

# Proceedings

**EURAU 2016**

European Symposium on Research  
in Architecture and Urban Design

Ion Mincu University of  
Architecture and Urbanism  
Bucharest, Romania



<http://eurau2016.uauim.ro>



Bucharest, September 28 - 30th, 2016

# IN BETWEEN SCALES



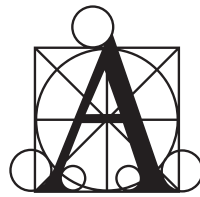




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## IN BETWEEN SCALES

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# Proceedings



# IN BETWEEN SCALES

Bucharest, September 28-30th 2016

**EURAU 2016 European Symposium on Research in Architecture and Urban Design: In Between Scales**

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The principal editor: assoc. prof. Beatrice-Gabriela Jöger, Arch.PhD, from UAUIM

The editing team: prof. Ana-Maria DABIJA, Arch.PhD; prof. Augustin IOAN, Arch. PhD; assoc.prof. Daniel COMȘA, Arch.PhD; assoc.prof. Iulius CRISTEA, Arch.PhD; assoc.prof. Francoise PAMFIL, Arch.PhD; assoc.prof. Marius VOICA, Arch.PhD; lecturer Oana DIACONESCU, Arch.PhD; lecturer Marina MIHĂILĂ, Arch.PhD; lecturer Mihaela ZAMFIR, Arch.PhD; researcher Anda SFINTEȘ, Arch.PhD; assist. Daniel ARMENCIU, Arch.PhD, Cătălin Caragea, Architect, PhD Cand., Arch., Delia Prisecaru, Architect, PhD Cand., Arch., Ștefan Mihăilescu, Lecturer Architect, PhD Arch, Anca Păsărin, Assist.Prof. Architect, PhD Cand., Arch all from UAUIM.

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# EURAU 2016

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## Introduction

The eighth edition of the European Symposium on Research in Architecture and Urban Design will be held from the 28th to the 30th of September 2016 in Bucharest.

The seminar will take place at the "Ion Mincu" University of Architecture and Urban Planning from Bucharest in collaboration with the institutions that organized the previous editions:

École Nationale Supérieure d'Architecture de Marseille, on doctoral research (2004);

École Nationale Supérieure d'Architecture et Paysage de Lille, on large scale (2005);

Association des Instituts Supérieurs Brussels-Liège-Mons (IESA), on cultural heritage (2006);

Escuela Superior de Arquitectura de la Universidad Politécnica de Madrid, under the theme cultural landscape (2008);

Facoltà di Architettura dell'Università degli Studi di Napoli Federico II, under the theme venustas (2010);

Faculdade de Arquitectura da Universidade do Porto, on public space and contemporary city (2012);

Faculty of Architecture of the Istanbul Technical University, on composite cities (2014).

The project EURAU is constituted within a network of schools and researchers in Architecture and Urbanism, meeting every two years to share the status of their investigation. In the long-term, it is intended to lead to the creation of a physical meeting and deposit space with all the research undertaken and ongoing in Europe to facilitate the sharing of resources and deepening of knowledge in these scientific areas.

The main concern of the EURAU is to establish itself as a place of debate and discussion of thematic disciplines of Architecture, City and Town Planning.

The theme of EURAU 2016 is "In Between Scales."

*Assoc.Prof. Beatrice-Gabriela JÖGER, Arch, PhD, UAUIM, Bucharest, Romania*



# IN BETWEEN SCALES

Bucharest, September 28-30th 2016

## History

The EURAU project was initiated by the French Ministry of Culture, when, in 2004, it launched the proposal of an annual symposium for researchers dealing with Research in Architecture and Urbanism. The various editions were organized by different European schools of Architecture with a coordinated effort by a broad group of university professors and researchers.

The purpose of this initiative is to enable the confrontation between researchers concerned with the Architecture and the City on the European scene.

The acronym EURAU describes the congregation of the objectives which motivate these events: EU for "European Union", R for "Research", A for "Architecture" and U for "Urbanism".

## Important Dates

December 2015	Call for papers
January 15th, 2016	Abstract and registration possible
April 15th, 2016	Abstract Submission Deadline
May 5th, 2016	Notification of acceptance
June 30th, 2016	Deadline for Final Paper submission for the publication of the proceedings
June 30th, 2016	Registration Deadline for Authors
September 28th-30th 2016	Conference dates
October 1st-2nd 2016	Post-Conference Tours

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# IN BETWEEN SCALES

Bucharest, September 28-30th 2016

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Bucharest, September 28-30th 2016

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European Symposium on Research  
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# **IN BETWEEN SCALES**

**Bucharest, September, 28-30th 2016**

## IN BETWEEN SCALES

How can one define in-betweenness in terms of built environments?

We want to explore the connections and cracks between the scales of public, communal and personal appropriation of the (un)built matter and space.

We want to inspect the intervals between built and unbuilt (virtual?) objects, between territory and settlements, between settlements and communal built environment, between public and private places and spaces, and between private and intimate spaces.

We want to investigate the links – and mutual misunderstandings - between culture of architecture and the culture of the vernacular; between the culture of the object based, top-to-bottom design procedures and the process based, bottom-up design strategies of contemporary parametricism.

Also, we want to further elaborate on the mostly unseen and unexplored conceptual territories between social awareness and activism with respect to preservation, housing, and migration.

And for this we address to Research, Education, Design, Implementation. All are processes, with different aims, at different scales, but all are processes of creation that are using research as a tool. The goal is to get out of the consecrated fields' routine in order to investigate the creativity that bridges those fields, the one that is making possible the passage between the scales, the one that is guiding us towards an inner inter-disciplinarity.

These are the theme and subjects proposed to be tackled by the EURAU2016 and everyone is welcomed to understand and develop them according to their background and affinities.

# Keynote Speakers

# IN BETWEEN SCALES

Bucharest, September 28-30th 2016

## Danilo Vespier



Danilo Vespier was born in Milan in 1972. He finished his studies in Italy, alternating some periods of formation in France and Belgium. He graduated the Faculty of Architecture in 1998 and in the same year, he moved to Paris. Here he remained for 2 years, collaborating with Mario Cucinella in an evocative atmosphere of a picturesque office inside Corbusier's Maison Plainex building situated in the 13th Arrondissement.

During this period, he gave his contribution to various international competitions and research projects, especially oriented towards sustainability and energetic efficiency. He dedicates to the Stazione marittima Otranto, Italy, project, and participates at the requalification and the restyling of the metro station "Villejuif Léo Lagrange" designed together with other symbolic interventions dedicated to the centenary of Paris underground public transportation.

In 2000 he arrives to Genoa. Here he finds again the sea. There is a crowded and laced harbor by a sum of activities, behind which developed over the centuries such a rich and fascinating city, but also which allows it to be read and discovered. In this manner begins the adventure in Renzo Piano Building Workshop. There took place a personal and professional association for 16 years.

The first design commitments are in Genoa, for the completion of a series of interventions of requalification that began with the Colombiade in 1992, which received new finances in the occasion of the G8 meeting from 2001. The office initiated the requalification project for the antique harbor waterfront by a series of activities for the public and especially by constructing the Bolla, a new glass Biosphere intended to host a collection of plants, part of a small ecosystem that in now part of the exhibition path of the aquarium.

## EURAU 2016

European Symposium on Research  
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Ion Mincu University of  
Architecture and Urbanism  
Bucharest, Romania



This becomes shortly the new image of the city.

In this manner the RPBW entrust him to follow and design different interventions all over the world, as an important reference of the office, up to the proposal of becoming associate of Renzo Piano Building Workshop in 2007.

He manages, among other assignments, the final phase of the project and of the site of the Liturgical Auditorium of Father Pio from San Giovanni Rotondo and is responsible of "Jardim de Braço de Prata" in Lisbon, a new 140.000 m<sup>2</sup> neighborhood, part of a larger requalification project of the industrial site along river Tago.

Danilo Vespier directs a design and research activity more and more concentrated on the great confrontations of architecture and urbanism, typical for the current period. His works treats: the suburbs, the urban "voids", the transformation of the big abandoned industrial areas, the public and social value of the architecture, the sustainability and the energetically efficiency.

These are the main topics that come into discussion for the project of the Le Albere Quarter from Trento, where he is in charge and follows it entirely, from the first conceptual sketches to the complete construction, which ended in summer 2013. The realization represents an important event of urban requalification that transforms a large industrial abandoned area (former zone Michelin) in a new multifunctional neighborhood, connecting it to the existing urban texture. The project consists of: over 11 ha, 16 buildings of a total of 200.000 m<sup>2</sup>, 25.000 m<sup>2</sup> of offices, residential area with a total of 350 apartments, commercial spaces, public constructions, streets, piazzas and an urban park of 5 ha.

Inside this urban intervention is born "MUSE", the new Trento Museum of Sciences.

Danilo Vespier follows personally the designing of "MUSE" from the elaboration of the first concept, through the long process of the executive design, but also by assuming the Artistic Direction in site and following the project management in museum organizing.



# IN BETWEEN SCALES

Bucharest, September 28-30th 2016

The key concepts that he expresses from the first drawings: monitoring of the articulation of spaces through the insertion of big voids, the interaction with the natural light, the limited use of interior wall divisions which allows space perception from each point, integration of new exhibit modalities that connects the language of the "contents" with that of the building, are becoming the characteristic elements of the project, which determined the big success to the public. Inaugurated in July 2013, it attracted one million visitors in the first year after its opening.

In interventions of this magnitude, one of the major challenges is to focus on the themes of sustainability and energetically efficiency that should be pursued without overlapping, but integrated into the creation process, becoming an expressive opportunity, a part of the architectural language.

In 2009, Danilo Vespier obtains the LEED professional accreditation, issued by Green Building Certification Institute. Thus, the project "Quartiere Le Alberi" finds itself among the winners of "Awards Casa Clima 2013". MUSE obtains the LEED Gold certification.

Always next to Renzo Piano, he continues to handle projects in the USA, Asia and Australia, including "Soho Tower", one of the residential towers of New York, "Concept" for the National Palace Museum in Taipei or the project for three residential towers in Sydney.

In parallel with the large-scale design, he is dealing with various temporary performing, related to disclosing exhibitions or events. In 2004 during the "RPBW, Pezzo per Pezzo" exhibition held at the Palazzo della Regione di Padova, the project aims and regards the execution of the work entitled "Tavolo Dell'Architettura" (Table of Architecture), an urban temporary and itinerant performing design adapted to expose awarded projects from an international competition. Seven blocks of Vicenza stone, arranged in a succession of over 20 meters length, are cut and carved in order to highlight the heterogeneity of extraction signs alongside with the material's natural structural vibration.

Special adjustable steel supports sustain them, opportunely positioned, for a more discreet appearance.

## EURAU 2016

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Ion Mincu University of  
Architecture and Urbanism  
Bucharest, Romania



In addition of the design activity, Danilo Vespier is dedicated to disseminating and sharing his professional experiences toward academic and professional community. He sustained lecturers at the Faculty of Architecture from Reggio Calabria and at the Faculty of Engineering from Trento. In 2010 he participated as a speaker at the seminar entitled "Il future del mondo dell'edilizia sostenibile e LEED Italia" (The future of sustainable building world and LEED Italy), in the Social Theatre of Trento. In 2014, he was invited to Marseille by the President of the National Order of Architects of France to lecture at the seminar "Cloture des Universites d'été de l'Architecture" (Closure of the Architecture Summer Universities). Also in 2014, during the general assembly of the Architects' Council of Europe, he was invited to present MUSE and Quartiere Le Albere. He is one of the lecturers in the international cycle about Ecological Neighborhoods held in the auditorium of „Seminario Maggiore of Padua.

By the end of 2015, he decided to establish together with Onur Teke, a new design company, named Teke Vespier Architects, with the intention of finding new spaces that combine the interests toward innovative expression forms with the substantial experience in the field of the two architects. Currently he is developing several projects, carrying out an activity in which the sensitivity for the context and its equilibrium, the study of materials and attention for construction details, as for sustainability issues, are the tools of a research method by design followed with passion and determination.

# IN BETWEEN SCALES

Bucharest, September 28-30th 2016

## Andrei Șerbescu



Andrei Șerbescu (1977) lives and works in Bucharest. He graduated from the Faculty of Architecture of UAUM in 2002, year since he has also been teaching as a lecturer at the University's design studios. He was invited critic for final projects and presentations at Oxford Brookes University, Oxford (UK) and Universidad Politecnica de Catalunya, Barcelona (Spain). In 2011 he presented his PhD thesis about vernacular architecture in contemporary Romania. He is one of the two founders of the architectural office ADNBA, since 2003. ([www.adnba.ro](http://www.adnba.ro))

### Awards, recognitions

Shortlisted among the 40 projects at the European Prize for Architecture Mies van der Rohe Awards, Barcelona, 2015

Milan Zlokovic Prize for the best architecture project in the Balkans area, Belgrade, 2015

Prize of the Architecture Section – Collective houses, at the Bucharest Architecture Biennale, 2014

Prize of the Architecture Section – Collective houses, at the Bucharest Architecture Annual, 2014

Shortlisted project at the World of Architecture Festival, Housing Section, Singapore, 2014

First Prize – Rehabilitation and remodeling of the Johannes Honterus courtyard, Biserica Neagră, Brașov (ADNBA + Exhibit Arhitectura), 2011

Mention – Remodeling of Piața Universității, București (ADNBA + Exhibit Arhitectura), 2011

## EURAU 2016

European Symposium on Research  
in Architecture and Urban Design

Ion Mincu University of  
Architecture and Urbanism  
Bucharest, Romania



Mention – Extension of the Central University Library, Cluj-Napoca, 2011

Prize of the Timișoara Architecture Annual, category > 1000sqm, 2010

Second Prize - European 10, Eisenstadt, Austria, 2010

Second Prize ex aequo – Arhetipuri / competition for public space, Bucharest

First Prize – Extending and functional remodeling of the National University of Arts premises, Bucharest, 2008

Mention – European 9, Bisceglie, Italia, 2008

Runner-up, RIBA (Royal Institute of British Architects) President's Medals for Architectural Education, London, 2002

Nominations at: Bucharest Architecture Biennale, Collective houses, 2014; Romanian Green Building Council Awards, Bucharest, 2014; Bucharest Architecture Biennale, category > 1000sqm, 2010; Arhitext Design Awards, rehabilitation section, 2011; Arhitext Design Awards, dwellings section, 2009; Bucharest Architecture Biennale, interior design section, 2004;

### Publications, exhibitions

Dwelling together. 6 apartment buildings by ADN BA (Locuind împreună. 6 blocuri de ADN BA), Zeppelin Zoom, Zeppelin & "Ion Mincu" University Press, Bucharest, 2014 (with Ștefan Ghenciulescu, Adrian Untaru and Bogdan Brădățeanu)

Projects by ADNBA published in: Detail, A10, Deutsche Bauzeitung, Zeppelin, Igloo, Arhitext Design and others

Projects by ADNBA exhibited in: Bucharest, Barcelona, Bruxelles, London, Venice, Belgrade, Vienna, Rome

"Ion Mincu" University of Architecture and Urban Planning (UAUIM) / lecturer.

# IN BETWEEN SCALES

Bucharest, September 28-30th 2016



Alejandro Aravena, introductory text for ADNBA's contribution to La Biennale di Venezia 2016 (15th International Architecture Exhibition Catalogue. Reporting from the front, p. 316).

## "The Work of ADN in Romania: Fighting the weight of dullness in the mediocre real-estate world"

**W**e tend to be worried about scarcity, emergency, crisis and all kinds of threats that jeopardize the quality of our actions as architects. But at least under these circumstances the enemy is clear. What is more dangerous is when the opponent is diffuse: the apparently inoffensive traditional middle-class housing and real-estate market, for example, which is responsible for the majority of the square meters built world wide. In that niche, nobody dares step out of the set of rules because of the fear of being replaced by the next architect in the queue. The vicious circle is as follows: the developer claims to know what the public wants. This is an euphemism to avoid saying that he (normally it is a he) has calculated the margins within which private gain and profit can still be assured. This set of rules shouldn't be too difficult, otherwise the whole commercial operation would become too difficult. This means that any average architect can do the job. So whoever wants to challenge the status quo (threatening financial return) is dismissed or treated as a commodity since average skills can easily be replaced.

In addition to this, it is a field where it is hard to prove that there is a problem. Basic needs are satisfied, so no life is in danger, and there is no humanitarian crisis at stake. There is no sense of urgency to solve anything. In the best case the answer is "acceptable" architecture. In the worst case, it is mediocrity replicated hectare by hectare. Although marketing tries to convince us of a different story, providing quality of life to people is not what brings developers to work every morning; to the real-estate world, architecture is a mere means to make money. The merit of ADN is that of struggling for architecture's quality where apparently there is no conflict.



# EURAU 2016

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ADNBA / Andrei Șerbescu, Adrian Untaru, Bogdan Brădățeanu ([www.adnba.ro](http://www.adnba.ro))

ADNBA was established in 2003 in Bucharest, by Andrei Șerbescu and Adrian Untaru, later joined by Bogdan Brădățeanu. The work of our practice is characterised by our attempt to search for the right balance between experiment and experience in the complex and delicate landscape of contemporary life. While we believe in architecture as a creative gesture, with cultural value and social responsibility, we also acknowledge the sometimes hazardous, and always subjective distinction between such attributes, in a rapidly changing environment as nowadays Romania and the whole of Eastern Europe. The challenges brought by the different scales, the diverse urban and cultural contexts, or the various building types we have worked with so far, have all enriched our experience and understanding of the many-sided nature of our profession.

Our practice has achieved critical recognition for both our built projects and our competitions entries, many of which have been awarded in national and international juries. We are currently involved in a diverse body of work, including mostly residential and public projects. In all of these, we strive for a wider and wiser understanding of the city and its evolution, this being also the essential background for our thoughts, hopes and doubts. But upon this background, the specific situation which each project and place bring to us, together with its fragile ties to the people, the neighbourhoods and their stories, is what interests us most.







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# actions, permeability, reflexivity

Actions: agency, social engagement beyond professional or social boundaries; architecture in the making, the making of architectural processes and buildings, the social engagement of architects and of architecture as a field.

Permeability: on boundaries and limits in phenomenology (Heidegger's *peras*), in deconstruction (Derrida's *parergon*) double faceted limits, porous borders.

Reflexivity: the role of *theoria* (neutral embassy, observed practice) in configuring an explanatory discourse for contemporary process-based architecture; can one envision aesthetic principles for parametricism? Can one foresee the emergence of a new, criteria-based criticism of contemporary architectures?









## GREEN ACTIVISM IN THE CITY AND URBAN AGRICULTURE

Cosmin Caciuc

*"Ion Mincu" University of Architecture and Urbanism (ROMANIA)*  
*cosmin.caciuc@gmail.com*

### Abstract

Urban agriculture is not new in the human history; what attracted attention in the last decade on this practice is a new attitude on everyday life in the city under the imperative of ecology promoted by alternative communities. This attitude is caused by reactions to unclear situations or problems in the city: degradation of abandoned urban sites, and the problem of the lack of green spaces or courtyards in densely built areas of the cities, allowing plant cultivation on balconies, terraces, vertical facades, in rooms or even underground. It became not only a form of protest against the decline of the quality of life in cities, but also a non-antagonist model of development for many dysfunctional urban spaces, based on sustainable social and economic processes. Urban gardening is not just an alternative form of production of healthy food, but also a leisure activity and an increase in creativity with respect for the environment. Lastly, it paved the way for architects and planners towards research *through* design, based on a participatory and multidisciplinary horizontal system. My communication will dissect critical ideological issues that animate the current urban agriculture phenomenon to clarify a few transdisciplinary points for a viable theory of green architecture and smart city.

Regarding the political spectrum of these unconventional practices, I make a distinction between the right and left ideologies standing behind the architectural and urban theories:

(1) Right ideology of corporatism for profit exploits new consumer bio-niches, either in the real estate business, promoting the idea of quality dwelling, or in the office space development, advancing the idea of quality working in order to increase employees' productivity and their motivation at work. The examples exposed to our attention are the farm at Pasona headquarters in Tokyo (Kono Designs, 2011-2012), UF001 LokDepot - the first hydroponic farm in the world with commercial character (Urban Farmers), housing for Habitat 44 in "Les Dervallieres" neighborhood in Nantes (Tétrarc Architects, 2011) and Kallistos apartment buildings in Begles, Bordeaux (Hondelate Laporte Architectes, 2007-2011).

(2) The leading paragraphs in the leftist ideology are nonprofit activism, communitarism, urban resistance, guerrilla gardening, the freedom of self-regulating or unregulated activities. The dialogue between the city government and non-profit ad-hoc organizations created in this sector is notable: the City of New York, for instance, collaborates with local non-profit groups to provide a kind of social system operating in the field of urban agriculture in public spaces; an example of public success is High Line New York (designed by Diller Scofidio + Renfro between 2004-2014 and maintained by Friends of the High Line community – a private and nonprofit partner). Little known and no less spectacular are the so-called *Organoponicos Populares* - urban community gardens in Cienfuegos, Cuba, motivated by survival in difficult economic times and less by a "green" lifestyle in the consumer society, as in the case of North American metropolises. We already have an example of guerrilla gardening in Bucharest, and Colectiv A Association, entitled "*La Terenuri*. Common space in Mănăştur Neighborhood. Cluj" is a notable moment in Romania to mobilize the local community for claiming and organizing landscape by urban gardening. Three more examples about claiming temporary neglected areas in cities are exposed here to criticism: community intervention in Ljubljana (Obrat group, from 2010 to present), gardening

in unbuildable urban lots, in the historic center of Zaragoza, connected to a national program for employment (Estonoesunsolar team, 2009-2010) and the ecological corridor "Passage 56", in St. Blaise Street, Paris (aaa - atelier d'architecture autogérée, 2005).

Finally, my proposal envisages 4 points for a future theorizing of urban agriculture in the neglected areas of our cities:

- > The rejection of antagonism between public and private interests, against the background of the eroded political struggle between "left" and "right";
- > Firm support for cooperation with the administration, following a "bottom-up" principle of intervention and a variety of partnerships with residents or businesses;
- > A positive vote for the voluntary proposed alternative projects, coming both from the professional community and civic groups, as a manifest for smarter everyday practices in the city;
- > Criticism against the conjuncture simulation of fashionable images created by a superficial slogan as "green everywhere".

**Keywords:** urban agriculture, green activism, green ideology, guerrilla gardening, community gardens

## 1 ACTIVATING A HYBRID IDEOLOGY

The architectural theory discourse was enriched in the last decade with various interpretations of alternative farming on urban lots phenomenon. Plants are cultivated on abandoned places in metropolises, starting with cracks in the asphalt and continuing with available areas on balconies, open terraces, vertical facades, inside the buildings themselves or even underground, in the basements. Interpreting these practices could draw some critical benefits in our professional sphere. The starting idea is that this new concern may activates now a hybrid ideology between the political left spectrum (nonprofit activism, anti-consumerism, guerrilla gardening) and the right spectrum (for-profit corporatism, businesses to exploit new bio-consumer niches, green developments in real estate domain). Amid this ambiguity, I find it extremely important to stress that urban agriculture can provide a non-antagonist model of development for of many dead spaces in our cities, based on sustainable processes of social and economic development, and energized by a boost in creativity deployed in a less intrusive manner to the environment. This is a good step for us, the architects, toward a research *through* the design in a horizontal and participatory system that simultaneously crosses multiple disciplines.

## 2 NEW CONSUMER NICHES FOR SMART CORPORATISTS: THE CASE OF GREEN RESIDENTIAL DEVELOPMENTS AND OFFICE SPACES

### 2.1 Office Farm in Tokyo

At "Office Farm " in Tokyo, by Kono Designs, managers seek to exploit current opportunities. They targeted emerging eco-niches in order to increase the employees' motivation, the general productivity and the attractiveness of the workplace itself [1, pp. 108–115]. Of great importance in this case is not only that this building is "green" on outside, but it contains gardens inside, configured like miniature plantations for cereals, vegetable and fruits. Introducing the vegetation at the interior, between office desks and chairs, has the role of a statement beyond architecture. This signifies an intensive research to materialize integrated processes: people and the environment are in direct interaction with educational implications for future generations of farmers, architects, administrators and entrepreneurs. Statistics already offers data that draw social attention: in Japan, less than 12% of the land is arable, less than one third of the consumed cereals is produced locally. Therefore urban agriculture becomes inevitable; introducing miniature plantations for edible plants inside buildings is

a pertinent and generalizable solution to the pressing social problem of food production not only in Japan, but also in many other parts of the world.

## **2.2 A Swiss company dedicated to urban farmers**

Urban Farmers is a Swiss company dedicated to urban farmers - the first of this kind in the world providing a hydroponic system with an area of 250 sqm [2]. Created in 2013 and named UF001 LokDepot, this system is both sustainable and cost effective due to a controller that enables the food production to be integrated on existing production areas or on new areas like rooftops. Vegetables grows nearby the point of their sale in the city and the system can be used by architects and designers in their designs. Urban Farmers slogan "Any machine making fresh food is a money making machine" expresses the capitalist desire for profit by exploiting a real opportunity on this market. Then, this is a business that transforms a hobby for enthusiasts into a complex collective enterprise and large scale action. Rooftop farms represents a smart form of urban activation, also improving the overall air quality in the city. Inserting gardens in unusual places in the city requires a creative effort, a major change of mentality and even finding some new constructive solutions. The gradual transition from aesthetic debates to ethical attitudes, marketing, research through design and design processes is obvious and promising in the near future. Architects are no more dominant and authoritatively characters in this theatre of urban operations, thus weakening the traditional privileged position of the architect-as-author in a "top-down" professional system. In fact they mixed-up themselves in horizontally deployed teams together with managers, entrepreneurs and engineers. They work with types of discourses borrowed from other disciplines for visualising processes, tactics and strategies, more than aesthetic forms. Spatial diagrams for example are more useful for modeling specific solutions in aquaponics together with technical specialists and engineers.

## **2.3 "Les Dervallieres" building complex in Nantes**

Beside the Urban Farmers business model, some real estate ecological developments combined with urban micro-agriculture based on private property also draw our attention. The building complex called "Les Dervallieres" in Nantes, designed in 2011 by Tétrarc Architects for Habitat 44, provides 36 apartments with greenhouses and farmland to revitalize a post-war urban area [3]. The interwar social housing tradition played here an essential role on the investment agenda, energized by the current imperative of sustainability. The building is erected on pillars and the car parking occupies the entire ground floor. The general shape is fragmented in smaller volumes making a reference to the individual house with a pitched roof; each of these connected volumes hosts 3 or 4 apartments served by staircases, an open corridor and elevators. The greenhouses and the wooden elevated access bridge are the most characteristic elements of this block of flats representing in the first case a bioclimatic principle, and in the second one, a strong link between public and private spaces. The private vegetable gardens, reminiscent of rural individual houses, are supplied with small cabins-like structures for gardening tools. Here, the dwellers can produce their own food in a sustainable manner, maintaining a local tradition and the diversity of outdoor spaces.

## **2.4 Kallistos blocks of flats in Bordeaux**

Hondelate Laporte Architectes completed in 2011 the Kallistos blocks of flats in Begles, Bordeaux, with appropriate spaces on the apartment terraces for practicing gardening, with greenhouses and open gangways, based on expressive spatial typologies and architectural solutions [4, pp. 39-44]. The most distinctive part of these 2300 sqm collective housing units is the A building with wooden elevated terraces looking like trees or "vegetal islands". Here, the residents can practice gardening in open air. The B building is provided with winter gardens closed with polycarbonate sliding panels, offering a greenhouse area for fruit / vegetable gardens during the cold season. The sliding panels can be opened during the summer in order to be transformed into loggias.

### 3 MEDIATION, COLLABORATION AND SUPPORT: THE ADMINISTRATIVE MODEL CONCERNING THE URBAN GARDENING

Not only corporations, firms or real estate developers are interested in urban gardening, but governments and administrations too. They can support communities, entrepreneurs or individuals, on the basis of agreements / partnerships that formalize bottom-up practices. First, the administration observes spontaneous practices in the city, often unregulated, propagated by urban activists and NGO's. Second, the city officials interpret these practices and listed to the the inhabitants demands. For example, the City of New York collaborates with local non-profit groups in order to provides a kind of social system operating in the field of urban agriculture. This system is based on free access to available land and terraces, plus know-how and financial support where is necessary. The local administration offers regulations "from above", but they are accompanied with a strong "bottom-up" effort based on the direct initiative of voluntary communities.

#### 3.1 High Line Park, New York

At the beginning of the 20<sup>th</sup> century, Le Corbusier promoted the elevated gardens on rooftop of the new buildings for saving the ground space and making the city a better space with clean air. Now, the planted terraces in New York is are already famous worldwide and they are not only spaces for leisure, but also areas of healthy food production. High Line operation of urban gardening can be an excellent model for urban agriculture in converted postindustrial areas. [5, pp. 24–33] The fact that stararchitects like Diller Scofidio & Renfro successfully designed that park in collaboration with landscape architects James Corner Field Operations and Piet Oudolf, is not really important here. Beyond the professional virtuosity of architectural design, the essential fact is that this project is promoted and maintained by the civic organization Friends of the High Line, a private and nonprofit partner the municipality, that must provide 98% of the park's operating support.

#### 3.2 Cuban model of urban farming

One might say that High Line Park represents a new eco-niche for perpetuating a healthy life-style into a highly developed and capitalist country based on consumer society. But this is not a singular and favorable example of green urbanism, and we can find a positive example into a socialist country with a very controversial political and economic background like Cuba [6, pp. 110–116]. Here, the administration and the inhabitants contribute together to the practical success of agriculture inside the city, just between blocks of flats. This kind of urban agriculture is based on necessity and it is born from embargo, poverty, totalitarianism and the downfall of the great intensive plantations. The Cuban model of urban farming is a model of everyday survival in fact and it would not have existed as such and perpetuated without human solidarity and civic engagement. These two aspects transcend the politics and really make the basic threads for both the citizens and administration, of a successful strategy for transforming the city into a sustainable garden.

### 4 PROTEST AND HOBBY: UNREGULATED INDIVIDUAL ACTIVISM

#### 4.1 Guerrilla gardening in Bucharest

Camil Ressu Boulevard in Bucharest was the place of an unusual practice, both protest and hobby: a young man, usually working as programmer, voluntarily grows in his free time fruit and vegetables in the public green space, daily maintained by the administration [7]. This practice contradicts the "official" administrative policies concerning landscape architecture based on roses, grass, lawn mowers and hedges. This form of *guerrilla gardening* draws public attention to the principles of permaculture for the community's interest and involve both a civic protest and an ad-hoc project for making the city a more diverse and attractive environment. By reactivating neglected stripes of land between buildings, and using vegetable seedlings or fruit tree saplings, the young man challenges the city employees which diligently bring the stripes back to their barren

value, erasing his interventions and mechanically checking the day's cleaning tasks. This situation generates the cultural split between us and those walking on New York's High Line. This is happening while many public areas in front of our block of flats from the socialist period are carefully enclosed with fences by the ground floor apartment owners for improvising simulacra of peasant gardens. This phenomenon of public space privatisation is against the collective spirit that activate the urban gardening into the Western countries.

## **4.2 Balconies for spontaneous vertical gardening in Deva**

It is worth noticing that some clever design projects of block of flats after 1990 allow unregulated interventions of urban gardening. It comes back to my mind the example of a building with apartments in Deva, designed by DSBA office in 2005, which integrate a delicate metal structure on the facade, on all balconies, to allow spontaneous vertical gardening [8, pp. 56–59]. Even this type of participationism was not fulfilled at that time as expected, in the absence of a culture of urban gardening and stronger community spirit, this type of architecture provides in the future all the prerequisites to a return to the original design direction. From this point of view, I believe that city administrations should be more receptive to alternative models of making our neighborhoods greener through personal hobbies and collective ad-hoc involvements that can lead naturally to a good practice in urban agriculture.

# **5 URBAN RESISTANCE AND SOCIAL ACTIVISM**

## **5.1 Reactivation of an abandoned plot of land in Ljubljana**

Slovenian group Obrat [9, pp. 86–89] have been coordinated community interventions in Ljubljana since 2010. These actions based on a program, manifesto or articulated attitude are very significant models of improving urban space for non-profit associations and self-organized groups people that intervene either on private areas or public domain. An abandoned construction site in Ljubljana (a public owned terrain, but with a restricted access) became an urban garden under Obrat guidance, who mobilized 20 voluntary citizens and the municipality in the first phase in order to clean up the ground and make it useful for urban agriculture. It is hard to apply here the conventional labels of aesthetic beauty in architectural terms mainly because this sanitation procedure and sustainable reactivation of a plot of land is based on a participatory and critical model of intervention, not on some preconceived landscape design. Strengthening community spirit, the project finally involved 80 enthusiast inhabitants that planted 40 small gardens, rethinking green space areas beyond the official landscape strategies with some floral arrangements maintained only by city administration.

## **5.2 Interventions on unbuildable urban lots in Zaragoza**

In Zaragoza, Spain, Estonoesunsolar group reactivates unbuildable urban lots in the historic center in a similar manner, collaborating with local authorities in connection with a national program for employment [10, pp. 96–101]. During 2009-2010, this group of architects proposed ground sanitation, urban furniture and gardening strategies on two locations: "Armas 92" and "San Blas 53". The redevelopment initiative was based on minimal budgets and voluntary work of local citizens.

## **5.3 Gardening by voluntarily participation in Cluj-Napoca**

We have a similar example in Romania, inside an undeveloped and poorly maintained area in Mănăştur neighborhood, near Cluj-Napoca. "La Terenuri. Common space in Mănăştur. Cluj" is the full name of an operation run by Colectiv A Association to mobilize the local community for an intervention into the landscape by urban gardening by voluntarily participation [11, pp. 79-81]. Started as a workshop, this operation targeted long-term process and encouraged a new attitude toward the public space uses through an approach lying between artistic intervention, architecture, landscape and anthropological analysis.



## 6 CONCLUSIONS

Our conclusion revolves around the very good practice of aaa team - atelier d'architecture autogérée – founded in 2001 by two Romanian architects, Constantin Petcou and Doina Petrescu. A project from 2005 of this team entitled “Passage 56 - An ecological corridor”, deployed an “eco-interstice” in St. Blaise area in Paris, on an area of 200 sqm, engaging a collective production of knowledge, self-organization of collective spaces, resistance to profit driven developments and recycling and ecologically friendly constructions. [12, pp. 96–103] The theoretical structure on which this group bases its projects capture essential points of public interest and responsibility: 1) unusual partnership between the public administration, local organisations, professionals and residents; 2) open consultation process; 3) collectively managed space; 4) participative process; 5) temporary installation; 6) mobile devices; 7) minimal-costs, and 8) eco-construction.

We can finally highlight four ethically driven directions for the future thinking on improving public space in the city, especially in the neglected areas:

- > Rejection of the antagonism between public and private interests. The ideological battle between “left” and “right” leads nowhere. Urban agriculture could give a chance to overcome this conflict and nurture a new urban practice in favor of a better life in our cities;
- > Enthusiastic support for the collaboration with the administration on a “bottom-up” model and a variety of partnerships with residents or businesses;
- > Helping the alternative proposals coming from the voluntary participation of the professional community and civic groups, as manifest to a smarter practice. The attention and recognition by the municipality are required to stimulate a broad social reaction. The schools of architecture can play a stronger role in this direction;
- > A critical attitude and lucid reaction toward the simulation of images with trendy and superficial “green everywhere”: let us re-read Beatriz Ramo’s manifest (STAR Strategies + Architecture), called “O’Mighty Green” out of which I choose a warning excerpt: “The word Sustainability has been raped, abused, and insulted by architects, politicians, advertisers...in essence, by everybody. The musical harmony in the perfect trio – the social, the environmental, and the economic – is eclipsed by a simplistic solo performance of the environmental, entitled the Green”. [13, pp. 104–107]



Figure 1. Kono Designs, “Farm at the Office” Pasona headquarters, Tokyo (2011-2012). Photo: Kono Designs

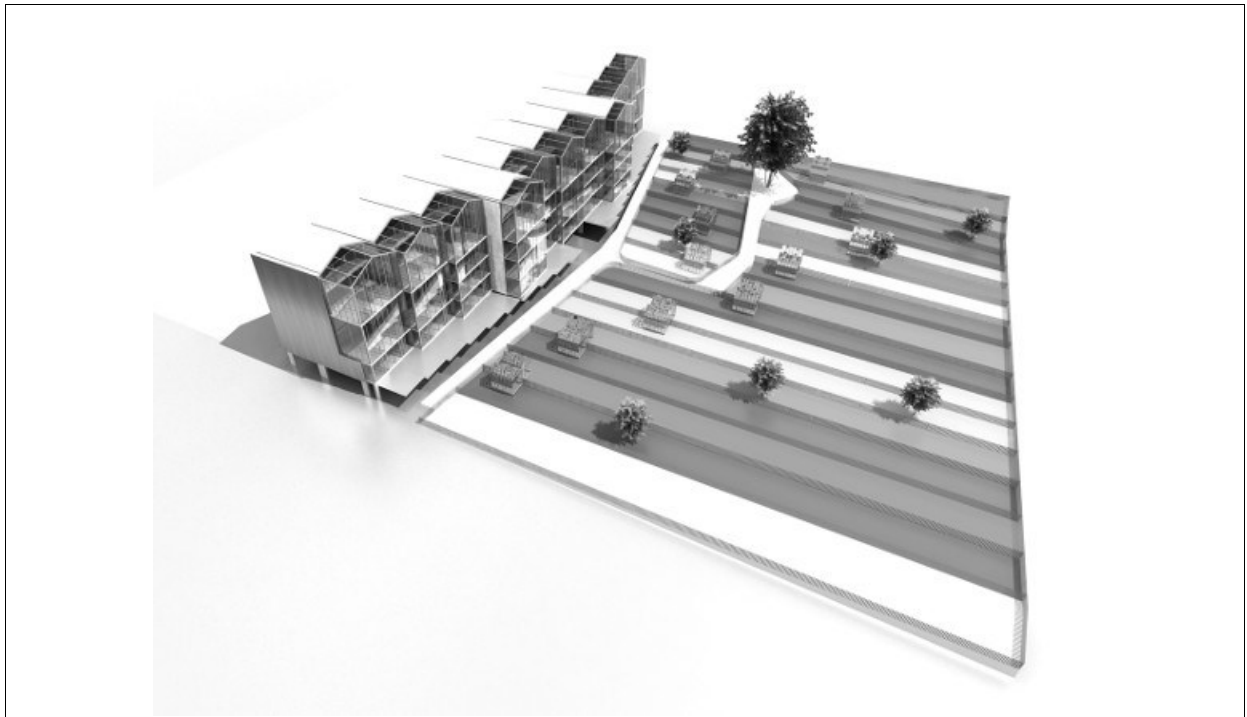


Figure 2. Tetrarc Architects, dwellings in “Les Dervallieres” district, Nantes (2011). Illustration: Tetrarc Architects



Figure 3. Estonoesunsolar, 鄭 rmas 92 • Zaragoza. Photo: Estonoesunsolar





Figure 4. Obrat - community interventions in Ljubljana, Slovenia, since 2010.



Figure 5. aaa – atelier d’architecture autogérée, “Passage 56 – An ecological corridor”, St. Blaise Street, Paris (2005).  
Photo: aaa – atelier d’architecture autogérée

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**NOTE:**

This text is an extended and modified version of my article "Urban Farming: Resource, Ideology, Activism", first published in *Zeppelin* #122, March 2014, Edited by Q-Group Proiect, Bucharest: pp. XII-XVII.



## URBAN DYNAMICS AND NEW CENTRALITY IN ALGERIA: CASE OF BISKRA

**Foued Bouzahzah<sup>1</sup>, Naouel Hanane Boudjab<sup>2</sup>**

*<sup>1,2</sup>Institute of Management of the Urban Techniques  
University Constantine 3, Ali mendjeli Constantine (ALGERIA)  
bouzahzah\_f@yahoo.fr, boudjabi\_nh@yahoo.fr*

### Abstract

The urban space is through time prone to different mutations, transformations and conversions of any nature. This gives it a nature (character) of mobility and perpetual effervescence, which is a real dynamic. Indeed, the city has always had multiple transformations that depend on several factors that are combined at the level of a complex context at different scales going from the international to the local one. These factors interact and are at the same time: political, spatial, economic, cultural, but also technological, demographic and historical. The entire factors induce thus the space evolution, either by concentration, dispersion, specialization, or by homogeneity but not necessarily always in a positive way, because negative dynamics may emerge such as: degradations, obsolescence, disorganizations, congestions etc.

New dynamics affect the contemporary city, causing mutations of its functioning and of its representations, both in the center and at the periphery. This has provoked real urban functions redistribution and a redefinition of the "territory" notion. In fact, in the current context of urban looseness, the center no longer seems opposed to the periphery, because new places with attractions appear "in margins", prompting new relationships. To be interested in these "new centralities" is equivalent to be aware of the overall transformation of urban areas and territories.

The Algerian cities seem to be mightily (strongly) a part of this significant new form of territoriality of contemporary urbanization process, with obvious differences related to the local context or to the regional specificities. Indeed, the Algerian cities through the disparity of territories they cover know active reconstructions of their urban centralities, and that as they extend and transform. The centralities mutations comes under very specific logics, some centralities are ancient and their radiation goes sometimes further and further away, others are recent and often relayed to the spatial extension of the construction that coincides with a modification of the social expectations, or the new practices and usage. A fact is certain, the new centralities mark out the urban dynamics experienced by the Algerian cities either at the level of the top of the urban hierarchy or the one of the floor.

In this regard, we notice that in the majority of the Algerian small cities, the city's effigy is no longer the same one that predominated before: with an original center with all the functions and the activities. On the contrary, those cities are changing rapidly as their periphery symbolized by new constructions with residential nature is at first on track to attract many normal activities whose acquisition induces long displacements within the population. This phenomenon affects all the other urban echelons such as the large cities (Algiers, Oran and Constantine etc).

In order to grasp better and understand all this, we dealt with the case of the city of Biskra in Algeria; a transitional city that links the north to the south of the country and whose centrality has erected until now in a traditional way, with the domination of a point on the rest of the territory, has known reaching transformations. The commercial function was a determinant factor for the "shaping" of the city contemporary centrality. Thus, our work is essentially structured at the crossroad of two approaches: the qualitative and the quantitative one of the city commercial activity through its different logics. It was found that a new centrality model is being gradually set up in Biskra. It is henceforth structured around two principle poles: an initial centrality marked by the factor and the

historical weight and another centrality, secondary and peripheral with economical petrol. This structuring of the Biskri space was a holder of a new urban dynamic and has made the spatial structure of the city more legible.

In our view, it would be interesting to develop a strategy for the urban agglomeration in order to prepare, to accompany and to anticipate the future urban evolutions of the city. The conception of this overall strategy will be certainly able to offer action and management opportunities to the local communities and the various concerned actors and that through a complementarity logic between the existent and the new centralities.

**Keywords:** Centrality, new centralities, urban dynamics, trade, structures, concentrations, Biskra.

## 1 INTRODUCTION

The issues of urban spreading, of the relationship between center and periphery and those of new centralities seem to be now indivisible. The new cities rhythms mark the end of a design of the urban based on the places statistical vision, and initiate a clear modification in the structuring role of the urban functions and the city's different equipments. As for the new centralities, they are built a priori from the users' social behavior, depending on their needs and the trends.

It is indisputable that the urban centrality has evolved through history in a certain structural and geographical continuity but this classical form knows at the level of the contemporary city a slide and movements which materialize in two peripheral places that produce now attractiveness and gathering.

This doesn't cause the traditional center, the holder of the classical centrality to lose its strengths, its image, its importance and weight which is often historical. However, a new logic that is spatial, functional and structural at the same time, and is supported and required by the new practices and the users' needs is working now. The urban space is structured now around those ancient and new points and the dynamic that they animate. It would be interesting to think about the existing relationship between these new forms of peripheral centralities and the traditional centrality; which relationships are they holding: Substitution, complementarity or opposition and competition? The Algerian cities seem to fit mightily in this new form of significant territoriality of the contemporary urbanization process. Indeed, the Algerian cities and through the territories disparate that they cover know active reconstructions of their urban centralities, and that as they extend and change. The new centralities mark out the urban dynamics experienced by the Algerian cities either at the level of the urban hierarchy top or at that of the floor. In order to better apprehend and understand all this, we considered the case of the city of Biskra in Algeria, the desert door which links the north and the south of the country. The capital and the center of the administrative, the economic and the cultural life of the region of Zibans. This city has experienced profound changes that have affected its centrality. In fact, since its accession to the rank of administrative center of the Wilaya in 1974, Biskra has known a significant evolution, moving from a small city of a few thousands inhabitants to a medium city of more than 200 000 inhabitants.

The city has a particular topography and a strategic position on major transport axes that structure the Saharan region in term of economic dynamism and mobility. This gives it a determinant role in the center of the urban framework and gives it intrinsic characteristics which have an impact on the urban organization and the functioning at the local level.

The choice of the city of Biskra almost imposed itself on us, especially after a longue investigation that allowed observing the dynamic and the contemporary transformation experienced by the city. Our motivation is to study and evaluate the centrality problematic and its impact on the structure and the organization of the Biskri space. It is about thinking and maybe even achieving to convey an effective urban strategy to prepare, support and anticipate in the best way the urban evolutions that knows the city of Biskra.

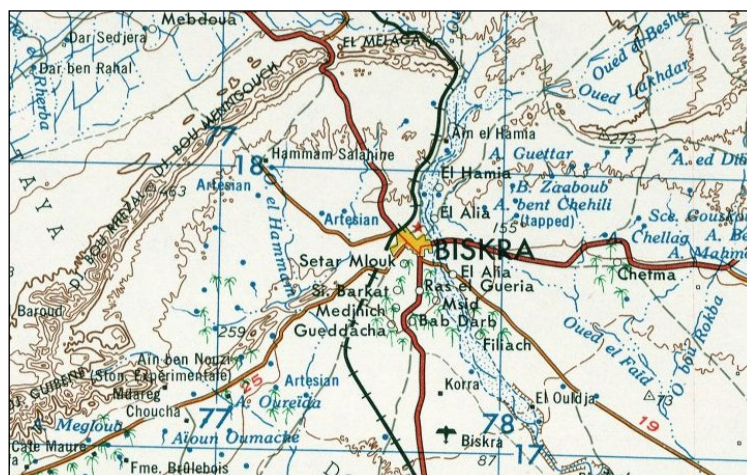


Figure 1. Geographic location of the city of Biskra.

## 2 URBAN DYNAMIC, AND SPATIAL EVOLUTION OF THE CITY OF BISKRA

“In order to understand Biskra, the characteristics and the importance of this city of the Algerian south, it is necessary to proceed by increasingly broader fields of vision, such as the photographer using a zoom“. [1, pp. 1517-1522]

### 2.1 The demographic dynamic of the city of Biskra

We have tried to reconstruct the democratic evolutions that have marked Biskra and that since 1845, by drawing two tables (N°1 and 2) including the population evolution before and after independence.

	Population			Expansion rate (%)	
	1845	1893	1954	1845/1893	1893/1954
City	4000	19000	52511	3,29	1,68

Table 1. The population evolution of the city (1845-1893-1954)Title of the First Table

Source: SENATUS Consulte 1863

	Population					Expansion rate (%)			
	1966	1977	1987	1998	2008	1966/77	1977/87	1987/98	98/08
<b>City</b>	52519	87200	128281	176145	200654	5,20	3,93	2,92	1,31
<b>Town</b>	58561	90471	128924	178064	205608	4,44	3,60	2,97	1,44

Table 2. population evolution (1966-1977-1987-1998)

Source: ONS, RGPH 1966, 1977, 1987 et 2008

The city of Biskra has known a great population growth through the different periods from 1954 to 2008 ( the year of the last RGPH). Indeed, its population has almost quadrupled and it currently holds the rank of the ninth city at the national scale (RGPH 2008). This population raise is the logical result of the imbrications of three mechanisms, namely: the natural growth, the migration and the city promotion at the rank of administrative center of the wilaya since 1974. In fact, this raise has committed the city on the way profound changes: economic, social and urban. Also, the tertiary sector (trades and services) became dominant, occupying 63,33 % of the active population, this situation reflects the importance of the commercial activity and its great expansion in the city.

We are witnessing in Biskra a real demographic transition phase with a growth deceleration and a disruption of the structure by the age of the population.

For a more complete comprehension of the urban dynamic of Biskra and its impacts on its urban and functional organization, it is imperative to focus more on a spatial reading.

## 2.2 Urbanization process & spatial evolution in Biskra: diachronic analysi of a moving centrality.

At the beginning of its development in the 17<sup>th</sup> century, Biskra had a perfect and consistent



geographic centrality as shown in “Fig. 2”. It was the traditional model of the centrality ( center/ periphery) on which was based the organization of the majority of the Islamic cities namely: the mosque and the market.

In this same period, there was a governor (the Turkish caïd Hussein Ibn lagha) to whom we owe the creation of “Labouab core” which was surrounded by five villages “Fig. 2”: Ras el Qaria, Gueddacha, Mejniche, Msid and Filiache.

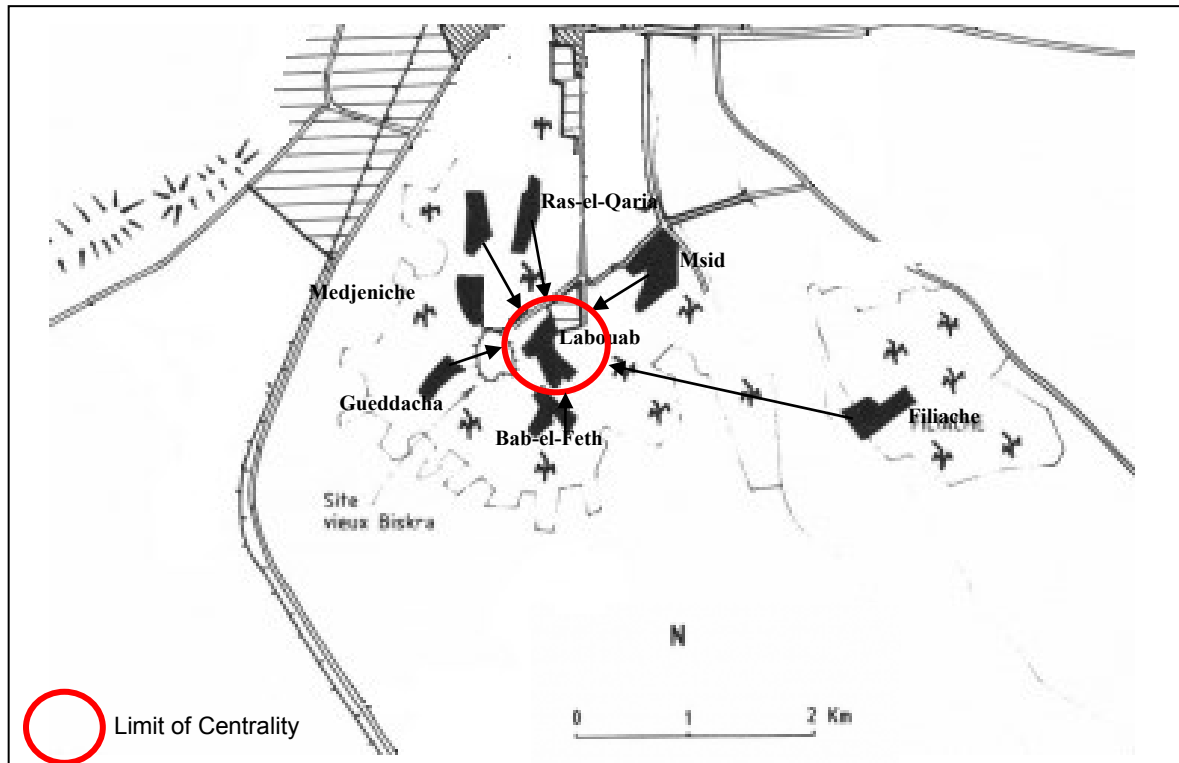


Figure 2.The traditional centrality of the city of Biskra in the 17th century

Labouab, was the center of the administrative and the cultural activities, it also shelters the headquarters of the caïdat (governor and judge), the mosque and the main school etc. Therefore, it represented the power-center of the political and administrative decisions.

This traditional model of centrality lasted until the arrival of the French in the 19<sup>th</sup> century. This era was marked by the construction of the Saint German Fort in 1850 which represented the nucleus of the colonial city. This Fort was built to control the water sources and to be physically detached from the aboriginal city, creating from that a territory reserved only for Europeans. A new form of centrality came since then to graft to the existing system.

Thus, the colonial city of Biskra, included henceforth a new type of centrality, based essentially on the development and the implementation of an administration “centralized” (city hotel), cultural, commercial and touristic equipments. Thereby, the old Biskra was marginalized and isolated from the newly erected material.

Since the independence in 1962, the evolution of the city of Biskra has known three great distinct phases of urbanization. The first (from 1962 to 1977) a phase characterized by the slow transformations, the city has experienced a spontaneous development without a real urban organization. It also knew an urbanization extension of the district "Star Mlouk" that housed the native population in the colonial period, as individual lodging and some equipments, succeeding thus in captivating an attractiveness and creating a parallel centrality to the one of the colonial checkerboard “Fig. 3”.

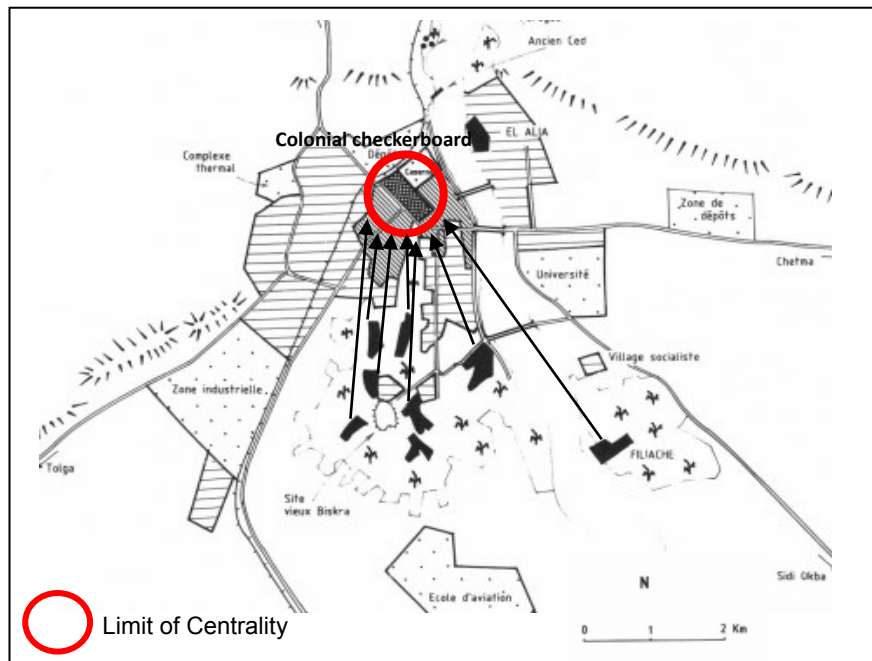


Figure 3. The centrality of the city of Biskra in the colonial era

Since the independence in 1962, the evolution of the city of Biskra has known three great distinct phases of urbanization. The first (from 1962 to 1977) a phase characterized by the slow transformations, the city has experienced a spontaneous development without a real urban organization. It also knew an urbanization extension of the district "Star Mlouk" that housed the native population in the colonial period, as individual lodging and some equipments, succeeding thus in captivating an attractiveness and creating a parallel centrality to the one of the colonial checkerboard "Fig. 3".

But due to its promotion to the rank of CLW in the early 70s, the city of Biskra was marked by a very fast urbanization, based on a massive and unprecedented consumption of the palm lands. This second stage of urbanization (from 1977 to 1998), characterized by a sustained and continuous development, on a horizontal axis, moving towards the East and the West with the initiation of a new construction method established by the Algerian state in the end of the 70s namely the famous new urban habitat areas. These areas occupied a relatively large land bases covering the two parts of the city (from the east to the west); the aim is to master the extension of Biskra in a " regulatory and planned" manner. As for the centrality, it extended in an extension formed by the colonial checkered and Star Mlouk district.

During the last stage, from 1998 until today, the city of Biskra is essentially characterized by its expansion to the East and the West, resulting in a conurbation with peri-urban centers of Chetma and El Hdjeb. In fact, the "Fig. 4" shows that the city has known a rather abuse of its ground. Its area increased from 433.25 hectares in 1962 to 2778 hectares in 2008 with a particularly rapid rhythm of urbanization and market by a spontaneous and uncontrolled evolution especially during the 70s and the 80s.

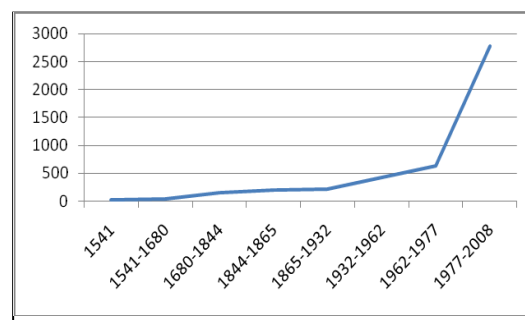


Figure 4. The evolution of the spatial consumption of the city of Biskra in Hectares (1541-2008)

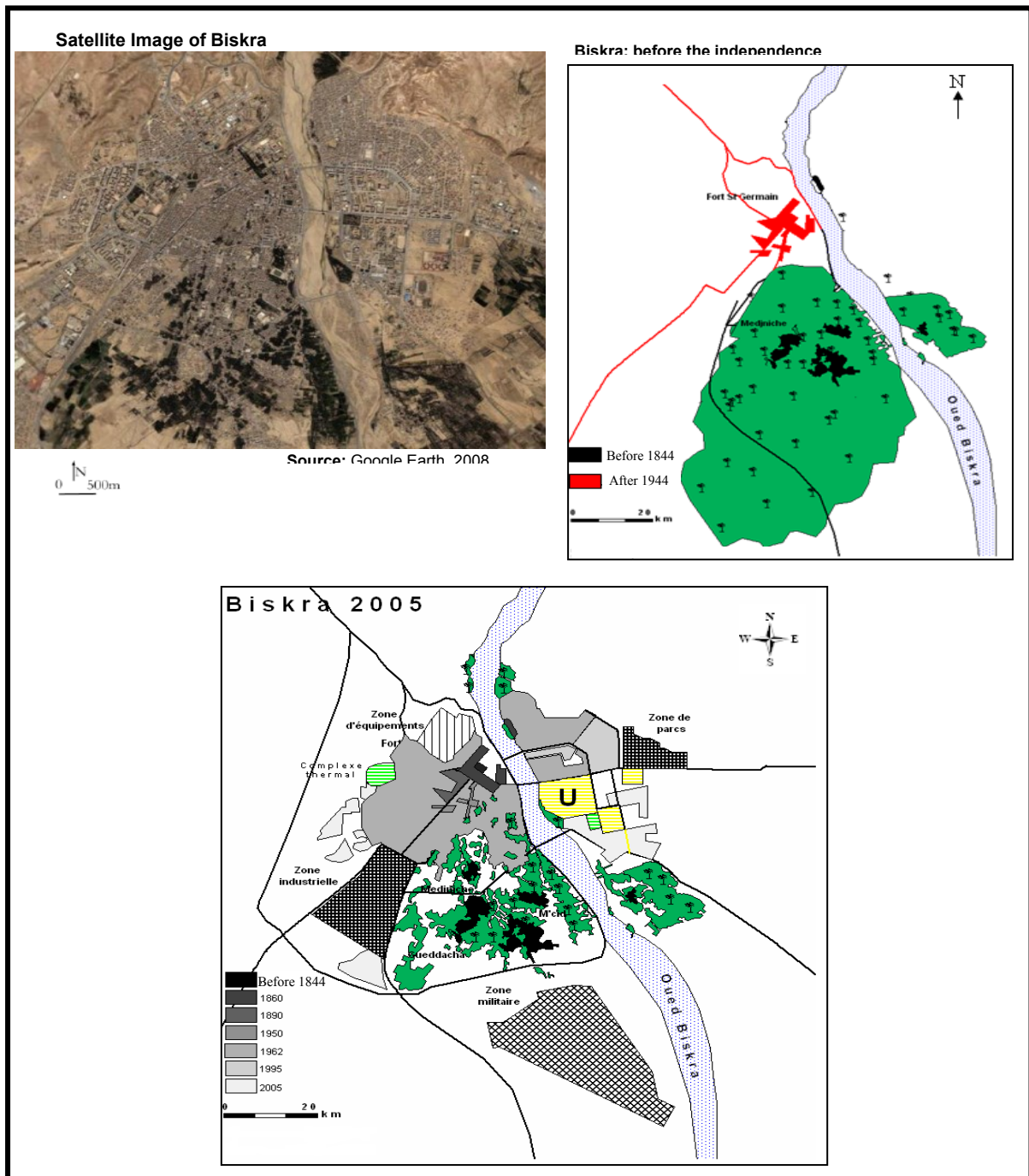


Figure 5. The spatial evolution of the agglomeration of Biskra

In the contemporary era, it seems that the city of Biskra accumulated a set of transformations and evolutions that have widely contributed in the modification of its overall structure. The centrality that raised till now in a traditional way, with the domination of a point on the entire territory depending on this high place of command has shifted to include other places such as peripheries with an attractiveness power.

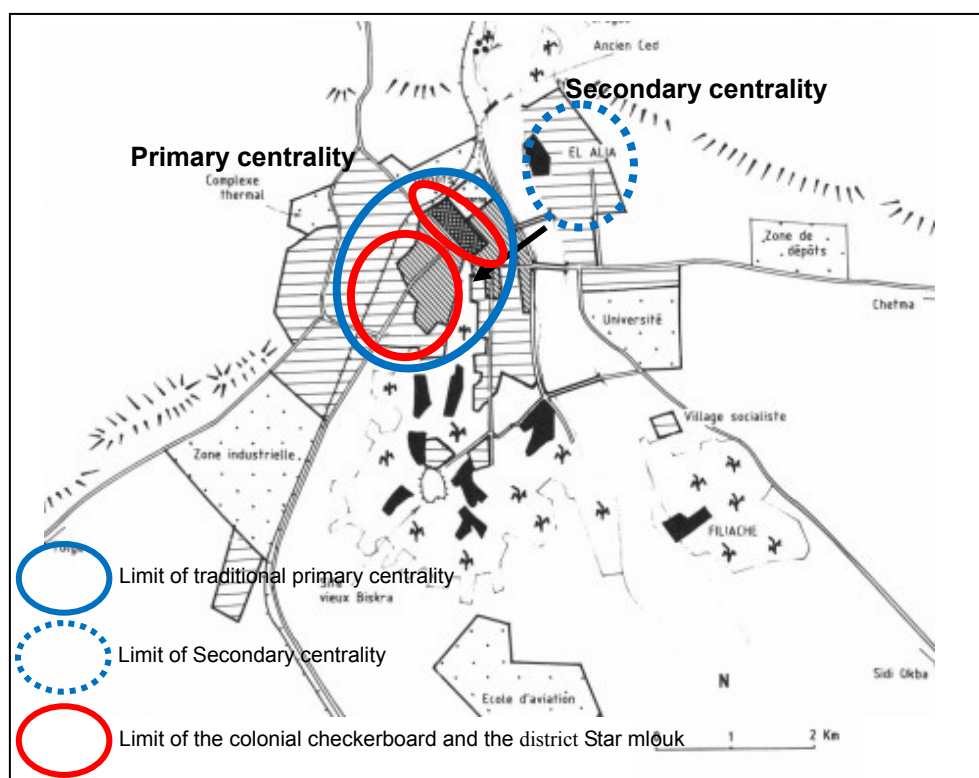


Figure 6. Mutation of the city of Biskra centrality

### 3 ELEMENTS AND FACTORS OF THE CENTRALITY IN BISKRA

A new model of centrality is gradually setting up in Biskra. Its principal center has known due to the expanding of the city an enlargement from the geometric point extending over the districts: Star Mlouk, Elboukhari and the colonial checkerboard. It covers all the commercial activities, the administrative equipments and the urban services; giving it a crucial role in the organization and the structuring of the city. Other attractiveness and concentration aspects emerged at the level of the peripheral district of El alia. It is among other commercial, artisanal activities, but also administrative equipments and services (health, education, sport etc.).

To better understand the new emerging centrality and measure it through the Biskri urban space, we chose to focus on the different types of equipment of the city, but especially the commercial structures that represented, in our opinion, a crucial factor in the spatial and functional reconfiguration of the city.

#### 3.1 Spatial distribution and concentration of the major equipments in Biskra

The study of large-scale equipments in Biskra and of their distribution/ concentration, allowed us to focus on their ability in structuring the urban space through the different functions and services they offer to users.

They participate in creating a real urban dynamic especially comparing to the flow they daily or occasionally drain. Our investigation on field has allowed us to notice that the city of Biskra has 365 equipments (all categories) divided across the different sectors of the city. we have noticed that the most dynamic zone and the one that concentrates the largest number of equipments in Biskra, is implanted in the sector N°1 which is the colonial checkerboard "Fig. 7".

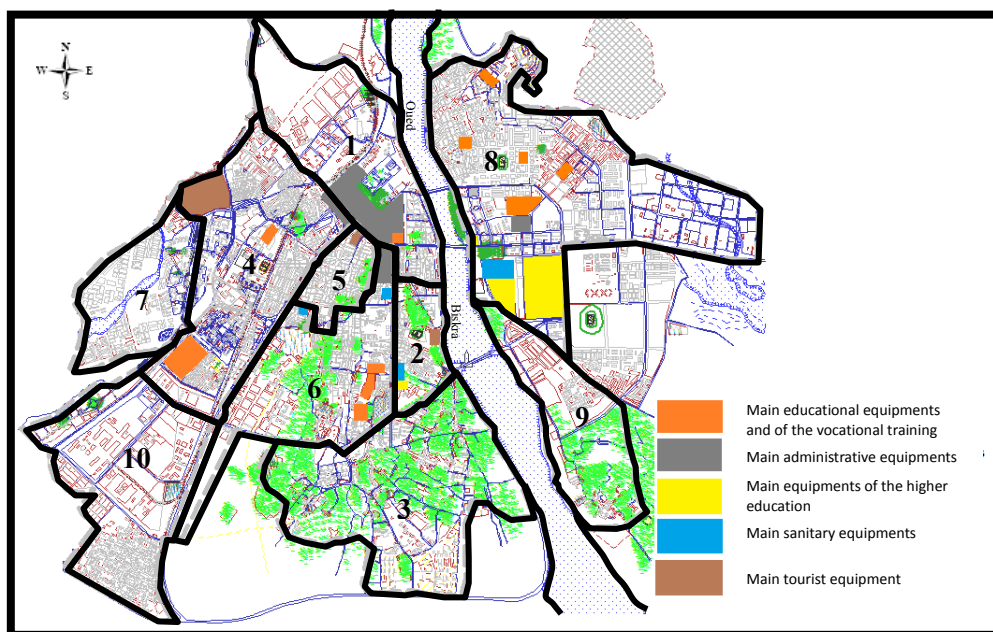


Figure 7. City of Biskra : the distribution of the main public equipments

Indeed, this last is the holder of all the important urban functions and services of the city, it also concentrates the majority of the functions command, and that gives it a very important area of influence covering the city and going beyond (the wilaya).

Another zone is characterized by a high concentration of large scale administrative equipments; this zone is located in the sector N°6. It is the Ras El Guerria North district, this district is located specifically at the eastern boundary of Star Mlouk district (sector N°5), entering thus in the immediate extension of the city center zone ( colonial checkerboard and star Mlouk district). We find also in this district: the seat of the wilay, transit hotel, the house of culture, the open-air theater...etc.

The last zone that knows an high concentration of equipments is located in the periphery of the city, at the sector N°8, ie El Alia center with great importance equipments to the city and the whole region: the university, the hospital of the wilaya, the emergencies, the maternity, multisport complex, the center of professional training, the teacher's home and all an administrative district that includes the DPAT, DUC etc.

### 3.2. Commercial structures and new centrality in Biskra

"The commercial function is often seen as the fundamental function. [...] Some authors have included this function in the definition of the city, as it seemed inherent in the urban life"[2, p. 121].

The commercial activity and particularly the retail trade, has always had a significant impact in the structuring of the cities through the urban history. In fact, the commercial concentrations allow the captivation of a wide and diverse range of individuals and potential users; it is here a major feature of the centrality phenomenon.

This drove us to analyze and observe the commercial activity in Biskra, and to scrutinize its localization logics, the distribution of its different forms, its concentrations, its attractive capacities and specializations.

Trade in general and the retail trade in particular, appeared to us as the indicative factor of the Biskri territory composition. It reflects, of course, the history of the city and adapts to its demographic, economic and spatial evolution. But its actual structure operates according to different logics from those prevailed in the past.



### 3.2.1. The trade concentration:

The analysis of “Fig. 8” that represents the spatial distribution of the commercial establishments in Biskra, shows the existence of certain concentration logics. This has allowed us to identify « sectors » or « places » that are more central than the others.

Furthermore, the great concentration of trade in the city of Biskra is recorded at two main urban unities namely: the sector N°5 ( and some small parts from the sectors N°1, 2, 6 and 4) and the sector N°8, ie in the zones with high population densities[3].

- The first area of released concentration represents the heart of the city, it is the colonial checkerboard ( city center) and the Star Mlouk district.
- The second area is the new extension of the eastern side of the city, ie El Alia North.

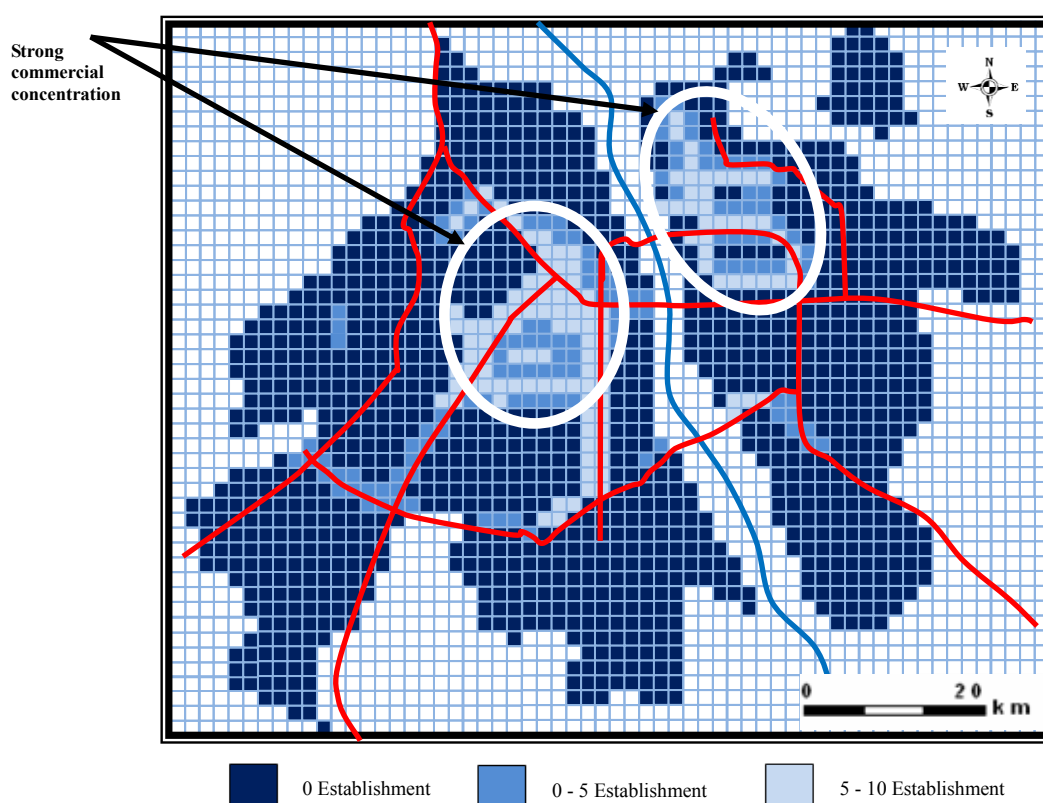


Figure 8. The city of Biskra: commercial Concentration

Thus the profile of the commercial structure of Biskra has different characteristics and features. At the beginning, In terms of quality, the city records the presence of many commercial categories that response to different factors and obey to particular logics of arrangement. Thus, the commercial device has been shaped by the historical aspect and the centrality slipping that has occurred between the old Biskra (the initial core formed by the seven villages) and the colonial **checkerboard** with its immediate extension, the district Star Mlouk. The structure and the commercial dynamic of the city of Biskra illustrate “a certain historical evolution, the old Biskra was in the pre-colonial phase the souk of the city. The colonization has completely changed the attraction pole from the south to the North by creating the covered market, and that made him monopolize all the commercial activities”. [4, p. 178]

Thereafter, new elements have characterized the contemporary city (growth, expansion, new needs etc.) pressing the structuring of another commercial centrality, which is peripheral this time.

In terms of quantity, we have noticed the significant number of the commercial establishments, so the city has an important number of shops that make it an essential commercial area in the entire region. The establishments are divided in two large groups “Fig. 8”. This structuring of the Biskri space is a carrier of a new urban and productive dynamic of a sustained attendance in both the poles.

#### 4. URBAN DYNAMIC AND NEW CENTRALITY IN BISKRA: TOWARDS A POLYCENTRIC PLAN

We have tried to realize a synthesis in order to match different aspects previously analyzed; after the establishment of different relationships of correspondence “Fig. 9” it appears that the city of Biskra is now structured around two poles:

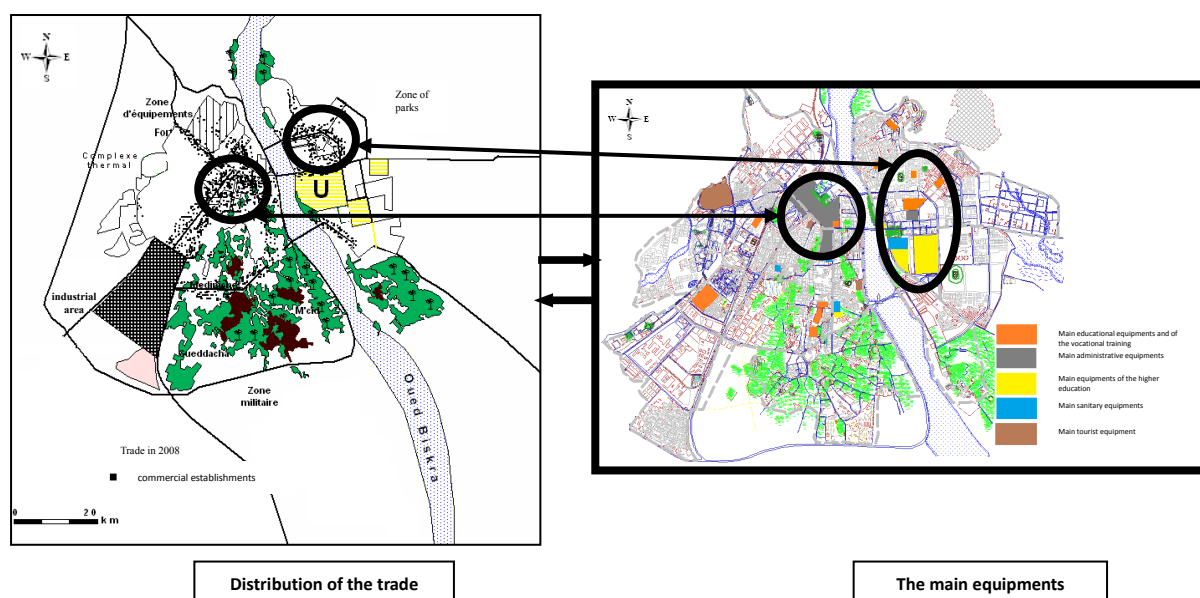


Figure. 9: The relationship (correspondence) between the distribution of trade and the main equipments (cross- reading)

- A principal centrality « initial » that includes the colonial core and its first extension (Star Mlouk district). This centrality responds to historical stratification logic, it is characterized by a strong commercial attendance but also by a gathering of different equipments with great importance to the city and to the whole population located in its attraction area, exceeding significantly the city perimeter.
- A secondary centrality in Northeast periphery (ZHUN El Alia), due to an important demographic weight and whose the commercial attraction and the specialization remain less important than those of the principal core. This type of centrality reflects in fact, of the effective emergence of the new polarities in the periphery which can now be a counterweight to the central core for the acquisition of commercial properties and other properties.

All this informs us about the dynamic nature of the urban functions in the city of Biskra, some factors are: growth and expansion, choice of urban policies and tools of urban planning new needs, new mobility and new representations, have provoked the gathering of certain functions (mainly administrative, commercial and of services) to constitute a concentration that becomes attractive at the periphery of the city, so the city has seen the formation of a new centrality in Biskra.

#### 5. CONCLUSION

The development of the cities, their transformation and their logic of functioning, resulting from the combined action of urban planning, from the raise of the urban mobility, from the economic interest, and the new uses cause a real “recomposition of urban territories”. In Biskra, we could conclude that a real redistribution of the urban functions took place, the city knows a redefinition of its urban

« territory » which is structured now around two major poles two centralities, one main central, geographic, and the other peripheral, emergent and secondary.

Thus, new relationships are being established, the center no longer holds for itself the main functions of the city and is no longer opposed to the periphery, new places appeared in the peripheral zone of El Alia, those places must now complete and enhance the principal center role, in a poly centralization logic, the planning policies will henceforth have to take in consideration this new spatial and functional configuration that is decisive for the overall consistency, since then we have to:

- revitalize the old center who knows multiple difficulties related to the degradation and the congestion relevant to the centralization of important functions at its level).
- master the new pole which has emerged in the periphery and try to preserve the whole city through a strategic vision for the entire city.

The local communities are called today more than ever to ensure the responsibility of building a urban management project that will gather the different public and private participants around a partnership approach based on an effective coordination, allowing the implementation of a urban project that promote the emergence of real urban poles. This will open the possibility of arrangement and complementarities of the new peripheral centrality with the principal and initial centrality of the city.

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## THE INTIMATE SPACE AND THE SHARED SPACE: FROM OPPOSITION TO HYBRIDIZATION

Gioconda Cafiero

*DiARC, Università degli Studi di Napoli "Federico II" (ITALY)*

*gioconda.cafiero@unina.it*

### Abstract

Our current times present us with many opportunities to realize that the border between the public and the private dimension is dissolving, both in the concrete forms of buildings and in the way people behave inside them. This process is influenced by a number of factors, depending, on the one hand, on the impact of technological innovations on people's lifestyles, on the other, on the crisis of the ideologies which, until recently, informed the relationship between the public and the private sphere.

Today we can affirm that the private sphere is not the negation of the public sphere, and vice versa. Thus, if we wish to investigate how the relationship between these two terms is reflected in architecture, we should not employ parameters such as typology, size, or juridical status; rather, we should look at how the relationships between people, objects and spaces constructed by architectural planning articulate the notions of collectivity and privacy. Today we are witnessing a reciprocal migration of models, forms and behaviors between these two areas of human life, and a condensation of interest in interstitial places constituting a threshold between them. Life spaces cannot be reduced to clearly defined categories; rather, they are "exploded" and disseminated in various places in the city, in continuity, not contraposition, with the intimate space of the home.

Some public spaces are legally private, but provide settings for especially significant moments of shared life. These spaces are designed to allow people to do something "together." Conversely, there are public spaces where one can enjoy intimacy, such as a carrel in a library – a place suitable for isolation in study, although within one of the symbolic places of shared life – or a waiting area in an airport, whose design, combined with the possibilities afforded by modern technology, allows us to concentrate on our work. Conversely, when we are in our bedroom we are still connected with the rest of the world. We can share words, ideas and images through social media, which have partly replaced the physical town square as centers of public life. The space and time boundary between work and family has also become blurred. This has repercussions at a multi-scale level in the transcending of the notion of zoning at the urban level, in the hybridization of typologies, and in the inclusion of work spaces within the domestic space.

While technology has strongly contributed to dissolving the distinction between shared space and time and intimate space and time, the crisis of ideologies has also played a role in this process. The spaces of public life have been consigned to a mercantile logic. They have become places where individual trajectories casually collide, without making real contact, as in many typical "non-places" of today, such as shopping malls or entertainment places. Contextually, private spaces have become places where we seek shelter, having been disappointed or frightened by public spaces. This involves giving up on the quality of public spaces, as well as the risk of understanding domestic spaces not so much as places where we regenerate our existence and express our identity, but rather as settings for our social life. The current trend to exhibition within the domestic space is a significant token of this trend.

In this changing and contradictory scenario, special emphasis should be placed on spaces and planning modes granting new importance to intermediate conditions between the public and the private dimension. This can be achieved in two ways: on the one hand, through unprejudiced adaptation to the public space of models and forms traditionally characteristic of the domestic space,

with special regard for the human measure; on the other, by looking for flexibility to different uses of the private space, by striving for transparency and osmosis of the private space with the shared space, encouraging more participated forms of habitation, and making the most of intermediate spaces between the street and the intimacy of one's room to promote modes of habitation meeting the needs of contemporary lifestyles.

Significantly, renovations of existing buildings, which constitute case-by-case scenarios and therefore do not allow for the rigid application of models, provide interesting examples of liminary spaces between the private and the public dimension, between different functions. These examples constitute important points of departure for new definitions of the living place. The impossibility of pigeonholing these spaces in standard categories of habitation often suggests less rigid configurations, both within a single residential unit and in its interface with the street. These configurations thus constitute intermediate forms between the public and private dimensions. Significantly, many urban regeneration actions view courtyards not as residual and functional spaces, but as points of departure for the requalification of a whole neighborhood, in view of restoring a human dimension of habitation that used to be centered precisely on courtyards.

All this restores the importance of a way of understanding planning that connects forms to phenomena, that uses design to construct experience, that does not forget that the objective of architecture is inhabiting and therefore architects must necessarily reflect on the links between different forms of knowledge and real-world needs.

**Keywords:** public, private, hybridization, sharing, behavior, architecture.

## 1 PUBLIC AND PRIVATE BETWEEN MODERNITY AND THE PRESENT

Today's world offers many opportunities to ascertain that the border between the public and the private dimension is gradually dissolving, both in the concrete forms of buildings and in people's behavior inside them, of which the forms themselves are an interpretation. This process depends on a number of factors. The most important are the impact of technological innovations on people's lifestyles and the crisis of the ideologies that informed the relationship between the public and the private sphere until recently.

At the end of the nineteenth century, the relationship between public and private was clearly defined, and was reflected in the correspondence of building types and building uses. The collective character of public spaces contrasted with the private character of domestic spaces, which, as Benjamin has shown, sublimed separateness from public life.

By the end of the 1900s, this situation had completely changed as the result of a process that had begun in the early decades of the century. Today, the architecture of modernity has completely called into question the relationship between inside and outside. Modern approaches to planning focus on the relationship between actors and actions, using it as a point of departure to design space proceeding from the inside to the outside, and conceiving the relationship between interior and exterior spaces no longer as one of opposition but as one of continuity. The purpose of the outer shell of a building is no longer to distinguish the interior from the exterior, but rather to put them in a dynamic relationship. This is achieved through transparency and the adoption of the same forms or materials indistinctly for public and private spaces, both for architecture and for furniture [1]. This phenomenon has gone hand in hand with the complex evolution of the relationship between the public and the private sphere, which of course has affected architectural culture. The way in which these processes have spread, partly through the media, has contributed to overcome the traditional distinction between public and private, as Beatriz Colomina has effectively illustrated in her comparative investigation of the different relationships between interior and exterior in the works of Loos and Le Corbusier [2].

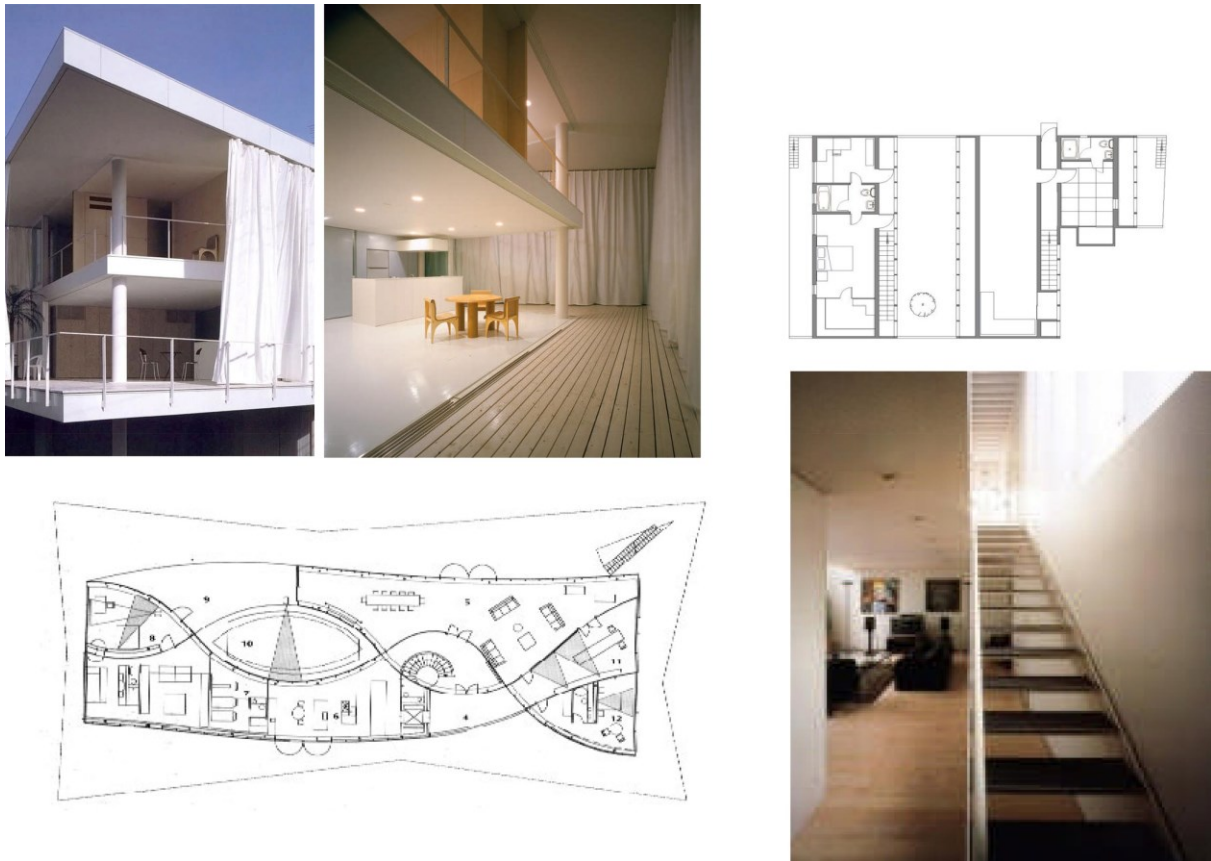


Figure 1. Projects presented at the exhibition Un-Private House, Moma 1999. Clockwise: Curtain Wall House, Shigeru Ban; M House, SANAA; Kramlich Residence, Herzog & De Meuron

The exhibition “The Un-private House”, presented at the MoMA in the summer of 1999, highlighted this phenomenon, which resulted in house designs where the relationship between the public and the private dimensions was articulated in several ways, in all of which, however, it was possible to read the connection between innovation in the organization of space and changes in cultural contexts. The need for constant contact with the exterior is materialized in the omnipresent screens on the walls of the Lipschutz/Jones Apartment built in New York City by Frank Lupos and Daniel Rowen. The commixture of domestic and work spaces results in a new model of habitation in Kazuyo Sejima’s M House in Tokyo. The Kramlich Residence, planned by Herzog & De Meuron, is an example of what is actually a very old model of house, the collector’s home, which has always been public to a certain extent because it is open to visitors as well as being used as a dwelling in the traditional sense. Herzog & De Meuron’s creation, however, takes visitors through totally new spatial sequences, because its residents are collectors of a new form of art, viz., videos.

While the maison à Bordeaux by Rem Koolhaas takes to extremes the dissolution of the role of the outer shell, to the point of being almost a manifesto of anti-domesticity, Shigeru Ban’s curtain wall house in Tokyo explores the possibility of animating liminal spaces, allowing for a gradual and flexible relationship between a condition of introversion typical of the traditional conception of privacy and a state of total merging and openness with the exterior. This project highlights the importance of intermediate spaces between different conditions and functions – private and public, domestic and social, interior and exterior. In my opinion, it is this zone that provides food for reflection in contemporary design, and is possibly where we live most of our lives.

## 2 HYBRIDIZATION AND MIGRATION OF FORMS AND WAYS OF HABITATION

Today it can be said that the private sphere is not the negation of the public sphere, and vice versa. Thus, if we wish to investigate how the relationship between these two terms is reflected in architecture, we should not employ parameters such as typology, size, or juridical status; rather, we should look at how the relationships between people, objects and spaces constructed by

architectural planning elaborate on the notions of collectivity and privacy today.[3] We are witnessing a reciprocal migration of models, forms and behaviors between these two areas of human life, and a condensation of interest in interstitial places constituting a threshold between them. Life spaces cannot be reduced to clearly defined categories; rather, they are “exploded” and disseminated in various places in the city, in continuity, not contraposition, with the intimate space of the home [4].

As Andrea Branzi argues, today it is impossible to link a given building type to a specific function, and thus to determine whether a space is private or public. This is partly due to transformations in urban design that have led to “a shift in the functional zoning on which [a city] was planned and built.” These transformations have “challenged the certitudes of the domestic landscape.”[5]

The legally public status of a space does not preclude the possibility of it being used privately, or rigidly impose a non-individual use. Today, some public spaces are legally private, but provide settings for especially significant moments of shared life. These spaces are designed to allow people to do something “together.” Conversely, there are public spaces where one can enjoy intimacy, such as a carrel in a library – a place suitable for isolation in study, although within a building type that epitomizes sharing – or a waiting area in an airport, whose design, combined with the possibilities afforded by modern technology, allows us to concentrate on our work.

At the same time, today the private space is far from being the place of separateness from the external world, as construed by Benjamin. When we are in our bedroom we are still connected with the rest of the world. We can share words, ideas and images through social media, which have partly replaced the physical town square as centers of public life. Technology allows us to live in a virtual town square while physically occupying a closed space. Furthermore, it allows us to design our virtual display cases as we would our own living space, as we would, somehow, our own homes. Thus, not only are online domestic interiors in permanent contact with the outside world, but our ability to design our living space – our “place-making” ability – extends beyond the physical confines of our homes. The space and time boundary between work and family has also become blurred. This has repercussions at a multi-scale level, notably in the transcending of the notion of zoning at the urban level, in the hybridization of typologies, and in the inclusion of work spaces within the domestic space. Conversely, work spaces aspire to an ability to welcome that is typical of the domestic space. They provide scope for personalization through the flexibility of their layout, which no longer reflects the rigid organization of interpersonal relations, translated into a rigid organization of space, that characterized the workplace until not very long ago. An example of this process is the gradual waning of the clear-cut distinction between home furniture and office furniture, mirroring the blurring of the line between these two worlds as well as the growing need for comfort and livability in all the spaces we live our lives in.

While technology has strongly contributed to dissolving the distinction between shared space and time and intimate space and time, the crisis of ideologies has also played a role in this process. The spaces of public life, given over to a mercantile mentality, have become places where individual trajectories casually collide, without making real contact, as in many typical “non-places” of today, such as shopping malls or entertainment places.[6, pp. 7-8] Concomitantly, private spaces have become places where we seek shelter, having been disappointed or frightened by public spaces. This involves giving up on the quality of public spaces – which is tantamount to giving up on exercising one’s citizen rights, as Richard Sennett has pointed out [7] – as well as the risk of understanding domestic spaces not so much as authentic places where we regenerate our existence and express our identity, but rather as settings for our social life. The current trend to typical exhibition strategies both in the domestic and in the urban space is a significant token of this trend.

In this changing and contradictory scenario, special emphasis should be placed on spaces and planning modes granting new importance to intermediate conditions between the public and the private dimension. [8, pp. 26-35] This can be achieved in two ways: on the one hand, through unprejudiced adaptation to the public space of models and forms traditionally characterizing the domestic space, with special regard for the human measure; on the other, by looking for flexibility to different uses of



Figure 2. Clockwise: City Lounge, Raiffeisen, ST Gallen (CH), Carlos Martinez, Pipilotti Rist; Storefront for Art and Architecture, New York, Steven Holl, Vito Acconci; HOME, Manchester, and, Mecanoo

the private space, by striving for transparency and osmosis of the private space with the shared space, encouraging more participated forms of habitation, and making the most of intermediate spaces between the street and the intimacy of one's room to promote modes of habitation meeting the needs of contemporary lifestyles.[9]

Steven Holl and Vito Acconci's design of the facade of the Storefront for Art and Architecture in New York, dating all the way back to 1992, is an example of how the line between space and the size of furniture, the building, and the urban space is much more tenuous than teaching and professional habit would suggest. The project directly connects design to the human measure and to the gestures we perform when our bodies come into contact with architecture. At the same time, it perfectly interprets the mission of the cultural institution that commissioned it, which strives to bridge the divides between several disciplines and thought approaches, as well as achieve the highest degree of interpenetration between the street and what goes on inside the building. This small-scale project, employing light materials such as plasterboard panels, displays great vigor in transforming the rather residual character of the small triangle it encloses, creating a variety of possible spaces where to test different modes of use and different degrees of relationship between inside and outside. This vigor, along with its position at the corner of a block where the neighborhoods of Chinatown, Little Italy and SOHO meet, has granted this small project the status of a landmark of sorts in the urban space.

The project that architect Carlos Martinez and artist Pipilotti Rist carried out in 2005 in the Raiffeisen neighborhood in San Gallo, Switzerland, introduces forms, arrangements and ways of use that are typical of the domestic space. The project area, the object of a competition called by the Schweizer Verbandes der Raiffeisenbanken (SVRB) in collaboration with the town of San Gallo, is an irregular space, lacking character, amongst important new institutional buildings. Within this empty space, the City Lounge functions as a "living room" in the center of the town. A great red carpet invades the area, ironically covering up everything in its path, from outdoor furniture to cars, and thereby gives the site a clear-cut identity. The human measure is the real strength of this project. Although a single material, all of the same texture and colour, is used throughout, each function – relax, foyer, cafeteria,

sculpture park, reading corner – reflects careful study of human postures, choice of equipment, and spatial configuration. The welcoming nature of this space is enhanced by its lighting system. Large-scale elements fluctuating like clouds constitute the ceiling of this vast urban living room, emitting a light whose intensity varies with that of natural light.

The project for the HOME cultural center, which Mecanoo built in Manchester between 2012 and 2015, further summarizes and exemplifies the blurring of the line between public and private. The very choice of name betrays a will to build a space understood as a shared living room, where users can feel at “home.” This project borrows from the domestic space the informal character of its aggregation spaces, a certain flexibility in the possible uses of its various parts, and the character of its distributive and connecting elements, which are understood as going well beyond their logistic function to become social spaces. The building is very large, housing two theaters and five cinemas, as well as all the connected services – cafes, a restaurant, exhibition and educational spaces, and workstations. All these different spaces connect smoothly to the pathways and distribution areas, which always allow a view of the exterior and look down onto the other levels, helping users to orient themselves. The large triangular volume of the building puts a strong mark on the square it looks out upon, but its transparency immediately reveals the pulsating and intimate character of its interior. The large sign with the name of the building is visible from the outside, but lies deep inside, suspended above the tables inside the restaurant. The transparency of the façade reveals the void of the terrace, as well as the double heights and the views the interior spaces look out upon. The staircase connecting the different levels and functions of the center is also clearly visible from the outside, although it stands in the middle of the building. It attracts visitors with its wooden structure intersecting with the carrying structures of the various levels, encouraging visitors to use them as an alternative to the elevators, which are situated in the background. The staircase thus becomes an instrument for orienting oneself and exploring and appropriating spaces, as well as an element that defines the design of the structures clustered around it.

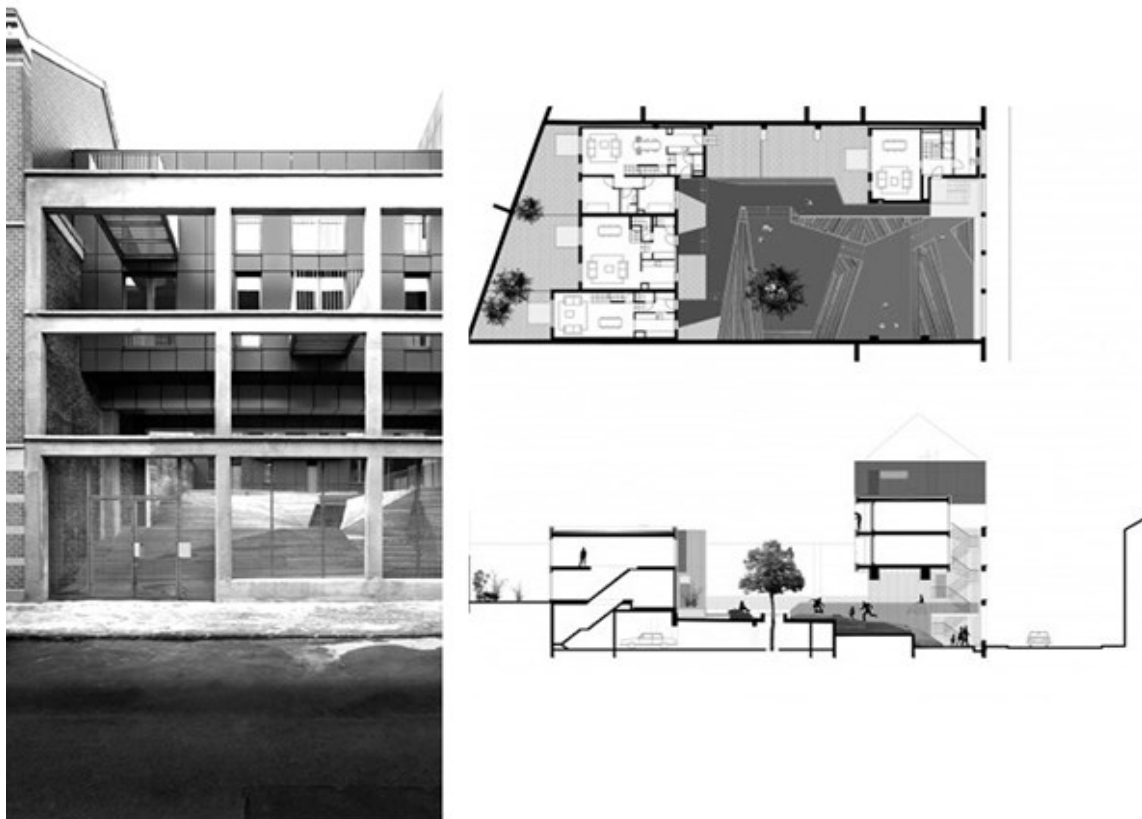


Figure 3. “Le Lorrain”, Molenbeek , Belgium 2009-2011, MDW Architecture



Significantly, renovations of existing buildings, which constitute case-by-case scenarios and therefore do not allow for the rigid application of models, provide interesting examples of liminal spaces between the private and the public dimension, between different functions. These examples constitute important points of departure for new definitions of the living place. The impossibility of pigeonholing these spaces in standard categories of habitation often suggests less rigid configurations, both within a single residential unit and in its interface with the street. These configurations thus constitute intermediate forms between the public and private dimensions.

Some of MDW Architecture's creations in France provide valid examples of how the reuse of former industrial buildings for residential purposes generates an approach to the theme of habitation in which pre-existence becomes the driver of innovation. The project for the "Le Lorrain" complex, erected at Molenbeek between 2009 and 2011, reused the abandoned site of a metal-processing company to obtain a set of very diversified residential buildings, where apartments of various sizes coexist with single-family homes with private gardens.

The emphasis on collective spaces – where one clearly reads the planner's concern for tactile and experiential aspects – aims at an action of "desenclave," supported by a search for permeability between the street and the communal spaces in the complex. In terms of formal language, the weight of the structural concrete grid is reflected in the galvanized grids screening off the common spaces and in the metal panels that face the new building volumes. A similar emphasis on shared spaces and search for a middle ground between public and private, and the same recycling-based aesthetics, are observable in the same authors' project for the "Savonnerie Heymans" in Bruxelles. Here the dimension of memory is combined with a very innovative planning of housing units which are also very diversified in type and surface.

The attention to climatic and energy factors guiding this project for the retrofitting of a diverse and stratified preexisting structure, as well as the planning of the new building parts, is not a mere technological renovation; it is the driver of the building's architectural quality, both as regards its organization – thanks to the presence of green spaces and the management and reuse of rainwater – and inside the housing units.

The bioclimatic loggias facing south, besides characterizing the facades, make for a flexible and personalized inner spatial articulation, allowing for subjective modulation of the inside/outside relationship and lending itself to different uses, so as not to reduce internal spatial articulation to a rigid control of use surfaces.

Significantly, many urban regeneration actions, such as the plan for the Giambellino neighborhood coordinated by Renzo Piano, view courtyards not as residual and functional spaces, but as points of departure for the requalification of a whole neighborhood, in view of restoring a human dimension of habitation that used to be centered precisely on courtyards. An especially significant aspect of this regeneration project was the decision to do away with some of the fences between courtyards, between courtyards and housing, between the marketplace and the park, and between the lots the park is divided into, to allow for new pedestrian route possibilities [10]. In this project, the overcoming of the sharp separation between the street and the premises leading to the private spaces of homes is regarded as equally important as actions undertaken inside the housing units to improve the living conditions of the denizens, who were attentively listened to and involved in the planning stage.





Figure 4. Redevelopment project for the Giambellino District, Milan, Renzo Piano and G124, 2016.

### 3 CONCLUSIONS

A joint examination of cultural and social processes and of the ways in which architectural culture responds to them restores the importance of a way of understanding planning that connects forms to phenomena, uses design to construct experience, and does not forget that the objective of architecture is habitation and architects must therefore necessarily reflect on the links between different forms of knowledge and real-world needs.

Marc Augé has analyzed the transition of our mode of habitation to a new, planet-wide scale. He has also highlighted the heterotropic character of places founded on consumption, as well as the alienation resulting from social media replacing direct contact. These surrogates cannot meet the existential need to make contact with others, a contact that must be situated in space and time, in suitable physical places. In spite of virtualization and globalization, we are always searching for real places [11]. The challenge that architecture must meet is to conciliate globalization with the urge to feel *chez soi*, that is, in a place that is private enough that one can identify with it, but at the same time open toward the exterior. In the conflict between the necessary character of place and the evidence of the context in which we live, hybrid places provide opportunities to experiment with new forms, spaces, and use modes, beyond typological rigidity and the cogency of the form-function relationship.

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## THE WERKBUND IN CROSS COUNTRY COMPARISON: MOBILITY AND GENDER ISSUES

**Maria Bostenaru Dan<sup>1,2</sup> , Alex Dill <sup>3</sup>**

<sup>1</sup>*"Ion Mincu" University of Architecture and Urbanism (ROMANIA)*

<sup>2</sup>*Fernuniversität Hagen (GERMANY)*

<sup>3</sup>*Karlsruhe Institute of Technology (GERMANY)*

*Maria.Bostenaru-Dan@alumni.uni-karlsruhe.de, Alex.Dill@kit.edu*

### Abstract

The Modern Movement displayed a dialogue between the solution for housing at individual house level and the level of the neighbourhood, so-called Siedlungen, where the traditional block structure of the city was not respected anymore, but the complexes of housing units formed so-called "Zeilen" on the periphery of cities. In central city places, such as the Magheru Boulevard in Romania, the solution was applied for every single housing block, even if they form protected assemblies, but the Siedlungen displayed repetitive structures. An example presented is the housing at Dammerstock, Karlsruhe. However, Werkbund neighbourhoods are a special case. Being thought as architecture exhibition, they present only an extract of the future thought Siedlung, the prototype. The prototypes of different Siedlungen form a newly thought Siedlung. Therefore an extension of the prototype at the scale of the Siedlung must be imagined.

Werkbund neighbourhoods in Europe can be found today in Poland, Czech Republic, Austria, Switzerland and Germany. Chronology: 1927 Werkbundsiedlung Stuttgart, Germany, „Weißenhofsiedlung“, 1928 Werkbundsiedlung Brno, Czech Republic „Nový Dům“, 1929 Werkbundsiedlung Wroclaw, Poland „WUWA“, 1932 Werkbundsiedlung Vienna, Austria, 1932 Werkbundsiedlung Neubühl in Zürich-Wollishofen, Switzerland, 1932/33 Werkbundsiedlung Prague, Czech Republic, „Baba“. The Werkbund neighbourhoods are already present in the East (Poland, Czech Republic) and the West (Germany, Switzerland, Austria, the German speaking countries) of Europe. In this paper we will also talk about the Werkbund in different European countries, including the fate of the Werkbund in Hungary, where no exhibition took place, and the buildings were erected individually, in block structures, and the emigration of the representants, with a special focus on Jozsef Vago to Rome. Mobility of architects in cross country comparison is a key element. Such a cross country presence deserves UNESCO status as in case of the Le Corbusier heritage. Modernist heritage listed so far is Modernism in the West, with the Bauhaus sites Weimar and Dessau (1919-33) Rietveld-Schroeder-Huis (Utrecht,NL, 1924-25), Haus Tugendhat (Brno, Czech Republic, 1930), Zeche Zollverein (Essen, 1928-32), Reconstruction of Le Havre (1945-64), Century hall Breslau (1911-13), Neighbourhoods of Modernism in Berlin ( 1913-1934) Fagus Works (Alfeld, 1911). But the presence of Werkbund is different, they are neighbourhoods, hence urban planning masterpieces. The scale is different, not the building separately, but the assembly. Each of the neighbourhoods displays exemplary housing of the Avant-Garde, in an architecture exhibition. They present experimental housing, houses which tried to respond to the mainly societal challenges of the time, including industrial production, although the Werkbund maintains a certain connection to Arts and Crafts. We will go deeper in presenting the architecture of women pioneers in the Werkbund neighbourhoods, for example Margarete Schütte-Lihotzky in Vienna (later also mobile to Frankfurt), as well as Ilse Bernheimer, who did the interior of a house (later mobile to Venice), and Hanna Kucherova in the Czech Republic Bata neighbourhood. The Polish Werkbund will be put in dialogue with Polish block housing, individual housing and Siedlungen, featuring also the particular participation of women (as

architect pairs). In Hungary the housing of the time also presented Hungarian interior architects. Being projects of housing the Werkbund buildings best present the change in architecture layout for the women of the time, as planers and users. The Vienna Werkbund Siedlung is currently subject of restoration, for a better reception.

**Keywords:** 20th century architecture, neighbourhood, cross country comparison.

## 1 INTRODUCTION

The main attention of the Modernism was directed towards housing. New solutions to the challenge of social housing were looked for in Western Europe. In this part neighbourhoods called Siedlungen were constructed at the periphery. The urban morphology was different of the centre, instead of blocks the individual housing units formed through repetition the so-called “Zeilen” [1, pp. 177-182], rows of housing. Such an example is the Dammerstock Siedlung in Karlsruhe (Fig. 1). The Dammerstock Siedlung, unlike others of its kind, was also one featuring multiple architects, such as Walter Gropius and Otto Haessler.



Figure 1. Dammerstock Siedlung in Karlsruhe. Photos: M. Bostenaru, 2013.

In other European countries, such as for example Romania [2] or Greece [3], the situation was different and is called “other Modernism”. Here the middle class adhered to the aesthetic principles of the Modernism and buildings for multiple family housing were raised in the block structure of the traditional tissue. In Romania the Magheru boulevard displays a row of individual and protected assemblies of such buildings in the city centre. In Greece the buildings were raised in the direction of the new mean of movement, the train station, following a Tony Garnier type. These rich housing buildings display an adequate floor with main and secondary entrance, and generous spaces. In today's attempts to reuse sometimes they get divided into smaller housing units, following today's family structure.

A special case is that of Portugal [4], where the buildings of Cassiano Branco were raised in the block but featured social housing.

The association DOCOMOMO dedicated in 2005 a conference to the other Modernisms [5].

## 2 WERKBUND NEIGHBOURHOODS

Werkbund neighbourhoods are a special case of Siedlungen of the Modernism. They were created as an exhibition of architecture of the Werkbund association, which still exists today. As an exhibition, they consist of different housing types which through repetition could form a Siedlung on their own, belonging to different architects. The housing units are experimental housing, responding to the challenges of the Modern Movement in term of social issues (affordable housing, minimal size with maximal comfort), response to hygiene requirements (light and installations), etc. Affordable housing was proposed to be solved through industrial production, although the Werkbund maintains a certain connection to Arts and Crafts.

### 2.1 Geographical spread

Werkbund neighbourhoods in Europe can be found today in both:

- Eastern Europe: Poland, Czech Republic,
- Western Europe of German language: Austria, Switzerland and Germany.

Their chronological order is as follows:

- 1927 Werkbundsiedlung Stuttgart, Germany, „Weißenhofsiedlung“,
- 1928 Werkbundsiedlung Brno, Czech Republic „Nový Dům“,
- 1929 Werkbundsiedlung Wroclaw, Poland „WUWA“,
- 1932 Werkbundsiedlung Vienna, Austria,
- 1932 Werkbundsiedlung Neubühl in Zürich-Wollishofen, Switzerland,
- 1932/33 Werkbundsiedlung Prague, Czech Republic, „Baba“.

In Fig. 2 geographical spread of the Werkbund neighbourhoods can be seen.

### 2.2 Special situation

The Werkbund existed also in countries which did not take part in the row of exhibitions. Such an example is the Eastern European example of Hungary [6].

The Hungarian Werkbund was founded twice, in 1913 and 1932. The first organization was called “Hungarian artwork”, the second “Hungarian workshopbond”, both considered themselves as a country chapter of the Werkbund. Both Werkbunds in Hungary had it common that they, as opposite to the German Werkbund, were rarely closed organizations with clear goals. As such, their influence on the architecture and industrial art was much lower than in Germany. Actually the members let the Werkbund principles to show through their work, what does not mean that there were no differences and even oppositions among them. Members of the first executive committee of the first Werkbund were Zs. Jónás, B. Lajta, B. Málnai, K. Neuschloß and J. Vágó. Further it was signed by Ö. Lechner, L.Kozma, B. Jánosky, etc. The members of the Hungarian Werkbund showed different artistic concepts. Even Vágó, the leading figure, shows in his artistic way those polarities, the already mentioned tendencies between the national style and functionalismus. Vágó belongs to the few artists of his time who looked – as expected by the political dimension of the Werkbund – at economy



and society. After the 1st World War, during the time of the short spanned Council Republic, he was member, then president of the country council for housing.

The reason for the Hungarian Werkbund being founded twice is that in 1919 a socialist revolution and a counterrevolution took place, which led to the emigration of the representatives of the AvantGarde. Most of the architecture generation of the “innovators” from before the world war had to leave Hungary. Centres of Hungarian Avant-Garde became the cities of Pécs and Újvidék. The innovations moved to Vienna, Berlin and Weimar. Kassák assumed the role of organiser of the Avant-Garde in Vienna, with the magazine MA (today) edited since 1920 and later with the „Book of new artists“ (1922), a predecessor of the Bauhaus publications of Moholy-Nagy.

An improvement of the cultural climate in Hungary could be sensed only from 1925. Farkas Molnár returned 1925 and Lajos Kassák 1926 to Hungary, but the decisive change will be reached with the publication of the magazine Space and shape (Tér és forma) 1928. Fréd Forbát returns only in 1933, after a stay in the sovjet union. The Avantgarde returned. There was a was to found the second Werkbund. Figures 3-5 show buildings of the representatives of the Hungarian Werkbund.



Figure 2. Map of countries with Werkbund neighbourhoods



Figure 3. Buildings by first Werkbund representatives: Béla Lajta house on Népszínház street, Brother Jonás block Szénassy and Barczai, Málnai and Haasz social housing. Photos: M. Bostenaru 2006.



Figure 4. Buildings by Jozsef Vago in different countries (first Werkbund) Buildings of József Vágó in Switzerland (designed during the stay in Rome: ONU palace, 1926), Italy (Rome: Hotel de la Ville, 1922), Romania (Oradea: Darvas La Roche palace, 1909-1910) and Hungary (Arkadenbasar, Budapest, 1908). Photo: M. Bostenaru, 2006, 2009, 2013.



Figure 5. Buildings by Farkas Molnar (second Werkbund) in Budapest, Pasaret neighbourhood, a neighbourhood featuring Modernist housing. Photos: M. Bostenaru, 2014.

### 3 PROTECTION STATUS

The protection and listing of Modernist heritage is problematic, the buildings being new their heritage status is not so deeply rooted. Developing criteria for early reinforced concrete housing was also one of the topics of our project CA'REDIVIVUS [7].

Still, some Modernist heritage is listed so far in UNESCO, namely:



- the Bauhaus sites Weimar and Dessau, Germany (1919-33),
- Zeche Zollverein in Essen, Germany (1928-32),
- Neighbourhoods of Modernism in Berlin, Germany ( 1913-1934)
- Fagus Works, Alfeld, Germany (1911),
- Rietveld-Schroeder-Huis in Utrecht, the Netherlands (1924-25),
- Reconstruction of Le Havre, France (1945-64),
- Haus Tugendhat in Brno, Czech Republic (1930),
- Century hall Breslau, Poland (1911-13).

For Eastern Europe the spread is in the same countries as the Werkbund neighbourhoods.

All the mentioned listed sites are individual sites. But apart of listing individual buildings or assemblies at a single geographical location, there have been initiatives for listing of multiple buildings of the same architect. Le Corbusier buildings enjoy such a status in cross country comparison, while in Hungary there is a pending proposal for Ödön Lechner heritage. The Werkbund Siedlungen are however different. First, they are urban assemblies consisting of multiple buildings by multiple architects at the same location. Through this the scale is different, from the single building to urban planning assembly. We dealt with this difference of scales in our other paper to the conference [8]. Second, in cross country comparison there isn't anymore the complete denominator of the same architect as in the mentioned case of Le Corbusier.

#### 4 GENDER ISSUES

The Modern Movement came to spread in the 1930s, which the time when also the first women architects started building. For this reason also the Werkbund Siedlungen featured works of pioneer woman architects.

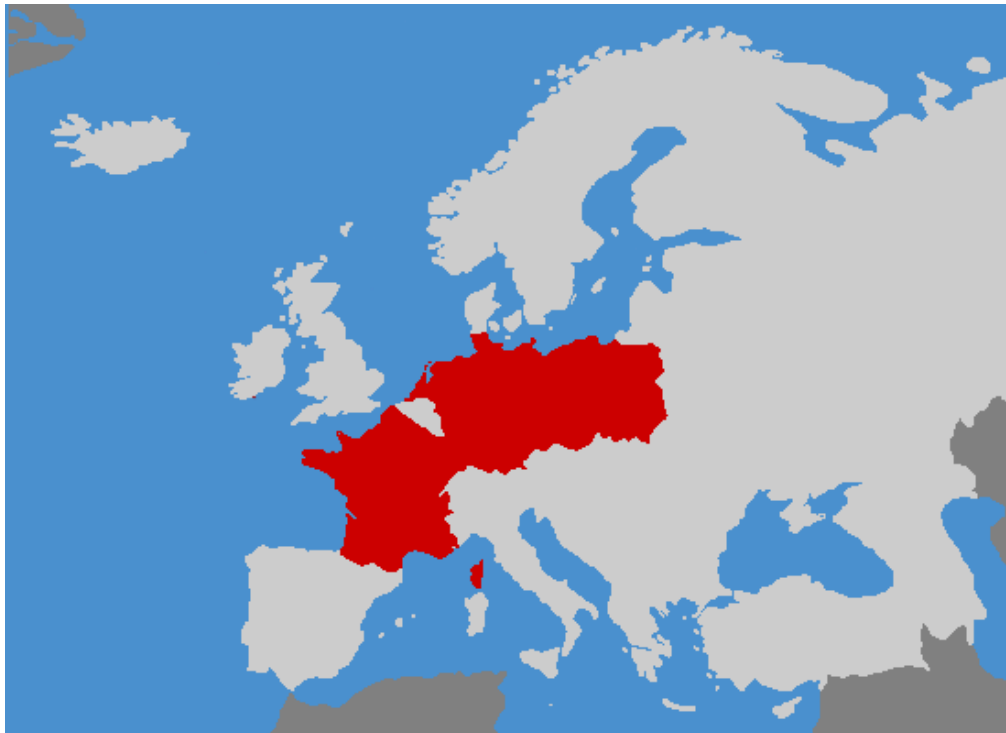


Figure 6. Geographical spread of countries with protected Modernist heritage

In the Vienna Siedlung Margarete Schütte-Lihotzky (later also mobile to Frankfurt), as well as Ilse Bernheimer, were active (later mobile to Venice). A recent project by Iris Meder showed the network of these women architects in the context of the Modern Movement [9]. The Siedlung is currently in restoration. Margarete Schütte-Lihotzky built a house, while Ilse Bernheimer, an artist, designed the house interior for .... In Frankfurt Margarete Schütte-Lihotzky designed the Frankfurter kitchen, which aimed at a further step in gender issues. Through the redesign of the furniture and size such as less movement is required while cooking, the time management of women was changed and hence their work life balance. The change in the layout of the plan, for women by women (planers and users) is best visible at Werkbund neighbourhoods as they are projects of housing [10]. Through this not only women as planers are considered, but also women as users. Also in Hungary there were women interior architects of the time.

Hanna Kucherova has built in the Czech Republic in the Bata neighbourhood.

In Poland the situation of women is different. There pairs of architects (male and female) built together, instead of the affirmation of the single woman architect. It is to be questioned if this was the case also for the Werkbund neighbourhood.



Figure 7. Housing of woman architects in Poland. Women as planers: Pairs of architects in Poland: Barbara and Stanislaw Brukalski: own house 1927 (a) and housing estate after Wienese model WSM colony 1929-34 (b), Jadwiga Dobrzynska and Zygmunt Loboda one family house 1932 (c); Helena and Szmon Sykus block of flats in the city centre 1937 (d) and housing estate WSM (Warsawska spoldzielnia mieszkaniowa) part Rakowec 1930 (e). All in Warsaw, Poland. Photos: M. Bostenaru, 2011.

## 5 DISCUSSION AND CONCLUSIONS

In the united Europe from today, the European Union, much of the issues from the pioneering time of the AvantGarde are not as striking as they were. But at that time this cross country unified activity was pioneering. Mobility of architects in cross country comparision is a key element. For this reason of mobility the difference between countries, including in the work of woman architects, are not that

significant. This was in line with the AvantGarde, which let after the 2<sup>nd</sup> World War to the so-called International Style.

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## DESIGNING WITH ALGEBRAIC SURFACES AS THE BASIS OF CYBERSPACE ARCHITECTURE

Unciuleanu Oana

*"Ion Mincu" Architecture and Urbanism University (ROMANIA)*

*art@oanaunciuleanu.com*

### Abstract

The argument discussed in this paper is the link between reality and virtual, and architecture being suitable of creating new spaces that are capable of intriguing our minds, instead of our bodies, as it does in real life. Any sort of intuition is eliminated, the space and the shapes are generated by equations, by numbers. Architecture seeks for inspiration in non-Euclidean geometry.

The research aim is to find ways of determining virtual spaces that transpose our minds and perception into the virtual world and to perceive it as our second nature, our home for our thoughts. At this moment cyberspace can disconnect us from our everyday life, it is our second home, but we are aware of the immaterial space that it is composed of. I am exploring new ways to generate virtual architecture that is capable, using its geometry, to make us want to explore the space, in depth, in three dimensions, using speed and light, adding some values from real life to it.

The architectural object fits to each user's needs, it offers a unique solution for each person that is exploring the space. I have identified the stages which a viewer in cyberspace passes through. Stage one is of observation, that things happen without the direct participation of man, but to reach the understanding of space and of the existing notions in the virtual world, the observer must become involved in the action, which is stage two, to interact with the space and the information received, and finally modify what he found, leaving his mark.

Virtual modeling using computer frees the creation of restrictions, the architects being permissive with the solutions. The design process is different, one can experiment without seeking to respond to stringent requirements. The resulting architecture is also free to express its unique volume without taking into account the structural and material sides. The space is flexible, easy to handle and can change at any time. Spatial effects are designed in tandem with human behavior. By experimenting with the virtual world architects have the opportunity to create new spatial solutions, not to emulate the real world. Utopian solutions are designed that can transmit new states and allow different activities for the spaces created.

Digital architecture seems to be immaterial, conceptual, a savant game translated into numbers and equations. I use for the creation of virtual architecture algebraic surfaces because they are generated by an equation, and are suitable for manipulation using numbers. Design, whether it will be transposed in the real world or the virtual one, starts from a concept, an immaterial idea. Architectural thinking is converted into digital volumes by using programming and algorithms. The process is logic, the steps are clearly structured. There are many dimensions to be explored in the virtual world, time is added and the forms are not limited to Euclidean geometry. The result is a virtual animation in which man participates actively influencing the space through movement.

The architects who create for cyberspace are connoisseurs of using the computer and programming. Not every building is adapted for the virtual space. Building for cyberspace requires a new approach. Digital architecture appears after processing data inputs. Digital architecture is a metaphor of built space based on information. It can generate an infinite number of solutions, but working on the

equation, not the form. The technology at the core of cyberspace architecture is information processing, starting from the real, transitioning to the unreal, having connections with the real world. The computer creates a possible world, an improvement of reality, or at least a temporary escape from everyday life.

**Keywords:** cyberspace, algebraic surfaces, virtual, experimental architecture

## 1 INTRODUCTION

Some forms obtained using algebraic surfaces are suitable for the virtual world, cyberspace. External factors related to the context and meteorological conditions, geological or structural factors pose no problem for the development of non-standard forms. Arises the question of a link between the virtual and real, a translation in the real world, into the built world of such structural fantasies.

Using virtual architecture, architects have had an opportunity to ask questions related to space experimentation, the movement of people through space and the necessary time for activities. The emphasis was placed on the sensory side of architecture.

### 1.1 Understanding cyberspace

Cyberspace is the virtual space in which we all have access, the only thing required is an electronic device like a computer. The area proposed by cyberspace is one of ideas and symbols. The concepts are taken from the real world, but have an extra side, they are dominated by fantasy and experiment.

Today we perceive pretty easy cyberspace and the role it plays in our lives, since we spend much of the day on the Internet. We're connected to technology and the Internet using mobile phones, the tablet and computer, the digital world means for us a new side of our personality. We communicate digitally, work on the computer, and extract information from the Internet every day. Virtual space exploration has become possible not only in the sending of information, but also at the sensory level, the volumetric three-dimensional understanding.

Today we can easily view what we imagine with technology. We translate our thoughts faster in the virtual reality than in the built environment. Cyberspace may seem illusory, but this is our second reality. There are museums and cities built to be explored only in the virtual environment, reproductions of ancient monuments, which are again open to the public in this manner. Museums present their entire collections on the Internet by visiting the buildings online.

"Cyberspace is an invented world; as a world it requires "physics," "subjects" and "objects," "processes," a full ecology." [1, p. 278] Cyberspace is a whole new world without known landmarks, a world to escape to, where all the rules have to be created. In Fig. 1 I have created a virtual experiment, a strange architecture that is being explored by people in various ways and at different sizes, without any known restrictions.



Figure 1. Personal experiment, the project Fractal Art – 3D Voronoi.

## 1.2 Algebraic surfaces for virtual architecture

The forms taken from mathematics are more easily transformed and explored in the virtual world because they are no longer subject to the same laws of the real world. Materials are abstract, gravity does not act and architecture has fewer creative constraints.

Non-standard architecture based on algebraic surfaces requires a new way of working with space. Physical forms are no longer handled by operations on the models, but the changes occur in the equation, adjusting the numbers. For innovative results, architecture had to experiment with new tools. Non-Euclidean geometry offers a wide range of shapes to operate, and requires their thinking in a peculiar fashion. Examples of surfaces that are appropriate for the experimentation of virtual architecture are: Cayley Surface, Durchblick Surface, Klein Bottle, Clebsch Surface.

Mathematical concepts are abstract and therefore they do not apply directly to architecture that is solid, static and very precise. Through technological advances and computer programs, architects were able to make connections between non-standard forms and their application in architecture. Virtual architecture is the first platform to test these new concepts, without putting into account issues such as materials, the experimentation took place first at the level of form. The surfaces do not have to turn into solid volumes, they can exist in virtual word as they are, without thickness.

Fig. 2 presents a personal virtual project created using as the basis an algebraic surface. I have changed the formula in order to have the spatial characteristics that I was aiming to. The final formula that generated the pavilion is  $(x*y+x*z+y*z)+x*y*z+x^6-y^7*z^2+z^3=0$ . Participants exploring the pavilion in cyberspace can manipulate the geometry, either by altering the formula, either by distorting the polygons.

Algebraic surfaces have accentuated curvatures that generate new types of spaces, explored in a limited way by architects, and offer the possibility to be controlled by a formula that can be changed in any moment and produce new formal results.



Figure 2. Personal virtual experiment, Oyster Pavilion.

## 2 METHODS OF DEALING WITH VIRTUAL SPACE

The methods needed for shaping and experimenting new geometry for the virtual word are experimenting with programs on computer that help with the construction and generation of geometry: Surfer, Rhinoceros 3D, 3DsMax, placing the result on the web on a platform that can be accessed by different users, and the use of virtual world glasses or devices that give users the impression that they take part in the virtual scene. Exploring cyberspace is a mental activity, it requires imagination and giving up old ways of exploration.

### 2.1 Generating virtual shapes

The tools that animators working in virtual space use are similar to the ones from the real world. To create a real scene that captures the interest, the artists are careful with the lights and shadows in the scene, building the perspective and offering multiple angles for deep understanding of space, offer rich volumetric options and detailed texturing of materials.



Technology is the matter that generates virtual forms, not physical materials. The creation processes are new, everything is generated using special software, and the result is shared to the world on the internet. Virtual architecture is created on computers and can be explored only in digital manner. Architecture can remain conceptualized, it doesn't have to be detailed, as the important aspect to consider is the idea behind it. The term that best describes virtual architecture is flexibility. Architects imagine and generate new shapes that are then modified by the users of the space. Cyberspace is a world of exchanging ideas and testing new possibilities. The memory of space, the state in which an object is at a certain point in time can all be stored exploring virtual realities, giving the opportunity to return at any stage.

In table 1 I have listed some computer programs that are suitable of creating virtual shapes that can be used as virtual architecture.

Table 1. Programs used to generate algebraic surfaces for virtual architecture

Program	Used for	Result
3DS Max	Any type of geometry	Detailed polygonal geometry
Rhinoceros 3D + Grasshopper	Parametric geometry	Flexible structures
Sculpture Generator	Non-orientable surfaces	Closed polygonal 3D model
Surfer	Mathematic surfaces	Surfaces

By now architects are well used to 3DS Max that can be used in creating any complex shape by manually modeling it, or to Rhinoceros 3D and Grasshopper that allow users the possibility of determining the phases that generate the final object and include parameters for a better control over the shape. Some new programs that can be used for exploring and altering algebraic surfaces are Sculpture Generator and Surfer. Sculpture Generator uses non-orientable surfaces and offers designers a wide range of parameters to control the final result. The 3D model obtained can be saved and imported into other software, or it can be printed 3D, so the shape can be explored also in real life, not only in the virtual world. Surfer is used for exploring or creating new algebraic surfaces modifying the formula. The result is a surface without thickness that can be explored in the virtual world, and gives an understanding of the shape from all the sides. Fig.3 shows Surfer's interface, with the possibility to rotate the model, change the colors and modify the control parameters of the shape.



Figure 3. Surfer interface.

## 2.2 Exploring cyberspace architecture

People are becoming aware of their presence in space and the mark they leave „Virtual architecture has to do with the experience of the body, with perception and memory.” [2, p. 6] Penetration into cyberspace is like participating into a film, it looks and seems real, but we know it is fictional. The movement in the space creates a story that ultimately determines the importance of the scene. Virtual architecture has added a temporal component to the solution of the space while the participant moves through the volumes.

The experience is intellectual, not physical, so all of the environment relates to the sensibility of the

person exploring the space, and not his corporeal needs. The artist creator of the virtual space takes some notions from the real life, like atmosphere, surrounding objects, lighting, the existence of a ground, and simulates their presence in the virtual, not by mimicking them, but by adding a symbolic representation of them, so that the explorer of the space can relate to them.

Any space or object can be analyzed and explored at multiple scales in the virtual world. The user can change the scale of the scene to see how it would fit best with his ideas. The limit of a project or of space is also questioned, thinking what is next or how much one shape could be extended. Space can be rearranged, nothing is fixed in the virtual world.

The table 2 lists different ways of exploring cyberspace architecture. There are a number of tools needed in order to explore the virtual world, starting with the simplest solution, at least a computer connected to the internet, and continuing with more complex inventions as virtual reality glasses.

Table 2. Tools for exploring cyberspace architecture

Tools	Materials needed	Result
Computer exploration	Computer, internet and special software	Movie like experience
Google Cardboard	Cardboard object and smartphone	Movie like experience
Virtual reality glasses	Special glasses	Real life illusion of cyberspace
Hologram	Smartphone and Plexiglas	3D object

The simplest way of exploring virtual space is by accessing the project on the internet, after it was uploaded on a server and has a specific url. Placing the creation on the internet offers the option of being explored and manipulated by many users, and have feedback in real time.

Google Cardboard is a simple alternative to virtual reality goggles that apply to mobile phones. It can be made of cardboard, or can be ordered, and some apps should be installed on the phone in order for it to work. This solution is simple because of the vast mass of people owning a smartphone today.

The virtual reality glasses are a great way of exploring spaces generated by computers, because it gives people the possibility to move and feel like being part of the scene. Another option for exploring an object generated on computer is to create a hologram. The object has to be filmed on a black background, and be played on a smartphone. Around the smartphone there has to be a sheet of Plexiglas folded in a special way. The result is the creation of a hologram, creating the object outside of the phone screen, into the real world.

### 3 RESULTS

Cyberspace allows the reconfiguration of space around the Internet user in real time, creating what non-standard architecture aims to achieve in the future, getting a feedback from users by the movement in the building.

"Cyberspace has insinuated itself into our existence, at every scale and at every turn." [3, p. 363] The virtual world has replaced the traditional city where people interact. Using the computer, people are sending information to multiple users, information is spread rapidly. The virtual space is flexible, everybody has control over the space, meaning that if we don't act, the virtual environment is influenced by the behavior of other people.

Cyberspace is used mainly for establishing connections and experimentation. It is a simulation of life, a trial version of what the world could be in real life. The shapes created by virtual architecture don't have to be characterized by logic. They are a thought experiment to test the limits of our perception of space. Cyberspace becomes a tool. Architects test unconventional shapes to see the reaction they generate.

Fig.4 is a personal experiment entitled Feather Pavilion. The project was generated to be explored only in virtual manner, the decomposed surface does not obey the gravitational forces. The project has its own rules, it is not clear how it can be explored by users. People have to use their imagination



to try to make sense of the object and give a personal meaning to it.



Figure 4. Personal experiment, Feather pavilion.

#### 4 CONCLUSIONS

A direction that has to be investigated more is if the virtual space needs architecture in the way that we need and use it in real life, or if its role is of a different nature: of stimulating our minds and imagination instead of seeking for comfort and protection.

Building in Cyberspace requires an immaterial architecture. Forms soundness is replaced, this component of the architecture in the real world, with musicality and perception in relation to time.

Architecture in cyberspace loses its basic characteristics: interactivity and robustness for the exchange of information. We live in the real space, we need a physical and tangible architecture, but we have an inner world, thoughts that can better perceive the subtleties of virtual architecture, without application in reality. The architecture of the future attempts to combine the physical needs of people with intellectual aspirations, finding a link between space and thought, form and feeling.

In the end, one thing that virtual architecture manages to do for the users is to complete the experience of space exploration in a playful manner, which challenges our senses.

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- [1] Personal experiment, the project Fractal Art – 3D Voronoi. Source: Oana Unciuleanu, image created in the programs Rhinoceros and Grasshopper in 2013.
- [2] Personal virtual experiment, Oyster Pavilion. Source: Oana Unciuleanu, image created in the program Surfer in 2015.
- [3] Surfer interface. Source: Oana Unciuleanu, image created in the program Surfer in 2015.
- [4] Personal experiment, Feather pavilion. Source: Oana Unciuleanu, image created in the programs Rhinoceros and Grasshopper in 2013.

## THE ECOLOGICAL PROJECT'S CAGE

Andrea Giachetta

*University of Genoa, Polytechnic School, Department of Sciences for Architecture (ITALY)*  
*andreagiachetta@arch.unige.it*

### Abstract

The ecological approach in architecture – which is marking with increasing interest the contemporary field's debate – could have represented an important opportunity to reflect on current design trends. The rapid diffusion of the new trend of sustainable architecture transformed it instead into a bunch of technicalities and legislative regulations, following a strict bureaucratic - if not commercial - logic. So the so called "ecological culture" of the built environment design, fails not only to react to the globalizing technology, but transforms into a strictly technical culture that claims to globalize. This paper is taken from the author's study for one of his books [1] and it will face the theme framing its epistemological basis. The focus will be on the possible effects produced by the current situation, proposing some possible solutions to exit it. The paper will be divided into seven parts: "The age of globalizing technology"; "The metaphor of the Crystal Palace"; "Responsibility as an antidote?"; "From experimentation to the cage", "Giants and ecological monsters", "Regulations' Perversions and the project"; "Conclusions".

**Keywords:** architecture, sustainability, ecology, technology, bigness, eco-cities

### 1 THE AGE OF GLOBALIZING TECHNOLOGY

The last two centuries, have been marked by a common thought of the most important thinkers that firmly believed that technology – the massifying power of technology – is the cultural paradigm around which all our projects and social actions has been revolving. During the recent history of thought, all theories have been considering the problem of human existence in a technological society; this is the assumption of Philosopher Gianni Vattimo in his analysis of the most important movements of thought since the Enlightenment [2], which committed to the reasons of the domination of technology - such as Positivism and Neo-positivism whereas others, tried to resist it. Existentialism and Nihilism, are the movements of thought that more strongly tried to oppose to the homogenizing control of the Society of Technology, fearing what Max Weber called the "iron cage" of modern rationality [2, p. 42]. In any case, it is the internal resistance of a culture that is totally impregnated of Enlightenment rationalism [3, p. 51, author's translation].

The leading roles of this internal resistance were several, with a lot of different stances: Karl Marx, Friedrich Nietzsche, Sigmund Freud, Jean-Paul Sartre and above all the unavoidable Martin Heidegger. In many occasions the most important exponent of modern Existentialism tackles this issue (especially [4], [5] and in his debate with Ernst Jünger) but especially in his famous and troubled "Letter on Humanism" [6], Heidegger ascribes to ethics a redeeming power, in a time when the man of technology is more and more at the mercy of the massifying process.

Ethics is a redeeming urgency precisely because, from Enlightenment onwards, the dominant culture has been technology, which - as an instrument - has gradually got out of the hands to its creator, becoming the ultimate aim having no other aim than itself. In this way, giving up a metaphysical

dimension and having no need of an ethical dimension, technology risks to turn man into a dehumanized monstrous cog.

Philosopher Emanuele Severino [7, pp. 163-64, (author's translation)] offers an incisive explanation of this process. He argues that technology - as main instrument used by modern man to survive on earth and weapon employed by various political, economic, ethical, religious, cultural forces to contrast each other - became the supreme aim precisely because of the increasing importance assumed in the conflict between these forces. "It happens with the technology what happened with God: one starts to ask the Savior to be saved and ends up willing to do his Will: the Will of God, the Will of the Technology" [7].

Umberto Galimberti [8] describes the acceptance of the Will of technology referring to Günter Anders to explain the beginning of an anthropological change caused by this process. He explains how Anders finds in the change in mentality due to supremacy of technology, an even more tragic event than the massacre of his people itself, "Anders referring to the passage from acting to pure and simple doing. I act when I carry out certain actions as part of an aim but I do when I limit myself to simply carrying out my task, independently of its aims which I usually do not know and for which, even if I do know, I am not however responsible. During the Nuremberg Trials, just as in the Eichmann trial, when the generals were questioned about their responsibility for their actions, the response that they gave was always the same: 'I was just carrying out orders'. In a technological age we could consider this response perfectly correct" [9, p. 13].

Perhaps "The Banality of Evil" that Hannah Arendt so well narrates [10] - referring precisely to Eichmann's trial - is a perfect synthesis of the possible extreme outcomes of a society of technology. This society has been characterized by such a deep and rooted change, that one must be ready to heroism or fanaticism to oppose it [3]. The age of globalizing technology generates, in this sense, few heroes, that are rarely recognized as such: one of these fanatical solitary heroes, as a voice "from the underground", is an impressive and - at the same time - sordid literary character born with extraordinary advance ahead of its time. We will be meeting this character in short.

## 2 THE METAPHOR OF THE CRYSTAL PALACE

"They say that Cleopatra [...] liked to stick golden pins into her slave girls' breasts, and took pleasure in their screaming and writhing. You'll say that this was, relatively speaking, in barbarous times; that now, too, the times are barbarous. [...] Moreover: then, you say, science itself will teach man (though this is really a luxury in my opinion) that in fact he has neither will nor caprice, and never did have any, and that he himself is nothing but a sort of piano key or a sprig in an organ; and that, furthermore, there also exist in the world the laws of nature; so that whatever he does is done not at all according to his own wanting, but of itself, according to the laws of nature. Consequently, these laws of nature need only be discovered, and then man will no longer be answerable for his actions, and his life will become extremely easy. [...] Some well-meaning publications will appear, like the present-day encyclopaedic dictionaries, in which everything will be so precisely calculated and designated that there will no longer be any actions or adventures in the world. [...] Then the *Crystal Palace* will get built [...]. Of course, there's no guaranteeing (this is me speaking now) that it won't, for example, be terribly boring then [...], but, on the other hand, it will all be extremely reasonable. [...]" [11]. "YOU BELIEVE in a crystal edifice, forever indestructible; that is, in an edifice at which one can neither put out one's tongue on the sly nor make a fig in the pocket. Well, and perhaps I'm afraid of this edifice precisely because it is crystal and forever indestructible, and it will be impossible to put out one's tongue at it even on the sly" [11, pp.15-16; 22].

These are the words of one of the most incredible characters of Fëdor Dostoevskij, and the entire nineteenth century literature, speaking to the "men of action" of his age. Abstract from a long monologue from "*Notes from Underground*", published in 1864 with extraordinary advance on Sigmund Freud, but also on literary characters such as Gregor Samsa and Zeno Cosini.

Peter Sloterdijk captures very well the power of this architectural metaphor in his essay "*The Crystal Palace*" [12]. This author narrates how Dostoevskij, during his personal visit to London in 1862 [13]

must have got negatively impressed, by the palace hosting the Universal Exhibition in South Kensington – that surpassed the scale of the Crystal Palace of 1851 – of which “immediately grasped the immeasurable symbolic and programmatic dimension” [12, , p.188].

A building like the Crystal Palace, mirroring so much its time, is difficult to find in the history of architecture and engineering. It is, on the one hand, a real technological revolution (especially for the construction process), while on the other, it is the perfect symbolic expression of the age of the massifying technology at its beginning and in its spirit. Since then, especially with the Modern Movement, technology acquired, in architecture, growing importance: significant, in this regard, are the words of Le Corbusier speaking about the “linears”, the “airplanes”, the “automobiles” or the “mass-production houses” in “*Towards a new architecture*” [14].

The process pushed to extremes with *Megastructuralism* which will be discussed later. In years of race to the conquer of space, this architectural movement has been the most exasperating expression - in mainly unrealized architectural forms - of the strong determination of an important part of intellectual in an hyper-technologized – and even set free by its mechanization - society .

Thanks to this imaginative and hyperbolic explosion, architecture has become one of the greatest expressions of the massifying power of technology, up to cause concern.

In 1957, Gehlen wrote: “we cannot disown that the single disciplines of culture took advantage of a more powerful partner, which led them the way transplanting the entire society on reinforced concrete and steel, getting rid of nature” [3]. In the years when Gehlen writes, this society of reinforced concrete and steel began to frighten, triggering a deep reflection about its responsibility towards nature, that was being got rid of and seeking for an antidote to the Crystal Palace, a palace outside which men - as we will see - will not even be able to have a look.

### 3 RESPONSIBILITY AS AN ANTIDOTE?

In some ways, the affirmation of the concept of responsibility towards the environment, which was beginning right in those years thanks to the work of authors such as Rachel Carson [15], could be considered as a sort of reaction to the “crystallization” of the society of technology. In this sense, the ecological culture would not only represent a program in response to the problems of resource's depletion [16] or environmental impact, but rather a form of philosophical resistance, that arise from existentialism, to the inexorable escalation of the technological progress. In truth, right from the beginning the environmental movement – too often and simplistically identified as a *unicum* – showed its two opposite souls: one technological and the other metaphysical.

So if on the one hand, James Lovelock, at the end of the seventies, inveighed at Carson as “she presented her arguments in the manner of an advocate, not a scientist” [17, p. 12]; on the other hand, Fritjof Capra, another very well-known ecologist in those years, asserted that the ecological balance requires profound changes in our perception of the role of human beings, requiring a new philosophical and religious basis [18].

This conception of ecological culture, between new technologies and deep philosophical reflections, is also typical of the one that could be called the first ecological approach to architecture. We can read in this perspective authors such as James Marston Fitch [19] or the works of the first experimenters. Let's think, for example, to the Drop City, founded in Colorado in the early sixties, where a social demands mix with new bioclimatic technologies. Alternatively, we can think of the complex holism of Paolo Soleri's experimentations at Arcosanti in Arizona. Two souls, one more technical (physical) and the other more metaphysical, coexisted with equal dignity - sometimes working together, sometimes clashing – when in the seventies, the environmental issue became gradually an emerging cultural phenomenon.

In different fields (politics, culture, economy, etc.) and sectors (construction, agriculture, industry, transport, etc.), this phenomenon, sooner or later and at various degrees, has become very important on a global scale, producing, in almost every state around the globe, environment ministers and environmental policies, more or less effective. Moreover, at least in the wealthiest countries, it has

promoted new models of economic management, production, mobility, research allowing the construction of ecological buildings and even eco-cities. It has been an enormous success, with implications not always positive. Well-known philosopher Hans Jonas, writes: “If nothing succeeds like success, nothing also entraps like success” [20, p. 9]; this aphorism seems apt in this case.

In fact, when this phenomenon passed from the first single isolated experimental experiences to the dissemination of its results on large-scale applications, it had to deal with regional, national, transnational governmental institutions and with the preexisting system of values and rules which were the foundation of the society of technology. Furthermore, principles and concepts had to be rearranged in order to be spread through mass media, more through slogans than in-depth explanations.

For new rules to be accepted and integrated in the new system, no underlying philosophical reasons could be produced in order not to destabilize it in his funding values; therefore, no ethical or ontological re-foundation could be made, but content with only the underlying technical and scientific reasons (energy, pollution and climate). Therefore, unavoidably – according to the above mentioned metaphor – the situation turned out to be back in the Crystal Palace. This hasn't been painless: as the trendiest slogan today testifies, “sustainable development”, describes for some, an oxymoron (for example: [21], [22, pp. 20-27], [23], [24], see [25]).

This process led to an *ecological culture which is no more a reaction to the society of globalizing technology, but is turning into a strictly technological culture that claims to globalize*. So the aforementioned Sloterdijk writes: “Behind the mask of the principle of caution, now universally embraced, a pragmatism with a wild past is coming into its own. One can say that it has passed through the complete cycle of modern attitude shifts from hysteria to cool” [12].

#### 4 FROM EXPERIMENTATION TO THE CAGE

The process that has been briefly described so far represents a transition from the experimentation to the standardization with a highly reductionist dynamic. Some thinkers describe this trend as typical of the society of our time. For example, philosopher Gianluca Bocchi writes: “Dirigisme, as capital sin of contemporary humanity [...] is put into action in order to reduce preventively the complex diversification processes in place nowadays, rather than waiting for these processes to show and test their enormous potential of experimentation enabling the establishment of a basis for the development of evolutionary levels of a higher order” [26, p.74, author's translation]. Piero Pozzati e Felice Palmieri, speaking about the globalization of the ecological culture, write: “We must fight against an evolution without a vocation to ethics [...] in a regulations' increase, that if in excess, may imprison the man in a real *iron cage*, as Max Weber sharply observes at the beginning of the twentieth century” [27, p.266, author's translation].

The Crystal Palace of a society showing its structural incapability of profound changes, even when the opportunity exists, the iron cage of rules crystallizes, in the bud, any effort for new experimentation. So, the pretended environmental care translates into codicils and absurd air-traffic controllers' marks.

Sticking to metaphors, we cannot fail to recall, in this regard, the one of the “acrobat on a high wire” from the beautiful and forward-looking essay “*Ecology and Flexibility in Urban Civilization*” (of 1970!) of the famous anthropologist and sociologist Gregory Bateson: “The ecological analyst faces a dilemma: on the one hand, if any of his recommendations are to be followed, he must first recommend whatever will give the system a positive budget of flexibility; and on the other hand, the people and institutions with which he must deal have a natural propensity to eat up all available flexibility. [...] The [...] system [...] may be compared to an acrobat on a high wire. To maintain the ongoing truth of his basic premise (“I am on the wire”), he must be free to move from one position of instability to another. [...] Certain variables such as the position of his arms and the rate of movement of his arms must have great flexibility, which he uses to maintain the stability of other more fundamental and general characteristics. If his arms are fixed or paralyzed (isolated from communication), he must fall. [...] In other-words, as laws proliferate, our acrobat is progressively limited in his arm movement but is given free permission to fall off the wire” [28, pp. 502-503]. To

retain a reserve of flexibility is a key to deal with complexity; this issue cannot be faced through a reduction, a simplification into simpler problems, with a paralyzing and falsifying process.

The idea that the complexity of the environmental problem cannot be tackled through its fragmentation is crucial in another essay by Bateson, *"The Roots of Ecological Crisis"*, in which the author writes: "That all ad hoc measures leave uncorrected the deeper causes of the trouble and, worse, usually permit those causes to grow stronger and become compounded. In medicine, to relieve the symptoms without curing the disease is wise and sufficient if and only if either the disease is surely terminal or will cure itself" [29, p. 494].

Thinking about the environmental issue with specific solutions and urgency is a short-sighted strategy, perhaps deliberately, because comfortable, allowing us instead of changing the whole system just some of its parts which become insignificant if watched through the whole. So - synthesizing with an illuminating phrase of Edgar Morin – "keeping on sacrificing the essential at the expense of the urgency, one ends up forgetting the urgency of the essential" [30, p.51, author's translation].

In an interview from 1990 with the philosopher Félix Guattari, the French doctor and intellectual Jacques Robin says: "Now, as far as we know society, and the industrial system what do we see working? An environmental policy. As if to say: whatever! If there is a greenhouse effect, if there is a hole in the ozone layer, well, we will sell some catalytic converters more, we will find replacements to sprays, but surely we will not change our model of consumption, our wastefulness, our production model, our demographic development" [31, p.140, author's translation].

The other interlocutor of the interview, the famous psychoanalyst and philosopher Félix Guattari, in his beautiful book *"Les trois écologies"* addressed the issue as follows: (*"The Three Ecologies"*): "Political groupings and executive authorities appear to be totally incapable of understanding the full implications of these issues. Despite having recently initiated a partial realization of the most obvious dangers that threaten the natural environment of our societies, they are generally content to simply tackle industrial pollution and then from a purely technocratic perspective, whereas only an ethico-political articulation - which I call ecosophy between the three ecological registers (the environment, social relations and human subjectivity) would be likely to clarify these question" [32, pp.27-28].

Without an effort aiming to recover an enlarged, wide-ranging, not specialist dimension, ecology (instead of representing an important cultural revolution) ends up becoming a barren set of rules applied without understanding their significance and producing models as well as political, economic, urban and architectural forms, which sometimes work, but are though, completely empty, un-human and, therefore, un-ecological.

The well-known Italian anthropologist Franco La Cecla, right in his afterword to the Italian edition of the mentioned book by Guattari, speaks in this sense of "pornecology": "the lion cub, the sunset, the natural eating that invaded advertising, ...", they "work like the playmates and the velvet bodies of the models" [33]. We shall ask ourselves if many of the ecological buildings are not communicating a content that they do not really have, pornecologic architectures showing what they are not and become, for this, ecological monstrous masks.

## 5 GIANTS AND ECOLOGICAL MONSTERS

"I pondered this as I spent an afternoon with Ma Cheng Liang, a man in charge of redeveloping Shanghai in a greener mold, including building a new eco-city on an island in the Yangze delta. He outlined for me his many plans for ecological modernism in the city. It sounded a little bleak and technocratic. More about ecoefficiency than building a place people might want to live. From Ma's office window, we could see below the huddled buildings and lanes of Shanghai's old town. As we talked, bulldozers were tearing down the buildings to make way for new office blocks. Ma saw this as progress. He wanted to do away with the past. Tear down the old town and create a bright, new, and green future. But to me, the old town was a dense, largely car-free enclave, mixing homes and workplaces and shops. It was a model of green design, the perfect embodiment of the dreams of the new urbanists. But he didn't see it. And still the bulldozers came" [34, p. 247].

This is the way in which British journalist Fred Pearce describes the operation conducted by Ma Cheng Liang (with Arup and others) to create an eco-district in Shanghai to host, within 2040, half a million inhabitants. The project's renders are reassuring (see, for example, references for image 1): mini vertical axis wind turbine raising beside two or three levels white buildings in the middle of a green area. It is hard though, not to be troubled by the fact that it handles of a real city by half a million people to be built in a few years out of nothing, with a single project, and considered, moreover, as a new model of life. The feeling of being in front of the project of a sort of giant ecosystem in vitro is strong; it seems as a transgenic experiment for a politically correct product to be sold to rich solid citizens.

We are not at all facing an isolated case; many similar projects are already subjects of discussions. For example: the Eco-City by Russian designers Ab Elis, for a city of 100,000 inhabitants in Siberia, obtained by Mir's former quarry, with a huge glass dome with sustainable technologies (see reference for image 2); the ark of NOAH (New Orleans Arcology Habitat), an enormous floating eco-city for 40,000 people designed by Kevin Schopfer (see references for image 3); Caofeidian, an ecological city for two and a half million inhabitants, in China near Beijing, designed by Pier Paolo Maggiora (see reference for image 4). Furthermore, there are, among others: the pyramid of Little Denmark, the Zina Zero Island in Azerbaijan; the Post-petroleum Palace in Dubai, the Rødovre Tower (see reference for image 5), all structures designed by the studio BIG, known for their famous architectural comic strip, *"Yes is More"* [35]. Many architectural magazines, books and web portals show the imaginative projects of Belgian Vincent Callebaut as an expression of modern ecological utopia (see, for example, reference for image 6).

Wanting to find a common definition for these new sustainable giant architectural works, one could use what Fumihiko Maki writes: "is a large frame in which all the functions of a city or part of a city are housed. It has been made possible by present day technology. In a sense, it is a manmade feature of landscape. It is like the great hill on which Italian towns were built". [36, p. 8] In reality this definition dates back to 1964, and it is, according to Reyner Banham [37, p.240], the first definition of Megastructure.

Isn't it paradoxical that current ecological gigantism has points in common with the Megastructures' movement that, back in the sixties, was the highest expression of the willingness to found an entire society on the power of technology? How is it possible that this movement, in some ways, ends up to rise again exactly through what should represent its exact opposite?

Yet, looking at today's architectural examples of extreme environmentalism, one cannot fail to remark the incredible similarities with yesterday's famous Megastructures.

How not to remark, for example, in Vincent Callebaut's renders reminiscences of Kisho Kurokawa's illustrations for the Helix City (see references for image 7)? How not to grasp the resemblance of BIG's Rødovre Tower with Louis Kahn's Tomorrow City Hall (see reference for image 8)? How can one not notice that the Mir's former quarry project is clearly linked to the boldest Buckminster Fuller's projects (see references for image 9) and that the ark of NOAH is linked to the Kenzo Tange's project of the Port of Boston (see reference for image 10)?

In fact, several authors have spoken of the Megastructures' movement as a theoretical movement which made its history in a decade, at the beginning of the seventies [38] [39] [40]. According to Reyner Banham, the Megastructures' movement only produced "a dozen or so built megastructures worthy of the name stranded like dinosaurs in a desert of distrust" [37]. What caused the end of this movement was the fact that the Megastructures needed a huge capital to be accomplished; which became unacceptable for the supporters of that movement who were tempted by the futurist fascination of the machine, but also by its presumed capacity to offer an opportunity for the city democratization and against any compromise with other powers, other than technology itself.

However, today the context has changed and someone willing to pick up, with little effort, the heritage of that titanic imaginative effort might exist. We are, in fact, since the mid-nineties, in an era of architecture that, according to Rem Koolhaas, is Bigness "enter an amoral domain, beyond good

and bad” [41, pp.495-516]. This Bigness is what, sharply, Nicola Emery [42] assimilates to Big-Business.

From the Big-business of the nineties to emerging Eco-big-business of today the step is short: the keyword of sustainability appears to be indispensable to promote any building operation, also the biggest, profitable and (ecologically) pitiless.

The examples are many; just to mention some: the Zero-Emissions City of Masdar, in Abu Dhabi, designed by Foster & Partners with LAVA and built with oil money (see reference for image 11); the construction of the green city of Tianjin, in China, to 35,000 inhabitants, in which many sustainable technologies are present, green roofs and green facades. The vegetation, moreover, is constant in the drawings of these new ecological mega-structures. It covers, for example, the skyscrapers designed by famous MVRDV for the Gwanggyo Power Center in the new Green City that will be built near Seoul (see reference for image 12).

Even the examples of “ecological” skyscrapers are many: the Dynamic Architecture, designed by David Fisher, that will be built in Dubai; the Clean Technology Tower in Chicago and the Pearl River Tower in Guangzhou in China, designed by Skidmore, Owings & Merrill; the Cor Tower designed by Chad Oppenheim, under construction in Miami; the Strata Tower in London designed by BFLS which is already built; the Bahrain World Trade Center in Manama, designed by Atkins studio and already built with integrated wind turbines (see reference for image 13). Many other cases could be mentioned.

Obviously, we cannot affirm that the ecological macro-structures and skyscrapers shall not exist; similarly we cannot claim that a multinational corporation could not be seriously involved in environmental initiatives. However, it is at least a legitimate suspicion to be in front of masked monstrosities. In any case, the phenomenon is hard to understand if we consider that it is merely linked to economic benefit reasons. At least, it isn't fully credible that entire selected business or design teams never doubt the undertaken routes.

It is rather a different matter: “They know what they are doing, but they do” and “A certain chic bitterness provides an undertone to its activity”. It is in these terms that Peter Sloterdijk [43] describes the accommodating contemporary cynicism, as “enlightened false consciousness” [43]. This cynicism is the opposite of combative and revolutionary ancient Kynicism of Diogenes, “the urge of individuals to maintain themselves as fully rational living beings against the distortions and semirationali-ties of their societies” [43]. It is an “urge” that we have already met with the hero of “*Notes from Underground*” [11].

In effect, modern cynicism is the exact opposite of the ancient Kynicism of Dinocrates. The anecdote in which he asks to Alexander the Great to get out of his sun is famous. Moreover, during the same faraway years, Dinocrates (the architect!), significantly dressed with a lion skin, was perhaps absorbed by drawing his dull “Macrostructure” on Mount Athos to celebrate Alexander (a whining Vitruvius tells it in the preface of second book of his “*De Architectura*”).

Today, “the times are cynical and know: New values have short lives. Being concerned, caring about people, securing peace, feeling responsible, caring about the quality of life and about the environment-none of that really works” [43, pp. 5, 217-218, XXVII]. The world seems destined to be more and more populated by friendly giants of sustainability - with their inoffensive look and politically correctness – who could crush us with their uniform and perhaps boring ecological goodness. In the meantime, we are once again penned in the Crystal Palace unable to take a look out of it and doubting to be even aware of a world outside.

## 6 REGULATIONS' PERVERSIONS AND THE PROJECT

It is actually too easy and even a little old-fashioned to assume the role of King Kong and lash out against the skyscrapers or the exceptional architectures. The problem, moreover, is not limited to this dimension; the ecological megastructures are only the most visible tip of an iceberg that is a techno-idolatry receiving almost unanimous approvals.



So, despite having only a vague sense of the reason why, a muddle of social, political, economic and cultural forces pushes, in architecture as well, towards a technocrats form of environmentalism. On the large-scale, this phenomenon ends up to produce eco-cities in the deserts and grassy skyscrapers, on the common building scale, turning into a rigid regulatory control, with all its qualities, but its aberrations as well.

We must recognize, of course the fundamental role of regulations in relation to the dissemination of systems and methods for environmental protection and sustainable architecture. However, it is clear that a totalising vision of the norm is spreading. This vision leads to identify the ecological project with the application of increasingly technical orientations. In this context, technology in the domain of ecological architecture becomes a prescriptive technology, defining *ex-ante* some pre-guaranteed technical solutions, which are then transformed into rules that will ensure the architectural project to get the most desirables environmental licenses.

A good example of this behaviour, is the growing success of the environmental rating systems for buildings. These systems, starting from the English BREEAM (Building Research Establishment Environmental Assessment Method) and the American LEED (Leadership in Energy & Environmental Design), are spreading in many countries.

The role of the environmental rating systems has certainly been significant; they have contributed to the wide dissemination of an ecological approach to the project. However, the environmental rating system, considering how they are structured and applied today, leads to a rigid technocratic vision of the ecological approach that is open to criticism [44].

“We’re concerned that LEED has become expensive, slow, confusing, and unwieldy, a death march for applicants administered by a soviet-style bureaucracy that makes green building more difficult than it needs to be. The result: mediocre green buildings where certification, not environmental responsibility, is the primary goal” [45].

Therefore, rules and certification systems are welcome, but they must be considered as supporting tools, as the risk to become a unique system of evaluation and validation of the ecological quality of the projects, generates only absurd A class hyper-insulated boxes / thermos, close to be “nearly zero energy” buildings (buzzword today) called “ecological architecture” without being one thing nor the other.

Facing the inappropriateness (and, ultimately, of the indecency, on environmental ethics plan) and, in any case, the impossibility of global control, what seems ecological is a surrender attitude. An attitude enabling us to accept a certain degree of vagueness, confronting from time to time on the “whys” and refusing to settle only the “hows” that were not deeply understood, operating as bureaucrats rather than with designer intuition.

## 7 CONCLUSIONS

So far we have seen how the ecological project, instead of representing a revolutionary opportunity, it has been largely an illusory escape route from the Crystal Palace, in which the massifying power of technology trapped us into. Both the amazing large-scale expressions of this ecological project as the dominant logic of widespread architecture’s control are in fact characterized by a blind attitude towards the future and a dull one to the past.

However, do we have any operational possibilities? Is there an alternative attitude to be adopted?

In the current situation, strict rules and *a priori* established instruments are futile, as they often end up to be confused with the objectives to reach, generating a simplification process that ends up confusing the ends with the means and leads us, for example, to identify the certified building with the ecological building.

Equally unnecessary, however, is an *a posteriori* technological approach, willing to engineer architectural “compositions” with a vaguely sustainable-look (as the floating ecocities or the green

skyscrapers), which end up generating an architecture without any real ecological conviction, without any technological reflection and outside of any real environmental and social context.

Equally useless, is a non-technological, *naïf*, “naturist”, primitivist approach: one can choose a hermit life, living exclusively out of products of his labor or barter, and the choice might even be shareable, however, it has evidently not any social horizon.

What we need is that technology (*téchne + logos*) gains back its reasoning ability on techniques, in the broadest possible sense, physical and metaphysical, scientific and philosophical. In other words, it is important do not be led by the technological knowledge, but lead this knowledge instead, without taking anything for granted, not even things that seem well and good by definition.

It sounds easy, but it is the hardest thing to put into practice nowadays.

It is an important turning point, a responsibility that has to be taken educating new generations of designers as it will be most likely up to them to face the problem of safeguarding human needs and the needs of other living species on the planet. They shall not undertake this role with a superficial, fideist and mechanistic attitude to technology, but they shall assume an open and cultured attitude.

This attitude is essential for a real ecological architecture, linked to its deep reasons, without a unidirectional and arid technical orientation. This is the only way to obtain an open ecological architecture and rich, of registers, nuances, thought and future.

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## **"The place" of the architecture museum**

**Turturică Ștefan Ciprian**

*"Ion Mincu" University of Architecture and Urbanism (ROMANIA)*  
*marin\_turturica2000@yahoo.com*

### **Abstract**

The paper talks about the general problem of inserting an architecture museum in a cultural city. The paper also defines some terms:

- cultural city - referring to a city as a historic city
- architectural museum - referring to the cultural city as an out-door museum
- architecture museum - referring to the architecture museum itself, the building

The idea behind this paper is a new way of conceiving an architecture museum within a cultural city. This new way must lead to the realization of an architecture museum that has a final purpose in educating its visitors in an architectural/ urban understanding of the city. In this way, people, can participate actively in the development process of their city. But, in order to realize such a project, first we must ask three questions:

1. How do we interpret a cultural city?
2. Where do I propose a function such as an architecture museum in a city like this?
3. What kind of analyzes I must perform in order to devise an architectural concept?

A cultural city can be interpreted as an out-door museum, an architectural museum. This being said, the buildings (in particular the listed buildings) of the city become exhibit pieces; the exhibition being the hole city. But not only buildings can have this status, listed zones, parks, archaeological sites, etc. will be considered exhibit pieces. The architecture museum, after construction, will become part of this system, part of the exhibition; it will become a new layer in the multi-layered piece that is the city itself (the architectural museum). Using the concept of Genius Loci the city can be interpreted as a system of places (like the cells of the human body) that in relation to each other creates a "higher place", the cultural city. Going further with this idea, we will discover the answer to the second question. Thus, the architecture museum must be built somewhere inside this "higher place", in a place that has a perceived negative Genius Loci, so that the museum becomes an example of good architecture and urban revival. If no such place exists, the architect must find another way of making the museum appealing for the public, and being at the same time a good example of architectural practice. The third question has a more complex answer then the first two because there are two levels that we must understand in the first place. The first level of understanding is an objective level, that contains all the human knowledge about the particular building site and the community and traditions of that particular area. The second level of understanding is a subjective level and it's represented by the human senses (sight, hearing, smell, taste and touch). Sighting has been considered the most important sense but sighting, by its self, produces only an image. Without the rest this image tends to be static, to be a background for everything else. Touch is very important because in collaboration with sighting allows us to feel surfaces at a distance. This sense also works through our feet allowing us to feel the texture of the pavement. This being said, the texture influences the speed with which we go through the urban space. Smell and taste are very punctual senses. These two can actually help us to make connections between the space we are experiencing and another space that we have experienced in the past. Hearing is another important part of our

perception because it allows us to differentiate between certain places on its own, regardless of the other senses. Thus, in collaboration with other senses it helps to complete the picture. The collaboration between the subjective level and the objective level is actually the total experience of the human body of the space its living in, this being the answer to the third question. The conclusion is the fact that an architect needs to understand the city and the site of the project.

Not only this, but, he needs to know how to interpret the city because every city is different (like the difference between human beings); and he has to feel the site with his senses and his mind in order to create a good architectural concept (with his mind he has to understand the objective level and with his senses he has to understand the subjective level; he has to treat the site like he would treat a new acquaintance). The architectural concept devised will lead to the development of an project that will fit the site perfectly, being an example of quality architecture.

**Keywords** : architectural museum, architecture museum, genius loci, place, cultural city.

## 1 GENERAL ACCEPTATIONS. DEFINING NOTIONS AND CONCEPTS

In the last decades of the XX<sup>th</sup> century and at the beginning of the XXI<sup>st</sup> century, there are a many theorists (S. Holl, J. Pallasmaa, C. Norberg-Schulz, etc) that have tackled with phenomenology in architecture, in an attempt to overcome the modern times and to restore a more profound understanding of the architecture project and the feeling of allegiance of the man to the world. *"Equally, the task of art and architecture in general is to reconstruct the experience of an undifferentiated interior world, in which we are not mere spectators, but to which we inseparably belong. In artistic works, existential understanding arises from our very encounter with the world and our being-in-the-world - it is not conceptualized or intellectualized"*. [1, pp. 25-26]

### 1.1 The cultural city as an out-door museum

Pursuant to the Romanian Explanatory Dictionary (DEX), "the city is a complex human settlement, with multiple municipal facilities, usually having multiple functions such as administrative, industrial, commercial, political and cultural." [2] "The cultural value of a city is also given by the quality of its architecture the philosophies and trends it represents, the history witnessed by its edification, but is also linked with the sighting and identification of spaces similar to themselves, whether authentic or become symbolic." [3, pp. 570-574] Also, the cultural value of a city is given by the cultural events that take place, either being permanent or temporary activities. The temporary activities are represented by concerts, carnivals, etc; and the permanent activities are represented by museums, buildings, etc. The museum, pursuant to Romanian Explanatory Dictionary (DEX), "is the institution that takes care of the gathering, keeping, research, valorization and exhibiting of objects that present historic, artistic, etc value"[4]. After defining the terms city, cultural city and museum, we can say that between a museum and a city there are fundamental similarities, which determines the fact that we can interpret a city as an out-door museum. The comparison between the two is represented in the next table.

Number	Museum	Cultural city (out-door museum)
1.	Permanent exhibits	All the buildings of the city, especially listed buildings, streets and parks
2.	Temporary exhibits	Temporary cultural activities
3.	Exhibit description & highlight	Informative panels for listed buildings, parks and pedestrian streets that allow people to understand the buildings and to feel the city atmosphere
4.	Exhibit evolution	New construction projects that define a new city texture (a continuous process that is elaborated and understood by specialists in which the public has limit access and knowledge)

The permanent exhibit of an museum is comprised of exhibits, ordered chronological by specialists or being ordered by other criteria; highlighted using specialized lighting systems and explained through a descriptive text or using technology (new interactive ways of presentation). In a similar manner the buildings of the city are placed in a chronological fashion (from the center to the a edge of the city); the most important "exhibits" being the listed buildings and other buildings that form a coherent city texture (there are cases where there are few listed buildings but the listed zone is very big). Thus, there are two typologies (listed buildings and listed zones), which differentiates from the rest of the city texture. "A workable image requires first the identification of an object, which implies its distinction from other things, its recognition as a separable entity"[5]. Also, at the city level there are important streets and parks that have had a long evolution, but there importance and history is unknown by the inhabitants.



Figure 1. Permanent exhibit in Sanremo.

Figure 2. Historic maps of Sanremo.

Figure 3. Historic maps of Sanremo.

The temporary exhibits of the museum can be associated with different cultural activities that take place in the city (different local cultural activities or even big cultural activities - concerts, carnivals, theater, etc). The highlighting systems and description systems of the exhibits in a museum can be associated with informative panels of listed buildings and archeological sites. The highlight of the old city centers is realized by the pedestrian streets which allow people to experience the city's atmosphere and allow people to contemplate architecture; likewise in a museum the space surrounding the exhibit is conceived having in mind the importance of the exhibit and its dimensions. In a museum the evolution of the exhibits is done in time, through research, and leads to new exhibit pieces or the retreat of others, so the exhibit as a whole is as representative as possible. At the city level demolishing buildings is not desirable and the evolution of the city (new building projects) is done according to plans elaborated by specialists, plans in which the public has limited access (city dwellers). *"Museum side of the city could be either start from the theory or inquiry in developing the method of discovering the links that leads to a cultural sustainable local development. Best practices inquired grant possible methods, but still in connection with local habits or traditions, not applicable to every city. Also theory is a first method to enrich and value the collections, and establish the paths, links and continuity-discontinuity flows within city contexts and patterns"*[3]. Probably, the best way of moving forward is to develop many projects, projects that are evaluated by the population; the population as a representative of the customs and traditions of the place. *"It is taken for granted, that in actual design form should be used to reinforce meaning, and not to negate it"*[5]. The main idea behind this subsection is that the city can be interpreted as an out-door museum, this museum can highlight itself through permanent exhibits (urbanism, architecture, museums, pedestrian streets, listed buildings, etc) and temporary exhibits (concerts, carnivals, etc), exhibits that define the atmosphere of the city, atmosphere that dwellers should be actively be part of.

## 1.2 Genius Loci

Genius Loci is a concept that expresses "the special atmosphere of a place"[6] or "the deity, guard of a place"[7]. Genius Loci is a concept that expresses the fact that every place has a spirit. even the natural place has a spirit, but the anthropical place has a significantly stronger character from this



point of view. The natural genius loci is the spirit of a place given by the natural layers of the site. The anthropic genius loci is the spirit of the place made up by the successive layer that have been deposited; material layers (architecture, urbanism, etc), non-material layers (symbols, rituals, etc) and the remaining natural layers. At the city level, the spirit of the place is given by a multitude of historic layers that overlap (natural layers and anthropic layers as well - material and non-material). All the material layers represents the human culture, this being the essence of the settlement that was realized in time through the creative participation of successive generations. "The results of creative participation constitute man's existential foothold, his culture" [8, p. 185]. "The essence of settlement consists in gathering, and gathering means that different meanings are brought together" [8, p. 195]. At the site level we can identify the same elements that give the place its spirit, the same elements that are present at the city level: architecture, urbanism, etc. On the other hand, we can identify one more element, probably the most important one, that aura given by the architecture and the meaning gathered in time. This spirit of the place can be perceived through the human senses, as J. Pallasmaa says: "It is evident that the architecture of traditional cultures is also essentially connected with the tacit wisdom of the body, instead of being visually and conceptually dominated" [1, p. 26]. Thus, we can say that the city can be interpreted as a living organism with one genius loci, and the site is just a living cell of this organism that has a genius loci as well (the city is a "system of places" that work together to form a "higher place").

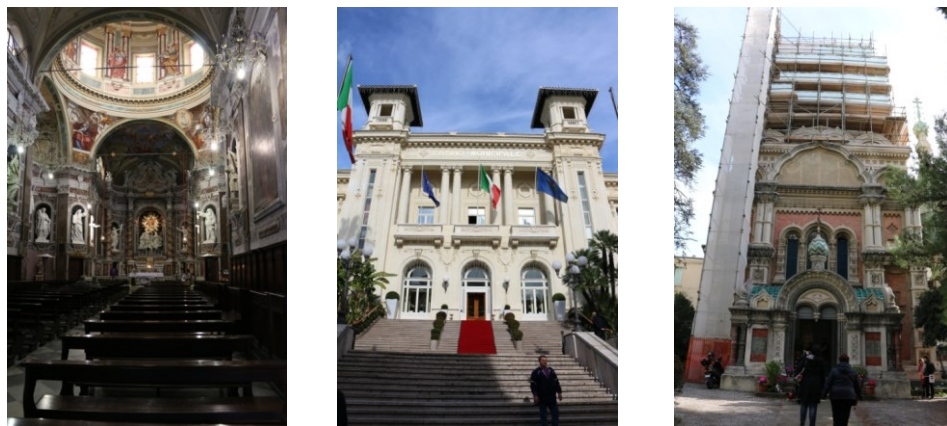


Figure 3, 4 and 5. Urban atmosphere in Sanremo, Italy.

### 1.3 Architecture and the phenomenological approach

The understanding of the site and the spirit of the place can be done on two levels:

- an subjective level through our senses;
- an objective level through knowledge of the different layers that have been deposited successively, which lead to the current spatial configuration (history, architectural styles, etc.).

The subjective level is site analyzes realized with the help of the human senses, not only through sight (the image) as we are used to in our culture, especially that of the architects. Thus, J. Pallasmaa says that: *"I believe that many aspects of the pathology of everyday architecture today can likewise be understood through an analysis of the epistemology of the senses, and a critique of the ocular bias of our culture at large, and of architecture in particular. The inhumanity of contemporary architecture and cities can be understood as the consequence of the negligence of the body and the senses, and an imbalance in our sensory system."* [1, pp. 17-19]

The objective level of knowledge:

- Knowledge through sight has been considered over time very important, although it is just a small fragment of the entire picture created at the brains level. This sense creates just an image, maybe just a static image of reality.

Regarding architecture: "The detachment of construction from the realities of matter and craft further turns architecture into stage sets for the eye, into a scenography devoid of the authenticity of matter and construction." [1, p. 31]

- Hearing is a very important sense because it completes the image produced by sight, bringing essential information about the place (example: sea waves that brake on to the coast line, sea gulls, etc.), things that sight cannot catch. Auditory sensations are much more important than we can imagine, in some cases we can identify a place using only hearing, without sight.
- The sense of touch is a very powerful instrument that we use through our feet, all the time, without even knowing. The roughness of the flooring can vary, so man can accelerate or slow down in his way through space. This sense, with sight and the touch-experience of the hand, allows us to feel surfaces without touching them, from a distance, as Juhani Pallasmaa said: *"The sense of sight may incorporate, and even reinforce, other sense modalities; the unconscious tactile ingredient in vision is particularly important and strongly present in historical architecture, but badly neglected in the architecture of our time"* [1, p. 26]. Thus: *"The distant and the near are experienced with the same intensity, and they merge into one coherent experience"* [1, p. 42]
- The sense of smell and taste are punctual experiences that ties us unconsciously to a place, to a certain experience. Through this sense, we can associate a place with another place experienced in the past. Also, the sense of smell and taste, can lead to the reliving of a certain genius loci in absence of other sense but only if the certain genius loci has been experienced before.

The objective level, the knowledge level refers to all the human knowledge about that place. This knowledge must not be taken as simple information, it must be related between them so they create the atmosphere of the place throughout its evolution, and together with the contemporary living of the place (the subjective level) will lead to a total understanding of the site. After this sensible understanding of the site, an architectural concept can be conceived that would lead to an architectural project, which through building will become a new layer over the older layers and will lead to a new perception of the site, a new genius loci. This new intervention can be positive meaning it can accentuate a positive genius loci; it can be a neutral intervention leaving the genius loci to express itself (the most subtle change) or a negative intervention, which will bring to the surface negative aspects about the place (usually to remember what happened so it won't happen again- the architectural program of Memorial or even Museum). On the other hand, it can be realized, through the project itself, a denial of the negative aspects of the genius loci and replacing them with positive aspects, the negative aspects being moved from immaterial level to the material level, which is secondary. Thus, a place that is packed with negative aspects can be re-functionalized, getting a new perception; the negative events being turned to history, realizing the transfer from the material to the imaterial.

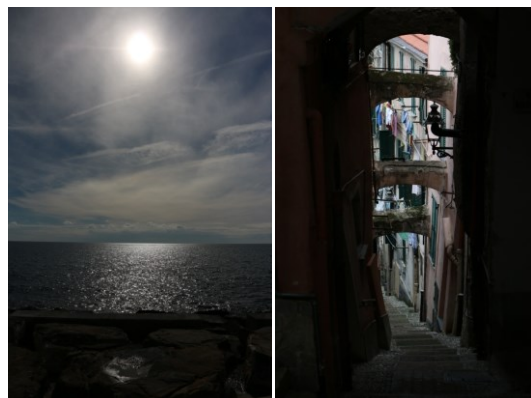


Figure 6 and 7. Seaside in Sanremo, Italy.

## 1.4 Exhibition/ exhibit and the phenomenological approach

The building of the architecture museum must be the result of a sensible analyzes (phenomenological analyzes), but the institution must be visible, it has to stand out no matter its style. Thus: "And what more obvious way is there to realize that new mission than through a highly visible building project?" [9, p. 3]

The building project must be highly visible because people must associate the building with the city's evolution (the place where the evolution of the city is decided) not only the place where there are exhibits of architecture projects.

The main idea of every museum is to enlighten the population via the exhibits. The same idea is the foundation of the architecture museum, the only difference being the fact that have to learn about famous architects, details, etc. and also about process that leads to the realization of the architecture project. The visitors must understand a sensible analyzes (analyzes made on many level of human understanding) and an architecture concept in order to understand why the project has been realized that way, by the architect. In order to enlighten people in this way, the exhibit must be interactive, it must show different stages of the architecture project, it must show them how architects work with architecture models (architecture models of every stage of the project), graphics, etc. Thus, in this way, people will use all of the senses to understand this domain, will understand the development process of the city, a spirit of community will be born or it will evolve (people will work together in order to fully understand the domain), and after this people will have an opinion about the development of they're city. After these decisions, the projects will be updated, will be built, will become part of the exhibit (will be a part of city), and people will have to decide which are the next projects for the city. This exhibit is also open for tourists that can participate in the decision making (people that are not dwellers of the city), which are welcomed because they can have a more objective view/ a more detached view about the city unlike its dwellers; this could have unexpected results (in positive way) over the projects. however, this result, will be analyzed by architects and city planners and they will be the ones that will have the final decision about the project.

The conclusion is that the exhibit has two purposes:

- the first one is to enlighten and to create a spirit of community
- and to ask for opinions about future projects that regard the development of the city this being a repetitive process, a constant participation of the people to the city life.

## 2 CULTURAL CITY - HISTORY - GENIUS LOCI

"History is the science that studies the past of mankind and of societies with the purpose of rebuilding them." [10] Or, "history is the process of development of natural phenomena and of society".[10] According to the definition of history and other concepts (cultural city and genius loci) we get to the conclusion that the three concepts are inseparable and that they determine each another. Thus, they are concepts that establish the essence of a single living organism, the city. First thing, even before the birth of a settlement, the site has a natural spirit of the place determined by natural elements which have had a certain meaning for the people, and this convinced them to establish the settlement (example: water in the dessert, a hill - protection from invading populations, etc.). Once the foundation of the settlement is established, the spirit of the place evolves through people and they're architecture, but in the same time history is born, and through the people rituals, they're activities, the first steps towards a cultural city are taken. The cities of the XXI<sup>st</sup> century are all cultural cities, even if some have less of a character then others. In essence, all the cities built using

the system previously described are cultural cities. Even if the cities haven't been born using the previously described process (example: city of Brasilia), these cities have collected meaning over time and have been embraced by their dwellers; so we can give them the title of cultural city.

## **2.1 Understanding of the cultural city**

The cultural city will be defined as a system on two levels: out-door museum and genius loci. The concept of an out-door museum has already been explained in the previous section, so does the concept of genius loci (spirit of the place). In this subsection I will show that a strong genius loci is given by valorization (a museification) of the architecture of the city; and architecture itself is highlighted by the understanding and attitude of the population. If the population seeks only pragmatic aspects (material layers that do not have a cultural importance) of the city life, then the city will be "alive" just part of the time. Taking Sanremo as an example we can say that the city has an enormous cultural potential and despite this potential the city is "alive" just part of the time, this being realized by the annual festival and by the casino. The rest of the time, the city is just a resort on the Mediterranean coast, that has no museums and it doesn't highlight its listed buildings and important architecture. If the population would be more involved in the development of the city, and would understand the architectural and urban potential, the city could become a cultural hotspot through the entire year. The first step towards this goal would be the construction of an architecture museum that would inform and educate the population, making people realize the potential of the settlement; the next step being their decision making about the development of the city. This way the people's mentality would change making them more alert about other aspects of the city not just the pragmatic ones (material layers that have no cultural value), this way, in time there will be a major evolution of the genius loci, in a cultural sense.

## **2.2 The phenomenological description of the site (genius loci)**

In this system (cultural city) there will be phenomenologically identified some sites that are favorable for a construction with the function of architecture museum. Continuing the analyses on Sanremo, we can say that all the major functions of the city are located within a small city center, that can be crossed from one end to another within 20 minutes, the old center and the Santa Tecla fort (N-S axis) and Cristoforo Colombo Square and the Casino (E-W axis). So, the new intervention must be located within this perimeter. For the beginning we will presume as a probable site, the site near Santa Tecla fort, the only one large enough for this function. Visually, the site is populated by low importance functions, and a high importance listed building that should preferably be refunctionalized and introduced in the new cultural circuit of the city. The site is surrounded by two different types of environment: the city - an anthropic environment and the sea - a natural environment, maybe the most important one which determined the evolution of the settlement. Hearing is another piece of the puzzle, completing the image through the waves of the sea, the sea gulls and boats, this sense substantiates the choice made earlier. Touch will complete the image through a variety of textural surfaces: the fort (stone and bricks), buildings (plaster), pavement, etc. Beside these anthropic surfaces, there is a natural surface, the surface of the sea and breeze of the Mediterranean sea. Thus, on this site there will be present all the characteristic surfaces of the city, either natural or anthropic. Smell and taste on this particular site expresses in classic Italian style through the presence of more than one Italian restaurant. Exploiting these senses, the project should include a restaurant or a coffee shop. Thus, the site described in Sanremo is probably the only one suited for this particular function. Of course this phenomenological determination of the site in the city of Sanremo can be extrapolated and applied for determining other sites, in other cities like Sanremo, for a similar function.

### 3 THE ARCHITECTURE MUSEUM AND THE PHENOMENOLOGICAL APPROACH

"This hope that phenomenology offers possibilities for resisting the reductive ideology of modern science has been expressed by various writers as part of a general disillusionment with the state of architecture in the twentieth century." [11] The new contemporary intervention, unlike those realizes in the XX<sup>th</sup> century, starts from the phenomenological principles for the realization of the architectural concept and the design. In the previous section I demonstrated the fact that a sensible/ phenomenological analyzes is needed for the determination of the site, now I will show that a sensible/ phenomenological step is needed for the development of the design of the building (volumetric, spatial configuration and materials used) in order to get integrated on the site and to highlight the exhibit. Visual, the new building must fit in the urban and architectural context, it must not be dominated by the existing buildings, neither dominate the already built context, it should be at the scale of other major elements of the city and it should clearly be a new intervention. "Artistic meaning rests upon an intricate interplay of showing and concealing. The work of architecture is no mere bearer of meaning, as if the meaning could be transferred to another bearer. Instead, the meaning of the work lies in the fact that it is there. [...] Rather than simply meaning "something", art and architecture allow meaning to present itself". [11, p. 22] The volume of the building results from the analyzes, the architecture concept and most of all from the capacity of the architect to produce a space that can be experienced. Thus, the result is a balanced volume (does not dominate and it is not dominated), one that establishes a symbiotic relation with the fort, making the genius loci better. The materials chosen for the new building can be addressed in two ways:

- new materials, not specific to the site, which enrich the variety of materials
- a material similar with one found on the site

In any case, the materials chosen for the building should be natural materials (materials which show they're age), not new materials, that are timeless materials. There is possibility to chose modern materials, only with the condition that there aren't timeless. Regarding the interior space, there should be a total space in which the exhibit is clearly shown, and while experiencing the space there should be a clear connection with the space of the fort (the link should be realized at least on a visual level), the fort having opposite space, with small chambers accessible from the inner court. Those two typologies of space will show two different models of building will exemplify the history of the city, will create a symbiosis, so that the project will integrate itself into the site; another important part of this integration is the link between the proposed architecture and the public space, which will be treated in similar fashion. Thus, the interior space will flow from one building to another, from the exterior to the interior and from the interior to the exterior. The materials used for the inside of the new building, there should be natural materials which will show they're age (or contemporary materials that are not timeless), but there will be a minimalist design so the exhibit will be highlighted. In the fort, there is a different situation, the architecture will be as little as possible, the exhibit will be comprised of small objects in order to let the space be highlighted, some chambers could be made to look like different functions that were there over time: prison cell, gunpowder deposit, etc., the same thing could be said about the roman ruins.

Considering the negative perception of the population regarding the fort, because it was made not to defend the city but to threaten it, the new intervention refunctionalize and rehabilitates the spirit of the place, the place should become a space of the rebirth of the city.

### 4 CONCLUSIONS

The main conclusion is the fact that an architect needs to understand the city and the site of the project. Not only this, but, he needs to know how to interpret the city because every city is different

(like the difference between human beings); and he has to feel the site with his senses and his mind in order to create a good architectural concept (with his mind he has to understand the objective level and with his senses he has to understand the subjective level; he has to treat the site like he would treat a new acquaintance). The architectural concept devised will lead to the development of a project that will fit the site perfectly, being an example of quality architecture. Other conclusions:

- The city can be interpreted as an out-door museum whose exhibits are the listed buildings, buildings, streets, etc.
- Genius Loci is in a perpetual evolution, each new layer contributes to its development, in positive way, in a negative way or a neutral way.
- The understanding of the city and the site is done on two level: an objective level (an understanding of the site through history, math, etc) and a subjective level (through senses: sight, hearing, touch, smell, taste), a sensible understanding.

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## ANOMALOUS SPACES AS A NEW OPPORTUNITY FOR THE PUBLIC REALM

**Marta Rabazo Martín**

*Università Degli Studi Roma Tre (ITALY)*  
*rabazomarta@gmail.com*

### **Abstract**

In the contemporary cities, infrastructure and urban landscape should not be identified as opposite entities but as complementary and in a reciprocal construction of identity; we should leave them space enough for overlapping and hybridization: a physical and conceptual limit constantly being redefined.

We can say that the infrastructures are indeed structuring systems within the urban area which change and characterize the urban landscape becoming reference elements. But in some other cases the infrastructure can become a limit or barrier if they are conceived as a foreign element and completely independent from the reality they come across. These infrastructural spaces represent an intermediate level between the general systems and the local project, the reality of the urban fabric they intersect.

The infrastructures generate a variety of anomalous and complex spaces when they intersect with the territory; these spaces have a difficult relationship with their surroundings always searching for an identity that tends to rebuild the altered environment, remaining in another physical level without specific function and often outside of the infrastructure's project: they don't seem to belong to the city or to the infrastructure either, they are only created based on the technical needs of the infrastructure and not yet based on the relationship with the adjacent fabric. However, these spaces that operate autonomously to the city, with a different human or pedestrian scale, definitely need new instruments for its insertion into the urban fabric and therefore become a new opportunity for the contemporary urban landscape.

To understand the concept of anomalous space we can talk about the Solà Morales' *terrain vagues*, Foucault's heterotopies, Auge's non places and the smooth spaces of Deleuze-Guattari, but it is also mandatory to talk about artist Gordon Matta-Clark and his project *Reality Properties: Fake Estates*, where he exhaustively documents 15 micro plots, fissures in the city grid created by surveying irregularities or zoning oddities.

Through the historical-critical analysis of the relationship between the infrastructures and their urban environment, and the study of various projects that have worked in this field, we will discuss these ambiguous locations between the infrastructure and the city as new opportunities, usually abandoned in the European urban areas.

We will introduce an intermediate landscape scale as a tool to connect these urban voids between them and to the already existing public spaces in an area creating networks, and then explain the potential of these spaces to keep together all the pieces of the game. This intermediate landscape does not deal with extensions but with relationships, binding local projects to the territory and transforming spaces in places (we will consider Franco Farinelli's definition of space and place).

The exploration of the phenomenon of re-use of urban infrastructure is an opportunity to understand the effects that they have in their environment. Infrastructure, with its imposing presence and a clear ability to create an identity, should be designed to establish places of great spatial, social and legal freedom, which adequately addressed could also give people the opportunity of appropriating them in a flexible and dynamical way, making spaces full of meaning so necessary in building new identities in the contemporary city and so important to the collective space.

**Keywords:** infrastructures, lost space, anomalous space, intermediate landscape, urban landscape, urban voids

Large linear infrastructures that run through our cities today are the imposition of a new order onto the existing one. Such taxation is made according to technical (and economic) needs of the infrastructure itself, which implantation is made independently of the existing urban fabric. At the same time, due to their technical and construction requirements, the noise and pollution they usually produce, infrastructure separates from the general level of the city or its immediate surroundings (setback strips, elevated tracks that generate their own speed regardless of urban traffic, etc.), isolating themselves twice: in its design but also in its execution. This implies that the infrastructures are born with a limited relationship with their environment, even if they are planned in very long term, and are in a permanent state of expectation of being integrated into the self- image of the city.

Already in 1999, in his article *Infrastructural Urbanism*, Stan Allen ask architects to "redirect their own imaginative and technical efforts towards the questions of infrastructure. A toolbox of new and existing procedures can be expanded by reference to architecture's traditional alliance with territorial organization and functionality" after a period in which the architects had given up dealing with infrastructures, leaving them in the hands of engineers, politicians and economist [1].

It is hard to ignore how the design and construction of the infrastructures for mobility in urban areas generates or includes a void. We define voids associated with infrastructures as those spaces remaining in another physical level without specific function, outside the attention of the infrastructural project (despite being directly part of it) and not belonging to the city, created only following the technical requirements of the infrastructure but not considering the relationships with the urban fabric that come across. We call them voids for their lack of a proper function, although generally they have a rich and alternative activity.

These spaces, which might not be occupied or characterized but have a strong identity are, in the other hand, available and susceptible to project from the potentialities; it is the territory of the chance. The lack of characterization gives them flexibility, being adaptable and convertible into alternative uses, while cushioning the impact of the infrastructure by keeping the key for connecting its two banks.

However, because of this intermediate and diffuse nature, infrastructural voids seem to live in a constant indeterminacy. We have called these voids anomalous spaces because they have a unique and different character.

## 1 THE ANOMALOUS SPACE

It seems logical to think that to address the issue of the anomalous, the odd and singular, we must first establish that it is contrasted and it is determined by the difference: something is anomalous only in relation to an opposite term of reference. Anomaly is it then to go against the rule, against habitude or a use. But despite of being opposite, in many cases they do complement each other: without normality there is no abnormality and vice versa. It is considered normal everything that is governed by the standard, therefore, anomalous is anything that differs from the norm and the standard; the singular use of an exception, the unusual, and the primacy of the difference stated by Deleuze-Guattari [7]. Following these definitions, we can say that we understand anomalous as exceptional spaces. With a complex and often ambiguous nature, they are difficult to classify, not belonging to any of the different natures around them, having to find by themselves their own characterization.

To discuss this concept of the anomaly, we will move briefly to the summer of 1973 when Gordon Matta Clark discovers that the city of New York was periodically auctioning small absurd plots, unusably small slivers of land, sliced from the city grid, patchy pieces of land some of them even inaccessible, that appeared after the city was mapped out and land use designated in the

neighborhoods of Queens and Staten Island. The artist bought 15 of these urban slivers (fig.1) for prices ranging between 25 and 75 USD, documenting them with all the bureaucratic information he could find, maps, deeds, plans, measurements and photographs, which he published under the title *Reality Properties: Fake Estates*. He wanted to illustrate the marginal nature of these interstitial spaces in an official allotment of a bureaucratic city, tiny residual lots, leftovers in the process of regularization and result of the superposition of two orders: the existing one and attempted regularization. The main purpose of this project was to identify the dependence relationship between building and construction system, showing the absurdity of wasteful expenditure, the internal contradictions of a mercantilist and bureaucratic system and at the same time, release those fragments of space.

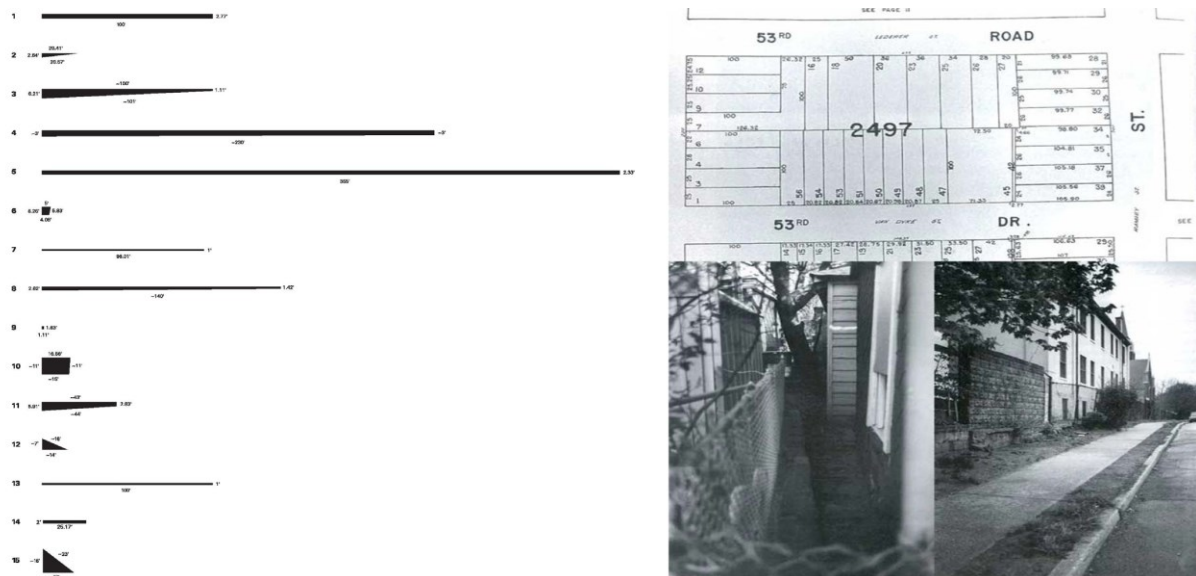


Figure 1. The 15 micro plots bought by Gordon Matta-Clark to the City of New York and the details of one of them.

But let's leave the Fake Estates for a moment, let's forget about measures and scales and let's exchange the map of New York for the map of any contemporary city and we will find thousands of properties like those, anomalous spaces awaiting to be discovered, which from a territorial scale have another dimension. In the historic centers few vacant lots are left and those arising due to demolitions usually have a clear destination due to speculation. However, in the fabric of our actual cities we can find tons of small-scale spaces, unexpected nooks, residual fragments, bureaucratic irrationalities, oddities of the real estate, easements, simple forgotten spaces or even islands floating in the sea of our infrastructures, endless units of space resulting when overlapping layers of the current city; places that can be incorporated in various ways to the city as a global project to expand public realm.

In the case of Gordon Matta-Clark, the plots found are the result of administrative anomalies in an attempt to regularize the real estate map of New York. In general, these anomalous areas arise from the superposition of two settlement structures, leaving those anomalous spaces to muffle both natures. Anomalous spaces involve complex conditions in any of their properties whether these are legal, administrative, functional, formal ... and are always associated to borders, interstices, multiplicity; always guarantees singularity as honest indicator of reality.

### 1.1 Anomalous spaces: Urban Potentiality

Due to this diffuse nature, to the whole potentiality they hold and to a certain marginal character, photographers have been very interested in portray these anomalous spaces. The artist Edward Ruscha was maybe one of the first when he published the volume *Twenty-six gas stations* in 1963 (Fig.2) and related his work to Edward Hopper about the loneliness and the abandonment (Hopper faced this problem from the human point of view while Ruscha faced it from the urban point of view). Followed by *Thirty-four parking lots* in 1967 are now untraceable books kept in the best

collections along US and Europe. Most recently, was photographer Gisela Erlacher in her volume *Skies of concrete* (Fig. 3) to recreate these voids and how they have been occupied along very different circumstances. While Ruscha was a very systematic photographing the same kind of space within a very specific area (although those parking lots or gas station seems to be universal), Erlacher is more international focused on showing that the urban marginal situations are the same everywhere. In this case, the fact that they have been occupied (formal or informally) means that we are dealing with useful spaces even if they don't fit under standard category of open space.



Figure 2. Some of Ruscha's Twenty-Six Gas Stations



Figure 3. Gisela Erlacher's units of spaces under elevated infrastructures from her book *Skies of concrete*



If we walk along any contemporary linear infrastructure we will find a few different categories of anomalous spaces, pieces of Trancik's lost spaces, buffer areas or transitional spaces of the city which actually try to accommodate itself to these infrastructures. We would find for example, **marginal voids**, boundary spaces linked to the limits and margins, which are uninhabited due to the proximity of two distinct natures that cannot cohabitated. Usually one of these natures has such a force that produces a discontinuity in the medium flowing through, generating marginal spaces as intermediate areas of adaptation to the environment.

They are spaces that exhibit anomalous limits, with a precise and concise limit against the infrastructure (the berm bordering the road, the railway line) while the other boundary is blurred against the adjacent nature (where is exactly the limit of influence of a train crossing a rural environment?). When our infrastructures are not strongly delimited or channeled it creates a porous boundary with the medium that is difficult to delimitate. We can say then, that the marginal voids have an abnormality in their limits.

They have the power to characterize this contact with the city but also to give continuity to the urban fabric, becoming real connection stripes between interventions in both directions: along the infrastructure line concatenating voids and perpendicular to it, from the infrastructure to the city, connecting margins that would otherwise be totally disconnected.

The small town of *La Rustica* in the Roman outskirts, was once divided by the railroad tracks that connect Rome to Naples. At the beginning it was just a simple separation (in a section of railway the presence of the train is very ephemeral as it takes just few seconds to run through it), with the arrival of high speed trains became a major split since the stretch of railway that runs through *La Rustica* was enclosed within a concrete box (Fig. 4, left) to protect the town from the noise (now the presence of the train is continuous: the train still run through it in few seconds but the concrete box is permanent). The separation was then so great that for the inhabitants of *La Rustica* is not conceived to get marry between people from opposite sides of the town. Trying to alleviate the separation, the cover of the large concrete box was turn into a different public spaces with different areas and activities, spaces that never were used by the population and are now abandoned (Fig. 4, right). The desolation produced by these spaces from the adjacent windows is so intense that the inhabitants first protested against the closure of the railway, but now are also protesting against the "surface" project that never solved anything spending uselessly money that could have been used in the improvement of other areas. If the split was already existing maybe a natural inaccessible space at least would had improved the views from the neighbors' windows.



Figure 4. High Speed Railway enclosure at La Rustica (Rome) and the abandoned spaces above it

On the other hand, we can find projects like the one for Gran Via of Barcelona, a huge program that made the high speed road go underground, redraw both margins as linear parks requalificating all the buildings facing these areas, reconnecting both banks and reinstating perpendicular connections to the linear infrastructure.

We would also find voids characterized by exclusion, by being left out of the planned areas. They are not outside the city but spaces that because of their urban position are out of the day-to-day life. They are leftovers voids which adapt to the functions that no other space around them want. They are **residual voids**.

Generally, the efforts made on infrastructure leave these voids "empty" of design, ignoring that they have the clue to solve locally the intersection of large systems. Here we can include all spaces under elevated roads or railways and the spaces under bridges, which rarely are projected together with the infrastructure and must be solved afterwards. We should highlight projects like the Urban Plaza | Media Garden in Milwaukee by LaDallman Office (Fig. 5, left) and the A8terna project under elevated highway A8 in Koog, a village near Amsterdam, by NL Architects (Fig. 5, center) working with these kind of spaces and archiving a clear regeneration on the areas. Sometime are pop-up events to attract attention on the attractive potentiality of these anomalous spaces, like Folly for a Flyover by Assemble (Fig. 5, right), under a London motorway flyover; but once the event is over the interstitial space turns back to the initial stage of abandonment.



Figure 5. Urban Plaza | Media Garden by LaDallman Office, A8terna by NL Architects and Folly for a Flyover by Assemble

We can also find islands-spaces. As Ballard anticipated in his book *Concrete Island* in 1973, we can find islands floating in the infrastructural rivers we navigate every day in our cities, spaces which are barely hidden. This residual spaces are due to the technical needs of infrastructures, and due to these needs remain isolated, disconnected and inaccessible. Some are difficult to locate; others are right under our sight as large roundabouts or abandoned knots in between our highways. Their boundaries are clearly definable due to the anomaly presented in their connection with their immediate environment. The project for *Nus de la Trinitat* in Barcelona designed by Batlle i Roig (Fig. 6) operating in one of this units of spaces, is the best reference on how to transform a self-referential space as a circular roundabout is, into an opportunity to supply the industrial surroundings with open space and sports facilities. The park models its topography into lentil shape inverting the centrality into an overlook, making visual connection with all the contiguous area. Despite being clearly perimetered by expressways, the space manages to link itself to the general green system that reaches the area and passes through, establishing an intimate dialogue with the environment close to its perimeter.



Figure 6. *Nus de la Trinitat* by Batlle i Roig Architects



Lastly, we find **forgotten spaces**, very obvious neglected areas in our cities but which, for different reasons, have been left out of the design of the urban public spaces (sometime they are not even considered as part of them) becoming shaded off, nasty spaces. They have a complex nature and the abnormality lies in the connotations that society has given them (social abnormalities). They are marginal static places, in opposition to the continuous flow of the contemporary infrastructural mobility, like parking lots, which despite being one of the public spaces we experience more in our everyday life (we just need to think how cars have modified our streets to become full parking areas) and because of the high profits they can produce, spaces therefore created with almost no investment, nor on their design or in their innovation. However, many recent projects have worked on them taking advantage of their great multifunctionality and visual impact. Although they are quite minor, recent projects support the ability to create original and versatile parking lots.

We must highlight Kayak Market in Koepenick design by Topotek 1 (one of the most published ones) where a market functions and a car park area alternate depending on an hour schedule, or a Car Park in Yvelines by Pascal Cribier, where he focuses on designing a very poetic and sculpturally paving that can be even left empty or hosting any kind of activity. Even though, if we don't want to revise its importance as a public space in our cities, we should at least care about its importance within an ecological and sustainable framework or as space unit that can give continuity to the system of green spaces.



Figure 7. Pascal Cribier's Parking Lot in Yvelines and Kayak Market in Koepenick by Topotek 1

## 2 THE INTERMEDIATE LANDSCAPE

Franco Farinelli states that space and place are irreducible and inseparable: "... the space has other meanings, implies the standard, which means that the same measure applies to all sites regardless of the context, that is, regardless of the nature of the place. This is the reason why they are irreducible: the place is the context and the portion of the earth's surface I can imagine with irreducible qualities to those of any other part of the earth; space is exactly the opposite, this is the kingdom of equivalence". This quote materializes and becomes really clear when we think about any infrastructure: a section of road, a section of an aqueduct, which are infinitely repeated along it. Only in some exceptional points it manages to merge with their surroundings, becoming a place [9].

It is important to understand and integrate these contemporary infrastructural urban voids linked between them to their immediate environment, where the separations they produced within the urban fabric may be mitigated by the anomalous spaces that are created simultaneously in their vicinity; strong character spaces which are often annulated by the great built masses that generate them. Actions to re-integrate these spaces are made largely afterwards, reestablishing new spatial patterns and meanings, avoiding to use the landscape project as a superficial practice to mitigate or embellish, but understanding the landscape as theme and project method that allows working with and from the contradictions of contemporary territories, taking in both the technical and engineering components as well as the urban scape's figures.

The landscape project can be the element that keeps together all the pieces as enunciate in the article "La scala intermedia per il progetto di paesaggio italiano" [11]. This scale does not understand about extension but links with the territory and nearby areas either these links are temporal, spatial, environmental or social. Thus, the projects operating on public space can be constituted as a network to enrich the local projects.

Many and various are the examples that have been studied, examples that unfortunately we don't have here space enough to talk about: reactivation of marginal spaces under roads in different countries and contexts (spatial and temporal) reconnecting the communication between two urban margins, the reuse of obsolete infrastructures as new tool for requalification, the reconfiguration of boundary spaces, the re-appropriation of lost and forgotten spaces, the reactivation of vacant spaces and so on; endless situations that once have been deeply analyzed will give us an abacus of units of anomalous spaces and possible tools for their reintegration.

As Sennett states in his article The powers of the Eye: "Yet in the ecology of most natural systems, the greatest biological activity occurs where different zones meet, as in a swamp or in a forest; species congregate at the boundaries where they interact with other species. To strengthen that sense of touch and contact, an urban design should equally focus on the edge as a scene of life. In practical terms, this means finding ways to use the dead space on the fragmented periphery.

It is in the ecology of natural systems, most biological activity occurs when different areas are, as in swamps and forests; species congregate at their boundaries where they interact with other species.

To reinforce this sense of contact, urban design is analogous to focus on the edge as a stage. In practice, this means finding mode to use the dead spaces of the fragmented periphery" [17].

### 3 ACTIONS TO INTEGRATE THE INFRASTRUCTURAL VOIDS IN THE URBAN IMAGINARY

Infrastructural voids are small spaces compared to the infrastructure they are generated from. They are determined by their presence but in the end belong and are defined by the local realities they face. Understanding correctly this local identity is essential to understand the limits and performance's space of this areas, in order to define their reconfiguration and reprogramming in a closer scale, and the connection to a network of public spaces and ecology in a larger scale linking them to the territory they belong to. It's also mandatory to understand that even if infrastructures belong to the territorial scale for being general systems, it is in the local scale where we can project their inclusion into the self-image of the city.

- The physical limits of this units of space are usually clearly definable due to the strong presence of the infrastructural opera. There is no doubt that the spaces under the elevated infrastructures of our cities do not have the project definition of the infrastructures themselves; they are often not even projected. Its boundaries are clearly identifiable but not its scope. So, we should not stop in these initial limits and understand their ability to bind different surrounding urban fragments and to reconnect the urban interruptions created. Being marginal areas where different natures meet, should then be for those natures to define their sphere of influence. A **redefinition** that will lead to a **reallocation** of uses and meanings.

- The necessity of having a program that can satisfy the needs of the surrounding urban environment is mandatory for these spaces in order to be accepted and included into the local daily life, following the dynamicity of the infrastructure that generates them. They need definable and stable programs that go against the abandonment of already marginal spaces. It is not intended to defend the systematic and indiscriminate occupation of all urban spaces. The possibility of resting our sight in a non-built space, a gap in the built continuity of our overdesign cities it is important to add the idea of the city in progress, with a continuity program and transformation over the time. We do defend instead to keep cared urban spaces to avoid marginality in the already marginal areas. It is essential for urban spaces to belong to the city and to the citizens, in both contexts whether they are empty or not. It is through a **reprogramming** action that we can encourage an **urban re appropriation**.



- Understanding the possibility of connecting public and natural spaces creating a large local network, which can even work together with territorial systems, means the linkage of different urban fragments, generating unity and continuity, anchoring local actions to the territory, to the general systems that crosses them and to the identity of a community. A **reconnection** that products a **reinterpretation** of the links to the territory.

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## STATUS PASSAGES: PROXIMITY AND CONTACT BETWEEN AGRO AND URBAN

**Aurora Perra**

*DICAAR, University of Cagliari (ITALY)*

*au.perra89@gmail.com*

### Abstract

Study of the territory regards the analysis of all these characters and phenomena that characterize it as a portion of recognizable landscape, in which you can read the relations between the states-objects that constitute it. These reports appear even more strong and of great interest when the portion of the territory under study is characterized by the contact between the agro and the urban. It will study the minute size, of the small centers of rural matrix of Sardinia. Contact between the fabrics allows you to explore the theme of the border, mediation element par excellence, the “between” the fabrics, practices, usages. Element that, for its ever-changing nature and susceptible to variation, has declinations at different scales and in different states; urban-rural, natural and artificial, inside-out, public-private, occupation-appropriation, etc. The border conquer a dimension, a thickness, a feature based on the components that define it or change it. It is the place of event monitoring, where we read more prominently the type of relationship between the constituent elements. It becomes interesting to define and interrogate the border as a space capable of relating to all the others, becoming the place of objectivity. In this sense, the agro space, becomes the coveted board par excellence, the place reflected the appropriateness, necessity, functioning, adaptability of man works on the environment. Space of interaction between human practices and the natural state, place of the first act of occupation of space. The occupation generates geometries, measure the land and, consequently, defines an act of confirmation, which follows its coverage through signs, practices, instruments of definition of a property. The result is the developmental dimension and ever-changing agricultural land, useful for reading the changes over time in the productive fabric. The changing nature, dimension, border variable thickness, allows to introduce the concept of change of state. With this term, it is said the interaction between the elements that identify a particular structure. Depending on the nature of those relationships (Man-made nature, natural, cultural, economic, productive), portions of land can change connotations, making a change of state. We refer to the liquid nature of the territory, as understood by Baumann, namely the environmental change, of structural change. The board, which receives the state change process is meant as a mirror of the man-land relationship. In it, they welcome incursion phenomena of factors, technical, management tools and organization of agro space; colonization of a territory from the consolidated rural matrix, re-organizations of the fabric portions according to today’s needs. You can query these steps and read such phenomena within a series of board types, to which it relates a first classification and taxonomy in which identify salient characters, recognizable and invariants of the constituent factors the framework of the board. This type of survey allows to analyse resources, quality of the areas of border throughout the years, puts questions about their morphology and variation, and also highlights the critical areas of possible intervention. It is therefore interesting to understand the contact’s theme, the development of environmental modification phenomena and the generation of a thickness, the edge, in which anthropogenic and natural dynamics contribute to the achievement of its balance.

**Keywords:** Border, change of state, urban-rural contact, urban-rural fabrics, border taxonomy

## 1 THE BORDER, COMPLEX SYSTEM. TRANSCALARITY AND ADAPTABILITY

The urban-rural interface and the generation of an border, of a settlement thickness is a fact of great importance in the perspective of re-reading of the margin contexts of the smaller towns of Sardinia, often damaged by today's occupation space mode, where you lose the significance of the place, decontextualizing them. The birth of a new border structure, highlights the concept of complexity of the system and self-organization who will stand at the base of its development. The complexity, deals with phenomena associated with the functioning of a system that evolves over time, as in this case the border; phenomena generated from the bottom up in which the architectural product can be reached with the transformation, mutation of material components, organizational and technical and by their mutual interconnection. They are phenomena due to local interactions between the system components (agricultural, urban); phenomena planned but also unpredictable. These phenomena, lay the foundation for the construction of a new system-settlement pattern, which entrusts its development and evolution to the uses, create an open system, supported by self-organization practices. Self-organization is defined as the principle that pushes a system far from equilibrium conditions to spontaneously explore new positions in space (technically it is a movement from one state to another, urban and rural/ agro). Configure it as the evolutionary principle that introduces the idea of cooperation and collaboration between individuals. The evolutionary growth of a system, depends precisely on its ability to absorb and return the emerging innovations, through a mutual and self-correcting process of adaptation. It creates a fact emerging, an episode, generated by ecological processes founded on the interactions between the states making up the board system. The study of these issues poses numerous questions concerning the how, these phenomena, react and adapt to their environment; in which state they belong and fit, and then, how it acts the environment on the system; what are the structures that regulate adaptation. And yet, what are the mechanisms of adaptation; what are the limits, the obstacles, that the system encounters in adapting to the environment; as they may be compared to the different processes of adaptation and the relative dynamics. At the base of the reflections about the genesis of the board there are two paradigms linked together - the transcalarity and adaptability - that always refer to the subject of the system complexity. This system has the ability to show as a living organism at all scales. Cells, tissues, organisms, the population, are the components with a certain degree of self-sufficiency and internal complexity, that aggregating itself, coming into contact, increase the interactions and therefore the potential of the system, but do not lose their individual characteristics. The conformational dynamics of the border, refer to the process by which the settlement usually comes out from its traditional limits to move to other settlement types and, in doing so, traveling a distance, creates a thickness reaching other parts of the territory. In performing this step, it generates a distance, of a different extent, and with implications for the different scales that, very often becomes ambit of passage not well defined. Born new thicknesses and new settlement borders, more or less functional. Referring to the comments of Bernardo Secchi, the border describes the change: the question of the change of the settlement and its evolution is related with the more generic of contemporary society. It is necessary therefore identify within a system, the resistant components, the hard core distinct from what is malleable and very often more vulnerable, because it modifiable in its properties, in its structure, in its functions, in relationships with others elements. The study of the borders, also means the analysis of the architecture as a modification, in which we can recognize intermediate areas, assembled to the hard parts, consolidated. In the borders, to the contact between the states, very often happens that concentrate the most fragile areas of diffusion and fragmentation, in which you lose the strength of the consolidated element. Their weakness is probably a consequence of their different spatial nature, a "spatial liquid" which is recognized as a different "phase" present at the borders of the settlement. Here, there are concentrated the contemporary urban expansion dynamics, where the fabric begins to crumble: "The expanding city is a liquid organism in constant transformation where margins and the borders are an integral part of the urban structure: they differ in relation to natural factors, the characters and the size scale, the administrative boundaries, to their legal status , customs and relations between the communities to which they belong"[1, p. 24]. The multiplicity of objects and the variety of situations that can be found within the fringe areas, including the borders, shows the wealth and project opportunities: At the border, there are those

landscapes that Levi-Strauss would call warm and Robert Smithson define entropic (...) These urban amnesia are not just waiting to be filled with things, but they are living spaces to be filled with meaning. There is no question of a non-city to be transformed into the city, but a parallel city with its own dynamics and structures that have yet to be understood"[2, pp. 132-133]. "The margins and the borders are the areas of proximity settlement and those arranged along a transport infrastructure or water. In geomorphological continuity of the territory, the margin and the border correspond to situations halfway between urbanized environments with different densities and settlement morphologies and different land uses and different landscape partitions. (...) More generally, the margin situations constitute residual spaces: they are the result of actions whose content, borders and limits have not taken account of what remained; they are numerous and their use always requires a wider reference framework"[3, p. 26].

### 1.1 The border. Contact between fabrics, adaptive technology and self-organisation

The theme of the border as a container of uses, forms, phenomena, buying interest in the reading of the contact dynamics between different urban and rural fabrics. The border conquest a dimension, a thickness, a feature based on the components that define or change it. It is the place of event monitoring, which reads more prominently the type of relationship between the constituent elements. The border dimension is very close to what Piero Zanini attributes to the confines: "The confine die and rise, moving, deletes and reappear unexpectedly. They mark the experience, the language, the dwelling space" [4, p. 1]. It becomes interesting to define and query the board as a space capable of dealing with all the others, becoming the place of objectivity. [5, p. XVII] In this sense, the agro space, becomes the setting board par excellence, the place reflected the appropriateness, necessity, functioning, adaptability of man on the environment works. Space of interaction between human practices and natural state, where the first act of occupation of space. The occupation generates geometry, measure the land and consequently, defines an act of confirmation, which follows its presidium through signs, practices, tools of definition of a property. The result is the developmental dimension and in continues mutation of the agro-urban territory, useful for reading the changes over time in the production fabric and settlement. This is a technical capacity which, together with morphological features, allow you to learn new habits, and today's needs. The analysis of the board begins its discovery in terms of construction and structure, from which it can read consequently properties, attributes. Explore its components, its size, the conformation of the states that constitute it, leads to the recognition of a series of episodes from the dynamics visible and legible, capable of identifying the "behaviour, attitudes" occupation of space. The reading of the board dynamics, takes place thanks to a diachronic approach, in order to understand the different phases of construction of the thickness, the layers, the overlapping dynamics, juxtaposition, creation, breakage of the elements that have generated and, in the course of the time, they have in some cases transformed the border. The urban-rural interface and the generation of a border, a settlement thickness is a fact of great importance in the perspective of re-reading the margin contexts of the smaller towns, often damaged by today's methods of space occupation, where you lose the meaning of places, of context. The theme of the border as a container of uses, techniques, forms, phenomena, buying interest in the reading of the contact dynamics between different urban and rural fabrics. You can identify the border phenomenologies, of the overrunning, where, through ecological processes will discover the nature of the conformation of a border. Within this article, I will try to describe a range of studio cases pertaining to a first classification of borders of the smaller towns of Sardinia with a strongly rural character, which is very strict the relationship with the context and with the agro productive proximity, to which it confers a minute dimension. These readings bring out the importance of the cultural contribution in the construction process, occupation, appropriation, modification and evolution of space, over time. It emerges the importance of land use, of the morphological, climatic aspects, the traditional practices of all those processes of long duration that confer recognition and quality to settlement spaces, urban and rural. These processes of construction and production of spaces move it on the line of adaptive technology; spaces that become equipped places and serving particular uses, pieces of specialized agro infiltrate it in the urban fabric, they are declined at the domestic dimension. The

board architectures, the deans of agro space are often based on the ephemeral nature and subsistence, the materials used are often recycled and follow strictly functional forms, related to the uses and climatic conditions. It is interesting to understand if you can spot a “taxonomy of borders”, investigate the dynamics of contact between the urban and agro fabrics, the result of certain rules and approaches to the site. The size of the border takes on different forms and meanings in relation to several factors: the interface with the masses and densities (urban and agro), the interface with the ground and its uses, the morphological factor and water, infrastructures. Takes on properties and characteristics such as porosity, it becomes a measure of space, place the full or the place between the full. It emerges, at different scales, the developmental dimension and constantly changing of the territory, useful for reading the changes over time in terms of morphology, ecologies. At the small scale, we read the relationships tessute through micro spheres of relationship, those of the borders, of the proximity between the states, areas sometimes consolidated and functioning, sometimes marked by weak uses, born from character infiltration and uses from one state to other. Infiltration which give rise to returns, identify adaptations and permanence and the place-resistant components. The text included in the sections or subsections must begin one line after the section or subsection title. Do not use hard tabs and limit the use of hard returns to one return at the end of a paragraph. Please, do not number manually the sections and subsections; the template will do it automatically.

## 2 STATE TRANSITIONS

The changing nature, the dimension and the border thickness, allows to introduce the concept of change of state. With this term, it is tell the interaction between the elements that identify a given structure. Depending on the nature of these relationships, (man-made nature, natural, cultural, economic, productive) portions of territory may change connotations, making a change of state. The border, which receives the state change process, is understood as a mirror of the man-territory relationship. In it, they welcome incursion phenomena of factors, technical, management tools and organization of agro space; colonization in a territory from the established rural matrix, re-organizations of the fabric portions according to today’s needs. The change of state implies a careful study of the mode of contact between the fabrics and the elements that characterize them, is the theme of environmental change, the observation of ecologies in terms of phenomena at different scales, from the territorial, to that of ‘assembly of small portions of tissue to the border scale. It is necessary to recognize the “habits”, the rules or changes, explore the measure and dimensions of the transformation of the rural landscape and contact with the urban. The change of state is a step process that can be described schematically as: a first step which reads an interface between consolidated fabrics, two states that come into contact feeding relations and settlement dynamics; happens then the introduction or adoption of factors from state to state (urban-agro), the interaction determines the acceptance or otherwise of infiltrators factors going forward with the reproduction of new model-user input or otherwise, leading to degeneration (clear situation in the contemporary transformation of the urban borders). You can query these steps and read the mutation or confirmation phenomena of agro-urban contact? There are strong characters, what kind of permanence and transformation? The study of the “board” phenomena, the contact between the tissues has as objective to try to identify the quality of valid episodes, dimension of the transformations that are the basis of the creation of new tissue processes, those of expansion or, on the contrary, regression of small towns and their margins, the weak areas, but also of consolidated and company districts fabrics, introducing the theme of habitat dispersed in agro. You have the opportunity to identify rules and best practices of appropriation-occupation of spaces and often the opportunity to re-activate them. The interest in the agro-urban contact dynamics, includes reasonings on the thickness of the border that include the issue of private and the public space. The phenomena that we study, refer to the relations between the centrality of village, the agro of proximity and, not least, the episodes of the business districts, the reform or newly developed, by binding to the possibility that they offer in terms of system. There is in fact, a border between settlement and agro of proximity but, there are also the “borders” created by the spread networks of micro-construction agricultural-productive.

### 3 PHENOMENOLOGY BOARD. TAXONOMY OF THE BORDER VARIANTS

In every landscape they are recognized emerging and recurrent elements that characterize the local environment. These emergencies have been defined by Turri iconemi: that is, the elementary parts of the landscape that correspond to recurring forms of anthropic or natural origin. The identification, reading the signs of the territory, of their layers, their genesis based on environmental mutations, it becomes necessary stage in the process of knowledge of the territory and the project. Resistant components are those that allow the reading of the dynamics inherent construction of places and spaces. And consequently the borders reading. These are built from the union between ecological, morphological, topographical, cultural factors, which then determine the properties and attributes of the border. The morphological reading of the board, leading to a first distinction between continuous and discontinuous shapes, namely a border in which the interface between the states appears sharply confined on the line from its dense and compact shapes that define and limit interface between the parties. The discontinuous border, however, is one where topographical factors often bring out the the question of adaptation to the topography of the buildings, to the contour lines, placing the theme of building on the slope or along the ridge and the interface built with the ground, with its occupation and redefinition-domestication.

The continuity and the discontinuity of the edge in established contexts highlights several gradients in permeability, transition, porosity, relationships and relationships always system and highly structured. Between the borders of the continuous character, may include the categories of analysis and morphological interpretation that characterizes them as "hermetic borders", "leading borders, of in-thickening". In the first case, the interface between agro and urban fabrics highly dense, reduces the border of the micro capillary percolation line between the states, perfectly balanced between them that often crop, despite their density, relationships and spatial continuity, this happens especially in the public space that infiltrates seamlessly from urban to agro. They present these characters San Vito and San Vero Milis, both centers of specializing cultivation in citrus grove, where the strength of the urban signs are reflected in the agro. The thickness walls of the court houses repeats itself and declines, following the same orientation with windbreak walls that protect the vegetables density. In these cases the board is a well defined structure, clear, continuous.

The borders "of in-thickening", Busachi and Villasalto, are structures in which the interface between the urban and the other state is mediated through the domestication of soil, through its occupation and reorganization, creating an instrumental thickness, service, which mediates the states. It is building an agro domestic interface. Among the discontinuous borders, you can recognize some characters that describe the construction of the board as "infiltrating", "of Interface". Infiltrating border, Villacidro and Ruinas, it refers to a permeable structure and highly susceptible to adaptations-transformations of uses and land occupation. In this, the border is defined as infiltrating, because the agro-uncultivated state permeates in a capillary manner inside the urban, creating spatial hierarchies and complexity often quality. In both cases, plays an exclusive role the relationship and adaptation to the topography that defines the infiltration gradient between the states. The interface borders are episodes in which the processes of transformation and configuration of the board are, at times of long duration sometimes sudden, relative to a reduced time frame, develop thanks to the presence of a trigger factor, generator of transformations, namely the interface with the infrastructure or element of water.

This situation is evident in the case studies of Siliqua and Santa Giusta. In the first case, the border, as always, has undergone changes and transformations starting from the flu and the generative guidelines of the course of the Cixerri river, that has led to the conformation of the settlement on its morphologies. By the construction of the new course of the river, this humid area of proximity to the urban, it becomes in agro fabric, born new vegetable gardens, new small production space of domestic scale that create a green cord from urban to the new course of Cixerri. Also in the case of Santa Giusta, the term of comparison and of the urban interface is the element of water. In this case, reference is made to the construction of a new portion of productive fabric, the construction of a new border-interface, born of a reclamation project of the lagoon area, with a redesign of the water lines, which have created a buffer between water and settlement. It is a new fabric of agro plots;



episode of great national importance, as a successful experiment of urban gardens. It then builds a settlement thickness, born from the geometric redesign of a mesh, a specific infrastructure design, water lines and roads. It comes another spatial dimension, new fabrics interface that lead to changes in land use, construction of a new space, new occupations. Is interesting in this case, see how the minimum technology has allowed the creation of a new reality agro, a perfect and perfectly balanced interface with the urban. In this first grouping, they recognize different variations to the construction of the border-contact: sometimes the contact-thickness is reduced to the line, assume a "impermeable" character and we read a strong proximity between urban density and agro specialized (San Vito-San-Vero Milis); sometimes the border creates a thickness, a contact bag between urban and reliefs, equipped thickness where, through outbuildings and agro "domestic" deals and equips part of the slope (Busachi-Villasalto). It still happens that the border becomes infiltrating, creating from uncultivated areas, bands of urban gardens from the private and semi-private character that structure the backs of the houses and create a new front, (Villacidro-Ruinas). In other cases, it is possible to identify borders of the interface constructed and developed starting from the relationship with infrastructure lines or water (Siliqua), in which are read influences in the forms and expansive lines that orient fabrics development or the generation of new (Santa Giusta).

It is the reading of the factors and processes of borders construction in the course of time that brings out the possibility-necessity of studying the dynamics of contact between the fabrics-states, with the aim of drawing quality guidelines to be reinterpreted in the project key in urban and agro border contexts. The locals resistant components, are therefore hinges on which is based the ecological process, a practice of transformation but also conservation, necessary and inevitable.

#### 4 CONCLUSIONS

The board as a product of the admixture of the elements of the states urban and rural\_agro, allows to analyse it, interpret it and design it as a complex system, a field of mediation. Place where you read the slow evolution dynamics linked to consolidated spheres and of transformation linked to contemporary mutation processes. In some cases, it prevails continuity with the practices and customs of tradition, the result is a border from easy reading, from which to extract the rules, good practices and guidelines to be reinterpreted in contemporary planning perspective. It is important to understand the structure of each board based on the reference context, morphology, soil uses and modes of contact between the constituent states; just so you can have available a method, tools and techniques to act in the board environments. It is possible, then, restore a dimension, a thickness of a field now relegated to the dispersion, the fragmentation and loss of meaning. From there, the importance of identifying of a borders taxonomy, an analysis of its mutations, of the changes in state and contact dynamics.

The study of the "board" phenomena, the contact between tissues, has as objective to try to identify the quality of valid episodes, the dimension of the changes that underlying the processes of expansion or, on the contrary, of regression of small towns and their margins, the weak areas. You have the opportunity to identify rules and best practices of appropriation-occupation of spaces and often the opportunity to re-activate them.

CONTINUOUS BORDER

DISCONTINUOUS BORDER

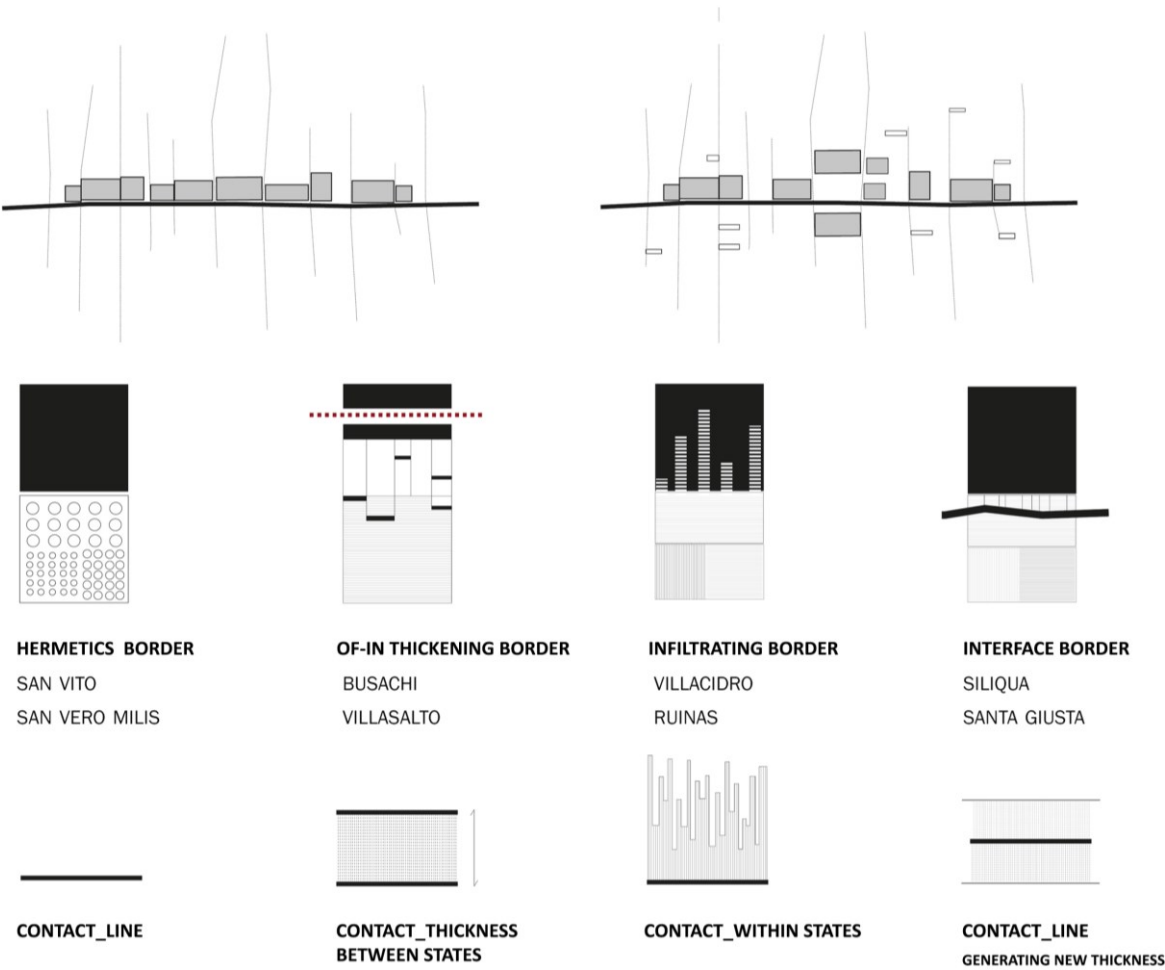


Figure 1. Border classification.

CHANGE OF STATE - INFILTRATION  
urban-rural

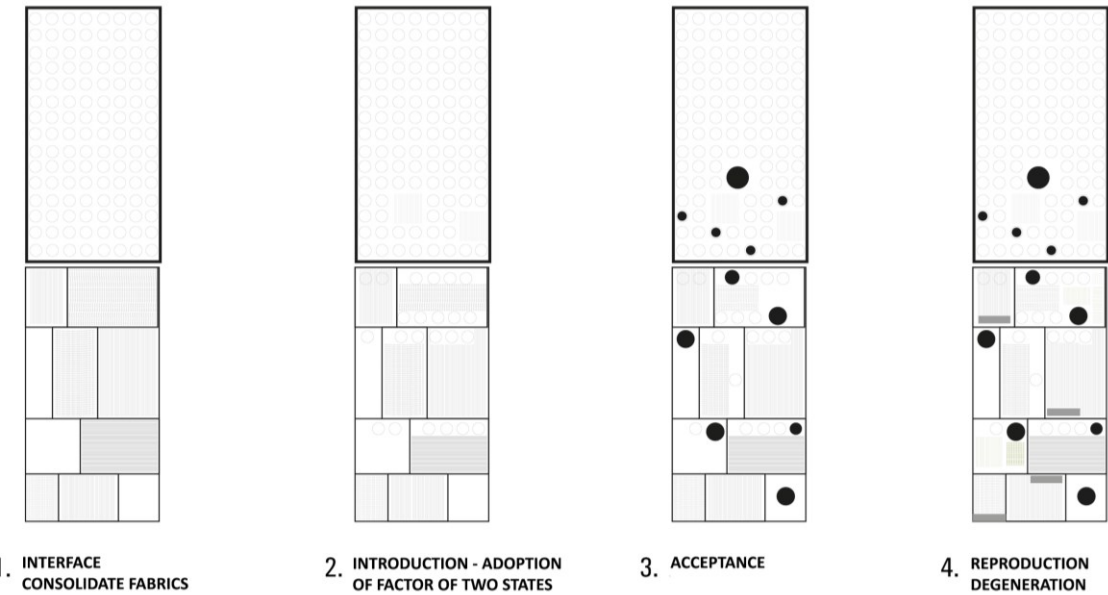


Figure 2. Diagram change of state.





Figure 3. Border Taxonomy. In order: a. San Vito; b. San Vero Milis; c. Villacidro; d. Ruinas; e. Busachi; f. Villasalto; g. Siliqua; h. Santa Giusta

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## BETWEEN THE VISUAL AND THE TACTILE

Alexandra Vişan

*"Ion Mincu" University of Architecture and Urbanism (ROMANIA)*

*alexandra.visan@yahoo.com*

### **Abstract**

The aim of this paper is to analyse the permeability that characterizes the boundary between visual and tactile in architecture. Our focus is to explore the common ground between the public and the personal scale. Therefore, we propose researching the way in which the tactile aspects overlap with the visual ones in the built environment.

An architectural object can be analysed from two different perspectives: either as a whole, from a visual point of view, or as a collection of precious details, from a tactile point of view. Even though the first case refers mostly to the public scale and the second one refers to the personal/ intimate scale, in neither of them is it possible to completely isolate the visual from the tactile and vice-versa.

Perceiving architecture is usually influenced by the visual field, however one has to consider that the architectural space possesses material properties that involve our entire body. Architectural images can express tactile sensations and even when the subject is not really able to touch an object, he can relate to the image through the properties of the materials he is already familiar with.

The architect is the master that controls the way in which the architectural image communicates with the senses of the inhabitants of the city. By creating the object he reveals not only visual aspects, but also a variety of tactile sensations that can be decoded via neural mechanisms. Tangible characteristics play an important part in the art of building, having an effect on the way the built environment is decoded and afterwards experienced.

Over time the image of the architectural space has changed, and with it the way in which it is conceived and built have changed as well, due to the evolution of construction materials and techniques. Critics argue that the art of building is becoming more visual and less tactile, losing some of its most important features. Nowadays it seems that we live in a superficial world of images but the architectural space as a whole can be understood as a collection of material fragments that imply a variety of sensations that affect not only the way we experience buildings, but the way we respond to the environment.

As we approach a building, we pass from the visual scale to the tactile one, but we can't ignore what we have already perceived. We understand the object gradually, accumulating sensations that help build the architectural experience. The tactile aspects are first analysed through our eyes and, after this, through our skin. Starting from the conclusions of Edward T. Hall's studies on visual and tactile spaces and distances, we propose an analysis of the boundary and overlaps between what we perceive through our eyes and through our skin. For this purpose we will explore the difference between the visual, tactile-visual and tactile.

Therefore this paper proposes a new interpretation of the boundary between visibility and tactility. We ask ourselves at what point does an architectural image becomes a tangible one and when is our skin able to interact with its material characteristics?

**Keywords:** visual, tactile, boundary, distance.

## 1 INTRODUCTION

We propose a research in the field of architecture regarding the properties that define the boundary between the tactile and visual aspects characterizing the surfaces of the built environment. Our aim is to analyse the architectural space both from a tactile and visual perspective, exploring different aspects of the personal/intimate and social/public space.

Over time the architectural space has been changing not only from a visual and material point of view, but as a process as well. Many critics argue that the built environment is predominant visual, losing some of its most important tangible features. As pointed out by Juhani Pallasmaa: *architecture has turned into an art form of instant visual image*, even though, as the same author argues *every significant experience of architecture is multi-sensory* [1, p. 78]. In our opinion a proper interpretation of the architectural space as a whole has to start with a deep understanding of the material features of the fragments that compose it. Neglecting this important aspect can lead to a superficial understanding of the architectural space.

This paper proposes a new interpretation of the boundary between visuality and tactility. Although many factors influence the perception of the architectural space, this study will focus only on tactile and visual aspects. From our point of view, the visual overlaps the tactile generating three possible spaces: a visual, a tactile-visual and a tactile one. Each of these spaces possesses its own scale that can generate a different interpretation of the built surfaces and a different approach. In our opinion these three categories of spaces carrying tactile and visual characteristics imply the existence of two different boundaries that separate them.

## 2 METHODOLOGY

The type of research used in this study is the qualitative one, based on the interpretation of bibliographical sources concerning architecture and psychology. Starting from the concepts introduced in the 60' by the anthropologist Edward T. Hall regarding the classification of spaces and distances, we shall be investigating the delimitation/demarcation between the visual and the tactile. Even though there are many researchers as Jan Gehl and Bryan Lawson that have been developing the study of space and distances introduced by Hall, they have focussed mainly on the relationship between individuals. Our aim is to study the relationship between individuals and the architectural space, both from a visual and tactile point of view. Therefore, we will highlight aspects that concern: scales, distances, visuality, tactility and the boundaries that separates them.

## 3 THE VISUAL AND THE TACTILE SCALES

Previously published studies in the fields of architecture and psychology mainly emphasize the dominance of the visual aspects, associating visuality with a certain distance and tactility with nearness. As Kenneth Frampton points out, our body has the capacity *to read the environment in terms other than those of sight alone* [2, p. 28]. We perceive the architectural space gradually passing from a visual to a tangible scale. A normal perception of the architectural space includes both of them; however we cannot keep wondering if there is a clear delimitation/demarcation between what can be perceived through our visual receptors and through our tactile receptors. From our point of view the visual scale overlaps the tactile one and vice-versa.

### 3.1 Scale

Scale in architecture refers to different aspects, from architectural drawings to the full perception of the architectural space. Scale is being *measured by the eye, ear, nose, skin, tongue, skeleton and muscle* [3, p. 78]. Therefore scale is not related only to visual aspects but also to a variety of stimuli that we perceive with our entire body. The Greek mathematician Nikos Salingaros believes that: *Human beings connect to their environment on a number of different scales, and the connection is strongest when the environment is visually coherent* [4, p. 96].

The British architect and researcher Bryan Lawson, draws attention in his book *The Language of space* to the interpretation of the concept of scale in architecture. He believes that the scale of a building



does not refer to the scale of an architectural drawing. In his opinion scale *means the effect the building has on us in terms of relative rather than absolute size* [5, p. 46], representing *one of the most fundamental components of the language of space* [6, p. 48]. Therefore, it results that each architectural space generates both a visual and tactile scale addressed to its users.

From small to large, scale can influence us in different ways. As argued by the Danish architect Jan Gehl in his book *Cities for People: small in scale means exciting, intense and "warm" cities*, while large scale refers to *impersonal, formal and cool* [7, p. 53]. In our opinion, small in scale reflects the tactile space while large in scale reflects the visual one.

Another interesting point of view regarding scales in architecture belongs to the French landscape architect Bernard Lassus who argues that there is a *distinction between tactile scale and visual scale, that is between a scale where is impossible to confront the visual information with physical presence, and another where the phenomena are only visual* [8, p. 66]. We consider that between the tactile and the visual scale, there is an in-between scale that involves both tactile and visual aspects.

In our opinion, the most important stimuli perceived in the built environment are the visual and tactile. Therefore, we propose an interpretation of the most important scales in architecture, having as hypothesis the fact that *"liking" a building depend on establishing visual and tactile connections with it* [9, p. 101].

### 3.2 Distances

Analyzers enable us to perceive the different scales of architecture; however, depending on distances we might be obliged to rely only on some of them. Edward T. Hall classified receptors into distant and immediate. He also proposed four types of distances, each of them divided into close and far phase. These categories refer to the distances between people. We propose an interpretation of these concepts, bringing to the forefront distances between people and surfaces that define the architectural space (distances between people and buildings).

The first two types of distances proposed by Hall imply both touch as well as sight. The difference is that in the intimate phase the objects are really close (less than 45 centimetres) and this can generate distortions regarding the visual field. We can also register the temperature of the building's materials and we are able to touch the surfaces without much effort. In the case of personal distance, between (45 and 120 cm) there are no visual distortions, however *The three-dimensional quality of object is particularly pronounced... Surface textures are also very prominent and are clearly differentiated from each other* [10, pp. 120-121]. It results that the intimate and personal distances refer to a space where the tactile aspects dominate the visual ones, without excluding them.

The other two distances, the social (between 120 – 370 cm) and the public (above 370 cm), involve the existence of a wider space between the viewer and the perceived architectural object or surface. In the case of social distance, as presented by Hall, it seems that we are allowed to observe general characteristics; however some fine details might be lost. In the case of the public space, we are situated *outside the circle of involvement* [11, p. 123]. As Hall points out, plenty of details disappear because of distance. In the case of social and public distances we might assume that the visual dominates the tactile, even though in the public phase we might perceive some tactile characteristics through sight.

Another theory that continues some of the principles introduced by Hall, belongs to Jan Gehl. Gehl argues in his book *Cities for People* that *contact between building and street is possible from the lowest five floors. Contact with the city quickly dissipates above the fifth floor* [12]. The Danish architect draws attention to the fact that *only the ground floors can offer us interest and intensity. If ground floor façades are rich in variation and detail, our city walks will be equally rich in experience* [12, p. 41]. Therefore it is clear that distance can influence our architectural experience, enabling us to connect to a different scale of the built environment. Jan Gehl considers that we might associate *short distances with strong impressions and great distances to many impressions* [13, p. 46].

An interesting point of view concerning distances belongs to the researchers J.E. Cutting and P.M.

Vishton who argue that *the layout around a moving perceiver can be divided into three circular, egocentric regions that grade into one another* [14, p. 100]. They define three types of spaces: personal space (2m), action space (30 m) and vista space (beyond 30 m). They also assume the fact that each of them is *perceived by means of different combinations of different sources of information* [15, p. 109].

In our opinion the distances listed above allow certain types of stimuli to be perceived through our analyzers, experiencing different scales. Therefore taking all this aspects into account we will try in the next part to explore the common ground between the visual and the tactile scale.

### 3.3 The Visual

The visual scale refers to information that has been perceived through sight. Our eyes are classified as distance receptors, and even though the tangible component plays a critical part, *architecture is usually understood as a visual syntax* [16, p. 81].

The distance that separates us from the perceived object can emphasize a variety of features belonging to the architectural surfaces. Starting from the classification proposed by the anthropologist E.T. Hall, we might consider that the visual scale refers to three of the distances: public, social and personal, due to the fact that when we are dealing with intimate distance we register visual distortion. As Hall points out *the visual field is made up of constantly shifting light patterns— recorded by the retina—which man uses to construct his visual world* [17, p. 66]. However, the visual field is built with material surfaces, and almost everything that is perceived through sight might be analyzed through touch as well.

It is our point of view the visual scale refers to the detection of contours and volumes and ends with the perception of colours and surfaces' characteristics. Fig.1. We approach the building and we register more and more information. As pointed out by Jan Gehl: *In communication between people there are very few changes in the range between 10 and 100 meters (11 and 110 yards), while at short distances, the nature of contact changes dramatically almost centimetre by centimetre (inch by inch)* [18, p. 47]. Starting from this, we might say that every centimetre that separates us from the architectural surfaces offers us a different perspective of the same space.

If we refer to the classification made by Cutting and Vishton the visual scale is related to all three categories of spaces *personal space (2m), action space (30 m) and vista space (beyond 30 m)*. Only when dealing with the personal space is it possible to directly touch the architectural surfaces; however, tactile properties are perceived through sight as well as through touch. Fig. 2.



Figure 1. The Visual: Street in Bath, A.Vişan, 2015.

Figure 2. The Tactile: Wall in Bath, A.Vişan, 2015.

### 3.4 The Tactile

Touch refers to a closer relationship between the user and the building. In the vast majority of cases a direct contact is possible. E.T. Hall speaks of *immediate receptors*—those used to examine the world close up—the world of touch, the sensations we receive from the skin, membranes, and muscles [19, p. 41]. He argues that the skin is the chief organ of touch and is also sensitive to heat gain and loss... skin is both an immediate and a distance receptor [20, p. 42]. This means that the tactile does not imply only the small scale but the large scale as well.

Referring to the classifications made by Hall we might say that touch is related to the intimate and personal distance, and only in some cases to social distance. On the other hand, if we take into consideration Cutting and Vishton's perspective, we cannot extend the tactile space beyond the action space (30m), due to the fact that beyond 25 meters it is difficult to perceive any details. The landscape architect Bernard Lassus argues that *the tactile scale is linked to everyday life by a direct encounter with things* [21, p. 66].

To conclude, the tactile space might be associated with the short distances that allow us to perceive through our receptors any type of tactile information such as: soft/ hard, fine/ rough, warm/ cold, wet/dry.

### 3.5 The In-Between Scale

There are many characteristics that can be decoded through touch or through sight, however in many cases it is almost impossible to dissociate the tactile from the visual and vice-versa. We must take into account that: *All the senses, including vision, are extensions of the sense of touch: the senses are specializations of the skin, and all sensory experiences are related to tactility* [22, p. 78]. Therefore, all our experiences are based on the sense of touch, even when we perceive the built environment from 3,70 to 25 metres.

As noted before, touch connects us with the small scale of a building, while sight connects us with the large scale. Nevertheless, we believe that it is almost impossible to define where the limit/boundary between small and large or between tactile and visual is situated. This is due to the fact that each of us perceives the built environment in a subjective way, and our receptors differ in their degree of sensitivity.

The tactile overlaps with the visual and vice-versa, because as Pallasmaa points out *The distant and the near are experienced with the same intensity, and they merge into one coherent experience* [23, p.42]. Our eyes, skin and muscles collaborate to generate an architectural experience that can be decoded from a visual and tactile point of view. Bernard Lassus argues that the tactile scale refers to *the confrontation of imprecise information, transmitted by the eye* [24, p. 66]. Our sense of sight and touch are continuously interrelated, and in the vast majority of cases it is impossible to say where the visual ends and the tactile starts, due to the fact that *touch and visual spatial experiences are so interwoven that the two cannot be separated* [25, p. 60]. From our point of view there is a scale situated between the tactile and the visual that involves both of them because it refers to a space that is at the same time both visual and tactile. Fig.3.

## 4 THE BOUNDARY/IES

In the previous sections of this paper, we have argued that an architectural experience involving sight and touch refers mostly to three possible types of scales: visual, tactile-visual and tactile. As previously shown, scales depend on distances and on the sensitivity of our receptors.

In this context, we consider that it is improper to talk of a single boundary between the visual and the tactile, in respect that a correct interpretation of the boundaries between tactile and visual should regard two different boundaries.

The first boundary refers to a clear separation between visual and tactile-visual. In this case the information perceived through sight can be decoded by our brain only as visual stimuli, excluding any possible tactile interpretations. Fig.4. It implies the existence of a large distance, more than five

storeys (as the Danish architect Jan Gehl was arguing). In this case we observe only contours, shapes and volumes, and we are not able to distinguish what are the material properties of the perceived surfaces.

The second type of boundary represents the line between the tactile-visual and the tactile, or better said it separates the in-between space from the one characterized by tactility and lack of visibility. Fig.4. When referring to the tactile-visual scale we perceive tactile properties through our eyes, even though we are not able to touch. This is the result of our neural mechanism, because *when we view an architectural material, for instance, we know that the tactile areas of the somato-sensory cortex are also called into play. In other words, in an act of simulation we at the same time simulate the touch of the surface with our hands* [26, p. 28]. This boundary differentiates the world of direct touch from the world of indirect touch that can be perceived through sight and relates to our past experiences that remind us of a previous direct connection.



Figure 3. The tactile-visual: Bath, A.Vişan, 2015.

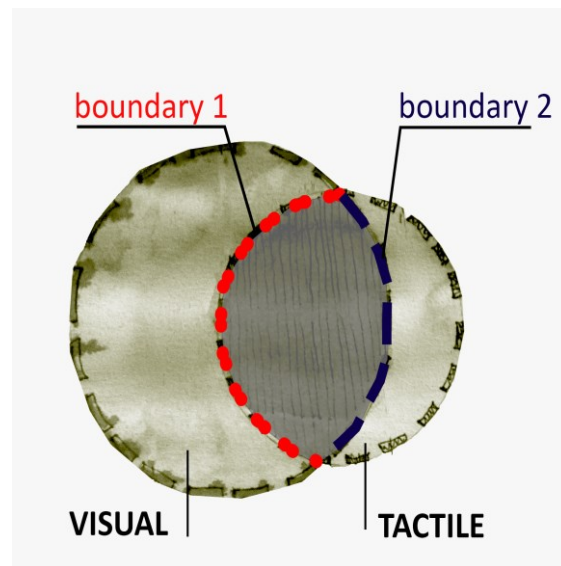


Figure 4. The boundaries between the tactile and the visual, A.Vişan, 2015.

## 5 CONCLUSIONS

The architect is the one who decides which are the boundaries that define the architectural space and at what scale does the built environment relate to its users. The effect of the building translated as scale represents a vital characteristic of a built space. The perception of the architectural space is influenced by distance that enables us to connect to each space and its different categories of scales. We experience the city in many ways due to the *connection between distance, intensity, closeness and warmth* [27, p. 53].

From our point of view our relationship with architecture can be interpreted mainly from a tactile-visual perspective. Often it is impossible to separate the tactile from the visual and vice-versa. Therefore experiencing architecture refers to a scale that is situated between the visual and the tactile. However, we have to take into account that there is no unique boundary between the world of sight and the world of touch. The existence of the tactile and the visual spaces implies three different scales: the visual, the tactile-visual and the tactile scale. Each of them offers us a certain perception of the architectural space and emphasizes the presence of two limits/boundaries that separate the visual from the tactile-visual and the tactile-visual from the tactile. The first refers to a more intense and profound relationship with tactility, while the second one refers to a more superficial contact, determined by visibility.

To conclude, we consider that the boundary between visibility and tactility in architecture is represented by the overlapping space between the individual limits of the visual and the tactile.

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## ON PERMEABILITY AND SPATIAL CONTINUITY IN URBAN FABRICS

**Păcescu Alexandra**

*"Ion Mincu" University of Architecture and Urbanism (ROMANIA)*

*alexpacescu@yahoo.com*

### Abstract

This presentation starts from the idea that permeability (porosity) in urban fabric is a mark of specificity, one of the most important traits that define the character of the place. It is in these intermediary spaces that a great part of the communal life and activities take place, a sometimes neglected but very important part of the urban public space. A city is, among many other things, a system of connected focal points. The more connected they are, the more interesting the city becomes, not only from an architectural point of view, but from an "experiential" stand point. These links are of a linear nature (pedestrian itineraries) or of a surface nature (large abandoned/discontinued areas), where the focal points are dispersed and afford for cross-connections.

The present study focuses on the porosity of the boundaries in urban fabric, mostly of historical nature but not exclusively. To exemplify this, we will be considering urban itineraries, as the roads more travelled in a city and an incentive for people to discover the more "hidden" traits of the built texture. In order for an itinerary to arise, we need a starting point and a finishing one, along with several focal points on the course, to keep the passage interesting. There is a main trajectory for the users and several divergent options. The goal of the study is to focus on the latter. It is from the gradual discovery of the secondary spaces that the interest in a certain city area arises. This is directly linked to the porosity of the space, which affords for interesting spaces that are beyond the main trajectory, as secondary pathways that branch out from the main one, permeable crossings (thoroughfares, gangways and backyards) or permeable façades. The idea of a façade fostering urban life comes from Christopher Alexander and his thought that "The life of a public square forms naturally around its edge. If the edge fails, then the space never becomes lively" (A Pattern Language, p. 600). We intend to explore if this statement, formulated in 1977, can still find its way into design today. This paper is an exploration of the permeable edge, of the public life of narrow streets, of life across the gangways and of the public space behind the façade, as an extension of the public life of the street.

The present work goes along these lines, but emphasizing the "permeability" of the architectural fabric in different types and typologies of space. Older, medieval type fabrics, with narrow, deep plots, filter transition between different degrees of publicness, through multiple gangway-type intermediary spaces that you discover gradually as you walk by. Some later, XIXth or even beginning of the XXth century fabrics display a more fragmented type of space, with alternate built and unbuilt fronts and a lower built/ unbuilt ratio, highly diminishing the element of surprise, but offering more space to be filled with green areas or activities. In order for this principle of gradual discovery to work, it needs to be applied on a human scale. Thus contemporary design, although nowadays more caught in "bolder" statements, needs to consider the small scale concept of the "edge", as the real attractor for human activities.

**Keywords:** porosity, fabric, continuity, edge, façade, public.



## 1 INTRODUCTION

The city is a porous fabric, it absorbs life and fosters it. Sometimes, if the cards are dealt right, meaning good planning to achieve “friendliness”, it ignites processes that are linked to human needs on a deeper level than basic daily fulfilment. It ignites involvement and appropriation, spontaneous responses that imply display of well-being and “joie de vivre”. The city does not create them directly, but facilitates their happening and shelters them.

It is the thesis of the present article that it is the permeability of the urban fabric that constitutes one of the main marks of specificity. It defines the character of a place and makes it memorable, because the more permeable it is, the more activity it generates. This is what constitutes “life between buildings”, as Jan Gehl puts it. In his book bearing the fore-mentioned title, he states that “life in buildings and between buildings seems in nearly all situations to rank as more essential and more relevant than the spaces and buildings themselves” [1].

Architecture is linked to Man. This is an obvious statement, since buildings are tailored according to the human scale and created to shelter him. Still, the space inbetween is more often than not alien to it, unfriendly to people since it lacks scale and a constant referral to humans. In order for it to become an attractor for human activity, it needs firstly to address human scale, secondly to consider the traits and limitations of human senses, which is in a way still a matter of scale, and thirdly, to consider a basic psychological dimension, and beyond that, a “phenomenology of architecture” that becomes a quest for “meaning” in the case of Norberg-Schultz.

Porosity implies transition from one type of space to another and this transition involves the edge. The present study explores the edges, as the real attractors for human activities, trying to prove that neglected margins are one of the main reasons why contemporary architecture is nowadays often oblivious of its users and alien to city dwellers. The margin is neglected both on the inside and on the outside (the outside being the main concern here), therefore creating barriers instead of bridges.

## 2 URBAN FABRIC – A POROUS TEXTURE

Use as many sections and subsections as you need (e.g. Introduction, Methodology, Results, Conclusions, etc.) and end the paper with the list of references.

The layers in the city hide many surprises. A city is a texture dotted with “objects” which are interconnected. These objects are of an architectural nature (representative) or activity nodes (where the public character is of importance and not the building itself. Pierre von Meiss speaks of “fabric” vs. “objects”, saying that “objects concentrate visual attention, they stand out against a background” [2, p. 93]. This fabric is, in fact, texture, as a collection of elements tightly woven together as to be perceived as a whole, having a common denominator of scale and physical similarities: materials, fenestration etc.

Medieval towns are characterised by dense textures, labyrinths that lead to unexpected surprises, hence the perpetual attraction that defies time. 19th or even beginning of the 20th century display a more fragmented texture, that is maybe less surprising but still of a homogenous nature. The gaps are wider, but they can be filled with activity. Modern towns are still textures, but the elements grow further apart, the void becomes predominant and hence the texture loses cohesion. This is not a formal lack of cohesion, on the contrary. The design is homogenous, machine-like even, as being drafted as a serial process, inherited from our Modern prominent figures. What changes is the scale, becoming one that people can no longer relate to. Plan Voisin is the most extreme kind of textures, perfect in its shape, devoid of the capacity to be appropriated.

What matters here are not the objects, but the voids. They are perceived as pierced through the texture of the city and are subject to hierarchy. The city is a network of interconnected points, but these points are not necessarily buildings. Museums, cultural hubs, public buildings in general are urban attractors, but they become cut off from the city were it not for the public square filled with

people in front. So, in fact, it is this negative space that gets connected to form a network and not the buildings themselves. This is the place for the real public life of a city and this is its mark of its success or failure. The more connected these points are, the more interesting the “experience” of the city will be.

The transition from the void to the positive architecture is achieved by degrees of publicness/ privacy. The more layers in between, the more attractive the space will be. Gradation has two opposable traits: one resemblance and one difference without a hierarchy [3, p. 44]. That means thresholds exist, you can feel them, but they only enhance the passage, not obstruct it.

So porosity of the edge is what leads to public life. Christopher Alexander emphasized the importance of the edge in his book *A Pattern Language* in 1977, by stating that “the life of a public square forms naturally around its edge. If the edge fails, then the space never becomes lively” [4, p.184]. This is, in fact, the phrase that inspired the present study, pointing out man’s natural attraction towards limits, in this case of an architectural nature.

Let us speak now of ways the “nodes” are linked together. This can be a linear link, as the case of pedestrian itineraries in the city or the connection can take a surface nature, the case of large abandoned areas that are being refurbished and invested with new uses, made up of inter-connected objects scattered about a vast territory, as pointed out in a previous study [5, p. 600].

In the case of pedestrian itineraries, we need a starting point and a finishing point, along with other several attractors on the way. This constitutes the main trajectory, but apart from it, there are several divergent options. The present study is about these divergent options – secondary paths. Their attraction depends on the capacity of the fabric to absorb you in, in at least two directions (“Fig. 1”). Firstly, through crossings to the back fronts [1, p. 29], thoroughfares and gangways, to backyards that sustain public life, to façades behind façades. The built front in the back is important to sustain public life, because it affords for more quiet types of activities, such as watching a movie projected on a blank wall or finding a hidden bookstore or cafe. Secondly, the porosity of the façade (2) needs to pull you in and get you interested on what happens inside, for the mutual benefit of the street and of the public space inside that is thus not cut off from the city.

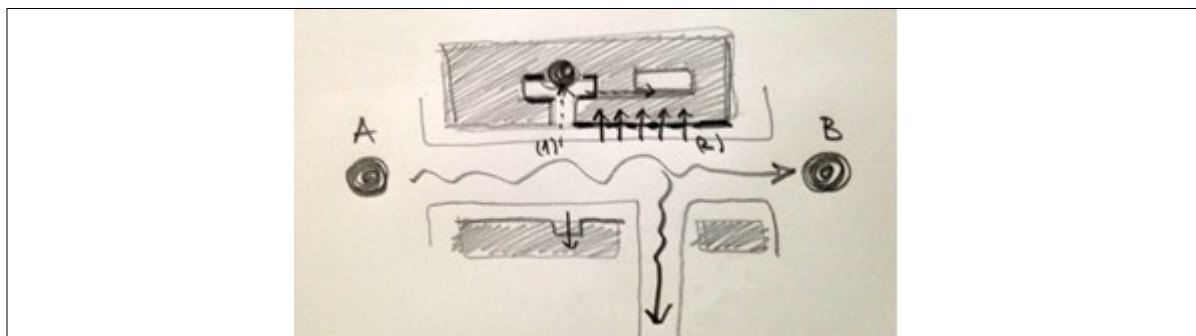


Figure 1. Scheme of porous fabric in pedestrian itineraries: back fronts/ permeable façades

Let’s take the case of the surface link. We have several “objects” of interest spread along a large urban area. Let’s assume they are filled with public interesting activities and there is a reason to be there, in the building. But the space in between is not neutral and can enhance, given the chance, the attractivity of the individual objects, enhancing their connection. It is better if what happens in the buildings attracts the same kind of people, involved in the same kind of activities at the same time. As Jan Gehl repeatedly suggests, activity generates more activity. If complementary uses occur in different buildings, people will be encouraged to step out of a building and enter another, providing that a walking distance is possible. Thus, activity spills outside, in the same way as in the following scheme of Christopher Alexander (“Fig. 2”).

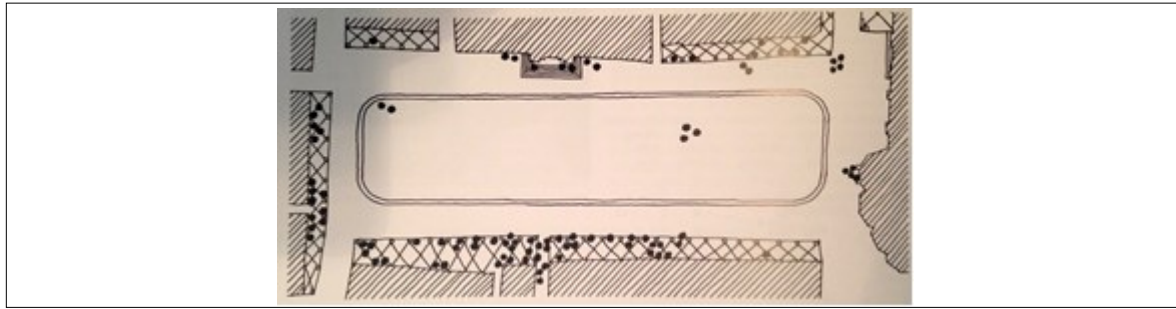


Figure 2. Scheme of preferred places to stand in a public square – Piazza del Popolo, Ascoli Piceno, Italy, 1965 in Jan Gehl – How to Study Public Life

The scheme applies to activities surrounding a square, and in this case it starts from the outside towards the inside. Playing upon this idea, we can affirm that, in larger areas, the process is reversed, but ideally with the same result. One goes to experience an activity that goes on in one of those buildings and starts using the outdoor space as an extension.

People are driven to explore the edges in search of activities. Good city planning makes rooms for these activities to happen, supplying the “background”. People are using public spaces, driven by basic psychological needs, one of them being the need for seeing other people and be seen by them. Although this might be the real reason to leave the house, people will search for an official “destination” [4, p.212], a strong goal to serve as an excuse. This is where the architect comes at play, not only by designing the building, but by supplying the “excuse” and the “means”. It is not a matter of cosmetic design of the outside space, although this is nevertheless important. It is more a matter of understanding the basics of the human mind at work and applying it in design. The “goal” is easier to define, by filling a building with uses. What is more difficult to forecast is the “means” that make people stop on their way and linger in a place for a while, while sitting on a bench or other unconventional object that initially served other purposes, or leaning against a wall or just sitting on the stairs or grass. For this purpose, people will always lean towards the edge of a space, out of the way and protected, with a good view towards the empty space.

The edge has two sides. People inside, involved in activities, be they leisure or work, need to be aware of what is happening outside. But this awareness needs to be optional and searched for, not forced. This is why the contemporary tendency for all-glazed façades is uncomfortable for users since it does not leave room for protection and privacy. On the other hand, and especially for buildings that have public uses, people from the outside need to be attracted towards the inside, hence need to feel involved or intrigued. For this to happen, when naturally attracted towards the edge, they need to discover a porous edge that bridges inside and outside and not a disruptive blind wall. Still, how transparent does it need to be in order to work?

Here, degrees apply as well. The façade is a filter: not non-existent and not opaque, it usually needs to be inbetween, hiding what needs to be private and revealing what needs to be public. Gehl implies that in order for people to seek each other, it needs to happen “in a relaxed and undemanding way” [1, p.17]. In other words, it needs to be a choice, and more than that, a spontaneous, effortless one, otherwise people will not make the effort. It is one of this article’s thesis that people have a psychological need for filters as markers of choice, and this is what urban porosity is all about.

### 3 LIVING BY THE EDGE

Modern architecture, although its many breakthroughs, has introduced radical changes to the way public space works, by emphasizing the importance of buildings and lessening the importance of “event” outside the building, that got lost in an infinite, alien landscape. Starting with the ‘90s, we speak of an “experience society” that has replaced the “leisure society” of inbetween the ‘60s and the ‘80s. This ranks cities according to “livability”, that Jan Gehl defines in his book *How to Study Public Life* by citing Ray LaHood: “Livability means being able to take your kids to school, go to work,

see a doctor, drop by the grocery or Post Office, go out to dinner and a movie and play with your kids at the park- all without having to get in your car” [8]. This speaks of walking distances and a “condensed city” where everything is close at hand. But is livability not also about a porous, accessible city, where public life is thriving in the spaces inbetween? “Livability” is about the “experience of the city”, more from the resident’s point of view than from the visitor’s, but it is the present study’s statement that the active life by the edge is a good indicator of the livability of a city, since its presence validates a strong “experience”.

Let us take the relevant “patterns” of Christopher Alexander. At the town scale they involve: activity nodes, promenades, degrees of publicness, small public squares. At a building scale, we have: circulation realms, paths and goals, building thoroughfare, arcades, building fronts, activity pockets, pedestrian density. Basically, they all speak of two main ideas: the importance of the façades and the attraction of the margins. Although this book starts from the idea that, using proper language, users can build for themselves just as efficiently as planners, which nowadays seems an all-too-idyllic vision, it deals with a basic principle that is, from my point of view, more viable than ever: building at a human scale, with the user in mind. In other words, we should want a city tailored for people and not in spite of their basic psychological needs.

It also starts from a premise that Jan Gehl reinforces in his writings: if people don’t see public space, they won’t use it.

Most of the cities today are collages of parts of various periods that need to be stitched together in order to coexist and generate connections. That implies that various parts of the city have different porosities. They can coexist harmoniously if connections are established and if these connections respect the human scale.

Arcades and thoroughfares for instance are normally associated with historic fabrics. Miles and miles of porticos allow pedestrians to flow through the medieval or Baroque city space, sheltered and protected, looking into the buildings that surrounds them through permeable façades. Still, modern interpretations of porticos are equally efficient in result, attracting people towards buildings. Nowadays, thoroughfares tend to be replaced by indoor shopping plazas, a very marketable strategy for the investor but a poor investment for the city, since it acts in a similar way to shopping malls, engaging in unfair competition with the pedestrian shopping street. One of the issues in contemporary design is that we tend to move public space indoors, restrict the access and attach a monetary obligativity to it. So porticos turn to indoor corridors, thoroughfares turn to indoor atriums or galleries and the edges are thus robbed of their meaning, becoming borders instead of filters. Although the main argument is protection from climate, the Scandinavian experience proves the contrary: that in a harsh climate, people still want to be outside. Because when public space becomes enclosed, the rules by which it is governed change. Why? In my opinion, it is linked to people perceiving indoor space as less “relaxed and undemanding”, contrary to what Jan Gehl was stating as a human mechanism of choosing to use public space. We unconsciously attach an owner to it, and thus perceive it as less public, even if we are not asked to state a reason to visit and do not have to pay in order to be there. The psychological factor possibly applies as a restriction, changing the nature of the boundary.

Thresholds and transitional spaces are “places” in the Heideggerian sense, “meaningful” because there is a philosophical and poetical dimension to them. They mark the procession from one realm to another, in a ritualic kind of way. It is not a simple division between inside and outside, but a cleansing of your “public” persona to your other kinds of self. The degrees of transition needed by each individual tend to be subjective, depending on the “extrovert-introvert” condition that makes a person community-oriented or privacy-oriented. Still, it is a common trait the fact that people recognize boundaries as such and need them to feel secure in the city space.

In a similar way, people prefer to sit in transitional spaces. The “edge effect” as described by the sociologist Derk de Jonge states that “the edges of the forest, beaches, groups of trees or clearings were the preferred zones for staying, while the open plains or beaches were not used until the edge zones were fully occupied” [1, p. 149]. It is a direct result of “the fear of the empty space” [1, p. 157],

another basic human psychological trait that must govern the way we design public spaces if we want them filled with people.

Starting with “less is more” of Mies van der Rohe, architecture became septic and perfect. Façades became flat and polished, the ornament became banned from design and perfect people lived in perfect buildings. The man-machine translated into statement-clean architecture. But probably perfection is alienating to humans, since Man is not perfect, so by contrast, the environment becomes stifling. Perfection is in a way monumental, without being at a monumental scale, and thus foreign.

Post-modern architecture reinstated Ornament, even if it was in part to paraphrase it.

Now, façades themselves become textures. They are not drafted using the solid vs. window rule anymore, but grow into multi-layered entities of technological complexity. It is, in a way, a kind of ornament that has turned into fabric, like an haute-couture expensive clothing. Façades have begun to speak to us in unexpected interplays of depth and light.

However, in order to foster public life, façades need to fulfill a double role. They need to be detailed enough to speak at human scale for the passer-by that sees it up-close, but also need to display gestures at an “urban scale” in order to be perceived as part of the city fabric. The Exeter library of Kahn would be a perfect example of the two scales, as perceived at human scale from the inside. The Whitney Museum of American Art speaks of a “cut” to face the city and a transparent bridged entrance at human scale. Volumetrical details are a welcome alternative to ornament, and so is the exposed texture of the building materials that address touch rather than visual perception.

#### 4 ON HUMAN SCALE AND SENSES

Both Christopher Alexander and Jan Gehl use the book of the anthropologist and cross-cultural researcher, Edward T. Hall, *The Hidden Dimension* [11], as a reference for the measurement of human senses. Our environment is shaped by our physical limitations, and the link between architecture and the human scale has always been a topic of research, since the three classical orders that reproduce the human proportions, the Vitruvian Man and Le Corbusier’s fascination with *The Modulor*.

Scale is a relationship of proportion between space and the measurements of the human body. So we judge space by our own body, guided by our human senses, meaning physical limitations. According to Hall, we are walking creatures, with an average speed of 5 km/ h., mainly horizontal and tending to avoid split levels if possible. Our capacity of interacting varies with distance, basically ending at 100 m. and progressing as we get closer. At 70 m. we start discerning age, sex and activity, at 30 m. we recognize facial features and at 20-25 m. we can perceive emotions based on facial expression. In accordance, we need to shape our environment taking into account that large spaces, instead of being freeing, become frightening and alienating, because they will always seem deserted. According to Christopher Alexander, people feel that they half-consciously interact in squares that have a diameter of 20-25 metres. This may be the “regular” gap in the urban texture, the small square for neighbourly use. Kevin Lynch in his book *Site Plannings* states that dimensions larger than 110 m are seldomly seen in efficient urban spaces [12]. Jan Gehl’s advice comes in handy, although sounding radical: “Whenever in doubt, leave some space out” [1, p.91]. This means that smaller spaces are efficient in fostering human contact, because the tighter the space, the more involved the user becomes. On the contrary, large urban spaces almost never work, because they seem deserted. According to William H. Whyte, American urbanist, it takes approximately 16.6 people in your sight range [8, p. 110] in order for a space to seem full. In a very large space, this only happens during meetings or processions.

Many of the contemporary squares are over-sized, since this is a contemporary flaw of city planning. While drafting plans according to car flows and parking spaces, we tend to forget that cities are mostly perceived at a pace’s speed when it matters, since when driving you are mostly concerned with the road and final goal. Another reason for over-sizing is one that is common both to architecture and the urban void: architects have been caught up in statements. So iconic buildings

and “grand-gestures” are meant to impress, and they do so in post-cards, but at the expense of the user getting overwhelmed and downsized.

Still, a person is well capable of accepting large-scale monuments as part of their environment if he or she understands their symbolistics in the general city frame. The user instinctively knows the difference between representational architecture and vain gesture and thus accepts or rejects it as being “meaningful”. Also, large squares are associated with extremist regimes, trying to impose a sense of overwhelming power on citizens and thus tend to be unpopular.

An alternance of tight spaces and larger ones makes the passage more interesting, enhances the effect of squares and makes distances seem shorter, hence walkable. The city needs larger squares and needs to vary its porosity in a hierarchical scheme, because otherwise the city becomes a labyrinth in which all sense of orientation is lost.

Distribution of functions facing the street is also a crucial matter. From the Danish experience [1, p.95] we learn that in many cities, “boring” functions such as offices or banks have been banned from street levels to the upper levels, except from the accesses. In other cities, there is a limitation in place that states that no such function should occupy more than a span of 5 m. of the building front, leading to a succession of more activity-attracting displays towards the street. This can constitute a valuable example, since such uses are the ones robbing the streets of public life by closing their backs to the life outside.

## 5 CONCLUSIONS

There are few instances in urban planning where we get to draft a city area from scratch. Usually, the work consists of stitching together parts that are different and lack cohesion. Designing buildings is one way to start, but considering the voids in the urban fabric, would, in my opinion, be another, more interesting one. It is, in a way, the equivalent of designing architecture from inside out. In a mirroring image, this is designing the city from outside in, starting from public necessities to the private ones. Porosity, or in other words, the permeability of texture in the city, is in many cases an unconscious result instead of being a goal in design. Both of the fore-mentioned methods have one thing in common: they are driven by human necessities. The study of urban life, as described by Jan Gehl, has started as a collection of scattered studies in the 60's and gradually turned to an academic field, being convincing enough to be integrated in urban policies. Highly interdisciplinary, this study proves one thing: that people are still driven by the same basic needs and psychological perceptions as before, in spite of the obvious changes in life-style, induced by globalisation, mobility and an increasing individualism. Nowadays, architecture is caught up in “bold gestures”, so the small-scale concept of the “edge” has been largely forgotten. But in the course of designing “statement” buildings, something has been lost, the ability of the people to relate to their surroundings. The successful cities, the ones that rank high in “livability”, although a debatable charting system, are those who keep in mind public life and the means to ensure it. And, as “God is in details”, this happens at a small scale. Barcelona is a successful city because it has beautiful architecture, but even more because the “voids” are colourful, friendly and full of people. Paris works at a larger scale, so the porosity is less dense, and the voids are filled with activities. Coherence comes from a highly recognisable texture and the building fronts absorb the life outside. Bucharest is a collage of uneven parts, interesting precisely because of this trait. It is interesting to notice how the Old City and Calea Victoriei have changed after becoming pedestrian. The buildings themselves are the same, except for scattered refurbishments. What has changed, though, are the edges, which have become permeable, enhancing something that was already in place by opening up the façades, or at least the ground floor towards the street. With a more active public life comes the “courage” to explore the fabric in the back, otherwise unsafe and unused. It is a gradual process that makes public life generate itself, following the principle “one plus one is three – at least” [1, p. 73].

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## MATHEMATICAL THEORY IN ARCHAEOLOGY

**Oana Diaconescu**

*"Ion Mincu" University of Architecture and Urbanism (ROMANIA)*

*onk\_di@yahoo.com*

### **Abstract**

Archaeologists and architects are using today, for a site research, a serial of geophysical methods and satellite data, further archived in a computerized system. Most often, such a detection may prevent many problems caused by excavation. In this manner, the result of determining stratigraphic relations and site prospection maps, achieves the charts anomalies.

The close relations between humanities disciplines and the computerized ones generate a new mechanism of analyses based not only on anthropological, historical and field research, but also on the introduction of mathematical theories, which seek "scientific" answers at issues related to the nature of dwelling.

We experience a moment of denying the machinists, bionic and zoomorphic architectural interpretation variants, by examining a computing system whose parameters can actually generate colossal errors in the appropriation and the understanding of a civilization. Starting from the first interdisciplinary attempts of the New Archaeology movement to the Computational Archeology, it will present a series of quantitative methods for determining spatial coordinates and dissemination of cultural heritage.

Geographic Information System- GIS is a primary computer system that provides aerial maps, which show the connection of the site to the surrounding areas and provides the detailed study of different evolutionary habitation phases. This procedure is widely spread and offers required database for mathematical functions application. A special form of investigation is "archaeological informatics" (archaeoinformatics or computational archeology), which structures the site information as an algorithm.

The Space Syntax British group has developed an informatics system that investigates the urban space and the relationship between its morphological elements. The axial space, the convex space and the "isovist" one are the three applied methods that explain the city street network, the distribution of the main buildings, their relations with the center etc.. The study of movement in antique cities is fundamental because it reveals a series of new interpretations to the initial archaeological information compared to the current period, due to the polycentric category increase, to the residential area agglomeration or to the intensity of the space use. Another mathematical tool used is Voronoi's diagram, which reflects the influence margin where archaeological area adjoins its historical edge defined by limit. The diagram's applying determines the main influence site area based on similarity relations. This assignment model refers to the geometrical division of a plan in polygons, by emphasizing the closer and the distant points from comparable spaces of surrounding territory.

To motivate their veracity a relation between the resulting conclusion from the mathematical theories application and humanities is required. In this sense, it completes a realistic image through the general philosophical concept of dwelling by overlapping an anthropological profile over the archaeological site. This problem, related to narration, clarifies through the implementation of Virtual Heritage programs. For the same purpose of protecting patrimony goods and referring to their virtual reconstruction, the UNESCO adopted the "Charter on the Preservation of Digital Heritage", relying on

the representation at territorial scale of a DEM (Digital Elevation Model), used as indicator of historical traces. The advantages of such a working process are the immediate archiving of data, the conception of different evaluation models of all superimposed layers and the permanent identification of vestiges on a site. This program works as the laser scanning both at a territorial and a detailed scale, reproducing interior objects or other elements meant to illustrate the ambiance of a complex. Various sections present all data, from the geomorphic aspects of a zone to its vegetation, hydrology or paths. The stratigraphic superposition generated by its reconstruction, may potentiate the archaeological value of a site and communicate those aspects that led to the occurrence of marks and to the disappearing of some historical levels. For a long time the virtual reconstruction has been considered the simplest and useful way to provide information to all users, in a comprehensive way, simulating the scientific ambiance of the numerous professionals involved.

One of the biggest problems of the accurate knowledge of the archaeological good is the evident difference between the research information and the antique possibility of use or in other words, the difference between the narrative forms of exposure of a survey and its authentic cultural values. The EngLald project, developed by Oxford University and the SEAD (The Strategic Environmental Archaeology Database Inter-linking Multiproxy Environmental) are one of the first programs that detect the continuity, the transformation and the identity of a landscape, starting from the human action. In this sense, the reconstruction may begin from the story and not from the effective reports. The introduction of a digitalized system eliminates an amount of inaccuracies, but it becomes accurately applicable only when linked to a subjective system, generated by human nature, regardless of the era to which we relate.

**Keywords:** algorithm, archaeology, diagram, virtualization.

## 1 ARCHIVING DATA

In archaeology, archiving the data represents one of the most important tool in researching a site. Usually, from the excavation to the laboratory there may be difficulties in obtaining the proper notion on each artifact. Thus, archaeologists and architects are using today, for a site analyses, a serial of geophysical methods and satellite data, further archived in a computerized system. Most often, such a detection may prevent many problems caused by excavation. In this manner, the result of determining stratigraphic relations and site prospection maps, achieves the charts anomalies. One of the usual methods represents the site introspection, named also *periegesis*, which reveals land or vegetation surface diversity, for new archaeological sites discoveries. After the utilization of Earth first artificial satellite, from 1950 the photogrammetry became one of the basic instrument in the studies. These tools are recording information from the land surface through multispectral scanners [1, p.6]<sup>1</sup> and panchromatic photos. Based on the presence of various phosphates, carbonates or nitrates the soil indicates any dig-in, holes or channels that demand an excavation. Lime level from the terrain surface allows just some vegetation species growing and indicates the existence of the stone deposits. The spectro-zonal aerial photogrammes reveal these chemical phenomena [1]. Establishing the chromatic nature of a researched space may allow the identification of its archaeological potentiality. The pedologic surveys always analyze the field data, by using some samples that can determine the texture typology (the height of the humus level), the granulometry of the layer, the lithology, the petrography and the fossil remains and the metal quantity still identified after the chemical process finished. Mostly these non-destructive researches may offer a real detection of a possible archaeological site.

Eduard C. Harris is the first archaeological researcher who found a method for the stratigraphic investigation. His surveys initiate from the entire area of the site Fig. 1. Previous researcher's theories

<sup>1</sup> The multispectral images represents the source of color-composed photos, these type of instruments contain the digital recordings in realistic representations.

(examples as Sir Mortimer Wheeler square analyses) decomposed the plan in various independent surfaces. It represents and functions as a unitary assembly, which uses the digital instruments as the basis of its prototype model. The end of this process concludes with a 3D computerized model. From the field data, he uses the horizontal and vertical sections of the whole complex. By this thinking, Harris eliminates the non-excavated zones, which result at the end of a traditional digging. Through the method he describes a diagram sequence of all relations presented in a layer, without including other research parameters as the geographical and the anthropological ones. By continuing, this approach represents the connection between the site, its limits and its mental possible reconstruction, in case of lost elements.

A site analyses uses many geophysical data. Sometimes the prospection may encounter numerous problems due to excavation. The seismic prospection, for example, used in archaeological area produce an elastic vibration in all layers subject to the shock vibration, determining the rigidities and the volumetric mass. Conclusions are presented as a diagram. A similar method is the GPR (Ground Penetrating Radar) which offers tridimensional graphic representation, as ground surface maps. Usually, the dynamics of the waves determine the stratigraphic relations [3, p.6]. The most known methods of analyzing of remains is that of radioactive carbon  $^{14}\text{C}$ , which establish the quantity of the chemical element in the composition of the deposit [4, pp. 443-446]<sup>2</sup>, by comparing it with the one existing in the atmosphere of a certain historical period.

The close relations between humanities disciplines and the computerized ones, generate a new mechanism of analyses based not only on anthropological, historical and field research, but also on the introduction of mathematical theories, which seek "scientific" answers at issues related to the nature of dwelling. Generally, the tourist incurs difficulties while visiting well-known vestiges, such as the Acropolis; in reconstruct mentally the antique representations. The present musealization process regard the reconstruction as a didactic modality by which the monument presents its original image, without destroying the existing remains. To create a good reproduction of art and architecture forms that otherwise would lose the communication strength represents the end of a research or of a site excavation. In these cases, the dialogue with the present, the re-configuration of the original form or the integration in a similar context as the historical one, is necessary. For historical building or statues reconstruction, mathematic uses digital memory or convertors that present a hologram image around the object for a few seconds of time. The new formula, known as DAMP, the acronym from Digital/ Analogic Museum Project, produced by Modus Multimedia and applied initially to musical instruments museum where each object has its own sound. The Sistema Q442 produced by Laboratorio Museotecnico Goppion of Milan, during an exhibition from February 2011 represents a flexible, adaptable solution in the contemporary spaces for its industrial design. Interchangeable modules that may reach a number of 200.000 possibilities of recreating the object compose the system.

We experience a moment of denying the machinists, bionic and zoomorphic architectural interpretation variants, by examining a computing system whose parameters can actually generate colossal errors in the appropriation and the understanding of a civilization. Starting from the first interdisciplinary attempts of the New Archaeology movement to the Computational Archeology, it will present a series of quantitative methods for determining spatial coordinates and dissemination of cultural heritage.

Geographic Information System- GIS is a primary computer system that provides aerial maps, which show the connection of the site to the surrounding areas and presents the detailed study of different evolutionary habitation phases. This procedure is widely spread and offers required database for mathematical function application. A special form of investigation is "archaeological informatics" (archaeoinformatics or computational archeology), which structures the site information as an algorithm.

The Method of Edward Harris, that determinates the so-called Harris Matrix, works for the first time with the tetra-dimensional space or Minkowski [5, pp. 45–86.]<sup>3</sup>. Any point from this plan is termed

<sup>2</sup> 60 thousand years old represents the identified materials age until nowadays.

<sup>3</sup> It represents a Euclidian space with the four dimension- the temporal dimension.

„event”. A mono-dimension curve representing the „world line” underlines its history, defining by a succession of moments its evolution along time [*Ibidem* 4]. In this manner, the stratigraphic sequence is regarded entirely, as a sum of chronological relations. These do not refer to the ground’s composition, but to the analyses of the contact surfaces between layers. Harris Matrix follows the four principles of stratigraphy, as the superimposed elements, the original horizontality, the initial continuity and the stratigraphic succession. It is always considered that the lower level is the oldest one. Due to the gravity, all layers are initially horizontal; therefore, each mutation of earth surface is identified by this positioning. The level’s continuity of an interface regards its structure homogeneity.

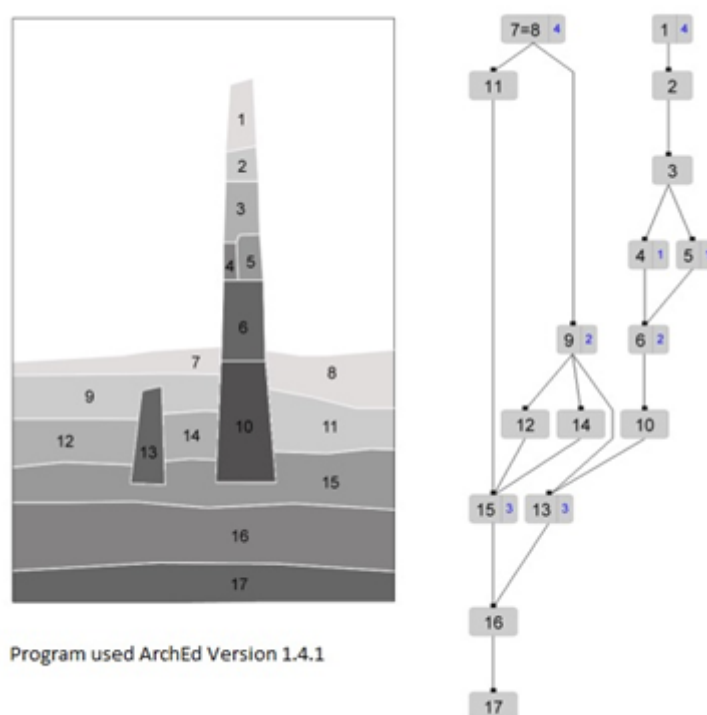


Figure 1. The stratigraphic relations as presented by Edward Harris

This process identifies the stratigraphic unit (SU) as positive or negative. The category indicates the suffered actions: accumulations, erosions, subsidence. Identified layers represent either parts of the same initial deposit, or lack of direct contact. Various graphics present the relation between units based on the site data. Thus, Harris Matrix relates levels, interfaces and chronologies.

“The conceptual maps” or the GIS are most of the times the appropriate graphic instruments to synthetize the numerous data archived and the site relations (as general control method). Therefore, from archaeological point of view a Corinthian capital represents a singular stratigraphic unit, meanwhile for the architect is important to analyze the relation between volutes and leafs levels or between abacus and echinus. An optimum division of the element’s structure shows its proper nature. The result of a research corresponds in this way to the fluid identity space, related to archaeology and that functions following the principles of the peer-to-peer network, regarding the equivalence of relations or studies<sup>4</sup>.

For a better understanding of mathematical application are used the GPS system coordinates associated to the international ellipsoid WGS84, as indicated by the Defense Mapping Agency of the Council of the International' Civil Aviation Organization. The UTM system (Universal Transverse Mercator) which utilizes the WGS84 is based on a Cartesian grid (deriving from a Gauss conform projection Fig. 2) and represents a variant to the geographical coordinates latitude and longitude. The passing from a projection to another is strictly mathematic. By superposing the determined grid to a

<sup>4</sup> Named peer-to-peer it represents an informatics network that presents a limited number of equivalent not- hierarchized nodes, which may either receive information, either send them to the other system elements.

site, we can find the exact position of each remain and conclude stratigraphic analyses. The lacunar and fragmented remains of the past periods become the research thesis on sites and on the human relations derived by its use. For this, there are used some regressive methods, which investigate the contemporary forms of the actual territory, returning successively at anterior representations to identify, through stratigraphy the traces that continue acting in the present. For having from the microscopically to a macroscopically view a well-determined database is used the GIS system. The method has the advantage not only of creating an information archive, but a thematic map with each one of the parameters that interests the stratigraphic unit. The Italian archaeologist Tiziano Mannoni who was saying that there is not any archaeology without the archigraphy, introduce a new coordinate in the studying process, which is data interpretation. The information archive represents an unrepeatable practice, reason for which the database should remain opened to other researches.

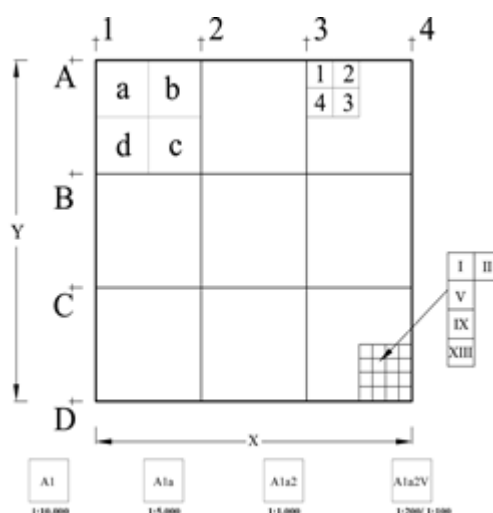


Figure 2. The mapping of an archaeological site used for GIS database.

## 2 CHANGING PARADIGM

The character of the antique life and the importance of architecture in past periods, results from the trace studies, which determine a used path, followed regularly. During the Roman-Greek period, the streets were already conceived for “jus eundi”, which was the right of passing, a roman norm that regulated how a street was used from the passage to the roads. In that period the street was designed before other urban works for strategic land commercial reasons and presenting important esthetical plan values (especially for the Hellenic world). Space Syntax proposes a new methodology for the study of paths in an archaeological site. The observation identifies a new layer, established by a series of categories of space relations, that condition, depending on distribution, the way of passing of individuals and the category of utilization of place. Urban limits or its shapes usually configures the internal connections of the site. The first analyses on edifices and their signification for the city's life will establish the basic elements of the graph, as a schematic representation of existing roads. The Space Syntax British group has developed an informatics graphic system that investigates the urban space and the relationship between its morphological elements, by axial maps. The methodology found is that of representing all the convex spaces and the relation between similar. The segments that unite them will underline paths, starting with the statistics to demonstrate that the straight direction (the visual one) suggests the followed street. The axial space, the convex space and the “isovist” one are the three applied methods that explain the city street network, the distribution of the main buildings, their relations with the center etc. The study of movement in antique cities is fundamental because it reveals a series of new interpretations to the initial archaeological information compared to the current period, due to the polycentric category increase, to the residential area agglomeration or to the intensity of the used space. Fridell Anter and Weilguni detail in their study about Pompeii's paths [7, pp. 89-100] the method offering qualitative data and quantitative evaluations (through distances). The interior of each building defines a convex space, no matter the wall divisions. The uses by superposing of all known paths excavated or not, identified various types of roads: orthogonal streets, spontaneous circulations and crossing site streets, to connect the forum

with the city's gates. The union of more convex spaces through singular axis configures the initial design of a various environment, which interested visually the passenger [8, p. 100]. The studies on integration and spatial segregation continue, relying by association the two moments of Pompeii: today and in the past, as visited and crossed.

### 3 MATHEMATICAL THEORIES

Another mathematical tool used is Voronoi's diagram (Fig. 3), which reflects the influence margin where archaeological area adjoins its historical edge defined by limit. The diagram's applying determines the main influence site area based on similarity relations. This assignment model refers to the geometrical division of a plan in polygons, by emphasizing the closer and the most distant points from comparable spaces of surrounding territory. Practically a various number of cells shape divide the site, having as borders straight lines, semi-straight lines or segments that will cover the total space of the archaeological sites studied. The relation between each diagram's polygon and the entire area of the site provide a result for every historical element from the cartographic grid. For an evaluation of the criteria, a mathematic sequence is proposed. Conceptually the diagram appears to be built successively, following the main functions between two or more sites, as change, production, residential.

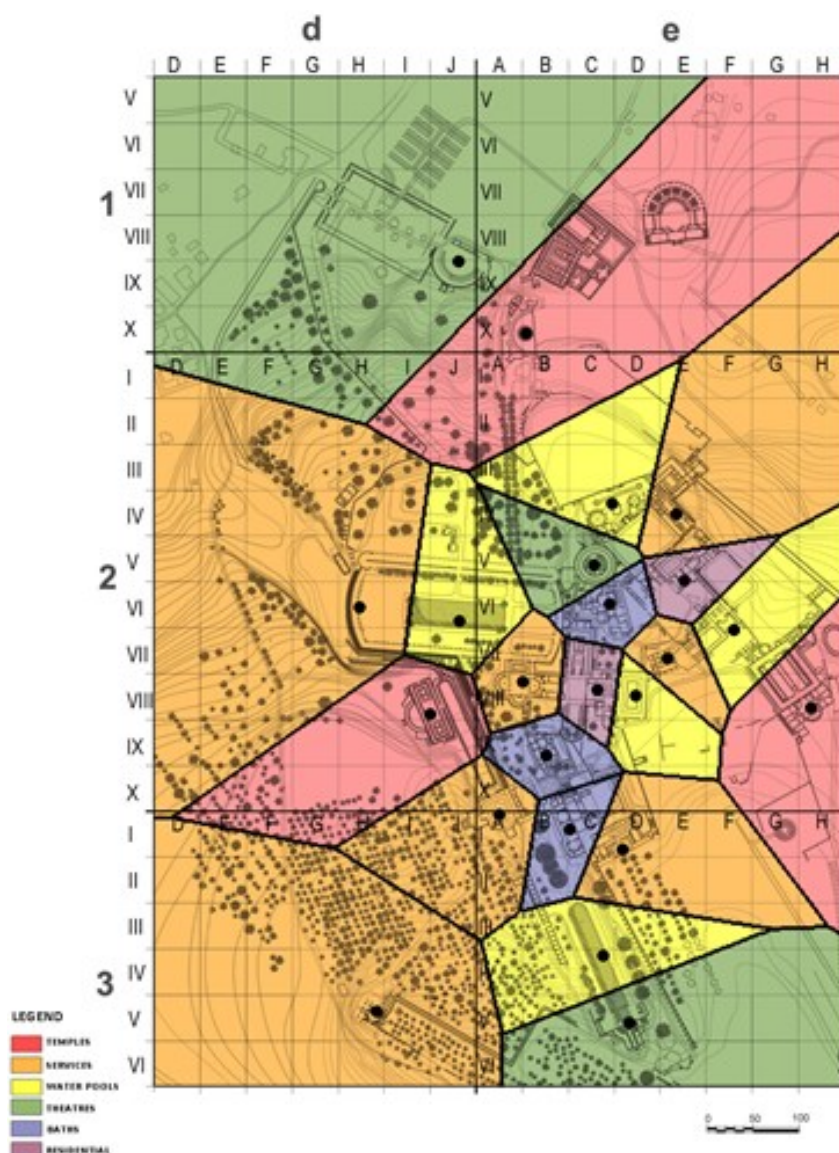


Figure 3. Example of Voronoi application on Villa Hadriana from Tivoli Italy.

To motivate their accuracy relations between resulting conclusion from the mathematical theories application and humanities is required. In this manner, it concludes a realistic image through the

general philosophical concept of dwelling by overlapping the anthropological profile over the archaeological site. The problem, related to narration, clarifies the significance of ruins through the implementation of Virtual Heritage programs. For the same purpose of protecting patrimony goods and referring to their virtual reconstruction, the UNESCO adopted the “Charter on the Preservation of Digital Heritage”, relying on the representation at territorial scale of a DEM (Digital Elevation Model), used as indicator of historical traces. One of the most representative projects is the virtual reconstruction of the ruins of Saint Mary of Tergu, a study conducted by prof. Letizia Ermini Pani<sup>5</sup>. DEM offered information about the achievable paths or indicated some historical traces. These operations gave the image of the stratigraphic layering and the correct identification of the ruins on the site. Having this information from 2003, the extensive excavation, the publishing of the research data and the musealization of the area opening it to the visitors, started. In this manner, it appears that the restoration from 1959 was done with concrete mortar, which degraded various structure, causing salt deposits. It was discovered also that there have been build ex-novo walls which didn’t appear in the old complex and that the mechanized digging ruined some monastery parts. The advantages of such a working process are the immediate archiving of data, the conception of different evaluation models of all superimposed layers and the permanent identification of vestiges on a site. The end of the project consists in the integral musealization of the complex, starting with its history and continuing with aspects of quotidian life, totally neglected before. The communication manner is that of a 3D movie, which puts together the entire archaeological divided fragments. As procedure, initially is created the landscape through Technical Regional Maps, GIS, high-resolution image such as satellite photos, aerial perspectives or stereoscopies. Starting from the 2D information, raster, the CAD programs draw a detailed mesh of the area, the equivalent of a DEM. A rectified photo will give the real texture to indicate a realistic image of the virtual model. This program works as the laser scanning both at a territorial and a detailed scale, reproducing interior objects or other elements meant to illustrate the ambiance of a complex. Various sections present all data, from the geomorphic aspects of a zone to its vegetation, hydrology or paths.

From 1970, the idea of a diffused museum spreads all over the world. In this way, the archaeological museum may integrate new exhibition functions, through on-site antiquarium, during the excavations, but also when the digging process is finished. Corbusier talks about the necessity of the diffused building. Any edifice should present a flexible composition that allows its extension. The divided modules define the space, which respect the requirements and necessities of a public complex. Stratification method of taxonomy uses extensive surfaces. In this way, Turin becomes, from April 2011, the first model of “diffused museum” in Europe, functioning as a virtual city of museums, connected by technological platforms.

The stratigraphic superposition generated by its reconstruction, may potentiate the archaeological value of a site and communicate those aspects that led to the occurrence of marks and to the disappearing of some historical levels. For a long time the simplest and useful way to provide information to all users, in a comprehensive way, simulating the scientific ambiance of the numerous professionals involved was the virtual reconstruction. The archaeologists and other professionals from the field do not accept any more the idea of the restaurateur architect, who from a fragment succeed to recompose the entire building, giving a personal image to the operation and offering a deformed perspective over the past. Archaeologist-architects, like Italo Gismondi, created, through their reconstruction the image of the Antiquity that we have today. A continuous form of renovating concepts and critical thoughts define the notion of history. The importance of vestiges derives from its original relation with the context. Thus, “opened museum”, as the city spaces that hold commemorative works, induce a new integration system, by its permanent and unconditioned presence of all participants that generates its dynamics, determining contemporary urban environment interaction with the history.

The graph theory becomes one of the most used mathematical procedure to design or remodel an archaeological element by a virtual process. Graph-cut method is necessary to identify hidden parts of

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<sup>5</sup> The professor of medieval archaeology Ermini Pani, from the „La Sapienza” University of Rome elaborated a new analyses method for archaeological sites of Sardinia, Tergu being the most important of them.



original substance that was lost after the excavation. The algorithm aims to partition a graph into two disjoint groups of vertices by cutting the edges between them. The number of cuts depends only on the number of maximum vertices<sup>6</sup> [7]. The obtained segmentation generates a number of faces that may create a surface. Some researchers of *The Hebrew University of Jerusalem*, implemented a computerized algorithm that generates all the meshes of an artifact, so that it can be used directly by scanning during the site excavation. The sequence determines all the unseen scars and ridges of the object. Employment of a vector graphics program always emphasize the dating of the erosion process. This mathematic function derives from the so-called *Monte-Carlo method* that underlies the smallest particle with the same data (characteristics) as the whole substance. The procedure allows the element to be studied independently. Surveys present a reverse chain that permit information to delineate the investigated object. [8, p. 270]

The Ripley's K function is a complex mathematical theory, which individualize aggregation and segregation points at any scale. It represents the modality of connecting a settlement with its environment by using data regarding characteristics of an event density and of distances<sup>7</sup>. [9, p. 350]. Revealing a homogenous function would give details about how environment blocked or encouraged the disposal of the settlement, meanwhile the inhomogeneous function regards its cultural contribution.

#### 4 NEW PERSPECTIVE

One of the biggest problems of the accurate knowledge of the archaeological good is the evident difference between the research information and the antique possibility of use or in other words, the difference between the narrative forms of exposure of a survey and its authentic cultural values. The EngLald project, developed by Oxford University and the SEAD (The Strategic Environmental Archaeology Database Inter-linking Multiproxy Environmental)<sup>89</sup> [10, p. 320] are one of the first programs that detect the continuity, the transformation and the identity of a landscape, starting with the human action. In this sense, the reconstruction may begin from the story and not from the effective reports. The introduction of a digitalized system eliminates an amount of inaccuracies, but it becomes accurately applicable only when linked to a subjective system, generated by human nature, regardless of the era to which we relate it. The scope of this program is to create a new possibility of reading archaeology, by linking the artifact with its original environment, from climate to geographical characteristics, from ethnography to faunal properties. The studied element cannot be removed from its location before having a complex understanding of the process that generated it. For an easier comprehension may be used the BugsCep Application<sup>10</sup>. [11, p. 326] This new manner of study led to the emergence of a new investigation field - Environmental Archaeology.

From the 2007 the European Parliament adopted a directive called INSPIRED (Infrastructure for Spatial Information in the European Community), which became an international database for all Protected Sites. The benefit of the network is the publishing of the research data and its online access, the implementation of similar study procedures in archaeology, the development and sharing of new research projects by connecting similar sites. The British and Scottish Parliament embraced the procedure from 2009, having ten years to accomplish the main processes. Unfortunately, in Romania

<sup>6</sup> By definition "A cut  $C=(S,T)$  is a partition of  $V$  of a graph  $G=(V,E)$  into two subsets  $S$  and  $T$ . The cut-set of a cut  $C=(S,T)$  is the set  $\{(u,v) \in E \mid u \in S, v \in T\}$  of edges that have one endpoint in  $S$  and the other endpoint in  $T$ ".

<sup>7</sup> The formula of the K function is  $k(d)=\#(C(x,d))/\lambda$ , where  $\#(C(x,d))$  represents the number of events of the circle  $C(x,d)$  and  $\lambda$  the average intensity.

<sup>8</sup> There are to be considered plenty of investigation methods among which models based on ethnographic literature (Dalla Bona & Larcombe, 1996), deductive modelling (Altamira Consulting, 2009), least-cost path modelling (Verhagen, 2010), optimal foraging theory and diet-breadth modelling (Whitley, 2010), geographically weighted regression (Löwenborg, 2010), fuzzy logic (Hatzinikolaou, 2006), intelligent network structures, based on neural networks (Ducke 2003), K-means cluster analysis and Dempster-Shafer theory (Veljanovski Cuming, 2002. [10, p. 340]

<sup>9</sup> The main requirements of a SEAD program are 1) data collation, storage and management; 2) integration, access and dissemination; 3) analysis and visualization and 4) networking and support.

<sup>10</sup> The BugsCep represents a Microsoft Access Application used to create various databases and taxonomies. First, it hosted a quaternary fossil record but from the '80s when it appeared it developed a series of ecological, climate, bibliography information. The application uses the SEAD information and connects more archives in the same time. The result is a realistic image of an archaeological remain from a certain historical period.

the archaeologists represent an isolated community, where data is presented only in some enclosure environments and even if published, the studies are not shared to professionals. This attitude brings Romania to the limit of survival of heritage, a place where most of the monuments are at risk and where the mathematical theories are far away from their appliance.

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## EXTRA-LONG RESIDENTIAL INFRASTRUCTURES: COLLECTIVE HOUSING ON THE LARGE-SCALE

**Sálvora Feliz Ricoy**

*Technical University of Madrid (SPAIN)*

*info@salvorafeliz.com*

### Abstract

Within the group of collective housing settlements developed both within and outside Europe during the 20th Century, we may find numerous projects that are characterised by their extra-long scale. Some of these constructions are contextualised within different housing developments planning, as the case of Home Union Work (Obra Sindical del Hogar) in Spain who led a number of housing settlements from the forties in order to palliate the housing necessity produced by the migration processes from countryside to city centre and the demographic progressive increase; or as the case of Italy and its “to increase employment and to facilitate the construction of dwellings for the employees” Draft Law in 1949, which was adopted for a period of seven years, whereas it was continued to 1963. We are interested in the study of the extra-long constructions which have been denominated with several terminologies as Metropolitan Buildings, Urban Megastructures (Banham 2001), Social Condenser (Fernández, 2009) or Vertical Suburbs (Bjarke, 2011), formulations that will be analysed and dissected in order to be able to define more specifically a buildings set which will be named XL Residential Infrastructures and characterised by their façade length (longer than 400 metres), by the great residential capacity that they hold (communities of more than 1,000 users) and by the existence in these constructions of recognisable elements of the city such as “streets in the sky” (Smithson 1952), local shops, different speeds for the building itinerary (by car, motorbike and bike), in between spaces for walking or meeting and so on. That is to say, a XL Residential Infrastructure is a city into a building and, accordingly, it has those spaces to interact, to produce community feeling, which are the areas stand among dwellings, or in other words, this buildings have a in between scale. This research will be conducted through the analysis of 60 collective housing study cases that were constructed from the twenties. Some of the study cases are Park Hill housing (1955-1961), in Sheffield, designed by Ivor Smith and Jack Lynn, with a façade length of 1,010 metres and with housing capacity for 3,448 people; Forte di Quezzi social housing (1956-1968), in Genoa, designed by Luigi Carlo Daneri and Eugenio Fuselli, with a façade length of 1,550 metres and with housing capacity for 2,010 people, only in the main building (Block A); Rozzol Melara Estate (1969-1982), in Trieste, designed by Carlo Celli, with a façade length of 837 metres and with housing capacity for 2,500 people; Byker development (1970-1980), in New Castle upon Tyne, designed by Ralph Erskine, with a façade length of 980 metres (combining the 3 blocks) and with housing capacity for 1,900 people, only in its longitudinal buildings; or the New Corviale (1973-1981), in Rome, designed by Mario Fiorentino, with a façade length of 958 metres and with housing capacity for 8,953 people. The complete sample for the study, which formally has differences, will be analysed through a tri-instrumental research methodology, with qualitative, quantitative and graphic analyses, to detect the substantial similarities and differences among them. To this end, we have designed and applied a specific research methodology that will help to determine the delimitation of a type of residential artefacts, which stand on the large-scale due to their extensive length and have not been set scientifically in a common definition so far, that we have denominated XL Residential Infrastructures. In addition to the definition of this new terminology, the conclusions of this research will yield reflections around several notions connected with these buildings which shape a lexicon linked with the large-scale as district, habitation cell, community, itinerary, horizontal

programmatic layout, communal areas, socialisation areas, in between spaces, privacy areas gradation, hybrids, horizontality, functioning rules, standard cross-section, user loyalty systems, support, suburb, super-block or size, among many others.

**Keywords:** infrastructure; collective housing; large-scale.

## 1 EXTRA-LONG RESIDENTIAL INFRASTRUCTURES

The definition of Extra-long Residential Infrastructures is assigned to those settlements of one or more blocks, whose façade perception is longer than 400 metres of length, its scale is urban and it wraps a territory (Feliz, 2016). Mostly, they have a standard section with a unified aesthetic, normally of concrete, and they are usually not urban icons. Their functional programme distribution is like a millefeuilles with housing units located in a supporting structure, public streets in the sky (although they could have restricted use or, in other cases, they could be traveled with different speeds), community areas, green spaces and other services intermittently located. They should not have neighbourhood identity and not always have shops (Fig. 1).

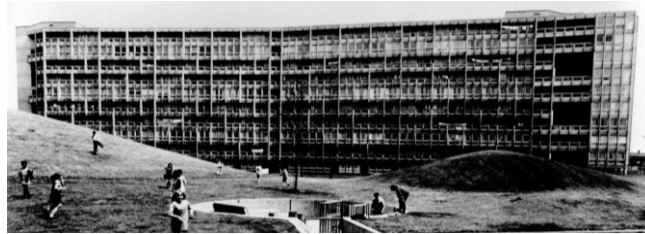


Figure 1. Robin Hood Lane, Alison & Peter Smithson (1966-1972)

In this meaning, the Infrastructure concept is interpreted knowing that its definition according to the dictionary of the Spanish Royal Academy of Language, as a human construction designed and led by professionals from Architecture, Civil Engineering, Urban Planning, etc., providing the support for the development of activities. In these study cases, the main activity is housing, being the building an artefact that supports a group of dwellings. This infrastructure could be composed of a single volume or form a unit from different blocks, in which case, each block should have common characteristics that allow it to be recognized as a settlement, either by a similar aesthetic, by a standard section or by a people community which becomes a disaggregate infrastructure into a unit. This is the case of New Corviale (1973-1981), which is composed of five blocks (Fig. 2), although it is considered a unified settlement. Furthermore, the concept of XL, taken from sizing industry, is not understood in this context as extra-large, but as extra-long. Therefore, these developments should have a length, which is longer than the length of the standard buildings, being this dimension of 400 meters (Feliz, 2016).



Figure 2. New Corviale, Mario Fiorentino (1973-1981)

The spectrum of these housing cases built mainly from the early twenties is, in addition to the qualities mentioned above, the magnitude of people that hosts. This is the case of Park Hill housing (1955-1961), in Sheffield, designed by Ivor Smith and Jack Lynn, with a façade length of 1,010 meters and capacity for 3,448 people (Fig. 03); Forte di Quezzi social housing (1956-1968) in Genoa, designed by Luigi Carlo

Daneri and Eugenio Fuselli, with a façade length of 1,550 meters and capacity for 2,010 people only in the main building (Block A) (Fig. 3); Neighbours Set n3 Elviña (1965-1967), in A Coruña, designed by José Antonio Corrales, with a façade length of 472 meters (adding the 3 blocks) and capacity for 2,582 people; Rozzol Melara Estate (1969-1982), in Trieste, designed by Carlo Celli, with a façade length of 837 meters and capacity for 2,500 people (Fig. 03); Byker development (1970-1980), in Newcastle upon Tyne, designed by Ralph Erskine, with a façade length of 980 meters (adding the 3 blocks) and capacity for 1,900 people (only in its longitudinal building); New Corviale (1973-1981), in Rome, designed by Mario Fiorentino, with a façade length of 958 meters and capacity for 8,953 people; or 8 House and small tower (2006-2010), in Copenhagen, designed by BIG, with a façade length of 640 meters and capacity for 1,500 people, this one defined by its author as a vertical suburb (Bjarke, 2010). Except for the case of Bjarke, we could note that every of these cases have more than 30 years of operation and, analysing them now, we would detect behaviour patterns of these communities, forced to live in stackable cities, which have evolved and, mostly all of them have failed to form a united cluster which should be represented by a community, being these artefacts currently failures of contemporary cohabitation that we must research to propose solutions that allow their cohabitation. We would like to note that these stackable cities are composted by housing units + streets + community areas. This last concept is what we mean by in between spaces, those in where members of the community should communicate actively, to strengthen relationship of cohabitation and to enable them to hold a daily routine in harmony.

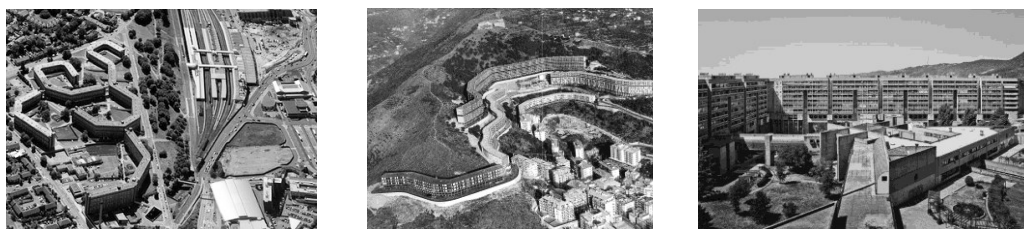


Figure 3. Park Hill housing, by Ivor Smith and Jack Lynn (1955-1961); Forte di Quezzi social housing, by Luigi Carlo Daneri y Eugenio Fuselli (1956-1968); and Rozzol Melara Estate, by Carlo Celli (1969-1982).

## 2 RESEARCH QUESTIONS

Having identified as exceptional developments, a set of buildings that have in common elements, as their relevant longitudinal dimensions and great dwellings capacity, and forming part of a set that many critics have named cities in the sky, we propose the study of these architectures focusing on in between scales and on in between spaces which structure these sets, and how people who live in them have evolved during operating life of these buildings, analysing the uses that have been developed in the community areas. In this way, we would board topics more closely linked to the community concept. We would be interested to know if these constructions have formal relationships with the city structure; furthermore, we would like to research if they are linked to a community capable of living in harmony and which are the elements that allow to characterize or identify this community; We wonder what would be the magnitude of community concept linked to XL Residential Infrastructures and if the community feeling is reinforced by being linked to an architectural space.

Another interesting question is if these infrastructures consist in a city development within an existing one; we would be interested in whether is there internal social + economic operation laws; In addition, we are questioning how they have faced over the years or what would be the processes that can be applied to reinforce the unity of community.

## 3 RESEARCH DESIGN

In order to confront these research questions, we proposed a comparative analysis that we would be performed from two different fronts. The first front is a study of seven representative cases, based on the method used in the collection of Monographs of one Building (CVI) (Canovas et al., 2010) in which the analysis of study cases is conducted through their redraws and listing of several data and parameters, understanding that datum is objective information extracted from the quantitative and metric analysis of each case. Therefore, datum is unprocessed information, quantitative and so, direct

and specific. Data determined with this methodology comes, mostly, from the procedure of the architect Alexander Klein. On the other hand, the parameters have been analysed, being these ones the relationship between two or more data. In this case, this information comes from the linking of data, which have no relationship a priori between them. For this reason, we have stated the parameter as intended information, designed with an exploratory purpose, which is primarily abstract information that cannot be identified with metric quantities and/or geometric evidences in the built project. The seven study cases selected for this more specific analysis are: Pedregulho Residential Complex, by Affonso Eduardo Reidy, in Rio de Janeiro (1946-1958); Park Hill housing, by Ivor Smith and Jack Lynn, in Sheffield, England (1955-1961); Forte di Quezzi social housing, by Luigi Carlo Daneri and Eugenio Fuselli, in Genoa, Italy (1956-1968); Neighbours Set n3 Elviña, by Jose Antonio Corrales Gutiérrez, in A Coruna, Spain (1965-1967); Byker development, by of Ralph Erskine, in Newcastle upon Tyne, England (1970-1980); New Corviale, by Mario Fiorentino, in Rome (1973-1981); and 8 House and small tower, by BIG, in Copenhagen (2006-2010) (Fig. 4).

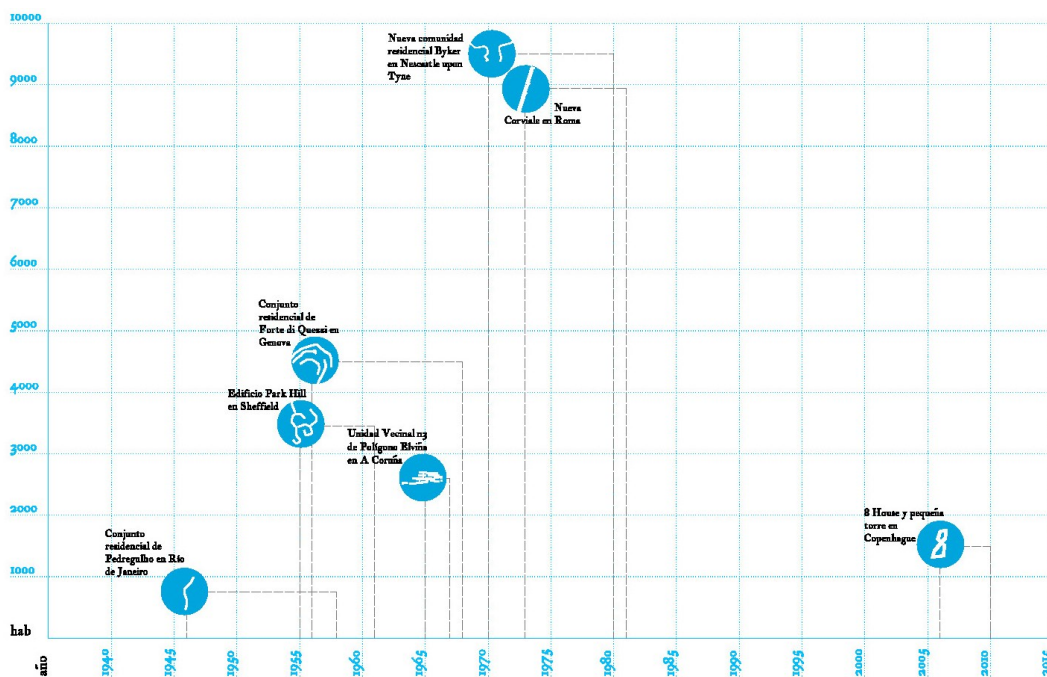


Figure 4. Chronology of the seven selected cases

Because of their large size, the cases are analysed from different scales of study. We have proposed four scales to redraw the most representative documents of each study case, because these figures facilitate their comparative analysis. Study scales are:

- Territorial or infrastructural scale (1: 20,000). These sets represent the materialization of an urban strategy on the large-scale. Either planned as reference icon, or as social condensers, or as new settlements that build city on them, the relationships established between city and these landscapes are different to other scales. Consequently, their own scale to examine them is different too (Fig. 5).
- Urban scale (1: 7,500). This one has relation with the access to these "cities within cities". We would research about interactions happen between both elements, observing if the set is closed on itself or, on the other hand, if it is associated to the city, facilitating an urban density intensification situation. These cases could also be satellite elements, which vibrate with their landscape, or understood as a cohabitation lung within the individual congestion of its surrounding landscape.
- Residential scale (residential levels and territorial sections 1: 1,000, and standard sections 1: 350). In this scale we would understand the infrastructure as a built element within the city, which is not necessarily an icon. So, the representative set of the city could be understood as a residential mass, which merges with its urban landscape and loses its entity as symbol. Moreover, relationships that happens in these blocks, describe a strategy that pursues to structure a building group with urban tools, such as different gradations of privacy. For this reason, we are inquiring whether the type of residential



development that occurs on this landscape, is again generated on a smaller magnitude with a similar scale structure to the city or not. (Fig. 6 and Fig. 7).

- Unit scale (Standard floor plan 1: 150). This scale would relate to the private operation of these accumulations of dwellings, which seem to emulate cells of a honeycomb. Many of these study cases are influenced by the “wine rack” system of Le Corbusier, needing other strategies to generate community life. This point could be fostered by community areas and streets in the sky, which could form a neighbourhood contained in a building (6, p. 50-61). In this case, the streets in the sky to access to dwellings could be traveled at different speeds. This one leads to the conclusion that these constructions are high-density suburbs with street in the sky, which are overlaid horizontal communications as urban interaction strategy.

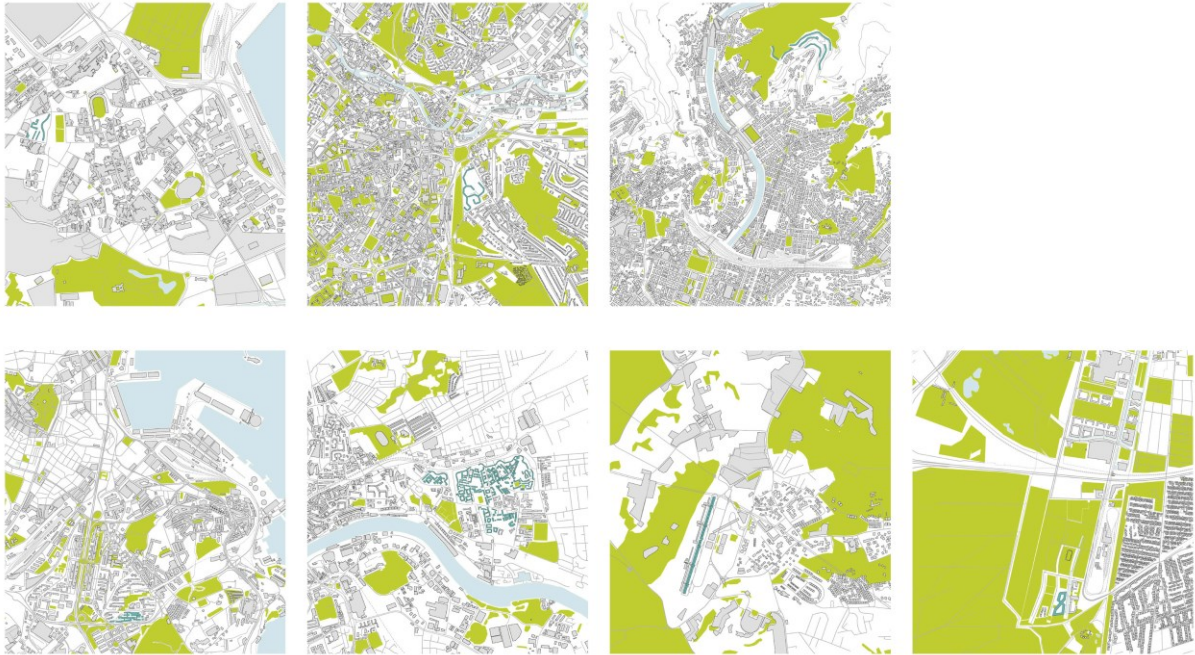


Figure 5. Redraws of infrastructural plans. Proposal sc 1:20,000.

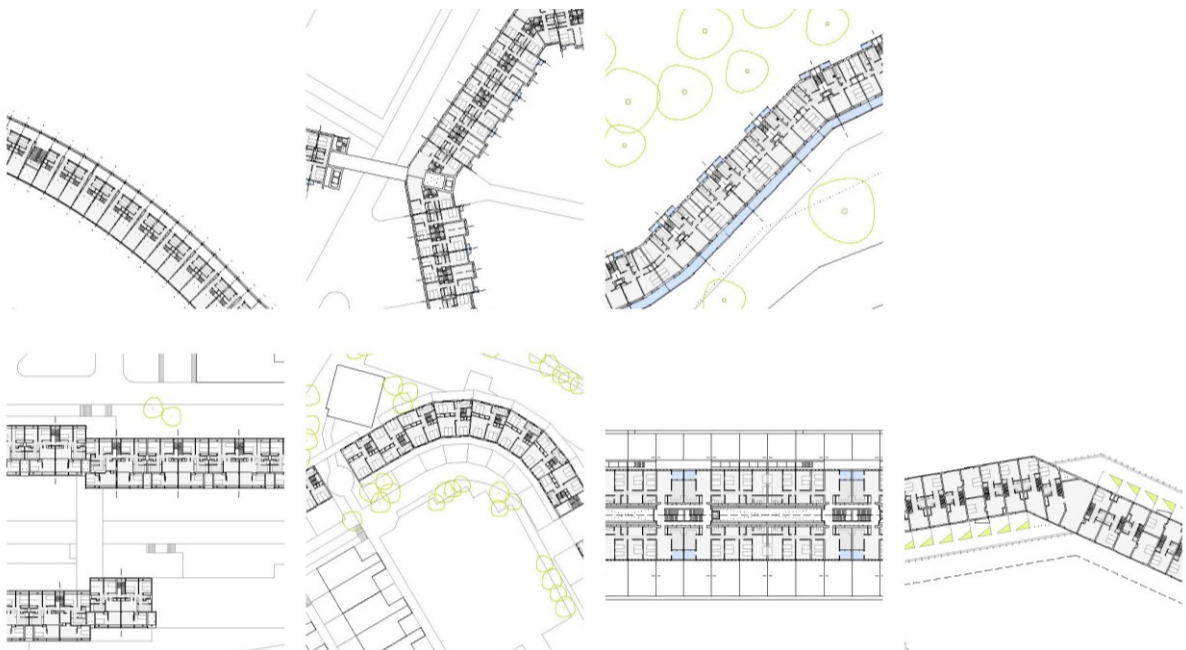


Figure 6. Redraws of residential floors plans. Proposal sc 1:2,000



Figure 7. Redraws of territorial sections. Proposal sc 1:2,000

In a second analysis process, we have cross the most representative qualities detected in the seven cases, applying this attributes to 63 cases of potential XL Residential Infrastructures, which have been collected from the consultation of different representative magazines in the world of architecture, since early last century. Thereby, a qualities matrix intersection is made among these selected cases according to variables as number of blocks; bordered or enveloped construction; symbolism; aesthetic unity; building name assimilated from the neighbourhood; shops in their various levels; other services on the block; public or private streets in the sky; different travelling speeds on these streets; community areas; or community operation (Fig. 8).

		un único bloque	varios bloques	longitud mayor de 500m	cont. envolvente o de unión	sección constante	sección variable	edilicio	unidad edilicia	estructura prior. horizontal	funcionamiento aislado	nombre edificio - barrio	comercio en planta baja	comercio en planta elevada	otros servicios en el bloque	calle elevada pública	calle elevada privada	varias velocidades de recorrido	viviendas tipo	zonas comunales	atención de comunidad	espacios verdes
1767	Hotel Royal Crescent de John Wood el Joven	O																				
1789	Hotel Lansdowne Crescent de John Palmer	O																				
1910	Road Town de Edgar Chambers		O	O	O	O																
1925	Rascacielos horizontal de Friedrich Kiesler		O	O	O	O																
	Ciudad vertical de Ludwig Hilberseimer		O	O	O	O																
	Plan Voisin de Le Corbusier		O	O	O	O																
1927	Damascus de Walter Gropius		O	O	O	O																
	Siedlung Rönnefeldt de Ernst May		O	O	O	O																
	Karl Marx Hof de Karl Mosler		O	O	O	O																
1928	Diseño de viviendas Brez de Bruno Taut y Martin Wagner	O		O	O	O																
	Edificio central de Jarzetzki de Fritz Schumacher		O	O	O	O																
	Proyecto para edificio de apartamentos de Marcel Breuer		O	O	O	O																
1929	Proyecto para Río de Janeiro de Le Corbusier		O	O	O	O																
	Apartamentos en puentes de Hugh Ferriss		O	O	O	O																
	Propuesta para Manhattan de 1950 de Raymond Hood		O	O	O	O																
	Larga Pasa (Colonia Siemensstadt) de Otto Bartning	O		O	O	O																
1930	Alojamiento social para 500 pers de Mikhail Okhtovich		O	O	O	O																
1931	Complejo de casas adosadas de Friedrich Kiesler		O	O	O	O																
1933	Plan Obus de Le Corbusier		O	O	O	O																
1936	Prora de Robert Ley y Erich Pulitz		O	O	O	O																
1946	Pedregal de Alfonso Eduardo Roldán	O		O	O	O																
1947	Conjunto Urbano Presidente Alemán de Mario Pani	O		O	O	O																
1950	Barrio La falchera Ins-Casa de Giovanni Astengo		O	O	O	O																
1951	Conjunto residencial de las Catacumbas de Alfonso Eduardo Roldán		O	O	O	O																
1952	Sistema residencial Golden Lane de A.P. Smithson	O		O	O	O																
	Conjunto residencial Marquise de San Vicente de A. E. Roldán	O		O	O	O																
	Proyecto residencial "Canta sin" de Viljo Revell		O	O	O	O																
1955	Edificio Park Hill de Ivor Smith y Jack Lynn		O	O	O	O																
	Conjunto residencial "Les Courtilles" de Emile Aillaud		O	O	O	O																
1956	Conjunto residencial Forte di Quelli de Luigi Carlo Dami		O	O	O	O																
1957	"Il Tren" de Giuseppe Vaccaro	O		O	O	O																
1958	Proyecto de asentamiento ecológico de Ralph Bakis		O	O	O	O																
	Proyecto para una zona residencial en Sundbyberg de Sven Markelius		O	O	O	O																
	Viviendas en Nockebyhov de Sven de Backström y Laila Rasmussen		O	O	O	O																
1959	Proyecto New Babylon de Constant Nieuwenhuis		O	O	O	O																
1960	Conjunto residencial Vila Isabel de Francisco Bolonha	O		O	O	O																
	Motopía de Geoffrey Jellicoe		O	O	O	O																
	Edificio principal de Le Lapin de Georges Ador	O		O	O	O																
	Ciudad en el aire de Arata Isomaki		O	O	O	O																
1964	Conjunto residencial Sant Ambrogio de Arrigo Arrighetti		O	O	O	O																
1965	Unidad vecinal n.º Elvira de José Antonio Corrales		O	O	O	O																
	Barrio de Bijlmermeer de la Oficina de Arquitectura de Amsterdam		O	O	O	O																
	Urbanización Rubens de Stefan Wewers		O	O	O	O																
	Proyecto de corredor en Jersey de P. Eisenman y M. Graves	O		O	O	O																
	Toulouse le Mirail de G. Candau, A. Josic y S. Woods		O	O	O	O																
1966	Edificio Kelvin de la Oficina de Arquitectura de Sheffield		O	O	O	O																
1967	Conjunto residencial Gallarate de Carlo Aymonino y Aldo Rossi		O	O	O	O																
1969	Diseños paralelos de Archizoom	O		O	O	O																
	The Continuous Monument de Superstudio		O	O	O	O																
1970	Nueva Comunidad residencial Byker de Ralph Erskine		O	O	O	O																
	Ciudad puente de Alan Boudwell	O		O	O	O																
	Estudios de vivienda en Roma de Studio Asse		O	O	O	O																
	Falwicz		O	O	O	O																
1972	Exodus de Koolhaas, E. Zenghele, M. Vriesendorp y Z. Zenghele	O		O	O	O																
1973	Nueva Corviale de Mario Fiorentino		O	O	O	O																
1976	Reestructuración socioeconómica en Valle Riva de Vittorio Gregotti		O	O	O	O																
1979	Edificio "de papel" de Hengstad Weber Schulze Van Tilburg	O		O	O	O																
1980	Proyecto para primer pueblo en Antártida de Amancio Williams		O	O	O	O																
1986	Viviendas en la M-30 de Francisco Javier Sáenz de Oiza		O	O	O	O																
1997	Viviendas Moabit-Werder de Georg Bünzler	O		O	O	O																
2003	Linked Hybrid de Steven Holl		O	O	O	O																
2006	8 House de BIG		O	O	O	O																
	Vankes Centre de Steven Holl	O		O	O	O																

Figure 8. Qualitative matrix

## 4 RESULTS

### 4.1 Comparative matrix analysis

As results of these analyses, we highlight the results associated with the community concept, because this one is the topic which is linked more strongly with the in between spaces, the in between scale which we would like to deepen. In this way, almost a 70% of these building cases involve a territory or it is the link between two situations or sites. Namely, these long lengths constructions are used in order to protect or identify a space, as an architectural assistance, which generate city.

The 65.08% of the cases have a standard section, point which refroze the hypothesis of that these artefacts are formed by the superposition of horizontal layers, without a complexity section. In the case of those developments which have a non standard section, we could stress their continuity, as their fluency condition in their different floors. The most part of the non standard section are designed from 1950.

In reference to their iconical intention, which could be understood as intrinsic in a XL object definition, it is only attributable to the 20.64%. This data, which could seem unusual, is because these residential settlements are normally focused on solving of a great housing lack and they try to create a residential mass where accommodate one or several community of neighbours. The relationship between the housing and the iconical concept is not very close, because in the traditional city centre the constructed mass is realised with a residential programme and specific iconical elements where are performed public activities. The community concept is linked, in this case, with the privacy, in opposition to the iconical concept, which is linked with the advertising and the public.

By their historical background, we could think that a lot of these developments follow their independence of the closer landscape, complementing their sets with lower scale services and facilities, situation which happens in a 44.44% of the cases. In a 38.1%, the neighbourhood name is the same as the residential infrastructure.

The 33.33% of these settlements has shops on the ground floor and only the 25.4% on the higher levels. The most part of the developments, which show this situation of the neighbourhood in the sky, dating back between 1950s and 1960s. The shops in the sky, raised as a facilitator of the urban operation in the settlements, are more visible from 1960s. However, and in relationship with the neighbourhood attribute, a 63.25% contains other integrated services in conjunction with its residential programme.

The public street in the sky, which appears from projects designed around 1927, is in a 47.62% of the examples, while the 33.33% has access to the housing units through a restricted street. Overall, a 68.25% proposes public or restricted street. In our analyses we find a 39.68% of the streets in the sky, which are enabled to travel at different speeds. This topic is linked with the street width, which has extra dimension in the residential projects designed from 1965 (Fig.9).

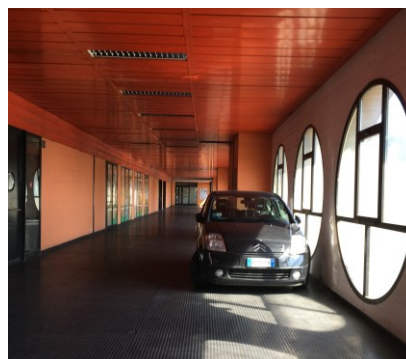


Figure 9. Street in the sky of Rozzol Melara Estate.

Due to the great length of these settlements, the housing unit becomes of secondary importance, using the repetition of dwellings as the residential solution in an 85.71% of the cases. From the 30s, the 76.19% of these developments include community areas. Similarly, an 85.71% of these ones have green areas.

Eventually, XL Residential Infrastructures that show a population with community characteristics are the 53.97%. This reflects that a large number of these sets have not been able to make the link between the population and the architectural space, unleashing a rejection of these buildings. We have found that populations, who make communities, have a dimension around 600 and 1,000 neighbours. The lack of this unit feeling has propitiated several criminal activities and causing the neighbours disruption and the space detriment.

## 4.2 Re-definitions undertaken

Due to exceptional characteristics of the infrastructures we research, we have re-defined several concepts adapting them to the particular qualities of the study cases, having a closer view of them. This one is the glossary by alphabetical order:

**Central place:** Delimited space where you can find particular services for block communities.

**Community:** 1. Minimum people with capacity of action in the property; 2. People group who have singular communal elements and whose they feel pride; 3. Different socioeconomical groups who manage an infrastructure; 4. Neighbour group by block; 5. A good operation of the community is development in groups between 600 and 1000 neighbours.

**Community areas:** 1. Places where the inhabitants can share activities; 2. Spaces with Internet connexion and, consequently, the virtual socialisation; 3. The socialisation spaces are in the community areas, while community areas cannot be socialisation spaces.

**Customize:** Action to personalize a space or façade surface, which is property of a user. Normally, you can find this operation in buildings with trend for masses anonymity.

**Internal laws:** 1. Moral code, predefined between a people group, which allows the peaceful cohabitation; 2. Rules list to use the community areas.

**Loyalty schemes:** Strategies, normally reinforced with economic incentives, to foster the participation of the neighbours in the community life.

**Neighbourhood:** 1. Group of people who are a community; 2. Similar buildings, which are a set with enough entity, so they are recognised as a unit; 3. Landscapes recognisable as units that divide the city.

**Privacy:** 1. Quality of restricted; 2. Access restriction to the personal territory; 3. Note that this quality is not only linked with the visibility.

**Privacy spaces gradation:** Situation which foster the relationship between people living in the building.

**Security:** 1. Parameter linked with the visual permeability; 2. Missing quality in spaces as streets in the sky with public access and restricted visibility, degenerating into spaces susceptible to uncomfortable situations.

**Vertical suburb:** 1. Neighbourhood or residential centre concentrated in a building, situated in the city or on the outskirts of the city; 2. Vertical cumulative organization of the elements recognisable in residential neighbourhoods as restricted gardens or row houses; 3. Concept linked with a horizontal programmatic distribution.

**Vila:** 1. Delimited community with 250 dwellings; 2. Units in which the neighbourhoods are divided.

## 5 REVISITING AND DISCUSSION

These great residential artefacts have mostly social high weaknesses, which have not been solved by the architectural space. In the last few years, and because of serious damage process visible on these buildings, several revisiting studies have been made, trying to deepen their circumstances and considering that people who request the demolition are rising.

We should note that, in many study cases, in their implementation, any regulation mechanism is not proposed in order to provide the people cohabitation. Due to this situation, communal areas were used



incorrectly. This one is not the case of Forte di Quezzi social housing, in which, during our visiting in June 2014, we could check the existence of regulations, dating from different periods (Fig. 10).



Figure 10. Regulations of Forte di Quezzi social housing (Genoa) 1968 vs. 2014.

This one is not the only action, which has obtained a peaceful cohabitant between people of this Infrastructure. The city council has legislated new official regulations for the garbage collection for this residential set, in addition to the closure of its street in the sky. Furthermore, users use the social media to visualize the individual and community activities. Strangely, this study case has been vaguely revisited, so any information we have obtained about different actions and performances for the cohabitation of its neighbours, have been punctual news. Its Facebook profile has very few followers (112 followers, accessed June 2016) and its activities are around sharing pictures about food, landscapes, and so on. The community has a website for manage the set, publishing resolutions of its meetings. In addition, between 2002 and 2004, “Il Biscione” its common name, was the focus of the project leaded by “plug\_in - laboratorio di architettura e di arti multimediali”. In this proposal, they coordinated activities as “Pic-nic al Biscione” or “Una giornata al Biscione” (Fig. 11). Particularly, in the workshop in Il Biscione, they interviewed some inhabitants. With these activities they intended an approach between the city and the set, and vice versa.



Figure 11. Pic-nic al Biscione (2002-2004) and una giornata al Biscione (2002-2004)

Another case, which has been the objective of multiple revisitings, competitions and researches, is New Corviale. Located in the crossfire of criticism, we would like to note that, a part of the problems which have emerged in this construction, are not only because it has a infrastructure scale, but also because the involving of incidents as its unfinished state, because the death of the architect leader of the design, Mario Fiorentino, and consequently the abandonment of the leadership. This one propitiated the unfinished status of community areas of the fourth level. So many destructive acts have been done in this settlement (Fig. 12), among them, the stealing of the mailboxes, which propitiated the self-construction them by the neighbours or the buying of them. Furthermore, over than four family names have mentioned in the mailboxes, so we could confirm the overpopulation, which is in this development. Terraces have been closed, expanding the kitchen or living room or, in other cases, obtaining a new room. In addition, at the beginning of the 90s, ten years after the end of the construction, the fourth level started to be inhabited by okupas. Currently, this level is occupied with self-construction dwellings, which are organized around community areas. A great part of the population of this level are illegals, while another part are inhabitants who owned a future dwelling in this floor and who decided to start the construction of their dwellings by themselves. In this respect, there are two types of inhabitants: community neighbours and okupas. The main problem is the lack of economic cooperation to the community expenses. Also, the security lack and the increase defaulting inhabitants, has resulted in the emphasis by neighbours to divide the settlement every 100 meters, as the broken lifts, generating 10 management units, in contrast to the 5 units which were raised at the beginning. When this situation was not legal, inhabitants built grilles in the streets in the sky to separate. Eventually, this condition managed to legalize when a renovation project, developed with the

neighbours, which was authorized by the public administration, regulated 120 illegal inhabitants from the fourth level.



Figure 12. Comparison between initial (1981) and recent (2005) status of New Corviale, Mario Fiorentino.

In 2001, Osservatorio Nomade (ON) starts a new initiative, which views its results in 2003. This group, in collaboration with the Fondazione Olivetti, generates a design to intervene in New Corviale by invitation of the Municipality of Rome, recognising the necessity of listening and discuss with the inhabitants. ON organized workshops, working structures, and so on, distributed in 3 differentiated approaches: ON | field, ON | network and ON | univerCITY (Fig.13).

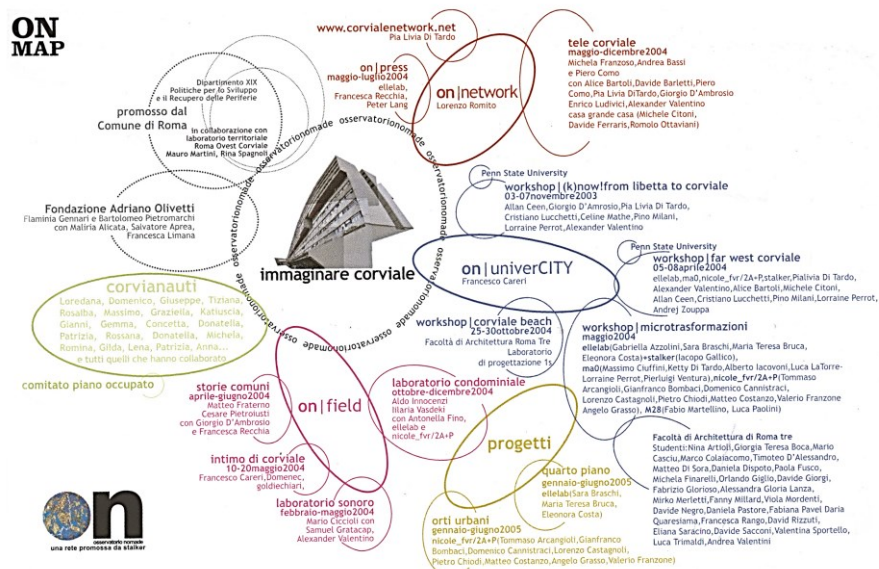


Figure 13. Actions structure coordinated by Osservatorio Nomade (ON)

Furthermore, Conferences and Competitions have researched about the problems of New Corviale and its solution. However, from 1980 some voices request the demolition of this building, and the other with similar characteristics, what is impossible because it would be necessary to transfer 6,000 inhabitants. This one was not the case of Hyde Park in Sheffield, which was demolished in 1992. Throughout history and in our own time, we have been witness of XL Residential Infrastructures which have been revitalized or which have been objectives to discuss their situation, trying to renovate for the current moment. Some cases have been rehabilitated through processes of citizen participation, it is the case of Park Hill Housing in 2007, but other buildings are in processing to discuss.

## 6 CONCLUSIONS

Some conclusions of this research are XL Residential Infrastructures are buildings which have a in between scale between the city and the housing unit. These residential settlements are normally focused on solving of a great housing lack and they try to create a residential mass where

accommodate one or several community of neighbours. Their correct dimension is complicate because they are on the large-scale and wrap a landscape. After our research, our conclusion is the appropriate size is between 600 and 1,000 people, being organized by an external manager. The process of self-management is not possible because this one is adequate for communities between 100 and 300 people.

These XL Residential Infrastructures could be defined as stackable cities or high-density suburbs with streets in the sky as overlaid horizontal communications. They have cohabitation regulations and keep the good maintenance of their community spaces. Furthermore, they have shops, services, and so on in their streets in the sky, which could be travelled with different speeds. However, cohabitation among so many people exhibits many criminal actions. On the other hand, some social media initiatives have helped to form a virtual community linked with an architectural space, achieving satisfactory results. So, we have detected it is necessary informal cohabitation + educational processes, involving to neighbours who live in a contained city. Consequently they should understand the set as a benefit instead of a detriment. Factual, theoretically in these projects community is above individual, becoming housing units of secondary importance.

Although the revitalization of these developments is in researching process, the demolition is a very complicate logistic situation. So, we need to continue this investigation in order to clarify more solutions.

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## NEW IN-BETWEENNESS

### ARCHITECTURAL AND VIDEO CODES IN THE DAN GRAHAM'S HOUSES

Angela Juarranz

Madrid Polytechnic University (SPAIN)

angelajuarranz@gmail.com

#### Abstract

The sculptor and video artist Dan Graham (Urbana, USA, 1942) has worked on the connections and cracks between the spectator and the built and inbuilt space. He investigates the links between public and private scale, in particular between communal and intimate environment. Our objectives are focused on looking for new types of relationship between both spheres. These new ways of interrelation will allow to surpass traditional structures that our society still maintains.

From the Graham's point of view, art and architecture refer to a social, political and economic context. The American suburban one family homes are one of his main fields of interest. In 1966, Graham designed the photo-text article *Homes for America* (*Arts Magazine*). It addresses the issue of Californian row houses and the new form of suburban living. In the early 1970s, Graham turned to interactive video concepts. For example, *Picture Window Piece* (1974) discusses the apparent symmetry established between broadcast interior/exterior spaces. In the foreground here are questions of privacy and media surveillance. *Video Projection Outside Home* (1978) is a sculpture where a large screen is placed on the front lawn, facing pedestrians. Graham reverses the traditional function of television by showing to everyone the private TV schedule.

The sculpture *Alteration to a Suburban House* (1987) is the culmination of that intense experimentation on the American houses. The entire facade of a typical suburban house is removed and replaced by a full sheet of transparent glass. Midway back and parallel to the front glass facade, a mirror divides the house into two areas. The mirror as it faces the glass facade and the street reflects not only the house's interior, but the street and the environment outside the house. The Graham's sculptures are an ideological critique to the suburban typology. As Beatriz Colomina states in the *Double Exposure: Architecture through Art* book, the suburban house works as a showcase of domesticity. In the context of residential surroundings, *Alteration* might be read simply as an eccentric "do-it-yourself" home modification. It could also be seen as a work of "high" architecture in the modern idiom. However, what Graham looks for has another significance. *Alteration* transcends the space of the house to connect with the neighborhood and intensify the strategy between family and social community. The operation affects both the users and the environment. An occupant, a pedestrian, and a passenger are at the same level by connecting them in the mirror and identifying the interior facades and adjacent roads. But also, the mirror's reflection exposes the house's relation to the social environment, revealing the position of the spectator's gaze. His game reverts the opening function and invite us from public to private space. It is a break with housing tradition. By violating the rules of the classical environment, we can renegotiate the existing conditions. The sculpture becomes a material for research. From this position, free of the restrictions of the real world, we can go further with the proposal of a new public/private relation. *Alteration to a Suburban House* and many of the Graham's masterpieces are fruitful case studies to a future *in between* architecture.

**Keywords:** public, private, housing, window, alteration.

## 1 DAN GRAHAM

The sculptor and video artist Dan Graham (Urbana, USA, 1942) has worked on the connections and cracks between the spectator and the built and inbuilt space. He investigates the links between public and private scale, in particular between the communal and the intimate environment. Our objectives are focused on looking for new types of relationship between both spheres. These new ways of interrelation will allow to surpass traditional structures that our society still maintains.

Since he started working in the sixties, Graham not only has been video-artist and sculptor, but also an art gallery director, critic and filmmaker. That multifaceted profile was not an isolated case. All disciplines were connected. Graham remembered that many of his projects were developed around the debates that they have in the Robert Smithson's lounge. Art was so an open field that painters, sculptors, dancers, writers, and filmmakers worked with common ideas. Sol Lewitt was interested in graphic design and architecture; Dan Flavin in painting; Donald Judd in philosophy and writing; Bruce Nauman in photography and, like those, other many artists tried different new lines of research. Also, since his career began in the mid-sixties, Graham has been using photographs, sculptures and videos to deepen the social codes and the permeability of architecture.

## 2 IN BETWEENNESS

### 2.1 Materiality

In 1969, the year of his first solo exhibition, Graham made a series of performances in which body movements and space were the main elements. For example, in the work *Two Viewing Rooms* (1975), he incorporated the glass-mirror, reflective on one side and transparent on the other. The work alters the visual and spatial perception by exposing the viewer to a closed circuit between the live broadcast of himself and the reflections on two mirrored facing surfaces. A second spectator observes his behavior through a glass mirror. This material is the base of its most recognizable structures: the human scale pavilions. These spaces are designed to be exposed on the outside both as sculptures and as architectural enclosures that eventually allow several uses like shelter, greenhouse or children's playroom. The living space provides a certain perception of the medium. Thus, the pavilion is a mechanism where experience is activated by the user. The visitor is considered intrinsic to the work. The material improvement is fueled by the massive use of double-sided mirror of the United States environmental policy. In fact, the ecology movement begins with Jimmy Carter and his interest in reducing oil consumption. To quote Graham, "corporations were on the defensive. Two-way mirror glass, which you know as one-way mirror glass, is actually, whatever side gets the sunlight is reflective, and the other side is transparent. So, corporate buildings cut down air conditioning costs by reflecting the sun. They also had a surveillance situation, because also, the main thing was, the corporations showed the sky, which meant they were identified with nature" (Graham 2012).

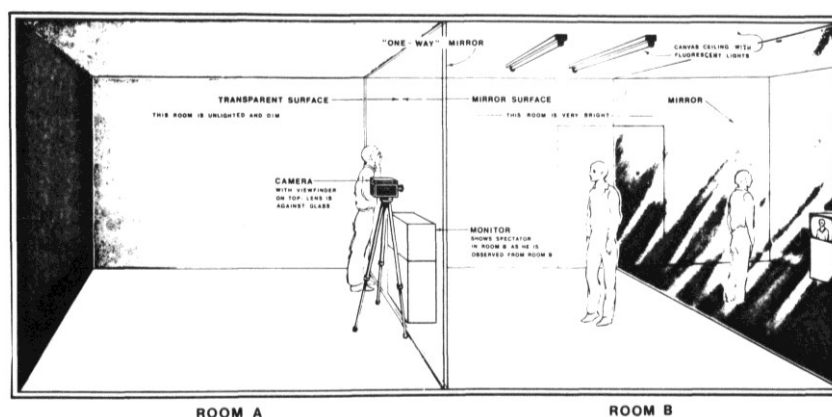


Figure 1. Dan Graham. Two Viewing Room, 1975.

## 2.2 Housing

From the Graham's point of view, art and architecture refer to a social, political, and economic context. The American suburban one family homes are one of his main fields of interest. In 1966, Graham designed the photo-text article *Homes for America* (*Arts Magazine*). It addresses the issue of Californian row houses and the new form of suburban living. The work, produced as a photo journalist article, examines the potential variation in style and color of serial housing. In the early 1970s, Graham turned to interactive video concepts. For example, *Picture Window Piece* (1974) discusses the apparent symmetry established between a filmed interior/exterior space. We see the picture of the interior live camera on the exterior monitor. The picture of the external camera can be seen on the interior monitor. The monitors are positioned in such a way that both monitors are visible from the outside and the inside. In the foreground here were questions of privacy and media surveillance. The treatment for this picture window foresaw a two-way surveillance: a camera and a monitor were to be set up both inside and outside a building, so that the observers standing on the two sides could watch the other people, and themselves as they were watching as well. Four years later, he designed *Video Projection Outside Home* (1978). It is a sculpture where a large screen is placed on the front lawn, facing pedestrians. It shows an image of whatever television program is being watched by the family within the house. Graham reverses the traditional function of television by showing to everyone the private TV schedule.

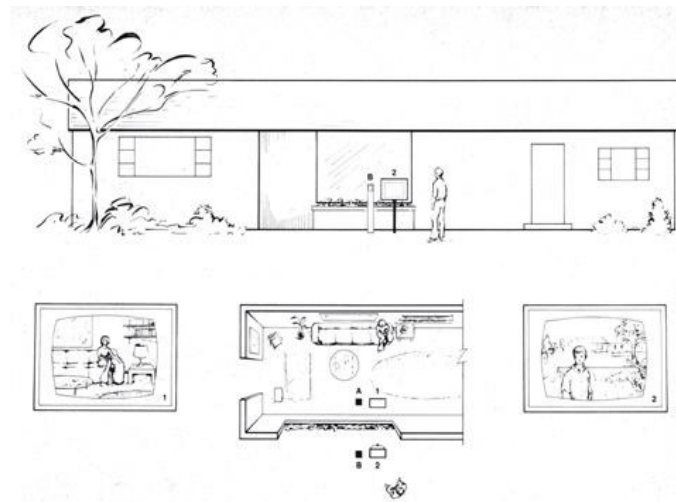


Figure 2. Dan Graham. *Picture Window Piece*, 1974.

## 2.3 Picture window

The sculpture *Alteration to a Suburban House* (1978) is the culmination of a long experimentation on the American houses. The accurate description of *Alteration to a Suburban House* perfectly describes the performance. The entire facade of a typical suburban house has been removed and replaced by a full sheet of transparent glass. Midway back and parallel to the front glass facade, a mirror divides the house into two areas. The front section is revealed to the public, while the rear, private section is not disclosed. The mirror as it faces the glass facade and the street reflects not only the house's interior but the street and the environment outside the house. The reflected images of the facades of the two houses opposite the cutaway "fill in" the missing facade (Graham 1993: 36). The picture window is the main variation of the Graham's house. He plays with the glass facade like a shop window. The side to side opening enlarges the view that people see from outside. Parallel to the facade, the mirror divided the house into two halves the house. Firstly, the private space acquires a bit of mystery, but also of discretion and privacy. On the other hand, the interior mirror shows both the interior and the external observer, placed in the outdoor environment but seen within the mirror. The reflective plane shows both inside and outside the house. The outside spectator observes the space behind the picture plane -inside house- as well as the space he is in -outside house-. That means that homeowner and pedestrian are at the same conditions.

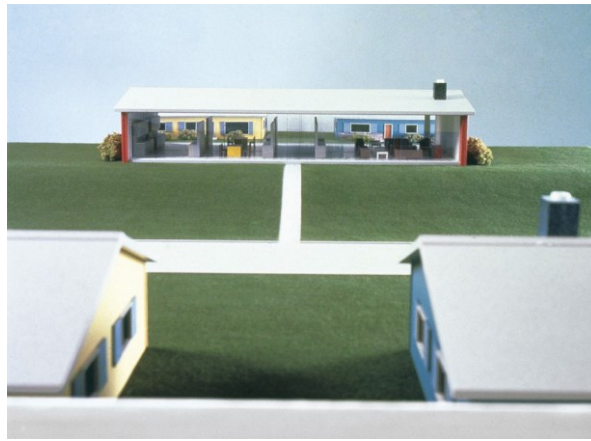


Figure 3. Alteration to a Suburban House, 1978.

## 2.4 Glass houses

*Alteration* relates to the *Case Study House's* program and to the glass houses of Mies van der Rohe, set in isolated, private, wooden estates. With four-sided glass form, nature is seen on all sides and, in the optical merger of its image with the reflections of the interior space on the glass curtain wall, interior and exterior are made identical. What is more, Philip Johnson, while designing the *Glass House*, was inspired by the idea of an old wooden villa in which, after a fire, there is only the metallic structure and the brick chimney (Frampton 1978: 51). On the other hand, as these houses are on private estates, they are not seen by the community. Writing about Mies' 1930s houses, Manfredo Tafuri and Francesco Dal Co note: "Nature was made part of the furnishing" (Tafuri 1979: 157). *Alteration* perverts this idea. The mirror's reflection also exposes the house's relation to the social environment, revealing the position of the spectator's gaze. There is also a relation to the houses built by architects such as Michael Graves, Robert Venturi, or Frank Gehry. This work, like the Gehry's Residence (Frank Gehry, 1979) takes away a section of the facade of an already existing house. Rather than building a novel form, it simply exposes the underlying material to show what is already there. There difference between *Alteration* and those pieces is that they do not disturb the existing public and private codes. Their work do not alter, split, or affect the surrounding environment.



Figure 4. Metallic structure and brick chimney after a fire.

Figure 5. Philip Johnson in the *Glass House*.

## 2.5 Lifestyle

We need to know the social, political, and economic context of the suburban villas to understand the Graham's progress. Even in the seventies and eighties, the postwar house is the quintessential American home. Decades ago, the growth of the North American economy and the rise of status allowed the young population to acquire a new home. The overcrowded cities caused the movement of challengers to the suburbs. The new model of house and the new lifestyle advanced at the same pace. The picture window was the newest feature of the suburban house. The opening on the front allowed you to enjoy the front garden, which had the best care to provide a proper appearance.

Moreover, the window was not only a connection to the outside, but also to the inside, which showed a not casual layout. This limited the privacy of the common rooms and became a claim to the neighborhood's glance. Furniture, lights, and decorations were placed to be framed from outside as a perfect family scene. The lack of complicity among the neighbors was another consequence of this new lifestyle. Sociological studies recognize an indifference when choosing between one and the other house. People looking for new home, paid attention to purchasing the property at the best price, but they did not consider social values. In addition, the advent of the television consumed all the homeowner time and filled the need for another type of communication. They were really sitcoms fanatic and spent the time watching *All About the Andersons*, *The Stones*, and other protagonist families.



Figure 6. "Houseful of Plastics. Modern living" article. *Life Magazine*, 1952.

## 2.6 Suburbia

The economical status in the suburbia allowed to reduce the line between the upper class and the large population. We can hardly recognize differences among houses in the photographs of the villas. Their tastes and habits were common and were guided by a powerful advertising. In addition, the properties of each family were provisional. The house, the car and the furniture were quickly sold to get the best ones. In part, the rapid rotation of objects was accompanied by the continuous improvements of the products. That was the main way of promotion in the suburb. Also, the physical context had important consequences. The suburbia was recognized as the ideal estate for a new generation; the green areas and a neighboring environment offer a great security. It was a time of confidence in a prosperous future. The baby boom of the sixties is the proof of that. However, the low density and the poor public facilities mean that mothers always care for their children, their social life, their education, their sporty activities. The image of the post-war marriage was shown in magazines, TV shows and advertisements. The intellectuals deplored the conformism and unconsciousness of these people. That is, according to the American sociologist Lewis Mumford, "the proliferating nonentity" (Hine 1986: 32).



Figure 7. American suburban house.



## 2.7 Television

The arrival of the television to the suburbia make a big difference in people's live. The household was transformed. Lives were organized around the TV schedule and the living-room furniture was rearranged so everyone can get a good view. It spawned the TV dinner and the TV tray. But most important, a new vision of modern life was available at the main TV shows. Television was one of their links to the new America. Suburbia and television are examples of the sixties and seventies economical growth. However, both show serious consequences for the public-private integration. Even, they need each other to complement the social lacks. The essayist David Foster Wallace studied the social casuistry of the television. First of all, television reflects what people want to see. If we want to know what American normality is -what Americans want to regard as normal- we can trust television. The second one thing is that television is for those that loves to watch people but hates to be watched itself. We can see them, they cannot see us. Audience, megametrically many, though most often they watch alone. "E unibus pluram" is the expression that uses Michael Sorkin in *Watching Television* to express the unidirectional role of television. Graham works on some of these in between implications. Some of his pieces try to solve the social lacks that American progress brought. He perverts both of these aspects, like in *Video Projection Outside Home* by showing publically the TV screen or like *Alteration to a Suburban House* by connecting the inner and outdoor parts. Also, both sculptures imagine situations that architecture has not discovered yet, but they appear to us as challenges to the in between space; in between the inside and outside home; in between the private and public world.



Figure 8. TV and TV tray advertisement.

## 3 A NEW IN-BETWEENNESS

### 3.1 Social common grounds

According to Graham's studies, architectural code both reflects and directs the social order. But he anticipates that in a near future the architectural code will be supplemented by a new video code. Architecture defines certain cultural and psychological boundaries and video can also rearrange those boundaries. Television being reciprocally two-way, can interpenetrate social borders not previously linked; its use may de-construct social hierarchies. In *Two Viewing Rooms*, the television connects different regions by taking an architectural and social function. TV images displayed on the wall-sized connect rooms, families, social classes and public/private domains. So, video works as a window and as a mirror simultaneously, but subvert the effects and functions of both. That is the Graham's expectation: an architectural that is able to work as a video code. Window in architecture mediates separated spatial units and frame a conventional perspective of one unit's relation to the other. Additionally, mirror in architecture defines self-reflective and spatial enclosure. In that sense, we understand that *Alteration* works as an attempt to provide architecture with a window and a mirror; that is, with a capability to reorganize cultural and psychological boundaries.



### 3.2 Public/private conventions

As Dan Graham explores, public versus private depends upon architectural conventions. By social convention, a window mediates between inside and outside space. The house separates the "private" and the "public" person and sanctions certain behaviors for each. The widespread use of video surveillance cameras involves similar social rules. The use of video would have social-psychological implications for the family structure. For instance, children being continually observed through the use of a video camera by their parents are involved in a complex concept of isolation; that is, there is no difference between public and private identities. *Alteration* proposes to go through that issue in the family-neighborhood relation by altering the virtual proximity between both. As people always can see the street, Graham opens a side to side window to allow a complete view of the interior. Through the huge mirror, the pedestrian travels to the inner sphere.

### 3.3 Symmetrical/asymmetrical frames

Graham defines the glass window, like the Renaissance painting, with a picture plane that places the world at a measured distance for the viewer on both sides. The world frames a conventional view which is defined by the specific size, shape and direction of orientation of the opening. A view from one space into the other space, defines one space's socially preconceived "view" of the other. A look from each side appears symmetrical, but not to be. The picture window appears to be symmetrical in the length of time allowed person on either side to stare, but actually is not. That is, the situation is not reciprocal in both sides of the glass; homeowner and pedestrian, seller and customer or boss and employee are not at the same level. For example, an office worker's view of the street through one-way glass, as opposed to the pedestrian's view is asymmetrical. What someone on one side of the window can see of the other space, and, what can be seen of them by a viewer on the other side (and, vice versa, for someone on the other side) is conventionalized by the social/architectural code.

*Alteration to a Suburban House* propose a symmetrical relation. About the symmetry, a mirror image optically responds to a human observer's movements, varying as a function of his position. As the observer approaches, the mirror opens up a wider and deeper view of the room. The mirror image connects subjectively with the perceiver's time/space axis. Mirrors in enclosure, like *Alteration*, exteriorize all objects within the interior space, so that they appear on the mirror as a close frontal surface plans. The pedestrian sees itself formed as an image in the mirror in the same way as a homeowner. In the mirror image he seems to be located in two places simultaneously, outside itself (in the world of exterior objects and being an exterior entity) and within itself (looking out at the image of itself).

### 3.4 A future in-betweenness

The work is an ideological critique to the suburban typology. As Beatriz Colomina states in *Double Exposure: Architecture through Art*, this house works as a showcase of domesticity. In the context of residential surroundings, *Alteration* might be read simply as an eccentric "do-it-yourself" home modification. It could also be seen as a work of "high" architecture in the modern idiom. However, what Graham looks for has another significance. *Alteration* transcends the space of the house to connect with the neighborhood and intensify the strategy between family and social community. The operation affects both users and the environment. An occupant, a pedestrian and a passenger are at the same level by connecting them in the mirror and identifying the interior facades and adjacent roads. His game reverts the opening from private to public and invite us from public to private space. The typical housing tradition is altered. By violating the rules of the classical environment and learning from the video code, we can renegotiate the existing conditions. The sculpture becomes co-producer of reality. From this position, free of the restrictions of the known world, we can go further with the proposal of the public/private relation. *Alteration to a Suburban House* and many Graham's masterpieces are fruitful case studies of a new in between space.

#### 4 ADDENDUM

We can mention some both spatial and video examples that show the Graham's prediction. We know not only the remotely supervising camera for parents or the camera as an employee control, but also, we have record other planets by sending cameras miles far away or, even, not so far away, we have entered indiscreetly into the private lives of the *Big Brothers*. Some decades ago, Graham detected what we might identify as the first *Big Brother*. An *American Family*, produced in 1971 by Craig Gilbert for *American Educational Television*, instead of documenting an exotic culture, studied the viewer's own culture at a nearly live broadcast. An idealization of the American family was placed in doubt. There were two main objections. Critics thought the show to be an attack on the "shallow, petty, and materialistic" aspects of the American family. Another objection to the series was that it was an invasion of privacy -a pandering to the viewer's voyeurism. This issue overlooked the existence of more programs like *Candid Camera* or *The Newlywed Game*. *An American Family* gave the viewer a self-awareness of TV's latent voyeurism (Levin 2002: 444). As well as George Orwell's novel *Nineteen Eighty-Four* (1949), every citizen was under constant surveillance by TV screens and continually reminded of this by the slogan "Big Brother is watch you".

The invasion of the private space reflects some transitional social changes. This attitude claims between the new cultural and social approaches and the private/public rights. But Graham omits this issue to go beyond that, to work on new ways of the friendly relations inside a suburbia community. *Alteration* breaks the social common grounds, the public/private conventions and the asymmetry of the frames by playing with the architectural and the video codes. We do not want an *A American Family*'s end, but the combination of a real and a virtual world seems to be the new in between. By playing with the architectural and the video codes, Graham, like a visionary, prepares us for that new in between space.



Figure 9. *Candid Camera*, 1947; *The Newlywed Game*, 1966; *An American Family*, 1971; *An American Family* (NewsWeek, 1973). *Black mirror*, 2011.

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## BUILDING FROM INSIDE OUT. ON AN (ALMOST) FORGOTTEN APPROACH

Vlad Thiery

*"Ion Mincu" University of Architecture and Urbanism (ROMANIA)*

*vladthy@yahoo.com*

### Abstract

In the article *The Principle of Cladding*, Adolf Loss states that one of the fundamental principles in architecture is designing from inside-out, as is from the user towards the external cladding. Nowadays, architecture is done in quite a different way. The principle of cladding as explained by Adolf Loss was replaced by the top to bottom strategy as the architects are generating spectacular objects – which people are supposed to inhabit.

From this first principle of a shell built around its owner to the contemporary structures whose primary goal is to look good when seen through the lens of a camera, architecture has suffered a radical transformation. Given this context, is “the principle of cladding” relevant any longer? And, if proven that this principle can still deliver a good design for the user, how can it work, how can it be put into practice nowadays?

The present paper is trying to answer these questions, at least to some extent. It's aim is to explore the relevance of the building from inside out principle for the contemporary architecture and moreover, for the contemporary user, and to see how it can be applied in the actual context.

In this endeavor, we will first take a look at some features of contemporary architecture. Thus the article will consider the statistic-based approach that has “flatten” people in a homogenous mass of users whose needs are not fulfilled by a standardized and obsolete design and on the answers concepts like Universal Design can provide for these problems. Also, we will consider some contemporary trends focused on small scale living, on a better control of the built area in order to reduce building and maintaining costs. And last, but not least we will take a look on how architectural practice is using the building from inside-out method.

**Keywords:** building from inside out, cladding, statistic-based design, concept, legitimate, egosystem, spectacular

### 1 “THE CORRECT AND LOGICAL PATH TO BE FOLLOWED IN ARCHITECTURE”

In his article *The Principle of Cladding* published in 1898, Adolf Loss was presenting an interesting image of the way mankind learned how to build. For Loss, man began building his shelter from inside-out, placing the cladding elements around him:

“This is the correct and logical path to be followed in architecture. It was in this sequence that mankind learned how to build. Man sought shelter from inclement weather and protection and warmth while he slept. He sought to cover himself. The covering is the oldest architectural detail. (...) Then the covering had to be put somewhere if it was to afford enough shelter to a family! Thus the

walls were added, which at the same time provided protection on the sides. In this way the idea of architecture developed in the minds of mankind and individual man.” [1]

This way the building, a simple shelter at the beginning that later transformed into a house, is an expansion of the clothes, a second layer of cladding after the coat. Architecture is thus seen intimately linked with its user, like a cloth tailored to fit him, like a shell that perfectly hosts the creature who has built it around itself.

Although the demonstration is perfectly logic and looks like the only way to build a house, in many cases buildings are not designed this way. On the contrary, architecture is done from outside-in as Loss observes: “There are architects who do things differently. Their imagination creates not spaces but sections of walls. That which is left over around the walls then forms the rooms.” [2]

I do believe that the image Adolf Loss is showing us, on how architecture should be thought, designed and built is a powerful one and architects should ponder over it. Although the aim of *The Principle of Cladding* was to plead for a honest use of materials so “a confusion of the material clad with its cladding is impossible” [3], this thesis, when read today, seems feeble or at least less interesting comparing to the building from inside-out method the author described in the beginning of his article.

Having in mind “the correct and logical path to be followed in architecture”, the present article tries to briefly examine – as the topic is an extensive and complex one - how and to what extent the principle of building from inside-out is used in contemporary architecture.

At a glance, a careless observer would think that designing from inside-out i.e. starting from the user should be a wide-spread approach nowadays for at least a few reasons. Firstly, the welfare society is gaining ground so buildings should be more affordable than ever. This, paired with the commercial approach in the building industry, focused on fulfilling the client’s demand, should lead to a design centred on the user’s needs.

Moreover, the scientific approach of the function in architecture since the beginning of the modernist period looks like a solid base for a user-centred approach in design. And last but not least, the trends towards a participatory design, emerged more than forty years ago, are well known and praised by everybody.

But things are far from being this way. The affordability of the houses is not following people’s purchasing power as the building industry seems to still work under the rules of production economy, generating thousands of square meters that nobody really needs. In response to this, the Millennials, a generation who does not want to accumulate assets but experiences, are looking for solutions that do not involve huge loans and long debts. As a response, a new sort of trends and approaches emerged, from DIY solutions with the recent concept of open source design of WikiHouse to the Tiny House movement.

The results of the scientific approach of function with all the studies on ergonomics seems to somehow be outdated since the man from Neufert’s “Architects’ Data” is no longer representative for today’s population. A new design concept, starting from the actual user’s needs, got shape in the last decades and it manifests itself through pretty similar approaches such as Design for All, Universal Design or User-Centred Design.

However, the general trend in architectural profession is heading towards a completely different approach and many buildings are designed starting from the outside image, having in mind almost solely a spectacular and dazzling look.

## 2 THE “BILBAO EFFECT” AND THE “WOW FACTOR”

Over the last decades we have witnessed a production of iconic buildings never seen before. In the past, structures having the qualities to become a landmark were pretty rare and the skyline of the city was changing slowly. But with the Guggenheim Museum in Bilbao the world started to think that a fast and spectacular way to renew decaying cities had been discovered. Thus, the desperate race for the “wow effect” began.

In the eighties, Bilbao was one of the cities suffering from the decline of the steel industry. The authorities came up with a development strategy meant to transform it into a city of culture and services and a top destination for tourism. In this endeavor, architecture – through the Guggenheim Museum building designed by Frank Gehry - was used as a key element in the marketing campaign to revitalize the city and the region.

The spectacular success of this enterprise of developing the city by using architecture came to be known as the “Bilbao Effect”. The architect Joseph Giovannini explains the phenomenon:

“The rust belt city, Spain’s Pittsburgh, needed a postcard image comparable to the Eiffel Tower and the Sydney Opera House to symbolize its emergence as a player on the chessboard of a united Europe and a globalized economy. It needed a monument. One building and \$110 million later, Bilbao is now a contender as a world-class city, and many of the world’s second- and third-tier cities have called Mr. Gehry’s office, hoping for a comparable Cinderella transformation.” [4, p. 238]

Frank Gehry’s emblematic architecture became a model for producing architectural image. The spectacular forms with indisputable photogenic character made the building so very loved and promoted by the media. And it is this very feature of being photogenic that changed the way architects design. In an era when buildings are promoted long before the first brick is laid and renderings are broadcasted like the movie trailers, architecture is done from outside-in, searching (solely) for a spectacular image. The design process resembles a photographer setting up a scene by looking through his camera.

Therefore nowadays both municipalities and companies are chasing “architectural trophies” – iconic buildings with the “wow factor” to enhance their brand equity. It seems that this feature could become an official request since “under a new set of performance indicators being produced by the Construction Industry Council, architects and bodies commissioning new buildings will be encouraged to consider whether the planned building has “the wow factor” as well as the more traditional concerns of function and cost.” [5] In this attempt, “clients and the intended users of the building will be encouraged to ask: “What do passers-by think of the building?”, “Does it provide a focal point for the community?”, and “Can you have a party in it?”” as it is considered “that thoughtful high-quality public buildings could bring about dramatic social benefits”. [6]

But the “wow factor” only is not a guarantee for success. The same “recipe” as in Bilbao, applied in the case of Experience Music Project in Seattle, design by the same Frank Gehry using, again, a collection of sculptural forms covered with the same metal scales, this time in a wider range of colors, did not achieved the same success. As a matter of fact, a year and a half after the opening the attendance was down by more than a third [7]. It seems that the “wow factor” is not enough even for commercial success. The spectacular, if not supported by other valuable features, is not enough for a resilient design. For, as Witold Rybczynski asserts on discussing “the Bilbao effect”: “The chief aim of architecture should not be to entertain, titillate, or shock viewers. After the third example of swirling titanium and colliding prisms, the effect begins to wear thin.” [8]

Guggenheim Bilbao was beyond any doubt a success. But this was not the result of its spectacular architecture alone, but of a mix of very well planned and applied strategies and of the good



collaboration between all the stakeholders and the local community. It was a project that emerged from within, in accord with community needs and desires, in a kind of inside-out approach. That was the true reason for its success, not the spectacular architecture well known around the world. Behind the front cover images of a magazine there is – or at least should be – much more consistency, as Rybczynski concludes: “Great architecture carries many messages, about society and individuals, about our values and our dreams. It should have more to say to us than “Look at me.” [9]

### 3 ROOM FOR THE USER

After examining the chase for architectural trophies with the “wow factor” which apparently involves the whole world trying to get the “Bilbao effect”, maybe it is time to get back to the human scale and look at smaller or at least more “discreet” architecture.

Naturally, the way of building Adolf Loss described is proper for vernacular architecture. Is it still possible today to build according to this method? There are a few areas to be investigated: today’s vernacular represented by small size homes, often build by their owners, the approaches born from the accessibility movement and the work of a few architects willing to “walk in the user’s shoes”.

Our world, full of standards and regulations, leaves little room for vernacular architecture. However, even in a pretty normative country like the United States, there are some actual trends initiated by people who are trying to reduce costs by building small and building by themselves. Both Do It Yourself (DIY) home construction and Tiny House Movement attempt “to bypass the normal systems of development, putting control into the hands of individuals rather than volume house builders and governments”. [10]

The DIY trend found some spectacular answers in an integrated design solution called WikiHouse – an architect-designed system who allows people from all over the world to have access to CNC files generating an IKEA-type house kit that two people with no previous experience in construction can easily build. [11, 12]

Tiny House movement has started from the financial constraints that came with the economic crisis, but is also the result of a new life style and of the options of the young generation. The Millennials – the demographic cohort following Generation X, seems to be unwilling to follow the former accumulation model and prefers to spend their incomes on experiences and not on big real estate properties. Although the first goal of the Tiny House movement was to seek for low-cost solutions for both building and maintaining a house by a most judicious use of the space this very feature lead to an enhancement of the living experience. People living together and inevitable sharing the same space are regaining the traditional connections within a family that are lost in the contemporary living. The relation with the environment is regained as well, for the interior space expands towards outside through carefully placed windows and everyday activities tends to be carried out in the open air.

Dealing with such small spaces – in some cases as small as fourteen square meters, the house should be “tailor-made” and, alike other interior designs (such as those for boats or train cars), should rely on the mix-use of spaces and mobile furniture. Being such the case, it is obvious that Tiny Houses can be designed only from inside-out and they are tailored on the user’s size like the first shelter Adolf Loss described.

### 4 DESIGN FOR HUMAN DIVERSITY

For the last eighty years, architects have for the most of times designed spaces for an unknown user, having as (abstract) model in mind - the man from Neufert’s “Architects’ Data”. The situation remains the same today and students from architecture and design schools are learning from the same

classical book, even though the statistic it was based on is already obsolete. However, the population is diverse and a lot of people just do not fit with the dimensions recorded in Neufert's book due to the size of their bodies or some temporary or permanent disability. Thus it became obvious that architects should think about the anonymous user on a larger statistical base and in a more inclusive way. Once again, architecture has to be done starting from the user.

For the last few decades, approaches related to human centered design finally built a concept focused on an design for human diversity in order to produce an accessible environment for all. This concept is known as Universal Design.

Its precursors are to be found in the trend towards an accessible environment emerged in USA with the disability rights movement in the late 1960s. This was prepared by the awareness campaigns started in the late 1950s, when people found that universities were not accessible for the war veterans and young people disabled due to the polio epidemic after the war (13). As a result of these campaigns, a series of laws and regulations have been adopted, becoming a starting point for Universal Design. This concept aims to reduce the need for special accommodation and the use of assistive devices, also eliminating segregation between able and disabled people by providing an accessible environment suitable for all users: "Universal design is a process that enables and empowers a diverse population by improving human performance, health and wellness, and social participation." [14, p. 29]

This way, the normative character of the accessible design approach developed into a broader concept as the focus is shifting from specific solutions and devices towards an enabling environment as disability is regarded more as a notion relative to environment or, as the EEID Stockholm Declaration stated: "Good design enables, bad design disables". [15]

## 5 WALKING IN THE USER'S SHOES

So far we have observed some actual trends focused on reducing building cost by choosing to live in smaller spaces mostly built by their owners. Then we had a look at the Universal Design concept which wants to provide an environment that enables as many users as possible to participate to everyday activities and to the social life as well. So far, our discussion seems to revolve around very particular domains. A question arises: is the building from inside-out a method to be used by architects for their general design activity also?

There are some architects who are using and advocating a user-centred design approach, a method of building from inside-out, starting from the user's needs. They seem to have the knowledge, the ability and the will to walk into the user's shoes, to see through the user's eyes.

One of them was the American architect Charles Moore who, in the years of "modernist triumphalism" was designing, teaching and "preaching" according to this concept. There were, as we can only imagine, pretty outrageous words for that time that he had: "we have attempted to introduce architecture from the standpoint of how buildings are experienced, before worrying about how they are built. We have believed that until we can begin to understand how buildings affect individuals and communities emotionally, how they provide people with a sense of joy, identity, and place, there is no way to distinguish architecture from any everyday act of construction". [16, p. IX]

Influenced by the theories of Gaston Bachelard, Moore put the human body in the center of his designs and highlighted the need for a three dimensional approach in design: "the human body, which is our most fundamental three-dimensional possession, has not itself been a central concern in the understanding of architectural form; that architecture, to the extent that it is considered an art, is characterized in its design stages as an abstract visual art and not as a body-centered art". [16]

His most influential work for this approach is probably Sea Ranch, a condominium built in the sixties – in the best modernist years, so to speak. The building is located in California in a remote spot characterised by a spectacular but harsh landscape. Moore carefully design an ensemble of buildings that provides the user a perfect “tailored” built environment merging into the natural one through a number of spaces which allow the transition from interior to exterior, and a unique experience of space and architecture as he stated: “architecture, the making of Places, is as we propose a matter of extending the inner landscape of human beings in to the world in ways that are comprehensible, experiential, and inhabitable”. [16, p. 105]

## 6 TOWARDS A PARADIGM SHIFT?

It is pretty obvious that the actual major trend in architecture is focused on producing spectacular images, perfect for the first cover of magazines. The spaces are the mere outcome of a designing process done from the exterior - spectacular, dazzling, glamorous, to the interior – whatever will ensue.

Designing the other way around, like designing from inside out seems an exception to be found only in some very particular design approach or in very particular architecture practice. On the other hand, the business area is focusing for providing experiences for consumers and not only products and services as it did before. And they always know what to provide their consumers with.

Tailoring a space to fit the user is more than a question of dealing with function, it involves designing a user experience. And this might be the chance the building from inside-out approach has. Because, for creating a relevant experience, you have to walk in the user’s shoes.

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## THE PARADOXES AND PARADIGMS OF MINIMALIST ARCHITECTURE

Iana Codruța

*"Ion Mincu" University of Architecture and Urbanism, Faculty of Interior Design (ROMANIA)*

*kodruyana@gmail.com*

### Abstract

Stepping into minimalist interiors, you enter in a blank white space, a plane space, which formal purity does not let anything to disturb it. The eye, which is always seeking color and movement, is forced to change the polarity of his usual curiosity and look up for other paradigm: the beauty beyond the image. And there, in this very empty space, the man will turn on trough itself. A self that is lost in the daily habit of wearing masks, pleasing the parents, the bosses and the teachers, in a world which imposes its own rigid models of perfection. Ok, but where is the real man in this world? He looks like its lost in his own set of masks, wandering and seeking its very own truth. Admiring the perfect empty white space, you are wondering where is the movement, the habitually mess, the unexpected emotion given by a natural and unexpected curve, the shadow of a sorrow, the colored joy? Where are hidden the souls within these perfect walls? Are they livable or are they playing only an aesthetic and representative role?

This paper is a critical approach about the minimalist style in contemporary architecture, after the conclusions withdrawn from my research about the subject, exposed in my PhD thesis entitled "Minimalist architecture paradigms". My thesis studied several constructions called "minimalist" and point out the minimalism is a style by his own been and what invariants or paradigms define it.

To establish the minimalist paradigm I didn't follow the usual path of esthetical style analysis but one more precise, far from the relative judgment of taste that live place of so many ambiguities. As scientific method of research I used complex morphological analysis, abbreviated GMA. This method of research, invented by Fritz Zwicky, Swiss savant in the astronomy domain is very versatile and multicriterial and is used in many fields of knowledge because of that. I made up a new way of documenting the material gathered so to be understood the style invariants and the compositional rules. The GMA protocol establishes that the style invariants are that hypothesis validated of as many specimens as it is. Some of them were excluded because they were not validated in a proportion of 30% of the specimens. That hypothesis not so powerful to be validated for the majority of the elements will became the style variants that particularize the sub-collection.

Although, after the study of the entire collection and the process of the hypothesis validation, and after determining the style invariants, it raised up some contradictions between the concepts declared by the creators and there's work of art. For example, minimalists architects such as Alberto Campo Baeza or Tadao Ando and Peter Zumthor declare their admiration for the nature and its energies, stating that minimalist architecture integrates in nature by a "tectonic attitude" and that they look up that its energies flowing freely inside. However their constructions are not volumes that harmonize with the organic forms of nature. Minimalist architecture creates inorganic forms in regular at right angle. Its volumes are simple prisms that contrasts completely with the natural environment or the striated space of the city. Moreover, in its inner courtyards there are natural elements but in an un-natural way. Water or trees, the patch of grass or the piece of scenery, all are brought into the architectural space like a bird in a cage, reduced to their value to symbolize nature and not to merge with it. On other issue, the most appreciate value is the simplicity and modesty, the purity of the nude material and its natural aesthetic. In reality, the minimalist construction is one of the most expensive architecture that exists, the costs contradicting with the Cistercian declared

modesty. To realize the perfect detail, obtaining the best aesthetic effect from the material, this must be of high quality and put in work with the best technology and instruments. That and many others are increasing the price of minimalist house. Despite these contradictions between the concepts and the reality, we cannot deny the image of an extreme accuracy that sets admirably the light and the space like a stage ready for the soul to open in a bright and pure atmosphere, delicate and sincere. Also we cannot deny its values of aestheticism.

My paper intent to present, on one hand, the paradigms of minimalist architecture and the research method that established them, but also the paradoxes of this style. I will rise up the questions about what is actually the minimalist architecture?! Is it true to its principles, or betray them by running the opposite, generating the paradoxes of minimalist architecture?

I conclude that paradoxes, those contradictions between concepts and there implementation, also defines minimalism as style in contemporary architecture as much as its paradigms and I want to present a scientific approach about the issues.

**Keywords:** minimalist, paradox, concept, paradigm

## 1 ARGUMENT

At first glance, the minimalist house looks like a conversion of an exhibition space without any defect, simply a perfect space, impossible to populate with movement, noise, with the organic that accompany the human life. You wonder where are the nooks where you can hide something when you're caught in flagrante daily disorder, where are the stored shovels or the rubber boots, pans burned or trash? Because we humans who live these spaces, are far from perfect, it does not seem nothing more than unnatural than perfection. The experiment, on the other hand, the fault, the attempts, daring to be perfect are deeply human actions. If we populate with people the minimalist interiors, we find that aesthetic effects are lost. This is one of the first paradoxes in minimalist architecture.



Figure 1. Shinichi Ogawa, Luminous house, Japan



Figure 2. Populate with human elements lose its pure, perfect aspect

The perfection is compromised by the natural human colors: stuff, daily accessories that makes the detail to disappear. By contrast with natural Brownian movement disorder, the minimalist interior is presenting an impersonal image: cold floors, white walls or concrete, emptiness in bright. Anticipating one of the paradoxes, a gap between the concept and its putting into practice, minimalist architects are purists which eludes the imperfection but the reality proves that this can't be possible.

Minimalist construction is a constant presence among architecture modern history, despite the artistic movements that rules the times. Much has been said about this subject, so much that it seems that we know all about it. But what is, in fact, minimalist architecture? What are its paradigms? Is it the "savant game of volumes in the light"? It is the brutal, cold, concrete wall that vanquish the site? What are its paradigms, its style invariants? Is minimalist architecture a materialization of its creators concepts or it betrays them?

## **2 BLACK AND WHITE IN MINIMALIST ARCHITECTURE**

### **2.1 The PhD research conclusions**

This paperwork intends to present the conclusions of my PhD thesis, „The paradigms of contemporary minimalist architecture”, published in 2014, putting accent on some paradoxes that rises if we study the concepts and there materializations.

I want to point out the fact that this thesis wasn't an tribute for minimalist architecture. I do not want to convince anyone that minimalist truths are universal and immutable. The universe of minimalist architecture can be anytime the subject of an esthetical judgment and can be guilty for many mistakes. Between the receiver and receptor is the space which interfere with both of them. But beyond its shell, is a special world, the world beyond the image, a world of introspection, of self search, which is found, paradoxically, in the Latin world, extrovert and solar, but also in the Japanese discrete and austere. And because beyond all is the soul, the searches of the German Peter Zumthor will be in accord with the traditional Shinto which describes physical world as housing for the spirit and also with the Iberian minimalist houses.

What I aimed in this research is to discover what really the minimalist architecture is. Where is the influence of modernism and were begins the pure style? In fact, can we talk about a real style or minimalism remains today a modernist mannerism? The purpose of this thesis is to determine which are the paradigms of the minimalist architecture in the way of understanding which are the coordinates of this style and which appearance is constant in architecture since modernism. The thesis demonstrates two important issues:

- **The minimalism is an architectural style by itself and not just an emanation of modernism.**
- **What are the minimalist style invariants?**

To prove that the minimalism is a style in architecture, I relate my demonstration by the book of Lucian Blaga, "Origin and Style". Blaga has a few point where he defines a style. As I proved it by decanting paradigms which coordinates its artistic process, we can talk in minimalism about a system's own language, which creates a coherent purposeful artistic products, with undeniable stylistic unity.

In the chapter about forms, I have defined some of the routes followed quite consistently in minimalist architecture. To recap, it is about using primary shapes, square, triangle, rectangle and rarely circle in planimetric and volumetric compositions of simple right angle. This phenomenon does not vary from one cultural area to another. Also a style invariant which can be related about the forms is the inner court or the protection wall, which gives to the construction an introverted aspect. For the second part-establishing the minimalist paradigms- I didn't follow the usual path of esthetical style analysis but one more precise, far from the relative judgment of taste that live place of so many ambiguities. As scientific method of research, I used complex morphological analysis, GMA. This

method of research, invented by Fritz Zwicky, Swiss savant in the astronomy domain is very versatile and multicriterial and is used in many fields of knowledge because of that. This quality gave me the possibility to adapt a special operating mode and to obtain result in the didactical field as much as in style analysis. I made up a new way of documenting the material gathered so to be understood the style invariants and the compositional rules. So the students found the inspirational resources for creating the style and the results, the interior decorations were originals and not pastiche or kitsch.

## 2.2 The minimalist style invariants and paradoxes

After the study of the entire collection and the process of the hypothesis validation, we obtain the very minimalist style invariants. The GMA protocol establishes that the style invariants are that hypothesis validated of as many specimens as it is. Some of them were excluded because they were not validated in a proportion of 30% of the specimens: that hypothesis not so powerful to be validated for the majority of the elements will become the style variants that particularize the sub-collection. The **style invariants of minimalist architecture** are:

### I. MORPHAE LOGOS- Plans and volumes [1, p. 41]:

- I1- SIMPLE GEOMETRICAL FORMS
- I2- SIMPLE COMPOSITIONS ON RIGHT ANGLE
- I4- STRUCTURAL ELEMENTS LIKE: THICK CONCRETE WALLS AND SLABS TO PERMIT AN OPEN FLOOR SPACE
- I5- FORMALISTIC CONCEPTS PLANS WITH AN INTEREST FOR THE PLANIMETRIC COMPOSITION

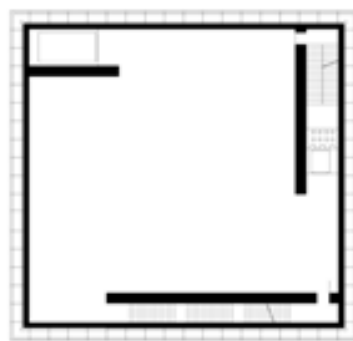


Figure 3. Tadao Ando, 4x4 House, Japan

Figure 4. Peter Zumthor, Plan Arts Museum, Bregenz

Figure 5. Gustavo Pena, All Saints Chapel, Brasil

At this subject I must mark the observation that is a gap between the concept of the simplicity, which order the minimalist architecture and the (mate) realization of it. It is true and proved that simple forms and compositions are one of the most powerful paradigms of minimalist architecture but this concept is only on the formal plane. In fact, the minimalist construction is expensive and gives an exquisite image, obtained with big costs, new techniques and materials.

**So here there are one of the paradoxes: simple but only on the esthetical level, the value of simplicity is not a profound concept but one on the exterior image level.** On my opinion, this gap between the saying and the realization, the importance given to image and the superficiality of the way that this profound concept is used, makes minimalist architecture one of the most significant architecture of the contemporaneous society.

### II. THE PHILOSOPHY OF THE LIGHT [1, p. 61] - THE LIGHT PARADIGM IN MINIMALISM

- THE LIGHT IS A COMPOSITIONAL ELEMENT IN ARCHITECTURAL CREATION

Natural light is taken and amplified by the texture of the material and white surfaces of the volumes. The light is an important element in the esthetical composition of minimalist architecture therefore



the minimalist architect try to control his trajectory and effects from the beginning of the creation. The light is used to dematerialize the forms and for his esthetical role. Light is used in architectural compositions like an element itself, with certain values and properties.



Figure 6. A.C.Baeza, Study model for Elsa Peretti Museum, Spain

Figure 7. Detail of Church of Light, Tadao Ando, Japan

Figure 8. Light effect in Peter Zumthor, Kolumba muzeum, Germany

### III. COLORS AND MATERIALS [1, p. 73]:

- I9- THERE ARE USED THE NATURAL MATERIALS, IN GENERAL SPECIFIC FOR THE SITE CONSTRUCTION, WITH AN APPEARANCE OF ROUGH AND NATURAL TEXTURED.
- I10 - THE ABSENCE OF THE COLORS, THE EXCEPTION BEING WHEN THE SPECIFIC USED MATERIAL HAS HIS OWN COLOR.
- I11 - WIDE GLASS PLANS-SURFACES- WINDOWS WITHOUT ANY OTHER PARTITIONS TO THE FACADES FOR THE FINAL GOAL:
  1. TO PERMIT THE MIXTURE OF INTERIOR AND EXTERIOR SPACE.
  2. TO CREATE THE ANTIGRAVITY EFFECT OF THE HUGE CONCRETE SLABS IN CONSOLE, SUSPENDED OVER THE FLOORS.
- I12- THE ACCURACY OF EXECUTION DETAILS

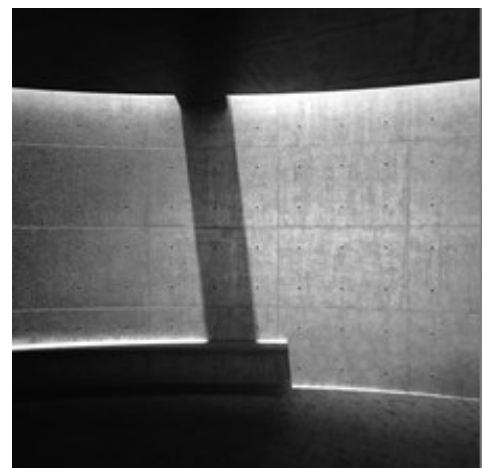
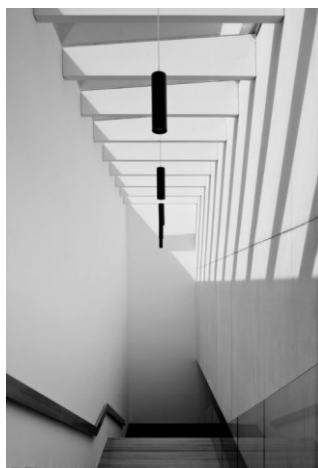


Figure 9. NATURAL STONE, Peter Zumthor, Klaus Chappelle, Switzerland

Figure 10. WHITE WALLS, Donaire Arquitectos, Almonte Theatre Huelva, Spain

Figure 11. CONCRETE WALL, Tadao Ando, Koshino House, Japan

On this chapter, of natural and rough materials we must keep in mind how those materials are worked and used. In fact the materials are not natural at all, they are, of course processed by all the new techniques too look natural or rough. As Zumthor notices, what is important about the materials

are, in fact there aspect for the impact on the emotional level. So again, minimalist architecture prove itself like an esthetical movement, using the concept in a superficial way.

#### IV THE RELATION WITH THE EXTERIOR ENVIRONMENT [4, p. 91]:

- I13- MINIMALIST CONSTRUCTION HAS AN INTROVERTED ATTITUDE IN RELATION TO THE SURROUNDINGS, NATURAL OR CONSTRUCTED.
- I15- INNER COURTS LIKE HETEROTOPIAS- TRANSITION SPACE BETWEEN INTERIOR-EXTERIOR, PRIVATE AND PUBLIC.
- I16- THE WINDOWS ARE DESIGNED EXCLUSIVE TO CONTEMPLATE THE EXTERIOR VIEW.



Figure 12. A.C.Baeza, Beneton Center, Italy

Figure 13. A.C.Baeza, Asencio House, Spain

Figure 14. John Pawson, Baron House, Switzerland

At this subject is one of the most interesting observation on the minimalist architecture, and one of the most contradictory of its concepts. All the minimalist architects are saying that the nature is important for them and try look up to integrate their construction into nature.

**But here are more paradoxes:**

- **The minimalist forms are rectangular and regulars forms that is not natural at all.**
- **The natural elements like water or trees, for example, are used in a decontextualized way and transformed in decorations.**
- **It is true that the windows are piercing the envelope for the pleasure of the site seeing, but those images are transformed into artificial pictures.**
- **The minimalist architecture has an introverted aspect for outside medium so the relation with the nature is zero.**
- **The only form of accepting the natural in a relation with the construction is the interior court but it is not an extroversion but a way to take prisoner the nature between the constructed walls.**

### 3 FINAL CONCLUSIONS

Minimalist architecture is a constant presence on the world architecture scene. Great architects such Tadao Ando and Alberto Campo Baeza, or Peter Zumthor and John Pawson based foundations of concepts that establish a common universe, well harmonized despite the four cultures that each of them represents: Japanese, Latin, Germanic and Anglo respectively -Saxon. This is possible because of the fact that there philosophy of creation is based on the values of the spirit, beyond the visible form. If in minimal art, "minim" refers to the minimum ways of express the art to reach the catharsis, in minimalist architecture the reduction of the artistic language came from the accent that is put on the spiritual values, far from the modern trends, the accent on the "essence".

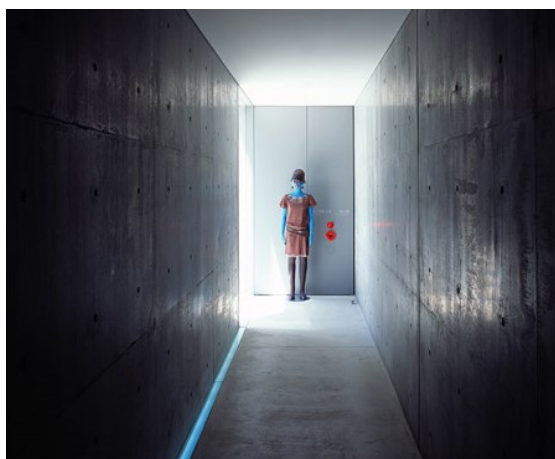


Figure 15. Tadao Ando, Conference Centro, Vitra

Minimalist architects realize interior spaces so exquisite by their simplicity and detail, but not at all modest. The implementation of the minimalist concepts requires high techniques and materials and rises the costs, which makes minimalist architecture to move away from the first principles: modesty, simplicity, a place for the spirit to manifest.

But, despite this gaps between the concepts and the constructed idea, one cannot denies the image of an extreme accuracy, the bright atmosphere, the delicate detail, even if they belong only to esthetic.

In the context of a world saturated and coordinated by cables and visual information, minimalist constructions appear permanently as an alternative to saturation, as a space otherwise heterotopic. Into an era of consumerism, where the speed to assimilate huge amounts of information equals only the haste with which we are doing this, the minimalist architecture with its static compositions, the perfectly colorless and seraphic bright, form a coherent chain of constructions which share the same paradigms. Watching the white volumes which absorbing the light, enhancing it, we wonder if the rush to cram as much into the bag of our time is not only an escape from ourselves, the image of a shell intricate and beautiful that may be empty inside although it builds itself after that much publicized patterns of his time. Likewise, minimalist architecture offer a perfect exterior image, for an exquisite elite who afford to put in opera the perfect dream.

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## PLAY IN BETWEEN SCALES

Carlos Arcos Ettlin

Escuela Técnica Superior de Arquitectura de Madrid-Universidad Politécnica de Madrid (SPAIN)  
carlos@carlosarcos.com

### Abstract

The paradoxical existence of **places** of multiple-scale, not spatially definable by the immutable presence of time, gave rise to the contemporary challenge of facing the *in-between*. The thesis of this paper is based on incorporating the time factor into these spaces through the collective actions of *play in between scales*. From these **paradoxical places** of unique environmental qualities, “**potential spaces of play**” may emerge as creative communal action. Thus, *play*, with its **unproductive** coexistence and uncertain goals, can lead to the development of innovative strategies of appropriation and collective identity.

**Keywords:** *play* | fun | urban paradox | *in-between* | special temporal fragment | unproductivity

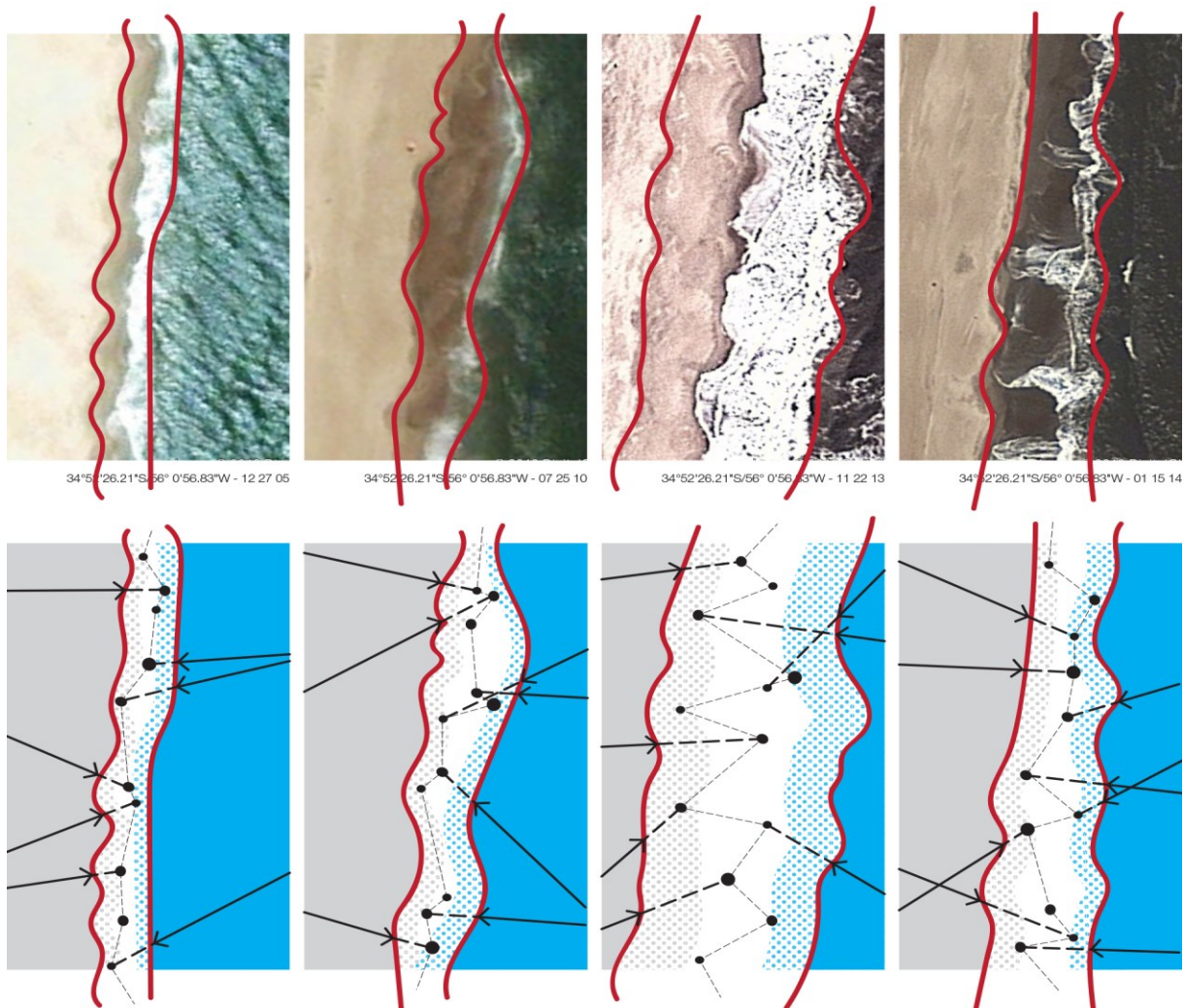


Figure 1. Potential space: Google Earth's screen captures and tension diagrams.



## 1 POTENTIAL SPACE

On the seashore of endless worlds, children play

RABINDRANATH TAGORE, *Gitanjali* (1912)

From a Freudian analysis, Donald W. Winnicott, the English psychoanalyst, interprets this paradox as a manifestation of the unconscious symbolism: “*the sea was the mother, and onto the seashore the child is born*” [1, pp. 95; 130; 93]. It is in this **moment** that mother and child begin to know each other. In this **paradoxical place** of the *in-between*, sea-space/liquid, sand-space/solid is where the first encounter between mother and child—the most beautiful one—occurs. There, in a caesura of time, in this changing, elastic and contradictory **place**, “*the seashore of endless worlds*”, Tagore surprises us: “*Children play*”.

That unique instant of the getting-to-know produces a tension, a paradoxical movement which generates the **potential space** or transitional space. That is, from the dialectical contradiction the opportunity for action is born, when a space that fosters the significance of objects is generated and an intermediate zone of experience is formed. From there on, concerned with understanding how this intimate relationship would crystallise in “*the union of two now separate things, baby and mother, at the point in time and space of the initiation of their state of separateness*” [1], he proposes the existence of **transitional objects and transitional phenomena**, as a symbol of the union between them. The baby begins to know this object (foreign or belonging to the mother) from his own perception, conceiving it in time and space. This interactive process of the first experience is characterised by **creativity that arises from playing**. Winnicott, then, defines a potential space born from paradox, transitionality, creativity and *play*. This space stimulates the creation of phenomena which are never-ending, variable and uncertain.

When publishing his lectures of Zurich (1934) and Vienna (1937) as *Homo Ludens*, in 1938, Johan Huizinga chose “The Play-Element of Culture” as subtitle, instead of “*in Culture*”. The Dutch historian did not intend to focus on “*the place of play among all the other manifestations of culture, but rather to ascertain how far culture itself bears the character of play*”. [2] In his groundbreaking study he explains that “[...] *play and culture are actually interwoven with one another [...] [because] genuine, pure play is one of the main bases of civilization*”. [2] In this paper, the words “**play**” and “**fun**” will be used in Huizinga’s sense: **play** will be considered as an **free activity**, “*as a ‘significant form’, as a social function*” [2], while **fun**, a word without an exact equivalent in other modern languages, will be defined by **intensity**, the essence of collective *play*, from which “[its] *power of maddening*” [2] emerges. It is this fun which characterises the **excess** and **unbridled pleasure** that comes from the act of playing.

According to Aristotle, **eudaimonia** (happiness) and what is understood as **play** are defined as activities with an end in themselves. Furthermore, the Classical Greek philosopher asserts that they are the only desirable acts: “*those from which nothing is sought over and above the activity*”. [3 pp. 249; 176 [1176b6-7]; 129 [1113b5]]

Centuries later, Kant considers **play** as “*pure disinterested satisfaction*” [4, p. 91], thus, its **unproductive character** is confirmed. Based on the same Aristotelian concept, he affirms that work and *play* are not only different, but that their aims are opposite. One works with a particular purpose and one plays for the sake of *play* itself. Therefore, he says that that the two domains should not be confused, even arguing in favour of recognizing a **specificity** to *play*. Although until then the activity had not acquired philosophical dignity, there were some precedents: Thomas Aquinas had observed that playing helps develop *eutrapelia*, **urbanity** and good humour, while Leibniz claimed that it could offer great lessons for the *art of inventing*. Thus, in his *De Arte Combinatoria* (1666), he advocated for the creation of a master work on Game Theory, through which humanity could learn about **chance** and uncertainty.

## 2 PLAY IN BETWEEN SCALES

The *in-between*, understood as the paradoxical existence of conflicting and contradictory **spaces**, of multiples scales (social, political, physical, emotional), not definable by the immutable presence of time, *“provide[s] the terrain for elaborating strategies of selfhood—singular or communal—that initiate new signs of identity, and innovative sites of collaboration, and contestation, in the act of defining the idea of society itself”*. [5, p. 2]

Everyday experience is at once unstable, uncertain, indeterminate, and changing over time. **Meetings** should be understood as **moments of play**, as they succeed to achieve the magic of **lasting instantaneity**. *“Annulling time in time”*, says Schiller, in other words, to get to increase its duration from an “other” instantaneity. Existing conflicts and contradictions in the *in-between* are unchangeable if they are to be addressed from a deterministic understanding of space.

Only **play**, as it handles the space-time paradox, manages to accept them, thus enabling action. Therefore, its nature is to bring closer the progress of experience—**sensitive knowledge**—with the absolute quality of being—**intellectual knowledge**—: *“The play-drive [...] would be directed towards annulling time within time, reconciling becoming with absolute being and change with identity”*. [6, pp. 97; 107; 103]

**Playful living** is the only place through which the **recovery of identity** can be promoted, in action or inter-action—**meetings**—of individuals in society. Appropriation would be the consequence of free use of these spaces in “play time”. *“[Man] is only fully a human being when he plays”*, states Schiller, when trying to approach the ideal of the total man.

*Play* can be used as a strategy to face the challenge of conquering a **social identity** in the *in-between*, as it is a “free action” (Huizinga); “has an end in itself” (Aristotle); “perfects the art of inventing [...] or the art of thinking” (Leibniz); and “is in place of pure pleasure” (Kant).

Contemporary space has been built from political power, economic activity and cultural experiences. Therefore, from the inconsistency of intentions of the different parties involved, a territory-network of discontinuous, disconnected and fragmented spaces in various scales has been generated. This **fragmentation** is causing the emergence of residual spaces without shared use: *junkspace* (Rem Koolhaas)—literally.

**Cultural relations**, and therefore “play as a generator of culture” (Huizinga), will be regarded as elements capable of fostering an **appropriation of residual spaces** by the inhabitants themselves, from their **everyday lives**, in direct relationship with their lived space and combining the main components of social life in the use of urban space.

**Play**, as a **free action**, occurs in “**separate**” **potential spaces** (Huizinga) and, through use, favours **appropriation**, generating the significance or re-significance of its own **identity**. It can be argued that the territory is relational—even if political power claims it to be dimensional in nature. This condition has been increasing in late modernity by expanding sources of information and the ease of instant communication through new “appliances” (Flusser), which enhance our senses. Because it is relational, the territory is also movement, fluidity, interconnection, that is, **temporality**. It is not possible to understand a static notion of space in contemporary times, but as a set of historical and social relations, and in the sense of a complex relationship between changing social processes and physical-material space.

For Kant there are two faculties of knowledge: the sensible and the rational. In the “*play of the faculties*” lies the key to the Kantian philosophical union of empiricism and rationalism. Schiller defines the *play-drive* as: *“Reason, on transcendental grounds, makes the following demand: Let there be a bond of union [Gemeinschaft] between the form-drive [Formtrieb] and the material drive [Stofftrieb]; that is to say, let there be a play-drive [Spieltrieb], since only the union of reality with form, contingency with necessity, passivity with freedom, makes the concept of human nature complete”*.



### 3 PLAY IN BETWEEN HER AND ME

Winnicott, then, proposes an elastic and malleable transitional **potential space**, founded on interpersonal relationships. His theory is based on criteria of emotional and perceptual **modes of knowledge of transitional objects and transitional phenomena** and their behaviour in space and time. It is the very essence of potential space: the place of knowledge through *play*. Namely, the place where **creativity** flows in its purest state from the ability to *play*.

When basic needs are covered, *play*-space potentiality increases, through trust. This space is created from sensitive and intellectual knowledge, is founded on sentimental bonds of trust, and its **intensity** grows in **everyday life**, as does the force that absorbs the player. Domestic potential space, as a place of maximum trust, encourage **play's free action** in its highest form and, consequently, the further development of creativity.

*Play*, as the understanding of transitional objects and transitional phenomena from perception in space and time, develops fluidly in the context of the household. The opportunity of playing as a free action, which is ruled by the autonomous decisions and feelings of the dwellers, who are oblivious to external pressure or criticism because of *play's* natural separation from "ordinary life", allows optimum capacity for the affirmation of knowledge of the autonomous universe of childhood.

Winnicott uses the concept of **paradox** when referring to the *in-between* of baby and mother, which gradually extends to the ***in-between* walls potential space**. This moment can be understood as a continuity in the child's development, and his existential or emotional capacities, in which the transition process from baby to child is reflected in environmental stability. From there, endowed with extremely unique characteristics, the child feels safe to create and observe the adult world, constituting his own temporality, as spontaneous worldview. That is the reason why Walter Benjamin tells us: "*Children want adults to give them clear, comprehensible, but not childlike [representations]*". [7, p. 407]

And the child, in the process of understanding the transitional object that **appears** from the mother or the person who takes her place (father, siblings, etc.), begins his **experience of knowledge** of the object in space and time. In order to do this he must get to know its parts, by proceeding to **dismember it** to understand "how" and of "what" it is made of. It is an action of **knowledge** born out of comprehension and appropriation of the minimum possible piece: that **ephemeral**, unstable, temporary **fragment**, seen from the **instantaneity** and understood from **intuition** as a primary mechanism of knowledge.

The ability to *play* in the domestic potential space, regarded as the *in-between* the home and its immediate exterior, fosters a common ground of shared ideas and collective reflection.

This place, as the beginning of the "me and us" relationship, in a shared private magical space, is reborn in its liberating force: as the redemptive hope of **spontaneity**, as the true creative *play* ability, and as the place of experimentation. It is a place still away from conflict, open to dialogue.

It is the ideal place to *play* by its own rules, set by family and first friends, which enriches the act of playing from the shock caused by a **controlled uncertainty**, where the maternal functions of holding, handling, and object-presenting still remain present.

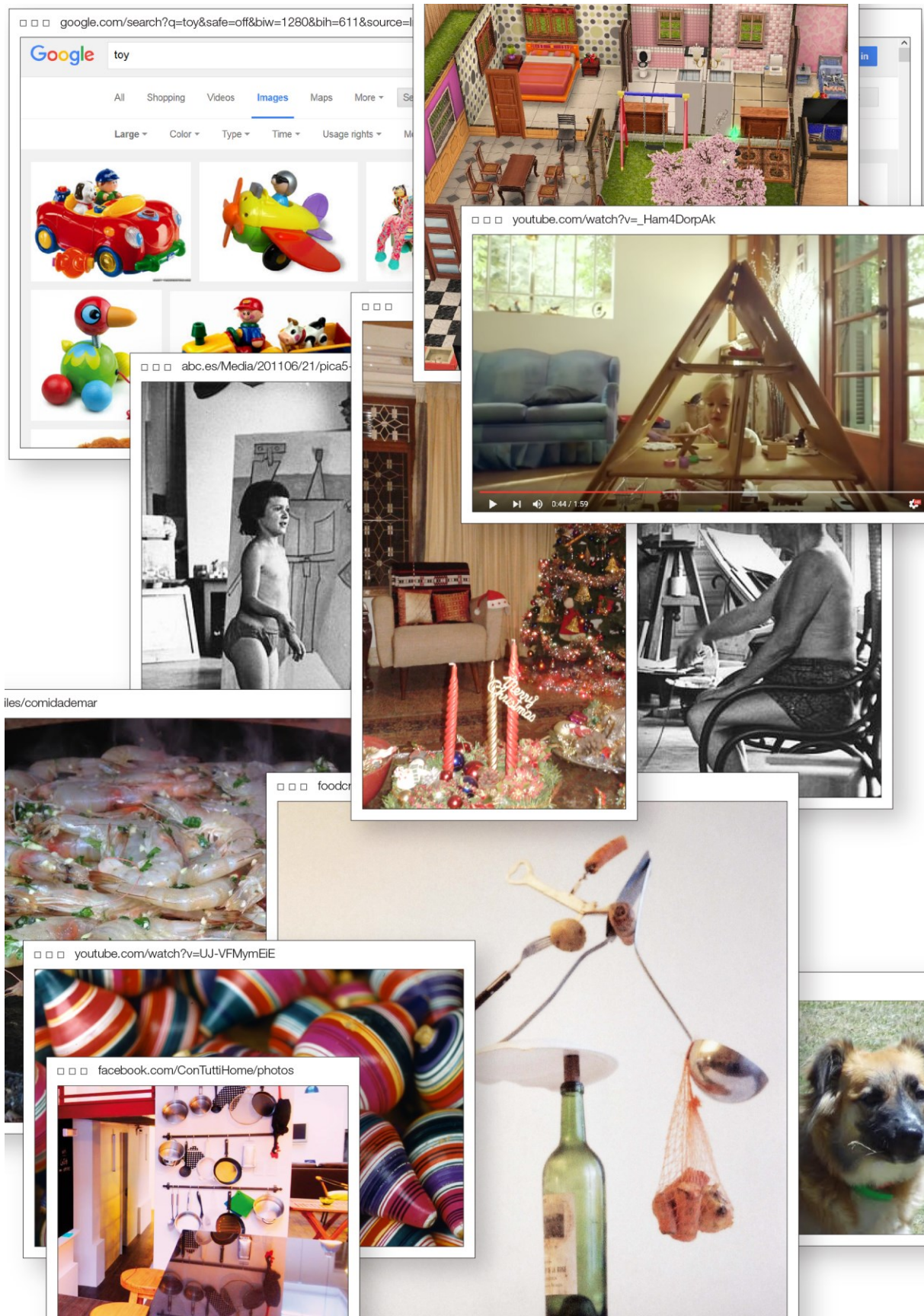


Figure 2. “Toy” Google-search and an instant collection of open-windows: house in the video game *The Sims*, a frame of the Brazilian film *Território do Brincar*, Picasso skipping rope with his children, a Christmas tree and home decor, a seafood meal, Eames tops, art piece by the Swiss artists Fischli/Weiss, a kitchen, Linda (dog).

#### 4 PLAY IN BETWEEN ME AND US

Architecture, understood as the construction of public space, is a part of people's lives. Therefore, it has an impact on the everyday environment of human relations, in neighbourhood settings: those related to the home environment and educational centres, daily grocery purchases and places for social gathering.

*Discover Your Neighbour* (1945), in the framework of the research project Mass Observation (1937-1956) by Judith Stephen, incorporates street photographs taken by her husband Nigel Henderson in the working class district of London's Bethnal Green. [8] The resulting **acute look** of life on the streets of this unique neighbourhood (everyday life, **encounters**, children on bicycles, corner stores), evokes a real concern about people's lives, offering the viewer the possibility to reflect on the link between "creative living and living itself". [1]

By playing, the individual in everyday life encourages the formation of a potential space, which facilitates its appropriation assigning it, in turn, a new symbolic value. This is the very expression of urban *play*: street games, the relaxed chats in Joyce's *Dubliners* (1914), *letting time pass*... The great strength of this human behaviour was confirmed for our discipline when, from the acknowledgment of a **playful urban reality**, an end was put to the determinism of Modern Movement's rationalistic doctrines. In Dubrovnik (1956), along with other members of the European avant-garde architecture, the Smithsons proposed a series of "other" approaches to urban planning, sprung out of movement and ordinary life.

While taking a **stroll**, external ordinary phenomena attract little attention, because of their utilitarian or productive nature. However, these phenomena, if read in a playful manner, can have greater magnetism, thus, facilitating their internalisation. As an activity, playing can enable that space as a **place of meetings and tensions** for transitional phenomena to occur.

*Play in between scales* reminds us of that carefree and disinterested feeling inherent to playing, which exists **as if** outside of ordinary life and completely absorbs the player. This condition allows the dweller to appropriate of its surroundings to a much greater extent than if coerced into it by productive activities. Because it is an **activity without external purpose**, one wishes to remain, to be, to take part, and this is why it provides pleasure.

The Smithsons, along with their artist friends Henderson and Paolozzi, used the **as found** procedure for their artistic and architectural proposals. In the article "The 'As Found' and the 'Found'" (1990), written for the exhibition of the Independent Group, they explain their use of this dada procedure: "The 'as found', where the art is in the picking up, turning over and putting with [...] and the 'found', where the art is in the process and the watchful eye". [9, pp. 201-202] It was a new way of **looking at the ordinary, the superfluous, the useless**.

The "neighbours" could use this procedure for choosing the **fragmented in-between** as a **play-territory**, with "**found**" objects as potential transitional objects, since resignification gives a new symbolic value. The architect/urbanist would be a partner in uncertainty and no longer the centre of deterministic decisions. That is the proposal of this paper: working on the **fragment**, working on the "**in between scales**", in the place of immediate vicinity, from the **intensity that flows from playing**.

Through *play* strategies, mechanisms of **appropriation of the social space** can be found, as a product of sensitive material experience and rational conceptualisation, in an indivisible and complex reality of the constant relationship of space-time. According to Winnicott, **to play is to do**. Consequently, it allows the appropriation of the moment in space. Playing is ephemeral, but extends its length by its **repetitive nature**. That is, it is the paradigmatic place of participation, because of its intensity and **self-movement**. In this doing so again and again pleasure is found. In the action of playing in public space, people (whether children or adults), are involved in the creative proposal of a lasting daily social experience.



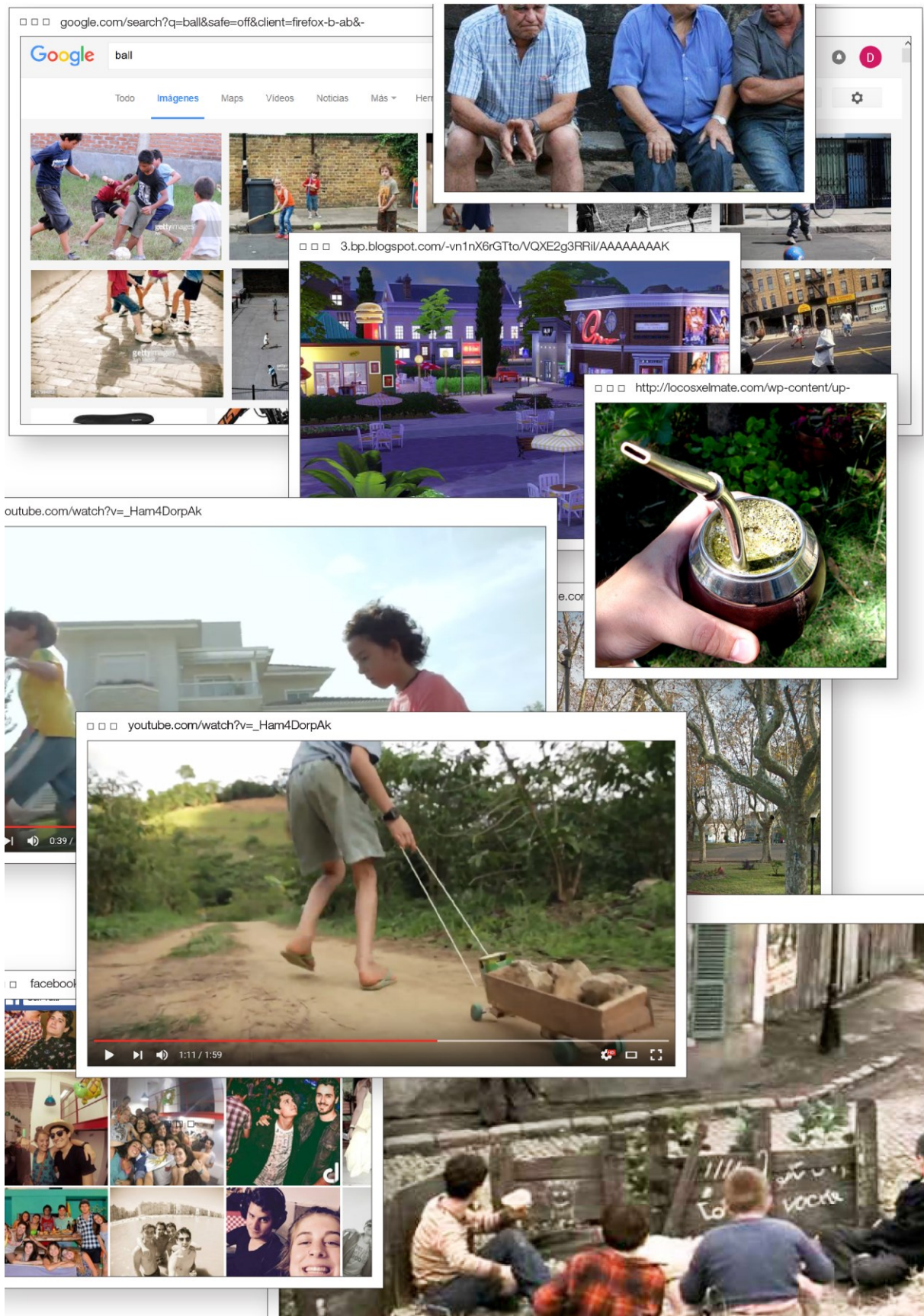


Figure 3. "Ball" Google-search and an instant collection of open-windows: Two other frames of *Território do Brincar*, an entertainment district of *The Sims*, a *mate*, Paysandú's Constitution Square, old men sitting on a bench, a still from of Tati's *Mon Oncle*, public Facebook photos of young people having fun.

## 5 PLAY IN BETWEEN US AND THEM

Benjamin had a **different way of looking** at things, an acute perception of reality; from details he sought to find the uniqueness of each object that **appeared** in front of him. This is the curious, compelling, and at once, contemplative gaze, which he had learned from his studies of **Baudelaire's**—the *poète maudit* of modernity—figure of the *flâneur*. Hence, the **dandy**, defined by Baudelaire as “*observer, philosopher, [...] passionate lover of crowds and incognitos*” [10, pp. 4-5; 12; 9; 13], who has the peculiar ability “*to distil the eternal from the transitory*”, who moves in a relaxed way among “*the flow of movement, in the midst of the fugitive and the infinite*”, and whose supreme pleasure is “*to become one flesh with the crowd*”. Afterwards, Baudelaire in “The Painter of Modern Life”, synthesises this idea by saying that “*modernity [is] the ephemeral, the fugitive, the contingent, the half or art whose other half is the eternal and the immutable*”.

Benjamin saw the *flâneur* as a detective, who “*hides the riveted attention of an observer*” [11, p. 442 [M13a,2]], like Jeff (James Stewart's character) in Hitchcock's *Rear Window*. In *One Way Street* (1928), there is an **as if** one could walk a one-way street, with a wandering, hesitating, but attentive, look, which goes through the surface of things. From this way of discovering another hidden truth in the **instantaneity of the moment**, which perhaps was not even part of the singularities of the observed object, but an illusory construction of the gaze and the sum of rich snippets from subjectivity, can emerge a temporal narrative, belonging to a different, contemplative gaze, full of feelings, which does not allow emotion to blur it...

With a watchful eye, in a lively city, we see paradoxical situations that are repeated in the **comings and goings of self-movement** inherent to playing. That is the **swing** built from a series of conflicting events that can be detected as an unparalleled opportunity to create playground-like environments, with potential opportunities for fun, inventiveness, and freedom. There, city rules become contradictory, allowing the formulation of new rules in creating **places** that are nothing **yet** can be all, due to the existence of everyday life situations that require an “other” gaze —one that is attentive, rebellious, transgressive. These potential spaces are conducive to the development of **creativity in urbanity** and coexistence. We propose to use them in this “*play in between scales*”, between us and them, while accepting paradox and not resolving it, as Winnicott suggests.

In these paradoxical “**found**” spaces, one can do whatever he pleases. Our proposal is to enhance playing as a free action in which everyone may participate willingly, each group setting up rules, acquiring responsibilities, and assuming temporary leadership, as new spaces of coexistence and socialisation are opened. Thus, **participation** strengthens the relationship between the gazes of I-us and the others.

This attitude, as permanent reflective process, would lead to understanding and **accepting the diversity of identities**, while integrating, in a meaningful way, **their worldview**. Identity is a permanent and strong tension in subjective interrelationships, between individuals and social groups, in the free *play* of individuals with “found” transitional objects in the temporary space. In the *play*-interaction of individual and group identities that manifests as social representations, the individual deeply elaborates the “I” and the “us”, as well as the recognition by others and to others.

Away from any coercive power, the individual uses all available resources to **preserve his identity**. Since identity has to do with the preservation of the subject, it is normal for **costume-wearing** to be implied, as a way of being a desired other, as in the *flâneur's* need for keeping his anonymity...



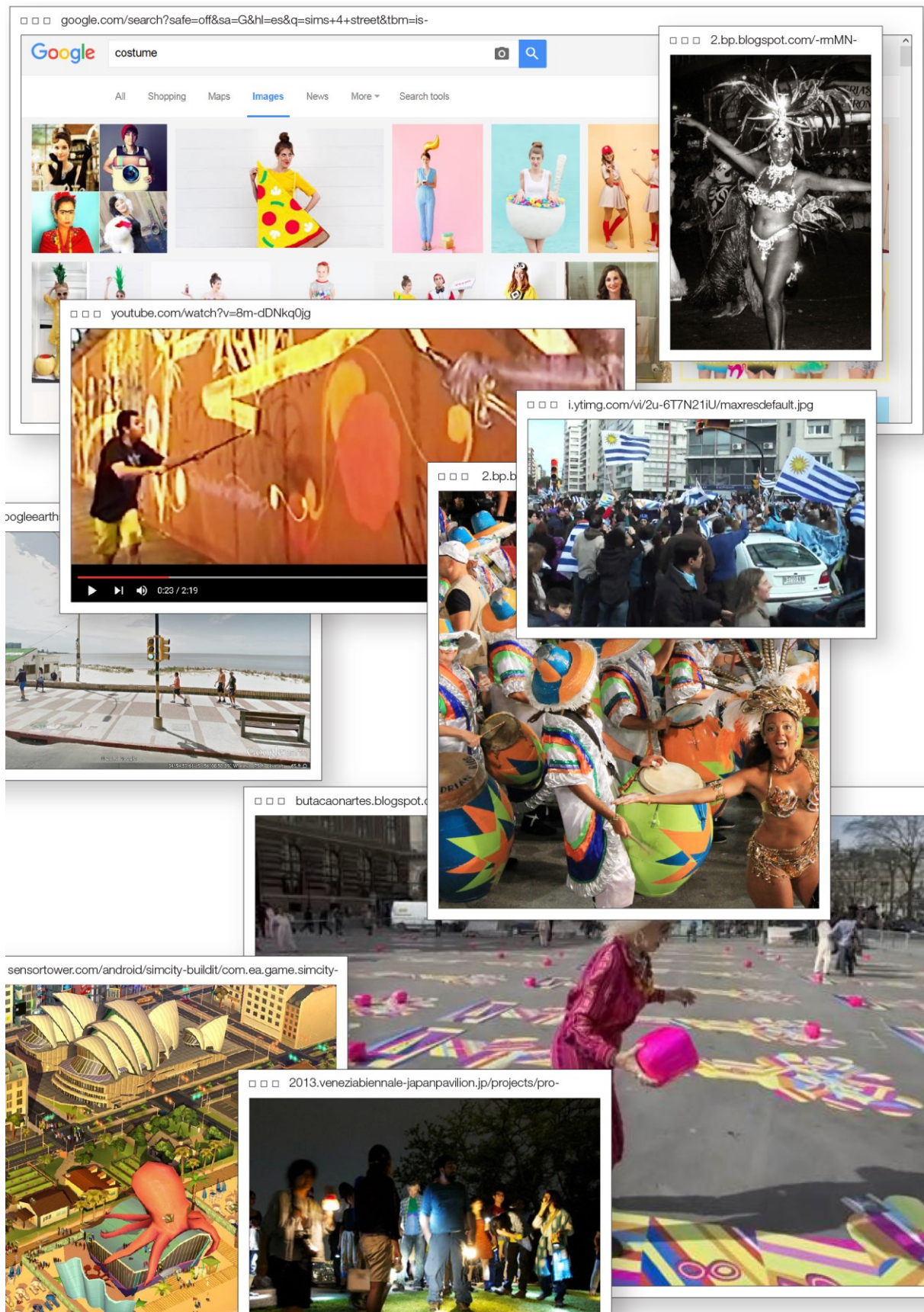


Figure 4. "Costume" Google-search and an instant collection of open-windows: Rosa Luna, desfile de llamadas, Uruguay's football team celebrations on la rambla, a Google Earth's screen capture of Montevideo's rambla, a frame of the Brazilian film *Pixadores*, an intervention with hundreds of hopscotches in Buenos Aires by Minujín, *SimCity*, a urban drift performance by Japanese artist Koki Tanaka.

## 6 CONCLUSIONS

Lefebvre wondered “How could a space obey common rules, constitute an ‘object’, and disintegrate, all at the same time? [...] Could there not emerge, through and against hierarchization [...] in architectural and planning terms, ‘some thing’ that comes out of the existing mode of production [...]?” [12, pp. 212-213] The answer to this question is yes. While a rational unity is necessary to the world of production—to have a social object that is recognizable and manageable as a whole—, when it comes to the activities involved in the act of *play* and its objectives, the **fragment** proves to be a much more efficient instrument. Paradoxical *in-between* places allow for an increased closeness between people, object and the phenomena occurring in “**potential spaces of play**”. Therefore, it fosters a more neighbourly **coexistence**, a better acceptance of paradoxical situations, greater **participation** and, as a consequence, an effective **appropriation** of **vital space** and its **identity**.

Accepting the existence of two parallel worlds, those of **work** and *play*—**productive** and **unproductive**—, has been a recurring theme in Western philosophy. These two human actions differ in that, while the former is regarded as a means to an end, the aim of the latter is in the actual performance of the action. Aristotle formulated this in his *Nicomachean Ethics*, as he stated that humans find the performance of unproductive **desirable actions**, since these are “*based on decision and voluntary*”. [3] And these actions are **play and happiness**, the only two human actions which are at once means and end.

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## IN BETWEEN THEOLOGY AND ARCHITECTURE

**Ruth Adalgiza Constantinescu**

*"Ion Mincu" University of Architecture and Urbanism (ROMANIA)*

*adalgiza.ruth@yahoo.com*

### **Abstract**

Architecture has always been influenced by a diversity of concrete and abstract factors, such as the availability of materials, technology, the political, social, and economic contexts, ways of thinking, and societal values. The architect and theorist Christian Norberg Schultz, in *On the Way to Figurative Architecture*, notes that a building makes the collective values of the world visible. The architecture of Christianity has also developed under the influence of concrete and abstract factors, but the greatest influence was the religious doctrines of the communities it represented. The style of the architecture of Protestant and neo-Protestant religious groups is the result of a long process of adaptation and of putting into practice concepts that are both theological and spatial.

Christianity (together with Judaism and Islam) is one of the three large monotheistic religions, and is currently the most predominant religion if considering numbers. There are 2.4 billion Christians, dispersed in three main branches: Catholicism, Orthodox, and Protestantism. On a global scale Protestants make up the second largest Christian group, with Catholics being the largest. In Romania the number of Protestants and neo-Protestants has risen over the last several years, which has notably contributed to the religious and cultural identity of the country. Architecture, and especially religious architecture, brings with it responsibility, and transmits values, educates, lifts up, or, on the contrary destroys. The issue of how the religious spaces of Protestants and neo-Protestants (groups that are currently experiencing growth) are built is becoming increasingly important.

Architecture needs to favour that sensory experience about which the Finnish architect J. Pallasmaa, or the French philosopher M. Merleau-Ponty wrote, but to also lead to knowledge, as highlighted by the German philosopher M. Heidegger. The world is not only the act of knowledge, but also of perception. Being in the world, the concept with which Heidegger's phenomenology operates, implies the act of being with others. A very important idea that Christianity, and especially neo-Protestantism, has in view is that of understanding others, of love towards our neighbours, and of living at peace with others. In an interpersonal relationship, as well as in a church in which love, the good, and the spirit of sacrifice are manifested, the emphasis is on the other in the relationship. Church is the place where people are transformed into something even better. It is a space perceived as a "home". It is not by chance that neo-Protestant churches are also called the house of the Lord. "Home", the place where you feel protected, the place which contains the memories and dreams of a person is the place where you live. The place where God lives with humanity.

The study of the relationship between theology and architectural space, between values which determine the space and materials used, and lighting, between the perception of people and the space itself, between individual perception and that of the community, are the focal points of a piece of research about the foundations and implications of (Neo)Protestant architecture.

**Keywords:** neo-Protestant architecture, religious spaces, theology, phenomenology, perception.

## 1 PUTTING IT INTO CONTEXT

1517 was the year in which the Catholic priest, teacher of exegesis at the Wittenberg University, and doctor of the Bible, Martin Luther, changed the history of Christianity and the entire world definitively by writing and posting his 95 theses. Among other things, the thesis attacked the practice of indulgences (the first two theses are about the fact that God expects repentance and faith from the sinful person in order to be saved, not works. The following 93 theses are, to a large extent, a criticism of the practice of indulgences. The Pope should not have power over purgatory [1, pp. 62-64]. Although Martin Luther only desired the reformation of the Roman Catholic church, the situation finally resulted in the split of the Roman Catholic church and to the birth of the Protestant church. The Reformation was born, which the historian and theologian Michael Reeves goes so far as to call a revolution. The term "Reformation" is used to name the Western European movement begun by Martin Luther and continued by John Calvin and others who were interested in changing the morality, the theology and the institution of the Catholic Church. To be more precise, it refers to those who fought to change everything that they considered to stem from a mistaken interpretation of the Bible. It refers to the people who formed Protestantism [2, p. 17].

The main branches of Protestantism which formed due to the events of the Reformation are: Lutheranism in Germany (Martin Luther), Calvinism in Switzerland (John Calvin and Ulrich Zwingli), Anglicanism in England (Henry VIII and Thomas Cranmer), and the Anabaptist movement in Switzerland (George Blaurock, Conrad Grebel, Felix Manz). With time, a whole range of other protestant groups also appeared independently or through a mixture of influences from these four main branches. The most productive branch was Anglicanism, which was the religion of those who colonised the North America, where the diversification of Protestantism was much more pronounced. Some of these new groups were the Baptists, the Presbyterians, the Unitarians, the Adventists, the Pentecostals etc. Each of these groups had a different set of doctrines. Although there are differences between these religious groups, they have the "Five Solas" in common: Sola Scriptura (by Scripture alone), Sola Fide (by faith alone), Sola Gratia (by grace alone), Solus Christus (by Christ alone), Soli Deo Gloria (glory to God alone). One of the most important principles that led to the separation of Protestants from Catholic church was that of Sola Scriptura (by Scripture alone) [3, pp. 134-137, 157-159].

The term "Protestant" has its roots in the name of a petition/complaint - "Protestatio" in Latin - made by five German princes, which they forwarded to Charles V at the Diet of Speyer of 1529. The petition made known the dissatisfaction of the princes about discrimination against Lutherans. Subsequently, the term was used for all Christians who were not a part of the Catholic or the Orthodox religious group [4].

"Neo-Protestant" is the generic name given by the Romanian authorities to those religious groups which did not appear at the same time as the first Protestant churches (the Lutheran and the Reformed Churches). The state secretary for religion in Romania acknowledges the following as being Neo-Protestant churches: the Baptist Church, the Brethren Church, the Seventh-day Adventist church, the Pentecostal Church, and the Romanian Evangelical Church.

## 2 CONCERNING THE ARCHITECTURE OF PROTESTANT CHURCHES

In the same way that every Protestant group has a set of partially differing dogmas, the architecture of these protestant groups varies depending on the principles and dogmas of each institution. Lutherans are more tolerant than Calvinists – in Calvinist churches, the idea of removing anything that reminded one of idolatry led to altars, icons, and even stained glass to be removed. Only the pulpit was kept.[5]. Lutherans, in contrast to Calvinists, kept the altar and their pulpits are located somewhere on the side of the nave. In his criticism of images, Martin Luther did not contest their value as teaching aids, and so in the Lutheran Church those narrative images which did not so easily remind one of image worship were, at least initially, kept. Images that spoke about the suffering and death of Christ, as well as other important religious, events were retained. Images which no longer correspond with the new doctrines were replaced [6, p. 151]. The ground plan of the large majority of churches was longitudinal, given the fact that the many of the Protestant churches were initially

Catholic churches, which had been modified. Eventually new churches were built, which were similar to Catholic churches. However, innovations also appeared, such as churches with L shaped ground plans, and also a returning to ancient Christian symbols, such as the Greek Cross ground plan [7, pp. 11-15].

### 3 CONCERNING THE ARCHITECTURE OF NEO-PROTESTANT CHURCHES

Neo-Protestants empty religious spaces of symbolism, and for this reason symbols are hardly present in the meeting places of the believers; they are almost non-existent. "Neither clerics, nor liturgy, nor altars, nor icons, nor sacraments (except baptism and the Lord's Supper)" [8, p. 65].

Compared to Protestant architecture, Neo-Protestant architecture has completely broken away from the Catholic architectural style. The altar was replaced with a pulpit or a lectern, usually placed at the front of the hall [9, p. 153]. The pulpit is the place from where the Bible is read, and where preaching takes place. The Bible is placed at the centre of religious activities. Likewise, icons, statues, and decorations were eliminated, because they were associated with idolatry. The interior walls of Neo-Protestant churches have remained unpainted, though some do have Bible texts reproduced on them. [10, pp. 65-66]. The baptistery, which is under the pulpit, or very near to it, is a clear difference between Neo-Protestant and Protestant architecture (where the baptismal font is still present). Neo-Protestants practice adult baptism, in keeping with the example of Jesus.

If God told Moses to take off his sandals because the place where he was standing was holy by virtue of His presence there, the religious spaces of Neo-Protestants are sacred spaces by virtue of the calling upon the name of God and His presence in that place. "Do not draw near this place. Take your sandals off your feet, for the place where you stand is holy ground." [11]. God also says that where ever His name is called upon, He will be present there, and His presence makes that place holy in the same manner as the place where Moses had stepped was holy. However, the architectural edifice in itself is not holy and does not contain sacred symbols, such as a dome (the vertical axis).

The style of the architecture of neo-Protestant denominations is the result of a long process of adaptation. The political and religious context in the second half of the twentieth century in Eastern European countries played an important role in the development of the current style of Neo-Protestant church buildings in that part of Europe. For example the establishment of a Communist regime (as was the case in Romania, Poland, Hungary, Czechoslovakia, Bulgaria, Yugoslavia, and East Germany), which officially promoted atheism, marked the beginning of a period of repression of minority religious denominations. Due to the need of believers to stay hidden, this repression led to religious meetings at home. Likewise, the lack of economic resources as well as the construction of churches without the involvement of specialists, often led to vernacular Neo-Protestant church buildings. Due to the ever increasing number of members later on, as well as the need for halls in which to hold evangelistic series, mega-churches appeared and meetings were also held in public buildings.

#### 3.1 How can churches still be identified?

If Neo-Protestant churches are no different from any other house or public building, what message do they communicate? The interior space speaks about the importance of the Word of God by virtue of the presence of the pulpit. The Baptistry makes reference to the practice of adult baptism etc., but the facade of Neo-Protestant church architecture is similar to any other public building and does not speak about the activities which it hosts. The English architect Robert Maguire notes, in *Towards a Church Architecture* edited by Peter Hammond, that: "If you are going to build a church/ You are going to create a thing, which speaks. / It will speak of meanings, and values, / And it will go on speaking. / And if it speaks of the wrong values/ It will go on destroying. / There is a responsibility here." [12, p. 66]

The theological message of Neo-Protestants is that of a God who loves anybody and who calls people to Himself to be together with other people as well as with Himself. As noted in *Theology in Stone* by professor of religion and history, Richard Kieckhefer: the interior layout of Neo-Protestant churches is

one which is oriented towards communication, interaction, comfort, and dynamism. It is model of layout which accurately represents the principles which the community follows. [13, p. 15] Beyond the way in which they are put into action, the principles that are at the foundation of the way in which Neo-Protestant churches are built are in harmony with the way in which the activities of the religious group take place inside. In the same way that the church has principles for interior layout and design, it should have principles and ideas for an exterior that represents it, a style which that should make reference to the love of God and which transmits that He is there.

### 3.2 Cutting out of the Landscape

In a 2010 lecture, Paul Goldberger, the architecture critic at the *The New Yorker*, who the *Huffington Post* declared “the leading figure in architecture criticism,” was speaking about the fact that the Mies van der Rohe chapel at the Illinois Institute of Technology in Chicago, is not distinguishable by virtue of its architecture from the boiler nearby. This was the reason due to which, when a visitor on campus was asked which of the two buildings Mies' chapel was, he was more than certain that it was the boiler.[14] More than it just being desirable for it not to be confused with any other public building, a church should be recognised as a church by anybody. At the same time, it is good for it to remain a discreet and modest presence. “The exterior of a building does not need to strive towards the imitation of civil constructions, neither in proportion, nor in structure and decoration. Neither does it have to catch the attention of a passer-by through the architectural equivalent of market place shouting. The aim should be to declare in a worthy and the same time eloquent manner the totally different nature of what is inside the church (...)”. [15, p. 41]

### 3.3 Fitting into the Landscape

The issue of building in such a way as to keep in mind the environmental context should also be raised, so that the building fits into the surroundings. The issue of place must be raised in terms of integration into the landscape, but the issue of cutting the building out of the landscape it is also to be kept in mind when building the church; a different kind of space, in which the name of God is called upon, and who, through His presence sanctifies the space and makes it visible. The attention given to the site, the context, the materials, the integrity of the materials, the scale and proportion, describes a phenomenological model of approach. The building which is a result of the analysis of the topographical and social context in which it is constructed will be one which fits into the landscape. The use of fitting materials for a place of worship as well as the place upon which it is being built, in a form as fitting as possible for that material and that place, will transmit honesty, and will tend to attract people. The Protestant architect Harold W. Turner noted: “[...] the church building must strike the notes of honesty and authenticity in design and materials. Against the disorder of the world it must show coherence; against wordly strife and confusion, it must be a place of peacefulness and rest; to strident and disruptive affluence it must present the challenge of simplicity and austerity.” [16, p. 344]

### 3.4 A Place that Gathers

The role of a church according to German philosopher Georg W. F. Hegel, is that of containing the “ekklesia”- the gathering of the believers, to bring them together in order to keep them together. The church is a place called the House of Lord by some Neo-Protestants, a place in which you feel protected in the presence of God and together with others. The idea of being together is grounded on a “mutual commitment to the same cause” through trust in and care for others, as the German philosopher Martin Heidegger notes in his book *Being and Time*. [17, p. 168] Harold W. Turner also noted: “In order truly to serve people it must be unobtrusive and humble, neither impressing nor oppressing them by its own features but taking its modest and efficient place in the scheme of things; it will therefore be local and human in scale and thus hospitable as a place where people can feel at home.” [18, p. 66]

### 3.5 The Perception of Space

The perception of space through senses other than that of sight, such as hearing and touch, is a phenomenological perspective which also needs to be taken into consideration. For example, the emphasis on sound to the detriment of appearance is very present in Protestant and Neo-Protestant architecture. Because of the musical culture of these churches, they are designed so as to take acoustics into consideration. Likewise, space can better be perceived through sound, as noted by the Dean of Helsinki University, Professor Juhani Pallasmaa: "Hearing structures and articulates the experience and understanding of space. We are not normally aware of the significance of hearing in spatial experience, although sound often provides the temporal continuum in which visual impressions are embedded. (...) The sound of church bells echoing through the streets of a town makes us aware of our citizenship". [19, p. 49] Pallasmaa also notes that the sense of touch is the most important one, with touch being the parent of the eyes, ears, nose, and mouth. Practically, all the other senses are an extension of touch.

### 3.6 The Concept of Memory

"The closeness of space, including built up space, does not only occur empirically, but also through the means of affective memory (Bachelard), associations and analogies (...) which are born in our mind during the process of grasping, using in time and recollection." notes Augustin Ioan, professor, architect, and author, in *Themes and Difficulties of the Philosophical-Architectural Relationship: The Case of Phenomenology*. [20, p. 25] Projecting the values of a community onto an edifice and the repeated use of this space for meetings in which common values are celebrated, contribute to the achievement of a spacial nearness through the means of affective memory. People end up associating all kinds of buildings, regardless of their architectural quality or lack there of, with sacred spaces, spaces of God. The concept of memory functions for those who are already a part of the community, or for those who by some means had a degree of contact with a Neo-Protestant place of worship and internalise it, thus making it a part of their religious experience. However, for those who have not had the experience of using such a space over a period of time, the impact of Neo-Protestant architecture is a strongly negative one.

## 4 INSTEAD OF A CONCLUSION

Among the case studies which focus on ideal architectural examples, are the Protestant churches: Church on the Water (1988) and Church of the Light (1989) by Japanese architect Tadao Ando, whose approach to the building sites is remarkable. Church on the Water (Fig. 1, 2) is a little chapel belonging to the Alpha Resort Hotel. Church of Light (Fig. 3, 4) is the chapel of the Ibaraki Kasugaoka Church, a member church of the United Church of Christ in Japan. The buildings are influenced by their sites, their context, and surroundings. Church on the Water is located in an open field, and the architect took into account the topography of the terrain. The building is influenced by the form of the terrain, and the wall behind the pulpit, opens towards a lake. Church of the Light, on the other hand, is in an urban settings, and the wall upon which the cross is, faces a junction. The inside space does not have a view towards the outside world, but light is used in such a way as to not make one feel like they are in a space completely detached from the outside, but rather that the space is shielding them from the unrest of the city. The architecture of the two chapels is geometric, clear, and simple, but not simplistic. The scale of the building take into account human scale and is not decorated. Although the construction material used is exposed concrete, the furniture inside is made of wood, a material which warms the interior space, working together with well thought out lighting in terms of situation and quantity.





Figure 1, 2. Church on the Water



Figure 3, 4. Church of the Light

A better example in terms of flexibility, in which the seating is moveable, and which promotes various seating arrangements of the community (especially ones in which communication is made easy) is the Immanuel Church and Parish Centre in Germany (Fig. 5, 6), designed by German architects Sauerbruch Hutton. The architects used wood for both the interior and exterior of the building, which is a warm material that gives a very welcoming appearance to the entire construction. Nevertheless, the building does not stand out of its surroundings as being a church.

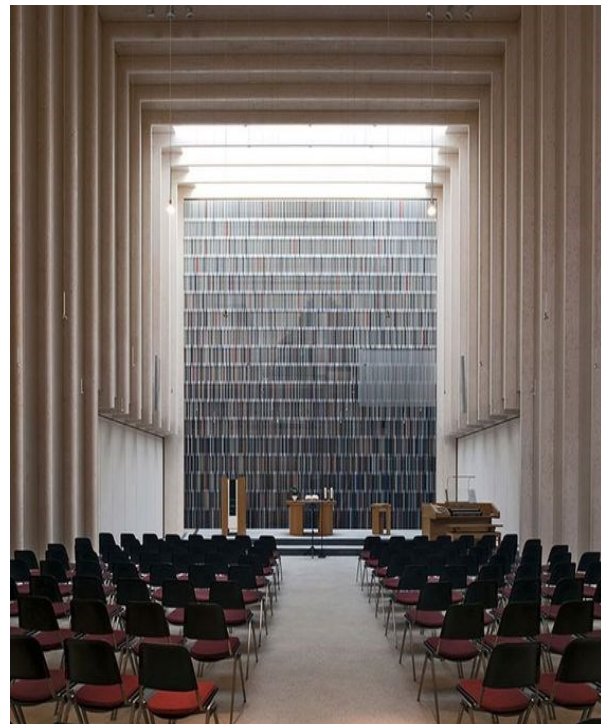


Figure 5,6. Immanuel Church and Parish Centre

At the end of his book *The Eyes of the Skin* Pallasmaa concludes: "The timeless task of architecture is to create embodied and lived existential metaphors that concretize and structure our being in the world. Architecture reflects, materializes and eternalizes ideas and images of ideal life." [21, p. 71] The mission of any church is to embody their vision about the way they relate to the world and to God, and the way in which we should live on this earth in the presence of the Creator. The church should be sensitive to the nature of the location in which their edifices are built, and especially for them to be a church; they should be identifiable as such. The mission of Neo-Protestant architecture should be that of transmitting as accurately as possible the identity of the group it represents.

The architecture of churches has a direct influence on people, their values and their faith. It has the ability to strengthen or weaken the experience of a person. This being the case, special attention is needed to be given to the way in which Christian worship spaces are built, in order for the effect that they have on the individual to be beneficial, uplifting, and positive from every point of view.

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## THE FUTURE FLOATING CITIES – A COMIC STRIP

Gențiana Iacob<sup>1</sup>, Irina Mereoiu<sup>2</sup>

<sup>1</sup> "Ion Mincu" University of Architecture and Urbanism (ROMANIA)

<sup>2</sup> "Ion Mincu" University of Architecture and Urbanism (ROMANIA)

cristinagentianaiacob@yahoo.ro, irina\_mereoiu@yahoo.com

### Abstract

There is a big difference between: illustrating how architecture is built, and illustrating how architecture should be used. Most of the times, this type of presentation is composed of one rendering or a series of renderings. This remains the static image of a product that is going to be built, used to attract the public, the beneficiary. It's a perfect moment, completed by the right people, wearing suitable clothes and moving in the correct direction, the sun is in the perfect angle that brings out in an ideal way the materials' textures and tones. It represents the idealization of the not yet realized project. But what would happen if we could find out how the project was designed, how each layer was added until the final form was reached and the people shown in the renderings would have a story that would help discover the whole project?

Comics represent the point where words, sequences and images meet; they are experiences, frozen in time, that are brought to life only when they are read. There is a big potential of building powerful stories about people, places and emotions by using this technique.

Sharing a story has deep roots in people's social behavior; for a long time, stories were being used to share knowledge in a certain community, to discuss moral values or to satisfy any type of curiosities. From the cave paintings, the silhouettes on Greek vases, medieval Japanese scrolls or the Egyptian painting, man felt, since ancient times, the need to express himself, to tell his story by using images.

The narrative element is certainly an important feature of comics. The comics' sequences and interstitial space underline the events' evolution in time. Also, the way a comic is organized allows the reader to set his own pace in which the reading is done, the rhythm can be controlled, varied, so that the person who covers the comic, can "digest" it in his own terms.

There is, nowadays, a growing trend in architecture to accept/use comics as a way to tell the story of an architectural object. In fact, just as pioneers such as Archigram already proved in the 70s, comics can be used as a mean of representation for anything related to architecture: from small scale projects/objects to whole cities or even larger territories.

Within the last two hundred years the evolution of port cities – dynamic places of both contact and separation between people and cultures, has had only one constant: change. The industrial waterfront of the early 1900 was followed by the post-industrial waterfront, a place of leisure and urban bliss which seems to have reached the end of its era.

From floating cities to underwater cities to fully robotized portscapes, there is a growing concern with the future of port cities which is, for now, still shed with uncertainty and conflict. The scenarios are either dark or highly enthusiastic but for sure very diverse. There are even grimmer forecasts which talk about a future crisis of port cities caused by the "perfect storm" - a dystopic scenario where the loss of most of the world's existing information and technological advance could be solved through a reversal of the industrial revolution and a return to using the seas as the main way of communication.

Focusing, as a starting point, on how comics can be a viable alternate model to discuss and design architecture, the paper takes the debate further, into the practical aspects of illustrating architecture, and applies the use of comics in the ongoing debate over the future of cities on water.

Combining both research done on the use of comic strips as a mean of architectural representation and research on the evolution of cities on water, including utopian scenarios for their future, the paper aims to present the reader with the story of a hypothetical floating city of the year 2200, both in writing and illustrated as a comic strip.

**Keywords:** comics, sequence, narrative element, water-city, floating city, utopia.

## 1 COMIC STRIPS AND ARCHITECTURE. A BRIEF INTRODUCTION

There is a significant difference between presenting how architecture is built and presenting how it should be used. Many a time this model of representation consists of a perspective or a series of perspectives. It is the image of a product in the process of being made, used to attract the public, the beneficiary. It represents a perfect moment, inhabited by the proper people, wearing the appropriate clothes, which walk in the right direction, the sun shining in the perfect position to ideally highlight the materials' tones and textures. It represents the yet unrealized project. What would it be like to see the journey it took for the project to reach this point, to see each layer being added to reach the final form, and the people living inside the rendering would have a story to aid in discovering the project itself?

Architecture is discussed, explained and identified almost entirely through representation. The concept of architecture is presented through a series of various representational techniques: photography, journalism, exhibitions, books, films, television. Why couldn't comic strips, sequential art, be an adequate medium to showcase and discuss the built environment?

Comic strips are the meeting point of words, sequences and images: they are experiences frozen in time, brought to life only in the moment of being read. Therefore, there is great potential in building strong stories about people, places and emotions by using this means.

Since times immemorial, sharing a story is deeply rooted in humans' social behaviour, stories being the channel to impart knowledge, to discuss moral principles or to satisfy various curiosities. From cave paintings, painted silhouettes on Greek vases, Medieval Japanese parchments or Egyptian paintings, man has always felt the need to express himself and tell stories also through images.

The narrative element is undoubtedly an important feature of comic strips. Sequencing as well as the in-between spaces of a comic book page underline the development of events in time. Moreover, its inherent structure allows the reader to set his own pace of reading, controlling and varying it in such a way so as to be able to internalize the story as to best their ability. This passing of time is often represented through dialogue or images which slow down the plot's tempo, or, on the contrary, accelerate it. In some scenes, words are rendered redundant; in comic strips, a "silent" space can be described without words, their presence serving only to enhance the images' potential.

Nowadays, the way in which comic strips are perceived has foregone important changes, attracting scholarly interest from art historians and literary critics, eager to analyse the structure, aesthetics and discourse of such works, regarding them as an important part of popular culture. Although the comic strips' contribution to understanding modern culture is growing ever more obvious, there is no academic subject names "Comic Strip Studies", as part of Art, Literature or Media Studies. Although already having a history of a hundred years, comic strips still find themselves at the outskirts of academic interest. Thus, those who choose to approach the subject in detail find themselves in the position of having to justify their interest.

In order to be able to scrutinise a comic strip in depth, taking into account the interactions between these different codes, as well as their inner mechanism, we need not only to use an analytical “apparatus”, but also to possess a good descriptive understanding, which must contain information related to both literature and graphic arts; in conclusion, a comic strip will never be understood only through its graphical content or only by reading the text.

An obvious parallel can be drawn between comic strips and films, thus the perspective pertaining to the frames of a graphic novel can often be likened to the film camera’s position – close up, general shot, montage sequence, but the comic remains in sharp contrast to film, a purely spatial realm. Its key elements (frames, images, pages) being entirely static. [1]

Moreover, each frame in a film is projected onto the same space – the screen, while each frame of a comic must occupy a different area. Thus space represents for comic strips that which time represents for cinema. [2]

As Scott McCloud explains in his book, “Understanding Comics”, sequential art has been used for centuries in order to tell stories. McCloud includes in his work the examples of cave paintings, a portion of the pre-Columbian manuscript discovered by Cortes in 151, with a length of 10 meters and painted in vivid colors recounting the tale of a warrior named „8-Deer Tiger’s Claw”, the silhouettes painted on Greek vases, Medieval Japanese parchments or the 1066 French Bayeaux Tapestry illustrating the conquering of England by nomadic populations, measuring approximately 70 meters. [3]

In speaking of the direct precursors of Romanian comics, we can mention the murals of the Sucevița, Moldovița and Voroneț Monasteries, which through composition, sequencing, character expressivity and short explanatory texts can be considered comic strips dated back to the XIV-XV centuries. [4]

However, the history of modern comics starts with the appearance of strips in American newspapers, around the year 1900. Although the first artistic contributions appeared in magazines such as “Puck” (1877), “Judge” (1881), “Life” (1883), strong competition between the New York newspapers, especially among their respective editors, who put heavy emphasis on illustration and on the Sunday Supplement, contributed to the dramatic evolution of the comic. The most prominent rival publications were: “New York Times” (1851), editor Adolph Och, “New York World” (1860), editor Joseph Pulitzer and “New York Journal” (1895), editor William Randolph Hearst.

Historically, comic strips have always been in close relation to architecture, in its use of the notion of “city”. The city has functioned as an important factor in the development of storytelling, an element having to do with creating atmosphere, a symbolic protagonist, but which can easily become the focus of a tale. [5]

Ever since the 1930s, comics authors and artists have continued to incorporate the city in the scripts they created, sketching hypothetical places which constantly pushed the boundaries of reality. In the USA, Frank Miller imagines *Basin City (Sin City)*, we become acquainted with *Metropolis* through Superman, Batman fights crime in *Gotham City*, Warren Ellis and Darick Robertson create “Transmetropolitan”, Dean Motter conceives “Terminal City” and “Electropolis”, Bolland presents us Mega city in “Judge Dredd”, while Doug Chiang introduces us to the city of Kantuur in “Robota”. Compelling examples can also be found in French-Belgian comics: François Schuiten’s “Cities of Fantastic”, Moebius with “The Long Tomorrow”, and Enki Bilal’s “Nikopol”. The Japanese manga culture also brings important contributions, with Katsuhiro Otomo’s “Akira” and “Domo” but also Jito Taniguchi’s work or Masamune Shirow’s, “Ghost in the Shell” and “Appleseed”.

In order to continue our argument, it is necessary to mention which architects and architectural groups set the foundation for an alternative representation of projects, far removed from the classical perspective used in most cases, as well as the memory of the context in which those were developed.

1960 marked the establishment of several architect movements which held an optimistic view on technology. These groups created several projects which explored a possible evolution of the

automotive industry, of consumerism, and social aspirations, while questioning technological utopias. At the end of the decade, their momentum starts to dwindle. The mix between visionary architecture, pop culture, art and rebelliousness made for the recognition of their works beyond the sphere of urban design. They fascinate even to this day, mostly due to the exceptional aesthetical qualities championed by groups such as Archigram, Archizoom, Metabolism, Superstudio and their respective projects: Ionel Schein - BiBlioteque mobile; Future Systems - Peanut House, Mandarin Hous; Arthur Quarmby - Corn on the Cob; Coop Himmelblau- Model of Villa Rosa, Model of Urban Fiction; Haus-Rucker-Co - Pneumacosm in the city.

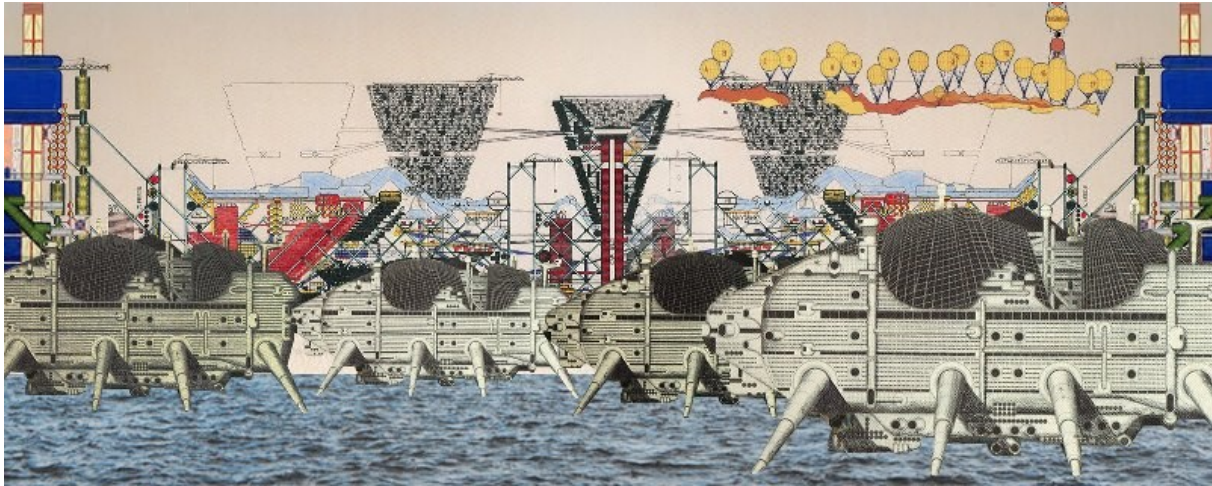


Figure 1. Archigram. Walking City (1964)

The architects of Archigram, a futuristic avant-garde architecture movement established in the 1960s, were inspired by technology in creating a new reality, expressed only through hypothetical projects, and were the ones to come closest to the simultaneous reveal of the creative process through storytelling and of the architectural project's use. Its most prominent members, Peter Cook, Warren Clark, Ron Herron, Dennis Crompton, Michael Webb and Davis Greeneau, worked intensively in promoting their ideas: between 1961-1974 nine numbers of the Archigram magazine were printed, the BBC screened two documentaries around the movement and an Archigram work being put on display. Numerous conferences were held and countless sketches and models were created. [6]

The leaflet through which they presented their ideas was called Archigram I and was printed in 1961. Loyal to the concept of high tech and using an infra-structural approach focused on survival technology, the movement experimented with modular technology, mobility of the environment, and space capsules. Their work offered a seductive view on a glamorous era of the automotive industry, but the manner in which their projects were displayed undoubtedly remains the movement's trademark. Over 900 works, each created using a wide array of techniques, in which the people inhabiting the drawn space are not there for the sole purpose of rendering the scale of the building. Peter Cook stated that the force of an architectural drawing can go beyond the mere bi-dimensional representation of a building and must express the construction's coming to life or the life it inspires.

## 2 THE FUTURE OF CITIES AND THE NEED FOR UTOPIAS

Nowadays utopian explorations in architecture continue, focusing more and more on alternative living environments. Maybe because the contemporary major cities are faced with serious problems, there is a growing interest in water-based cities, seen as a welcoming and yet unspoiled alternative to land which is already overpopulated, unwelcoming and increasingly sterile.

The cities illustrated in comic strips have a common trait of being insular cities, not even referencing an outside world or acknowledging the existence of other cities and of any relations with them. In a similar manner, the imagined floating cities of the future are seen as self-contained universes: secluded yet autonomous communities which came into existence out of rebellion against the "old

system". These new settlements would be based upon a libertarian ideology and would be an example of change: changes to the community and economy, to the political system, to the way in which resources are obtained and then used, etc.

Talking about their floating city project, Dan Wood, founding partner at WORKac, underlines the importance of a counterculture: "It's not just counter America – it is global. We have global concerns now and there could be potentially a global counter movement". [7]

However, living on water is by no means a new idea. Since Jules Verne and his Nautilus (1870) or even long before that, the world has been dreaming utopian dreams of living on or underwater...The same way, the legendary city of Atlantis has its modern day successors in the form of envisioned underwater cities.

The idea of somewhat autonomous communities which rule themselves is not new either and, in fact, there are examples of communities who manage to do this in real life, as a natural lifestyle and not as the result derived from a long lasting academic research activity. They seem to function quite well too. Communal living is a form of organization for many people such as the Hakka people of southern China with their multi-family living structures which can be easily defensible as well, and include everything necessary to living from temples to compartments for food storage, armoury and even an internal source of water - basically a contemporary fortified village. We must acknowledge that these communities do however have a small population and still live in an existing nation state. Even more so, their way of living is derived from tradition and not as a new form of organization.

## 2.1 Utopian floating dreams

In the 60s Buckminster Fuller designed Triton, a floating city for 100 000 people located just offshore Tokyo Bay's area and which was supposed to be connected to the mainland through bridges, offering all the advantages of an ocean ship at the same time with some of the advantages of living on land. His concept has now been updated by UK designer Phil Pauley into a floating system of spherical modules which can both float and sink, depending of the weather and the state of the sea.

Based on some of the drawings and concepts developed by the very conceptual and quite radical architecture group Ant Farm in the 70s, WORKac and Ant Farm presented at the Chicago Architecture Biennial last year the concept of a floating city that belongs to no country and that is a place where human and marine life come together to create a new kind of living which facilitates dialogue between species and which "serves as a vessel, a research lab, a conference centre and a "vehicle of dreams". [8]

More inclined towards the artistic aspects of such a project, In 2014, in Venice, photographer Philippe Calandre imagined new territories, under the form of new islands which are formed through putting together fragments of the old city of Venice with industrial ones, cut from the continental Mestre area and which form together new, democratic territories of both confusion and dream. [9]

One of the most prominent entities involved in the quest for making floating cities a reality is the Seasteading Institute. Their proposal is made of modular platforms which could be combined in a number of ways and which would form a floating city. The institute advocates thinking "waaay outside the box" [10] when it comes to political systems therefore their floating city could either float on high seas or search for a host nation to which to attach itself for as long as it's convenient. Although initially the floating city was supposed to be entirely independent, research carried by the institute has pointed towards the host nation solution as a more viable one: the city would be protected in calm waters, its residents would be closer to mainland and the legal framework taken care of in terms of protection and responsibility. This kind of model relies on a different political view where governments would have to compete in order to keep their people therefore they would actually have to please them. As shown on their website, modularity and mobility would guarantee the success of the whole project: "Mobility of the individual modules is key from the perspective of guaranteeing autonomy for the city – in the event that the relationship with a particular host nation

no longer suits either party, the platforms could detach from their moorings and float to a different location. Modularity and mobility also enable dynamic geography and empower citizens of the city to rearrange into more desirable configurations as the population grows and evolves." [11] This would also protect and ensure a dynamic geography of the community as stated by the the Dutch engineering firm DeltaSync in an interview for The Guardian: "At first the villages would aggregate in protected waters. Later, they would cut ties with land altogether. That's when all the trappings of civic life would be either abandoned or reproduced in microcosm on the rafted village" and also "if new friends decide to be neighbours, they could simply tow their houses together". [12]

The idea of somewhat independent cities hosted by nations is also supported by economist Paul Romer who developed a proposal for the construct of "charter cities" - relatively autonomous territories (such as Hong Kong). In his opinion the much needed change in today's world could come from the entry of new organizations or territories which would exemplify a new set of rules and set an example for existing ones. [13]



Figure 2. Floating City. The Seasteading Institute

Even more radical and deeply convinced about the floating future of humankind, self-taught architect and engineer Jacque Fresco spent his life designing a future where people will actually colonize the sea. and buildings made out of "memory metals" which could expand into real-size buildings when tossed into the sea. His experimental city will, the project description reads, "dramatically reduce crime, poverty, hunger, homelessness, and many other pressing problems that are common throughout the world today". By shifting the focus from a mindset concerned with profits to one concerned with quality of life, *The Venus Project* promises to translate spiritual ideals to working reality: "It will feature intelligent houses; high-efficiency, non polluting transportation systems; advanced computer technology; and a number of other innovations that can add value to the lives of all people." [14]



Figure 3. Floating City. The Venus Project



Another recent proposal for a water city called *Floating city* comes from AT Design Office who developed a concept for a floating metropolis as an alternative to expanding human settlements into the countryside. Their city combines both a floating island of 10 square kilometers and an underwater city thus giving people the option of living either above or underwater, according to preferences. Hexagonal modules would compose the foundation of the city while also creating a central chimney which would bring light and natural air to the underground city and its green spaces. Transportation options include underwater tunnels, yachts and submarines [15].

Meanwhile, French architect Jacques Rougerie dreams of a completely autonomous university city, City of Mériens, shaped like a Manta ray which would float around the oceans and contribute to the research on the marine environment through bringing together researchers, professors and students alike. [16]

Projects of building on water do not stop here and other visionaries such as Waterstudio, a Dutch architectural firm, dream of building floating structures which could help urban ecosystems survive in an increasingly dense and overpopulated world (Sea Tree). [17]

Taking it even a step further, a Chinese engineering company reveals plans for an underwater city located 500 meters below the ocean's surface which would be, again, autonomous. The *Ocean Spiral* would come with its own "factory" which would help generate energy from carbon dioxide and from the thermal differences of sea water. [18]

## 2.2 The critique of floating dreams

One would say that with all the preparatory utopias out there, the reality of a floating city seems to be only a matter of time. It seems however that, the more ambitious the projects are, the less detailed and the more vague their carrying out. Recurring ideas that are most popular are those of modular systems which can ensure a fluid movement within the city. The principle behind the Seasteading Institute's proposal where one could take his house and float to a different "neighbourhood" based on interests or simply float away when things in the community don't seem to be satisfying anymore sounds attractive but is definitely prone to debate. It would be interesting to explore how this new freedom would impact the development of communities all together. It is a well known fact that neighbourhoods where people with different backgrounds or of different social categories mix tend to work a lot better in terms of societal integration than those formed solely based on similarities. It would also be interesting to see what would happen when the formed "temporary community" would face a problem: given the possibility, would people hurry to leave rather than stay and try to solve the problem? A common problem of all ideologies is that they only tend to take into account the positive side of human nature and to simplify human personalities to unidimensional models that fit the overall architectural concept. Fresco's ideology even talks about "preparing people intellectually and emotionally for the changes and challenges that lie ahead" in an omniscient, all-powerful manner. The underlying principle of his work is that by significantly changing the living environment of the population, the population's behavior can also be dramatically altered in order to prevent and gradually annihilate destructive and self-destructive tendencies. Eventually, all models of free-living that reject the limiting and oppressive political systems fail to take into account the very human need for structure and even limitation: we are capable of adventure and exploration only when we have a stable foundation to rely upon.

Discussing contemporary floating utopias, Mieville also talks about a resentful way of dealing with social problems by running off into the sunset or, better said, floating away, labeling the philosophy behind these projects as one of capitalism inadequacy. It is also interesting to notice that in these scenarios the state is geographically confined to land territories and seen as an abstract notion. The settlers run away in order to escape oppressive states apparatuses but fail to specify how will the sea settlement be regulated, how will the labor division be organized and managed, how will inequalities be dealt with. In his critique, Mieville notices traits of authoritarianism at the core of libertarianism

and talks about a symbiosis between freedom and tyranny which characterizes this kind of floating utopian projects. If it ever were to be built, *The Freedom Ship*, a project for the biggest floating city in the form of a cruise ship ever made, would rely upon an extensive security apparatus to protect residents both from inside as well as outside threats. It would also resort to the Captain's word as the ultimate and undebatable decision tool. Totally skeptical to the viability of these projects Mieville concludes that "[s]easteading libertarians flee the oppression of bourgeois democracy for the tyranny of dictatorship". [19]

In terms of borders this kind of settlement would be a rather enclosed form of living as immigration onto a floating structure would be highly unlikely to occur; and equally impressive. Therefore far from being an open community where freedom of movement would reign, it would be a watertight community but only with mobile borders.

Another aspect which is also controversial is the economic viability of such a project. According to Jacque Fresco, for example, building a city from scratch would be less expensive than upgrading and adjusting existing ones. However, critics tend to disagree. In an article covering the reasons why utopias are prone to failure, Mojan argues that building new cities proved to be almost twice as expensive as expanding services in existing cities. In his opinion "[t]he economics of migration, therefore, may make sense only for the wealthiest residents of existing cities – or for those who have no other choice." [20]

Examples of such ideas that already went into oblivion but not after a scandalous downfall include the *Laissez-Faire City*, an offshore tax haven born in the 90s and *New Utopia*, a sea-based libertarian micro-nation which was supposed to be located in the Caribbean and that degenerated into scandal way before it was even built. Another one of the big failures of this kind of utopian dreams lies in the quick death of the *Atlantis Project*: in February 1993 a proposal to build a floating sea city named *Oceania* received worldwide publicity only to be abandoned shortly after, in April 1994.

In terms of aesthetics and functionality, these projects tend to follow two different, although not always opposing, directions: a "hallucinatory baroque" one, as Mieville described it, characterized by extreme organicism or a functional one, regulated by geometry and following in the line of thought of Le Corbusier, exemplified by proposals such as that of Buckminster Fuller and his Triton City. Sometimes, the need for a functional, modular shape as well as the concern with limiting consumerism and the use of resources that these projects deal with, leads to standardization in terms of architecture and creative expression. Fresco's city is planned into the smallest details, leaving basically no room for creativity or innovation from inhabitants: the layout, number, destination and shape of buildings is already decided, the materials of the housing units have all been chosen on the basis of durability and cost, even furniture has been pre-designed in order to be economical and long-lasting. In a paradox, a libertarian community would have, in the name of higher principles they chose to abide, very little freedom to design their life and their environment.

More than physical spaces, cities become realms of dreams and imagination, shaped by the communities they foster and who, in turn, shape the communities who inhabit them as well. Cities are outcomes of history and they each have a spirit of place which defines them and distinguishes them (and their inhabitants) from other similar settlements. Accidents and gaps in the urban fabric or places which are incompletely designed can turn into opportunities for new experiences, into spaces where anything is possible and which offer an escape from rules and orders. From this standpoint, floating utopias will for sure have to deal with the consequences of uprooting people and inviting them into territories which leave very little to the imagination.

However, despite all the failed or forgotten ideas, there is a cultural fascination with this topic. Despite the utopian impulse which is often foolish or plain dangerous, Kingwell seems to think that we need this kind of dreams and the energy that derives from them together with the optimism it infuses - the idea that things could improve in the future. However, ideas this big are useful to give us hope but they shouldn't be followed to a tee as "[t]here is too much associated destruction, too

much faith in reason or technology or socialism. Cities, we know, are less planned from the top down than they are grown from the bottom up. Utopian desire is a kind of inner tyrant, a dark, overwhelming form of hope [...]". [21, p. 59]

### 3 COMIC STRIPS AND FLOATING CITIES. CONCLUSIONS

Comics, a complex means of expression, with its characteristic elements, the sequence, the interstitial space and the narrative element, always discussing the relationship between object and observer, giving the individual an important role in the story, can be considered a viable alternative method of presenting any architectural project.

More than just utopian projects, with the right approach, floating cities could become part of the way we inhabit this planet, and possibly a settlement as functional as any other on land. Although it may seem against human nature to simply float around with no "roots" and it may seem that we need to be connected to land in order to survive, today's world functions on a constant communication between territories through water. Contrary to popular belief, most of the trade still relies on sea-faring therefore a floating settlement might even be more convenient at times. This scenario is also supported by a wide range of research topics such as aquaculture (underwater agriculture), underwater transportation systems, etc. currently being investigated. However, a floating city could be viable but not in the form of a utopian project, not as an "escape" solution but as a complement to land settlements and to today's living mode.

However, one aspect which nowadays limits the powers and influence of utopian projects is the age we are living in where individual happiness became the ultimate purpose. As Jendrysik put it, "in an age where the individual is the measure of all things, utopia cannot be large-scale and all encompassing (And this might just be a good thing)". [22, p. 41]

A hypothetical floating city in the year 2200, born from the eruption of a volcano in the Atlantic Ocean is the center of our comic strip. A group of intellectuals decides to form on the newborn island a society with a pyramidal management system, leaving behind the crowded continent, already depleted of most its resources. Although in the beginning they appear to have built the perfect community, in which all the necessities and wishes are fulfilled, with the passing of time, individuals end up losing their creativity, their freedom by living in this rigid system. The islands' inhabitants begin to wonder if they should return to their old lives on the continent when a shipwreck, containing elements that are no longer considered necessary for the progress of the new society, is discovered.

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## IN ARTS WE TRUST, SO HELP US ART: SHAPING PUBLIC SPACE AND EXECUTING COMMUNITY IN A DIVIDED CITY

### THE CASE OF MOSTAR (BOSNIA AND HERZEGOVINA)

**Sonja Lakic**

*Gran Sasso Science Institute (ITALY)*  
*sonja.lakic@gssi.infn.it, sonja.lakic@gmail.com*

#### **Abstract**

Once remarkably integrated and multicultural, the city of Mostar, Bosnia and Herzegovina, experienced radical (post-war) shift to ethnically divided city, which dramatically altered every single aspect of local everyday life experience. Despite the administrative unification (2004), the institutional parallelism – e.g. two healthcare, postal and transportation systems, followed by two different universities, theatres and electricity companies - was kept as an integral part of a general strategy of the local ethno-nationalist politicians – e.g. the practice of manipulating ‘political, demographic and cultural space’ (Pignotti, 2013: 12). Furthermore, different ethno-nationalist politicians’ territorial strategies – e.g. renaming of the streets (Palmberger, 2012), construction of new (mainly religious) objects and monuments related to particular ethnic identity, as well as destruction of ‘formerly shared spaces and memories’ (Bjorkdahl & Gušić, 2013, p. 23) - which were exercised in different parts of the city in order to ‘secure the spatial dominance’ (Bjorkdahl & Gušić, 2013, p. 23), resulted in an establishment of ‘the new ethno territorial order of space’ (Pignotti, 2013, p. 91). The latter resulted in an establishment of the new ‘demographic, social and psychological realities’ (Bollens, 2008, p. 1276) in the city, which consequently developed ‘the imaginary walls’ (Bjorkdahl & Gušić, 2013, p. 7) in the minds of most of the inhabitants.

This specific state of mind contributed to Mostar being perceived as de facto divided into our side and their side, with allegedly no true-shared space and any genuine heterogeneity left (Coward, 2009). Interpreted as ‘the world of the others’ (Gonca, 2012, p. 18), the city represents the place where Croats define Bosniaks as the other, and vice versa. Since the local City Council never succeeded ‘to create a fairer and less stringently ethno-territorial urban area’ and local planners got stuck ‘in a hamstrung position’ (Bollens, 2008, p. 1276), the shared Mostar remained out of reach until further notice. The inhabitants were left on their own, with their own creativity and imagination being all that remained. In that sense, in the post-conflict period, ‘the only legally non-ethnic’ part of Mostar (Sherman, 2011, p. 75) – e.g. undeveloped and neglected Central Zone - became a site of ‘exploration, surprise and self invention’ (Bloomfield, 2006, p. 54). In other words, it became the sphere of ‘symbolic, psychic indicators of unconscious desires and social constructions’ (Bloomfield, 2006, p. 46), hereby understood as “urban imaginaries”, with local non-governmental organisations (NGOs), as well as the individuals, organising different symbolic events in order to retrieve the city as it once was – e.g. shared rather than divided.

Unlike any other body of Mostar-centred literature produced so far, this paper first and foremost perceives the city as the stage of displacement. The latter is understood as the post-war condition, which led to disruption of normal order, habits and conventions and, as hereby understood, served as the catalyst for creativity and imagination (Heynen & Loeckx, 1998). In that sense, I focus on specific

civil society actors who have, since 2005, employed different forms of art in public space in order to overcome divisions, or, in other words, to 'raise people's sights beyond the existing and the given, and conceive alternatives to the present' (Bianchini, 2006, p. 16).

Mostar civil society efforts of this kind have so far been overlooked and generally poorly covered in academia. I aim to address these using the concept of "urban imaginaries" (Bloomfield, 2006). These stand for collective projects and represent a result of political conflicts and processes (Bloomfield, 2006). Moreover, they first and foremost rely 'on sensory and emotional experience' and, as such, 'project unconscious social desires and construct imaginary social alternatives' (Bloomfield, 2006, p. 46). I aim to add more of an understanding how have these practices that focus on 'imagining how the city could be, on the different, often conflicting, social constructions of the city's future' (Bloomfield, 2006, p. 46) so far contributed to Mostar being other than divided. To what extent can these 'non-material, symbolic and psychological dimensions to the constitution of cities' (Bloomfield, 2006, p. 46) shape an alternative vision of the city? I argue that these new urban imaginaries of Mostar have significantly contributed in achieving what has been missing for ages – e.g. a more unified everyday, providing the inhabitants of the city, regardless of their ethnicity, with a possibility to participate in the (re)making of a different and shared Mostar.

The paper is divided in four parts. In the first part, I describe the everyday life experience in the city, focusing mainly on the institutional aspects, in order to demonstrate what caused the rise of the specific actors of the local civil society. In the second part of the paper, I describe the actors and projects, in order to point out the reasoning behind them and different viewpoints they express. In the third part of the paper, I describe the outcomes of these projects, drawing out if and where these overlap and where they diverge, as well as discussing their actual contribution. I aim to conclude that these 'symbolic, psychic indicators of unconscious desires and social constructions' (Bloomfield, 2006, p. 46) have, to some extent, already impacted urban reality of Mostar, and have already been successful in making the city other than divided. These baby steps practices may represent tiny step for the mankind, yet they are, undoubtedly, one giant leap for Mostar, which finally included 'the other' (Bloomfield, 2006, p. 51).

**Keywords:** Mostar, displacement, civil society, public space, art, urban imaginaries.

## 1 INTRODUCTION

In 2004, Office of the High Representative administratively unified the city of Mostar by imposing the new Statute, which was 'carefully designed to ensure that no single people can dominate the others' (OHR, 2004). The statute, which was considered an extra attempt to 'reconcile and reintegrate post-conflict society' (Bjorkdahl and Gusic, 2013, p. 12), transferred most of the executive powers to Mostar City council and brought thirty-five councillors of different ethnicities together, forcing them 'to interact and, to a limited extent, compromise' (Bjorkdahl and Gusic, 2013, p. 23) for the first time after the war. However, from the very beginning, various 'nationalist agendas or influences' and 'a myriad of political, social and economic barriers on the local level' complicated local government's task 'to deliver equal and adequate services' (Heffernan, 2009, p. 28) to all the population. Superabundance of vetoes, political tie-ups, various problems regarding the adoption of the city budget, fourteen months and total eighteen attempts to elect a Mayor in 2008 (Bjorkdahl and Gusic, 2013; Coric, 2013) altogether with the institutional parallelism that, in spite of the administrative unification, never ceased to exist, consequently labelled the Council as a 'shared yet paralyzed political system' (Bjorkdahl and Gusic, 2013, p. 10). Due to injustices in how the votes were distributed, the Constitutional Court of Bosnia and Herzegovina proclaimed the city's Statute unconstitutional in 2012 (Coric, 2013). This consequently led to local elections not taking place in Mostar and the city operating without local government for more than four years. All the public

interests, if any, are nowadays responsibility of a single person - Mayor Ljubo Beslic, whose mandate also expired.

The very same year administrative unification took place, two different planning departments that were situated at two different banks of the river Neretva – e.g. eastern or Bosniak-dominated part and western, Croat-dominated part - were unified as well. However, this had hardly any contribution to Mostar being different than divided. Since 2008 until nowadays the local Institute for Urban Planning produced fourteen plans for different areas of the city. Each of these plans is dealing solely with *the ethnically clean* parts of Mostar. There was never a single plan produced for ‘the only legally non-ethnic’ part of the city (Sherman, 2011, p. 75) – e.g. the Central Zone – which was, back in a day, envisioned as the location of prospective jointly administered institutions by the International Community. As such, the Zone was supposed to be the only shared area in the entire Mostar where the overlapping of the two separate communities could actually happen (Makas, 2011). However, since the Zone was never part of the city where the ethno-nationalist politicians’ vote(r)s come from, as such, it was simply never an area of their interest. It remained neglected and undeveloped for decades, and completely out of focus of local planners as well. Without a single plan ever produced for this ‘planned unifier’ (Mitrovic, 2008, p. 31), the urban planning practice in Mostar earned the label of “enclave planning” (Sherman, 2011), which ‘begets unplanned border zones, the non-implementation of rational/technical-styled plans and the reification of conflict into built form’ and prioritizes ‘projects which narrate a certain perspective on the former conflict and give specific material benefits to only a certain side of the city’ (Sherman, 2011, p. 3) rather than focusing on the shared public space which may link the both sides (Sherman, 2011), such as the one of the Zone itself. Without a single line ever drawn towards “the unified everyday” (Bjorkdahl and Gusic, 2013), urban planning practice in Mostar obviously never contributed to a more integrated and shared city.

Attempts of both the international organisations and the local institutions towards getting the city back on the track of a shared multicultural society have largely failed. Nobody ever managed to provide the local population with a sense of community and belonging. The inhabitants were left on their own, with their own creativity and imagination being all that remained. And they decided to go for it. In spite of the fact that ‘the lives of most Bosniaks and Croats are still separated’ (Palmberger, 2012, p. 13), the administrative unification provided inhabitants of Mostar with opportunities to ‘coexist, cooperate and to participate in the everyday processes in the city’ (Mitrovic, 2008, p. 6) to some extent. The most significant outcome of this process were ‘the incentives for new usage or the redefining’ (Mitrovic, 2008, p.5) of the city’s urban space – e.g. provision of new meeting points for individuals such as cafes, bars and shopping centres (Mitrovic, 2008), as well as possibilities to engage in various non-governmental organizations, interest associations, movements etc. I hereby describe specific civil society actors who employed different means of art as primary means of (re)construction the sense of a community and belonging in Mostar hence intervened in public spaces around the Central Zone. In that sense, Urban Movement Mostar, “Abart” (one of the sub-sections of Youth Cultural Centre “Abrasevic”), as well as individuals Marina Djapic and Ivan Rozic are of significant importance for this paper.

## 2 MOSTAR CIVIL SOCIETY INITIATIVES

In 1993, Veselin Gatalo and Nino Raspudic, who were fed up with the fact that each of the ethnicities was ‘trying to endow “their own” space with “their own” characteristics, to “posses” it even more by constructing their own religious and cultural objects and symbols’ (Raspudic, 2004, p. 2), established Urban Movement Mostar. The latter employed satirical tales, exhibitions, TV and radio shows in order ‘to express local social issues and respond to tensions that have emerged from the mass victimizations during the war’ (Veljanovska, 2012, p. 194). However, what placed both them and the city on the world map was the inauguration of the world’s first ever statue of Bruce Lee in local Zrinjevac Park in November 2005. The statue, which was designed by Croatian artist Ivan Fiolic, was



primarily a result of personal frustrations – e.g. ‘the general absence of the law’ in Mostar that was, according to Raspudic, manifested ‘through the total devastation of public space’, with citizens overwhelmed with politics and ideologies, feeling ‘more and more alienated in their own environment’ (Raspudic, 2004, p. 2). Being the son of a Chinese father and an English mother, Lee was recognized as ‘a symbolic bridge between the East and the West’ (Raspudic, 2004, p. 3). However, it was less important who Bruce Lee really was. It was more important that ‘he was not a Bosnian, Croat nor Serb’ (Kushinski, 2013, p. 69). Hong Kong-born kung-fu star was first and foremost recognized as a childhood hero figure that was simply loved by people from different ethnic backgrounds (Raspudic, 2004). As such, the statue was suppose to serve as ‘a common denominator’ (Raspudic, 2004, p. 3), reminding the inhabitants of Mostar that ‘outside of this vicious circle of national conflict’ (Raspudic, 2004, p. 1), there were still some common things left to be shared – e.g. the childhood memories. Thus, Bruce Lee of Mostar was somewhat a gentle reminder that ‘the real values of life have nothing to do with politics or the ‘great narrations’’ (Raspudic, 2004, p. 1).

In 2009, Anja Bogojevic, Amila Puzic, Mela Zuljevic and Husein Orucevic founded “Abart”, the platform for art production and urban research, as one of the sub-divisions of the Youth Cultural Centre “Abrasevic”. “Abrasevic”, which is situated in the former frontline area within the Central Zone, is generally praised as ‘one of the main civil society actors working towards reunification’ (Carabelli, 2013, p. 54), establishment of the ‘everyone’s land’ (D’Alessio and Gobetti, 2010, p. 17) and bringing ‘urban culture back’ to Mostar (Heffernan, 2009, p. 60). “Abart” had a clear ‘political strategy to organize cultural events with the aim of engaging with art practice as a tool for social change’ (Carabelli, 2013, p.56). As such, the platform was after long-term projects, such as “Art in Divided Cities” (2009) and “(Re)Collecting Mostar” (2010), aiming ‘to create awareness and facilitate discussion among citizens on the possibility that the future of the city could be other than divided’ (Carabelli, 2013, p. 56). “Abart” employed different exhibitions, performances and artistic interventions as primary tools to target the city’s ‘problematic polarization’ (Carabelli, 2013, p. 56) and addressed the phenomenon of a divided city from various perspectives, collaborating with various individuals and organisations from all over the world. It is generally considered that the work of “Abart” evolved around the idea to re-interpret the notion of a border and assign it with a whole new and more flexible meaning – e.g. the one of a *threshold* – that could bring people together rather than separate them hence generate places of encounter (Vidovic, 2011). In that sense, artistic interventions “Lazne price o istoriji Mostara” and “OpSjene. ver. 1.0 Gdje bi ljudi trebalo da hodaju naglavacke nogu podignutih u vis” as well as exhibition “Urbani Imaginarij” – “Urban Imaginary”, that represent (the first phase the of building of) ‘a different future’ (Carabelli, 2013, p.58) “Abart” are of great significance this paper. As such, they are discussed in the next section.

In 2012, Marina Djapic, who represents “Abrasevic” in umbrella NGO organization of the Youth Council of the City of Mostar, formed Street Art Festival Mostar team with Ljubica Bajo, teacher at the United World College Mostar. The two immediately launched the call for applications and started developing the programme of the Festival while simultaneously applying for funding. The first Street Art Festival Mostar took place in May 2012. The amount of applications received astonished the organizers. Young people were very enthusiastic, showing enormous interest to participate (Djapic, 2015). Everybody wanted to seize the opportunity to express themselves through arts, to present themselves to a wider public, and, finally, to be part of something new, completely different and unseen. Everybody wanted to be(come) visible in the public space(s) of Mostar. Five editions of Festival have so far brought more than 500 young people from Bosnia and Herzegovina and abroad to the city, all of them contributing to the festival according to their own preferences – e.g. murals, graffiti, workshops, exhibitions, jam sessions, breakdance, theatre performances, sculptures and art installations etc. The activities took place in different public places all over Mostar yet mostly within the Central Zone area. Apart from art historians, with whom the street art was discussed during yearly round table sessions (Djapic, 2015), some of the acknowledged graffiti artists from different parts of the world took part in the festival as well. Organizers state that more than 4000 people

visited this one-of-a-kind festival (Djapic, 2015) that undoubtedly enriched the city, representing 'some good that the present lacks' (Albrechts, 2010, p. 1120).

Very same year, Ivan Rozic, just an ordinary young local man, got frustrated after another series of riots that took place in centrally located Spanish square, when around two hundreds of supporters of Croatian national football team, disturbed by the fact that their favourites lost the match against Spain in the eighth-finals of the European football championship, clashed with the police forces and demolished the city (or, at least, what was left of it). Rozic posted a status on Facebook, inviting all the counterparts who were tired of what he believed to be 'the wrong image of Mostar' (Rozic, 2015) gaining enormous media attention again, to finally share something – that being a chocolate. Hundreds of the inhabitants of Mostar came together at the Spanish square, taking part in what Rozic self-proclaimed "Cokoladni neredi" – "Chocolate riots" / "Chocolution". The news fast spread all over the region, making Mostar the headline again. According to his personal confession, Rozic was quite sceptical and had doubts if anyone would actually come (Rozic, 2015). However, hundreds of people took part in the "Chocolution", believing that sharing is caring.

### 3. THE OUTCOMES OF THE PROJECTS AND THEIR CONTRIBUTION TO A SHARED CITY OF MOSTAR

The statue of Bruce Lee first and foremost represented the idea of 'universal justice', or, in other words, the belief 'that the good guys can win' (Gatalo, quoted in Veljanovska, 2012, p. 194). Raspudic and Gatalo sincerely believed that the monument would help to (re)connect all the inhabitants of Mostar and create the new identity of the city (Raspudic, 2004), becoming a new tourist attraction. And it certainly did. Even just for a couple of days. Few days after the statue was unveiled, it was vandalized and moved to a more secure top-secret location. The good guy, Bruce Lee of Mostar, vanished never facing surface again. However, it made the city the leading news, with global media for the first time reporting about Mostar, without mentioning war or politics (Raspudic, 2004). In spite of the fact that the good guy, Bruce Lee, did not win in his very own Mostar, it initiated series of discussions about the importance of the collective memory in each of the former Yugoslavian countries (Raspudic, 2004). Bruce Lee of Mostar was recognised in academia as 'an attempt to reconceive (and avoid national narrative,) as well as to unify the city' (Kushinski, 2013, p. 69) by 'inciting childhood nostalgia' (Kushinski, 2013, p.71). Furthermore, it was considered 'an ironic representation' of 'familiar, but absolutely foreign' (Kushinski, 2013, p.74) non-political celebrity, placed in ideologically overburdened public space with a very clear strategy of 'eluding the national narrative' (Kushinski, 2013, p.74).

"Abart"'s projects "The Festival of Art in Divided Cities" (2010) and exhibition "Urbani Imaginarij" ("Urban Imaginary") (2011) could be considered the highlight of their work. While the former represented four-day collage of lectures, discussions, art exhibitions, performances and interventions, which brought architects, multidisciplinary artists, curators, art historians and sociologists together (Tomas, 2010; Vidovic, 2011), "Urbani Imaginarij" was part of "(Re)Collecting Mostar" project and was envisioned as open and forever-and-ever-under-construction city archive whose primary aim was to tell the story about the city solely from its inhabitants' point of view. Thus, it had nothing to do with either of the ethno-nationalist ideologies, which dramatically altered Mostar and shaped its recent history. In that sense, "Urbani Imaginarij" was as an attempt of the establishment of 'the new narrative, created exclusively by the citizens of Mostar, leaving the two a priori ethno- nationalist histories of the city behind' ("Abart", 2011). Thus, the project was the first step towards the creation of the new and shared history of the city (or, in other words, its citizens) and had nothing to do with either of the ideologies and ethnicities. "The Festival of Art in Divided Cities" gave birth to artistic intervention "Lazne price" ("False (hi)stories"), which were created by "Abart" founders as somewhat a different sightseeing of Mostar, far away from the city's most recognisable landmark and touristic destination – e.g. the Old Bridge - and were entirely based on the use of the power of imagination, which was spiced up with a bit of sarcasm. When a gathered crowd

was taken for a walk, they were introduced with a set of false (hi)stories written for various locations all over the city, as well as the whole new world “Abart” founders created solely by themselves. The building “Staklena banka”, which is located in the Central Zone, overlooking the Spanish square, was, for example, introduced as a monument designed by the Hollywood actor Steven Seagal and commissioned by the Spanish Knight De Sade for the United Spanish Emirates that were part of the Archipelago of Mostar (Carabelli, 2013). Being based exclusively on fantasy hence with no real evidence “Lazne price” pointed finger(s) at ‘the authority of history and history-writers by challenging the ways in which stories are told and evidence provided’ (Carabelli, 2013, p. 60). Thus, this was an attempt of “Abart” to raise questions about the ways two different ideologies were inscribed in the cityscape of Mostar and investigate whether history can be written by anyone, whenever, wherever and taken for granted with no critical thinking. “OpSjene. ver. 1.0 Gdje bi ljudi trebalo da hodaju naglavacke nogu podignutih u vis”, on the other hand, was another yet physical and site-specific intervention. Bozidar Katic, Zagreb-based artist, used various media to transform once lively and important meeting point – e.g. former square located in front of what used to be famous department store “Hit” - Katic combined audio elements – e.g. the sounds of birds singing and the ones of children’s laughter - with forms of visual communication – e.g. shadows of people painted on the ground - and, finally, the smell of meadow lilies. “OpSjene” successfully managed to turn the beast into the beauty, transforming the area into a (temporary) lively square, offering an insight what this neglected and forgotten space could (or, in other words, should) look, sound and feel like if ever used in a proper way again.

Bruce Lee of Mostar first and foremost represented ‘an attempt for the public spaces in the city to regain their meaning’ (Raspudic, 2004, p. 1). Different practices described in this paper are no exception in that sense. Unlike the statue of Bruce Lee, which is clearly to be understood as an end product, artistic interventions of “Abart” – e.g. “Lazne price” and “OpSjene” - represent a process. As such, they offered a possibility to the inhabitants of the city to participate in the (re)making of a different Mostar. They indeed managed to produce a temporary (sense of) community in the city. The same goes for Street Art Festival Mostar and ‘Cokoladni neredi’. What was primarily ‘a personal revolt’ of Rozic (Rozic, 2015) turned out to be a true bombshell indeed. “Chocolution” seemed to make once remarkably integrated and nostalgically recalled ‘charming microcosm of Bosnia and the former Yugoslavia’ named Mostar (Bose, 2002, p.98) to resurrect, even only for a couple of hours. Moreover, what started as a personal confession on a social network nowadays takes place yearly all over Bosnia and Herzegovina. The last three editions of “Chocolution”, which was firstly widely recognized as a massive local anti-hooliganism protest (Pavkovic, 2012), were of humanitarian character, helping the abandoned children, citizens of Bosnia and Herzegovina affected by 2014 floods as well as the children with special needs. Rozic’s initiative clearly used completely different method than all the other initiatives, but, without any doubt, managed to produced the same effect – e.g. the one of Mostar community being awoken, even for just a couple of hours. Although sharing chocolate ‘on the surface appears to be a banal’ thing, it is, in fact, ‘a process leading to new forms of communication, new forms of relating amongst a specific community and, potentially, a more humanising geography (Loftus, Alex, Democratic Interventions into the Urbanisation of Nature, p.4. Electronic article).

Each of these interventions ‘avoid speaking directly of the state’ (Kushinski, 2013, p.74). Thus, Bruce Lee of Mostar was not the only medium that strived ‘to express feelings of the people who were exhausted by a sense of justice that did not match theirs’ (Veljanovska, 2012, p. 194). So were the squares and walls covered with murals. So was the chocolate shared among all of those coming from the other side. The same goes for imagination and sarcasm, the sounds of birds singing and children laughing, shadows of people painted on the ground and smell of the meadow lilies. The good guy from Mostar, Bruce Lee, indeed was a pioneer and the first ‘strong voice of resistance’ in terms of building ordinary people ‘own sense of justice’ (Veljanovska, 2012, p.194). Interestingly enough, none of these practices were ever obstructed by anyone. Djapic, for example, communicated all the ideas about Street Arts Festival Mostar with the civil servants from the Department of Social Affairs and

Department of Urbanism, who often provided her with additional piece of advice and information (Djapic, 2015). Unlike Gatalo and Raspudic, who used actual statue in order to explain ‘what it felt like to live in such a context of defeat in terms of disagreeing with the past nationalist regime (that took their pre-war existence and norms,) as well as within a new order that struggles to manage social divisions’ (Veljanovska, 2012, p. 194), Djapic and Bajo decided to look beyond the divisions and to focus on what they believed was the city’s greatest potential – e.g. talented and creative youth. The two primarily envisioned Street Arts Festival Mostar as the way to ‘encourage the young people to set themselves free’ of what was believed to be ‘a heavy burden of a divided city’ (Djapic, 2015). They also aimed to send the message that Mostar is ‘not such a peculiar city after all’ and wanted to demonstrate that ‘despite the fact that situation in the city is far from perfect’ there was still a lot of good things to be appreciated (Djapic, 2015). Rozic, for example, also stressed that “Chocolution” primarily aimed to send out the message to all the citizens of Bosnia and Herzegovina, as well as the world, that Mostar is much more than just an(other) ethnically divided city. It is rather a place where ‘many normal people (keep to) live in, believing in a better future’ (Rozic, 2015). It is these normal people who deep within wanted their voices to be heard while mingling with their fellow citizens and sharing a piece of chocolate at the very core of the Central Zone. It is these normal people that, according to Rozic, can make a difference. It takes one step at a time though. Big things do not come to those who wait anyways.

#### 4. CONCLUSIONS

This paper never aimed to introduce the chosen practices of the civil society actors in Mostar as first and foremost examples of good practices. Rather, their selection was made in order to demonstrate if and to what extent these have contributed to a more unified everyday, or, in other words, Mostar making a step towards the shared city. Although, as described, the initial motivation for each of the initiatives is different, the paper clearly demonstrated that the described practices managed to assign (the public places in) the Central Zone of Mostar with what was truly missing – e.g. “the investment with meaning and value”, or, in other words, naming, identification and first and foremost representation by ordinary people (Gieryn, 2000). It is exactly this presence of ordinary people, being involved in different processes, such as the one of sharing a chocolate, that made a difference between *space of* Mostar, hereby understood solely in terms of materiality, location and geometry, and Mostar as *the place*, hereby understood as a coming together, or, in other words, *community* (Gieryn, 2000). Thus, it is exactly these practices that finally resulted in temporary (sense of) community and coming together, with some of them lasting not more than couple of hours. In that sense, the described practices, with no doubt, represent a unique achievement in the world of others of Mostar, making a significant contribution towards the shared city, one step at a time. However, under the specific circumstances with respect to political deadlock in Mostar, it is important to point out that any baby-steps-strategy of this kind should be considered as well as appreciated as a sign of a significant progress. Needless to say, it will take some time to see the actual (or, in other words, the long-term) outcome. Thus, patience is, in that sense, the keyword. At this very moment, time is the best ally for anyone interested in how these events of a symbolic character, hereby defined as the urban imaginaries, which are first and foremost based on the emotional experience, ‘can help remake the city’ at least ‘in the image of its citizens’ (Bloomfield, 2006, p.49) and work towards the alternative future. What Mostar case can definitely teach us is the fact that in turbulent societies of this kind it is social interaction that matters. It is social interaction that shapes places, not the planners (Gaffikin, 2012). Hereby described practices of Mostar civil society call attention to perceive local population as growing number of ordinary and everyday people ‘seemingly marginalized from and immiserated by urban life’ who, at the same time, stand for specific ‘modes of provisioning and articulation’ that to some extent managed to make ‘the city productive, reproducing it, and positioning its residents, territories, and resources in specific ensembles where the energies of individuals can be most efficiently deployed and accounted for’ (Simone, 2004, p. 407). Welcome to Mostar, the city of “people as infrastructure” (Simone, 2004).

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## THE ARTICULATIONS OF THE *IN-BETWEEN PLACES*.

### LEARNING FROM ALDO VAN EYCK

Francesca Oggiano

*DICAAR, Cagliari, Sardinia, ITALY*

*francioggiano@gmail.com*

#### Abstract

At the base of the reflection developed in this research work, there is the concept of habitat<sup>1</sup> as a system, as an articulated “whole”, that cannot be explained with the simple sum of its parts. The concept of habitat, in fact, implies issues of dialectic spaces, in other words, those settings that can be defined as relational subsystems within the urban/domestic scale.

This essay has its roots in the CIAM of 1953, during which the complementarity of the outside space next to the dwelling and its relevance within the project discipline, have been affirmed.

In particular, assimilating the lesson of Aldo van Eyck, this work investigates the deepest issues of the concept of threshold.

The theoretical studies of van Eyck can be defined as a new relativistic conception of the habitat. His theoretical and practical explorations of the “in-between” are enriched by aspects such as the lack of interest towards the conception of an absolute order, the recognition of the complexities generated by the connections of reciprocity between the parts and by the multiplicity of meanings coexisting within different elements, places and people.

The photos taken by van Eyck during his travels evoke ambiguity and consciousness, that are characters which distinguish the in-between realm. The indeterminacy and simultaneous presence of multiple spatial meanings belong to the “in-between”.

**Keywords:** in-between, Aldo van Eyck, threshold, doorstep, relativity.

## 1 INTRODUCTION

At the base of the reflection developed in this research work, there is the concept of habitat as a system, as an articulated “whole”, that cannot be explained with the simple sum of its parts. The concept of habitat, in fact, implies issues of dialectic spaces, in other words, those settings that can be defined as relational subsystems within the urban/domestic scale.

The unicum nature of the urban organism is clearly evident in the complex articulation of its parts, in the relations of contiguity and measured proximity that are structured between the elements of the private, public and semi-public sphere.

This essay has its roots in the CIAM of 1953<sup>2</sup>, during which the complementarity of the outside space next to the dwelling and its relevance within the project discipline, have been affirmed.

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<sup>1</sup> The word habitat will be used for settlement systems; l’habitat here – from the Team 10 lessons – represents a complex system where reciprocity relations establish between various internal compounds.

<sup>2</sup> Eric Mumford, *The CIAM Discourse on Urbanism, 1928-1960*. foreword by Kenneth Frampton, pg. 226 : “The program of CIAM 9/1953 emphasized that there was no intention of limiting the subject to the family dwelling, but instead the work should address “such things in the immediate environment as are necessary for a complete life”. These the program termed “Extensions of the Dwelling”, reflecting Le Corbusier’s idea of “l’odgement prolongé”.

In particular, assimilating the lesson of Aldo van Eyck, this work investigates the deepest issues of the concept of threshold.

The second part of this text contains the re-reading of the village-city of Chefchaouen by means of the conceptual tools bequeathed by van Eyck. Some portions of the urban fabric, taken as examples, will be used to analyse the spatial matrix in which the various natures of spaces are structured.

The speculative interest addresses the ways in which the space and its size are differently arranged and the roles that each component performs within the urban-domestic relation system of the habitat. The description will be supported by some photographs and a graphic apparatus which - summarising - will describe the spatial relationships.

## 2 LEARNING FROM ALDO VAN EYCK

The theoretical studies of van Eyck can be defined as a new relativistic conception<sup>3</sup> of the habitat. His theoretical and practical explorations of the “in-between” are enriched by aspects such as the lack of interest towards the conception of an absolute order, the recognition of the complexities generated by the connections of reciprocity between the parts and by the multiplicity of meanings coexisting within different elements, places and people.

In this way, the theme of urban design is specified as the definition of relations between things.

The criticism of hierarchical forms of organisation - where there is always an operating centrality under which subordinate relationships may be established - opens the path to reflections on the complexity, diversity, the tensions and translation built up by the “in-between realm”.

In the wake of the great theoretical depth of the intellectual corpus gained by Aldo van Eyck, this research work is based on the interest that is still alive for the extended meaning of doorstep<sup>4</sup>.

The extended spatiality generated next to the dwelling, shaped to conform a spatial opportunity of dialectic pause or transit, finds its most explicit built result in traditional villages.<sup>5</sup>

The photos taken by van Eyck during his travels evoke ambiguity and consciousness, that are characters which distinguish the in-between realm. The indeterminacy and simultaneous presence of multiple spatial meanings belong to the “in-between”.

*“What excites me especially with respect to the village is the fact that they are generally built in pairs. The same goes for the districts. Since I am deeply concerned with twin-phenomena, the principle of twin-ness – gémelliparité – which runs right through the entire Dogon cosmology, manifesting itself at every scale level can, therefore, hardly fail to excite me! A rare sense of equipoise pervades the life and doings of the Dogon and epitomizes their specific genius. It seems to me that it could well be nourished by this principle of twin-ness, the one sustaining the other reciprocally.”(Aldo van Eyck)*

The in-between realm, which is a conceptual entity that van Eyck defines with abstract terms such as “frame of mind”, can be recognised in the kaleidoscopic places of the casbah, in particular that of Ghardaia<sup>6</sup>, i.e. in places that are characterised by ambivalence. The “in-between places”, in fact, have not yet acquired a clear definition; their meanings do not fit a completed theoretical matrix but, instead, they have an “open” meaning, undetermined by their very nature. They are the places of relativity, of the tensions generated by dialogic relationships between the part and the whole,

<sup>3</sup> Lammers, Harm. *Potentially... Unravelling and reconnecting Aldo van Eyck in search of an approach for tomorrow*, Thesis for the master Architecture, Building and Planning, Eindhoven University of Technology 11 January 2012 – second update, 24 June 2012. “Perceived as a whole, his theoretical development can be understood as one lifelong search for the translation of the abstract notion of relativity to an understanding of society and a purpose of and approach for architecture and urbanism. Because in his view the answer to this problem was not yet (fully) given by modern architecture, he looked for other sources showing possible answers, which he found in the other arts, in science and in philosophy, but also in an anthropological approach to history and ethnology.”

<sup>4</sup> The term doorstep, meaning “intermediate space open to relations”, was introduced during the CIAM 9 by the Smithsons.

<sup>5</sup> That possibility, that *place-potential* which van Eyck introduces when talking about the “human dimension of architecture”. In fact, van Eyck maintains that such concept, widely presented by TEAM 10, is too naturalistic and limiting. He proposes the concept of right-size as an alternative - or rather, the right effect of size. In his words: “The right size will bloom as soon as the reciprocity mechanisms are put in motion – in the climate of relativity – in the twin phenomena landscape”.

<sup>6</sup> “Size and number mean nothing without reference, to that all will agree. But there is little agreement as to the nature of this reference, beyond that it should accord with the measure of man!”

between small and large, individual and collective. They are places in continuous development, places of the twin phenomena, those settings in which two opposite polarities are reconciled.

And the spatial equivalent of the twin phenomena is the notion of in-between: “it implies a break away from the contemporary concept [...] of spatial continuity and the tendency to erase every articulation between spaces, i.e. between outside and inside, between one space and another. Instead I suggest articulation of transition by means of defined in-between places which induce simultaneous awareness of what is significant on either side. An in-between place in this sense provides the common ground where conflicting polarities can again become twin phenomena”.

The analytical approach criticism of the CIAM expressed by the notion of twin phenomena, leads van Eyck to the articulation of his thought of architecture as a configurative discipline – the necessary alternative. He therefore proposes to conceive the project in terms of reciprocity, as an action of re-stitching the different simultaneous twin phenomena. To establish a dialogic relationship between the parts and to set up the “in-between”, means reconciling opposing polarities. The re-establishment of the original dual phenomena.

Hence the transcendence of the intermediate as a setting in which two independent realities which are also linked and complementary, are put into relation. The intellectual effort of van Eyck is clearly directed to find a suitable approach to the contemporary period, to a specific individual, which can be different according to time and place in which he lives.

The configurative (or structuralist according to Eizberger) point of view, derived from the conception of the intermediate matter, introduces the complexity of the systemic nature of the habitat, of its configured and densely-woven compactness. The fabric weaving of the living places is possible thanks to the “in-between places” that are interposed and modulate the relationships between the different natures of space, generating - inside them - the reunion of the twin phenomena. So the city is a set of places, a cluster inside which there are no continuity interruptions.

The topics at the heart of the current debate and experimentations within the architecture project are the relationship between spaces, the relativity climate where the relations and reciprocal links between the elements of the habitat are established and the configuration of suitable places – capable of producing the place-possibility with their use.

The empty space is the living space, the matter of the project. The empty space is the open space, the invisible substance between buildings which allows to articulate complexities. The disaggregation of the object is opposed to the idea of assimilation of the object within the system, it is conceived as part of the whole, included within a matrix that starting from the existing elements assimilates what is already there in a complex and unified configuration according to reciprocity and context relations.

The urban spaces of the intermediate dimension can be recognised in those spatial devices – alleys, widenings, thresholds, vestibules, interstices and common courts – that are capable of affirming the scale variation and that perform the role of gradients in articulating the relation between urban space and domestic proximity.

In particular, the lesson of Aldo van Eyck, provides an investigation on the deepest issues of the concept of doorstep. The young architect from Team 10, during the '50s, provided an erudite reinterpretation of the spatiality of the fabrics with Arab matrix, assimilating the complexity of spatial bonds, of the relational micro-structures at the intermediate scale that are typical of the systemic organism of the casbah. The system-casbah<sup>7</sup> clarifies the lack of interest in a clear, immediately-legible, rational and simple condition, in favour of an intellectual interest to grasp the richness and density of meanings that the habitat possesses. A space made of tensions, we could summarise, it is

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<sup>7</sup> Aldo van Eyck In 1991, in an interview, he once again referred to the topic of the casbah, what he meant and how it was understood: “We just used that one word ‘casbah’ as an image, as a poetic image. We were referring to any kaleidoscopic society where all the functions were more or less mixed, and I always said the casbah was the final limit. We don’t have to literally make a casbah, imitating a period of human history when things were mixed and closely knit, but we need to be a little more ‘casbah-istic’, by putting things together: and letting things penetrate into each other again. That is what we meant by casbah”. (The source: Lammers, Harm. Potentially).

the meeting place of the “twin phenomena”<sup>8</sup>: the inside and the outside, the public and private spheres, the stasis and dynamism.

Doorsteps are the spaces of relativity, small spaces that exist by virtue of their dependency on the system; they are mediation spaces, which are in the middle between parts regulating their ratio and dialectic.

Their dimension of “the in between” makes them places of multiplicity and of living, dense of use meanings and of relation possibilities due to the vocational indefiniteness which characterises them. They are small-scale indeterminate spaces, where the effect of the size, which Aldo van Eyck talks about, is clearly shown. We can talk about doorstep space when space, besides being intermediate and indeterminate, has “measured” spatial characters<sup>9</sup>.

The casbah, the primordial settlements and traditional Mediterranean contexts are the basis of the research. Their compact fabrics are micro-regulated by small spatial devices and connectors capable of becoming part of the mass and regulate transitions. Here the urban or semi-urban spaces become doorsteps, opportunity small environments capable of building a dense spatial dimension. The alleys, the penetration spatial structures at the urban scale, the covered passages, the interstices are gradients, areas of proximity, they define the presence of built environments and are identified as protected urban interiors, which embrace the individual and therefore are appropriate for a domestic dimension of inhabiting public space.

Very interesting for this theme are the compact fabrics of the blocks where the porosity of the masses has structured over time permeable “thicknesses” which articulate complex doorstep configurations.

The historic settlement structures, the ways of inhabiting spaces, the shapes of the living systems which are rooted in the territory in response to morphological conditions and to anthropological and geographical dynamics, are a source of knowledge of living places and provide themes and instruments to the contemporary habitat project.

### 3 CHEFCHAOUEN – THE ARTICULATION OF TRANSITIONS<sup>10</sup>

The reading of the generative dynamics of the village of the Dogon does not highlight the articulation in “couples” of the parts of the habitat (according to the rule of the double, and therefore, to some extent, of the dual phenomena, which would later be called twins). The village of Gardhaia, in particular Marabout of Sidi Aiss, evokes and performs “the enigma of size”.

We can acknowledge that Chefchaouen left some articulation examples of the “build homecoming” capable of embracing the tensions of the in-between places. Through the conceptual tools bequeathed by Aldo van Eyck, we can re-read the in between places of the Medina of Chef11. Focusing on the description of some types of urban solid articulations, some evocative names will be used to describe each case study - urban room, the interstice, the in-between room - without claiming to give a scientific definition of the places<sup>12</sup>. The synthetic redesign of these spatial structures aims to describe the built results of the in-between places at the scale of the more dense urban fabric.

<sup>8</sup> Van Eyck, A. 1947: “It is in the nature of relativity that all twin phenomena should be inextricably interwoven. The whole fabric is distorted throughout if you damage one by splitting it into conflicting alternatives, for each half will then of itself take place on a pedestal and become a meaningless absolute. You cannot come to terms with one twin phenomenon without coming to terms with adjacent ones.”

<sup>9</sup> Van Eyck, A. 1961 : “In fact there is no barrier between the myth and what is measurable. After all, measurable doesn’t mean that you can measure something in centimetres, kilos, guilders and dollars, does it? This has no meaning whatsoever as far as measurability is concerned. It doesn’t have anything to do with measure or right-size. We try to give shape to the place between here and there, between this and the following moment, between inside and outside. These are things that cannot be ‘measured’. They are things where the mind can feel at home if we gauge instead of ‘measure’.”

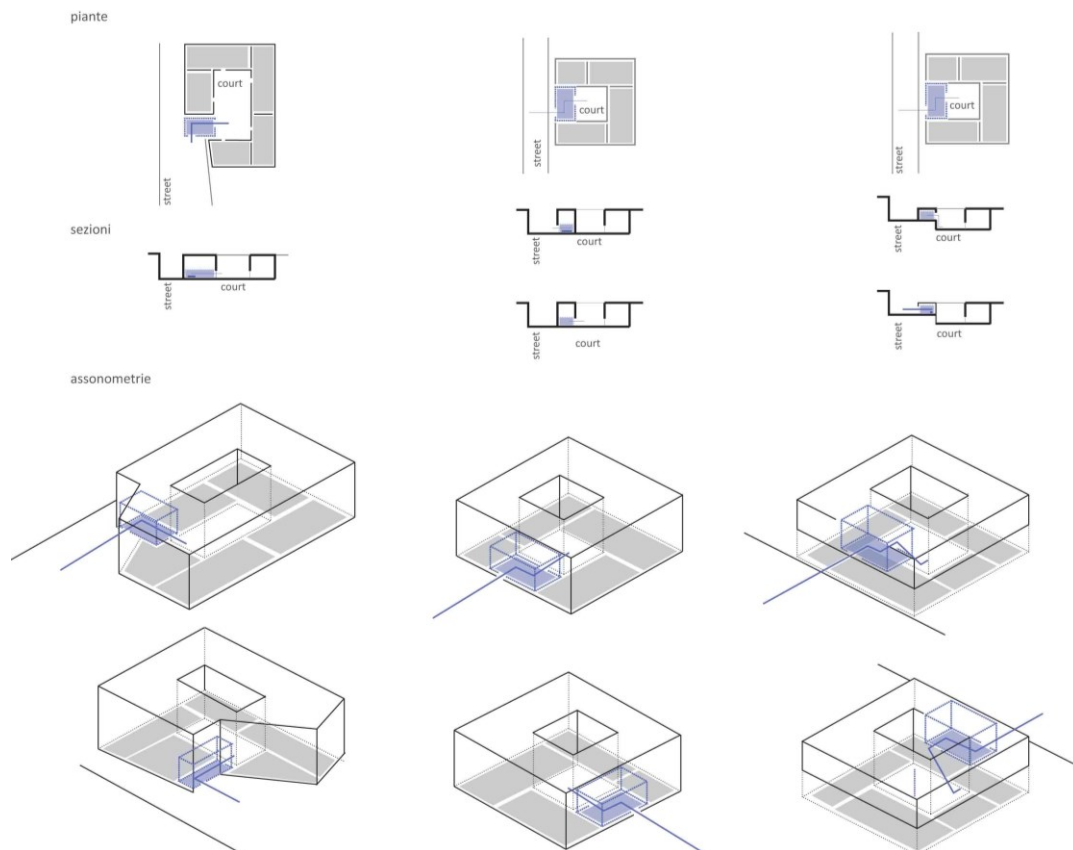
<sup>10</sup> “...(the in-between) This implies a distant break from the contemporary concept of spatial continuity and a tendency to erase any link between spaces; i.e. between inside and outside, between one space and the other. I suggest instead the articulation of the transition by defining the in-between places which produce the simultaneous awareness of what is meaningful to both sides”

<sup>11</sup> The overall scale descriptions of the village will be omitted in order to deepen the focus of interest of this contribution.

<sup>12</sup> Grown up as the son of a poet, educated in the spirit of William Blake and fascinated by such writers as James Joyce, Van Eyck had developed a rather literary style of writing.

The conception of the town/village as a cluster of places can be recognised in the Medina of Chef. The urban space is densely woven and has intense texture qualities<sup>13</sup>. The modulation of the relations between the different parts of the habitat system produces places which are specialised in the urban role that they perform, but are undefined in their identity. In fact, we can talk about developing identity, which has been re-signified over time according to the use of the space and to its “interpretation” made by those who specifically inhabit that space. Main paths and roads, are branched out into alleys and interstices. Inside the urban fabric there are internal clusters with living units (private entities) that are organised around a central empty space and interact with the road by means of their entrance area.

### Diagrams \_ the open room



<sup>13</sup> Defining the concept of texture qualities.

### 3.1 The open room

The open room, which is located in the space between the urban and domestic environments, is the intermediate scale urban device capable of interposing itself between the two environments and creating a dialectic spatiality. A gradient capable of measuring the continuity relationship of the open collective space. It modulates the changes of connotation of contiguous spaces, as it lies in the middle between two spaces with different natures and produces, by virtue of this, an in-between place that embraces the pass-through tensions, and states the entrance to an Other microcosm: the neighbourhood unit.

The sharing of a distributive central space such as the patio, clarifies the collective dimension of living in Chef. Domestic microcosms converge in the central open space, whose shared dimension is extended only to the living units which surround it. This is an organisational logic that structures a neighbourhood cluster. The patio is not an urban space; its domestic and semi-public nature is expressed by the separation between the cluster/neighbourhood unit and the urban surroundings in which it is included.

“An in-between room” is in fact a hollow volumetric unit with an inside, chicane-structured path that interrupts the visual continuity between the street and the internal courtyard. By virtue of its spatiality that is dug into the mass of the block, it expresses the dimensional gap between the two extended spaces of the road and the patio.

In fact, it is a half-closed space, neither open nor closed, private or public, and where you are neither inside nor outside. Its “in-between” character results in a hollow space with significant texture qualities, a shade-giving setting which offers a dialectic “seat” between the inside and the outside, between domestic and urban environments. An intense spatiality that embraces the dynamics of the entrance and the return to the dwelling.

### 3.2 The urban room.

The urban space is shaped within the dense urban fabric of the Medina; the urban solid is dug in the empty spaces of the streets and in the internal patios, and the permeability of mass is readable in the porosity of the section. The tangency points between the blocks form an “in-between place” with an urban nature, of course with a smaller scale.

A spatial occasion which includes several use possibilities; the space complements – the mass protrusions which make up a seat – trigger the appropriation dynamics of its margins.

The open and extended path of the road is often gathered around a microcosm with an intermediate and undetermined nature. The section introduces an “intimate” shade-giving proportion of space, an open volumetric unit (permeable) which shares a dialogic relationship with the urban surrounding in which it is immersed and of which it is part.

### 3.3 The interstice – common courtyard.

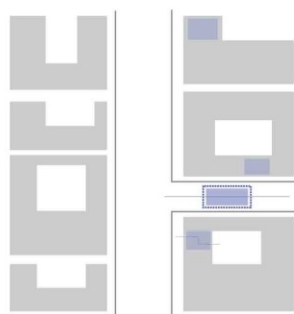
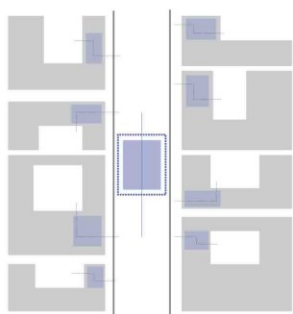
The branching of the streets, at the smaller scale, is arranged in alleys, interstices and loggias, that put together a number of living units.

The distributive articulation of the accesses to the living units produces minute spaces, inside the more dense fabric or contained within its mass, in the case of loggias.

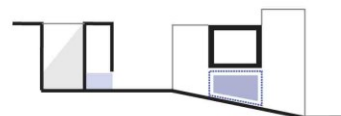
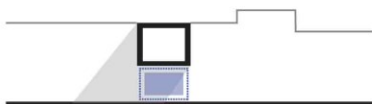
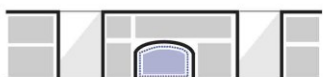


Diagrams \_ the urban room

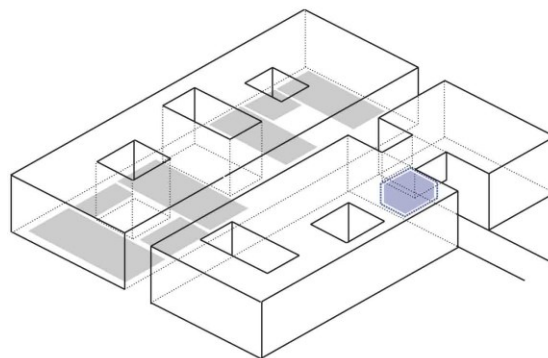
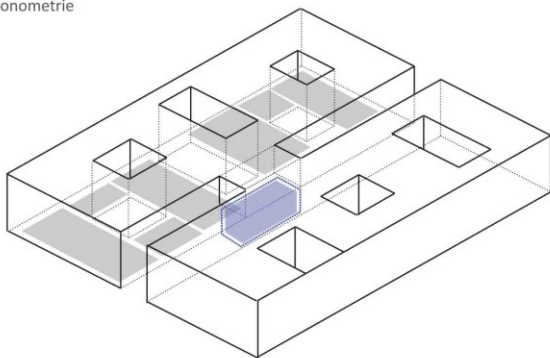
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## 4 CONCLUSIONS

The built example, its right size, its in-between nature, is still a very fertile design research topic that embraces the research tensions of new project approaches for the habitat.

The lesson of the historical consolidated fabrics offers itself to the contemporary project. The discovering and understanding of the structures and substructures of the habitat creates opportunities and thematic richness. The appropriateness and necessity of the relational space of consolidated habitats poses sense questions to the practice of the architectural project and states the meanings and layers of the places of living at different scales.

The habitat project is called to constitute an evolving architectural fact within the process/habitat. It is possible to weave the weft of what's real, manipulate the layers of the system/habitat by implementing the fabric and reinforcing the relational weaving with thin, stratified and indeterminate patterns. The plan articulation, the section generation, the accurate survey of the settlements "found" in the analysed contexts, offer experimentation material for the study of the project and guides the re-creation of the fabric.

This redrawing of the selected socio-spatial systems, in generative terms, describes project themes, constitutes meta-projects that are suitable for the definition, articulation and diversification inside several advanced project phases. The reduction in the size of "reality" and the completion of specific models, leads to the abandonment of the diagram non-contextual abstraction and introduces the complexity of the real/specific space on which the project can be structured by modifying its fabric (layers).

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## MEET THE GLOBAL AND LOCAL CHALLENGES SUSTAINABILITY NECESSITY OF FLEXIBLE ARCHITECTURE IN EDUCATION SYSTEM

Hakim nia Mostafa<sup>1</sup>, Kaveh Nazanin <sup>2</sup>

<sup>1</sup>Hakim nia Mostafa, "Ion Mincu" University of Architecture and Urbanism (ROMANIA)

<sup>2</sup>Kaveh Nazanin, "Ion Mincu" University of Architecture and Urbanism (ROMANIA)

Mf\_hakimnia@yahoo.com, nazziix93@gmail.com

### Abstract

Today, the term "sustainability" is used in many academic and nonacademic communities and the themes of many conferences and seminars are dedicated to this topic. But in an era of escalating consumerism and endless growth, it seems that sustainability will face more difficulties in pursuit of its goals. Although architecture schools care about sustainability and seek appropriate solutions for environmental concerns, the recentness of the topic has caused architecture to face various obstacles such as "limited expertise", "lack of inspiring prototypes to counterbalance prevalent non-sustainable lifestyles", "fringe reputation", "number crunching", "the old guard", "holistic vs. fragmented", "the Braux art tradition", "unawareness of environment crisis" and "lack of technical courses that support design studios" inside the classroom and "ambiguous identity", "confusing implications", "the magic flute", "the question of aesthetic" and high cost of sustainability outside the classroom. Following an investigation into environmental crises, the principles and history of sustainable architecture, has two sustainable education models (one theoretical and the other practical) and the obstacles facing the teaching of sustainable architecture, this paper attempts to analyze architectural education in Iran in order to assess the performance of Iranian architecture schools in teaching sustainable design. For this reason, courses taught in Iran's architectural schools are divided into 5 categories including: "Architectural Design", "Building Technology", "Architectural History and Theory", "Urban and Rural Development" and "Historical Building and Renovation". Then the challenges mentioned are examined in each category with secondary data reviews. While courses related to sustainability and environmental crisis are not taught in Iran's universities; some obstacles like "fringe reputation:", "number crunching", "limited expertise" and "the old guard" are not trained and only 4 obstacle including "holistic vs. fragment", "the Beaux art tradition", "unawareness of environment crisis" and "lack of technical courses support of design" are investigated in architecture universities. This paper will conclude that architectural education in Iran follows one rigid strategy, which is not suitable for a multidisciplinary field like architecture, particularly sustainable architecture; so Iranian architecture schools are not capable of teaching sustainability, whether as an attitude or as a technique. Therefore, a systematic policy is essential, one that concentrates on all three important aspects of an educational system: well-defined goals, planning in accordance with these goals and the assessment of programs to refine goals. This paper also proposes two level programs consisting of:

- Level 1 (architecture education system): On this level, one flexible system will be defined consisting of several subsystems in accordance to global and local challenges. Each of these subsystems includes various theoretical and practical courses with focus on its subsystem goals. Students can choose some of these subsystems – which are controlled by one management system – according to their interests. This model of education system, not only that lets students learn what they are interested in, but also produces graduates with different types of skills who can cover the different needs of the society.

- Level 2 (sustainability subsystem): This level consists of theoretical and practical courses (especially interdisciplinary courses) relating to sustainability education in architecture.

**Keywords:** Flexible learning process. educational systems, sustainability, architecture.

## 1 INTRODUCTION

The industrial revolution and technological developments made people to forget the indigenous architecture. 70's can be the awareness of environmental crises. In this decade, there were many reactions to the environmental crises. The reactions to stability included the environmental crises that were felt more on the psychological level and the various fields in the middle years of the 20 centuries, such as environmental, social and economic as universal meaning. But at the same time, they were psychologically affected in the final two decades of 20th century in the international community and the official organizations, as a recipe and objectivity agenda found (Bahraini, 1385, 257-266). With a review on the massive and dangerous effects that humans have on environment, finding a solution for this increasingly growing problem is needed. Moreover, the architects of the individual and collective human life have a great responsibility in the human habitat, rather than other organizations. On the other hand, the fact that the Construction and Architecture stable only a light or not, but the rapid reaction and vital habitat loss of living creatures, and it plays an essential role in training at all levels.

## 2 DEVELOPMENT AND SUSTAINABLE ARCHITECTURE AND ITS EDUCATION IN THE WORLD

Sustainability debate within the framework of sustainable development through conventional report "Brandt Land" (Chairman of the Norwegian Summit) in 1987 called "Our Common Future" by the World Commission on Environment and Development was formally on the agenda. Followed by the 1992 document called "Agenda21" at the UN summit in Rio de Janeiro conference under the title of "Earth Summit" was signed by 178 countries. (Golkar, 1379-451) as defined by Brandt Commission Land, sustainable development," the development that also meet the needs of the current society, does not detract from the ability of future generations to meet their needs. (WCED, 1987/8). Action Plan outlined in the "Agenda 21" the three environmental protection requirements based on their life stresses. The three requirements are: economic development to overcome poverty, social justice and cultural diversity in order to empower local communities (Willis, 2006, 8-12).

The main cause of environmental protection and sustainable architecture dates back to the 19<sup>th</sup> century. John Ruskin, William Morris, Richard Tebali can be called pioneers of sustainable architecture. In his book "The Seven Lamps of Architecture", Raskin noted that one can achieve development order by taking harmonic pattern from nature. Tebali also sustained the value of the architects of the order and the beauty of nature. William Morris returned to green countryside and self - sufficiency and local industries. [4, 1386-62]

The basic meanings of sustainability can be emphasized by two main components which are identified in humans and the environment. Consequently, to achieve environmental sustainability it should be made a distinction between "ecological sustainability", "economic stability" and "social and cultural sustainability" is the balance of these three environmental systems as named "The original trilogy". (Williamson, 2003, p. 4-8)

Almost 16 years after the Declaration of International Associations Union with an emphasis on solidarity for a sustainable future and for almost a decade with the features and characteristics of sustainability education by the Educational, Scientific and Cultural Organization (UNESCO), International Associations Union passed. These two architectural specialists statements recommend that we should look for ways to achieve stability and ecological in the education sector, architecture, environmental balance and sustainable development of the building environment of architectural

education goals. Ever since then, a large number of schools of architecture, new courses based on the technical aspects of sustainability have been added to the curriculum. For example, the lessons as "Intelligent Design Power" or "bioclimatic architecture". (Stasinopoulos, 2005, 6). With this interpretation there have been made different interpretations of sustainable architecture and numerous attempts have occurred at universities all over the world. The first is of the conceptual model proposed by John Jim Kim to 1998, and other practical model in the United States of America Oregon School of Architecture is already implemented.

Kim conceptual model have three levels: principles, strategies and methods. The three levels of architectural education to three issues that includes: "Environmental awareness", "Expression of ecosystem structure" and "Education on how to design sustainable buildings". The conceptual model also qualified for the principle of one of the three circuit designs, according to the life cycle save resources, which include reducing savings resources, and recycle the use of natural resources that are entering the building. Life cycle design to the introduction of a method for analysis of the process of building and its effects on the natural environment, circuit design and human interaction and interaction between human and natural environment. Each of these principles included specific set of strategies. (Kim et al. 1998)

On the other hand, the University of Oregon architecture, especially David Posada, all the teachers were looking to teach practical methods and models are sustainable architecture. To discuss practical models such as the University of Oregon mention of David Posada reflects his emphasis on practical training: "I hear and I forget, I saw and took note, and I did." At the University of Oregon as an environmental control system of classes that have been erected, and of course important practical model offered by Posada, by communication and interaction with environmental control system design workshop classes. He believes that the phrase of education, meaning the stability of benefiting from a series of practical training for the reunification without traditional issues unrelated appearance. He proposed working with models that emphasized on the idea of "multiple measures". Students needed to understand the problem from multiple points of view. Therefore they developed a method which allows them to measure the territory from multiple scales. Apart from the scale of the territory they also consider the impact of the user behavior or the elements present in the territory. For classifying and categorizing data, while observing the relationships among them were environmental control system for classes and in the design workshops it also helps students during the design process from different scales crossed with full understanding of the design process, at any stage and scale - appropriate as input, the scale and injure to provide the design approach with regard to the totality of governing the plan of the components, was not forgotten and move down to and from top to bottom in the design studio. (Posada, 2004, 5)

As it can be seen in the theoretical models and practical training methods, with an emphasis on holistic interdisciplinary nature of the architecture as education infrastructure used oscillating of stability and not only the two methods but all existing methods to move in this direction. Of course, despite all the efforts in the past two decades on the sustainability of the country's education, training in this field implied many challenges.

## 2.1 Challenges in architecture education and sustainable architecture in the world

Before the stability of education in schools and architecture to fundamental assumptions architectural schools, pointed out the big challenges on sustainable architecture. The five fundamental defaults include:

1. Learning superior skills related to the industry and professional society to learn basic knowledge;
2. The design is preferred to other sciences and skills related to architecture. In schools of architecture "stardom in the design" was the greatest goal. This caused marginalization;
3. Specific design priority buildings and symbolic ones as museums or unusual buildings in which they are being evaluated creative spaces, such as the gallery and design workshops to normal buildings, such as the rural houses;

4. The belief that knowledge matters little to solve the future problems. In other words, despite the architectural history education, local architecture and traditional design methods cannot be used.
5. Training with computer and pen away from the real field; (Asquith et al., 2006, 237 - 238).

The integrity and sustainability debate integration in schools is to be designed by several researchers that have been investigated, most of them achieved nothing:

1. Many schools in the right direction, it had the right to education and practices to it;
2. Sustainable design requires training methods completely different from previous training methods (Traditional). (Stasinopoulos, 2005, 5).

The environmental crisis is still the subject of a niche in university studies and architectural schools is still in the form of stability into one lesson educational programs and besides restrictions in the selection of them, there is a completely isolated from the design workshops ; whereas sustainability and beyond the style of a new world. Part of the stability of the challenges is due to the fact that even a definition of stability that all the experts to the consensus and agreements. For example, the definition of meet the needs of aware, without destroying the capabilities of the next generation to meet their needs.

Some people believe that sustainable architecture should be done by buildings made of basic materials, such as clay soil, straws. On the contrary, others believe in single methods such as those sustained by Norman Foster, obvious in Commerzbank Frankfurt, Germany and Fox & Fowle in the Time Square Building, which are representing the sustainable architecture. Others may just learn of sustainable architecture as a hobby and as a result of a seriously need to pay to read it. However, what does not the sustainable architecture of entertainment is to answer to reality, nothing that is like current experiences in extremist except for bug check - list and that their approach to be a great challenge for sustainable architecture worldview holistic (Posada 2004, 2). However, sustainable architecture is responsive to the entertainment and responds to reality as well, it is not worthy that the current experience through a realistic and based on the Czech ideas. And this method is a challenge for sustainable architecture with its holistic worldview (Posada 2004, 2) despite the efforts carried out research, there is a long way from sustainable design clearly rooted in learning style architecture. Problems "Celebrity fringe", "offers little in the way of sustainability issues", "the defensive traditional education systems", "a holistic review of the", "The Beaux Arts Tradition" and "systematic lack of awareness of the crisis environmental " and emerge from academic communities are "ambiguous identity", "an immense variety of sustainable design family", "Global architecture resistance against sustainable architecture", "aesthetic challenges "and" cost the relatively high sustainable architecture" (Posada, 2004, 3-2) in this part of sustainable architecture in this section only problems within university communities, which include:

#### *2.1.1 Celebrity margins*

In most architecture schools that environmental concerns are considered modes, related content is restricted electives classes and is separated from design studios. As a result, no practical experience in scientific communities do not assume that the quality of sustainability at the center of their dairy program and benefit from it.

#### *2.1.2 Offers little in the way of sustainability issues*

Emphasis on the quantity related to the issue of sustainability in sustainability education courses, technical courses such as structural design and mechanics into the lead. These courses cannot, as they should be infrastructure for the creation of architecture.

#### *2.1.3 The Beaux Arts Tradition*

This referred to repeatedly design projects, such as what happened at school Bazaar occurs before the 20th century, the ground realities are separated.

#### *2.1.4 Systematic lack of awareness of the environmental crisis*

However, the ecological crisis is frequently discussed in the media, but to a considerable extent it has

been neglected in the curriculum.

#### 2.1.5 *Lack of support for technical courses of the design process*

The technical data presented in classes such as physics or technologies building an environment to support sustainable design projects seem very inadequate. When the dynamic relationships among 37 structures, environmental situations and users do not understand, how can the building in the landscape and building engagement with the landscape distinguish? (Stasinopoulos, 2005, 1-2)

#### 2.1.6 *Holistic vs. Atomistic*

Sustainable design is an architectural complex that encompasses many fields of knowledge and trans disciplinary working collective needs. So realistic training with methods conventional linear analysis is hardly possible.

#### 2.1.7 *Defensive traditional educational systems*

In the traditional educational system, most teachers do not have the necessary practical experience and in particular, the importance of sustainable design and architectural highlights Hungary position to the challenges that they do not understand. (Kim et al., 1998, 5-6)

Finally, check the above problems, requires a fundamental change in the context of university education for sustainable architecture will be felt. This means that the correct architecture lesson plans according to the static nature of academic programs due to the working of the industrial age is very difficult.

The main question of this paper is: Are the current education curriculum and system architecture design and sustainable architecture in the country suitable for training? To answer to this question at the beginning of Architecture at the School of Architecture's curriculum and education system are evaluated.

### **3 ARCHITECTURAL EDUCATION SYSTEM AND CURRICULUM OF SCHOOLS OF ARCHITECTURE IN IRAN**

Curriculum of higher education and consequently it Iranian architecture school of architecture is now the main activity of the product is the institution of the Supreme Council of planning is that of late has begun its activity 1984.

A master's degree in architecture from 2000 that transformer into Architecture Bachelor of Architecture. Continue the program in 1984 with a decrease from 176 units to 169 from 140 to 144 units and changes very little of its content is used.

In this paper, two aspects of architectural education in Iran or military (macro perspective) (and the content of the curriculum (a microeconomic perspective) the case is investigated. The structure of education and curriculum studies has evaluated the documents.

The purpose of "training" teaching process "targeted" which is more or less pre-planned which aims to determine students or external factors such as professors. What is important are the preset targets.

With regard to the definition of the educational system should target three elements, architecture planning and evaluation of the current education will be examined. Studies and expert review lesson plan architectural discipline. Act of 1998 shows that in this program the only goal is the period of architecture enacted expert 15/ 10/ 1998 history of a sentence.

New structure for MA in architecture that comes in, the undergraduate level is dedicated to training professional architect's public performance". (Company Profile Topic +Courses of Architectural Engineering program, approved 15/10/1998).

According to what the purpose of a former learned in the system, with public efficiency professional training architects, so that it cannot be accurate and useful purpose to train architects as one of the three major pillar of the educational system, especially in the case of professional public efficiency and

comprehensive explanation which is not enough. Also on page 2 expert curriculum architecture, the final plan as summed up the findings of the previous projects and theoretical courses, a comprehensive project, which is not necessarily fully prepared to solve the problems of the executive maps, architecture, structure, setting the environmental conditions and co - ordination with them. (Graduate curriculum architecture, if enacted 1998) executive maps with all the architectural considerations, the structure mean being public efficiency is a professional. If such a project is to be considered synonymous with public efficiency, professional performance? Was it only by offering different issues to the public, the efficiency of professional performance? The conclusion is that the current education is accurate and an objectively is not useful. When the target accurate and useful for training in any part at any time is not defined, how can it plan for training and evaluation of it? The end architectural education in Iran is only a curriculum, instead of a useful and efficient system for relying on education. Naturally, the program has static nature and the new targets and a diverse changing world for the current difficulty. In the study subjects content, sustainability concepts, environment, and sustainable design a BSc in architecture has no place in Iran. Or any particular lesson to this issue is not only a little, and in the universities in the Masters of sustainable development trend. While teaching this category and benefiting from it, with regard to the fact that stability has, a range of a new world to technical studies in undergraduate is necessary. After the lack of sustainability concepts in the curricula undergraduate architecture in Iran became apparent question arises. whether a particular program that almost constant Content with the emergence of architectural graduate curriculum enacted 1998 year to provide design concepts of stability and sustainable, or not? Initially, lessons provided a BSc in architecture could be based on their contents to divide 5. That includes architectural design, construction, theoretical foundations and history of biological complex and get acquainted with and restoring monuments. Since subjects related to the stability and even get acquainted with the environment in undergraduate teaching, a number of challenges in lines before such as a little margin, sustainability concepts defensive for Traditional educational systems has been ruled out. If the 5 group in the content that mentioned above, the technology and the building most for technical education associated with the assumption of stability, appears that although 30% of the total Dareus technology field and the building of a variety of subjects, only a few of the Andros environmental conditions, such as setting workshop construction materials can directly to the concepts of the environment. Also discussed the status quo, content and fashion, Dareus tech building and technical, according to investigations, accepted the following:

1. Students should be a joint chapter of the technical units to help those objectives to crystallize the lessons
2. The weakness of the structure of the technical awareness and engineering college students in terms of information need in other technical broader lessons and its failure to comply with requirements or needs with the goals of the technical disciplines, missing link in the chain of creates lessons
3. Injection dual thinking of architecture and engineering and create the illusion of creative in architecture and engineering non-creative of the world
4. Disproportionate coverage of the courses offered by them are the present and future needs of the country and the world.
5. Headlines technology lessons to cross the building and communicate with each other, I don't quite clear.
6. Secession training courses, building techniques of other subjects, particularly of architectural design.
7. Recession in practical application of new technologies in the construction industry due to a lack of education and information from the new facilities in the system of materials and construction methods
8. "Lack of training in the form of both architectural and structural design process and at the same time." In other words, lack of communication and interaction with the domain field of



architectural design, building technology analysis and realistic look at the five areas mentioned [6, p. 190].

With respect to matters seems to be named as sustainable architecture of a view to provide technical methods for architecture and the current program in the field of architecture art area of the building to provide convenient assumption of concepts related to it, with the challenges such as against the holistic prospecting. The Beaux Arts Tradition lack support. In addition since the units presented with the needs of the architecture conform to stability, increase educational curricula in this field training stability, the task in other areas such as history, the theoretical foundations that seek to meet the needs of the society, the other in a halo of ambiguity. On the other hand, as well as in other areas, there are many problems. Who cannot meet sustainable architecture as an ideology, and the fundamental changes in all fields, seems to be necessary? For example, in the field of architectural design, the dominant aesthetic criteria on other measures is the design. As a result of the challenge in The Beaux-Arts Tradition strongly in this area.

The lack of correlation with other areas of your vehicle workshops designed to challenge "a holistic look at the detailed look" is. On the other hand, as shown in the last page was introduced to achieve stability of environmental sustainability, the triple agent that includes the system of environmental, economic and social - cultural should be achieved. While the education curricula presents architecture, the educational curricula, suitable for economic systems and socio - cultural does not exist. The weakness of stagnation curricula for architectural discipline and the lack of attention to global challenges achieve a sustainable human environment. The weakness of micro - level (school) and the contents of the macro level (the structure of the education), is the field of architecture. Even if the contents of the need are included in the curriculum, the way the content in a whole for achieving the goal of the main triple agent in environmental sustainability is a vital and important is that without a system for attitude.

#### 4 CONCLUSIONS

The conclusion is that with regard to environmental crises that very high importance in the world arena, according to the university in all fields such as essential architecture appears college of architecture Iran still due attention to this matter.

Also according to the endurance training and theoretical models and practical sustainable architecture necessary to teach holistic worldview was evident again in the architectural creation and if you hide sustainable architecture, not a fashion but a new global architecture should be considered, the need for a holistic worldview in education and the creation of architecture becomes more and more understanding.

Also, given the challenges of sustainable architecture in the academic communities of the world, including "Celebrity marginal", "offers little in the way of sustainability issues", etc. and lack of attention to the need provide the coverage required sustainable architecture and sustainable architecture as a container for sustainability education more than ever (ies).(Iran) should be taken. It should be noted that one of the most important goals for architectural education, program development, including the fourth development program entitled "Fourth Plan Sustainable Development" is prepared. Because of the program, often in connection with architecture includes; each of them can be a target for an education system under the system. It is not necessary that all the students, all defined under the system based on internal and external challenges and select the units pass.

But according to a defined management structure, it will have the possibility to choose their favorite system infrastructure. It is also covered by the database. Various needs of the community are high. While also covering the multiple needs of society under multiple systems, unit 140 also concerns will be resolved. The proposed architecture is on two levels for sustainability education changes:

1. At the macro level:

The level of the education system to define multiple subsystems addressed by global and local needs that each subsystem includes a set of theoretical and practical courses. One of these subsystems could talk to their stability at this level also based on long-term goals and short-term training system able to define, delete or develop any of the following systems. This causes the educational system is divided into several separate subsystems, but at the same time in relation to the key challenges to be resolved architecture schools if designers to focus on certain buildings to achieve stardom the design can be assigned to a sub-system.

2. Micro level:

This level consists of subsystems related to sustainability education in the developing countries subsystems understanding differences and developed countries in terms of stability are extremely important; it means that developed countries on the ecological aspect of sustainability especially from the perspective of improving the quality of life stress and deal with it are often economic terms. While in developing countries, environmental sustainability, social and cultural aspect is very important. The next level of accurate and useful goals should pay attention to the following: knowledge of the vernacular architecture of its many achievements in the stability (and maintain indigenous and traditional architectural patterns).

- Units with "environmental control systems" in dealing with design workshops
- Emphasize on interdisciplinary and issues related to sustainable social, economic and cultural alongside ecological sustainability
- Develop and implement various models of sustainability education, including education model "of multiple scales" for organizing the information, emphasizing the relationships between ideas, project design, and finally needed
- Workshops to assess the work of professional architects who tried to provide examples of ways of sustainable architecture.
- Offers numerous discussions and exercises to enable students to deal with small problems.

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## **ADAPTIVE REUSE FOR POWER PLANTS: CASE STUDY – FILARET POWER STATION, BUCHAREST**

**Moisescu Radu-Ioan**

*"Ion Mincu" University of Architecture and Urbanism (ROMANIA)*  
*moisescu.radu@gmail.com*

### **Abstract**

In light of the energetic development that took place over the past decades within the city, significant amounts of industrial plots have been left behind, so-called brown areas, which in time have been incorporated in what we may regard today as the city center and its surroundings.

The current paper aims to give a brief review over the way in which the industry has made profound changes in how we perceive the city today, as a result of the industrialization process. Within the industrial sector, power plants appear as a result of the development of the city in the later part of what is known as the industrial revolution. Having outlasted their purpose, due to the rapid change in technology, today the general tendency is to incorporate these industrial sites in the urban tissue, with newer functions, whilst keeping them as a symbol of the development of the city. The adaptive reuse of power plants has been implemented throughout the years in various sites (as noted in the case studies), with positive results, as part of a wider attempt to revitalize the urban tissue of the city. The case studies serve as a background for specific action courses in relation to the distinct case of the Filaret power station in Bucharest.

As a distinct case and a pioneer project, the implementation of electricity within Bucharest is marked by the unveiling of the first power plant at the dawn of the 20<sup>th</sup> century, in the Filaret neighborhood, situated today near the city center, close to Carol Park. Following the analysis of the urban context as well as the historic development of the industrial site, the power station emerges as a prominent landmark within the sector, along with the surrounding industry that developed at the beginning of the last century, thus marking one of the city's most prosperous social and economic points in time.

As a response to the sustainable development of the city, the adaptive reuse of industrial spaces can be applied in the specific case of the Filaret power station. As a change in pace in regard to the economic sectors, the manufacturing of raw materials has become outsourced and obsolete. Resulting in its relocation, existing industrial spaces have to adapt its economy to the framework of the tertiary sector of information services.

The proposal of reusing the power station as a TechHub and a technology museum aims at strengthening the cultural identity of the place, acting as a trail blazer project, whilst ensuring its continuity within the industrial park of the Filaret area.

The mixed use of the future functions within the proposal is supposed to link it to its previous utilization, as reference to a once single use space of production. Acting as a tactical urban solution for both the building itself as well as the build environment and its surroundings, the project involves all three parts of what is coined as a sustainable development – economy, environment and the social aspect. Finding the balance between these three components leads to a solution that may prove to be economically equitable, a technological reversible process and a socially viable one, with a minimal intervention on the existing landmark.

**Keywords:** Adaptive reuse, urban renewal, power plant, hub, creative, museum.

## 1 INDUSTRIAL HERITAGE

Following the TICCIH congress in Moscow in 2003, the need to protect and stress the importance of industrial monuments as an architectural reusable resource for future generations is highlighted.

The Industrial Heritage Charter thus becomes a document of relevant importance for a newer field of protecting industrial heritage, based on the relatively recent practice of industrial archaeology<sup>1</sup>, meaning the study of equipment and buildings formerly used in industrial sites as means of development within a civilization.

### 1.1 Historical premises

Today industrial heritage is considered the result of a process of industrialization, which was conducted over a period of three centuries. The industrialization process first occurred with the attempt of mass production, which was directly linked to the technological progress in three distinct phases:

The first phase also known as „The Industrial Revolution” marks the first initiatives of the use of mechanization aided process in the textile industry during the 17th century. The second phase develops increasingly more industrial branches and is marked by the use of new fuels and the newly emerging transport industry. New means of transportation reduce distances and therefore speed up working times and production. The third phase begins with the end of WWII and continues until today. Marking the end of a heavily industrial process of production, industry today moves towards an era of services in the tertiary sector.

### 1.2 Power plants

Power plants are therefore a particular case in the industrial architecture sector. Since the first half of the 19th century, following the development of the city, the need for street lighting and electricity in everyday life leads to the development of power plants within the urban area.

Power stations developed in the 20th century broadly share a common development process. In light of the technological advances of the late 19th century, power plants accounted as the paradigm of the industrial space. Equipped with cutting edge technology for that period, many of them were capable of producing electricity for various functions required within the city – electric trams, electric clocks, street lighting.

Ironically, just as technology was the engine of the development, it's also the main cause for why it shortly became outdated. As many power plants globally become updated in several stages with powerful engines, fossil fuels lose ground and many of them become outdated or are used as back ups for peak loads. The industrial recession of the 80's puts out all power plants which today can be found in the middle of the city, near urban centers.

With the beginning of the 21st century these spaces start undergoing a process of reintegration in the city, many of them becoming mixed-use spaces that serve the developed tertiary sector.

## 2 ADAPTIVE REUSE

As mentioned before, buildings regarding industrial sites within the city represent a distinct case within architectural programs. Factories that have developed within the city are a testament to human activity as well as a historical landmark which give the identity of the community. Industrial heritage buildings acquire valence both through their architectural qualities as well as their historical context. The option of reusing buildings that already exist in order to bring something new to the

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<sup>1</sup> The Nizhny Tagil Charter for the Industrial Heritage (last viewed 14.02.2016):  
<http://ticcih.org/wp-content/uploads/2013/04/NTagilCharter.pdf>

community has become a contemporary economic practice. A set of principles by which the community may benefit from these interventions are also expressed in the TICCIH Charta.

## 2.1 Common principles

Adaptive reuse is now a trend of integrating industries undergoing the third phase, through an intervention in the existing built environment, as these places play a pivotal role in the urban identity of the town. The principles enumerated are a set of joint recommendations to regulate an international approach towards a heritage monument, which represents a non-renewable resource.

In legal terms, industrial heritage is seen as an integral part of cultural heritage in general, thus conservation programs for the industrial heritage should be integrated into economic development policies and national and regional programs.

In terms of maintenance and preservation, authenticity and a protective approach are to be considered a priority, dismantling and relocation representing an economic and social imperative legal decision. Interventions adopted providing for minimum energy losses, based on reversible processes contribute to a sustainable development.

### 2.1.1 Possible interventions

Mounting a historical monument in today's daily course is an attitude that serves to define cultural identity. A protective attitude towards a monument, without hindering its evolution may be considered an approach which lies at the border between preserving it, abolishing it and restoring it. By forming a synoptic map, a brief description of these types of possible interventions helps display the best decision for the current proposal (see Fig.1):

Preservation is regarded as a regular inspection aided by the preventive actions in order to halt degradation once discovered. Usually, preserving sites may be perceived as "freezing" a building in a particular physical state of evolution, while transformations of the monument are no longer possible.

Conserving a monument is a method which implies lengthening a monument's lifespan with preventive actions, such as the former method may imply, to which building maintenance may be added. However, authenticity subsequently may be lost due to poor use of restoration techniques. Restoration involves the process of restoring the full unity potential of a work, considered as a whole and it implies preliminary conservative treatment.

Rehabilitation of a monument indicates an intervention that aims to restore the functionality of an object within the limits of its physical improvement.

Adaptive reuse indicates the reuse of buildings whose original function is disabled, by assigning new functions compatible with the existing spaces, also through adding or subtracting volumes.

The terms suggested are also in a strong connection to one another and should be the means by which the most efficient solution should be used in order to prolong the life of a building. Understanding adaptive reuse as a process that goes beyond form and function binds the initial newly implied vision of the future to the continuity of the existing space. The function is thus not a constant, but a process in perpetual change, which implies a high degree of independence and necessary flexibility of the architectural program in today's cities.

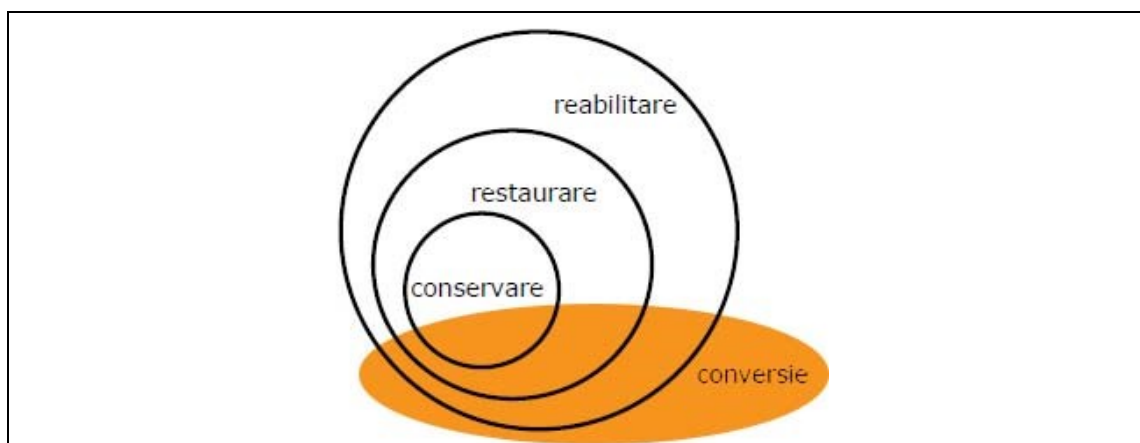


Figure 1. Intervention types diagram

### 2.1.2 Sustainable development

Sustainability is mentioned officially in the UN report “Our Common Future”, where it is noted that “sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs”<sup>2</sup>.

The concept designates all methods which focus primarily on ensuring a balance between the social, economic and social aspects<sup>3</sup>. The three components are interdependent thus requiring equal development on all three plans. (See Fig.2)

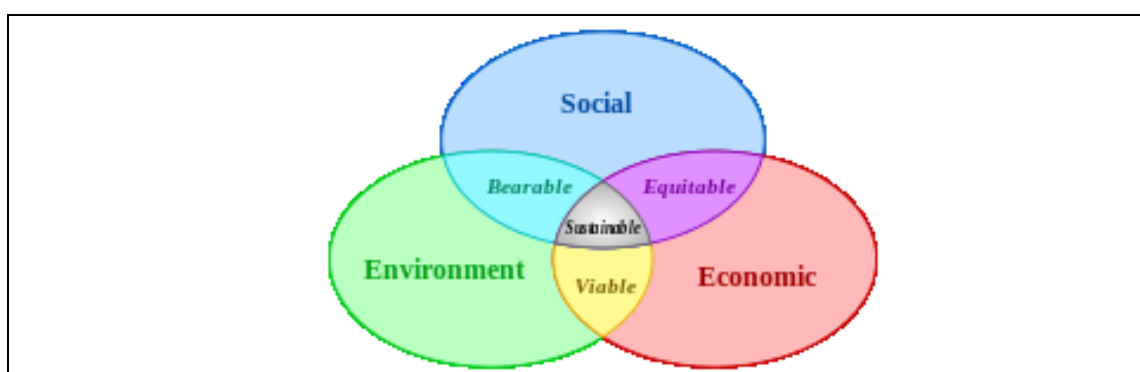


Figure 2. Sustainable development diagram<sup>4</sup>

## 3 INTERNATIONAL EXAMPLES

The current examples are share a common history with that of the Filaret Power Plant’s case. The buildings were former industrial areas dating back to the period between the late 19<sup>th</sup> century till the beginning of the 20<sup>th</sup> century, located near major urban centres. With specific industrial hall type sections, built on masonry structure, they were decommissioned and later have been assigned functions that made them regain the primary quality of sheltering activities. Approaches varied from the rehabilitation of the historic structures, maintaining volumes as close to the original as possible, to expanding by adding new volumes and creating new public spaces.

<sup>2</sup> ONU, Raportul Comisiei Mondiale pentru Mediu și Dezvoltare (WCED, World Commission on Environment and Development) intitulat “Our Common Future”, 11 decembrie 1987. (Raportul Brundtland, 1987)

<sup>3</sup> Ciobanescu, Elena, Problematica Trinomului Management – Dezvoltare Durabilă – Sit Patrimonial, Bucuresti, Școala doctorala SITT, UAUIM, 2012, p. 68.

<sup>4</sup>Adams, W.M., “The Future of Sustainability: Re-thinking Environment and Development in the Twenty-first Century”. Report of the IUCN Renowned Thinkers Meeting, 2006( visited 21.03.2016): [http://cmsdata.iucn.org/downloads/iucn\\_future\\_of\\_sustainability.pdf](http://cmsdata.iucn.org/downloads/iucn_future_of_sustainability.pdf)

### 3.1 The Tate Modern - London

Redesigned by Sir Giles Gilbert Scott and having undergone several upgrades, the power plants is closed in 1981, only to be the subject of an architectural competition won by Herzog & de Meuron in the year 2000. Tate Modern Art now hosts one of the biggest art exhibitions, becoming a prime example of an urban regeneration project. The added glass volume improves zenith lighting and adds to the silhouette of the construction when viewed from the Thames River.

### 3.2 SantralIstanbul - Istanbul

Used initially to provide electricity for the public transport of the city, it becomes obsolete in 1983. Following a urban rehabilitation project a student campus is officially open in 2007, which is added to the existing power plant that is currently used as a museum with exhibitions, public spaces and conference rooms, that have been the subject of positive reviews.

### 3.3 Crikoteka - Krakow

The power plant was functional until 1926 and the was reuse as a shelter for homeless people until 2006 when it was considered to take part in the urban development plans of the southern part of the city, acting as a industrial symbol for the neighbourhood. The added volume uses the existing context as a starting point from which it creates a new relation to the existing framework of the city.

## 4 FILARET AREA

The Filaret area has been used for different industrial purposes throughout its history. Recently after a strong deindustrialization process the area consists of valuable architectural monuments that may be used to redesign the park and its vicinities.

### 4.1 Urban context

Following the intention of illuminating the city in 1861, the first power plants emerge in the neighbourhood, based on gas and oil as a primary source for fuelling the city. In 1906, with the restructuring of the Carol Park, Candiano Popescu street is designed and in 1908 the first body of the existing power plant appears. After several extensions in 1945 the plant was reorganized. Plots of land were either privatized or abandoned at the beginning of the 90's.

### 4.2 Filaret Power Station

#### 4.2.1 Brief history

Companie du Gaz Bucharest won concession of the public lighting in Bucharest in 1906 and with the help of the French engineer Alin Lonay the electric power plant was built, inspired from the industrial architecture from his home region, Lille. The first municipal power plant is thus equipped with Diesel state of the art engines. Electricity is exclusively provided by the Filaret power plant up until 1912. The plant is rebuilt in 1937-1939 and operates continuously until 1970 for peak loads. Considered obsolete, the plant is decommissioned and emptied of all installations which are either transferred to other plants or stored as spare exhibition parts at the National Technical Museum prof. ing. Dimitrie Leonida in Carol Park.

The Filaret Power Plant is a particular case in the history of the city and proves to be an important milestone both for the development of public infrastructure of the capital and the transition from gas to electric lighting, participating in one of the most prosperous periods of economic and industrial development in Bucharest. Within half a century it functions as a pioneering project to illuminate the capital and pave the way to a new branch within the industry.

Referring to the architecture of industrial buildings of the 19<sup>th</sup> century, in terms of space they are defined by large typical "hall type" spaces, truss roofs and with a special inclination towards giving it a civil-like air and incorporating it in the city's architecture, observing by the brick masonry. Details such as window frames and other ornaments are obtained by overlapping bricks or plaster finishes alternating with brick surfaces. As most plants occur in the late 19<sup>th</sup> and 20<sup>th</sup> century, industrial architecture uses metal as an emblem, where interior elements such as columns, profiles, beams



represent both structure and decoration as a paradigm of the modern eve.

#### 4.2.2 Restrictions and intervention possibilities, SWOT analysis

Located near the Carol Park, near the protected area No.63-67, the power station is part of the mixed use area M3. The general character of the area proves great flexibility in accepting different public functions, operating as extensions to the central and main urban hubs. According to the Territorial unit of reference M3 (UTR), commercial spaces, services, pedestrian spaces, public facilities, covered passageways, trades and restaurants are desired and promoted.



Figure 3. Mixed use area according to the general urban plan of Bucharest<sup>5</sup>

Following a SWOT analysis and a detailed look upon the public administrative permissions of the site's development, the current proposal seeks to fill in the gap produced between the evolution of the current urban tissue that revolves around the park and the dissolute industrial areas of the park, starting with the adaptive reuse of the Filaret Power Plant. (See Table 1)

Table 1. SWOT analysis

EURAU2016   In Between Scales	
STRENGTHS	WEAKNESSES
Situated between an area mainly with houses and the Carol Park as a central area of the capital.	The absence of an urban identity of the place, apart from major interventions such as the Carol Park.
Good interconnection to the capital's transportation system. Appropriate positioning near a road with high traffic volume.	Major traffic routes act as a barrier between urban tissues.
Relatively large reserves of undeveloped land, mostly low height buildings with relative architectural heritage value; acts as a buffer zone between the new and the old tissue, with strong contrasts.	The lack of any urban hubs other than the parks in proximity.
Good population dynamic. The proximity of schools, educational centers and the Carol Park marks potential benefit for the real estate segment, particularly leasing to students – the area has informally become a campus, with a young population of temporary residence.	The need for repairing the traces of the unused industrial sites.
OPPORTUNITIES	THREATS
Central positioning within the city. As part of the southern part of the city, it lags compared to the northern part.	In the absence of a correct development strategy, proximity to the center may become a disincentive to further investments.
The lack of any urban identity next to the compiled area allows a large variety of interventions. Local housing plots and students can provide a sufficient number of primary users for initial investments.	The risk of a chaotic development of the area due to lack of regulations and subsequently the loss of further monuments.
Revealing the architectural value of the monuments and enhancing their feats relative to the urban landscape formed in the new tissue can be a success factor.	

<sup>5</sup> reglementari pentru zonele m1 si m3 (visited 5.04.2016) [http://www.pmb.ro/servicii/urbanism/pug/regulament\\_local.php](http://www.pmb.ro/servicii/urbanism/pug/regulament_local.php)

#### 4.2.3 Proposal – Tech Hub Filaret Power Plant

The adaptive reuse proposal of the power plant presumes the expansion from its current state, supporting a functional integration of a Technology Hub, a place of information technologies and a space for creative industries. The adaptive reuse of the power plant ensures its historical continuity whilst offering a possibility for new future uses, through a sustainable development.

As the sole primary function of the building no longer finds its place nowadays, integrating it in a cultural tour and adapting it to the social context, the physical construction of the power plant remains a testimony to the historical background and becomes the premise for the design of a science park, in which the volume acts as an extensions of the Carol Park, treated as a public space and a place of departure/ arrival point in an alternative industrial touristic tour.

The proposal aims at designing a multifunctional space, where new spatial relations are discovered by combining different functions based on different architectural programs such as museums, library database, public spaces, offices, student hostel, conference rooms etc. (See Fig.4)

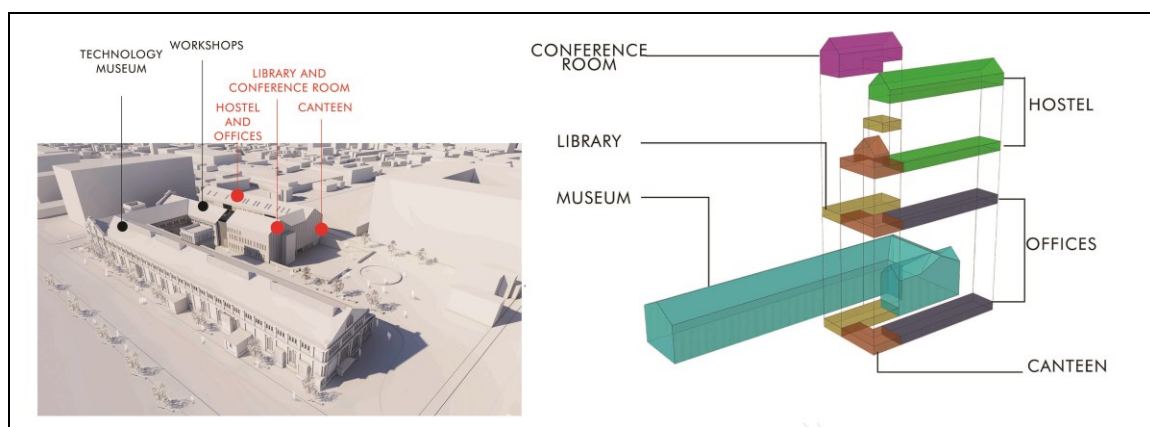


Figure 4. Adaptive reuse proposal – Tech Hub Filaret Power Station.

The proposed scenario of the project is to maintain the main body of the building in its current state, whilst introducing a temporary reversible structure that will engage the public in exploring a museum of technology, in which workshops and classes will be kept throughout the year, on themes of industrial heritage and more. Exhibitions and conferences are to be held in the main body of the power plant, maintaining the power plant a permanent place of production and activities. Students and enthusiasts alike are able to seek help in the creative industry domain by having the possibility to work in the extended offices of the newly attached body, as well as do research in the specialized library provided. The hostel accommodation acts as a temporary residence for people joining different workshops which may be conducted throughout several days.

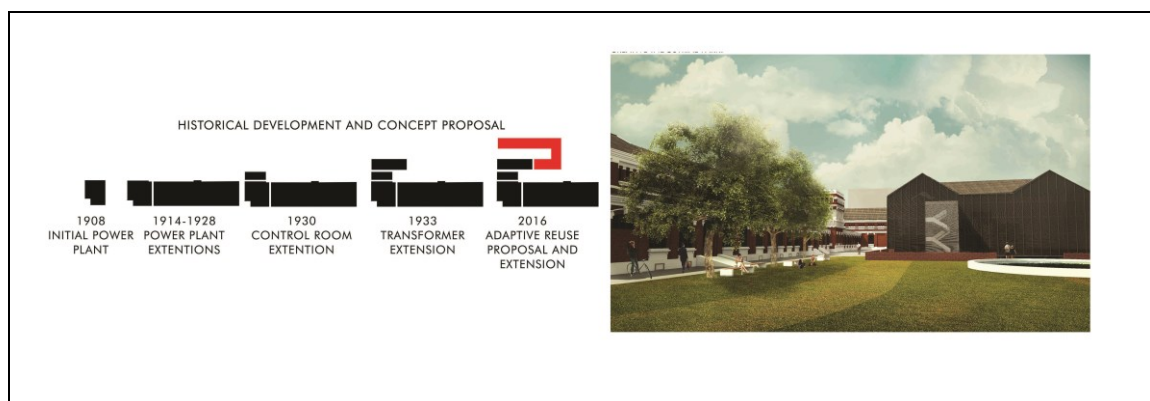


Figure 5. Historical development and extension proposal

## 5 CONCLUSIONS

Representing an evolution that spans throughout three centuries, industrial development has profoundly affected the way we perceive today's urban landscape. Industrial buildings within the city today are local evidence of the tradition and the development of the city's current shape and identity.

Throughout an unprecedented historical impact, embedded industrial spaces within the city center today belong to an outdated urban tissue, able to regenerate local areas. The potential of these industrial spaces is able to offer an alternative route in tourism and show a different view on the cultural identity of the city. Although it is a young activity, the practice of recovering industrial heritage is a field in which the gap with the rest of Europe has diminished, Romania having the advantage of learning from the experience the international industrial age and reuse process. Adaptive reuse turns out to be a tool that involves the participation of multiple professions, which have until now activated by oneself with considerable yet limited results.

Furthermore, promoting and raising awareness in this field should not only take place only through architectural achievements, but also through education in the public domain. The existing spaces thus become an opportunity for the locals and the wider public to engage in a future scenario of its recovery.

The Filaret power plant and its urban context represent a source that is capable to boost the economic and social sector. Situated near the Carol Park, it allows the creation of a positive space which operates as a pedestrian space and an urban pause.

Architectural history presents itself as a continuous accumulation of successive layers of evolution. The new challenge is finding the unifying concept between the new and the old, within the incomplete story that the city provides. Any intervention acts thus as a palimpsest, creating new forms within the new context, based on established existing rules. There remains only the proper reading of the context in order to understand the direction in which future insertions may prove to integrate harmoniously in a given case, by referring to the past through a genuine decision of adding a new chapter to a story that is in a perpetual state of shift.

Acting as a pioneer project in the last century, today's proposal for the Filaret power station may be able to answer questions that lie in between scales within the city.

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## **RE-APPROPRIATING EXPANDING CITIES: A PROPOSAL FOR A LEGITIMATE SQUATTING**

**Marta Busnelli**

*Independent Researcher (ITALY)*  
*busnelli.marta@gmail.com*

### **Abstract**

Our contemporary society is constituted mostly by urban areas and endless cities. Expanding cities are the main actors of the globalized scenario; they have slowly undertaken the role of expressing markets' global competition, mainly through physical developments. In some cases, their exploding dimension seems to neglect people's living conditions, and produces an increasing distance between the institutions and the many different groups inhabiting these megacities. This progressive detachment between the institutions - which empower economical and political actors to transform and expand the urban space- and citizens' effective needs and desires about their cities, has become an extensive phenomena that affects not only the wider global urban hubs, but also every expanding city that aspires to become competitive in the international urban contest. Inside this scenario, citizens have slowly developed different devices and solutions for vindicating their right to the city, and their will of not being set aside. Athens, the capital of Greece, is an example of expanding city that has deeply suffered some important top-to-bottom choices, which have had negative consequences on its development. The wrong call performed by the 2004 Olympic Games constituted a critical turning point for Athens development and, instead of successfully promoting and pushing the city inside the global contest, this event produced a domino effect, which led into the physical and economical crisis of the latest eight years. The reaction to this situation came especially from the bottom, through active ventures made by groups of citizens, and directed towards the re-appropriation of the city space. These groups do not question or face major urban questions and issues; quite the opposite they explore bottom-up strategies for taking control of abandoned micro urban spaces, scattered in the city-scape, which are the physical expression of Athens crisis and decadence, but, at the same time, represent a common ground between institutions and citizens, public property and personal appropriation. In this perspective, the present paper's aim is not only to offer an insight into some informal ventures and strategies adopted by Athenians for the re-appropriation of their city, and for the obtainment of desirable living conditions, but also to propose a strategic project for a wider and deeper reactivation of the capital. The project analyzes and chases the natural tendency to personal appropriation and activism hidden inside the core of the Athenian population, grown and enhanced by the peculiar development of the modern Athens, and revalued in the latest years of the civic and national decadence. From this significant starting point, the proposal endeavors to seek a merger between top-down detachment and bottom-up usurpation, for a long term and stabilized reactivation and transformation of the city spaces. The project attempts to give temporary life to spaces forgotten and left empty by the municipality, too often destined to become useless ruins, by granting the right of use them to citizens. This strategy looks at many existing but abandoned parts of Athens, proposing new ways to keep them alive and, simultaneously, reactivate the whole city and its living conditions, exploring and empowering citizens' activism under the protection and the agreement of the institutions.

**Keywords:** Right of use, top down/bottom up, governance, merger.

## 1 INTRODUCTION

### a. What Does the “Right to the City” Mean inside the Contemporary Scenario?

The current living condition of the contemporary man is typically an urban one. Generally speaking, this peculiar condition is not analyzed in terms of new emerging forms of living, for it is rather described as a settled situation, shared by the majority of the global population. The so-called “diffused city” represents an essential feature of the contemporary era, and has gradually become one of the main expressions of spatial, social, economical and political growth, as well as a prominent instantiation of the competitive environment which characterizes neoliberal societies. The concept of urbanity is constituted by many different properties and, therefore, it shall be considered as a complex object that we could look at through diverse kind of lenses. We might want to say that cities are not only the product of massive global industrialization, demographical expansion and economical development, but, rather, they are also the outcome of a variety of other social factors. Beside this fact, we can consider that cities represent primarily “the man's most consistent and on the whole his most successful attempt to remake the world he lives in more after his heart's desire” [1, p. 3] as the urban sociologist Robert Park once wrote. Nonetheless, the urban shape and living conditions experienced by cities' inhabitants through decades have never truly reflected their desires and intentions. The empowerment of agents driven by capitalistic values and neoliberal policies have increased significantly the gap between common people's will and city embodiment. The neo-liberal institutional asset - characterized by waves of capital, surplus, investments, crashes, crisis, recovery, etcetera - strains urban development and expansion as the main terrain for the constant production of surplus value. This attitude has shaped dramatically the cities' form, by changing not only the evolution of urban spaces, but also their life-form, and the kind of urban subjects living inside. David Harvey, in a recent inquiry on citizens' right to the city and on its meaning, describes very clearly the strong connection between the city-form and the city inhabitants' dispositions, maintaining that “what kind of city we want cannot be divorced from the question of what kind of people we want to be, what kind of social relations we seek, what relations we cherish, what style of life we desire, what aesthetic values we hold.” [1, p. 4] Cities have gradually become the expression of small elites' interests and will; these agents have the economical/political power to shape the city after their own desires and needs; they have slowly purchased a right to the city which is more effective than the collective one. Harvey stresses the statement of this fact when he writes that “increasingly we see the right to the city falling into the hands of private or quasi-private interests”. [1, p. 23]

The consolidated relationship between capitals and urbanization has caused two main effects, which both utterly express the current changes in power and authority (related to cities' expansion), to the detriment of the majority of urban population. As already mentioned, the immediate, patent effects of this condition are the progressive urban growth, and cities' transformation in scale. The paradigms of this unlimited expansion are usually “socially unjust and environmentally wasteful” [1, p. 12] constructions - we might take as an actual example the case of Dubai, but there are many other similar cases of new urban hubs - namely, architectural objects that are entirely determined by individual interests. Shopping malls, science parks, airports, the so-called “leisure places”, and so on, are functional to the “common good” only in appearance, for they should rather deemed to be the result of some private business' achievement. The second effect is just a follow-up to the first one. The transformation of the city scale has a strong impact on the quality of urban life, by introducing new social patterns and dynamics, such as individuality, isolation, anxiety, and, above all, social and physical detachment among different citizens' strata. The outcome of this process is the spatial isolation of some social classes, which are “protected” inside special gated communities; their environments are specifically structured in order to be inaccessible to the majority of city inhabitants. In this way, we can say that expanding cities are characterized by the presence of many *fortified fragments*, separated by the continuous space of the city. These areas used to be public spaces, which are now expropriated and privatized, and, therefore, generate a clear manifestation of the distinction of wealth and the distribution and power in the urban landscape. They might be metaphorically described as islands or

archipelagos that divide and interrupt, both physically and symbolically, the cities' continuity, accessibility and commonality. Due to these inexorable processes, which are more and more becoming a *status quo*, the city has become unable to work as a collective body, and, day by day, is losing its common, social and urban identity.

#### **b. A Widespread Question: Vindicating the Right to the City. How?**

During the last years, we have observed an increasingly worldwide diffusion of social movements and groups whose aim is the re-appropriation of the "right to the city", which is now lost by the majority of urban population; they stand for a more common, just and public urban space. Many scholars have defined this right to the city through different words, but having in mind basically the same concept. When researchers, planners, activists speak in terms of collective rights, and claim the privilege of every inhabitant to re-appropriate her urban space, they are referring to the possibility, for an ordinary citizen, to express her desires and intentions. The making of the city represents a declaration of which kind of living conditions we aspire to and, consequently, of which kind of urban subject we aspire to be. Accordingly the right to the city shall not be reduced to a request of accessibility; "the right to the city is not merely a right to access to what already exists, but a right to change it as our heart desire, and remake ourselves by creating a qualitatively different kind of urban sociality." [2, p. 25] Researchers, planners and activists claim not only the possibility of accessing to the spaces of the city, but above all, they claim a recognition of citizens' authority and power to change urban spaces, and to shape them after their desires and needs.

The architect Camilo Boano, in one of his texts, expresses very clearly why this current re-vindication of space is so important inside contemporary cities. We might say that space isn't just an object, a static and metric form; instead, space shall be primarily regarded as an incubator of social dynamics and lifestyles. "Space is thus an interlinking of geography, built environment, symbolism and life routines. [...] People fight not only over a piece of turf but about the sort of reality that it constitutes." [2, p.23] The "construction" of urban space is the physical expression of power, interests, desire and need. Due to this reason, we can pinpoint two types of space-producers: "those who produce space for domination versus those who produce space as an appropriation to serve human need." [2, p.24] If Citizens together with activists and associations represent the second type of space producer, what is necessary, today, is to find a way capable of inverting the current situation and put in people's hands the essential right of claiming their city, by appropriating it, shaping it and changing its common/public spaces. This right to change shall be practiced through measures such as resilience practices, adaptation to the existing context, and creation of innovative life forms; new life forms and lifestyles have to be built and shaped essentially by communal, social and sustainable principles.

## **2 METHOD AND CASE STUDY**

#### **a. Looking at Athens' case: which occasion does this place offer?**

Inside this picture, the main question is how this objective can be possibly achieved, or, at least for the moment, how to work for it. The first, necessary step is to observe and study situations of resistance and struggle inside contemporary expanding cities; in other words, we have to explore these experiences to figure out what is the right set of contextual tools and strategies that best helps citizens in reclaiming and transforming a certain urban space. The re-vindication of a collective right to the city passes through two main actions: the first one, as already said, is the recognition of this right as common, which entails not only the permission, but also the actual power, to access urban resources, and to change ourselves as urban subjects, by changing the city. The second action represents the central process of intersection between activism and architecture, through the support to the proposals put forward in a particular context, at the beginning, and, afterwards, by facilitating the change from usurpation to appropriation. Architects, planners and associations should collaborate in order to create a negotiation between top-down neoliberal visions and the just needs and aspiration of the locals. The implementation of this strategy shall start from those places where grassroots



initiatives of resistance to the neoliberal current urban vision have already been established, and where movements of struggle for collective and social actions already exist. Those places might become the paradigm for a widespread urban attitude, which could gradually involve more and more places and cities worldwide.

Perhaps, Athens constitutes one of the most starting points for such a reflection, due to its peculiarities, its modern history, and, most important, the dramatic events that took place in the latest years, events which have deeply influenced the present and the future of this city. During the last ten years, the Greek capital has passed through many significant changes that modified the way people perceived and lived the city, and bringing about the situation that we now observe.

Athens' urban shape and life has started to change radically when the Athens' government decided to bring the city inside the international context, and to demonstrate that the Greek capital was perfectly able to compete with the other capitals of the world on the same level. With the staging of the 2004 Olympic Games, the city transformed its whole structure, and imposed a different model of urban development. In order to provide Athens with the necessary transportation network, which could be apt to host the important event, the government added a new layer on the city structure, which didn't find any connection with the existing city form and life. "The organization of the 2004 Olympic games was an attempt to improve the position of Athens in the ranking of world cities. Olympic Athens was made up of major infrastructural projects, such as the new Athens International Airport, the Athens Metro, and the new Athens Ring Road". [3, pp. 44-59]

This fact provoked, on the long run, a crisis of the consolidate habits of the citizenship. The new transport system provided faster connections between the city center and the suburbs, with the consequence of helping the fast expansion of new urban centers on the city borders, planned and raised as wealthy gated communities, that were completely detached by the rest of the capital. The new neighborhoods were designed according to zoning parameters, and were mainly thought as residential fancy areas that, nevertheless, were not provided with the necessary services and activities; in order to fill this gap, many shopping malls started to grow along the new transportation lines. These new consumption spaces introduced new habits among Athens citizens, and especially ruined one of the Greek population's most typical custom: using the city as a public common good and appropriating the street as a place for encounter and meeting. "The new infrastructure allowed for the diffusion of the city into the rural periphery. New shopping malls and leisure areas were established along the new motorway, in competition with downtown commercial activities. Their proximity to the suburban residential areas offered a substitute of public place to the upper middle-class population, in accordance with the consumerist ideals and standards of the lending-based economy." [4, p. 92] The change of lifestyle and habits has produced a migration of the wealthiest classes from the city center to the new urban developments. The old buildings of the center have been left abandoned, and the waves of immigrants coming to the city start gradually to occupy them. Due to this situation Athens have experienced a gradual *ghettoization* of some neighborhoods. The previous cultural, economical, social *mixité* -existing inside every district of the capital since the late '60s received its deathblow by this sudden escape of some groups and classes of citizens from the heart of the city to the new periphery."

In addition to these phenomena, Athens underwent also through some devastating spatial consequences of the Olympic Games; all the new stadiums and sport-facilities, expressly built for the event, were abandoned almost immediately. The new Olympic citadel, its services, collective spaces and gathering areas, which were built and designed according to the finest and most technological standards - became empty ruins right after the Games, due to their monumental dimension and peripheral location with respect to the Athens' centre. All these reasons, jointed to the significant fact that the Greek government have cheated about its financial situation in order to ask for money that it wasn't able to give back, have strongly contributed to the 2008 financial crack of the Greek state. "Winter 2008 was a moment of violent awakening for Athens. The global economic crisis unveiled the weaknesses of the Greek economy and the fictitiousness of the prosperity that was based on borrowing. Greek society, hypnotized by the hunt for good times, has been shaken to the core by the outbreak of the economic crisis and social unrest,". [4, p. 94]



After the state's bankrupt in 2008, and the adoption of austerity-policies aimed to the crisis recovery, the Greek population started to claim a significant change to the actual situation, asking for alternative measures. In summer 2011, Syntagma Square, constituted the beginning of a new attitude: citizens from different nationalities, age, and social classes gathered and lived together in the public square for weeks – right in front of the Greek parliament- organizing and discussing new ways of inhabiting the city, new life-forms, and alternative solutions for the social and economical crisis, inspired by collective and common-shared values. This movement, called the *movement of the plazas* showed very clearly the citizens' intention to reclaim their right to the city and, therefore, their right to transform the place where they live, and their way of living, according their true needs and aspirations. The movement of the plazas can be described as a pacific appropriation of the public space, in order to make it common. This event pursued the goal of transforming a piece of public space in a forum for discussion, capable of opening "the political space to people who where until then far from collective efforts." [5 p. 271] This new conception and use of Syntagma square was intended to produce a profitable exchange of ideas among citizens, and to conceive new living forms in the city -especially in the public spaces- far different from the ones decided and conceived by the neoliberal public administration. Thanks to this first effort – which was unfortunately suppressed by the government, before the end of summer- other collective movements and grassroots initiatives started to flourish in the Greek capital, and to spread all over the country, "Public spaces and public goods in the city have always been a matter of state power and public administration, and such spaces and goods do not necessarily a commons make. [...] While these public spaces and public good contribute mightily to the qualities of the commons, it takes political action on the part of citizens and the people to appropriate them or to make them so. [...] Syntagma Square in Athens, Tahrir Square in Cairo and the Plaza de Catalunya in Barcelona were public spaces that became an urban commons as people assembled there to express their political views and make demands." [6, p. 73]

## **b. Informal Appropriation and Authority Usurpation: Spontaneity as a Greek Spatial Tradition**

Currently, we can describe Athens as a city crossed by a multitude of *alternative* initiatives and movements, which try to offer different points of view, behaviors and urban lifestyles in the landscape of the capital. These groups attempt to challenge the present neoliberal policy, offering to the citizens unconventional modalities of living the city, in order to demolish and overpass the current system, considered failed and obsolete. They are becoming more powerful year by year; the number of their affiliates and the dimension of their network are increasing very quickly; they are becoming powerful agents, which are located not only on the entire capital, but in the whole country. These movements act outside the institutional structures: they have their own rules and hierarchies. Their action works beyond the boundaries of legal agreements on real-estate property, and beyond the private ownership legal system; they re-claim the city as a collective body, aiming to create new social bounds, spatial conditions, and economical dynamics. The main goal of their action is the physical appropriation and/or use of public/private urban space in order to make it autonomous from the ordinary institutional logics; through this autonomous space, new forms of life shall be invented and released inside the city. This attitude expressed by Athens grassroots groups is not totally new and unexpected in the cultural background of the Greek population. Semi-spontaneous interventions and appropriation of urban space, according to personal rules and needs, has been a hallmark of the spatial Greek tradition since the advent of the Modern Greek state, and especially from the exploding expansion of the capital after the Second World War and the Greek Civic Wars. "The actual city of Athens and the wider metropolitan area of Attica comprise a patchwork of different grids – independent, neighborhood-scale islands separated by large pieces of infrastructure, topography and physical obstacles. These are the spatial, social, and even ecological consequences of opportunistic, fractional expansions and modifications of a city plan determined by local scale and without clear, centralized decision-making. This method of "self-building" is the mechanism by which Greek cities have expanded. Ultimately, small groups of builders, local-scale developers, and a large petit-bourgeois class of technicians, engineers, and architects built the modern Greek city –not from one

universal plan or vision, but, as Dimitris Philippides said, "piece by piece and section by section." [7, p. 323]

Since the development of Athens as the new capital of modern Greece, Athens inhabitants have been used to live in the mid-way between of the institutional established system, and the informal, free, personal one. The main expression of this peculiar situation might be observed in the *semi-informal* housing development of the modern Athens. The uncontrolled expansion of the city hasn't been planned or decided through top-down measurements, but is almost entirely "abandoned" to the hands of the growing population, thanks to some special exchange agreements, prompted by the government itself, between landlords and builders. "The building stock was not built at once or by one large building corporation. It instead evolved, unit by unit, according to the particular needs of each landowner." [7, p. 323] According to an agreement called *antiparochi*, every land-lot could be exchange in space for construction, and occupied with a new construction-usually housing- without the intervention and the permission of the State; also thanks to another law, the same land-lot converted into a building, could be split into several pieces, and sold or rented to several landowners. "Known as the *antiparochi*, this quid pro-quo land-allowance mechanism fueled the small-scale building industry. Following the provisions of the law "On Horizontal Property," this mechanism provided a framework in which a piece of land owned by a family or a single person was exchanged, without any further tax revenues, for built space that took the form of property-shares and, in most cases, a number of apartments." [7, p. 330]

For these reasons, Athens grew without control, and without limits, in a somehow spontaneous way, even if based more on the interests of the speculative housing system, instead than the true people desires and decisions. Moreover the small land lording system produced a "piecemeal urban development" [8, p.245]: this means that the typical modern multi-storey apartments block, the *polykatoikia*, has been constructed through a long run piecemeal process that allowed the small owner to expand and appropriate the un-built space of the construction through informal self built systems. These appropriations of space were expressed through vertical storey addition, horizontal rooms' widening and "parasitic" expansions on the un-spoiled space of the city. All these addition and usurpation were seen as alternatives to the speculative market system, with the semi-authorization of the government and the owner/builder, who neither truly authorized neither directly suppressed them.

The current case of grassroots initiatives comes from the same spatial tradition but with completely different attitude and outcomes. The example of Navarinou Park, inside the Exarchia neighborhood, shows the different prospective of the new informal urban appropriation conducted by groups of citizens inside contemporary Athens. These citizens are usually not even member of a political group, neither express a political thought or action. They just claim to use and transform their city according their own rules and ideas. Navarinou Park is a unconventional green area self realized and self managed by the inhabitants of Exarchia. The area was occupied since 1907 by a clinic, which was demolished in 1970, and the lot have been let empty and abandoned since then. The owner of the lot, the Technical Chamber of Athens, offered the place to the Municipality of Athens in order to transform it in a public square, but the project has never been realized. The area became one of the many numerous voids spread in the landscape of the city, usually occupied by unauthorized, illegal parking lots. During 2009, Exarchia's activists and inhabitants decided to come together and to work for the transformation of this place. Also sustained by the association *Us, Here and Now and for All of Us*, in march 2009 the whole neighborhood occupied the parking lot and started to plant plans and flowers, using the slogan "their parking our park". Due to the complete lack of green areas and common spaces inside the city, the inhabitants wanted not only to create a small green oasis inside the capital, but also to establish an experimental laboratory where to develop and strengthen a sense of community, commonality and social bounds. The park now hosts a urban vegetable garden, a playground, an open air cinema, an agora for public discussion and also a small café recently self built by some students of the Technical University of Athens. The space is completely self-managed by the Exarchia citizens and everyone who wants to participate can join to the discussion group every Sunday morning, and expresses her own desires and suggestions.

### 3 CONCLUSION

#### a. Athens' Vindication: Moving Towards an Update Solution

The case of Navarinou Park offers the occasion of reflecting upon the future possibilities that similar urban events and actions might have on the evolution and transformation of the city's actual conditions. The action launched by the Exarchia population and its actual result gives the possibility of creating a common ground of strategies and interventions, addressed to the re-appropriation of the city spaces in the hands of citizens, in order to obtain the establishment of new life forms and lifestyle, directed to achieve a true urban common inside contemporary cities. How could experiences similar to Navarinou Park become the true beginning of a new urban condition? The researcher Stavros Stavrides speaks about Athens' future saying that "to devise common spaces means, thus, something a lot more than succeed in re-appropriating small pieces of still available open space. It means, explicitly or implicitly, sometimes in full conscience sometimes not, to discover the power to create new ambiguous, possibly contradictory but always open institution of communing." [9, p. 213] The paper aims to suggest a possible strategy for expanding and reinforcing people's use and appropriation of urban space, creating alternative rules and dynamics to the neoliberal ones, but under the agreement and the "protection" of the authority. The case of Navarinou Park have shown that the introduction of a merger institution or subject inside the action of appropriation is an important condition for the long run success and the acknowledgement of the practice. The presence of a merger between the bottom up citizens' usurpation and the top down control and opposition might be the key for the beginning of a strong, widespread and effective change for the urban future. In the proposal presented in the paper, the merger is represented both by the figure of planner -who has the role to develop a strategic project for some spaces of the city- and by the associations and institutions which work together with citizens for the appropriation of these spaces.

The strategy proposed looks at Athens' actual spatial condition, especially observing its parts and elements currently forgotten, ignored, and often ruined. These areas, nowadays neglected and abandoned by the city municipality, might become the starting points for the transformation of the city. The Greek capital is characterized by a wide presence of abandoned micro spaces, scattered though its whole landscape, that share the same nature of the plot occupied by Navarinou Park. These spaces are the leftover of the peculiar city expansion: for to their small dimensions, or the lack of an unique owner, or either due the crisis of capitals and financial possibilities, these areas have been progressively abandoned. Furthermore a big number of forgotten neoclassical building, built during the early decades of the nineteen century, stands along the Athens' streets, facing a progressive decay, without any type of use or private interest on their recovery. The same destiny is shared by numerous abandoned shops, situated on the ground floor of the typical Greek housing building, the *polykatoikia*; these local traditional/neighborhood commercials have gradually bankrupted after the empowerment of shopping malls and shopping chains inside the city, with the result of being left abandoned and void.

These particular areas -diffused on the whole surface of Athens- offer the possibility of reflecting on their actual use, their unexpressed potentialities and the future conditions they might contain. The future establishment of the right of use and change the city spaces by Athens' inhabitants, might have its start from the most neglected areas of the capital, the ones that show and clearly express the government's lack of interest about their present and nearby future. Through the introduction of a governance that accord the temporary right of use of these spaces by a particular urban subject, the government re-establishes life forms and activities in some dead parts of the city, and lets citizens transforming their city according to their desires, into some delimited and controlled urban areas.

According to the proposed strategy four main urban spaces have been identified as possible resilience areas of the city. These spaces, now ruined and abandoned, are looked through a different prospective, identifying them as the most capable of a deep urban regeneration. Every area is linked to the possible range of activities that the space itself suggests to the observer. The exchange agreement instituted between the government and the future user of the space, grants the right of use of the particular chosen urban area for a limited period of time, according to the activity, the need and the desire of the

urban subject. The agreement doesn't charge the user of any rental or purchasing expense, but asks the user's commitment in the preservation of the regenerated space. The four categories of spaces identified inside Athens landscape are: *voids with no name*, *eclectic ruins*, *forgotten rooftops* and *abandoned shops*. Each category is associated, according to the strategy, to a range of activities identified as the most suitable with the shape of the areas, and with the city's actual conditions and habits. The group *voids with no name* is linked with activities belonging to *self expression* category; that means all the possible activities related to citizens personal interests and free time; the right of use of these areas might be given preferably to neighborhood associations or collective groups of citizens, like the case of Navarinou Park. The space category called *eclectic ruins* is associated with activities connected with *personal experiences* and personal needs. Marginal activities such as homeless and refugees center, brothel and drugs/alcohol clinic, could be located in these buildings - through the proposed right of use exchange- offering protection and safety to the weakest strata of the Athens population. The space category named *abandoned shops* is linked to activities related to production. The re-activation of these empty local shops is imagined through their transformation into *production spaces* by a single urban subject or a group of citizens, with a common desire and interest. The last category, identified as *forgotten rooftops*, offer the possibility of transforming many empty and abandoned spaces of Athens: the terraces of the diffused polykatoikia. The paper strategy proposes to offer to the city inhabitants the possibility of changing these useless public/private spaces of the city, with the establishment of sharing activities and situations, supported by the traditional Greek café.

All the presented solutions aims to become examples of citizens urban appropriation, which go beyond the autonomous and illegal practice of squatting, but find a middle temporary condition between top down detachments and bottom up usurpation. If the action of squatting has often produced -in the Greek capital and not only- continuous conflicts and fights among the government and the activists, and the consequent segregations and isolation of the few squatted areas of the city, the present paper searches and looks to possible alternatives. Through the "right of use exchange" between Athens municipality and its inhabitants, the paper presents a starting point for a legal and accepted re-vindication of the urban space of the capital, in order to create and establish new forms of inhabiting contemporary cities. "Rather than perpetuating an image of the capitalistic city as an archipelago of enclave-islands, we need to create spaces that inventively threaten this peculiar urban order by upsetting dominant taxonomies of spaces and life types." [9, p. 211]

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## THE PERFORMATIVE CITY: Wooosh! WINCHESTER

Rosa Herrero<sup>1</sup>, Sam Howard<sup>2</sup>, María José Martínez<sup>3</sup>, Mariana Sastre<sup>4</sup>

<sup>1</sup>SASAKI Associates (USA)

<sup>2</sup>The University of Winchester (UK)

<sup>3</sup>Universidad Politécnica de Madrid (SPAIN)

<sup>4</sup>Royal Central School of Speech and Drama (UK)

*r.herrero.deandres@gmail.com, s.d.howard@unimail.winchester.ac.uk,  
martinez.sanchez.mj@gmail.com, marianasastre@gmail.com*

This article presents a practice as research Project that takes the city of Winchester and its public spaces as the catalyst for interdisciplinarity. *Wooosh!* is specifically focused upon combining the architectural with the theatrically playful, contextualized within street arts practices.

An urban-scaled performance takes place all around the city and unveils within the process different relationships amongst the public spaces. Looking at the fragmented structure of the narrative of *Hopscotch* (Cortázar, 1963), a similar perception of the public space is proposed. Through simultaneous cyclical performances in several public spaces, providing different experiences depending on the itinerary chosen by the audiences.

The citizens come across these performances in the street and their experience of the city is completely transformed, as they guide them through the subsequent spaces. Pneumatic structures materialize the kinesphere of the movement of the body and reveal some of the existing relationships in the public spaces and provide visual unity to the different scenarios.

As pointed out previously, one of the goals of this approach to the city is the exploration of the performing body alongside the city landscape and civic space. The city is understood as a complex playground with its inherent laws of movement and tensions, where the performers introduce a new spatial and ludic dimension. The interplay of the ludic parameters of the city, as defined by the resultant combination of function and actuality of use, along with the specific paidaic interference of the performative events, results in a rhizomatic construct of the cultural landscape of the city of Winchester.

In the science fiction book “The city and the city” by China Miéville, two cities coexist in the same time and location, but both ignore the existence of the other. There are spaces that belong to both cities and others that just exist in one of them. The inhabitants of both cities and the way they move and act make this superposition possible, so it is just through the body how both realities are constructed.

Architectural and urban space are configured by layers of different characteristics. Each of these layers offer us a series of data and each of them provides with complexity the architectural space. It is essential in architectural analysis to distinguish them and to research different tools and processes, not necessarily architectonic, to be able to find the different levels of reality. This is one aspect researched with *Wooosh!*, how performative elements throughout a city are able to underline and show invisible realities that are there, but that we wouldn't see without these performative process. Using performance to make visible ‘the invisible’.

**Keywords:** communities, playground, performance studies, interdisciplinarity, activation, street arts.

## 1 CITY AS A PLAYGROUND



Figure 1. Image of the final Research and Development phase of Wooosh!  
Photography: Stephen Cook

*Play* is perhaps as disambiguated a term as *God* or *Art* and analogously, those who write on it often fall into rhetoric [19] of deifying it, trivializing it and/or attempting to concurrently define it and its function, in much the same way as they do *God* or *Art*. But what of the *City*?

*Man Play and Games* [2], the arguably seminal work of play theorist Roger Caillois, sets out a clear binary spectrum for what he perceives to be the components of play; the *Ludus* at one end, which in our analogous world can be understood as the engine of play, that which sets its parameters, how far it can go, what it can do, and the *Paidia* at the other; the fuel of the play, the play-ing, the subversive and unruly desire for enjoyment... and can we not say this is also true of the *City*?

That the *City* has its own *Ludus*, we drive on the left or the right, that these stripes on the floor mean you can cross at this point of the road and these lights mean you must pause here for so long, this pathway means that you *should* walk here and the existence of this bench intrinsically comes with permission to use it but the placement of this table and chair in proximity to that cafe is different... you can lean up against a lamppost but, unless you are wearing a fluorescent yellow jacket, you must not open a lamppost. Umbrellas of one kind are for use in the rain, another in the sun. Dr Taiwo calls this the "Bandwidth of Normality" [20] the parameters within which we may act and behave in public which, although not ever formalized in common law, if we fall outside of we are seen to be different, to not understand, to be awkward or naïve or some other.

As for the *Paidia* of the *City*, we drive on the left except *sometimes* we go down this slip road the wrong way and save ourselves some time, we can't *really* park here... but we will only be a 'moment'. Those stripes mean I should cross there but if I did I would have to come back on myself. I may have permission to sit on that bench but *no-one ever sits on that bench (or uses an umbrella in the sun!)*, and the paving slabs stay clean as the desire lines cut mud paths and dust trails denoting a second level of *City*, the active level, where people and individuality interact within the *Ludus* of the city, ever testing Dr Taiwo's Bandwidth.

In truth, the intentionally experiential aspects of the *City*, a simplified definition of its formal *Culture*, are a result of such testing, of the push and the pull of the *Paidia* against the *Ludus*, the graffiti becomes the brand and the place where the crime took place<sup>1</sup> becomes the tourist selfie-hotspot. This *Culture*

<sup>1</sup> Whether it be where they shot of JFK or Franz Ferdinand, or where they found Jack the Rippers victims... or perhaps you want to see Ground Zero, or the camp at Auschwitz... The table at Wannsee...

is not simply a veneer but the semi-permeable epidermis layer, the second level in the cybernetic system, of the *City*, born out of the underlying *play* of the *City* itself.

Experiences that are external to the *City* must permeate this epidermis to enter/affect its paracosm and it is here we arrive at *Wooosh!*. An intentionally experiential event which came with its own aesthetic, its own internal *Paidia* and aimed to give the audience an opportunity to experience various psycho-geographic narratives by super-imposing them, via the medium of performance with pneumatic structures, upon various urban and sub-urban locations.

Three of these locations demonstrate most clearly the occurrence of acceptance by the *City*, rejection by the *City*, and the liminal, semi/pseudo 'tolerance' by the *City*. The first was Abby Gardens, where the performances were accepted with almost no resistance. This was also the area where the *City* Council were most happy for us to perform, we were granted explicit permission and we were even offered free advertising in the Councils newsletter and website.

The next was the *City* High Street, where the performance was shown extreme hostility. Heckled not just by passersby but also by the market stall holders, this performance was later moved into Abby Gardens for the safety of the performers... and what were they doing? Asking people to play a game of catch, a child's game where a ball is thrown between two people, although in this instance the ball was replaced with various inflated shapes.

The last was the Cathedral Grounds. Here, the audience was more inquisitive<sup>2</sup> as to what the performance 'meant' and what it was 'for'. As the performance offered them no help with these questions, they were left in this ever questioning place, self-convinced that what they were seeing was a puzzle more than a story.

There are many ways these locations could be analyzed to derive reasons for these reactions, we could look at what was specifically performed in each, the psychological temperament of the individuals performing and the individuals watching<sup>3</sup>, the history of performance in each location (with regards to societal expectation), and so on and so forth however if we look at each location through the lens of *Play*, a starkly clear set of reasons emerge.

In *Man, Play and Games* [2] Caillois also, amongst many other things, addresses the classification of Games. He separates them into four 'Rubrics', which he calls *Agôn* (Games of Skill), *Alea* (Games of Chance), *Mimicry* (Games of Role-play) and *Ilinx* (Vertigo... of sorts). These rubrics are not mutually exclusive and some games are combinations of each.

Using these rubrics to analyze the above locations we can see that Abby Gardens, a gated public park-like area designed for children's play and public enjoyment, lends itself to *Mimicry* and lightly to *Ilinx*<sup>4</sup>. As it is a 'Gardens', it is clearly not a space designed for sports (*Agôn*) and it is ambiguous with regards to *Alea*. If we compare what this space lends itself too, with the activities of *Wooosh!* i.e. telling a narrative, a story, which in gaming terms falls squarely within role-play, we can see a compatibility.

Now let's take the High Street. As the principle shopping location and capital centre of the *City*, the High Street magnifies and almost caricatures the *City's* capitalist activities exaggerating both its competitiveness and combativeness. The rubrics which mirror this are *Agôn* and *Alea*, but *Agôn* especially. The primary skill of the game, amplified more during market day, is getting and holding peoples attention with the secondary skill being selling something to those people who's attention you have. Looking at the activities of *Wooosh!* in this setting it becomes clear why such a combative response was given. The passersby assumed we were (financially speaking) selling something to them and the stall holders viewed us as competition to them selling their goods to the passersby. The domineering nature of that specific form of *Agôn* framed the ludic parameters of that space as such that that which fell outside of that game of economics was seen as suspicious, in the case of *Wooosh!* so much so that it was not testing but falling well outside of the Bandwidth of Normality.

<sup>2</sup> Although, thankfully, not in a historically Cathedral like way.

<sup>3</sup> Although, how, alludes me.

<sup>4</sup> *Ilinx* disrupts the "Stability of perception" and public Gardens such as Abby Gardens are attempting to achieve an aesthetic which, maybe not completely 'disrupt', but certainly aim to affect that stability by instigating a sense of sudden beauty.



Turning to the Cathedral Grounds, this space was much the same as Abby Gardens except that it so happened that on the day of Wooosh! there was also a celebration of a Saint in the grounds. This set one strong narrative in the space and when we introduced ours it led to a slight clashing of narratological parameters and due to the semiotics of this specific Wooosh! performance only using the written word “Nothingness”, it could have been seen as commenting upon the Cathedral/celebration... although exactly what was being commented was undeterminable. In play terms, we were role-playing but with roles with exclusively different weltanschauungs<sup>5</sup>. This lack of narrative clarity between the two different games (the celebration and Wooosh!) can clearly be seen as the driving force behind the enquiring nature of our audience’s responses.

Richard Schechner, in his 1995 publication *The Future of Ritual* [15], puts forward a theory of *play* as “the underlying, always there continuum of experience” [15], the creative force that drives all of societies endeavours. He calls this “the Maya-Lila theory” [15] or “deep play” [15] and, in some ways, Wooosh! demonstrated this theory in the practice of experiencing the *City of Winchester*.

## 2 LINKING COMMUNITIES WITH URBAN SPACE

Conceived as a site-responsive production, Wooosh! was performed in multiple public spaces around the city. The locations, date and time of performance were selected for the anticipated heavy footfall at the sites from residents and visitors of the city. In selecting well-frequented sites, the production sought to engage widely with the local community as audience, drawing those passing by into the action through the interactive nature of the performance. The performers worked physically with custom made inflatable structures during the piece, which provided an immediately striking visual within the sites. The aesthetics and content of the performance presented activity outside of the norm, unexpected action, within a familiar space. Echoes of Shklovsky’s defamiliarization theory can be viewed in the approach, a desire to provoke thought through the unfamiliar an acknowledgement that once ‘perception becomes habitual, it becomes automatic... [Art] exists that one may recover the sensation of life’ [17, pp. 3-24]. Wooosh! encouraged the city’s residents to break habitual actions and engage with the shared spaces of the city in a new way.

To further, uncover the ‘invisible narratives’ of a space, projects such as Wooosh! can be developed to not only involve the residents of a city as audience but as creators, fully involved in the production as performance makers. There is powerful potential for communities to connect with and share narratives through the process of creating performance. As Prendergast and Saxton observe ‘across many cultures and traditions over time we can trace patterns and instances of groups of people using the stage as a space and place to tell their stories and their lives’. [12] The process of performance making is a long established and valued practice for communities to share their stories. Theatre companies such as London based SPID exemplify the potential for community performance projects to in particular explore narratives of space.

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<sup>5</sup> A simplified meaning would be ‘Worldviews’, and they have different world views because they are from actually mutually exclusive play worlds.

sensation of life' [17]. Wooosh! Encouraged the city's residents to break habitual actions and engage with the shared spaces of the city in a new way.

SPID have developed a *living heritage* model for projects with young people and communities, which explores the heritage of listed estates in London through multi-disciplinary workshop programs and performance. SPID's recent year-long project *TrellickTales* uncovered the experiences of residents living in Goldfinger's iconic Trellick Tower in West London, culminating in a site-specific performance set in and around the tower. *Trellick Tales* documented the residents experiences of both the inside and outside spaces of Trellick Tower, which includes one of London's legal graffiti areas - a well frequented site that attracts artists and viewers from across the city and beyond. One of the key components of *TrellickTales* and many of SPID's projects is oral history. Through recording oral history interviews with local people, and working with these in performance, SPID have been able to directly document and share stories of local history. Projects such as *Trellick Tales* arguably provide a valuable platform to document and share local experience, providing a unique opportunity to capture stories that might not otherwise be known.

Through participating in performance projects, communities are able to share their local lived experiences with immediacy directly within their own space. Prentki and Selman note however, 'the rhetoric of participation is on the lips of all who work in any area of culture or development, but the reality is often much harder to achieve' [13]. As Prentki and Selman identify, performance projects within community settings can be complex to set up and run, with many factors to be considered and addressed in doing so.

This begins in the very earliest stage of the work, in identifying how to work closely with a community in developing a project that is wanted rather than imposed. This may be addressed in varied ways, such as including clear and diverse opportunities for input and engagement in shaping the content of a project from those it proposes to engage with. For example, this might include consultation sessions in the development stages of the project.

### 3 THE ACTIVATION OF URBAN SPACE



Figure 2. Image of the final Research and Development phase of Wooosh!  
Photography: Stephen Cook

Urban space is the aggregation of man-made elements designed to meet various needs. This aggregation is structured by a framework of private restricted areas and public accessible spaces. The physical space in between buildings is the public realm, subject to the ever changing weather and the course of every day. Urban space is inhabited by people, it is where people go and meet. Humans attract other humans, as the Viking poem Hávámál describes "Man is the man greatest joy". It is the living system of the city. It is the equalizer that has the power to bring people together, strengthen

empathy and thereby build social capital. When a city is becoming unhealthy you see the symptom manifest in the public realm.

The term activation means to set in motion, to organize and to treat. The urban physical environment is the setting for the urban activation as well as the catalyzer for city livability or un-livability. The best indicator of an active place is to look at the people, not only the amount but also the qualities that they have.

This activation process has two general types of events, regular and special. Regular are those every day activators, the city buses, the kids going to school, the shops opening and so on. The special events are the disturbance of the quotidian and can be festive, a street festival, or disruptive, a protest. In the special category we should highlight two sub-categories: legal and illegal events. Legal events are permitted by the owner of the land. The permitting process can be a barrier for urban interventions and make the process longer. Cities like Boston are working to simplify the procedure and make it more accessible. The Boston Art Commission revised its Public Art Guidelines simplifying the procedure and making it accessible online.

When looking to ignite activation in the urban space there is a great palette of elements to pay attention to: scale, diversity, and the actors in play and programming.

Regarding scale, the human dimension is the metric for a successful public space but it is not the only one. William H. Whyte, in his project for Public Spaces [2, pp. 16-241], conducted a study on the life of small urban spaces, what works and what kills them. Whyte took into consideration all aspects of the designed environment, the physical, the environmental, the programmatically and the users' demographics. He conducted his research using time-lapse filming and straight observation. Nowadays we have more advanced technology to gather and quantify this data. New companies are using sensors and video processing to analyze pedestrian and vehicular movement useful for municipalities and business to optimize their operations.

Jane Jacobs defined a healthy active street as one that has great diversity; you have people there any time of the day, beginning with the early birds to the late-night workers [6, pp. 143-152]. Curiosity is what brings people to the streets where they interact with the physical space. Human activity reaches its full potential on foot. When walking conditions are improved activities increase and with them unplanned and spontaneous actions. Cities all around the globe are seeing how their life increases when they perform pedestrianization projects, whether permanent or temporary. With the removal of cars, elements previously invisible become visible and accessible. Great examples of this are London's Thames Path or the redevelopment of Trafalgar Square.

Different actors play a role in the activation of the public space with different degrees of intensity and responsibility: public officials, community organizations, activists, private organizations, neighbors and passers-by. The ownership of the land determines the nature and degree of the intervention.

Programming is the trendy term in Urban Design today. It is one of the holy elements of Placemaking. Programming is the process of scheduling activities in a physical or digital space. Cities are becoming aware of the great value of organizing events. Charles Laundry "the so-called 'experience economy' cannot be ignored – a rapprochement between "everyday living, consumption and spectacle shaping what cities look and feel like... This process is turning retailing into a part of the entertainment industry, often blurring the boundaries between shopping, learning and the experience of culture. In this process design, multimedia applications, theatrics and soundscapes move centre stage [7, pp. 5-7].

We are living in the age of the sharing economy, and for cities, this means communicating and stealing good ideas for urban activation. Cities are inspiring one another, borrowing and adapting good ideas to their urban setting. Such is the case of New York City and Mexico City with their creation of pedestrian spaces taking ground from underutilized vehicular territory.

#### 4 READING THE PERFORMATIVE CITY



Figure 3. Image of the final Research and Development phase of Wooosh!

Photography: Stephen Cook

It is not a secret that the origin of the cities is in the human body. They emerged as a relational space based on how bodies interact with others in the development of the everyday life. The clearest contemporary example are the slums, parts of the city that just respond to the utilitarian use of the space by their inhabitants.

In the case of the favelas, as Berenstein observes in “The aesthetics of the favela” [1], they are not designed to be seen, they are just responding to the fluxes that their inhabitants need. They have not a monumental function, they are not purely aesthetic – although they have some inherent beauty – they articulate the use with the local constructive systems and the spatial constraints of the area. There is no architect or designer in the building process of the favela, just a community that creates an environment with the minimal –and many times not enough – elements to develop their everyday lives.

Lewis Mumford approaches the city as a theatre, as he states: “it is in the city, the city as a theatre where man’s mere purposive activities are focused and work out, through conflicting and cooperating personalities, events, groups, into more significant culminations” [10]. The city has its inherent narrative, and it is experienced through time, as it is what makes the body able to engage with space. Being aware of this, in Wooosh! There was a narrative that was proposed to the audience, and that was fragmented and entangled with the different situations provided by the city. The choice of different spaces of the city, took us through a derive in the streets of Winchester, trying to understand how the city worked and which were the best locations for the different actions.

One of the premises of this project was to approach the city from a performative event, in order to get to a better understanding of its inherent laws of movement and tensions, where the performers introduce a new spatial and ludic dimension. Paul Makeham points out that “performance studies, provide an interpretive frame for analysing the urban drama, encompassing not only formally designated artworks but an almost infinitive range of other phenomena as well” [9]. In his book *Thirdspace*, Soja explains how the interpretation of space is reduced to two ways of understanding the space: the first one is the physical and geographical space, and the second one, which is more subjective, it is focused on how we think of space; the mental or ideal representations of space. Soja proposes the *Thirdspace*, which is described by superposition, where “everything comes together... subjectivity and objectivity, the abstract and the unimaginable, the repetitive and the differential, structure and agency, mind and body, consciousness and the unconscious, the disciplined and the transdisciplinary, everyday life and unending story”. [18, p. 57]

It is the search of this *thirdspace* that triggers much contemporary urban research and so did Wooosh! This idea of the artist as an urban researcher has been already approached in different experimental works. One of them is the project called Bio Mapping which is published in a book of essays called

Emotional Cartography by Christian Nold [11]. It is based on a portable device that records data from two technologies; a biometric sensor and a GPS system. The idea is that the sensor is able to record the changes in different parameters of the person and provide the different locations. We could say, that this presents us an objective subjectivity based on data and not on feelings or emotions. Some of the outcomes of the project that are presented in the book are maps and cartography that display this information.

But the approach that we try to present with Wooosh! Is not just about creating cartographies but finding new methodologies to work on the cityscape. Sennet writes: “navigating the geography of modern society requires very little physical effort, hence engagement; indeed, as roads become straightened and regularized, the voyager needs account less and less for the people and the buildings on the street in order to move, making minute motions in an ever less complex environment”. [16, p. 18]

The question this raises is: is it really a less complex environment? Or does this have to do with velocity and the way citizens experience space? What artistic projects like Wooosh! Propose is to introduce a new controlled event on the city, so as it is devised in the urban space with all its stimuli, and then given in return to the community. Sometimes this can be difficult, because some people may feel that their everyday life environment is being invaded. But when at some points of the project we were able to articulate the public space with its previous use and the performative action, the whole dynamic of the space changed, making visible the structure of the preexistent space.

## 5 CONCLUSIONS

From one perspective the city is a playground. A playground separated by areas designated for different games and the individuals within the city have the autonomy, in the same way they do a playground, to allocate for themselves the status upon which they perceive each game-rubric to have, which in turn informs where they place importance. Play a game of catch and you're a social deviant in one place and the savior of a child's day in another... its all swings and roundabouts.

Maintaining an open dialogue with the participants of a community project must also continue throughout in order for the project to remain relevant and connected to those who it engages with. As Preston makes plain ‘...we have a responsibility towards ensuring that the representations that are made are produced through a climate of sensitivity, dialogue, respect, and willingness for reciprocity’. [14, pp. 63-69] Firewood further highlights the need to work responsively, to be willing to change and adapt to best meet the needs of the project stating that ‘the best community theatre consists of temporary, mobile, ‘strategic ventures’ that have flexibility to adapt to changing circumstances [4]. There must be a willingness not only to create the project based on the need of the community but to work responsively to this need throughout, to best uncover, represent and share the unique invisible narratives of a city.

Urban activation has its consequences, most of them are positive but there are some negative aspects as well. Gentrification is a great danger after performing a reactivation or regeneration project in a neighborhood. New York City knows this phenomenon first hand with Brooklyn as a prime example. Activation also attracts tourism to the area which can create economic benefits. Uncontrolled tourism can displace the local neighbors transforming the center into a Potemkin village, an empty shell for the amusement of empty of life. This is becoming the case of Barcelona or London, cities that are becoming victims of their own success.

Activation ultimately leads to the transformation of the experience of the space. This change can be permanent or temporary. The Wooosh! project falls into the temporary category where the public realm was temporarily transformed into a theater by the street performance. A multidisciplinary group comprised of performers, architects, designers and musicians created an intervention geared to the re-experience of Winchester's public realm with the blessing of public officials. Actors were able to activate the urban space into their theater with simple elements such as t-shirts and inflatable props. The unpredictable conditions of the space impacted the performance such as the wind that became a

force of movement. The show evolved with different nuances and stimulus becoming activators and receivers at the same time.

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# **EURAU 2016**

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# **IN BETWEEN SCALES**

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**Bucharest, September, 28-30th 2016**

# actors, processes, constraints

No matter the scale, the space in-between is always a creative space, subjected to interpretation and negotiation. Thus, the in-between can only make sense in regard to its users – actors by chance rather than assigned – whose performance is highly meaningful as a performance in-between realities. For the same reason, the processes taking place in intermediary spaces are far from being simple, their understanding demanding a complex and multidisciplinary inquiry. What role does scale play in the way the in-between is performed? Who are the actors? Which is the extent of an in-between performance? Which are the limits of the in-between and are they understood as constraints? Whether we speak of an in-between two comparable scales, or an in-between different scales, different realities, different uses, the theme remains open for debate as actors, processes and constraints vary greatly and each or together underline important aspects of contemporaneity.









## THE SCALE AND THE FAÇADE.

### STUDY ON CONTEMPORARY ARCHITECTURE

**Letiția Bărbuică**

*Assistant Professor, Ph.D., "Ion Mincu" University of Architecture and Urbanism Bucharest (ROMANIA)  
letitia.barbuica@headmade.ro*

#### Abstract

Starting from the seminal book *S M L XL* by Rem Koolhaas and Bruce Mau, published in 3 editions and sold in over 1.000.000 copies, which addresses the different size of the projects with the same relevance irrespective of their scale, the present paper brings this idea together with another one expressed by Koolhaas in "Conversations with Students". He states that from a certain scale of space there cannot be any relationship between the interior space and the façade. "In other words, the human relationship between the interior and the exterior, based upon the fact that the exterior will make certain disclosures and revelations about the interior is broken." For him the simplicity of the façade should hide the complexity of the interior space – described by him as *field space*.

Relying on these two ideas, this paper will investigate the works of six architects, Pritzker Prize laureates, grouped in the synoptic table proposed by Adrian Meyer to synthesise "L'architecture de 1900 à nos jours", published in 2008.

The doctoral thesis "Reflexive Modernism. 5 [possible] points on Contemporary Architecture" I concluded in 2015 proves that, on five different criteria, the groups proposed by Meyer have indeed certain characteristics in common. The architects and the groups under question we refer to are:

group 1 – Alvaro Siza, Eduardo Souto de Moura

group 2 – SANAA

group 3 – Zaha Hadid, Tom Mayne

group 4 – Rem Koolhaas, Herzog and de Meuron, Toyo Ito, Zumthor

The study reveals a new type of relationship between the façade and the structure and an image which focuses on destabilising the relationship between the visual perception and what one expects from architecture.

The above research did not take into consideration any study related to scale. Hence this paper will investigate if the relationship between interior and exterior is reflected differently in the façade depending on the scale of the architectural object. Furthermore, it will address the relationship between the interior space and the image in order to identify any typologies related to the scale: S, M, L, XL.

Andrew Benjamin, in his reflection on the contemporary architecture, cosmopolitan architecture as he calls it, comes to the conclusion that in the new cultural context the style is not related to image. For him, contemporary architecture "moves architecture beyond the image while still allowing for the image of architecture ....and yet it will never be just an appearance-mere image." The study will investigate where does the SCALE (S, M, L, XL) stay in this equation related to the image in the new conceptual frame of style in the contemporary architecture.

**Keywords:** contemporary architecture, scale, image, façade, style

## 1 STARTING POINT

My doctoral thesis "Reflexive Modernism. 5 [possible] points on Contemporary Architecture", completed in 2015, proves there is a new type of relationship between the façade, the structure and an image, which focuses on destabilising the relationship between the visual perception and what one expects from architecture.

The research was carried on Pritzker Prize winners and grouped according to the synoptic table proposed by Adrian Meyer [1] as mentioned in the abstract. Given the limited space for this paper I will analyse 6 architects: group 1 – Alvaro Siza, Eduardo Souto de Moura, group 2 – SANAA and group 4 – Herzog and de Meuron, Toyo Ito, Zumthor from where I excluded Koolhaas' work considering not relevant to analyse his own work in this context.

Starting from the main topic of the conference this research is a scale-related study, focusing on the works realised between 1990 and 2010 of the architects listed above. This paper will thus investigate if the relationship between interior and exterior is reflected differently in the façade, depending on the scale of the architectural object.

### 1.1 Reflexive Modernism

When speaking about architecture, Reflexive Modernism means a type of architecture that critically and creatively reflects upon the architectural Modernism. The term was coined in sociology<sup>1</sup> as a way to describe the contemporary society and it refers to the modernity as a cultural phenomenon. This concept of "second modernity" examines the foundation of Modernism itself, in the same time in which "modernity has not vanished, we are not post it." [2]

Hence the topic of the façade as true mirror of the programme of the building, according to the modernist mantra, is put under scrutiny by the reflexive modernism.

In "Conversations with Students" [3] Koolhaas declares that from a certain scale of space on, there cannot be any relationship between the interior space and the façade." In other words, the human relationship between the interior and the exterior, based upon the fact that the exterior will make certain disclosures and revelations about the interior is broken." For him the simplicity of the façade should hide the complexity of the interior space – described as *field space*. His statement is an exception to the Modernism's main rule, and from here is understood that he is obliged to that rule under certain circumstances.

His approach to this topic is an example of a reflexive modernism approach.

Starting from the above rule he mentions, as well as from his equal interest into the different size of the projects irrespective of their scale – S, M, L, XL – I will explore what is the correlation between the scale of the building and the façade.

## 2 SEARCHING FOR CORRELATIONS

### 2.1 Alvaro Siza, Eduardo Souto de Moura

Siza is guiding his works on the following statement: "It is very hard to make a window properly. Frank Lloyd Wright said that architecture would be more beautiful if it didn't have windows or we didn't have to make windows" [4, p. 35]. Eduardo Souto de Moura shares the same opinion, but his strategy is to avoid making windows all together, whenever possible.

In Siza's façades the solid wall has prominence over the cut out, the window. This is valid irrespective of the scale of the buildings, to name a few:

S – Casa Vieira de Castro (1994); Casa van Middlem (2003); Casa Armanda Passos, Porto (2007)

M – Galego Center for Contemporary Art, Santiago de Compostela (1993); Santa Maria, Canavese (1996), Library, Viana do Castelo (2007)

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<sup>1</sup> by Anthony Giddens, Ulrich Beck and Scott Lash

L – Expo'90 Pavilion, Lisbon (1997), Seralves Foundation, Porto (1999); Cultural Center Manzana de Medelin (2010)

De Moura talks about the façade, as an analogy to human face. In this analogy the section of the building is the spirit of that person, its character: “.... the elevation is aesthetics and the section is ethics” [5]. For Braga Stadium the façade is the section which would mean that the aesthetics and ethics perfectly overlap. But this is one singular approach.

He also recalls a conversation with Herzog [5] related to the fact that architecture seems to be reduced to a thematic connected mainly to the façade, and its painterly value. De Mora politely declined to speculate on the consumerist value of the façade. It is as if – returning to the analogy between the façade and the face, a face that one can fall in love with – de Moura refuses this type of seduction in favour of a seduction related to the space, the understanding of the section: “the section reveals the truth and displays the intrinsic rules that prove the congruence of the things” [5].

Hence his buildings do not dissimulate the interior space or the function, with two exceptions: a Residential Building in Maia (2001), size M, where the exterior is equally wrapped in an overall louvred uniform façade, and Burgo Tower (2007), size L, where an interpreted screen type of façade hides the scale of the building as one cannot read true the number of levels. This is to say that de Moura uses only conjecturally a cleavage between the inner space, the function and the façade.

Analysing Siza's works between 1990 and 2010 it appears that as a general rule the exterior makes disclosure about the interior – in terms of space and program – regardless of the size of the building, until 2006. With the Ribera Serrallo Sports Center (2006), which is an L scale building, there is no hint in terms of program. The same for Crama Adega Mayor (2006), Viana do Castelo Library (2007), Iberê Comargo Foundation, (2008), Mimesis Museum (2009). These are both M and L size buildings so there is no direct correlation between the scale of the building and a façade as being disjunctive from the internal space and program.

The possible assumption, that Siza is interested in creating a cleavage between the façade and the space, after 2006, is contradicted by the fact that two L buildings, Lleida University (2009) and the Manzana de Medelin Cultural Center (2010), have the most *honest* façades, in the truest Modernist spirit. We cannot therefore talk about a shift regarding the correlation between the inner space and the façade in more recent works.

For both Siza and de Moura such Koolhaas' claims are far from true. But we need to ponder this with the fact that both architects have not so many buildings of large or extra-large scale, L and XL (see Table 1 and Table 2). For Siza there are some large scale buildings for which Koolhaas' claim is only partially true: the façade is not true about its programme but it does express the internal space: Complex Sportive Ribera Serrallo (2006), Crama Adega Mayor (2006), and Godomar Sport Center (2007).

It is interesting to notice that in my thesis I have proved that neither Siza, nor de Moura are particularly interested in complexity, where complexity might be one direction structuring the architectural world today. They are the exception from this rule. Koolhaas is connecting complexity and expression of the façade. He claims that the uni-vocal façade is enveloping complex spaces and programs.

Since Siza and de Mora do not use complexity as an ingredient for their architectural work and – as proven above – their façades are true to their spatial and functional content to a high degree, what holds true is that, irrespective of scale, low complexity ensures that “the disclosures and revelations” [3] connecting the exterior to the interior is not broken.

## 2.2 Kazuyo Sejima, Ryue Nishizawa (SANAA)

I have identified 2 types of approaches regarding the interior and exterior relationship in SANAA's architecture.

There is a way in which they want to show the content of their building to the public but they do not achieve this in a direct way but rather overlapping transparencies, blurring successive glass planes, using internal textile drapes behind curved transparent façades. Is a neither/nor situation in which they play with transparencies. They use simultaneously transparent, translucent and opaque in K Building, O Museum, Dior Store, Contemporary Art Museum Kanazawa, Novartis Office Building, Glass Pavilion Ohio, Cultural Centre Almere. It is a kind of translucent skin which gives some information about the interior but does not explain it totally.

There is another approach in which the façade does not give even a glimpse of the interior space or programme. They are using a type of draped façade that covers the main volume. For New Museum, New York, the double skin façade has a mesh as the exterior layer which brings a “feeling of lightness, subtlety and permeability” [6, p. 28]. For Vitra factory it is as if the textile curtains they are using for doubling the façade is moved to the exterior and frozen in place. This draped skin does not disclose the use of the building, the scale or the type of structure behind. In the same way that does not express the scale Zolverein School of Management display a façade that seems inspired by a textile pattern design.

SANNA is using the façade as a communication interface and integration device in the urban or natural context. “The mesh was inspired by our desire to acknowledge the texture of the surrounding.” [6, p. 28] is explaining SANAA about The New Museum’s façade.

For Louvre Lens, Serpentine, Park Cafe-Koga the façade is nearly vanishing in the surrounding landscape by using reflective mat panels or even mirror like polished surfaces. The same evanescent character is noticed by Eva Herman who poetically described them being “like a breeze of nothingness.” [7]

The façade is not only image but also atmosphere. Their façades are high couture façades, to use a term from textile area, as they are built with custom special elements, curved, cast, that are forcing the limits of the technology and are unique. SANAA is using extensively the non-disclosure dictum noticed and underlined by Koolhaas, but for all scales of the buildings such as:

S – N Museum, Wakayama; casa M;

M – Multimedia Workshop Oogaki; O Museum, Nagano; Glass Pavilion, Toledo-Ohio; Zolverein School of Management; New Museum of Contemporary Art, N.Y.;

L – 21st Century Museum of Contemporary Art, Kanazawa; Novartis Office Building; Louvre-Lens Museum.

XL – Rolex Learning Center; Vitra Factory;

SANAA is using in many cases the type of the façade that is concealing the meaning and content of the interior but across all scales of building. Is interesting to notice though a prevalence for this approach for L scale buildings which is in line with Koolhaas’ view (see Table 3).

### 2.3 Peter Zumthor

Zumthor believes that “every design needs new images” [8, p. 67] in his quest for singular architectural objects. Leaving behind the buildings with clear Modernist roots and predictable façades, I find an introversion tendency in the idea that the building’s outer shell protects the inside and its meaning to be readable from the outside.

Maybe one of the most relevant example in this sense and a personal manifesto is Serpentine Gallery, London 2011, where a simple austere black exterior is an enclosure for a wealth of colours, textures, and smell; a micro cosmos: the garden designed by Piet Oudolf. This contrast is also present in Bruder Klaus Kapelle and Diocesan Museum in Cologne.

The secrecy of the interior is also well kept in the case of Hanover Pavilion by means of a façade, which is true to structure, where structure is façade and decoration; in case of Bregenz Museum this is expressed by means of transparencies and translucent areas.

As it results from these examples, Zumthor manages to hide the interior using different techniques or a mixed technique:

- a blind enclosure, or an enigmatic appearance: Serpentine Gallery, Bruder Klaus Kapelle
- transparencies and a translucent mix: Bregenz Museum
- textile design: Terme Vals, Kolumba Diocesan Museum
- true to structure: Hanover Pavilion, Kolumba Diocesan Museum.

One can see that Kolumba Diocesan Museum is a hybrid solution, an intersection of true to structure case and a see-through solution façade. The massive brick structure walls have permeable areas where the bricks are laid in a lace-like pattern.

Zumthor employs austerity, simplicity and most often uses only one material for the façade [9], which gives a distinct sculptural character to his building.

It is clear therefore that most of his buildings comply with the observation of Rem Koolhaas, irrespective of their scale. In his case the hidden of the interior seems even programmatic. Also the L scale buildings are more often subject to this approach (see Fig. 4).

If Kenneth Frampton praises the type of architecture that has a strong haptic sense, which is what Zumthor creates, in contrast to the architecture which uses materials for only vain visual effects [10], it seems that Zumthor is the absolute master in this sense.

Still, Cristine Neuhoff [11] analyses Terme Vals and demonstrates that the whole building was designed for visual effects too and it is also about clear pictorial approach in which the term photogenic is centre piece. But, as I have shown before, there is something more beyond a mere image.

## 2.4 Herzog & de Meuron

Herzog & de Meuron think that “the outer skins of the buildings, independently of the underlying structures, can function as image” [12, p. 13]. It is exactly what Kenneth Frampton [10] criticizes about their work. Yet their claim is in connection with Koolhaas’ view, but they do not put any emphasis on the scale of the building, but rather on concealing the structure.

For them there is a separation between the structure and the façade, each functioning on its own independent logic. This can be seen in Goetz Collection, Tate (old), Laban Art Center, The Five Courts, Forum Building – Barcelona, Walker Center, Allianz Arena, Caixa Forum, Museum der Kulturen. They are concerned with a kind of artificiality of the outer shell of the building which is connected with the fashion design: “We are interested in that aspect of artificial skin which becomes so much of an intimate part of people” [13, p. 122]. Their aim is to create a very intimate relationship with the public, they are after a sensual and sensorial relation between architecture and the public and, in this sense, their aspiration is not far from Zumthors’.

This sensual appearance of the façade is seen in an array of buildings where the <see-through> façade leaves the structure open to a certain exterior glimpse: e.g. Sport Centre Saint Louis, Ricola Production Centre, Railway Switch Power, Cottbus Library, De Young Memorial, Tenerife Espacio de Las Artes (TEA). The perception by night adds a new layer of unpredictability and mystery, building on the seduction of the building.

Even when the structure of the buildings is explicitly exposed, the primary attention is directed to the expressive and sensory qualities of the structure. Structure is treated as an art object in itself. At Prada Store, the structure that makes the façade is a gigantic optical distortion device. For Vitra House, the repeatability of the modular structure creates unreal imponderable objects.

One step further are the buildings with no outer shell where the structure is the façade, for instance at Bird Nest Stadium, whose structure is pure expression and seduction, or 1111 Lincoln Road Parking whose delicate expressed structure transforms the dull architectural program into a glowing landmark.

We can thus say that their façades are hiding the structure and/or the use of the building, hence they comply with Koolhaas' observation. Maybe the most hermetical example is the Domius Winery with its poetic view through stone gabion walls, as it does not make a hint to the exterior. Herzog & de Meuron as well, do not differentiate their façade approach in terms of scale.

From among the four XL size buildings (Allianz Arena, Bird Nest, TEA, Philharmonic) that do not expose the structure or the type of space behind, the two stadium buildings reveal their program (see Table 5). Now, there is a possible debate here if they reveal their programme in itself or because they achieved a landmark status. This is a point that deserves investigation in a separate research.

## 2.5 Toyo Ito

Toyo Ito combines a façade <true to structure> with a façade <true to space> in his design of Taichung Opera House. It is a kind of façade that shows the section of the building, but in a different way than de Moura's Braga Stadium.

The façade changes its position in relation to the structure. There are transparent façades that leave the structure visible behind (T Building, T House, Sendai Mediateque), façades true to structure, where the structure forms the façade itself (Serpentine Gallery, Tod's, Mikimoto) and façades that are independent from the structure of the building (Matsumoto Performing Art Center, Za Koenji Theatre). He is also presenting the section of the building as the façade at Tama Art Library and Taichung Opera House.

Ito is interested "to produce a free space that is similar to nature" [14, p. 13], hence he is interested in façades that achieve a blurring of the demarcation line between interior and exterior (Ota-Ku Resort, Sendai, Serpentine, Tama Art Library or façades that borrow a typology of organizational growth generated by an algorithm that is inspired from nature:

- Serpentine Gallery and Tod's have façades inspired from a tree and its rule of growth
- Matsumoto Performing Art Center, Mikimoto Ghiza, Za Koenji Theater, Taichung Opera (locally) have façades inspired from the cellular automaton (see Fig. 1 and Fig. 2).



Figure 1. Automaton Cellular, source <http://homepages.cwi.nl/~dorresti/images/eindhoven.jpg>



Figure 2. Ito – Matsumoto Center – façade detail, source: <http://farm3.staticflickr.com>



Regarding the scale of the building and the disconnection of the façade from its interior space and programmes, it is true that most of L buildings and some of XL buildings comply with this observation, but there are small buildings in similar proportion as XL buildings that comply also: T Housein Yutenji, Serpentine Gallery (see Table 6). I also noticed also that after 2010 (Sendai Mediatque as turning point) 9 out of 11 buildings are compliant with Koolhaas' observation, irrespective of scale, which means an important proportion of around 80%.

## 2.6 Conclusive tables of analysis

For each architect I made an inventory of buildings raised between 1990 and 2010 (2014) in terms of scale and how many of them satisfy the observation made by Koolhaas about a certain scale of space without any relationship between the interior space and the façade.

Table 1. Alvaro Siza, correlation of scale and façade non-disclosure

1990-2010	ALVARO SIZA		
building	Overall	nb. nondisclosure	percentage %
scale	number	facade	
S	8	1	12.50
M	9	4	44.44
L	9	3	33.33
XL	2		0.00
<b>TOTAL</b>	<b>28</b>	<b>8</b>	<b>28.57</b>

Table 2. Souto de Moura, correlation of scale and façade non disclosure

1990-2010	SOUTO DE MOURA		
building	Overall	nb. nondisclosure	percentage %
scale	number	facade	
S	9	1	11.11
M	11	3	27.27
L	2	1	50.00
XL	1		0.00
<b>TOTAL</b>	<b>23</b>	<b>5</b>	<b>21.74</b>

Table 3. SANAA, correlation of scale and façade non-disclosure

1990-2010	SANAA		
building	Overall	nb. nondisclosure	percentage %
scale	number	facade	
S	5	2	40.00
M	9	5	55.56
L	3	3	100.00
XL	3	2	66.67
<b>TOTAL</b>	<b>20</b>	<b>12</b>	<b>60.00</b>

Table 4. Peter Zumthor, correlation of scale and façade non-disclosure

1990-2010	PETER ZUMTHOR		
building	Overall	nb. nondisclosure	percentage %
scale	number	facade	
S	3	1	33.33
M	4	2	50.00
L	3	3	100.00
XL			
<b>TOTAL</b>	<b>10</b>	<b>6</b>	<b>60.00</b>

Table 5. Herzog &amp; de Meuron, correlation of scale and façade non-disclosure

1990-2010	HERZOG & DE MEURON		
building	Overall	nb. nondisclosure	percentage %
scale	number	façade	
S	2	2	100.00
M	10	5	50.00
L	7	7	100.00
XL	4	4	100.00
<b>TOTAL</b>	<b>23</b>	<b>18</b>	<b>78.26</b>

Table 6. Toyo Ito, correlation of scale and façade non-disclosure

1990-2010	TOYO ITO		
building	Overall	nb. nondisclosure	percentage %
scale	number	façade	
S	3	2	66.67
M	5	2	40.00
L	5	4	80.00
XL	4	2	50.00
<b>TOTAL</b>	<b>17</b>	<b>10</b>	<b>58.82</b>

Taking into account the 121 buildings analysed, created by 6 different architects, it results that L size buildings are most likely to comply with the observation of Koolhaas regarding the relation between the scale of the building and a type of secretive façade (except Siza for whom M size buildings hold in a maximum percentage in this situation).

Still, it is important to see that in case of Herzog & de Meuron the same type of treatment is given to S, L and XL buildings.

It is interesting to notice that XL buildings do not comply in the same extent, having smaller percentages than L buildings with one exception: Herzog & de Meuron for whom the percentage is 100%, i.e. all their XL buildings satisfy Koolhaas' dictum. Other exceptions are Siza and Souto de Moura who are at the exact opposite pole with no XL buildings fulfilling the task.

Small scale buildings are in a relatively high number following the Koolhaas line for Herzog & de Meuron (100%), Toyo Ito (66.67%), SANAA (40%), while all the others are under 35%, and as a consequence they cannot be called relevant.

### 3 FINAL CONCLUSIONS

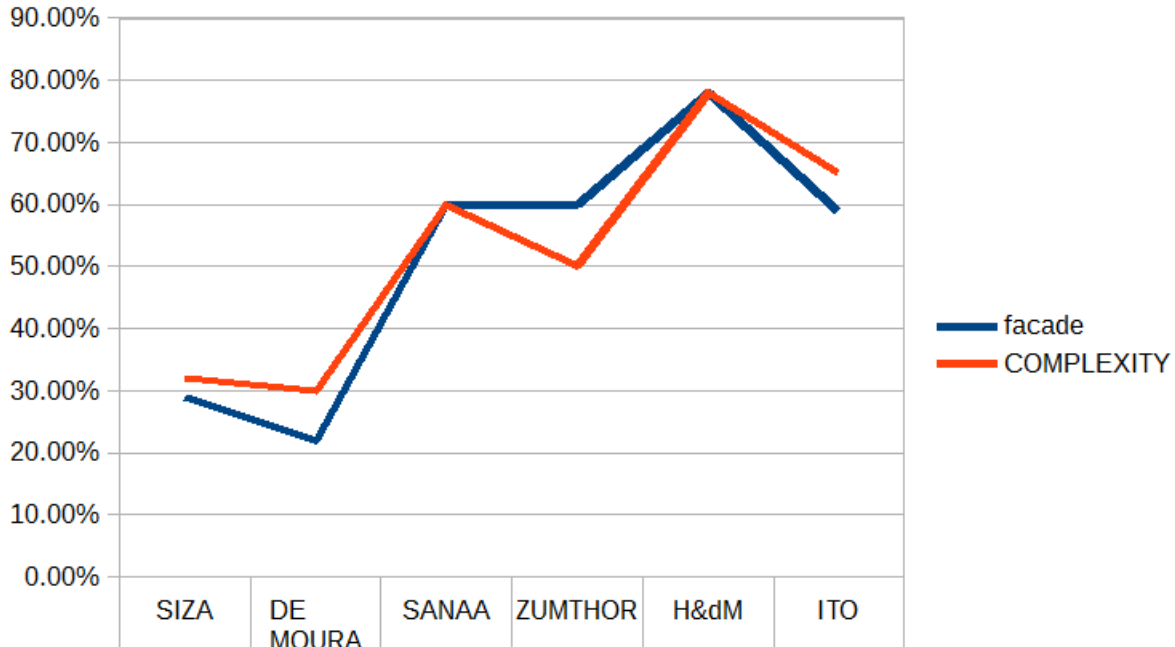
The analysis of the buildings in this paper proves that for L size buildings the observation of Koolhaas is true, but for XL size building does not hold true which is unexpected. An interesting aspect is the fact that the special characteristics of the façade migrates towards S and M buildings as well but is not the dominant feature as a general rule.

In my thesis on "Reflexive Modernism. 5 [possible] points on Contemporary Architecture" I also analysed complexity, as part of the architectural building and process, for the architects mentioned in the abstract, as one of the 5 key characteristics of architecture today. Starting from the conclusions regarding this aspect, I put together the complexity values obtained in the doctoral research [15] together with the percentage values resulting from this paper.

	SIZA	DE MOURA	SANAA	ZUMTHOR	H&dM	ITO
% of nondisclosure						
façade	29.00%	22.00%	60.00%	60.00%	78.00%	59.00%
<b>COMPLEXITY</b>	<b>32.00%</b>	<b>30.00%</b>	<b>60.00%</b>	<b>50.00%</b>	<b>78.00%</b>	<b>65.00%</b>

Table 7. Complexity and façade non-disclosure

Analysing Table 7 it is clear that there is a better correlation between the complexity and the secretive façade, and not necessary between the scale and secretive façade. Complexity is a better indicator than scale for identifying how often the relationship between the interior space and the façade is broken. The more complex the process, the space, the structure, the program, the bigger the likelihood of a non-disclosure, secretive façade. It is also true that this will appear more frequent in case of L size buildings. The correlation with complexity is shown in the graphic bellow.



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## THE ROLE OF LANDSCAPE ARCHITECTURE IN INTERDISCIPLINARY PLANNING PROCESSES: PARTICIPATION, PROTOTYPIC DESIGN AND APPROPRIATION IN PUBLIC SPACE PROJECTS

**Tobias Baldauf<sup>1</sup>, Florian Otto<sup>1</sup>, Marie-Theres Okresek<sup>2</sup>, Rupert Halbartschlager<sup>2</sup>,  
Bianca Okresek<sup>3</sup>, Kay Strasser<sup>3</sup>**

<sup>1</sup> *Landscape architect and urban planner, bauchplan ).( (GERMANY)*

<sup>2</sup> *Landscape architect, bauchplan ).( (GERMANY)*

<sup>3</sup> *Member of the pluridisciplinary collective bauchplan ).( (AUSTRIA)*  
*studio@bauchplan.de*

### Abstract

The following paper looks at the planning process in public space projects from the perspective of landscape architects in their collaboration with various stakeholders. It shows a strategy based on a collaborative approach between the different actors, from the underlying participatory process involving client and end users to the technical development of single project features with manufacturers and subcontractors.

The first part of the paper describes the complex interrelation between different actors throughout the planning process and the related contradictions the planner can be confronted with during the design and implementation phases. The prior goal in public space planning is to transform places into complex spaces on the long-term on both functional and atmospheric level, creating a docile link and service space between existing buildings and infrastructures and those to be built in the future. Sustainable spaces are the result of complex teamwork involving local and global actors jointly assisting the creation of local identities.

In the second part, the collaborative planning process is presented in three aspects: firstly, the participation process in which the design team is confronted with representatives of the client and end users; secondly, the prototypic design phase, in which the design team develops technical features with manufacturers and specialised subcontractors; thirdly, the appropriation process by end users and actors involved in the project. The latter proves to be fundamental in the creation of a local identity and is both a natural effect as well as a consequence of the activities jointly steered by planning team and building authorities. All three aspects take place at the same time and last until after completion of the project.

The collaborative planning process and complex interrelation between various actors are illustrated with empirical observations from a practical example: the redesign and pedestrianisation of the Bahnhofstrasse in Böblingen, Germany – a project by bauchplan ).(<sup>1</sup> that was completed in 2015 – shows how public space can be transformed and generate space identity in a heterogeneous and changing neighbourhood. By actively involving all actors (inhabitants, commuters, associations, municipality, local businesses, construction companies, specialized subcontractors, different space creating professions), a new space of reference was created in a formerly car-friendly part of town. This process presented an opportunity to jointly mark space and go beyond valid standardisation.

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<sup>1</sup> The authors are part of bauchplan ).(, an interdisciplinary collective with studios in Munich (D) and Vienna (A). Awarded key projects include the Chaponnière park in Bern Wankdorf (CH), the Habsburger Platz in Munich (D), the bridge crossing the Mur river in Bad Radkersburg (border A-SLO) and the conversion of the Bahnhofstrasse in Böblingen (D) into a pedestrian zone. One of the current projects is the development of the open-air supermarket: based on the Agropolis project, "Freiluftsupermarkt" is applied as a strategic tool for the transitional use of the urban development areas Munich-Freiham (D) and Vienna-Atzgersdorf (A).

Instead of using existing catalogue products, the creation of individual space identity was stimulated through participation and prototypic design of many features specifically developed for the project. The Böblingen project shows how public space planning can act as an independent generator of urban development on the long-term, including the appropriation phase after completion of construction works, which no longer constantly involves the planner and includes a part of uncertainty.

The paper illustrates how theoretical considerations from sociologists and philosophers regarding place identity creation and place appropriation can be experienced in practice throughout the different phases of a project. Furthermore, it highlights the role of the designer in this pluridisciplinary process as an expert for development processes, which can only be controlled to a certain extent, hence a role which is at the same time decisive as well as limited in time.

**Keywords:** public space, landscape architecture, collaboration, participation, prototype, appropriation

## 1 COMPLEXITY IN PUBLIC SPACE PLANNING

While in small private projects the designer is only accountable to his client who is usually the main user, public space projects have a far wider organisational chart involving various categories of users, different administrative departments as well as various contractors and subcontractors. Contrary to most architectural projects, they usually are not based on a precise spatial programme. The design team faces different needs and requests; its task is not only to act as a mediator between the different actors, but also to translate expectations, at times contradictory, into a strong image and a constructed space.

In this paper, the transformation and redesign of the Bahnhofstrasse in Böblingen into a pedestrian area will be used to illustrate the complexity of urban space planning processes and describe collaboration strategies, which aim at developing a place identity with all actors involved.

As part of a larger urban development programme in the lower part of Böblingen, a district town mainly known for its automobile and computer industries, the project is situated within a heterogeneous and changing context (Fig. 1). The Bahnhofstrasse is the main axis leading commuters from the train station to the old town and is flanked by a variety of shopping and retail activities: it acts as the forecourt for a new shopping mall with almost 25,000 m<sup>2</sup> of sales floor space and provides the access to existing retail and crafts, some of them in buildings which are already condemned for demolition. What was missing in this part of the town is in Karen Franck's and Quentin Stevens' words a "breathing space": "Cities are composed of a great variety of place types. In between the more constraining ones, the private and enclosed places of the city (...), lie public spaces, often outdoors, where definitions and expectations are less exclusive and more fluid, where there is greater accessibility and freedom of choice for people to pursue a variety of activities. Here is the breathing space of city life, offering opportunities for exploration and discovery, for the unexpected, the unregulated, the spontaneous and the risky." [1]

Being confronted with a diversity of users, the Bahnhofstrasse needs to adapt and at the same time provide many different functions. Even after completion, the public space (partly pedestrian, partly shared space with delivery access) remains what Belgian urbanist Michiel Dehaene would call a "contested space". The task of the landscape architect is to settle the conflict between the different claims and give this space a "public character" [2, p. 99], in other terms give the street space back to the people. Fig. 2 qualitatively shows how various, potentially conflicting user categories occupy Bahnhofstrasse depending on the time of the day, respectively the day of the week.

Besides the typically wide spectrum of users, the project also involves different departments of the city council, various contractors and subcontractors as well as stakeholders of parallel construction sites, all of which are bound by contractual obligations and facing responsibilities both in terms of assuring full quality and respecting a certain budget. Part of the landscape architect's task is to manage the interfaces between these actors. The Böblingen projects illustrates how these actors can be involved in different steps of the planning process and thus contribute to the creation of a local identity through participation, prototypic design and appropriation.



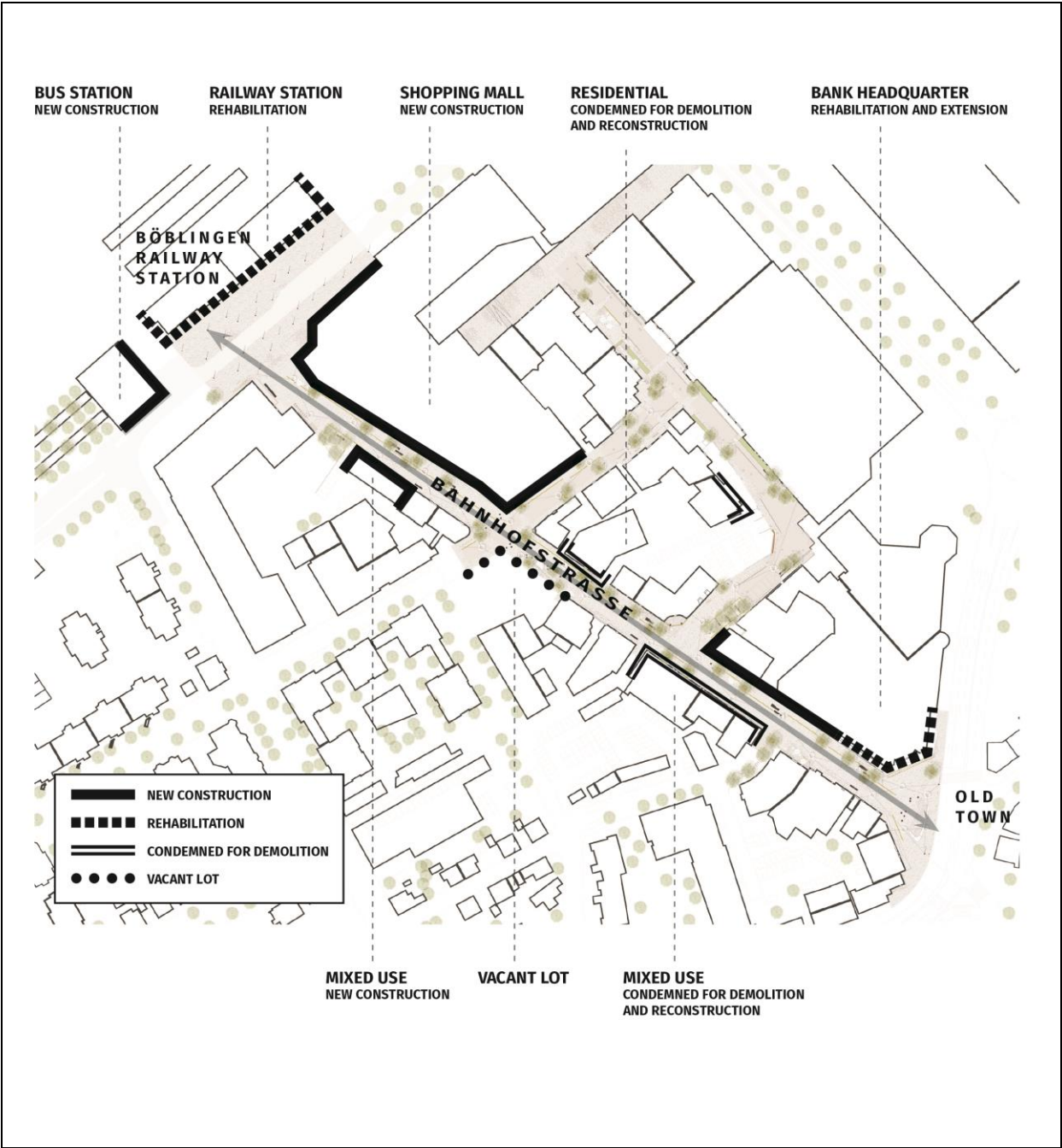


Figure 1. Site plan of the new pedestrian zone in Böblingen connecting the railway station with the old town, flanked by numerous developments.

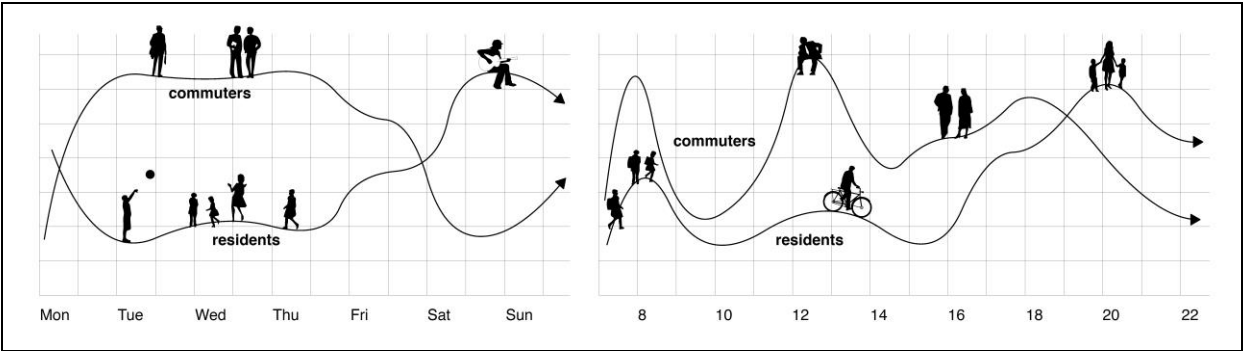


Figure 2. Variation of uses in public space in the course of a week (left) and in the course of a working day (right).



## 2 CREATING IDENTITY

While it is undisputed that public spaces are in most cases projects intended for the long-term and their permanence over generations facilitates the creation of public realm, as it has been indicated by Hannah Arendt [3, p. 55], the creation of identity is a process that can already start at the very outset of the design phase by involving both the client and the users in a participatory process and the manufacturing companies in a prototypical development process. Falke and Balatti clearly highlight the role of dialogue in the creation of “place-identity”: “a social construction 'that people create together through talk' rather than a personal construction of the individual.” [4, p. 5] This also means that the designer – whether architect, landscape architect or urbanist – cannot dictate a place-identity. By showing potentials, questioning established ideas, anticipating future situations and moderating between stakeholders, he is an important actor, but the creation of identity is a collaborative and, up to some extent, a unpredictable process.

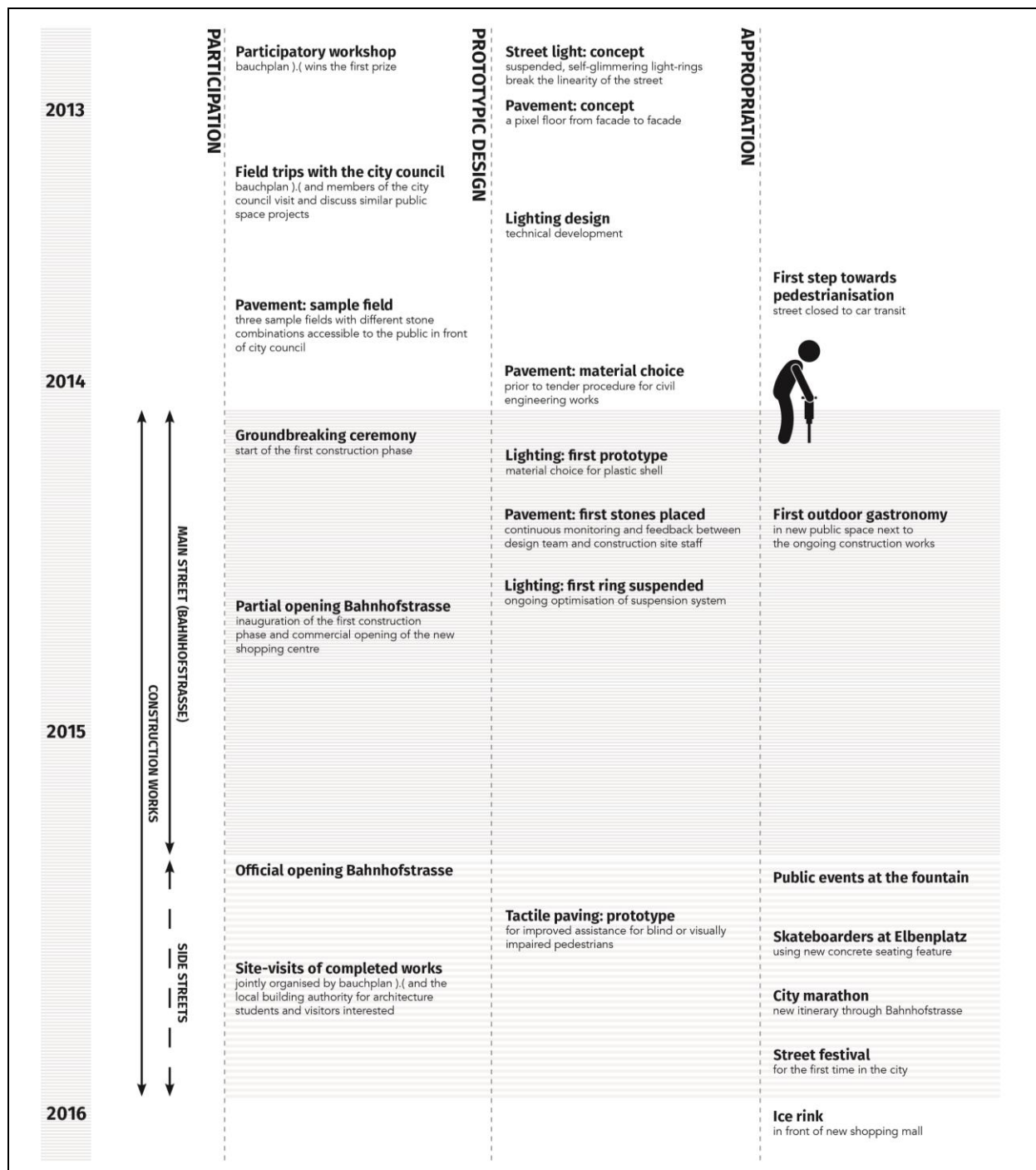


Figure 3. Project timeline with milestones regarding participation, prototypic design and appropriation.

## 2.1 Participation

For internationally working offices, a new competition brief often represents a new mission for an unknown client. In some cases, the designer is already an active user of the space he is asked to transform, in other cases he faces a completely unknown context. The designer needs to interpret the mission statement he is confronted with and convince the competition jury, in order to be offered the possibility of implementing his ideas. In public space competitions, the difficulty often resides in the conflict between strong ideas and defined rules, leading to the exclusion of experiments, as described by Richard Sennett: “The emphasis on integration puts an obvious bar on experiment; as the inventor of the computer icon, John Seely Brown, once remarked, every technological advance poses at the moment of its birth a threat of disruption and dysfunction to a larger system. The same threatening exceptions occur in the urban environment, threats which modern city planning has tried to forestall by accumulating a mountain of rules defining historical, architectural, economic, and social context – ‘context’ being a polite but potent word in repressing anything that doesn’t fit in, context insuring that nothing sticks out, offends, or challenges.” [5]



Figure 4. Participation throughout the project: on-site discussion with representatives of the city council about appropriate paving materials (left); site visit with architecture students and the mayor responsible for the building authority after completion of the construction works (right).

During the redesign of Bahnhofstrasse in Böblingen, many prototypical elements were tested and specifically developed for the project due to a common approach and mutual trust between the stakeholders. The preliminary design itself was already based upon a participatory workshop in which the design team was directly confronted with the end users and their expectations. The following steps were conducted in tight collaboration with the contracting companies and different representatives of the city. The design process did not only include the collaboration with the city administration and city marketing department, but also the consultation of operation and maintenance personal of the future public space – so as to guarantee a seamless handover of the project. This collaborative approach allowed the use of individually designed products: street furniture, lighting, gutter covers, tree grids, etc. were specifically developed for the project. Until the final handover, the project timeline (Fig. 3) was characterised by numerous discussions aiming at the validation of alternatives with the client and the development of technically sound solutions with the manufacturers. Together with the city administration, the design team organised on-site visits and discussions, during the different construction phases and even after completion of the project (Fig. 4).

## 2.2 Prototypic design

At first sight, the current trend for standardisation and use of certified catalogue products seems to facilitate design processes and reduce responsibilities from design teams. At the same time, BIM models and computer-aided manufacturing tools improve communication between project participants and reduce, as indicated by Piller and Reichwald, “the trade-off between a wide range of variants (flexibility) and production cost (productivity)” [6, p. 390]. This allows late adaptations and customizations throughout the entire manufacturing sector and subsequently more freedom on the planner’s side. There may be potential similarities between extensive customization and what we call “prototypic design” – i.e. the process of specifically developing new features for a given problem in a specific context; in the first case however, the parameters are set by the industry, in the latter by the designer.

In public space projects, design teams are asked to materialise the client’s and the user’s expectations in a defined context. In this regard, the use of specific non-serial products can mark a strong overall image, contributing both to the identity of the place and the development of the personal user identity, as described by Karen Sievers in her research about spatial attachment. [7, p. 40]



Figure 5. The semi-transparent torso-shaped luminaries specially developed for the Bahnhofstrasse in Böblingen: testing of different shell materials with the manufacturer (left) and luminaries suspended in the public space (right).

With respect to the picturesque old town, downtown Böblingen is characterized by post-war residential and commercial architecture without any representative elements. One of the scopes of the Bahnhofstrasse project was to provide a strong visual feature that would make this part of the city representable, recognizable. In other terms, considering the transient character of most of the existing space-creating elements in the project area (buildings condemned for demolition, regularly superseding retail activities, rapidly changing shop windows), the task was to generate continuity within change and build a strong collective and quasi permanent image in line with Boesch’s definition of personal identity: “a permanent background structure that allows identification and recognition” [8]. This idea was materialised in the Iberian granite stone pavement, a long-term investment that was based on deliberate technical aspects (durability) and social considerations (ethically acceptable production) after a series of discussions with the city council. The concept of identification and recognition was also decisive in the design of the luminaries. The choice of suspended, self-glimmering light-rings with a strong day-time and night-time impact has already emerged during the initial



participation workshops and was developed with the lighting designers and the manufacturers to meet the precise requirements of the project: besides common optimisation processes regarding light quality, energy efficiency and durability, important design objectives also included the choice of the right materiality and transparency for the shell, adjustment with surrounding materials and light fonts as well as the detailed design of the suspension system (Fig. 5). The choice of a serial product would have saved time in the detailed design phase and reduced costs on the short-term. However, as space building design elements, the luminaries fulfil functions reaching even further. When considering their economical and ecological equations, one should also take into consideration their long-term impact on the overall quality of public space.

While this prototypic approach strongly influences the perception of space by its users, it also provides the occasion for cohesive teamwork between designer, client and manufacturer, potentially leading to a joint sense of authorship after completion of the project – regardless of the degree of contribution or expertise covered. In the present case, the final Böblingen luminaries, named after the city, have become a catalogue product of the manufacturer. Moreover, the city oftentimes uses them for city marketing purposes.

## 2.3 Appropriation

During and following a project's implementation, users develop a personal relationship to the constructed space, a process which is often referred to as appropriation. Sala Llopart defines appropriation as "a process of mutual adapting between the architectural space and the inhabitant: on the one hand, the space designed by the architect somehow influences the inhabitant, conditions his practice; on the other hand, so as to adapt to this space, the inhabitant tries to overcome imposed conditioners, transforming them formally and conductively." [9] This definition can be extended to public space. Public space is accessible and used by all; it is discussed publicly and politically and thus has a strong impact on identity. Some authors go even further, for instance Cupers and Miessen when they state that "the identity of a city is not in its architecture, but next to it." [10] For the creation of a collective identity, public space needs to be appropriated by its different users. During the design process, the landscape architect anticipates future uses and appropriation scenarios. However, he can only assist to a certain extent with the creation of local identity.

The Böblingen showcase illustrates how tight collaboration between the designer and the different stakeholders involved (inhabitants, commuters, associations, municipality, local businesses, construction companies, specialized subcontractors, different space creating professions) can lead to a fast appropriation during the design process and the months following the official handover of the new public space. The project timeline in Fig. 3 shows how appropriation took place alongside the participatory and prototyping processes in Böblingen.

The first step towards pedestrianisation of the street was its closure to car transit prior to the construction works, removing some of the characteristic linear barriers of the street typology, especially the distinction between road and sidewalk and allowing people to walk from façade to façade: this new level of freedom was rapidly discovered, above all by children on bikes and scooters (Fig. 6). Some of the consecutive appropriation signals were steered by the city's marketing department (street festivals, city run, ice skating rink) and show the city's strong support of the project (Fig. 7). Other signals came directly from the users: outdoor seating areas emerged in front of restaurants and cafés, the interactive dry fountain became a new meeting point and the curved concrete seating feature behind the fountain was soon discovered and actively used by local skateboarders. These empiric observations confirm that public space is naturally exposed to its users, its "everyday artists" to use Michel de Certeau's phrasing, especially in loose spaces where use has not been constrained by the designers. The French philosopher even grants author's rights to the users for their decisive role in the success of a project [11].

This partial unpredictability of the users is only one of the parameters the designer cannot fully control. Multiple unknowns, for instance social and climatic factors, can potentially influence the development of the project after the official handover. The onus lies with the design team to anticipate future threats and opportunities and to grant the project enough degrees of freedom. For Kim Dovey,

planners should “rethink the idea of place and place identity without the suffocating ideal of place as closed or finished.” [12] According to Dovey, public space is subject to both local and global phenomena: “In each case they are local places enmeshed in global fields of power [...] They are also fundamentally local – constructed from the contingencies of site and society, climate and economy.” [12]



Figure 6. First signs of appropriation during construction works.



Figure 7. Prototypic design: from product design to place identity.

### 3 CONCLUSION

The Böblingen project illustrates a collaborative approach aiming at involving all actors in the design process so as to create not only a new space but also a new place identity. Empiric observations conducted during the planning, construction and handover phases show how the prototypical design approach combined with the use of common participatory tools can lead to a parallel process of appropriation and identity building among the users. They also revealed the designer's role and its limitations. Due to the inherent unknowns in planning processes of outdoor public spaces, the landscape architect can be seen as the specialist of unpredictable processes. He is the actor who anticipates future social, political or climatic changes, but he progressively leaves the projected space to the users. Hence design and use can be considered as two phase-shifted interpretations of the same space.

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## PROCESS ANALYSIS OF ENVIRONMENTAL PERCEPTION OF PERSIAN GARDEN BASED ON PSYCHOLOGICAL THEORY OF ENVIRONMENT

**Bahareh Bathaei**

*PhD student, "Ion Mincu" University of Architecture and Urbanism Bucharest (ROMANIA)  
bahar.bathaei@gmail.com*

### **Abstract**

The crisis in the relationship between man and nature as well as the population density and congestion of the information in the current era is leading to a tense atmosphere in life. The recent findings in researches of environmental science show that responses to human needs have a great influence in reducing of psychiatric, physical and social disorders. These needs are such as the need for privacy, relaxation, self-evaluation and self-actualization, increased mental health and also existence of nature in the physical environment of life.

In the meantime, designers, architects, planners and urban planners have raised the ideas of designing home gardens, healing gardens, enclosed gardens and participatory public parks in the city. Their main goal is to respond to the psychological needs and connect the citizens with nature. In other words, in contemporary life style, most of us crave moments of peace and security, a chance to mediate and smell the air, or quite literally experience the scent of flowers. We can find this peace in a "Persian garden".

The word "paradise" comes from the concept of the Persian garden ("Firdaus" in the Persian language means enclosed garden). The idea of paradise delights all the senses as well as the soul. It is important to note that the Persian garden is an enclosed or walled space, thus a special kind of "building". The garden which is embedded in the city fabric is the most special paradise analogous to a green oasis in the desert.

The Persian garden must speak to all five senses. The experience is sensual as well as spiritual. The garden is designed to accentuate the smells of lush plants, the sound of rushing water and singing birds, the textures of smooth tile and moist earth, the tastes of fruit, and the sights of colorful flowers and mosaics mirrored in placid pools. It exists on both the most abstract symbolic level and the most direct experiential level at the same time. The sensual engagement is cyclical, based on the temporal effects of night and day and the seasons.

Persian gardens may originate as early as 4000 BCE. Decorated pottery of that time displays the typical cross plan of the Persian garden. During the reign of the Sassanids (third to seventh century CE), and under the influence of Zoroastrianism, water in art grew increasingly important. This trend manifested itself in garden design, with greater emphasis on fountains and ponds in gardens. During the Islamic occupation, the aesthetic aspect of the garden increased in importance, overtaking utility. During this time, aesthetic rules that govern the garden grew in importance. An example of this is the Chahar Bagh, a form of garden that attempts to emulate Eden, with four rivers and four quadrants that represent the world. The design sometimes extends one axis longer than the cross-axis, and may feature water channels that run through each of the four gardens and connect to a central pool. Sunlight and its effects were an important factor of structural design in Persian gardens. Textures and shapes were specifically chosen by architects to harness the light. Trees and trellises largely feature as biotic shade; pavilions and walls are also structurally prominent in blocking the sun.

Through more recent centuries these gardens, with their logical geometric grid system, have achieved a universal appeal. Today the enclosed inner garden becomes an escape from a concrete

jungle of the crowded city in which we live, and reflects a return to love and appreciation of nature, and perhaps above all a place to mediate and rest. We already know a garden's healing properties but sometimes forget how it stimulates all our senses.

A review of the theories of researchers about Persian garden shows that the most researchers, in addition to introducing physical characteristics of these gardens, have always emphasized on semantic system and psychological effects of them on humans. Also they have pointed out the effect of the garden in creating a sense of calm in humans and as an invitation to reflection and thought. But so far nothing has been spoken about how this effect happens and no opinion on the subject is presented.

This paper tries to find answers to the above questions from the point of view of psychological theories of environment. In this regard, the concentration system of Persian garden that links the physical and semantic systems of the garden have been investigated.

The process of perception of Persian garden is conducted by using inductive and deductive methods which are based on the published researches. In this regard, we refer to behavioral science theories as well as to the perception of the ecological systems in understanding the garden semantic systems.

As a result, this study shows that the "environmental DETACH in Persian gardens can lead us to spiritual ATTACH" [4, p. 302] and this approach proposes a practical solution for architects on how to create gardens in a contemporary design language.

**Keywords:** Persian gardens, environmental psychology, human-nature, environmental perception.

## 1 PERSIAN GARDEN

In the Persian garden, the garden architecture system is consisting of organizing, operational, physical and semantic systems. Also, systems of landscape, perspective, light, shadow and sound are combining and mixing the resulting quality of physical system. They are specific to Persian gardens.

Most researchers emphasize that "in the Iranian garden materialism will be improved to spirituality" [1, p. 10]. In fact, Mirfendereski concludes that the Persian garden creates a pure, calm space. It is a space without any tension and an environment of great thinking [2, p. 68]. It can be said that the quality of comfort and relaxation and its quality as a place for thought, contemplation, meditation and creativity are created by structural elements such as number, geometry, color and material. The Persian garden is both physical and spiritual experience. The aroma of succulent plants, the melody of water and birds, the smooth tiled texture and taste of wet earth and the sun, the fruits, the flowers and the colorful mosaics that are reflected in a calm catchment, are all outstanding. These characteristics-exist both at a symbolic and abstract level and at an experimental level, in the same time [3].

## 2 RESEARCH METHODOLOGY

In this research, qualitative content analysis method is employed. Also, "inductive category development" and "deductive category development" methods are used on the basis of published research in this field.

## 3 A COMPARATIVE STUDY OF THE ECOLOGICAL MODEL OF PERCEPTION AND THE PROCESS OF PERCEPTION OF THE PERSIAN GARDEN

### 3.1 The main direction system in the garden

In a Persian garden, geometrical structure is determined directly and sometimes it is intersecting axes of motion (perpendicular to each other). The direct movement in the garden has a sense of purpose, urgency, meditation. Slope is important in a Persian garden. The entrance is placed at the lower level and a pavilion is placed at the higher level. The water moves in the opposite direction of

individuals, from the pavilion towards the entrance. Moving up in the garden, (the climb) gives the sense of discovery, motivation for reaching the higher level. There is an inherent human tendency to move towards the targets. In moving towards the target, the individual usually selects the easiest route, and tends not to deviate from moving in a specific direction until there is force. The diversity (e.g., moving from shade to sun) is pleasant for individuals. They move directly to the target (which is usually the higher part of the garden where the pavilion is located) on major and minor axes of motion of the Persian garden. It is much more pleasant to see the perspective of running or falling water that is passing in the opposite direction. In addition, the play of light and shadow, the fragrance of plants, the cool weather affect all the five senses. The geometrical structure of the Persian garden defines direct and targeted axes. Based on researches in environmental psychology, these paths give a sense of purpose, reflection, and exploration to the individual. The main direction of the Persian garden and the concentration system both make a favorable environment of privacy, relaxation and reflection for individuals.

### 3.2 The concentration system and stimulus of the five senses in the Persian garden

In the Persian garden all five senses of man are attracted as in each and every aspect of garden an individual sense is engaged. This is not only accidental or arising from the characteristics of nature but, in the Persian garden, natural and artificial elements are deployed essentially proportional to the human senses. We need to ascertain that in untouched nature the five human senses are also used, but in a Persian garden, based on human desire, senses of sight, hearing, smell, touch and taste are affected. In a Persian garden compared to wild nature, the five senses are used purposefully and distinctly by using specific techniques.

In the Persian garden, geometric structure and all the components and elements of the environment have been designed in such a way that they create a concentration system. In fact, all the existing systems in the garden (physical, geometrical, plants, water, shadow, perspective, sounds and the establishment of structure systems) have direct, identified and defined effects on the human senses. But the important point to note is that all these systems simultaneously stimulate the five senses. In Table 4 each physical system (water, planting and structures) of the Persian garden are described. Also the way that these systems effect human senses is defined. As well, the geometric system of Persian garden which defines the main direction system is studied.

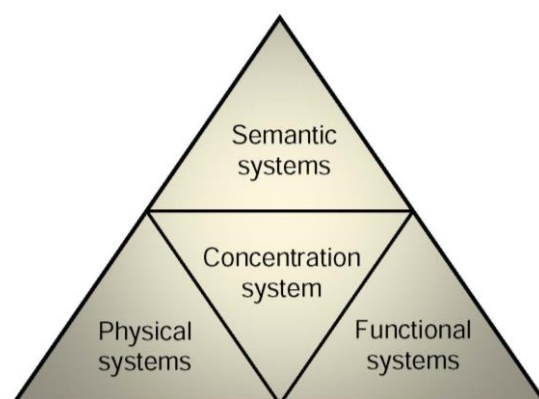


Figure 1. Concentration system as one of the architectural systems of the Persian garden

## 4 THE IMPACT OF THE CONCENTRATION SYSTEM ON THE SENSE OF SURROUNDING IN THE PERSIAN GARDEN

In a Persian garden, the concentration system results simultaneously from the effects of the main direction system and the perception system of the five senses. And what causes the sense of surrounding in the garden is the concentration system.

The researchers assessed that the wall surrounding the garden is the main factor in creating a sense of restriction. But a study in the architectural systems of the Persian garden shows that a more

intuitive feeling of restriction and surrounding in the garden is the result of the concentration system. When an individual walks on the main garden axes, he rarely sees the wall surrounding the garden, not only because of the distance from it, but also because of the axes and the garden paths which form in fact the view corridor (nor the hallway). So they make the sense of surrounding and restriction. The sound of water and birds creates the sense of surrounding in hearing. The fragrance of flowers and fruits attracts the sense of smell and taste. Ultimately, the move on soft ground, along with a feeling of softness and the water plants remind us of the sense of touch. Therefore, for the sensory richness in the Persian garden, all the five senses are impressed in the same time and the sense of surrounding and restriction is intensified. This feeling of restriction can lead people to a feeling of desired privacy.

Table 1. Study – the formation of the concentration system in the Persian garden by the physical systems and its elements

Physical Systems		System of Water	System of Plants	System of Structure
The perceptual system of senses	Eyesight	<ul style="list-style-type: none"> <li>- Finding and hiding water;</li> <li>- Water Show such as linear, surface, volume, waterfall, river, drainage, pond, fountain, atmosphere;</li> <li>- The effect of using special methods to increase the volume of water such as “Sine Kabki” and special methods of flooring, in terms of visuals;</li> <li>- Reflection and lighting;</li> <li>- Reflects the image of garden elements and creates a virtual visual extension.</li> </ul>	<ul style="list-style-type: none"> <li>- Creating a cone of view instead of viewing angle;</li> <li>- Creating sense of restriction and focus on vision;</li> <li>- Creating a virtual density by planting using the five-point method;</li> <li>- Emphasis on the vertical axes by planting trees and creating green body;</li> <li>- The variation of colour in environments with a combination of flowers, plants;</li> <li>- Combining a variety of fine or coarse texture of Flowers, Plants &amp; Trees.</li> </ul>	<ul style="list-style-type: none"> <li>- Create a physical sense of restriction through the surrounding walls;</li> <li>- Pavilion for seating and watching the garden;</li> <li>- Create visual order and symmetry;</li> <li>- The establishment of residence and service buildings around the garden without distorting the visual system;</li> <li>- A sharp contrast between the pavilion and the green trees (impact on the targeted main axes of motion);</li> <li>- Coherence in visibility along the inside to outside and the outside to inside the pavilion.</li> </ul>
	Sense of hearing	<ul style="list-style-type: none"> <li>- Create a variety of voices and water sounds;</li> <li>- Echo;</li> <li>- Create closeness and focus on hearing.</li> </ul>	<ul style="list-style-type: none"> <li>- Attract the birds;</li> <li>- The sound of wind moving through the trees.</li> </ul>	<ul style="list-style-type: none"> <li>- The impact of auditory stimulus inside the pavilion.</li> </ul>
	Sense of smell and taste	<ul style="list-style-type: none"> <li>- Creating moist soil and scattering the smell of soil in the garden.</li> </ul>	<ul style="list-style-type: none"> <li>- Making an aromatic space with flowers, plants and fruit and creating closeness and concentration;</li> <li>- Fragrant fruits;</li> <li>- A variety of edible and therapeutic fruits.</li> </ul>	<ul style="list-style-type: none"> <li>- The impact of stimulus of smell and taste inside the pavilion.</li> </ul>

	Sense of touch	<ul style="list-style-type: none"> <li>- The use of wind, water and shadow to create cool breeze;</li> <li>- Using various techniques of flooring to make routs</li> </ul>	<ul style="list-style-type: none"> <li>- Shading;</li> <li>- Stylized air;</li> <li>- Remove the dust in the air.</li> </ul>	<ul style="list-style-type: none"> <li>- The effect of tactile stimulus inside the pavilion;</li> <li>- Texture of tile, brick, wet ground and indigenous materials.</li> </ul>
System of main direction	Main direct axes	<ul style="list-style-type: none"> <li>- Combination of water system and axes of motion;</li> <li>- The presence of water in the motion axes.</li> </ul>	<ul style="list-style-type: none"> <li>- Create visibility on the motion axes;</li> <li>- Shading on motion axes;</li> <li>- Narrow streets with shady trees.</li> </ul>	<ul style="list-style-type: none"> <li>- A sense of purpose, urgency and exploration;</li> <li>- Creating direct visual axes between the entrance building and the pavilion.</li> </ul>

## 5 ANALYSIS OF THE PROCESS OF PERCEPTION OF THE PERSIAN GARDEN USING A COMPARATIVE ECOLOGICAL MODEL OF PERCEPTION

Based on a comparison between the psychological theory of environment and the concentration system and the main axes of direction in the Persian garden, the relationship between physical systems and systems of meaning through a system of concentration are as follows:

The physical systems of the Garden cause the garden concentration system to occur, a system that simultaneously affects all five senses. By creating a sense of restriction, a separation of the individual from the outside of the garden is obtained (desert, or town, or overcrowded environment). With this separation from the external environment, in the first place, a kind of calm is created.

The concentration system in the Persian Garden invites man to thought and reflections (invitation theory of environment). At this stage, based on the experiences, knowledge and prior information that an individual has directly or indirectly received from the cultural environment, he/she understands the semantic system of the Persian garden, or at least accepts and links to it. In the next step, the individual is invited to self-assessment and self-review. In the later stages, the possibility of achieving self-realization in the personal life emerges. This issue is described in Fig. 2.

So the concentration system has a multilateral effect on individuals and it is very effective in the human perception of the environment. In summary, the effects are as follows:

- The link between the physical and semantic systems of the garden;
- The effect of invitation to relaxation;
- The effect of environmental quality on the invitation to reflection;
- Impacts on the quality of desirable privacy in the garden and the invite to self-assessment;
- Impact on mental health.

An absolute isolation of outside world by emphasizing on concentration on inside magnificence. Persian garden touches deep inside human sense and a spiritual bonding is what it makes.

Therefore, it can be concluded that: the concentration system of the Persian garden creates a kind of “environmental detach - spiritual attach” in the garden and links the physical and contextual systems of the garden together. Also, this system has influence on improving the mental health of humans. It can be said that: gardening with the aim of improving environmental quality (in the past), could be changed to gardening with the aim of improving mental health (nowadays).

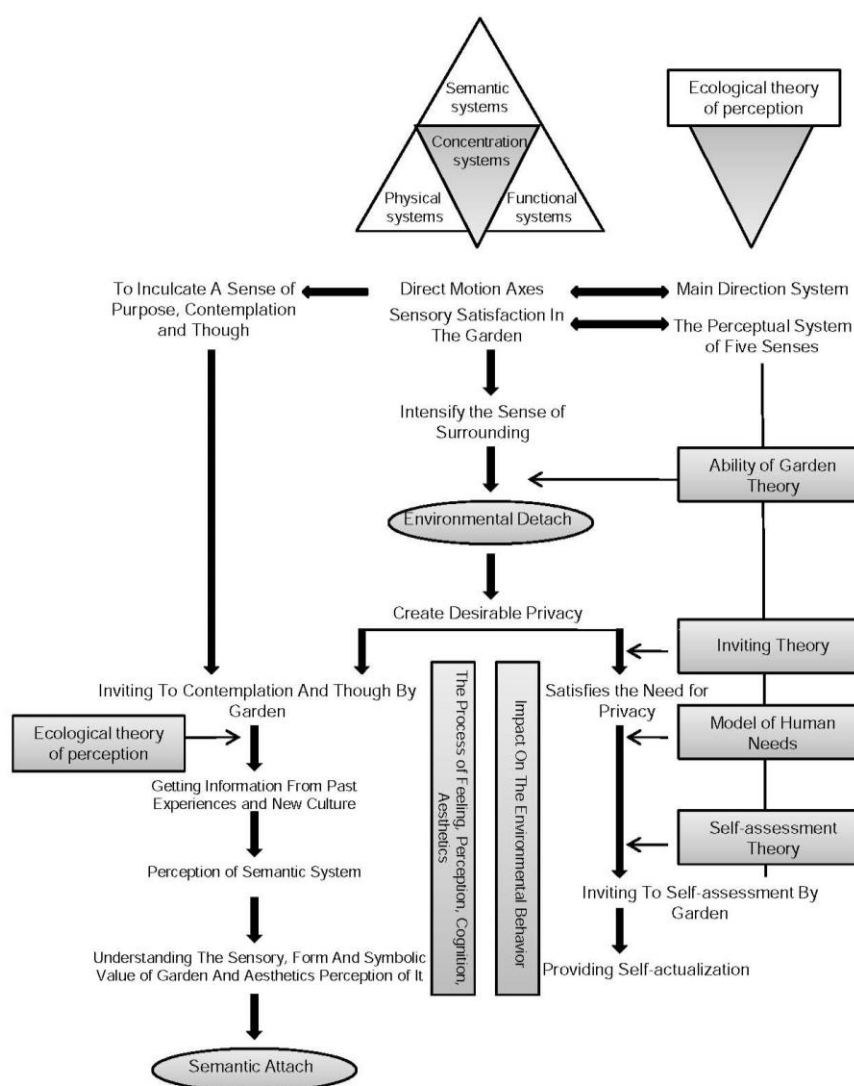


Figure 2. Analysis of the process of perception of the Persian garden using a comparative ecological model of perception

## 6 CONCLUSIONS

In this study it was determined that the Persian garden architecture system that forms the functional, structural and semantic systems, by coordinating elements of the five senses in the garden, creates a concentration system. In addition, through the quality of the main direction system, it provides a place of relaxation, reflection, self-evaluation and self-actualization for the residents in the garden.

In addition, in the process of analysis of the physical and semantic systems and of the links between them, the main propose is to find the reasons for which the senses of relaxation and reflection in the Persian garden, lead to an experience of "environmental detach - spiritual attach". In this moment the individual can obtain the desirable privacy in the garden. This desirable privacy, based on the ecological model of perception, in the first step, cause to the creation of peace, contemplation and reflection in the garden. At a later stage, and based on human knowledge, it leads to perception of semantic systems of the garden. Finally, it leads to recognizing the value and beauty of the garden. Therefore, in this study, the process of perception in the Persian garden, in short, was named "environmental detach – spiritual attach".

Therefore, it seems that the recreation of the Persian garden in the physical environment of life such as in the contemporary cities – which attracted the attention of architects, planners and urban planners – should be based on the process of perception of environment by the modern

man because in this way we can improve the mental health of the community in response to the needs of the modern man and we can start his self-actualization.

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## RITUAL AND SPACE

### TOWARDS AN ARTICULATORY METHODOLOGY OF WORLD VIEW, BODY AND ARCHITECTURE

**Pablo Berzal Cruz**

*ETSAM (SPAIN)*

*info@pabloberzal.net*

#### **Abstract**

Architecture, unlike other cultural expressions, has followed a path of specialization and detachment from the vernacular. During the twentieth century, the "ruptures" in architecture were produced to distance itself from the traditional in a continuous flight forward, away from the cultural realities, creating virtual spaces which were impossible to connect with a here and now. Societies no longer identify themselves with their environments. The built environment does not express the world view of its society, and the landscape has been transformed into a homogeneous space that stretches across the globe.

In this article I present a new methodology in development that takes the basic units of human activity, i.e. rites, as minimum cultural units that form a correlation between world view, body, movement and space in order to understand how we can reconnect with the current cultural reality and what direction architecture should take to face the problems posed by the twenty-first century.

**Keywords:** ritual, performance, senses, architecture

#### **1 DANCING WITH RITES**

From the '70s, the anthropological approach of Evolutionary Biology generalizes, focusing on human plasticity in response to the social and physical environment, reaching the understanding that the human being is the result of genetic and cultural heritage. They presume that the human species is an animal species, and biological aspects cannot be ignored, but it is also a social species with wide cultural characteristics. Biology and culture are constantly interacting thereby realising that only by considering both aspects at the same time will they be able to improve the understanding of human behavior.

C. Richard Dawkins argues that all life evolves through the differential survival of replicating entities. These replicators have evolved to become the DNA in living organisms, including humans. For Dawkins, most of the features that are unusual or extraordinary in man can be summed up in one word: culture. Despite not being something uniquely human, culture however is what defines us as a species [1, p. 215].

We are genetically programmed to develop the capacity to learn, store and transmit information but the particular way of conduct of different individuals belonging to a specific culture is passed down from generation to generation. According to Dawkins, the transmission occurs through a new replicator he calls *meme*, that is: tunes, ideas, slogans, fashions in terms of dress, ways of making pots or of building arches. Its dissemination, analogous to genes, occurs when moving from one brain to another through a process that can be called imitation [1, p. 217-8].

Despite the many detractors of the Dawkins theory, the idea of mimetic cultural transmission is commonly accepted. This way of transmission and learning through repetition of actions produces habits or patterns of behavior is characteristic of a culture. Community identity is necessary in human groups that exceed the number of individuals that we are able to know personally so as to recognise that others are members of the same community and can be trusted to behave in accordance with the common norm. Cultural performance is implicit in the continuous manipulation of symbols within a community, and of course, in their rituals and ceremonies that serve the maintenance of memory and community identity [2, p. 154].

Human culture presents such complexity that humans cannot eat, breathe, defecate, reproduce, sit, move, sleep or lie down without following or expressing some aspect of the culture of their society [3, p. 73]. The question is which human actions can be considered as rituals. Mircea Eliade argues that we may say that every responsible activity in pursuit of a definite end is, for the archaic world, a ritual. For him, human acts — those, of course, which do not arise from pure automatism — their meaning, their value, are not connected with their crude physical datum but with their property of reproducing a primordial act. He considers acts like food, sex or marriage as rituals [4, p. 15, 35]. On the other hand, Erving Goffman, with the publication of “The Presentation of Self in Everyday Life” (1959), focuses on the small daily acts of social interaction that qualify as rituals, because he is dealing with acts through whose symbolic component the actor shows how worthy he is of respect or how worthy he feels others are of it. One’s face, then, is a sacred thing, and the expressive order required to sustain it is therefore a ritual one [5, p. 19]. The distinction between ritual and other cultural activities is under discussion, since the opposition rite/non-rite, as far as all human actions are concerned, has blurred boundaries. The anthropologist Daniel de Coppet suggests that we must understand the indissoluble pair ‘ritual/non-ritual’ as a specific characteristic of a particular collective identity [6, p. 3]. Thus, irrespective of the relationship between ritual/non-ritual, rites can be considered as an essential part of the formation of cultural identity, since even that relationship would be part of the cultural identity.

Currently, Ritual Studies agree to define the rites as an almost linguistic, initially autonomous, system which appears in human groups prior to the spoken language and remains, correlative to the language, one of the more powerful tools for configuring a group and creating bonds of solidarity and intercommunication between its members [7, p. 77-8]. Émile Durkheim, with the publication of his work “The Elementary Forms of the Religious Life” (1912) [8], is the first to consider rituals as a social instrument, beyond religion, which expresses the ideal that a society has of itself. He finds four main functions in religions that occur through the rites; they introduce discipline, unite the group, revitalize and produce “euphoria”. The rites of passage prepare men for social life by imposing self-discipline and practice of certain asceticism. Collective rituals bind together the group and, therefore, serve to reaffirm their common bonds and strengthen social solidarity. The practice of rites maintains and revitalizes the social equity of the group and helps transmit its enduring values to future generations. Finally, collective rituals have a function of euphoria that serves to counter feelings of frustration and loss of faith, restoring the sense of the essential rightness of the moral world of which they are part.

The preservation of cultural heritage and its transmission will be part of the recurring themes of Ritual Studies, especially in Cognitive Anthropology. In “Rethinking Religion” (1990) by Ernest Thomas Lawson and Robert McCauley [9], and “Inside the Cult” (1995) by Harvey Whitehouse [10], one of their main interests is to describe how religious rites are transmitted and remembered. They argue that there are two modes of transmission and preservation corresponding to two types of rituals. On the one hand, are the rituals that are repeated frequently, whose mode of transmission is basically doctrinal rather than sensorial and they make use of semantic memory. On the other hand, there are the rituals that are repeated rarely, the form of transmission is through a great pageantry and events of great emotional impact and make use of episodic memory. These rituals are configured to be fixed in the minds of participants by activating the flash-bulb memory. In turn, they cause a vital transformation in the individual producing solidarity among participants. They argue that the message of the ritual is in the own body experience.

Durkheim’s exploration established an early link between representations and forms of embodied

experience and emotion. Following this line of research, Victor Turner, who consolidated the anthropological study of ritual in the 1960s-70s, also explored this relationship. For him, *communitas*—a generalized sense of communion or comradeship, a characteristic of the liminal phase of ritual—provides the context in which ritual participants are particularly receptive to the messages inherent in ritual symbolism [11, p. 103]. He develops “social dramas”, a concept defined as dynamic processes in which stress and tensions embedded in the social structure can be expressed and resolved [12, p. 28]. At the end of his career, Turner proposes a series of performative experiences with Richard Schechner, *re-presenting* the social dramas of Ndembu studied by Turner in his field work. For Turner, these experiences open a door to a new way of doing anthropology and ethnography. He considers that by participating in a ritual performance, with its kinesiological and cognitive codes, this enhances the collective and individual understanding of conflict, the emotional structures of “social dramas” and the deep sense of village [13, p. 96].

So far, we have seen that Ritual Studies consider the rites as the main transmitter of culture, the rituals are part of our personal and social daily activities and the fundamental means of expression of the rites is the body through performance. Ritual Studies have given little or no attention to the configuration of the rituals of space and architecture as one of the most important expressions of cultural identity, more so since they are physically implemented in terms of space and time.

Turner is one of the first anthropologists, and one of the few interested in the spatial aspect of the rituals. In his field work and in his experiences with Schechner he is interested in the space from a semiotic perspective [11, p. 42]. Turner follows Mircea Eliade in his considerations about space. Eliade states that every territory occupied for the purpose of being inhabited or utilized as living space is first of all transformed from chaos into cosmos; that is, through the effect of ritual it is given a “form” which makes it become real [4, p. 20].

The development of the Archaeology of Ritual has expanded the understanding of the relationship between ritual and space. Archaeologist Trevor Watkins shows that there has been little or no attention to the space where ceremonies or rituals should take place. He states that the scene where the ritual is performed is critical for the production of the sensory impact necessary to activate the flash-bulb memory. Watkins suggests that the first monumental architecture, sculptures and other smaller visual representations, constituted the material correlations of ideas about the nature of those communities, their lives and their worlds. He suggests that acts of the construction of these monuments, the making and placing of the sculptures, and the repeated remaking, refurbishing, and finally the concealing of buildings and the deliberate defacing of sculptures were forms of ritual performance. Even the solid and durable material forms of architecture require that the community or their representatives continue to enact symbolising actions in order to sustain the abstract notion of collective identity that they represent, even for a house to be considered as home [2, p. 155].

Archaeologist Evangelos Kyriakidis intends to follow the characteristics of the rituals enunciated by Catherine Bell to establish the relationship between space and ritual: Formality, tradition, invariance, rule-governance, repetition and performance [14, p. 94-164]. As an archaeologist, he tries to find the traces left by the activity, in particular rituals, in a human settlement [15, p. 37-8]. He recognizes the difficulty of this task because there is a great number of mundane activities which could, with the appropriate intentionality of actions, be turned into mini-rituals. He assumes that what differentiates a ritual of joint action depends on the mental state of a decision. However, the decision or intention with which an action is performed not only varies from person to person, from ritual to ritual, but also spatially and temporally. Thus, the “minimal common denominator” of the intentionality of ritual performance is the ritual *per se* [15, p. 15]. But how to perform a certain action is part of a culture, it must be common performance, not an individual reaction to a specific cause, no matter how much culture affects the individual. The issue is the success that concrete action has in a group, and if the group decides to add it to their repertoire or not. This is what will determine the cultural identity and characteristic architecture of a culture.

The ritual is presented as the way through which a society embodies its worldview, its beliefs, its art, its science, and its emotions, everything that represents its culture. They can be small or large collective events these actions that will determine the domestic space or collective space, but it is the

key to understanding the architecture. Although little attention has been paid so far from Anthropology to how the rituals determine our living space, Performance Studies, as we have indicated, and performance art, however, have themselves inquired the relationship between body and space, opening up possibilities for new studies that focus on how the anthropic space is formed through the ritual performance.

## 2 PERFORMANCE ART AND SPACE

According to Turner, *to perform* is thus to complete a more or less involved process rather than to do a single deed or act [13, p. 91]. For Marvin Carlson, the term *performance* has become extremely popular in recent years in a wide range of activities in arts, literature, and social sciences. *Performance* is a specific event with its liminoid nature in the foreground, almost invariably, clearly separated from the rest of life, presented by performers and with the presence of an audience, considering both the experience and made of a material which must be interpreted in which to be reflected, to engage emotionally, mentally, and physically [16, p. 1].

Performance became accepted as a medium of artistic expression in its own right in the 1970s. It has been considered as a way of bringing to life the many formal and conceptual ideas on which the making of art is based. Live gestures have constantly been used as a weapon against the convention of established art. According to RoseLee Goldberg, performance art is an open-ended medium with endless variables, executed by artists impatient with the limitations of more established forms, and determined to take their art directly to the public. For this reason its base has always been anarchic. By its very nature, performance defies precise or easy definition beyond the simple declaration that it is live art by artists. For it draws freely on any number of disciplines and media for material — literature, poetry, theatre, music, dance, architecture and painting, as well as video, film, slides and narrative — deploying them in any combination [17, p. 9].

Moreover, performance art has the capacity to transform space and time, as its main feature is that it takes place here and now. Marina Abramović considers that performance deals with the present and the present is the only reality we actually have. It is a time-based art. If you are not present right here, right now when this thing happens, you miss it [18]. It is only here in the present that allows performance to explore in space, in its meanings, in its scale or shape. Many artists during these decades have been interested in space: ORLAN, VALIE EXPORT, Tehching Hsieh and Marina Abramović to name but a few.

ORLAN's work focuses on the body and all the possible poetics it has been able to explore. From early on she is interested in the body in relation to space. In one of her first works in 1964, she started the "Marches au ralenti" ("Slow Motion Walks"), in which she would walk as slowly as possible between two central parts of the city. In this performance ORLAN sought to demonstrate the variability of the perception of distance in accordance with the speed of movement of our own body. In a later work, which she started in 1965 and developed for years, she performed the "MesuRages", in which she would use her own lying body as a measuring instrument, called the "ORLAN-body". In this performance, she would measure how many people could fit within a given architectural space, using her "ORLAN-body" as a unit of measurement. Her goal was to perform Protagoras' idea that "man is the measure of all things", and it was at the same time meant as measuring up the art institutions — Guggenheim, Centre Pompidou, Andy Warhol Museum and many others — fighting them, because they ought to be there to support the art and the artists, but often the artists do not receive the place they should in this institutions [19]. The imposition of human scale in this work is clear, but we can also see an appropriation of space through the body.

VALIE EXPORT develops her first works under the influence of the Vienna Actionists, known for their performances that reinterpret the ritual language and are always accompanied by scandal. EXPORT in her work "Körperkonfigurationen" (Body Configurations), conducted between 1972 and 1976, stood at different places in Vienna manifesting the tension between the individual and the ideological as well as the social forces that shape urban reality, recognizing the psychological effects of built and natural environments. In other performances like Tapp- und Tast-Kino (Tap and Touch Cinema) in 1968-1971, and in 1968 Aktionshose: Genitalpanik (Action Pants: Genital Panic), she alters the

established order between the public and private sectors through the transgression of exposing the female genitals in a public space. Touch Cinema was performed in the streets of ten European cities over three years. Wearing a wooden box fronted by a curtain on the upper half of her body, EXPORT invited people to reach inside and fondle her breasts. Action Pants: Genital was performed in Munich in an art cinema where experimental film-makers were showing their work. Wearing trousers from which a triangle had been removed at the crotch, the artist walked between the rows of seated viewers, her exposed genitalia at face-level. This confrontation challenged the perceived cliché of women's historical representation in the cinema as passive objects which were denied agency. The contrast with what is usually called "cinema" is obvious, and is crucial to the message. In EXPORT's performance, the female body is not packaged and sold by male directors and producers, but is controlled and offered freely by the woman herself, in defiance of social rules and state precepts. Also, the ordinary state-approved cinema is an essentially voyeuristic experience, whereas in Export's performance, the "audience" not only has a very direct, tactile contact with another person, but does so in the full view of EXPORT and bystanders.

Tehching Hsieh is an inspiration for the explorers who try to understand the pulse of life in space while his "One Year Performances" are a milestone in the history of contemporary art that posed countless debates about limits and gear configuration. We can mention his first work "One Year Performance. 1978-1979", in which he lived for a year confined in a cell of 3.5 x 2.74 x 2.44 m, built in his studio in New York, furnished only with a wash basin, lights, a pail, and a single bed. During that year, he did not allow himself to talk, read, write, or listen to radio and TV. "One Year Performance. 1981-1982", during which he spent a year on the outside, not entering buildings or shelter of any sort, including cars, trains, airplanes, boats, or tents. He moved around New York City with a backpack and a sleeping bag, except for a problem with the police that led him to be retained for a few hours at a police station. Essentially, these experiences change our previously established relationships about space, our perception of the environment, of the city, about society, about our own beliefs, our cognitive processes and our physical and mental limitations. Hsieh tells how, during the time he was confined in a cell, he assigned different meanings to the few elements that made up the furniture, the bed was his home and the other elements were the outside world, or how his routines were affected by schedule and that he was exposed to the public, trying not to drink during the day to avoid having to urinate in the presence of others.

Marina Abramović's interest in relation body-space is present throughout her career. We can cite one of her works, "The House with the Ocean View", in 2002, during which she lived for 12 days on three open platforms in the Sean Kelly Gallery in New York. She did not eat or speak, nor did she have any privacy: the rooms were open and spectators were even invited to observe the artist through a high-powered telescope. In this work she ritualize the simple actions of everyday life like lying, sitting, dreaming and thinking which focuses, in effect, on the manifestation of a unique mental state.

Abramović calls our attention back to the present. In her works "The Artist is Present" or "512 Hours", she highlights the need to place ourselves in the present, in the here and now. In recent years she has been developing a method, the Abramović method through MAI (Marina Abramović Institute), with experiences in Brazil and Greece, trying to prepare performers for their work, but it also serves for the public to have the experience of the present and thus develop their perception. In her work "As One" in Athens, in 2016, she invited the audience to focus their perception on space from the consciousness of self, trying to reduce the actions involved in this process. During the same event, she presented the progress with her method configured as a collective performance, as well as the work of 29 artists previously selected by Abramović and trained following her method.

The Abramović method consists of a series of exercises that Abramović has taken from different methods of different cultures. It is about learning to focus attention, directing it to the senses and action. Abramović considers that the mind is our greatest friend and our greatest enemy at the same time. It is easy to control the body, but very difficult to control the mind. Performance has to do with the balance between body and mind. This method is done for everybody and it is not necessary to be an artist to take part in this process. Anyone can take part and learn from it [18].

Regarding the works presented by selected and trained artists, it was an exhibition of long-durational performances that placed special emphasis on issues related to space and time. The proposals generally probed into the limits of body and mind focusing on minimal action in minimal space. Virginia Mastrogiannaki in her performance “Jargon”, counted the seconds for 8 hours each day for 7 weeks. During the same time, Nancy Stamatopoulou, with her work “White Cave”, lived between three white walls repeating the same slow movements. Yota Argyropoulou in “One Person at a Time” shared her *room-fishbowl* with a visitor who could gain access into a symmetrical room and interact with her.

Performance art shows us a path of inquiry into space with the body on multiple levels, but the Abramović effort is especially interesting in its attempt to illustrate the mental state we must reach to understand the relationships established between body and space. As many traditions show, that mental state goes through focused attention on the senses, as it is through them that we relate to space and reality. Anthropology and Sociology have been interested in the senses and offer other possibilities for study from that point of view.

### 3 NEW APPROACHES TO SPACE. TOWARDS AN ARTICULATORY METHODOLOGY

Since the 1980s, Anthropology has incorporated the study of the senses. Initially, it was inspired by a desire to explore the insufficiently investigated nonvisual modes of experience. Currently, it is recognized that we give meaning to the world not only through language, but through all our senses and their extensions in the form of various means, and also there are certain places and certain matters to which the senses gain access while the words cannot [20].

The anthropologist Tim Ingold is interested in the senses and doing. He concludes that the human being acquires knowledge through acting, doing things. “The mere provision of information holds no guarantee of knowledge, let alone of understanding. Things, as proverbial wisdom has it, are easier said than done” [21, p. 1]. He asserts that Anthropology must be based on the in-depth knowledge of the living world through observation and description and then propose new forms, like Art and Architecture do. “There is, perhaps, a discipline waiting to be defined and named where these three fields meet” [22, p. xi]. For him, the active observation is fundamental to the practice of Anthropology. He proposes simple experiments in learning, such as wet a stone and see what happens, remove your shoes and walk a foot feeling the texture of the soil, and saw a plank to understand that this requires the ability and the strength of the material. His conclusions about these simple experiments are the following: referring to the first experiment, the materials cannot be defined only through the description of their qualities, but must include relations with the environment, what he calls *stories*; in reference to the second experiment, it is a wakeup call to our perception of the environment through our feet. Ingold considers that Evolutionism has paid much attention to the development of hands in humans, while bipedalism is one of our clearest evolutionary brands, which in fact has led to build our environment by adapting it to our form of transportation; the third experiment leads him to reflect on the process of performing a task and the development of human skills and technology [22].

Ingold’s studies are related to the vision of the archaeologist Chris Tilley, who introduces the philosophical concept of phenomenology in landscape archaeology with his work “Phenomenology of Landscape” (1994) [23], in which he suggests that by experiencing the landscape and monuments *in situ*, they could be studied in a new way. He argues that Neolithic monuments, which he studied in different landscapes, are connected with landscape features such as rock outcrops and valleys of their environment. For him, a person visiting a place experiences it differently than a person who lives nearby and experiences it daily and during different seasons. The sights, sounds, smells, and activities in one place affect the way that people experience them when they spend time there. A phenomenological study takes time, because to get to know a landscape it should be experienced for several hours a day during different seasons, and in different weather conditions [24, p. 26].

For our part, we have begun to develop a method that allows us to study the architectural space through body and action. Since 2014, the Department of Architectural Projects ETSAM, Polytechnic University of Madrid in the group led by Alberto Morell Sixto, we established a series of exercises



aimed at students and performed in specific architectural spaces or workshop space, aiming to develop perception and generate a new form of approximation and compression space different from the usual.

During the trips that were made within the department, with groups of about 70 students, we established a set of routines to get a better understanding of the places we visited, which could be divided into: spatial, sensory and emotional. These routines included a performative component, since the point is to perform an involved action, as Turner suggests. It is to use the body in relation to others with the intent to explore space and understand it in a deeper way, as if performing a ritual.

Space actions aim to establish a direct relationship between body-space. That is, to measure the space with the body, as ORLAN proposed in her performance *MesuRage*, but unlike her, not use a *someone-body*, but the bodies of all the components of the group, forming different configurations depending on the character of the place. For example, in the theatre of Epidaurus we occupy a full radius and form several arcs. We also group to understand the dimension of a surface, such as the Treasury of Atreus, where we all stand together under the monolith forming the lintel of the entrance.

The sensory routines urge the students to perceive space with senses other than sight, as also proposed by Abramović, yet, with a concrete sense of investigation, pretty much along the lines of Ingold and Tilley. To feel the touch of the different materials that constitute the building; the heat it emits, its roughness or its strength. To perceive space through sound; listen to the echo, the vibrations when they absorb the sound of the different materials or in the distance between the surfaces. The action is also required with respect to the noise, it is not only about listening to a static form without interacting with the space but doing sound exercises to facilitate the perception of the spatial qualities. We also encourage the perception of smell and knowledge of the space.

Emotional routines are closely connected to sensory routines. Perceiving the site of an unusual way a different emotion appears immediately in our mood. Considering the character of the place in which we were, we tried to lead the group to a particular emotion linked to the site. So, in the theatre of Epidaurus the action we introduced had a festive character, while in the Treasury of Atreus it had a ritual character or in Delphi and Sunio a sacred character, of contemplation of a sublime nature. The performance itself causes a different emotion, an openness to the new and the unknown that renews the intensity with which the place is perceived.

Within the workshop space, we have also recreated spaces analogous to those posed by Turner and Schechner in the *re-presentations* of Ndemu rituals. The difference is that we do not have a social drama in which a ritual is performed, but we have an architectural space with its history, its relations with the environment, its uses, with its own drama. It is to follow the same pattern of spatial, sensory and emotional experiences, but in reverse; i.e. re-present what we have learned from *in situ* instead of moving to a neutral place, where we recreate the spatial experiences, sensory stimuli and emotions that are experienced as well as the acquired knowledge of the place. For example, we recreated the oracle of Didyma, on which we had worked previously during a visit. We recreated it through space distances, the spatial relationships between its tectonic elements, suggesting routes, the relationships established between the different uses of the building. We evoked the smells that were produced during the ritual of the divination session and tried to understand through the performance the emotions that the ritual should cause.

At the same time, in the Master of Architecture and Ephemeral Installations, ETSAM, led by Professor Carmen Rodríguez Blasco, and within the class dedicated to performance art, we conducted a series of actions proposed as teaching material to study the performance. We have begun to connect these actions with the above, giving them a ritualistic character, in the same sense as Abramović does; i.e. ritualize the simplest actions of everyday life, but fixing the attention in the space generated by the action.

## 4 CONCLUSIONS

Watkins' suggestion about the first settlements in which architecture required that the community or its representatives perform rituals on it, in order to sustain the abstract notion of the collective identity it represents, seems to have been blurred over history. During the twentieth century, human beings have been relegated from participation in the process of building our environment and our private spaces. We do not even perceive clear representatives to carry out the process, as our cognitive system has not evolved fast enough to adapt to our complex social systems [25, p. 253]. Therefore, society dissociates itself from its surroundings, there is no relationship of respect with it but, rather, it is demanding towards institutions that we believe are responsible, but do not understand their purposes.

Since the early twentieth century, architecture has been disassociated from particular cultural connections, to reach a global language that makes the differences between different human habitats unrecognizable. Little or none has been the interest in the space-body relationship, not to mention in the real understanding of the belief and value systems for which architectures are made. As a result, we have an increasingly homogeneous landscape and architecture between the alien and the kindergarten, perhaps expressions of modern societies, but that does not stop producing some unease, a certain feeling of "not going well".

This research proposes the performance or live art as a tool for investigating these phenomenological relations in an increasingly virtual context. It is a modern language that allows us to connect the multiple layers of human experience inherent to architectural space, transcending its socio-cultural context to understand the immanent, the essential underlying site. Performance is also an innovative tool for creating the site, i.e. architecture that shelters the action, either as a representation, a stage play, a building or a landscape, while at the same time it serves as a teaching tool in all disciplines in which we work on space.

If our daily actions are micro-rituals, as Goffman argues, our way of living or humanize the space, as Eliade indicated among others, is also a micro-ritual and architects cannot ignore this. We must discover these micro-rituals that make up our daily actions and relate to the spaces that have been generated to shelter those rituals. We can see the whole human activity characteristic of a culture such as ritual-like that embody their worldview. We must establish how we relate physically, emotionally and intellectually with space to give a more precise architectural response to the current culture. To do this, we take into account Ingold and Tilley's methodological approach to space, also the Performance Studies developed by Schechner and Turner, or the cognitive studies of ritual. We cannot ignore the importance of the experiences developed by artists working with performance art, even if their approaches are empirical, personal and intuitive, but they are the latest expression of our culture and our worldview.

The methodology we have begun to develop aims to fill this gap in Studies of Architecture. We do not intend to cover the immense possibilities offered by these new studies and experiences for architecture, but we intend to establish a new way of understanding architecture leading to new theoretical studies and new educational and professional practices. We have only begun the study, acting on architectural or archaeological remains and re-presenting these spaces in the workshop in a sensory and performative way. But as Tilley suggests, understanding the place and the relationships established with it takes time, visits throughout the year at different times, with different weather conditions and at different times of day – something that Vitruvius suggests in his treatise and that seems to have been forgotten or no longer considered necessary as a preliminary step to the project and its construction.

Other important areas to develop are the relations of scale with the body and ergonomics of spaces. To do this we must isolate the micro-rituals, based on daily actions and establish their degree of ritualization. The experiences of Abramović, as proposed in "A Room with an Ocean View" or in her method are useful, in particular all the exercises in what she calls "Cleaning the House" literally cleaning our body and mind via gestures and ideas that can condition our performance in the space we will study.

It is the beginning of this experience, but I think it is worth going back to give attention to the construction of our habitat, to involve society in the process of sustaining the abstract notion of the collective identity that Architecture represents.

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## FROM TERRITORIAL TO DOMESTIC ENCLOSURE

Ivo Vidal<sup>1</sup>, Ciro Vidal<sup>2</sup>

<sup>1</sup>Arch, PhD, ETSAV, Valencia (SPAIN)

<sup>2</sup>Arch, PhD, ETSAV, Valencia (SPAIN)

ivo@estudiovvv.com, ciro@estudiovvv.com

### Abstract

The feature that can better define the chameleonic enclosure is its permanence between scales since it is the element that connects the territorial, the urban and even the domestic scale. The enclosure is therefore a space independent of the scale that can be defined in some scales as unbuilt space or empty space but bounded by limits.

This article attempts to show how this single actor or architectural element which remains consistent at different scales is organized by the definition of its limits and originates the awareness of an urban enclosure at the various scales of a city. We'll also try to show that the different unbuilt areas generated in the domestic sphere, in the city or even in the territory, are based on the same concept of bounded space.

**Keywords:** enclosure, monument, territory, limit, landscape

### 1 INTRODUCTION

This research is essentially about well-known elements, but that had not been cross-connected. For example, in the Roman civilization, there is a relationship between domestic enclosure generated by the court, as the center of family life and the urban enclosure generated by the forum as a center of city life. In summary, this paper will attempt, by comparison with the domestic world, clarify how the urban enclosure is what generates the conscience of city and how the disappearance of this element within the city or neighbourhood prevents that consciousness of city to take hold.

Greek culture needed a word for the concept of enclosure, as it happens in Homer's Odyssey. Greek urban architecture was linked to this concept and its chameleonic ability to escalate made it be present both in the organization of the Greek house and in the city. The need for an internal domestic enclosure contributed to that awareness of city or polis the Greek populations had since its founding.



Figure 1. Drawing of Agrigento and Segesta. K. F. Schinkel. 1803.

## 2 ACTORS

### 2.1 Territory

The territory (Latin. *territorium*), is a portion of the earth's surface, a physical extension where the landscape is located, and is part of the complex spatial concept so linked to the sensitive and emotional aspect of the enclosure. If we analyze the term territory, somehow we discover that the boundaries that define it are mentally very complex, but are three-dimensionally linked to the finite vision and space continuum. It is a physical space linked to the awareness of the enclosure understood not as a closed three-dimensional space, but as a place mentally generated by a human being experiencing these limits. Thus, we can consider the territory from the Japanese sense of “ma” in the landscape not as something created by the composition of elements, but as something that happens in the imagination of a human being who experiences the global view of these elements.

As in a play, the elements that define a territory are the background, the figure and the scene. The scene is linked to the emptiness and incommensurable space of a plain, a lake or a green meadow. On the other hand the background is the boundary that nicely configures and dimensions the scene. It can be both a massive and tangible item like a mountain that sets a relaxing high horizontal line, or be on the contrary an almost initially imperceptible element, like a river that marks the limits of the land area by an almost invisible horizontal line that is pierced upon the surface. The third element, the figure, is a disturbing and jarring broken outline, like the peak that rises as an actor to become one of the figures of the play or the main figure (Fig. 1).

There are places where we unconsciously sense that the dialectic between background, figure and scene is particularly active and there is a harmony between the measurable territory and the tangible elements that shape its limits. This intuition is linked to the subjective and imaginary consciousness of the enclosure whose perception can proceed from multiple planes, generating the feeling of the existence of elected or holy places which we do not know why they are so. In fact the multidimensionality of that sacred character has generated a combinatorial that has not allowed to transmit the deep spatial consciousness of the enclosure outside each area, because the territorial enclosure can have such a large dimension that is very complex and difficult to relate it to the urban area or to the tectonic enclosure so linked to the scale of the domestic world.

However, the awareness of the enclosure has a subjective connotation that is linked to a deeper intuition of space, although its measurability is conditioned by the limits that define it. If we analyze these limits we will discover the relationship between the territorial enclosure shaped by natural elements and the one artificially built by the human being. The similarity between walls or platforms and the tangible elements that set the measurable limits of the territory, makes this architectural operator dimensionless and therefore chameleonic or difficult to distinguish in the landscape in which it is implanted territorially.



Figure 2. Platforms, Yucatan, Mexico.

### 2.2 Enclosure

If there is a gap in the vast literature devoted to architecture, it is about the architectural enclosure, understood as the space comprised within certain limits, the enclosed space marked or bounded.

The enclosure has been largely absent from architectural theory although it has remained in the archaeological ruins that once adopted it. When we try to visualize its beginnings, its roots, we can discover both the enclosure built by man and the territorial enclosure of natural limits to which it is subordinated and whose transformation is linked to the marks of the territory.

Although all great architects have worked inside areas that confine the limits of their architecture in a clear way, there has been little published material on this topic, probably the most widely read text is one of the few didactic writings by Utzon. In his essay [1], in addition to explaining how he applies various tools of visual calibration to his projects, Utzon describes a series of examples linked to different eras and cultures of the world where the use of the open enclosure or platform as a mechanism to delimitate architectural space has been the particular tool to relate architecture with the surrounding environment (Fig. 2).

The biggest problem in describing the enclosure is that it is also related to the feeling of the atmosphere contained in the emptiness and fullness that defines it. This awareness of the enclosure is a subjective experience that human beings feel when stimulated by the surrounding landscape. What becomes disturbing for an architect is not knowing that the landscape can become the threshold that leads to a transcendental understanding of the universe, but knowing that a previous architecture has been able to transmit that subjective experience. Since then he understands architecture linked to the creation of such awareness of the enclosure as an occupied place, and therefore as the negation of the non-place [2].

The abstract operator of the enclosure has its origin in a process of condensing, of trying to understand and synthesize the sensations that come from a place and then, from the simplicity, to reach the pregnancy that gives meaning to architecture. Getting to this simplicity means approaching the real essence of the existential laws whose complexity feeds us. Indeterminacy and ambiguity of abstract processes camouflages these synthesis processes, the simultaneous existence of contradictory elements give the wealth and power of attraction of a work of deep architecture, but also draws a veil whose dissolution is necessary to reach the clear vision of the condensation that was reached during the process of conception.

### 2.2.1 Enclosure-monument

The enclosure is defined by its boundaries and the monument constitutes a corporeal element but previously requires the configuration of the enclosure to be summoned as a reference. Therefore both are complementary.

The deliberate choice of a place whose topographical conditions are naturally advantageous has allowed man, by minor modifications of the natural environment, to find the ideal place in which a construction will provide the territorial control and the protection he needs. During the process of territorial definition he strives to bring to that natural place the awareness of enclosure that clears the understanding of its extension. In general the natural environment has shown to the man where to allocate the limits that allow him to recognize and measure the environment in which he will develop his existence, and man has learned how to transform that site by adapting buildings to the immediate topographic conditions in order to intensify the limits that define his living space (Fig. 3).

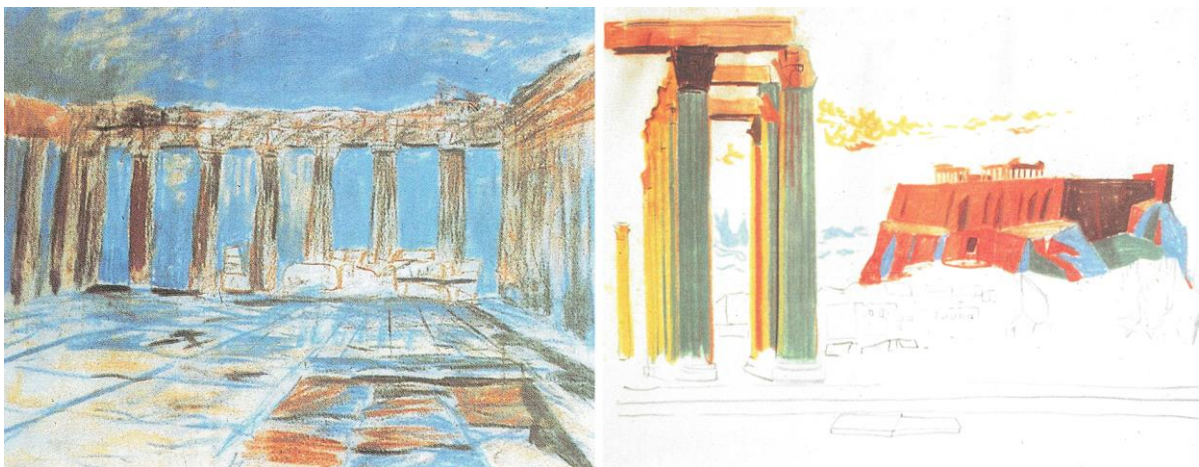


Figure 3. Drawing inside-outside, Parthenon, the Acropolis of Athens. Louis I. Kahn. 1951.



## 2.3 Monument

The word monument (Latin. *Monumentum*, *moneo+mentum*), is an expression originally derived from the concept of remembrance, memory and from the fact of warning. However, the meaning that interests us is the natural or artistic element which, by its exceptionality, is worthy of attention and even gains the right to be displayed and saved.

The monument is territorially linked to the theatrical figure of the protagonist, and his exceptionality should be displayed alone as excessive repetition can transform it into background. Thus, a small hill can be a great monument if inserted in a plain, while a jagged mountain range becomes an undeniable territorial boundary.

Power and visual domination of the territory are specific features of architectures that aspire to a stunning configuration and are therefore intrinsic of the monument that offers a striking and dominating image. However, the predominant arrangement of the monument, whose formal expression aims to impress, should occur as an event, as a special ingredient whose repetition would only cause nausea, but whose unique disposition can have a subtle and sensitive attitude to the environment.

Through this interaction with the territory architecture gradually grows from a conceptual structure and provides the boundaries between the natural and the geometric world, organizing their mutual levels of relationship, dependence and overlapping.

## 3 ENCLOSURE, LIMITS AND SCALES

The enclosure understood as the fenced, treated or limited space, the space within certain limits, is the negation of infinite space. It is the space through which man notices to what extent he is bonded to the land, where he understands that he can not break away from the place and feels as something intimate his planet, the oceans, the mountains, the rivers and valleys, the plateaus, the sky... He realizes that, with a stroke of his hoe, he can open in each row of the earth a protected place and, with each wall he builds, he can join or challenge that landscape, that open field, that hill, and possess the earth within, taking roots [3].



Figure 4. Agrigento, Juno Temple.

### 3.1 Limits

The limits may be set by three simple actions: flatten the ground, build the wall and build the lintel. Making the earth even generates a horizontal plane that deliberately denies the irregularity of the topographical conditions in the environment but allows the contemplation of it. The paving will further contribute to this differentiation with the natural surrounding environment because it generates in its edges horizontal lines that accurately mark the boundaries. The construction of the wall, means a screen whose vertical component is the counterpart of the horizontal plane on which it usually stands. Its main characteristic is the opacity of the material it is built with, as it defines the horizontal area by the obstruction of the view beyond that surface, which is protected and defined by the accuracy of the horizontal lines that are generated in its lower and upper edges. This high horizontal line generated by the wall is as space defining as the lower line located at ground level. Finally the lintel, that elevated wall laid on columns, will generate therefore a horizontal line so important in defining the space as the

one generated at ground level by the edge of the pavement. This distinctive elevated wall will also cause, for its deliberate disposition in the heights, a distant view that will render it a enclosure-monument (Fig. 4).

When architecture has a sensitive environment approach, its meaning grows gradually from a first conceptual structure conceived as an effort to understand the place, and generates a double relationship, one produced by the arrangement of the boundaries between the geometric and the natural world, and another that organizes the level of relationship and overlap between these worlds. The pursuit of rational clarity of the limits and the ambiguity thereof suggests the existence of an architectural operator that synthesizes multiple relationships and arrangements. By introducing the notion of limit in architecture these limits can be both dominant and predominant as ambiguous, fuzzy, contextual, sensitive or atmospheric. The limits can be generated and kept intact or can also gradually grow and change to a completely different level of relationship. This architectural operator so common in the natural world arises simultaneously in distant places and from different starting points because their relationship with the environment can be authoritarian or sensitive and, therefore, their attitude may vary from the domination of territory to the simple differentiation.

### 3.2 Territorial enclosure

The enclosure has acted imperceptibly in the architectural theory although it has remained as a heritage in the archaeological ruins that once adopted it. When we try to visualize its beginnings, its origins, we discover it as a territorial enclosure of natural boundaries, so it is not surprising that historically the first enclosures built by man were subordinated to the transformation of premises linked to marks of the territory.

We understand as territorial enclosure the place that has a supra architectural entity, so that it contains an internal order to position and stabilize the architectures that are developed inside. Its shape is bounded by net limits, borders or monuments. It is an architectural operator previous to the layout of the city or of any man-made construction, so it does not foreshadow a morphology, only the limits, limits of visual character.

#### 3.2.1 Monument - platform

If we ignore this adaptation of the natural enclosures, we will discover the incorporation of an abstract operator of enclosure in different cultures, but with his monument companion, which produces the occupation of the site, but has not normally survived in memory because its destruction has erased all traces. Its origin or beginning is also territorial, linked to the formal uniqueness as a topological reference, such as a visual call that allows us to measure the horizon.

The platform itself is the enclosure where the monument is located. This duality includes both the occupation and the disoccupation of the enclosure, because the complete disoccupation occurs when the platform is itself the monument.

### 3.3 Urban Enclosure

In the architecture of the city the urban enclosure has taken different names in each culture: the Greeks called it agora, the Roman forum and, since the Renaissance, squares. And it has always been accompanied by the visual reference of the unique elements such as the Acropolis, the bell towers, the obelisks, the Roman triumphal arches, etc.

We understand as urban enclosure the place whose entity in the city is subordinated to the urban layouts, since it contains an internal order to decide the arrangement of architectures. The historic city is manifested by enclosures bounded by clean limits, borders or monuments, which foreshadow limits of visual character.

### 3.4 Tectonic-domestic Enclosure

Kenneth Frampton [4] coined the term *tectonic* in architecture in order to show the material structure as an analogy of the geological tectonics referred to the structure of the earth. A tectonic enclosure

shall refer to the structure of an internal order in architecture, whose mass is formed both by the occupied volume and the vacant space.

History has deposited a huge amount of works to make the laws, circumstances and invariants that are scattered in a depth that would be incomprehensible without the methodological rigor of a research focused on the witnesses that support the principles of the dialectical foundations. Modern architecture inherited the urban operator of the enclosure and the monument, but only the great architects felt the need to seek it and absorbed it as part of themselves.

#### 4 PRIENE, FROM URBAN ENCLOSURE TO DOMESTIC ENCLOSURE

The Ionian city of Priene is, thanks to Wiegand's fortunate excavations, one of the best known of the Greek cities that have been uncovered. It has a regular urban planning where the topographic factor influenced necessarily in the final result, showing the rules of standardization of urban construction on the site. This morphologically singular Ionian city also allows to recognize the attitude of a society that controlled public construction on the large scale looking for a city architecturally unified in which they could perceive a continuous index of visual satisfaction that the isolated examples of sculpture and architecture did not allow due to its intermittent contact.

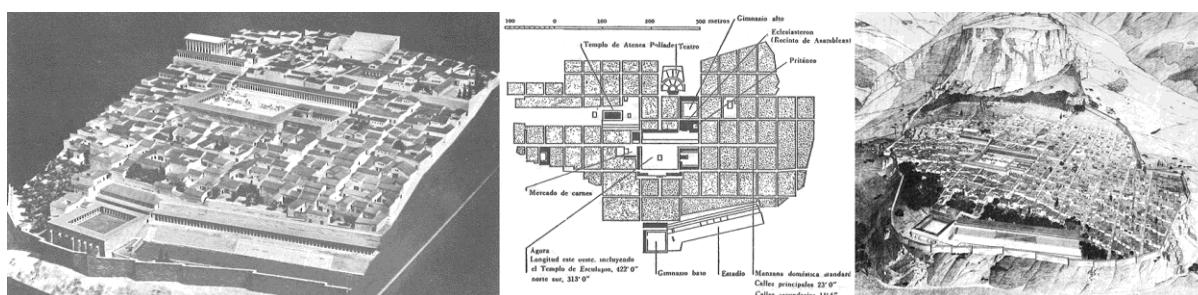


Figure 5. Model, plan and reconstruction of Priene in Ionia.

##### 4.1 Priene

The city of Priene was founded around 350 B.C. under the influence of Athens, between Miletus and Ephesus. Located on the southern hillside of the mount Mycale, immediately below a steep rock where the citadel or acropolis was built, allowed to dominate, from its high location, the wide valley that laid at its feet.

The visual satisfaction of contemplating isolated objects must have been perceived in this typical Hellenistic city with a new order of continuity. The urban planning unifies all its constituent elements, as each of them no longer receives a special treatment, but only an environment framed within its own orthogonal grid (Fig. 5).

Priene is the example of the construction of a city by applying a geometrically regular plot to a topographically irregular place, creating an unexpected effect where the building of the city is subject to the practical constraints of its disposition. The layout of the streets subordinated to the right angle is adapted to the slope, so where it gets too steep, it becomes a staircase. Through the continuous and even plot of the urban planning the elements reflect the unitary development. By insisting on a uniformity that subordinates the own enclosures of the Greek polis, the agora, the Stoa and the Temple of Athena Polia are systematized and organized regarding the texture and order of the streets.

##### 4.2 The Agora

The agora in Priene overlooks the city and becomes its center both for its virtually central position and for the ratio of its width and length in relation to the width and length of the city. The main street, oriented east to west, passes north of the agora linking it with the western entrance of the city. The most important cross street linked the commercial sector located in the west of the agora with the gym and stadium located on the south end of the town, the lower part of the slope, and also with the temenos where the temple of Athena Polia is located. The other cross streets that must have passed through it are subordinated to the civic enclosure of the agora.

The agora was connected to the city by the main street, and consisted of a large rectangular paved surface, within which there were several groups of statues. The commercial agora where business took place stood west, while the civic forum where the people gathered is located east. The Temple of Aesculapius appears to fall within its boundaries due to the longitudinal extension of the main stoa and its southern shadow. That originally Minoan agora, irregularly located at the intersection of major streets, acquired in Hellenistic times a formal definition in accordance with the overall idea of the city, becoming the great hall of the city of Priene (Fig. 6).



Figure 6. General Plan, photo and reconstruction of the northwest corner. Agora of Priene in Ionia.

Then the agora is the most important and representative area of the city, but is a subordinated enclosure which occupies two blocks, in proportion with its needs. It is a terraced platform surrounded downwardly by a staircase and superiorly by some stoas or extended porches whose rear walls are closed. On the south side a three steps stair continues to set the lower limit, while the stoa marks the upper limit, but the purpose of sealing the enclosure only happens in the corners that hold the rear end of the stoa, and the center of that wall disappears, allowing the views of the valley. So the agora becomes an enclosure that opens to the sky, but this southern front is the one that takes advantage of the terraced construction to take possession of the views of the valley.



Figure 7. Platform and temple of Athena Polia.

### 4.3 The Temple of Athena Polia

The temenos where the temple of Athena Polia is located, built by architect Piteos shortly after the founding of the city, sets a terraced and sacred enclosure, subordinated to the fabric of the city. The temple is conceived as an independent piece that overlooks the agora that extends below (Fig. 7).

## 4.4 Dwellings

Both the Hellenic (before year 323 BC, the year Alexander the Great died) and Hellenistic house (post 323 BC), have shared many of their basic elements and attributes with the monumental buildings, civic and religious, in order to reach a dignity, an aesthetic significance and architectural treatment consistent with the entity of the city. According to Theodor Wiegand, in Priene there were eighty blocks, which usually were divided into four plots of 24 by 18 meters [5]. Almost invariably, the general scheme of Hellenistic houses was organized through courtyards around which the rooms are located. By the analogy of the house and the city these atriums can be considered as the agora with its colonnades, its center, offering a home where the private family life had a high degree of independence within the safe limits of the city (Fig. 8).

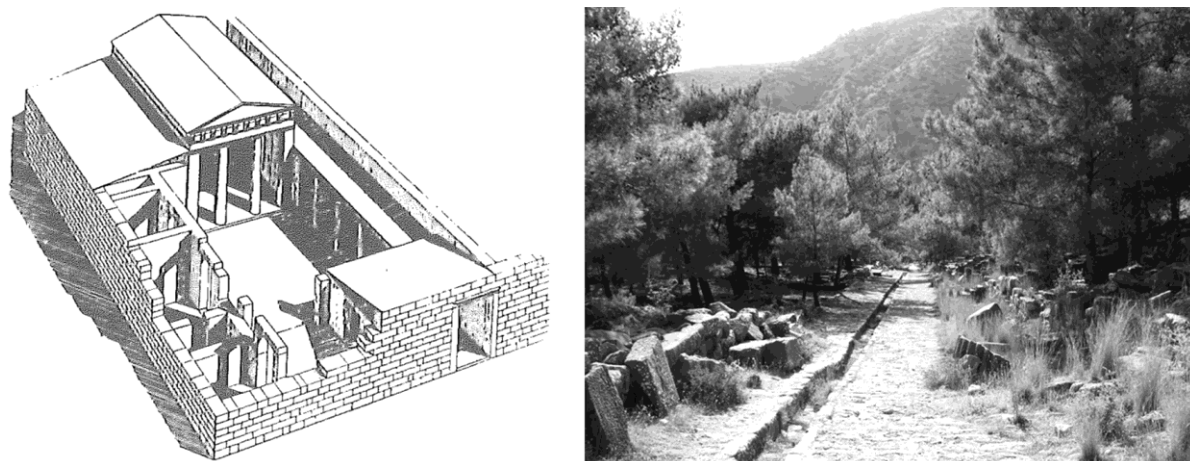


Figure 8. House of Priene, Ionia (reconstruction). Street in Priene. (With houses on both sides)

## 5 CONCLUSIONS

At present, the concept of enclosure remains valid, the architectural heritage of the miscellaneous cultures is too important. However, the architectural enclosure has been inherited and transmitted by a few who did not even seem to have been aware of it, since there are no writings that show so. The awareness of the enclosure is not due to an individual need, on the contrary, we believe in good measure, that opposing to the aimlessness of the current architecture, this awareness of enclosure is the key that many architects are looking for to incorporate in their works, albeit with more intuition than consciousness.

Both in the Hellenic and Hellenistic houses, the courtyard with peristyle generated a covered portico that granted access to the various rooms that were organized around it. The colonnade of the peristyle becomes a vital component of the domestic scheme and, in general, of the structure of the city. The Greek house has the yard that protects it from the traffic nearby, but forces it to live inwardly, towards itself, opening to the sky and the sun. The peristyle produces an expansion within the limited space of the house, and the free movement around it manifests a desire to express themselves through the slender columns and mosaics that pave the floor. All these elements point to the idea of an individual unit, a typological organization of one household.

This form of extension within a limited space links the humble house with the monumental buildings of civic and religious architecture. So the stoa of the agora with its paved surface or the peristyle of the temple is part of a theatrical ensemble where the highest voices of the choir are distinguished and need their echo, which corresponds to a wider tonal set in which the house is framed, giving cohesion to the idea of a greater unity, the city.

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## THE SCALE OF THE IMAGE – ARCHITECTURAL SPACE IMPLICATIONS

**Delia-Alexandra Prisecaru**

*Lecturer, PhD student, "Ion Mincu" University of Architecture and Urbanism Bucharest (ROMANIA)  
delia.prisecaru@hotmail.com*

### **Abstract**

In our contemporary world, dominated by the culture of image, the limits and the form of things become indistinct and therefore the scale of everything becomes unknown.

We have become secret adjuvants to the dissolution of our world by covering it up with virtual representations of immaterial information. These representations are the result of a perpetual dare of the bigness, instigated by the human need to assert itself in confrontation with the infinity of the universe.

Baudelaire litigated in his hymn that the horror is less fascinating than the beauty, but are we to stand tall and remain in awe in front of an outstanding horror that has evolved to annihilate our own culture, ideals and sense of consciousness?

Giving up our relation with the space that generated and sheltered us in the first place, and turning our backs to our anthropo-geographic roots as historic settlement habits, by starting to build cities under water or creating artificial islands in the middle of the sea, all of these are a direct consequence of the modern relative scale of the Earth and a cruel result of the globalization.

Men had taken control over the Earth, but had ignored at least one rule of nature, and that is: adaptation. Man is now everywhere but due to modern technology, he does not want to change his way of life according to the context.

Building more and bigger, higher and higher, further and further, besides having put the natural equilibrium at risk, man now finds himself out of scale in his vast creations. The space that was once irresolute, without a specific function, and because of that, identified by Gilles Clément as the perfect place for diversity, is now, if not gone, on the very edge of extinction.

Architecture must reinvent itself in order to channel this spatial conquest towards man as a social living creature with a soul, and center its values in order to make him evolve, not the technology made by him. Only architecture can manage both the scale of the object and the one of the bigness in order to bring out the meaning of living.

Kant said that the modern man must create his own space by the development of his every day activities. The contemporary tendency is the exact opposite: the already built space generates the man's day to day activities. The phenomenological approach might be one of the means, but the solution has yet to be found.

The prerogative of the project in itself has to have its own freedom in order to be able to continue the tradition of architecture as an art, and at the same time capture the immaterial relations between man and space, thus preserving its future potential for diversity. The architectural project is not a vision of a complete image made on the spot, but the conjunctive result of the construction ability and man's intentions, all of which are long thought out in a lent and controversial process of the mind.

**Keywords:** image, perception, phenomenology, design process, context, place

## 1 ACTORS

The 20<sup>th</sup> Century was a belligerent and strenuous era of industry, and it had become an age in which a perpetual effuse of all human marks – such as resources, information and culture – started in the cities and ended up in almost every town and village nearby. Presented with this standard imposing and virulent billow named globalisation, reinforced by commerce, finances, mass production and technology, local traditions and habits have developed a tendency toward isolation, a self-defence withdrawal mechanism being activated only for later on to become exclusivist and antagonistic, expressing themselves by accumulations of explosive energy. It is the case of architecture as well; buildings and construction techniques meant for the downtown city area are migrating toward subsidiary regions and nearby towns. The design process starts to become more and more a matter of adjusting the **scale** of predetermined volumes, rather than a proper research process and identifying the generating factors of form, space and materiality. The concrete, the steel and the glass produced and assembled in the cities are carried to the rest of the country; consequently edifices around the world had become to be constructed out of the same materials and bearing the same technique. Moreover, this surrogate culture tries to replace the local ways and customs with a foreign entity, with ruinous effects upon cultural identity, paving the way for moral decadence, directly diminishing the creating energy of the individual, and of the community by implication. The utility values in the form of mass production objects and services had become the first priority, meanwhile spiritual values, which delineate men, are completely neglected.

Overcoming these negative consequences of globalisation and the difficulties caused by the exacerbation of the traditions and cultural differences may be achieved by shaping the perceived **image** of constructed place. The contemporary world is facing an antipodal binomial: the globalisation of the object and the segregation of people into tribes. The culture of the virtual image is replacing the local traditions, imposing equivalent standards all over the urbanised world by pressuring and inoculating the young minds, through virtual media exposure, to the same virtual representations of a non-existent reality. The result is that one tries to adopt or at best adapt the virtual presented reality to his ordinary life, regardless of the existing factors given by the local environment; the immediate answer of the new constructed space is to best accommodate this shared desire, the effect being the dissolution of our world – fascinating, until recently, through its diversity.

The natural way of forming and adapting a place at its social environment does not exist anymore. One has become used to another perspective, from which the place no longer has the capacity to adapt to the natural transformations of the everyday life; instead, it has become a rigid one that contains strict regulations. This place, when faced with a new situation or relationship, refuses to conform and is consequently abandoned in favour of a new different but equally limited place. The abnegation of the relationship with the space that generated and sheltered man in the first place, and the disregard for the anthropo-geographic roots as historic settlement habits, these are all the result of globalisation. A slight deficiency in the conception of a place in its context, it can be facilely compensated, but any deviation when it is isolated, taken out of context and reappeared in another environment, it emphasizes and it becomes exacerbated.

R. Arnheim argued that the individual, as well as the place, are defined by a series of relationships, formed firstly with the nearby objects, secondly with the environment to which and where it belongs, the absence of any of them provoking confusion that is will lead to panic and ultimately, anxiety [1]. Hence man, eventually, if he continues further on this path of globalization, ignoring the first rule of nature itself: adaptation, is he destined to become alienated by the very spaces and buildings that he so avidly now wants, in order to convey to the new imposed culture – that of the virtual image.

## 2 PROCESSES AND CONSTRAINS

Architecture has become, alongside others, a meaning of expression of the dare of the bigness, instigated by the human need to assert itself in confrontation with the infinity of the Universe. It is unfortunate that man himself now finds his body out of scale in his vast creation. Some few people begin now to search for more secluded areas, closer to nature and synchronized with it, but the time

needed for all man to realize on their own this vital need will probably be too long. The space that was once irresolute, without a specific function, identified by Gilles Clément as the perfect place for diversity, is now, if not gone, on the very edge of extinction [2, p. 25]. Architecture must reinvent itself in order to channel this spatial conquest towards man as a social living creature with a soul, and center its values in order to make him evolve, not encourage the technology made by him. Only architecture as a mastered craft can manage both the scale of the object and the one of the bigness in order to bring out the meaning of living.

Merleau-Ponty stated that perception is considered the fundamental act that enables human beings to inhabit space and time, hence we can assess that architecture, through the diversity of perception, may induce the evolution of built and lived space. When phenomenology begun to be researched by architects, because of its potential to put the *essence back into existence* [3, p. 168] by direct contact with the world, the design process itself begun to shift. The main focus of the phenomenological approach is the essence of the place, established in its design. Whether that essence is captured or not is intrinsically related to what and how the space will be perceived once built. Such a space will immediately evolve into a place that organizes the space around it through its own presence. The amplitude of perpetual experiences into such a place can be vitalised by searching the essence of form, materials, light and colour that blend in with the existing context. The term *non-place*, introduced by Marc Augé [4], is an antipodal form of place with its own characteristics (Table 1), being a space to which one cannot belong to, in which one cannot survive for a long period of time, not because of the perturbation of the vital needs but because of the sense of discontent of the relationships one needs in order to conduct a proper life.

Table 1. Distinction between places and non-places

	Places	Non-places
Origin	Historical	Product of the supermodernity
Mnemonic feature	Support of relationships	Transitory function

In furtherance of creating places that assent to environmental constrains, characteristics and to the human need for direct emotional experience, buildings must gather from the soil on which they are located in. The planning methodology used in order to obtain such a result is the one that enables us to fully sense in an immediate way the reality of the site.

The process is fundamentally distinguishable from the normal one that connects the design process with the world of ideas extracted out of thin air. It includes working with abstract concepts and therefore it is composed by a sequence of steps that alternate in location: on the site and in the office. The plans and sections of the intervention thereby, the creation, is in fact a structure of balance between the abstract pattern language chosen by the architect for the project, and the living reality of the actual site. Consequently, we arrive at a general theory of practice, of approaching the process of design, that when applied each time conducts to a different result.

Accordingly, one discovers that the images, that are so advertised all over the world as advance key and icons to all the possibilities of a place, no longer exists; the true images cannot be captured in advance, and they can be viewed only on site, because the place itself cannot last once uprooted from the context in which it was conceived.

The places that emerge from this theory must be capable to establish, or better yet, to re-establish balance with the landscape and environment. Amalgamating the limits and perceptive boundaries between interior and exterior will make the individual feel more at ease, and encourage him to experience nature and interact with his siblings and with the environment. We can rely on technology to come up with new ways to manipulate materials, even the most compact ones, in order to obtain and create new layers of transparencies for the outer shell. The huge repertoire provided by the history or architecture provides us with a vast range of relationships between ground surface and

roofing that includes environments that create this continuity between interior and exterior. Correspondingly, the roofing might become in itself a new ground level, adding to the profile of the context which will commune with the constructed space.

As long as we exploit the limits of natural given materials through technology, and discover new ways of assembling or arrange them, we can evolve in a proper way, first with our minds and then by making a step further. One of the objectives would be to come up with some kind of filter for our shells that incorporates nature, thereby starting to generate not forms, but relationships with the empty spaces created by volumes. These empty spaces, that are cut-outs left outside the sphere of influences of the delimited places, have an unshaped character and often become residuals. A first step in this direction was made by a project started in Philadelphia that aims to discover the true potential of the vacant places and to resuscitate the social interaction of the community [5].

These new layers of transparencies may be obtained by applying specialized treatments to natural materials such as stone, for example (Table 2), to the point of achieving a permeable wall that inspires to be experienced.

Table 2. Stone processing by different methods

Method	State	Process	Utility	Effect
Traditional	raw	carving	filter	ornamental
Traditional	raw	cutting	barrier	flat
Tecnologised	raw	Pixelizing/fragmentation	filter	Refined transparency
Tecnologised	raw	overlaying	barrier	Refined light and shadow display

By successive fragmentation of the material, it will become a lightweight filter; an accomplished work in this sense would be Kengo Kuma's Chokkura Plaza and Shelter (Fig. 1).

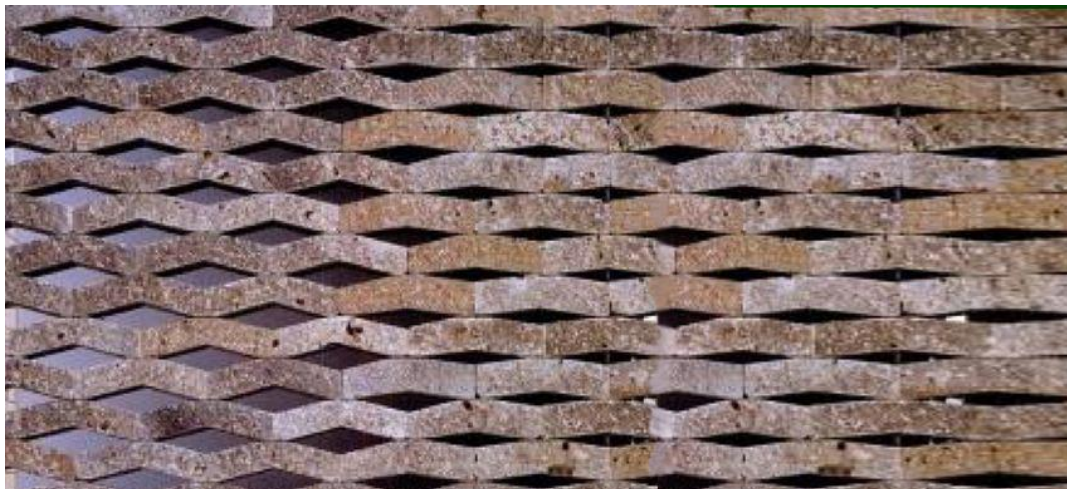


Figure 1. Example of stone fragmentation at Kengo Kuma's Chokkura Plaza and Shelter in Tochigi, Japan

The geometric patterns are not just mere ornamental elements, but have the effect of casting a shifting shadow, bring into touch an intriguing texture and develop at the same time a lightweight filter made out of local stone through the means of the latest technologies.

In order to fully grasp the final effect, one must work with many architectural models often in full scale. In making so, the form of the chosen texture, is vital to be put in the exactly same light in that will finally belong to, so another step that has to be tested *in situ*.

Such a design approach cannot leave the choice of the materials as the last step of the process, but transfer it in the initial stages, the shape and details being developed simultaneously throughout the project. The image perceived in the end can be similar to a Seurat painting [6, p. 32], the pointillist

technique might just inspire the up-to-date modern technologies to merge not just different colours of the same material, but different materials altogether.

Fragments of objective reality could recreate and recompose into a personal space. Every individual and every culture produces its own place. Architecture not only has to become more socially engaging, but it has to become sensible and dedicated to the cultural group that it provides for and has to constantly search and experiment possible solutions.

### 3 CONCLUSIONS

Nowadays, with the endorsement of digital technology and the development of advanced new methods of production and processing, new means of communication, capital changes in the political and social structures, we need to find new rational ways to conceptualize the present. These paths should merge phenomenology with the design process approach and with the critical direction of thinking about individual identity and politics of representation. It is mandatory for this new approach to extend and reach the level that contaminates all technical drawings, inducing them to shift and evolve from general details, to the real mark and imprint of the place they were designed for.

This genre of change occurs by manual and digital interaction in the design process. The prevalent of one over the other, or the absences of one of the two will conduct to an improper result. Exclusively, manual design will lead to a regress of the accuracy and promptitude of the outcome product, whether or not the unshared use of digital products will elude the very essence of the place. Thus, hand and computer drawing, models making and digital technology, when produced by men thinking only, are essential to the clear aim of an adapting architecture.

Aravot explains that architecture seeks knowledge in its historicity and the experience is the cognizance itself [7, p. 10]. Built forms and places are invested with imprints of habitation and beliefs through the employment of materials wrought by craft and modern technology. The design effort of the architectural work should always concentrate around the search of a settlement principle that would make room for the new dialectics as reasonable in relation to the context. The era of the catapulted objects into the human form of settlement, with their gargantuan emanating sensation, it is coming to an end, having done already too much harm. A humble and consequently noble architecture should emerge this way, in deeply agreement with the environment, capable to generate places that will provide meaningful experiences for any individual that finds himself emerged in it.

The prerogative of the project in itself has to have its own freedom [8] in order to be able to continue the tradition of architecture as an art, and at the same time capture the immaterial relations between man and space, thus preserving its future potential for diversity. The architectural project is not a vision of a complete image made on the spot, but the conjunctional result of the construction ability and man's intensions, all of which are long thought out in a lent and controversial process of the mind.

The scale of the image that forms in front of our eyes, and, therefore, real has to be identified with its context, emerging itself into it, and man, with his natural given aptitude of transport, will be able to experience and to feel accomplished, as being part of that place. Architecture must manage the scale of the constructed objects in order to bring out the meaning of living.

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## **FROM THE COUNTRYSIDE TO THE HOUSE: THE OTHER LIVING. PERSISTENCE AND TRANSFORMATIONS IN THE SARDINIAN RURAL LANDSCAPE.**

**Federico Aru**

*Phd Student, Università degli Studi di Cagliari, DICAAR, (ITALY)  
aru.federico@gmail.com*

### **Abstract**

The affirmation of economic systems of great importance and the extension of economic processes towards new markets have had the strength to influence those sectors which until that moment have built their economy and their society on small local relationships.

In such a structural rural society like that of Sardinia, these processes have involved different economic processes, which are deeply linked to its production history. The entrance on large markets of some local products, the alteration of some productions and the introduction, on the territory, of new industrial poles have largely brought important changes to the rural villages and landscape.

The historical Sardinian house model of the rural villages is almost always a farm house. Therefore it is an architectural unit that contains both domestic and work spaces. The modifications of the work spaces are linked, in a very direct way, to the productive dynamics of the territory more than others. In fact, here the manufacturing process that begins with the work outside the villages continues. Studying these minimal devices (which we will call the 'other living') turns out to be extremely interesting to understand the tissue changes that have as their object the urban public space and the house, in its growth and modifications. These devices traditionally regulate the interface between the private and the public space: the permeability degree, the possibilities of access, the relationships between them. In the courtyard house of plains and hills, the curtain wall of the house gets thicker because it contains the 'other living' spaces. This fact generates the continuity and the compactness typical of the Mediterranean historical villages. In the mountain houses that develop in height they are arranged on the ground zero, in close contact with the small court that regulates the access to the house. In these 'other living' spaces, so small on the urban scale but so decisive in the local economy, all those activities, which link different settlement scales, concentrate.

Nowadays the interpretation of these micro elements can evaluate how the relationship between the village center and the rural space has changed on a large scale in terms of production processes. On the other hand this research can clarify how the relationship between the way of living and the historical house typology has been transformed on the small scale. What is the value of the typology today? How is it able to absorb new contemporary instances? Does this 'other living' still exist? How are the modifications of the domestic interface regulated? Which is the relationship between them and the public space? What is the contribution of contemporary interventions compared to the urban landscape character? What are the constructive responses to the changes and what are the layers of matter that we find?

**Keywords:** rural landscape, macro-process, micro-entity, other living



## 1 INTRODUCTION

The affirmation of economic systems of great importance and the extension of economic processes towards new markets have had the strength to influence those sectors which until that moment have built their economy and their society on small local relationships. The question is if and how the relationship among the productive forms, the ecologies and the living has changed and in which form the living space has consequently been transformed. In this scale, as Brandolini says, "Architecture as modification of a specific perceptive context can be found almost throughout the history of visible architecture. The historical development of an urban block, its progressive completion, its partial remakes are the most typical examples of this fact (...)" [1].

The research will deal with the theme of the large scale – interpreted as the investigation on the large territorial space which gives rise to the different settlement forms – and will specify the delicate relationships among all the elements that connect the productive scale to the living scale, their historic dynamics and their contemporary state. The study will investigate how the changes which operate in the productive/economic sphere, transform some urban elements at the scale of the village, in terms of living spaces alterations: the house, the road, the public space. As Brandolini says about the relationship among time, progress and architecture "The most important thing is instead how the condition and the quality of the relationship among parts, or between the existing parts and the new, is the main field of action of the architecture of modification." [1].

## 2 THE CENTRALIZED LANDSCAPE. THE DECREASE OF THE SELF-SUFFICIENCY

"The characteristic that more strikes in Sardinian landscapes, is the large extension of uncultivated surface. It is possible to walk for kilometers without seeing any cultivated field." [2, p. 26]

The history of the Sardinian landscape speaks of a strong rural settlement characterized by an economic structure based on the coexistence between the pastoral and the agriculture world. What most persists in this complex island landscape is a common and constant structural composition of the settlement, made up of the close bond between the compact centre and the external territory, composed of a horticultural/arboreal crops belt, cultivated grain open fields and pastures [2].



Figure 1. Pastoral and open field in the Sardinian landscape. On the left, the village of Villanovatulo, on the right the village of Las Plassas

The '60s were characterized by an increase of the chemical and food industry (linked to the processing of livestock products, such as milk, cheese, meat). The strong historical cohesion among the landscape elements – the house, the centre, the garden, the field, the grazing – disappears. This fact has provoked the abandonment of fields and the re-naturalization of cultivated land causing a strong damage to the rural world, nowadays considered the main guardian of the landscape [3]. The social structure of the region has been badly damaged because of internal migrations (from the smallest to the richest villages/cities), the crisis of internal transhumance (replaced with extensive livestock) and the migration of shepherds towards the Italian central regions. These factors have led to the lack of all those fundamental contacts among villages.



Figure 2. Il Pastore di Ottana, Claudio Gualà, 1978

The significance of these macro-processes becomes more considerable if compared with the concept of “local”, historically defined as an extremely narrow territorial space that almost always coincided with the town borders [4]. The strong local inflection of the Sardinian landscape arises from the properties and the use of the soil, its dynamics, its cycles and its forms, which in a specific way define isolated and different settlement forms.

The economic dynamics of the last fifty years conditions influence in a considerable way the practical human life, the economic microcircuits which held the daily work of small groups of people, the daily practices and rituals, the direct contacts among people, the good food practices, the consistency of the family.

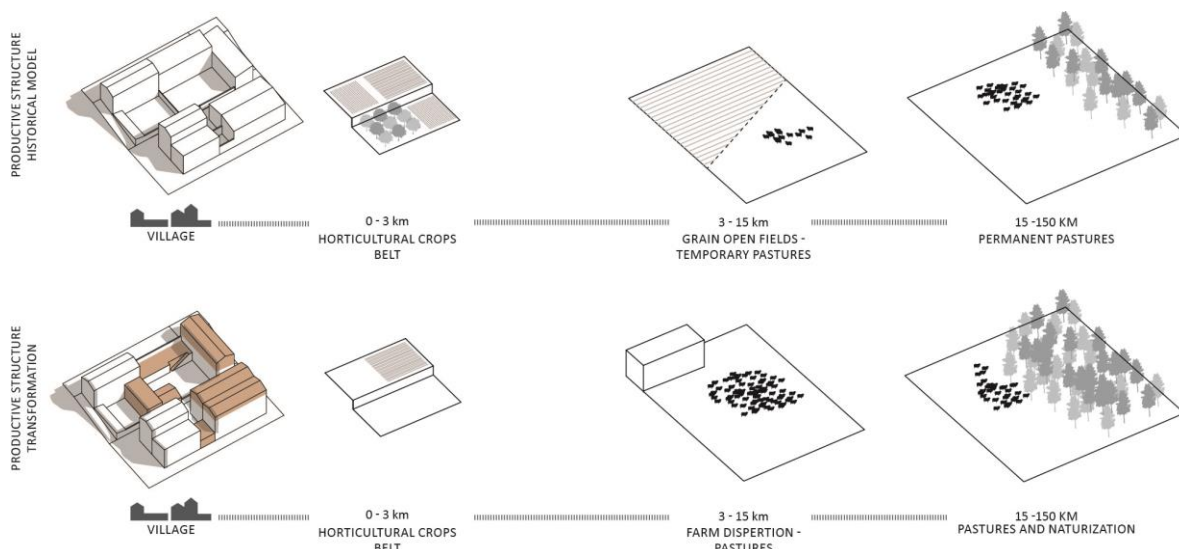


Figure 3. Transformation of the relationship between the village and the production rural spaces in Sardinian Landscape

### 3 THE DAILY VALUE OF THE FARM-HOUSE. THE HOUSE-VILLAGE ECOSYSTEM

“The Sardinian rural house in a very particular way is a dynamic element intimately related to the life of its inhabitants. Hereafter we will observe that it is an element in continuous evolution and extremely able to different changes and adaptations.” [5, p. 11]

The Sardinian village house is a deeply Mediterranean house. The enclosure is the element that proves the act of the foundation and the Sardinian house is a continuous high wall that always surrounds an introverted space and is only interrupted by the accesses. It represents both the edge of the property

and the protection of the family from the outside, the spatial detachment between the inside and outside, between the known and the unknown. The enclosure is in this sense a limit which separates two extremely different worlds: the exclusive world of the family and the community world of the village. Crossing the enclosure means leaving behind the domestic environment and being inside the heart of the village. Crossing the enclosure from one side to another signifies to surpass a door through where a change of state has taken place. The enclosure contains two elemental spaces of the housing: the empty and the full space. From the different relationships between empty and full space – which found themselves on different densities, mutual position, spatial proportions, section – different models of the house arise. The private empty space represents an essential service space for the domestic economy, for example the possibility to use open spaces to cultivate vegetables, to work on products of everyday usage or to keep free and protected the domestic animals. On the other hand the full space is a building box which is placed almost always in continuity with the enclosure and which contains all the real private domestic spaces. It represents a refuge, the heart, the meeting space of the narrow familiar community. In the shelter of the enclosure the full space is as well a sequence of small canopies and building boxes for the instrumental use which are really habitual in the Mediterranean environment and which thicken the continuous wall of the enclosure.

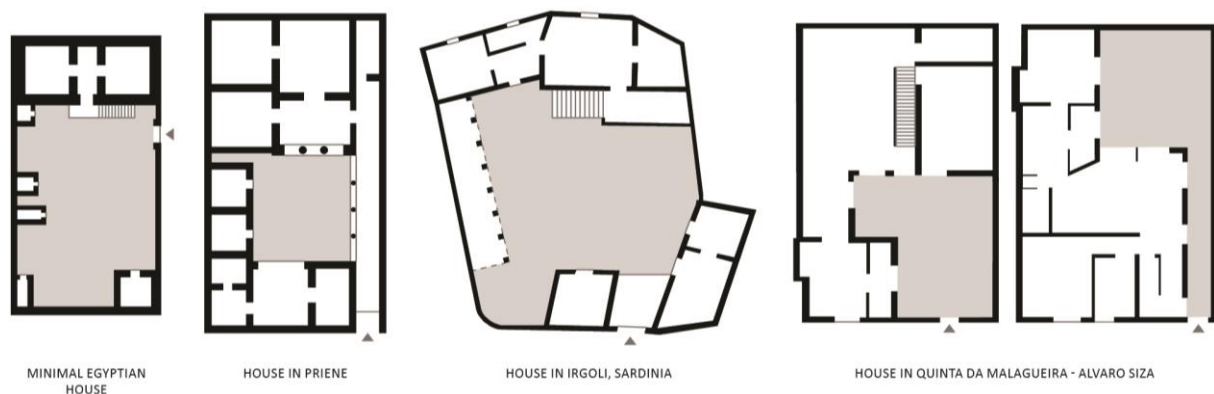


Figure 4. The Mediterranean houses in history

The historical Sardinian house model of the rural villages is almost always a farm house [5]. Therefore it is an architectural unit that contains very large uses and ways to occupy domestic spaces. The modification of these domestic spaces is linked, in a very direct way, to the productive dynamics of the territory more than others because here the manufacturing process that begins with the work outside the villages continues. Studying these minimal devices (which we will call the 'other living') turns out to be extremely interesting to understand the tissue changes that have as their origin the great economic processes and as its object the urban public space and the house. These devices traditionally regulate the interface between the private and the public space: the permeability degree, the possibilities of access, the relationships between them.

#### 4 THE "OTHER LIVING" TODAY. CONCEPTS AND TRANSFORMATIONS

"The relationship that connects a space to the person who occupies it defines the place itself and the experience that people have about it as private setting. Space and occupying compose a natural unite which loses its value if it they are absent. An observer, in this circumstance, perceiving the frustration of his expectation, defines the place as empty." [6, p. 45]

The research investigates how the traditional principles and the contemporary living are deeply connected with different physical elements which found the rural living today. A series of themes that study new ways of living the space in the founding elements of the traditional habitat will be defined. The main themes – the empty space and the enclosure – will be connected to real cases and from them principles of various kind which have led to transformations and modifications, will be abstracted from. The aim will be to demonstrate that large scale systems reflect small scale solutions and vice versa, in a chain that always describes mutual contacts and relationships.

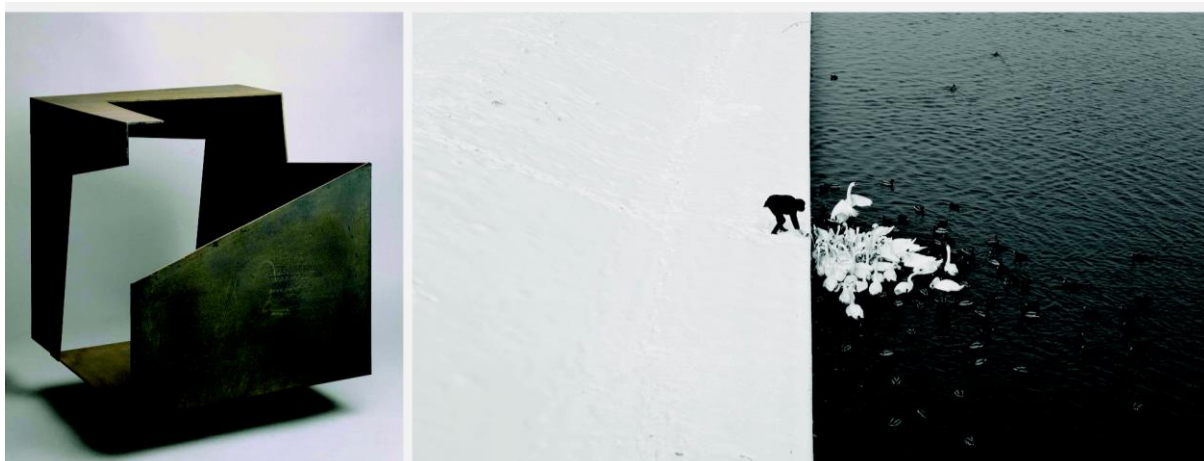


Figure 5. Contemporary visions of empty space and limit. On the left, *Caja vacía* (Empty Box), Jorge Oteiza Orio, 1958, Museo Nacional Centro de Arte Reina Sofia, Madrid; On the right, *Winter in Krakov*, Marcin Ryczek, 2013

## 4.1 The empty space

The empty space has always assumed an essential role among all the elements that compose the village. Inside the house, what defines the empty space is related to the strict relationship that it establishes with its physical limits. The enclosure and the volumes do not only define the empty space in spatial terms, but they also influence uses and specificities of the daily life. The dimension of the empty space and/or the density of the village forms determine the role of the empty space in the domestic economy: inside the Sardinian courtyard house a big empty space arranges the productive processes that often begin outside the village boundaries; in the dwellings that do not have available large open areas, the big courtyard becomes a patio, a useful roofless room for the cultivation of a small vegetable garden or for the aeration of the house. Therefore, the full and the empty space live in a symbiotic relationship, just like inside a delicate ecosystem in which each element possesses a specific use that supports the house-family organism.

Among the spaces of the villages the empty space represents in each form the community space. The public Sardinian space coincides more with the road than the square. Usually the road is a very narrow space – defined by the enclosures of the dwellings – often in shadow, where the portals of the houses appear. These factors facilitate interpersonal relationships among the inhabitants of the village more than a square could do, that instead is related to a more occasional use such as a religious celebration or a village event. It is extremely interesting to notice how, above all, in the centres of the “big courtyards”, the public and the private empty space are diametrically opposed in dimensional terms. Furthermore, the vastness of the house courtyard and the smallness of the road space give rise to extremely different living forms not only in terms of use but also in terms of spatial experience.

### 4.1.1 The inner transformation

Nowadays the empty space inside the village tries to affirm one more time these values, even if with the complexities and the contradictions of the contemporary life. The transformations of the last fifty years highlight a recurring alteration of the courtyard which has begun with the modification of its use. With the increasing invasion of the companies in the rural environment, in many cases the courtyard has ceased to assume that centralizing role for the local economy. So the productive chain arises and ends in the countryside, without invading the space of the courtyard inside the houses. The change is substantial in comparison with the role that the courtyard had in the house-village ecosystem – as outlined above. The reality shows how a slow somersault of the typology scheme which structures the courtyard house has happened, renouncing to the founding centrality of the courtyard. This renunciation is an absolute cultural fact, because it arises from a deep misunderstanding: the negation of the value of the courtyard for the daily life beyond its original function and nature.

Nowadays, in critical cases, the courtyard is often a space of conquest, degenerated by new dynamics of contemporary life and by the alteration of spatial, functional, material elements which compose it:



the architectural elements are so abundant, vernacular and decorative that they totally bump into the historical formal simplicity and the rule of necessity.

Other cases show how the courtyard is still considered as an important space for living, finding new solutions to the dynamism of the complex building additions growth. Historically, the division of private property of the building addition among heirs was a physical division. Today some cases refer to a different logic of the division of private property which is connected in some way to the theme of the traditional communal courtyards where the courtyard was a private but also a common space. Nowadays this theme is recurring in those large communal courtyards which have transformed into a space where different houses look out to. The original space of the courtyard does not exist anymore, but in some way it is re-invoked, becoming again a central space for the daily life: it is the protected space where the kids play, where inhabitants work or carry out housework. Beyond the architectural solutions and the quality of specific cases, it is interesting to reflect on the bent that a space takes to become an identity space of a small community.

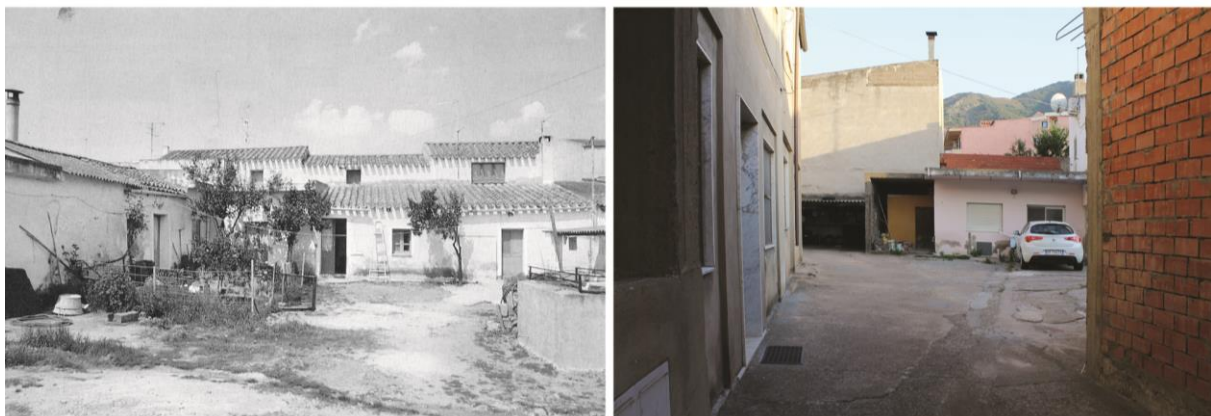


Figure 6. The inner transformation. On the left: a traditional common courtyard in Barrali. On the right a recent case in Muravera.

#### 4.1.2 The awaiting space and the cultivated empty space

Inside the village the empty space is often an awaiting space. Because of the recent evolution and the growth of the cities – in which the occupation of edges has prevailed over the re-utilization of inner spaces of the historical village – historical fabrics possess some discontinuities originating in the abandonment of ruined houses. These spaces are often anonymous presences inside the village, they are closed to community spaces which express the need of having a fruition to be actively included in urban organisms. But at the same time they are extraordinary presences because they derive from history and are still active bearers of local values in their forms, dimensions and technical solutions. Therefore it is possible to read in them themes of different scale settlement: fabric density and continuity of urban front, empty and full space, terracing and wall. Furthermore it is interesting to reflect on another phenomenon to highlight how timeless principles of settlement remain intact in their appropriation – in a spontaneous and compatible way – of empty space.

Inside the historical nucleus of Sardinian villages some empty spaces have been utilized again as cultivated spaces, re-invoking the traditional theme of micro-cultivations located in the borders of the village. The lack of the building is in many of these cases a factor related to its previous abandonment and decadence which has released in time the whole building. So the resulting empty space is a figment of a transformation of an urban element from a daily use and fruition situation to a situation of abandonment, decadence, ruin. This double process of modification represents an extraordinary reactivation of the settlement because it recalls the historical rules of necessity and practicality through the optimization of available human and economic resources. Effectively, this process has activated again awaiting areas, not affecting in a negative way the nearest surroundings thanks to a zero volume logic and a use of the compatible space in comparison with local ecologies. The interest for this kind of transformation – on a larger scale – originates in the relationship that these activated spaces might have with the community: on the one hand the maintenance of settlement logics and their elemental

constituting elements (the enclosure, the terracing, the access) contributes to not degenerating the urban space, on the other hand the birth of tiny productive/economic networks – based on the trade of products – supports the frequent interaction among citizens.



Figure 7. The awaiting space and the cultivated empty space. On the left Gavoi, on the right Osini Vecchio.

## 4.2 The limit

The Mediterranean urban space is connoted and defined by massive limits. The architectural continuity – made of enclosures and volumes – surrounds the community spaces. This spontaneous process and its ability to absorb modification has created great quality urban spaces and interesting ways of living in the village. In this relationship among matter, limits and living, the wall has a decisive role as a continuous element between the public and the private sphere. In a general vision, the wall is the basic element that, more than the others, has originated the settlement rules in architecture and landscape. Ideally, the wall represents the simplest constructive element: a system of stones or bricks linked to give rise to a unique object. The wall as a unique architectural element interacts with its environment in infinite ways – depending on its disposition and geometry – for determining different ways to occupy the spaces. For example, the same wall can be used to model the soil – as a retaining wall – or to define an enclosure thanks to the interaction among different walls. But the wall as an enclosure is the continuous element that constitutes, for example, a courtyard house which defines a private space. When the walls of several courtyard houses join, they originate an urban block first, and the public spaces of a village. So the wall operates as a whole, producing an impenetrable massive continuity and converting the urban block in a kind of unique-building. At the urban scale the set of this impenetrable blocks regulate and configure the community living, defining extremely clear forms and spaces. Therefore the continuity of the wall – as simple architectural element and as limit – arises from the matter and the constructive scale, but operates on several scales and ways of living the urban space, contributing to compose the timeless founding elements of the landscape.

### 4.2.1 *The occupation and the abandonment of the enclosure thickness*

The enclosure has always been a conquered space. In its location there was an instrumental use sequence. It is interesting to underline on one hand the role of these systems in various scales, and on the other the importance to go beyond the mere productive and functional aspect. A very important issue is the great role of those spaces – the enclosure and the empty space of the courtyard house – for the everyday life: on one hand the empty space, frequently cultivated and always invaded by the sunlight, on the other the system of awnings and walls, the refuge for the rain, the shadow for summer activities.

The instrumental use of the enclosure thickness traditionally coincided with the idea of a house deeply connected with the domestic and the production sphere. Many cases maintain this logic, with new architectural elements that are organized in physical continuity with the enclosure. But today it is necessary – according to a stratigraphic theory of modifications [7] – to recognise the weight of matter

and construction, conferring to this that value which brings back coherence among parts and attests historical sequence. Many cases show interesting stratigraphies where each modification coincides with a matter superimposition in which different material and constructive techniques operate. The interest for the historical-constructive superimposition becomes more relevant reasoning about the importance that some constructive practices had in the history evolution: the transition from local practices to global production, from traditional to contemporary materials, from historical to current workers.



Figure 8. Occupation and abandonment of the enclosure thickness. On the left Villamar, on the right Muravera.

#### 4.2.2 Continuity and discontinuity of the urban front

Nowadays the strength of the building-block continuum has been damaged because of the introduction of new house models which leave out of consideration the settlement rules. The wall as a continuous architectural element has been substituted by discontinuous closing devices – lattices, fences, palisades – which derive from the abandonment of the traditional constructive methods. The transformation of the meaning of limit is evident; it is no longer interpreted as what founded the traditional relationship between inside and outside, but only as a property limit. This new vision of an absent limit is a discontinuous interface, that is not able to separate – and therefore to define – urban and domestic spaces, generating a low quality continuity between them. The enclosure is no longer a physical and visual limit which hides the domestic world – introverted and intimate: it evolves in an open limit that does not succeed in filtering spaces of different nature and protecting private from public space. The wall as the impenetrable element disappears. The effect of this phenomena is the disappearance of the changes of state sequence that was very strong in the historical village model.



Figure 9. Continuity and discontinuity of the urban front. On the left Furtei, on the right Mogoro.

#### 4.2.3 Occupying the centre

Some peripheral cases demonstrate how the loss of the good construction values – based on the traditional settlement rules – is a common fact. Many buildings in Sardinian villages were subjected to a phenomena of negative transformations that has modified – and overturned in same case – the traditional settlement logics. This fact derives from the cultural lack of the settlement rules in



contemporary projects, very distant from the good architecture. These buildings appear very unbound from their own context, with inadequate formal solutions.

The proposed case shows the total reverse of the historical courtyard house logic and a new settlement model that occupies the empty space of the courtyard with the house volume. The empty space – absolutely defined in the history – is distorted because of a lack of hierarchy and clarity about the use requirement and the appropriation. The enclosure is completely abandoned and deprived of its own matter and role, and it becomes the emblem of this negative architectural approach.



Figure 10. Occupying the centre, Samassi

## 5 CONCLUSIONS

The suggested analysis about modifications prove how much the relationship among the house, the village and the territory has changed in the last decades. In particular the reshaping of the house role as the linked element between the village and the landscape scale is clear. In fact the productive processes outside the village are almost totally independent from the instrumental spaces inside the houses, because of the massive evolution of the economic contemporary situation. The traditional architectures do not always react to this social and economic independence reinterpreting with a new vision their own founding elements. Frequently the tie that links the society to the village has been broken through some kind of modification that refuses the community sense.

Nowadays the type as formal structure [8] can read the transformation theme only with the support of cultured projects that guarantee the correct continuity between modification – addition, removal, rehabilitation – and its original base. Specifically, this continuity has to identify in deep with the disciplinary meanings and speak to the society with the syntax of the matter. It can be interesting, in this sense, to read the Alvaro Siza project of the Quinta da Malagueira Social Housing. The extraordinary *elastic rigidity* with which Siza has conceived this settlement in every project scale – urban structure, block, house – has permitted to the project to be in deep harmony with the territory. Furthermore, the capacity of this project to absorb modifications has allowed to the Quinta da Malagueira to become a traditional and modern place, an individual and community model, a static and modifiable process. The typological response to the modification theme appears interesting, because the type interprets the mutation as the base for an evolving building, opened to future architectural solutions. This demonstrates that a project can regulate the future modifications even if they do not depend on the designer anymore.

In contemporary architecture it is possible to find almost opposite ways of thinking about type and its modifications. There are several project examples that go beyond the type issue to proceed in the research of the space and its variations. In these cases, the project as modification consists in an experimental way to examine the spatial value, bypassing the type as disciplinary paradigm. This is the case of RCR Arquitectes works, where there is a constant attention for the space – interior and exterior – in terms of continuity, limits and proximity. The historical and traditional references take place through the abstract use of some founding elements – like intermediate and filter spaces – that regulate the relationship between the inside and the outside. The innovation is the vision of the history not only as reference to traditional formal structures, but also as settlement principles and their

constitutive elements. The relationship with the history of these projects is absolutely aware and deeply linked to the capacity to travel again through the founding paradigm of the tradition and to reactivate them thanks to a new innovative key.

These points of view reveal that the theme of transformations is not only focused on the evolution of the type – as an element that carries the traditional knowledge – but also on the capacity of the project to intervene accurately in a single place. Therefore it is a quality that descends from the cultural foundation of the project. For this reason the question is not only dealing with the theme of conservation of the traditional elements, but also of understanding how these traditional elements could be transformed in new cultural-correct ways. In fact, the “not cultural” transformation of these founding elements of the villages – enclosures, courtyards, houses – represents a great damage for urban landscapes and reaffirms the importance of the project as a cultural and social instrument for landscape and urban design. Only the cultured project is able to maintain in its foundations the bases for a guided transformation of our cities and landscapes, with the idea that these transformations can nourish the places with sustainable modifications.



Figure 11. On the left and on the centre Quinta da Malagueira Social Housing, Alvaro Siza, Evora; On the right Espacio Público Teatro La Lira, RCR Arquitectes, Ripoll

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## BETWEEN THE APARTMENT BUILDING AND THE NEIGHBORHOOD

**Mihaela Staicu**

*Lecturer, Ph.D., "Ion Mincu" University of Architecture and Urbanism Bucharest (ROMANIA)*

*mhlstaicu@yahoo.com*

### **Abstract**

The following study is a brief and synthetic anthropological perspective on living in large assemblies in the period after 1989. To this effect, it becomes essential to understand the individual "hallmarks" on buildings structures, conversions, add-ons and deviations towards other purposes of territories and areas that apparently seem to be built with a certain function.

In the process of inhabiting an apartment building, which in Bucharest's landscape frequently belongs to a larger assembly of similar dwellings, one can observe varying degrees of resident involvement in the natural processes of appropriation of the private, semi-private, semi-public or public spaces. Large apartments building areas provide for the residents, as well as for passers-by, complex inner spaces, either outdoor or indoor. Most often perceived as voids between apartment buildings or within them, these spaces have nowadays various vernacular uses.

After 1989, when private interventions were allowed in the neighborhoods, some of the territories regarded till then as spaces belonging to everybody and nobody, more or less useful, became overnight full of potential. After decades of restrictions on private initiatives, any type of small enterprise became the dream of many Romanian families. The opportunity of opening a little boutique, and the continuously growing market, as well as the wider variety of construction materials, would allow drastic changes from the scale of the small apartment building, to the scale of the large neighborhood. The liberal market motivated the residents of such neighborhoods to invest their savings, time and energy in order to obtain satisfaction in the living process.

In this regard, the lack of ability or taste in execution or design did not cancel the validity of those interventions, nor the degree of satisfaction associated with these processes. Of course, everything paid a tribute to the culture of belonging, the special relationship with the constructed and natural environment, and the expectations of those implicated in those processes.

How were such disparate interventions, made by only some of the residents and often detrimental to others, even possible?! The answer may be found in J. Turner's remarks, 40 years ago, noticing that the willingness of individuals is closely related to the satisfaction they expect as a result.

In an uniformity proposed to us by a massive housing policy, the last twenty five years proved that the daily life in public, semi-public or semi-private spaces became more individualized and personalized, gaining characteristics which occasionally are almost symbolic.

Gradually, it became normal to invest and re-invest private resources, no matter how small, in shaping and re-shaping urban frameworks, in a desperate attempt to make spaces belong, from the most intimal, to the most exposed ones. Therefore, the street, the flat, the green spaces became a true source of diversification, by changing or adapting their means, purposes or uses to common or individual needs.

Often regarded as transition spaces, these spaces and territories that lie shadowed by the apartment buildings, either useful or useless, raising and causing, among inhabitants: conflicts, negotiations, territorial struggles, segregation, cultural admixture, reconciliations, changes, socialization, or simply the encounter with each other. Children and adults, women and men, young people and elders, those

who have initiative and those who do not, are sequentially or concomitantly actors or dancers in these areas. As a result, they reveal to the beholder new senses and dimensions of subliminal boundaries, ownership and identity affirmation.

Entire urban areas, especially those of the bedroom neighborhoods marked by a lifeless architecture and urbanity, were invested starting with the 1990, by serial private interventions, with various identities and expectations.

Nowadays, still searching for an answer, without any clear understanding of the population situation and priorities in the housing process, architects and planners can only ascertain that urban spaces and architectural shapes born in this vernacular way, rephrased social pathways as well as urban design, restoring a long lost, but very important sense of housing satisfaction.

Therefore, there are no absolute conclusions to be drawn. The conclusions aim towards a specific direction mostly on the understanding of the living process in which are involved individuals from different cultures. The success of a project lies, in my opinion, in the issues that are first brought into question when the design process is being made. Where we, the specialists, should stop and where the beneficiary should start negotiation and appropriation of the living space, it is a time issue that will certify the quality of our attempts.

**Keywords:** bedroom neighborhood, sense of habitation, private initiative, reconfigured, social life, behaviors

## 1 INTRODUCTION

I suggest that we should observe and analyze a certain habitation typology. A habitation model which is not only widely spread, but also very obsolete, especially in the Romanian space. Obsolete, but detested and liked at the same time. Living in a block apartment. A habitation pattern with its own rules and deviations. Liked by those who have afforded or who afford through it a cozy urban residence – to standards that an uptown or rural house didn't and still doesn't reach – and detested by those who, either through the demolition policies employed by the totalitarian regime or through bankruptcy, have come to lack resources, to live in an apartment, thus abandoning a superior *modus vivendi*.

The architectural model acting as the starting point almost six decades ago was barely upgraded or improved. The rare exceptions are called "luxury residences" in Bucharest and only serve to highlight the inability of the others to free themselves from an architectural program of mediocre sufficiency, characterized by poverty of language and simplistic morphology. In their building phase, the prices of such apartments with superior positioning and density standards, enjoying adequate areas, finishing works and facilities, are several times higher than the price paid for a house recently built by real estate developers in the city's outskirts. Besides a conventional scheme, such apartments also boast different comfort concepts. From larger net areas, additional facilities – gardens, terraces, pools, private sport courts, secured access, top quality finishing elements – to being located in expensive residential districts or green neighborhoods, or to a building architecture showing indubitable aesthetic values, backed by technical qualities raise the standards for a comfortable habitation.

Associating this kind of habitation with the ideological paradigm which exclusively promoted it in the sixth, seventh, eighth and ninth decades of the 20th century still puts it at a disadvantage. The patterns of the bedroom neighborhood and apartment block, so deeply rooted in the collective mentality, have made casualties in the ranks of both residents and architects. This reality, joined with the material shortcomings of those looking for a residence, regardless of their level of education, continues to allow the existence of a sales market and send the message that such apartments are still desirable. The consequence is that this kind of habitation, frequently conceived and located very improperly, not only proliferates chaotically, but destroys important urban areas, endorsed by an unprofessional and irresponsible administration. The consequent relations follow from the population blend/mixture which appears by putting together diverse and sometimes deeply antagonistic social categories.

In decoding behaviors born in such habitats and sending a decrypted version of certain messages back to designers, to the administration, to investors and to society itself, I find it inevitable to use an anthropological perspective on the changes which have occurred in major residential developments of large bedroom neighborhoods in the last 25 years. 25 years have elapsed in the circumstances of a certain freedom. Freedom means here being able to make interventions on one's home, on half-private areas, on the stairwell, on balconies or loggias (which you couldn't close in the last decade of the '80s), on the areas around the block, on the front of one's apartment, on the use of apartments – other than as a residence – especially those on the ground floor, on the conversion of garages, on streets.

After 1989, when the law did not fine him anymore for his urban gesture, *homo urbanicus* could decide on actions to plan, convert, individualize, enlarge, use landscaping, reconfigure, extend by adding territory, take possession over additional areas and, lastly, build on. He could employ radical or less radical actions, depending on initiative, courage, intention or budget. Changes were made not only to apartments, elements of blocks, streets or green areas, but to districts and, finally, the city itself. And not just in its formal aspects, but in its fundamental ones. And not anyway, but through the mediation and initiative of residents!

In my view as an architect and urban planner, this is the most extraordinary thing. Where projects for districts have failed or have been unsuccessful from the beginning, residents corrected landscaping designs, functional gaps and their social life through private initiatives and gestures which have superficially been called *anti-urban*, intuitively, relying on market opportunities and especially on the natural desire of every individual to make sense of his/her life, regardless of the framework supporting it.

More than six decades ago, living in Peru and being involved in the reconstruction of cheap residences in the aftermath of the devastating earthquake of 15 January 1958, the British architect J. Turner [1] noticed the degree of satisfaction that people have in their habitation, when they have participated together in the act of construction. This observation, much better understood now by the international community of architects, serves to explain the Pritzker prize awarded this year to the Chilean architect Alejandro Avarena, whose projects of cheap habitations – half-houses, „to complete”, incorporate this philosophy.

The answer of population forced to relate with and within a certain type of architecture is in most cases difficult to predict. This is how, in the case of living in a block in Romania, so many decades of practice and use of a shared home in a totalitarian political regime, followed by nearly three decades of notable changes have not yet been able to change by adapting a thinking mode, to convert particular gestures to appropriate solutions. When there is initiative and good faith, such individual gestures, genuinely decoded, lead to appropriate responses from architects and planners, from administration or investors. This is the case of solutions we consider futuristic, which are implemented or pending implementation by the workshop of architect Moshe Safdie, in Singapore, Canada and China. Solutions are delivered at affordable prices: comfort, nature in gardens that can be set up by owners, privacy, sun at least three hours a day with a similar land use percentage to a district of blocks.

**SO,**

What clues and real needs can be deciphered behind these private interventions on block apartments, mainly occurring in blocks built before 1989?

What exactly does something that seems or appears to be vernacular, parasitic-like architecture try to build or recompose in terms of lifestyle and sense of habitation?

What is missing or could be reconsidered or rethought when designing affordable blocks and apartments, so that acceptance is natural, easy and agreeable? Because in understanding these phenomena it is important to set the premises allowing these mutations to occur. Because investing the space built with certain facets will form, in the light of the exchanges imposed or implicitly determined, some permanent, lively and dynamic processes. And, whether occurring at the small scale of an apartment in a block or at the macro-scale of the city, they will be responsible for quality of life within its boundaries.

Without imposing a hierarchy of gestures used to identify mismatches and adaptations to these specific habitation frameworks, I'll try an overview of the most significant ones:

## 2 DIFFERENT CULTURAL MODELS

The massive urbanization of the building years of socialism, implemented by a consistent import of population from rural areas, usually not very well off, along with the dispatch to living in blocks of a segment of population driven away from individual homes with a high standard of representation and comfort, through abusive confiscations or demolitions applied to a scale unprecedented in history – overlapped on the proposed habitation model on the one hand, inferior models in terms of functionality and comfort, and on the other, superior models not only in terms of functionality, comfort and representation, but also as regards their openness to nature, sun, neighborhood, street, community, city.

The effects of these overlaps, sometimes antagonistic, have naturally produced deviations from the norm and mutations, from a cultural, or architectural, or social, or economic and sometimes even familial perspective.

At one end we have the case of complete adaptation and this is the status of those who, moving to the block, have climbed up the scale of quality and comfort, assimilating their habitation as a perfect model for living and having no reason to intervene, and at the other end, those who, abandoning a higher standard of habitation than that of an apartment in a block, refused to assimilate this habitation as their new home and, therefore, any intervention on it.

Between these two extremes we have situations of appropriation by imposing and investing spaces with personal cultural values and specific decorations imported from the culture of origin. Without belonging to the functional and minimalist architecture of the block, they set a difference between inhabitants, but mostly between modes of thinking about the terms pertaining to a home, of understanding and assimilating frames of the constructed object that comes already imposed. Such very divergent models have the most unpredictable spatial and aesthetic consequences: either apartments used as warehouses of valuable furniture, rescued from the demolished house and which testify to the death of a lifestyle – cramped in inadequate spaces and not only hindering a functional flow, but suffocating life between these minimalist frames in terms of areas and heights; or apartments, or block entrances, pastiches of rural dwellings with inadequate imports of decorations and customs; the stairwell converted to a porch, with gaiters left near the entrance threshold, a balcony converted to a warehouse similar to the “backyard”, laundry hanging in sight, in front of the window or in the green area around the block; block entrance alleys – assisted passage crossings, towels, ceramic plates, calendars used as interior decoration of apartments or stairwells etc.

## 3 FUNCTIONAL ADAPTATIONS

Although the apartment is intended to act as a shelter for one family, it naturally evolved into more generations sharing the same roof, on the one hand, because of youth taking too much to leave their parent's home – and causes are economic more often than not – and, on the other hand, due to a longer life expectancy. In adapting to constructed frameworks, frequently there are apartment rooms whose sense adds or subtracts from the whole. This is also sometimes valid for accessory areas of the block. Usually, the apartment is more crowded in the number of persons and functions assigned than its ability to hold and process. The added functions are frequently visible on the façade. The apartment's contents are adapted where they cannot be extended: claiming balconies, terraces or the area next to the block on the horizon, or, vertically, these are usually the block's terrace or lavatory.

It's still exemplary the innovative solution used by an elderly family who, after being transferred by demolition, broke through the pavement of their ground floor apartment, digging a small basement. Otherwise, it is already commonplace to note that the kitchen is not only a place to prepare food, but it is also used to serve dinner reduced to scale, as well as being a meeting place in the winter when the apartment is only heated by the gas cooker, or an office when the rest of the house has been conquered by children, or a lavatory and dry cleaner in the cold season. Since it finally became possible to “close”



it, the balcony becomes, as needed, an extension of the room close to it. It is either part of the kitchen or the kitchen itself, either a place for conversation, a greenhouse, dry house, smoking room, or an extension of the dining room. In the most unfavourable cases it becomes a warehouse, just like a “backyard” in the sense remarked by Rodica Eftenie [2].



Figure 1. A balcony that is part of the enlarged living area

Garages located in semi-basements of the block, if they were provided, are transformed, for practical reasons – the car is easier to park “up” – in “tool” sheds, or in small craft workshops, or small service stations, or grocery stores, or lottery agencies! Free areas around the block in turn become garages, ground floor apartments become shops or medical practices, or pharmacies or agencies, or pubs or “stand-up” cafes without furniture. Green areas in front of the block, when not completely neglected because of the lack of time from young people or the elders’ impotence, turn into a flower garden or a vegetable garden, or a private park for the ground floor resident who, with a lot of audacity and interest, makes use of it sometimes alone, sometimes inviting the other residents. The case of the 4-storey block in Militari, noted in a journal of social studies in 1994 [3], is exemplary by the extreme mobilization of an entire community, reinforced over time through family relationships, in improvising a small park with a playground for children and dedicated areas for the elderly.

#### 4 TECHNICAL DRAWBACKS

From this point of view, the main technical issue with living in a block appeared and still appears at the beginning of the cold season. The chilliness in apartments, where financial resources obstruct any other solution, lasts in Bucharest around six months every year. In the hot season, the discomfort felt in apartments without an air conditioner, too close to the sidewalk, with no vegetation in front of windows, is similarly unpleasant. So, corresponding solutions have been found, from the tinfoil glued to windows directly exposed to sunrays, to closing balconies and even to cover the block’s facade in polystyrene only for the surface of a single apartment. Frequently, this becomes visible not just in terms of thickness, but also chromatically, for a more complete customization and affirmation of taste in matters of colour.

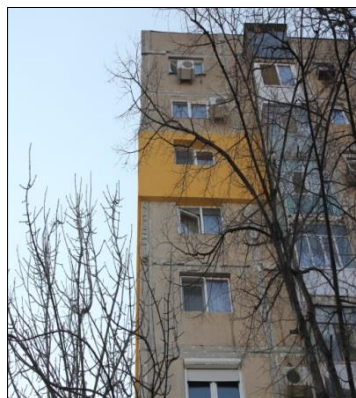


Figure 2. A thermic isolation of an apartment situated at the 9<sup>th</sup> floor



Nowadays, we witness a maniacal interest in a façade's thermal efficiency, which is obtained easily by gluing expanded polystyrene to the block's walls – understandable where walls are made of prefabricated concrete, but blamable for blocks built in the '60s or '70s from bricks, functionally better organized and with intended natural ventilation. While cancelling the qualities of brick as a superior construction material, this also "outsmarts" again the expression of facades, as if there was any need for that. Many of them, at least those located along important traffic arteries, either through surface brick layers or through the peculiar finishes that were properly executed from the very beginning, added a certain sense of individuality and formed part of a local character. In our days, colour is added and "drawn" images on facades are made by block administrators and we can discuss their negative impact in our capital city – see the blocks facing the Titulescu – Grivița Boulevards junction, or those on Ion Manolache Boulevard. Where such thermal insulation solutions have not yet been implemented, we may see other interventions, like weather protections, mounted over windows similar to overhangs, and used for appeasing the discharge of downpours on the windows and the possible infiltrations through jambs, or protections from radiation – another sign of neglecting the importance of orientation in line with dominant winds, at the time of construction.

If drawbacks related to excessive heating or cooling can somehow be managed, those related to the propagation of unpleasant odours, to disturbances caused by the daily traffic of people, by various social events or local/general repair works, backed, in some places, by the noise of the elevator going up and down day and night, complete a group of problems inside the block that often remain unsolved, forcing residents to mutual acceptance.

## 5 PERSONALIZATION AND EMBELISHMENT

Throughout history, in most cases humans have been guided by instinct to seek shelter in a good spot, thus occupying a plot of land and marking it with their own characteristic markings. This way, everything belonging to an individual, from their name to their house, from their garden to their fence, has firstly announced the unique character of the family and only secondly, if at all, affiliation to a group, to a whole.

The specific gestures we draw attention to are the result of a reversed paradigm to the one that formed, during millennia, a certain individual and social behavior. The apartment block, through the specific and well-known typology it has in Romania, which was imposed by the very authority which built it, be it the administration or a private investor, does just this: it rejects the individual act of the inhabitant of marking and personalizing their territory and property. This is the only register we should use to analyze and understand the specific gestures which interrupt the whole.

The natural investments and transformations which resulted in the living spaces concern not only apartments, but also areas belonging to the apartment block or to the territory around it. They usually relate to an effort to infuse meaning or reconfigure an aspect deemed unsatisfactory. The neutrality is annulled either at the initiative of the local administration, by changing the colors or materials for the finishes for large surfaces such as floors or walls, or because of independent initiatives which rather resemble a rebellion or voluntary affirmation using graphic messages or symbols – such as the graffiti which appear overnight. In the relatively small sphere of investments of these type, reduced in scale because of monetary constraints, the efforts which are meant to create a common benefit are all the more the appreciated, for example, investments meant to improve the socializing of the community living in the apartment block. I mention here the example I gave before concerning the apartment block in Militari or the one from the Râmnicu Sărat, Titan area, specifically the small parks surrounding the buildings, with benches, tables or chairs, pavilions, plant-laden pergolas and green areas that have their own watering systems and lighting.

## 6 EXTENSIONS OF THE PRIVATE PROPERTY

It is natural that the confinement born as a result of the invitation to conform, imposed by living in an apartment block, leads to acceptance or rebellion. As Amos Rapoport noted [4], the individual's reaction to space in every sense is in direct relation to the stimuli that the space gives to the individual. Hence the adaptation of available space and oftentimes of space appropriated with or without the

consent of others, at times in order to be given back to the community in an “improved” state, at other times in order to be retained for personal use.



Figure 3. A private yard with an extension of the living room build on the semi-public territory

The appropriation of territory in the case of apartment blocks is related in particular to annexation of semi-private or semi-public plots of land or of dependencies and utilitarian spaces of the apartment block, from alleys and passages in between blocks to laundries, basements, cellars, staircases and so on. Some of them are motivated by the private interest of one of the occupants, while others are done for the common interest of a group whose members share a certain culture, be it a group of youths who share a certain belief or a group of denizens who grow crops for example. The interstitial space should offer the constant possibility of adapting to social or psychological needs while retaining its intrinsic value. However, when although aesthetically enriched the space continues to be overlooked or, worse, vandalized, respect must be imposed through a change in the ownership status. According to F. Tonkiss [5], such boundaries which usually have a physical manifestation are not necessarily immutable but they do come about as a result of manifesting irreconcilable cultural differences. They serve to protect areas which have an identity-preservation role and tend to exclude what is unfamiliar. Almost a century ago, the German sociologist G. Simmel [6] noted that the divisions of territory in modern ghettos are objectivizations of subjective divisions.

The past and present mutations of urban landscapes which are characterized by uniformity and an urbanity which is detached from the meaning of a habitation tradition have led to the de-territorialization of huge city areas. In this way, sooner or later the spaces which seem available besides those which are legally owned are, in such circumstances, the target and object of such appropriations.

Usually in such cases, there is a more or less mutual agreement between the denizens or inhabitants which share a certain area. Unfortunately, such interests are too usually complex for architects to have the possibility of foreseeing them through mere functional partition.

## 7 THE IMPOSITION OF STATUS ELEMENTS

The apartment dwelling and particularly large residential complexes have imposed and are still imposing, and have confronted and are still confronting through the habitat closeness created by the administration or by private investors, the unifying and homogenizing will of the latter with the personalizing and differentiating will of the groups of dwellers. Deviations from the norm in regard to the habitation process which have started to occur naturally after 1989 are in connection to human nature, to the expression of particular or group identities, to social status, to the need for socializing, to dwelling practices etc. Yet, in the process of seeking or affirming an individual identity, the wish to stand apart is a variable which has a proportional influence on the degree of individuality manifestation. It still remains for the identity of the individual to merge to a greater or lesser degree with the social typology and implicitly the architectural/urban typology imposed by the environment to which the individual belongs to. This is the context in which the notion of inevitable environment determinism on the individual acquires greater depth, with all the specificity preserved by the level of education and the social status of the family. Hence the relative “monotony” of which the large

residential areas are accused, implicit in population structures in which neighborhood subcultures – particularly among youths – emerge and become more visible precisely as a reaction to uniformity.

At an architectural level, the difference in aspect is the first thing that draws the attention of the passer-by to interventions which are more or less evident at street level. Then come the quality and specificity of the intervention. This is the case for all gestures ranging from choosing a particular window frame, the entrance door, light fixtures which are more or less visible from outside and going all the way to all the “accessories” by which one can impress “the other”, including the type of car owned and way of dressing.

## 8 THE REASSESSMENT OF THE STREET

Often too heterogeneous to make up a community, the population inhabiting a block, area or neighborhood of a large city restricts inside communication to a barely necessary amount determined by civilization more than by social openness. Socializing on these levels, as explained by Dan Jurcan [7], is first of all responsible for integrating the individuals. In the urban culture of antebellum Bucharest, the street was a destination in itself. Going out in the street or going for a walk were natural manifestations of sociability.

The primordial purpose of the street as defined by J. Jacobs [8] almost half a century ago, which is to allow for any type of activity in the space it occupies, starting with child play, has been suppressed or – more accurately said – has suffered alterations in the large residential complexes, especially in the bedroom neighborhoods constructed during the years of functionalism. Actually, this role has been denied by the entire modern age, as James Holston [9] denounced in a direct reference to Brasilia. The street eluded denizens first of all by not providing functions which generate and nurture social contact, leisure time, meeting with others on a route that links different destinations in a permeability that the American sociologist Kunstler [10] identified as primarily Mediterranean.



Figure 4. The main street of Drumul Taberei neighborhood

The diminishing of the street to the sole purpose of a crossing space leads to social mutations. Street-level activities are lessened until becoming almost non-existent as a result of the banning by the communist regime of commercial spaces, terraces and any other leisure functions in the bedroom neighborhood. As such, individual initiatives from the '90s, although in most cases motivated by the opportunity of opening a business to meet a certain demand, has led to whole tracts of functionally sterile areas being animated and polarizing social life not only in the neighborhood but in the entire city; such is the case of a pizza parlor on Drumul Taberei street which opened in the mid-'90s and which attracted clients from all over Bucharest for at least a decade. Through initiatives such as the one mentioned before, urban frames were re-written, even if from the bottom up. From passage ways, streets became destinations. This type of interventions revitalized whole areas of the capital city in the '90s through primary revitalizing operations.

## 9 IN LIEU OF A CONCLUSION

They say that the cure for failed architecture is nature. But what would be the cure for failed urbanism?

The answer of the population, which came in the absence of good urbanism, seems to have been what gave the city a second chance at life, in this case Bucharest, a city that has been through so much. The reanimation which began shortly after 1989 is due to the fact that in Romania large apartment block complexes are inhabited by owners and not by tenants. Practically, the lack of alternative facing the owner inhabitants and the hope that their small businesses will prove to be not just subsistence means but flourishing businesses motivated people to keep a stable habitation pattern. Otherwise today we would probably have been the witnesses of largescale or complete abandonment of such areas, like in the case of major European metropolises. As it is they happen too much in Bucharest. To these investments, that are small at an urban level but significant at a family level, we owe today's consistency of the urban fabric at a significant scale as well as the enriched sense that these areas have attained in the consciousness of the denizens.

The young British architect Alastair Parvin [11] stated that if we were to treat urbanization, environment, durability and climate change seriously we cannot but take into account that metropolises will not be constructed by others anymore, but by the residents themselves.

Why would that be? We already have the answer to that. Stretching from J. Turner's 60-year-old observation that the control of inhabitants over the conception, construction and management of their own residences fosters individual and social good all the way to A. Avarena who in 2016 received the Pritzker prize for the development of the unfinished houses in Chile, it is a universally valid affirmation that the satisfaction of residents is not necessarily linked to meeting standards but rather to the possibility of intervening in their habitat. No proof is needed anymore that people would rather tolerate the faults of their houses and of the spaces they inhabit when they result from their own actions rather than the actions of another.

In the same line of thinking, Robert Neuwirth [12] stated that no bank, organism or administration will solve the multiple and complex problems of the residents. It will be necessary to involve the residents. They can no longer be mere consumers when it comes to habitation. The solutions have to be accessible and affordable. A database such as Creative Commons is already accessible to any aspiring inhabitant, confirming the main idea of Turner stated half century ago about the important aspect of habitation that resides not in the inhabiting *per se*, but in the way it can transform the lives of individuals [1].

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## ARCHITECTURE AND COMMONS

**Daniela Buonanno<sup>1</sup>, Carmine Piscopo<sup>2</sup>**

<sup>1</sup> PhD arch., University of Naples Federico II, Department of Architecture (ITALY)

<sup>2</sup> Associate Professor, PhD. arch., University of Naples Federico II, Department of Architecture (ITALY)  
 buonannodaniela@gmail.com, carmine.piscopo2@unina.it

### Abstract

The common goods (= Commons) issue is assuming a central role in public debate. The architecture, which straddles the public and private sphere, requires to play its part in this debate. The Commons cannot be identified as “private” or “public”: they are a third element since they represent neither the individual’s nor the State’s point of view. In a well-known sense of common good it’s a specific resource shared by all members of a given community. The issue of the Commons is deeply linked to the practices of architecture when Commons become the rendezvous point between the concreteness of the materials (buildings, city spaces) and the immateriality of the individuals’ idea of who lives in it. Taking these premises as our starting point we will discuss the way the anthropological and psychological side of the Commons appears to be fundamental to an understanding of their sense, for both planners and architects. The Commons, from this perspective, constitute a real form of social capital, i.e. a system of relations whereby it’s possible to convey information and cognitive resources, allowing people to achieve their goals in a simpler, faster, and less costly manner. Social capital is based on social relationships (characterized by trust, confidence, mutual compassion, and shared values and attitudes) that are able to get members of a community together, making cooperative actions possible. An example of that is a park or a new urban area, where the emphasis is on green spaces and on residents’ daily activities, or a school inside the life of a neighborhood, or a main road or a bridge linking parts of the city and inciting economic activities connected with work or leisure. These are all elements that can be part of the Commons independently of whether they are public or private if they are able to trigger relational exchanges, to satisfy desires and motivations of the population and meet its needs. In fact, Elinor Ostrom – American scientist who won the Nobel Prize for Economics in 2009 – noticed, as a part of the results of her analysis in ethnographic and psychological research, that many communities are able to avoid that Commons get depleted without resorting to public interventions, and even less private ones, and she studied the ways this was done. The main factors seem to be the direct participation of the community in monitoring the use of the goods, the fact that a rule can be enforced by voluntary supervision of the members of the community, the importance of gradual sanctions to those who breaks the rules, the effectiveness of a face-to-face communication, the ability to exclude the foreign, and the absence of technological or social rapid-changes. Ostrom also showed that privatization and public management do not always work, documenting the failures of a central authority imposing rules on local communities that had managed a common resource for centuries. With this spirit, in 2014, the Municipality of Naples has adopted two resolutions concerning the collective recovery of public and private abandoned goods, according to a collective and structured process to identify projects and methods – a two-key resolutions, which triggered a debate in Italy and which put the prevailing public interest at the center of the administrative action. The most amazing and unusual example of the management model of Commons is represented in Naples by the former “Asilo Filangieri”. This is a totally pioneering experiment, which is still “creating jurisprudence” throughout Italy and which is being imported into other cities. This space, owned by the Municipality, has been occupied for more than three years by a group of independent artists and producers who have turned it into a free, open, cultural center. To legalize the self-management of the municipal building, the “inhabitants” of the

Asilo have recovered to an obsolete legal formula that is still in use: the civic use (*uti cives*) of a public good, which it was formalized by a City Council's deliberation. In Italy, there are many studies and proposals that are being conducted in this spirit, and that isn't unique either in real estate or urban areas: emblematic is, in this sense, also the Neapolitan cases of "Vele" of Scampia and Bagnoli's industrial area. These are examples of places that become a common good and that, thanks to their characteristics, give people the freedom to choose the activity to carry out, to give expression to their capacities, in order to feel good and, at the same time, share positive experiences. An architecture of the Commons is an architecture capable of triggering these processes and that is able to build up a psychological, social, and not just economic, capital, i.e. something that is fundamental for the future.

**Keywords:** common goods, private/public goods, legal/illegal, Constitution, civic use (*uti cives*)

## 1 COMMON GOODS

The idea of commons is taking a central role in the public discussion, becoming more and more persuasive and captivating in many cities of Europe and the world. Despite its ancient origins, the concept of common goods has only recently re-emerged in the West from oblivion.

This concept dates back to ancient Rome, where collective property of the people and protection of "res in publico usu" (things of public use, not for sale, and therefore inalienable and imprescriptible) were founding values.

In the past centuries, the saga of the "enclosures" at the origin of capitalist development which reinforces the "privatization of the world" [1] and increasingly consolidates strong forms of individualism, has transformed the commons in an ideological issue, a revolutionary utopia for few people. Today, however, thanks to the struggles against the global market and the disasters caused by neo-liberalism and deregulation, this issue is coming back and is gaining even more consensus, becoming a formidable lever to push culture and society towards a new revolution, a new "reason", and new models of relating with reality [2]. This is the birth of a sort of collective "subjectivity", which in recent years has made possible the birth of a new form of "benicomunismo" (*communism of goods*) [3], highlighting the constituent potential of the commons. According to common sense, the commons represent the satisfaction of needs and desires of the citizens that cannot be satisfied by consumer societies, and this is the reason because commons fit to break, but also to enrich, sterile dualisms between public and private, between use of resources and environmental sustainability, between freedom and equity, between individuals and society (Fig. 1).

Therefore, the commons are not either private or public, they are a third element as they represent neither the individual's point of view, nor that of the State [4]. They are goods which produce utilities that are necessarily shared and therefore collective [5]. In the new social theory, the commons are not only natural goods such as ecosystems and non-reproducible resources, but commons are also knowledge forms, social capital, institutions, even human settlements. The theme is enriched and a new issue is born on the rights of a community to enjoy the fruits of a given resource and on the capacity to utilize it; the problem shifts from the different legal forms of ownership (public-private ownership) to the actual steering modes and the management purposes of these goods. It is important to underline that the common good does not present only material, economic, practical aspects, but it also includes an immaterial, relational, and affective world tied to the relationship between the individual and the others: family, friends, fellow citizens and, therefore, the places where these relationships take place: the house, the neighborhood, the city, the territory. If the commons are what a community, a social group, a population identifies as goods "functional to the exercise of fundamental rights, therefore necessary to the effective satisfaction of basic needs of individuals"[6], the subjective and relational side becomes as important as the economic and material one. This dual aspect of materiality and immateriality makes the theme of common goods deeply tied to architecture practices, when they become the fulcrum between the concreteness of the buildings and of the city and territorial places, and the immateriality of emotional ties and of the collective memory of the people who live there.





Figure 1. P. Dardot and C. Laval, *Commun: essai sur la révolution au XXIe siècle*, La Découverte, 2014 – Book Cover

## 2 TERRITORY AND LANDSCAPE AS COMMON GOODS

There is a common good that is rarely considered as such: the territory, but not as a mere aggregation of different elements or according to mono-disciplinary approaches which contemplate it from the point of view of just one of the human “branches of knowledge”, but as a “system” in which are intrinsically interwoven nature and history, heritage and social needs [7]. The concept of territory is not limited to the usual material entities (such as natural elements, cultural heritage, etc.), but it also includes intangible entities such as human activities on the territory and all those elements which determine the way of life and the standard of living of the people who inhabit it.

The territory is considered as a “homogeneous common good, formed by various common goods, shared by the collective community” [8], as a dynamic entity which is constantly changing, and which belongs to the present and the future generations, a territory that emerges as a “space of freedom” where individuals and the whole community can implement their skills and characteristics. City and territory are seen as an extraordinary “collaborative machine” built by a series of concrete and resistant facts whose identity is given by the demands, the desires, and the projections of the communities that have passed and continue to pass through it [9]. It is here that the landscape figures meet the oldest constitutional and administrative figures who see the landscape as a place to be used by everybody (Fig. 2). The recognition of the primary importance of the common good, whose first link is with the landscape, can only result from the lucid awareness that the interest of the individual should be subordinated to the common good and, therefore, to the prevailing public interest [10]. This postulate is not an abstract principle, but it is institutionally supported by the Italian Constitution. In it, especially with the Article. 9, state and society are bound to take the landscape/common good as a testing ground of civilization in all its facets (legal, ethical, political, economic). According to the Constitution, the common good does not compress but restricts the rights of individuals and companies: private property must have a social function (Art. 42), while free enterprise cannot go against the social utility and cannot damage safety, liberty, and human dignity (art. 41). These legal values reaffirmed by the Constitution change and enrich the notion of landscape, which is studied according to its ethical, civil, legal, and especially historic implications as they are linked to the *collective memory* of a population that acts as a factor of identification and belonging to a community. The landscape is indeed the mirror of the society that produces it and of the actions of citizens as individuals and as part of a community; it must be protected through the ancient institution of *actio popularis* (popular action), as seen by Roman law and based on the identity between the people as a whole and the citizens.



Figure 2. Mario Giacomelli, *landscape's imprints*. Florence, Italy.

### 3 THE CITIZENS POLICY

A new political dimension is advancing with slow and uncertain paces: the citizens policy, whose forms and practices are not necessarily *against* but surely *in spite of* the usual politics policy [11]. In recent studies about the commons, the importance of a strong participation of citizens in political and urban decisions is highlighted. Therefore a current notion of citizenship requires an awareness of the rights and an active processing of the identity, through a close comparison with decisive questions. These are the problems of the right to the city, of the responsible use and management of the soil, of the environment, of all other finite resources, of pollution, of overpopulation, of mass exodus, of the manipulation in suburbs of the city. The popular action becomes a right/duty of collective resistance to the degradation of the urban and rural areas and to all those actions that go against the public interest [12]. It is important to build a “right of citizenship” through a repertoire of active citizenship practices, in which participation becomes a necessary and indispensable condition for the success and the development of a legal theory of the commons. To proceed with greater awareness, we need the stimulant theories of Elinor Ostrom (Nobel Prize in Economics for 2009) which indicate a third economic way between Market and State, composed by a community management and by the experiences of self-government bearers of new forms of social income [13]. Ostrom studies show that the commons are not ancient relics, but an indication to imagine another future, another modernity, another way of thinking about human relationships and our relationship with natural resources. The model of self-government of the local communities of Indiana State studied by Ostrom is, under certain conditions (sharing, concerted usability, respect for others' needs, etc.), the most efficient model from an economic point of view, as well as the most democratic one. The reason is due to the active participation to the essential decisions of the community in order to guarantee the right to the enjoyment of that good.

This model strongly affects the absoluteness of private property and exceeds the standard concept of “public”. The commons are not simple resources to administer with prudence, but they are rather a real patrimony that must be safeguarded and subtracted as much as possible

from a short-term destructive logic, projecting their protection to a faraway horizon, inhabited by future generations: the real and sole owners of the commons. To strongly defend the commons it is necessary to build a broad base of information, awareness and coordination among the citizens, in order to trace a new project of the city based on general interest, justice and equity. In this sense the motivated proposals on civic uses are important, as well as those on the transfer of sovereignty and the overcoming of the ownership notion, and also the persuasive vision extensions on the principle of subsidiarity we can also find in the “Praise be to You” written by Pope Francis. The Pope himself, on several occasions, has highlighted the importance of the popular movement actions, which represent a “hurricane of hope”, as they think and act only in terms of community and priorities of everybody’s life against the concept of property appropriation just by some.

#### 4 SOCIAL URBANISM

Urban planning has strong and specific responsibilities in the aggravation of social inequality and exploitation of natural resources without limits. The tendency to exclusion of disadvantaged minorities is inherent to social dynamics which are difficult to control with the traditional tools of urban planning [14].

In the late twentieth century, urban planning has gradually become just a technical discipline, deleting its humanistic side, as if urban phenomenology was exclusively made of forms, but actually bonds, networks and the invisibility of intentions of those who live the city are also important. After becoming “the handmaid of the architectural formalism”, “urban planning has killed urbanity” [15] committing the big mistake of reducing the desires of men in rights codified by the planning doctrine [16], and at an enormous social cost for his resignation to indeterminacy of the empty space.

The need to give to each square meter of land utility and function, often at odds with the existing reality, has in fact generated an *horror vacui* which prevented the flexibility that, in the past, allowed the city to build itself in agreement with the social practices of its inhabitants (Fig. 3). It is no coincidence, in fact, that today peripheral and marginal places, territories discarded by modernity and areas with a dense content of naturalness, are the territories which welcome new and most interesting urban functions [17], and are perceived as common goods.

Just think of the (now lost) positive relationship between urban spaces and social, architectural and community balances. This relationship has been dissolved also because of the ambiguous dialectic between opening and closing, which in contemporary times has taken almost tragic features. What kind of space can best generate a community, open or closed? A closed and delimited space favors the creation of communities, but at the same time signals a need for seclusion and *privacy*. On the other side, the opening invokes an idea of flow, mobilization, communication, comparison, transit, but also an idea of indistinctness and indifference. An architecture of the commons must be capable of giving shape and place to these processes contributing to the birth of a psychological and social (not only economical) capital, which is fundamental for the future. The value of architecture must not reside only in the architectural object itself, but in what it produces. The important thing is to generate actions, changes and relationships, in order to develop forms, models or open and flexible structures, structures which can contribute to the construction of social facts and can grow to adapt themselves to different situations.

It is necessary to rebuild a relationship between the body of the citizen and the body of the city, to return to live in places in order to use the city and not to consume it or be consumed by it. This is the model of the city as a place which produce a social space, as intended by Henri Lefebvre (1968), with the related issue of the “right to the city” (equal opportunities for all, not only to take advantage of local goods, but also to participate in decisions on urban transformation), which characterize many demonstrations of these years [18].





Figure 3. Privately owned public spaces. New York.

## 5 A POLICY FOR THE COMMONS. THE CITY OF NAPLES

The City of Naples is one of the first Italian municipalities which is active in the identification of administrative paths that give strength and vigor to the various uses of patrimony for public interest, as we can see from the various chronological steps shown below. In 2011, the administration of the Mayor of Naples, Luigi de Magistris, has changed the City Charter, introducing among the objectives and the core values of the City the legal category of the common good, a good which is available, accessible, usable, shareable, a good which can be used to represent and create instances, projections, and recognizable desires of settled and walking communities. Then, in 2012, the City has approved the *Regulation of the Councils for the Discipline of Common Goods*, goods which belong to the community, establishing with the resolution of 18 January 2013 the *Principles for the Administration and the Management of Common Goods of the City of Naples*, according to which “every citizen must contribute to the natural and spiritual progress of the City”. In 2013, the City has sets up the *Observatory of Common Goods*, which has issued two new resolutions for the identification and the collective management of public and private goods, goods which can have civic uses and can help the public welfare. This is a path whose roots lie in the implementation and approval by the City of Naples of the Aarhus Convention, which later became an essential part of the



*City Council Regulation.* Later, on 17 of June 2013, the City of Naples has adopted the Public Space Charter, approved at the end of the *Second Biennial of Public Space* (held in Rome from 16 to 18 May 2013), as an active and concrete contribution to the process of democratic enhancement and study of way to use the urban public space – a fundamental act for the city of Naples, where you recognize the democratic right to use and the transformative potential of public space.

On 7 October 2014, the City of Naples has approved a resolution regarding the opportunity to “adopt” parts of the city, starting from a participatory process of civic committees.

On the “ways of participation for the implementation of social policies”, is then established an additional point of meeting with the Public Space Charter, where you define the methods of democratic participation and their roles in the formalization of the proposal resolutions to the Council, through the institution of consultations and the dialogue with the territories, where the public space becomes a place where it is possible to respond to the community desires and instances. We must then remember the resolutions of De Magistris council for the establishment of democratic collective places, starting with the recognition of existing realities on the territory. Starting from the European Landscape Convention (Florence 2000), the identity of a place is not given by abstract values, but rather by the recognition of the value that the communities give to those same places. This principle will be even stronger the day when all the involved institutions will define a path able to give a practical effect to the relationship between the “legally intended” landscape and the civil and social rights of the people and the right to citizenship.

Then, in 2014 the City Council has adopted two resolutions concerning the collective recovery of public and private *abandoned goods*, according to a collective and structured process to identify projects and methods – a two-key resolutions, which triggered a debate in Italy and which put the prevailing public interest at the center of the administrative action (Fig. 4).

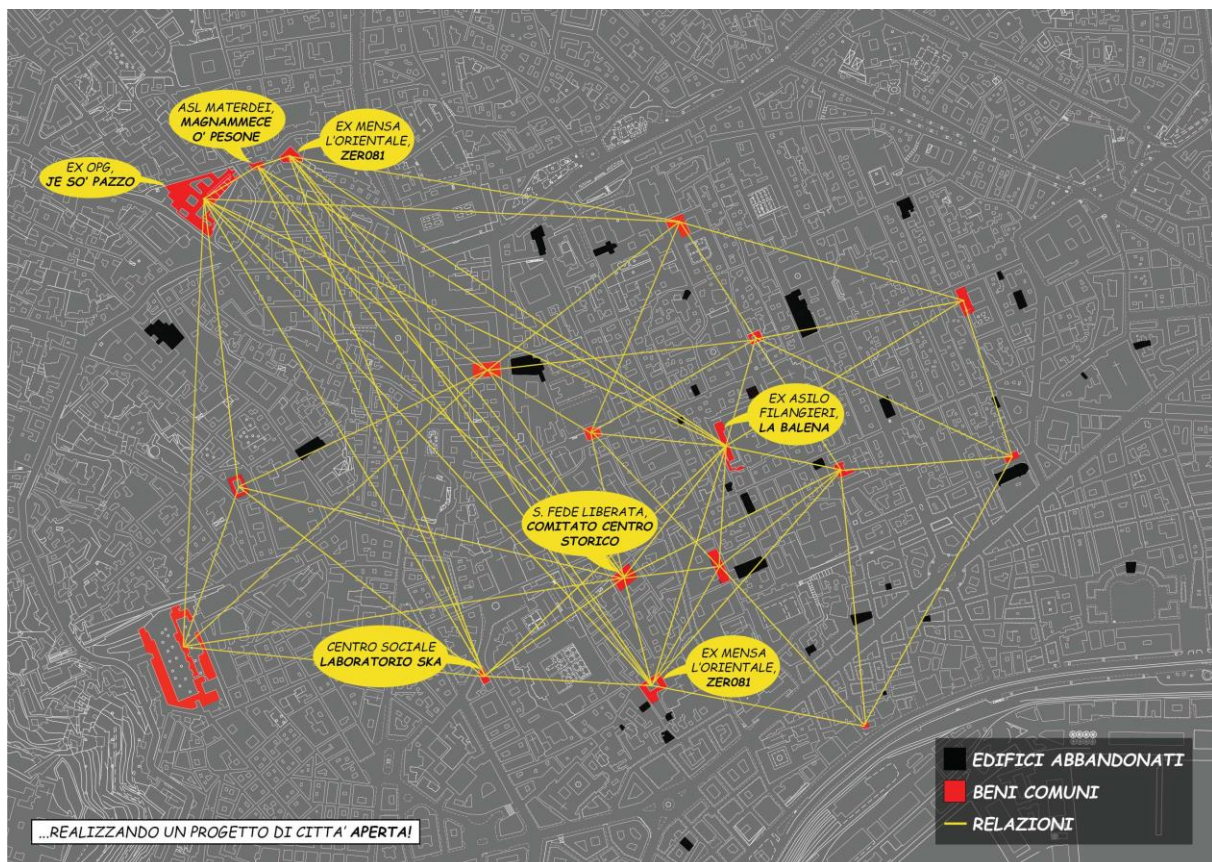


Figure 4. Common goods map (black= abandoned goods, red=common goods, yellow= networks). Naples. Status 2016  
By Michael Palmisciano graduation thesis.

## 6 THE CASE STUDY: EX ASILO FILANGIERI

The “Ex Asilo Filangieri” is a former monastery XVI century building, located in the historic center of Naples. The building is owned by the municipality of Naples. In 2000, the building was chosen to host the “Universal Forum of Cultures 2013”, and underwent extensive renovation works. The first edition of this international event had taken place in Barcelona in 2004, and the municipality of Naples hoped to replicate Barcelona’s strategy and market the city as an international touristic destination. Yet, decreasing funds and continuous changes in the planning committee of the Forum gradually reduced the scope of the event. Meanwhile, the building remained under-used until March 2012 when it was occupied by the collective “La Balena”. It is the first time in Naples that a group of workers of art, culture and entertainment is mobilized to protest against cuts in the sector and mismanagement of public funds, and organized to create a new model of production and cultural management. It was a symbolic action of re-appropriating a space that the city’s grand plans had taken away from the citizens, in fact, to legalize the self-management of the former monastery, the “thinkers” of the Asilo have recovered a legal formula obsolete, but still in force: the civic use of a public good. In the aftermath of the occupation, the city administration declared that the creation of a “common good” was in continuity with the political agenda of the Municipality. In fact, for nonprofit experiments aimed to the general interests fulfillment, if there is a social value, the City Council can decide to proceed with an appropriate regulation (what then was made) to compensate the management expenses, providing regulations for civic use or other form of civic self-organization to be recognized in special agreements. With these acts, the Administration recognizes the value of existing experiences in the municipal territory, carried out by groups and/or committees of citizens according to the logic of self-government and experimentation of public spaces direct management, leading in this way to perceiving those goods as places which can be collectively used for the benefit of the local community. In March 2016, the Asilo celebrated four years of uninterrupted activity. The building is run by the artist community, and it hosts events such as theatre plays and workshops, concerts, movie projections, dance exhibitions, and political discussions (Fig. 5); weekly, in fact, a public assembly meets to coordinate the different uses of the space.



Figure 5. Former Asilo Filangieri, vico Maffei, Naples.

These experiences are configured and considered as “houses of the people”, places of strong sociality, thinking processes, intergenerational solidarity and deep rooting on the territory.

While the experience of Naples will probably not set the new global standard in urban governance, it is a story with its own dignity, and the analysis of its trajectory may be useful to analyze the dynamics at play in the politics of urban informality elsewhere.

## 7 CONCLUSIONS

There are many problems to solve, but the Italian debate regarding this issue clearly indicates legal, ethical, civil, political and administrative rights that identify in the commons a deliberate choice not only for overcoming the notion of ownership, but also for any abstract form of urban prevision which is not founded on direct participation and on the democratic right to use public space. The public space represents the place of expression of the authentic needs of the community, the place of production of lifestyles and new economies which are no longer founded on the concept of *financial income*, a concept which has historically characterized the allocation of public patrimony goods; these economies are rather founded on the idea that the *social income* (with its civic uses) is an integral part of the *economic income*, as an essential part of the social welfare and of the projections of settled communities.

The passionate discussions about this issue are hardly marginal in relation to the city issue, they are a decisive response to the fact that today the city, with its complex and interactive global dimensions, presents an essential need for a new *trend* of thoughts, and also intelligence and administration.

The birth of advanced political systems in which new forms of citizen activism does not take place outside of the political system but take shape within it, through more participatory ways of interacting, to produce more effective results, makes us hope that there is already a change which can continue to advance and also find a possible configuration in architecture.

The commons represent an element of strong change from the traditional planning, because they deconstruct the idea of the public goods unity as an axiom of the territorial government and recognize that private entities can co-produce goods whose benefits can be shared, and give rights to communities outside the administrative boundaries of the territory.

It is along these axes which hold together an un-referential planning, the passing of the concept of public good to create new civic uses, the overriding public interest, the need to link social boundaries and distances with new figures of the institutional and administrative reality, that you have the vast and yet to be explored territory of the commons.

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## INTERIOR WITHOUT NOSTALGIA

### BETWEEN THE GREY OF THE GOLDEN AGE OF COMMUNISM AND THE LUXURY GOLD OF THE GREY CONSUMPTION

**Stefania Victoria Ruse**

*Associate Prof., Ph.D., "Ion Mincu" University of Architecture and Urbanism Bucharest (ROMANIA)  
stefi.ruse@yahoo.com*

#### **Abstract**

This may be a personal experience, standing for about fifty years – starting with the first memories of a child who wanted to become an architect, and ending with the adult, who became an architect and a teacher at the University of Architecture. There are two main periods in these fifty years of architecture and interiors, between the darkest grey of the communism and the most glamorous solid gold of our days.

The first twenty five years from this journey into the world of the interior architecture will propose an analysis of the way of living, from the written/drawn memories of the architects of the '70s and the '80s, including also some personal studies. The habitat will be seen as a result of the constraints of the communist period, a world of the grey spaces, populated with grey, sad, characters.

Special rules, colours, in particularly, had designed the space of some generations; a colour, as the dirty green of the walls in the hospitals, or in the block of flats, the same green of the linoleum, even in private spaces, marked the minds of the young people, even architects. Streets, houses, interiors, people are forming the background for the "golden age" of the socialist society. It is the time for the demolition of splendid monuments and houses, for the serial apartments, the small, cheap, cold, dark interiors with no identity, the time when the grey often becomes black. There is still a kind of resistance, the desperate battle for an artistic way of seeing the interior space, the exhibitions of object design, set decoration, fashion design.

The examples are chosen from the projects of that period, photos from the archives, details from the personal experience and from the workshops I had proposed to the students of the Faculties of Object Design, Interior Decoration and Interior Design, workshops that had the theme: "*Design and Dictatorship*".

The last 25 years represent also my experience as an architect and as an actor of the events which marked this period; I did see really bad examples, but also some spectacular changes. This period brings a lot of information from the Western world, for the architects who have discovered with enthusiasm new architectural programs, warm coloured interiors, wooden furniture, woollen carpets, cosy atmosphere. They began a permanent fight with the "new rich" and their "models of good taste", demanding luxury golden walls and furniture, dreaming of the Roma "palaces" of Baragan.

It is the time for controversial projects, the first magazines for interior decoration, the interiors of the ordinary people, the "actors of the transition" with the new architectural vocabulary which defines that period.

The shown projects will contain the opposite examples of *good* and *bad* design, regarding a new way of living, a new *life style*, promoted in the first line by the mass media, revealing the connections and the mentality changes in past-present-future.

From my personal experience with the students of the Faculty of Interior Architecture, I will choose and do some comments about the project “A house for an important personality in Romania”, one of the most interesting experiences for the students of the third year of study. The examples will show the extraordinary creativity of our students, born after 1989, and their own way of seeing the interiors of their future, between freedom, poetry and the possible victory of consumption.

**Keywords:** memory, communism, dictatorship, poverty, interior architecture, destruction, luxury, consumption

## 1 INTRODUCTION

This brief “excursus” proposes a return including five decades of living in Romania, my personal experience, and those of the malcontents who lived dramatic moments that marked their existence. It is a double reflection of these decades, seen by the students and architects of today and by the students and architects of yesterday, by today teachers, all with mentalities and feelings which seem so different at first glance, but united over the same enthusiasm and love for profession, being aware that each of us is influenced in good or bad by the space which surrounds us.

## 2 INTERIORS OF THE PAST – “GOLDEN AGE” OF SOCIALISM: ‘60S – ‘80S

“We have lived here for decades, in a serious conflict with the environment in which we move. And this conflict is really toxic. If you live in a toxic atmosphere, you end up becoming ill and, in my opinion, the Romanian population, especially the one who lives in the Romanian cities, is sick. We have to think of a therapeutic cure in a form of morbid result of so many years of living together arbitrarily between us and an environment that we had not chosen.” [1, p.65, our trans.]

I’ll start saying that, most often, for my generation born at the end of the sixth decade of the 20<sup>th</sup> century, the first interiors of our lives were no physical interiors but, more in our memory, they came to us from the stories of our parents and grandparents.

It may be a white interior, clean and austere as a monastery, with wooden clean floors and highchairs, with kilims and carpets, with wood cabinets painted in discreet colours, and scented hyacinths and lime; or maybe, as my grandmother told me, a bright interior with the rustling of silk, with high ceilings and bright chandeliers, huge mirrors that reflected images of an era of relative calm and prosperity, the “old world”. Light seemed very important, almost a living character: as I saw it, it was as bright as a morning of May, yellowed like an old family photo (Fig. 1).



Figure 1. Interior of a Villa, Bucharest, 1910

But how can you be nostalgic when you have never lived in these places, since you have not touched objects and inspired the perfumes of those rooms? I posed this question to students at a workshop with the theme “Architecture and Dictatorship in Romania, design and lifestyle” and, for most of them, it was an experience that sketched that era, more objective than the stories they had heard at home from their parents or grandparents, more or less nostalgic. They were astonished to discover how people lived in “shared” spaces, as families made up of six-seven people who lived in a single room, with only one kitchen and one bathroom shared also with many other families.

Architect Gabriela Tabacu tells a similar experience, with bitter humor: “The universe of that vast house, which I was so pleased to discover, was full of nooks, traps and hiding places, and full with life. Going up and down on the two ladders, a motley crowd who cobbled together in condominium living apart all kinds of rooms, scattered helter-skelter ... that is why, in the new order of things, the residents upstairs had kitchens in the basement, while those from the attic had no place for the kitchens. Instead, some had – not all, maybe just two-three, – one closet, object of discontent for the upstairs and the downstairs families...” [2, p. 154-155, our trans.]

We are in the early '70s, when huge numbers of peasants were brought to live in the new “districts bedroom” in large cities and especially in Bucharest: Berceni, Militari, Balta Albă are just a few examples to illustrate this displacement with dramatic consequences (Fig. 2).



Figure 2. Bucharest, Militari District, Blocks of flats, '70s.

A stunning blend of peasants, workers and intellectuals of a new type, plus what remained of the elite left homeless after the Nationalization, found new homes in the blocks filled with tiny apartments even for those, fewer in number, with comfort. Furniture of large series, made in Romania, gave a nearly identical look to interiors, fully contributing to depersonalization. It was quite frustrating for the architecture students of that time to discover the standards and the recommendations in the manuals (Fig. 3).

### Cele mai mari „cartiere“ construite după cutremurul din 1977

Apartamente construite în București în perioada 1977-1990

Zona	Nr. apartamente	Zona	Nr. apartamente
Pantelimon	27.000	Tineretului	10.800
Colentina	22.000	Drumul Taberei	10.000
Rahova	18.000	Bulevardul Basarabiei	8.700
(Mărgeanului-Ispirescu)		Ștefan cel Mare	8.200
Berceni-Sud	15.400	Calea Moșilor-	7.800
Bulevardul Unirii	15.000	Ștefan cel Mare	
Titian	15.000	Aviației	7.500
13 Septembrie	10.980	Bulevardul Titulescu	5.800

Figure 3. Apartments built in Bucharest, 1977-1990, nearly 150.000 new apartments, in the blocks of flats that mutilated the city and its human spirit.

Inside the grey walls, the magic of that childhood dream disappears; green linoleum flooring, furniture panels and melamine agglomerate, badly finished details and always dirty common areas are bathed in a harsh light of neon. Certainly, it is hard to forget the walls painted in green oil, in private spaces or in public ones, the same tiles, flooring and the same furniture design. The old atmosphere was still to be found only in villas and apartments built before 1945, but even their discreet perfume seemed to vanish. Students in architecture from the '70s and '80s, although learning by manuals and courses that tell you how to design for the "new man of the multilaterally developed socialist society", dreams of modern interiors, flipping through magazines and catalogues brought with great difficulty from the West (Fig. 4).

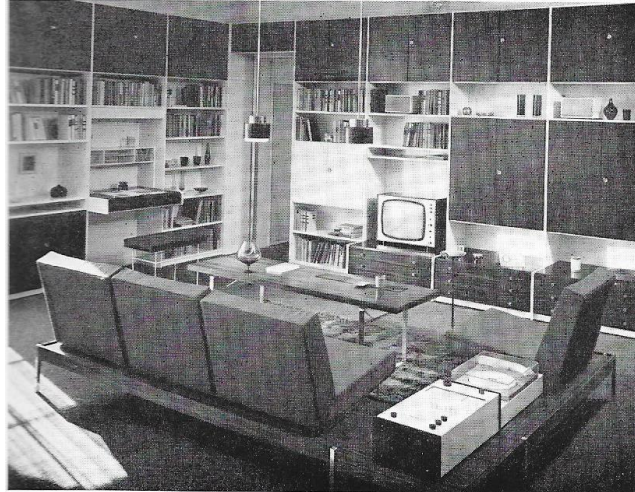


Figure 4. The dreamed Living room of the socialist apartment - German catalogue.

The very human ideal of those years is designed, literally and figuratively, as architecture for the people. The masculine and feminine beauty are seen in the context of values imposed by the leading party who knows how each lives in intimacy and controls the minds and bodies, even feelings (Fig. 5).

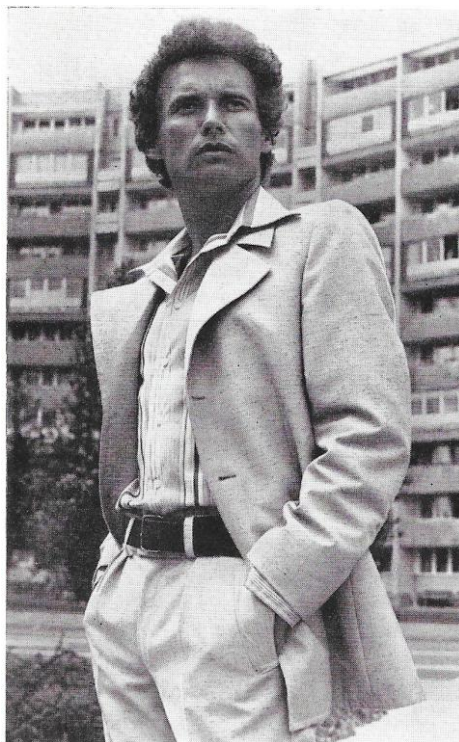


Figure 5. Male elegance and beauty, with a background of blocks of flats, '80s

The '80s bring sadness and despair, destruction of neighborhoods, demolition of splendid monuments of inestimable value and some beautiful houses that have withstood the two world wars, but not a dictator's bulldozers. And once again, the creators found refuge in their art: my colleagues,



students at the Faculty of architecture, endured hunger and cold, they were drawing their projects dressed in ski suits, with wool gloves, ate poorly but laughed a lot. Living and working interiors look warmer with painted walls, colorful curtains and bedspreads patchwork. The dirty gray is present everywhere, dirty interiors and purest souls, but youth and imagination help them resist; any information "from the Western world" is precious and not once I saw gorgeous interiors achieved with the minimum of material and costs, just to get out of that killing morass. (Fig 6).



Figure 6. Interior of a student's room, with a costume for the Faculty of Architecture Ball

"Huge areas of Bucharest were destroyed in a barbarian way, with specialized technical means: dumping excavators, pulling cables, hitting Ball of 1-2 tons...Instead of a living heritage that gave charm, novelty-specificity of this great city will rise another 7-10 storey blocks, crammed into promiscuity and lack of social comfort for tens of thousands of other residents. There is a feeling that a corner of the city in which you feel at home disappears..." are the words of bitterness, by the famous architect and watercolour painter George Leahu [3, p. 182, our trans.] (Fig. 7).



Figure 7. The portrait of humiliation, interior of a kitchen table, 1989 (Martorul surpriza, Andrei Pandele, Ed.Compania, Bucuresti, 2004)

### 3 INTERIORS OF THE RECENT PAST: FROM THE '90S UNTIL NOW

Awakened from the nightmare, and yet remaining trapped in it, we were all, architects and non-architects, caught in a vortex that has not subsided in the last 25 years. With a huge effort, that someone who lived in a normal world has no way to understand it, all the survivors, and together with them architects, tried to outline this new world. Architects should, however, by their very vocation, seek to influence the environment for the benefit of all, but, they also did big mistakes, brought many more complaints than praise, but things are starting, slowly, slowly to get moving –is this the right direction?

A real estate boom breaks all known canons, interior design magazines appear one after another, but giving to the readers hungry for news, solutions of questionable taste. Houses built “on the ground” are so numerous and demand for furniture and interior decoration that very soon the major brands appear on the market.

Several types of interiors define the new ideal which the beneficiary prefer: on the top is the “nouveau riche” model and also the “special design” of the Roma houses. The “palaces” of Baragan plain appeared in the most famous architectural magazines as an example of an architectural style which can be hardly explained and understood. In a way, it's about the fixation of the poor man who wants to become, over night, a prince. The proportions are pharaonic, the furniture is oversized, decorated in gold leaf, huge crystals, walls in bright colours, a kind of breathtaking taste with flagrant constructive mistakes and finishing with details drawn from Disney Land, or cheap commercials (Fig. 8).



Figure 8. Interior design, Dollar Roma House

After 2000, immense houses appeared, counting tens of rooms, for people more or less educated, but fortunate, interiors which were copying those of Versailles or Viennese palaces. Most of them are not (fortunately) signed by an architect, but the result is an absolute kitsch: a terrible puzzle of huge meaningless structures, strong colours, plastic doors, oriental carpets and strange details.



For those who want to look more educated, a kind of Eclectic Style joins golden details, expensive materials, Murano chandeliers and furniture signed by famous designers – Versace is one of them, with his beloved neo-baroque style (Fig. 9).



Figure 9. The New Rich's golden luxury

There is also a return to normality, some architects and their beneficiaries prefer a warm and smoothing interior with items salvaged from demolitions and confiscations, with natural materials; a return to wood, stone, clean walls and chests painted, comfortable armchairs and velvet curtains, recalling long past times, bringing back the fragrance of the interior that most of us know only from stories (Fig. 10).



Figure 10. Interior of a rehabilitated Villa, design Stefania Victoria Ruse

Others are feeling closer to the far East, the Japanese architecture and the minimalist style. The architect has again, a difficult mission: to educate the beneficiary, to change old mentalities, to be up to date with the last materials and techno details.

For twenty years I have worked with students and I have travelled with them through these decades of restlessness, in a mode that oscillated between post postmodernism, minimalism, deconstruction,

neo-industrial, neo-baroque, neo-organic, trying to find together a bridge from the past to the future. Topics related to housing have always sparked controversy, highlighting once again the complexity and difficulties in finding good solutions. Far from the '80s, from the cruel challenge, uniformity and interior standard, the architects of tomorrow do not have, however, an easy task. The help consists in their imagination and desire to show their power of discernment and creative force.

When I thought I saw almost everything, that everything has been said, a fresh idea takes us by surprise, and at the same time fills us with hope for a new beginning. Not just design rules and composition are important, but also knowledge in anthropology, sociology, literature and art styles, the permanent need for multidisciplinary and intercultural approach. Sensory experiences, the power of suggestion given by music, even astronomy or physics, all can be the starting point for a journey to the architect himself, in his quest to find the right idea (Fig. 11 and Fig. 12).



Figure 11. Interior design, Sandulescu Alexandru, Faculty of Interior Architecture



Figure 12. Interior signed by Teodora Ungureanu, Faculty of Interior Design, now graduated.

#### 4 CONCLUSIONS

Perhaps my generation is among the first, if not the very first, who willingly decided to wear digital handcuffs. Medicine specialists say that the information in excess causes even physical injury, not only mental ones, but, apparently, we assume, young and less young, this risk. Of course, computer aided design has brought us unexpected rewards, but also deception, frustration, the feeling that in reality things are not going to please us all, as in three-dimensional simulations. However, I remain optimistic: young architects, colleagues, my former and current students, are the evidence of a remarkable creativity, and, with tenacity and even serenity, they continue to dream of a good quality architecture. In addition, it seems that, for architecture, poetry is not dead yet – and this is how I become, in my turn, nostalgic. So, sometimes talking with the future architects, about the architecture of tomorrow, about honesty, simplicity and naturally believe, we try to imagine, together, a white interior, coming from a far childhood, an interior with a clean wooden floor, smelling of resin, and in its midst, a high, solid wood chair, and a red apple on it, as a promise of the future.

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## SHARING TERRITORIES

**Guillaume Baron**

*Architect D.P.L.G., BARON arch., Paris (FRANCE)  
office@baron-arch.eu*

### Abstract

Cities are a public good, everyday reinvented and everyday threatened.

In the last three decades, a closer interlinking between urban planning and neoliberal economy shapes cities not only from their own capacity of organizing the daily life of citizens, but according to the economical benefits various stakeholders see in them (Davis and Monk, 2007). This major evolution legitimates the notion of empowerment, however equivocal (Bacqué and Biewener, 2015), and recent experiences of citizen's involvement are evidences of new paradigms of urban transformation carried out by citizens who reject the idea of living in cities, which don't mirror their needs, hopes and opinions.

Then, urban projects reflect the expression of contentious situations resulting from opposite interests (individual and collective, including economical, political, ecological, social parameters), which call the design process into question. How can practitioners, among a myriad of stakeholders, listen each voice and integrate unsaid points of view? Can "antagonism" become a major substance to develop the project? Can "conflict" be considered as a synonym of "debate"? Finally, is there a way to organise a more integrative design process, which could be an opportunity to target a fairly sharing of our territories?

The paper focuses on inhabited territories, where the expression of conflict is the most visible. The first part describes antagonism and its consequences within those territories, before bringing to light the real beneficiary of those transformations. Then, by promoting a multi-scale approach to understand the city of today, we will explore the territory of Bondy, located in the suburb of Paris (France), which was the heart of our latest urban project, « Bo.N.Dy New Dynamics », awarded the special mention in the 13<sup>rd</sup> session of the EUROPAN Competition (The Adaptable City). In such a vulnerable area, where « thinking collective » is a major challenge, the notion of scale as a metric tool to design spaces and volumes, to divide plots and calculate their value (all the quantifiable measurements) is confronted to some strategies of controversies (Latour, 2007), which include more sensitive and not easily assessable dimensions, requiring various social knowledge. In the third part, some examples of expected spatial results we submit to the jury are finally an appeal to develop projects integrating doubts and uncertainty, instead of irreversible solutions.

**Keywords:** controversies, consensus, fair-sharing, French suburbs

### 1 INTRODUCTION

Cities are a public good, everyday reinvented and everyday threatened.

In the last three decades, a closer interlinking between urban planning and neoliberal economy shapes cities not only from their own capacity of organizing the daily life of citizens, but according to the economical benefits various stakeholders see on them [1]. This major evolution legitimates the notion of empowerment, however equivocal [2], and recent experiences of citizen's involvement are

evidences of new paradigms of urban transformation carried out by citizens who reject the idea of living in cities, which don't mirror their needs, hopes and opinions.

Then, urban projects reflect the expression of contentious situations resulting from opposite interests (individual and collective, including economical, political, ecological, social parameters), which call the design process into question. How can practitioners, among a myriad of stakeholders, listen each voice and integrate unsaid points of view? Can "antagonism" become a major substance to develop the project? Can "conflict" be considered as a synonym of "debate"? Finally, is there a way to organise a more integrative design process, which could be an opportunity to target a fairly sharing of our territories?

The paper focuses on inhabited territories, where the expression of conflict is the most visible. The first part describes antagonism and its consequences within those territories, before bringing to light the real beneficiary of those transformations. Then, by promoting a multi-scale approach to understand the city of today, we will explore the territory of Bondy, located in the suburb of Paris (France), which was the heart of our latest urban project, « Bo.N.Dy. New Dynamics », awarded the special mention in the 13<sup>th</sup> session of the EUROPAN Competition (The Adaptable City). In such a vulnerable area, where « thinking collective » is a major challenge, the notion of scale as a metric tool to design spaces and volumes, to divide plots and calculate their value (all the quantifiable measurements) is confronted to some strategies of controversies [3], which include more sensitive and not easily assessable dimensions, requiring various social knowledge. In the third part, some examples of expected spatial results we submit to the jury are finally an appeal to develop projects integrating doubts and uncertainty, instead of irreversible solutions.

## 2 UNDERSTANDING THE ANTAGONISM

Involving a team in a competition gives opportunity to all members to get a critical point of view about all the urban phenomena we notice for the last three decades, when neoliberal politics started to become a major component of city planning. Therefore, paying attention to various critical essays and academic researches may encourage us to keep a certain distance from the local scale to understand the problems in their entirety and diversity [4]. By using other scales of evaluation, we explored as well other urban situations, making us more aware of understanding how the antagonisms of the competition site are shaped, and able to bring to light the spatial mechanisms embraced by various scales beyond one only territory [5]. Two major urban phenomena have been detected, which later suggested us to erect a multi-scale approach to draw a first diagnosis of the site.

### 2.1 The city of today, from social uprooting to urban fragmentation

Our critical overview of various recent city developments starts in the '80s, when the distinction between urban planning and private investments started its dissolution. Progressively, two major tendencies appear to develop the city: top-down strategies, with a growing alliance between public and private decision makers, both supposed to complement one another, and, as a citizen reaction, bottom-up initiatives asking for a bigger citizen involvement in the process of decision.

#### 2.1.1 Good-looking neoliberalism

Massive urban transformations, in the recent years, have been shaped by neoliberal politics whose immediate consequences is the inequality of treatments offered to its citizens. This observation makes the global system of transformation non-viable [1]. Indeed, various examples, and with them a specific scale of analyse, illustrate what inequality is into the city and how economic benefits got the upper hand over the public interest [6]:

- The Gated-communities phenomenon is a small-scale privatization of a space, which actually could be public. Fences are displayed to make visible the boundary of the area and to emphasize the distinction between the ones who live in, and the ones who are out. Fences act as a mechanism of defence of a territory, ordered by inhabitants who spread out a symbolic domination [7];

- Massive transformations we recently observe in Beijing, due to the organization of the Olympics Games in 2008, contribute to drastically cleaning the vision of the traditional city by building high-quality architecture (i.e. National Center for Performing Arts, by Paul Andreu in 2007, CCTV Headquarters by OMA in 2008, National Stadium by Herzog and De Meuron in 2008). Today, Beijing is famous for these major buildings, whereas all the citizens' protestations occurred by these transformations have been kept quiet [1];
- The city of Dubai, as well, is drastically changing its urban space, by transforming a small original fisherman village into a city dedicated to leisure and profits, where individual liberty and social life don't belong to the business plan [8].

### 2.1.2 *Inequality, social abandonment and violence*

Market forces and non-negotiable processes of decision have promoted massive transformations. They create a social uprooting, because they bring disinterest about what could happen in the city. Indeed, in those three examples, power belongs to only one side, which contributes to dissolve the feeling of community [1]. To be more explicit, this dissolution comes from the final image the city gained after being transformed by such a process: buildings are isolated and spaces are closed. Modernism, at its paroxysm, by disconnecting buildings from their territory, contributes to replacing the feeling of community by a feeling of isolation [9].

If the feeling of community disappears, the whole city becomes fragmented, and the urban condition of each citizen is made of inequality and social distinction. When confronting to the venue of occidentals on his territory, Dubai reacted by adapting the liberty of each citizens [8]. Two citizens, therefore, may not have neither the same rights, nor the same liberty. Market forces, as well, are sometimes so efficient that "rejection" can be more spatial and less visible by moving the poverty out of the city [10].

Sometimes, social protestation nevertheless appears. That was the case in the Shoreditch district of London, which is confronted to the gentrification phenomenon. A demonstration, held by anti-gentrification activists, happened in September 2015, which finally targeted a cereal café, freshly settled in the district. As Will Harvey, stakeholder of these demonstrations wrote in the Guardian the day after, "Some 49% of the children in the borough live below the poverty line. Property developers and private landlords are making millions forcing these children and families out of their homes, often through violent evictions, and they are regularly moved into inadequate temporary accommodation and sometimes on to the streets. (...) The point of the protest wasn't to damage property or to frighten anyone. It was to highlight that gentrification is brutal, and is driving poverty in London" [11]. This example illustrates what the scholar Matthieu Giroud already noticed when observing the gentrification phenomenon: both social and symbolic violence bring uneasiness, frustration, rejection, isolation, disregard and confrontation [12].

### 2.1.3 *Handmade urbanism*

On a certain way, protestation becomes progressively institutionalised, as if the denser and denser network of citizens associations launches, after Jane Jacobs in 1961 [13], a second vibrant call for a new design process. Today, various citizens' initiatives can be analysed, from the most spontaneous to most organized ones. They came out certainly as a reaction against the social uprooting (a space within inequality is visible) and the urban fragmentation (the space is not for all of us). For instance, when the car industry suddenly collapsed, in Detroit, USA, the economical crisis engendered as well an urban degradation. To preserve the feeling of community, a few inhabitants, who are too fragile to leave the city for a better situation, developed an urban agriculture, which proposes food for all [14]. Handmade urbanism, which starts with handmade initiatives, is the expression of rejection of alienation of citizens from one another [15].

The increase of bottom-up initiatives progressively shapes a second network of stakeholders, which defies the traditional top-down scheme. As far as the practitioners are concerned, the challenge is to combine this multitude of voices, this diversity of needs, hopes, and wishes, to make the project possible. But, it is rather hard to identify this network and to legitimate this knowledge. Citizens



associations have understood this preliminary repulsion coming from traditional stakeholders, for that reason, they organized practical actions. « Curry Vavart », for instance, is a Parisian association, which pursues a concrete objective of occupying empty buildings in the city, by making easier their temporary occupancy by artists. Progressively, years after years, public stakeholders have identified this association and its expertise as becoming progressively precious. Practical action like this can be considered as a tactic [16] to be finally legitimated.

Various experiences, described in *Handmade Urbanism* [15] and *We own the city* [17], can be considered as evidences for a successful new organisation of the working process, which manages to combine both networks « top-down » and « bottom-up ». But organizing such a process imposes to change the traditional paradigm of doing project, to share the power of decision (one voice for each stakeholder) and to share and understand all the knowledge.

#### 2.1.4 Taking part to a competition

In 2015, the EUROPAN association launched a competition under the general theme “The Adaptable city”, and competitors could participate after choosing a territory among various proposals. We already took part to the previous session of this competition, showing our attachment to the French suburbs. Our entry illustrated another methodology of design, founded on a specific diagnosis and citizens’ involvement, which targeted a “framework of progressive results” [18]. In this new session, we selected the site of Bondy, in the suburb of Paris, which meets various stakes supported by the public council, by residential owners and major retailers belonging to wealthy international companies (i.e. Conforama, Darty, Volkswagen, BP). Above all, the competition site is interesting since the council, which wants to promote a drastic urban transformation, owns only 17% of the global area of the site, which creates an inedited situation where negotiations are unavoidable.

The site is one-kilometre long, located between the Canal de l’Ourcq and a national road with a dense traffic. Three wide blocks are inhabited by those brands, and the retail activity is settled within warehouses, without any connections neither toward the site nor the canal. Since the council is in minority, the companies, which own the brands, must agree all decisions. For that reason, various attempts of transformation have been launched in the recent years, without any results. No one manages to define a method leading to any consensus.

To coincide the existing driving forces, a specific methodology has to be created. Our proposal is a roadmap with successive steps, and each step publishes its conclusions. Our theoretical background is founded on the “controversies maps” [3], which analyse individual concerns and speeches to create a collective point of view. Therefore, our roadmap avoids all definitive visions of the city, neither unable to resist to unpredictable situations nor to create them. But it describes a method in which the city wins its capacity to get the control of the territory, to reject social uprooting and urban fragmentation.

## 2.2 Defining an “input” to the project, through a multi-scales approach

A multi-scale approach is an opportunity to design a project based on its quality and its potential. This kind of approach rejects the archaic posture, which consists in defining the suburb according to its core-city. Instead of that, project must go beyond the traditional scheme “center vs. periphery” and focus on the life, which happens locally [19]. But, the suburban cities are complex, much more than the traditional cities, and require first a framework for a future democratic restructuring [20]. In his proposal for the Grand Paris competition, held in 2009, Finn Geipel and his integrative team suggested to design the city according to nine principles, among them: “city on the city”, “strength in diversity”, “heterogeneous city”, “globality, proximity”. This proposal can be considered as a call to rethink collectively the inhabited city, heterogeneous and inequitable, by interrogating various scales of observation. Therefore, our strategy was to propose a preliminary study, an “input”, which promotes, first of all, this multi-scale approach and, secondly, invites all the stakeholders to take part to the controversies. Four scales are actually illustrated.

### 2.2.1 Geographical scale: Interacting with the Grand Paysage

The first scale of observation takes into account a part of the “Grand Paysage” [20], which gathers 6 cities on both sides of the Canal de l’Ourcq. Our diagnosis shows the future transformations that are already expected, and how the 6 cities develop their own territory. With such a map, we pointed out two main phenomena. Firstly, the canal is becoming an “infrastructure of leisure”, since each city and various bottom-up initiatives organize here a myriad of activities. Secondly, the network of public transportation is going to be densified, making our competition site more easily accessible, and more attractive in the future. Drawing such a map, which combines official projects (transportation) and personal observations (the social occupancy) was an opportunity to show dimensions that have never been collected before.

### 2.2.2 Theoretical scale: Evidence-based transformation

The second scale is theoretical, and illustrates the stakes we defined in our entry. The site’s transformation will necessarily deal with a transformation of the usual process of making projects, to better integrate new and unpredictable parameters: for instance, the time required to take a decision (which sometimes can be very long, and sometimes very short), unexpected negotiation’s results, and some other doubts regarding both the territorial and economical contexts which can drastically change during the long time of each urban project. To debate these identified stakes, we illustrate each of them with a major architectural or urban reference, which can be better understood by the jury (Table 1) and act as evidences of the tangible urban uncertainty.

Table 1. Evidence-based transformation

Observation	Project’s stakes	Architectural references
Absence of collective feeling	Building a community of inhabitants	Home for all, Toyo Ito arch., Kaimaishi, Japon, 2011
No global vision through successive transformation	Designing project successively, from the results of the previous one	Footbridge to the roof of the submarine base, Manuel de Solar Morales arch., Saint-Nazaire, France, 2004, and Refurbishment of this submarine base, Finn Geipel arch., 2007
Avoiding interruption of the economic life of the stores	Creating new building process taking existing constraints into account	Central Station, Meinhard von Gerkan arch., Berlin, 2011
Absence of users’ and inhabitants’ vision of the territory	Getting and understanding people’ requests	Hong Kong Bank, Norman Foster arch. Hong Kong, 1986

### 2.2.3 Local scale: Designing the Bondy’block

The third scale is physical but looks closer to the territory to show its spatial identity. The site is composed of three blocks, 250m long and 80m wide. Each existing block is then divided into several plots with various dimensions, and existing warehouses got therefore unequal areas. This lack of regularity appears as a major characteristic of the city, with a strong difference from the well-known Ville Haussmannienne. By focusing of this spatial complexity, which is moreover directly connected to the canal, we point out the spontaneity of use of the “faubourgs” and the social richness, which can be

generated. By a perspective drawing, we immediately show that our position won't consist in cleaning the area, but in accepting its diversity and make it stronger.

#### 2.2.4 Social scale: Launching an integrative process of work

The final scale of the "input" is the presentation of an integrative team, which will be able to face the major urban and theoretical stakes. By showing a graphic (Fig. 1), which points out all the actors involved during the time of the project, step after step (and controversy after controversy), we show our belief that the connection between various fields of knowledge is necessary. Besides the official stakeholders, several scholars joined the team, to enrich specific topics directly linked to the site (i.e. new mobility networks, new typologies of retail areas, environmental issues, expert in property-sharing).

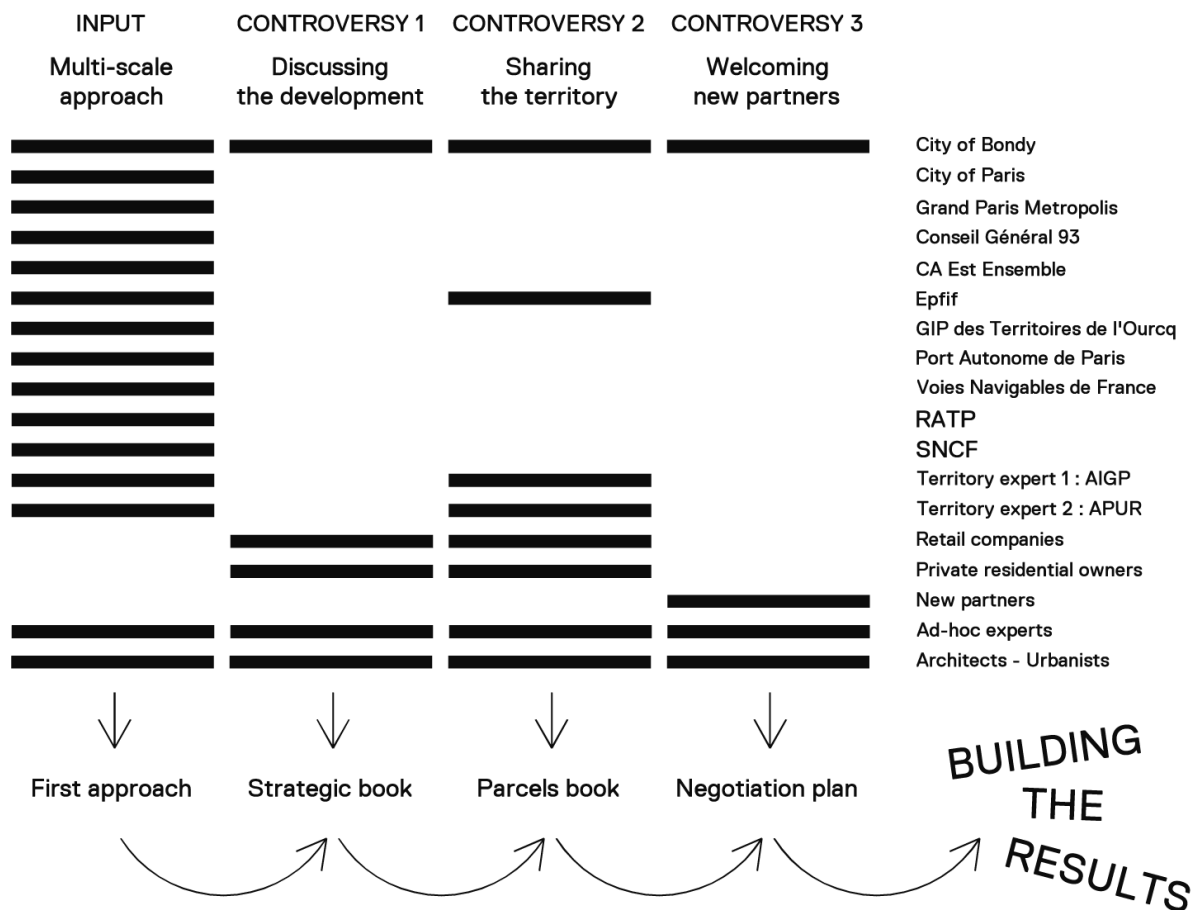


Figure 1. Scheme of the Integrative Process: the myriad of stakeholders according to the time of the design process

The multi-scale approach we detailed in this input helps to better describe our observations and our identification on the stakes. It is presented within a preliminary document called "First approach". That document focus on the site, but evokes as well the city transformation of the recent decades to point out the inequality we observe in various cities, through the spectrum of both phenomena: urban fragmentation and social uprooting.

### 3 PLANNING CONTROVERSIES

The methodology of the controversies has been erected for two reasons. Firstly, it tries to make compatible some design processes, which are traditionally characterized by opposite frameworks, supported by groups of people with divergent objectives: public council, local institutions, major retail companies, private residential owners, various associations, real estate developers. Hence, planning controversies gives opportunity to each voice to take part to the debate. And secondly, we admit from the beginning that the results of those coming negotiations are unknown. Indeed, controversies

organize the driving forces of the project according to the building of an unknown result, more than detailing an incantatory result, which certainly will be unable to deal with the real context (for instance, the incapacity of negotiating with one owner) or to resist to a shock we today cannot imagine. Therefore, three successive steps have been imagined, which convoke specific stakeholders and conclude with the publishing of an official report.

### 3.1 Controversy 1: Discussing the development

The site is today inhabited by a multitude of warehouses, which host retail activity. The analysis of the owners' profiles shows a big disparity of activities and benefits. For instance, the petrol station BP needs a really small plot to generate a big profit, whereas Conforama, which is a brand of furniture, requires a wider plot to expose its goods, but generates a much smaller turnover. That means that each company has a specific strategy of development, and may have a specific ambition for the site. For some of them, the transformation of the site is a good opportunity to move or to get bigger space, whereas some others may not want to change anything. Therefore, due the uncertainty of the reaction of each of them, we organize a first controversy to discuss about their strategy of development.

Conclusion of controversy 1: The controversy will end with the publishing of a report, the "Strategic book", which points out how each company wants to take advantage of the coming transformations.

### 3.2 Controversy 2: Sharing the territory

After the first controversy, we know which companies want to leave the site, which ones want to move into the site or stay at the same position. Consequently, the second controversy targets the sharing of the territory, and it is time to negotiate this sharing with other stakeholders and experts. The "economical" posture our team exposes is the increase of the land possession of the city of Bondy. Indeed, the city today owns only 17% of the site area, which means it is unable to develop by itself the site. Moreover, opening the city toward the canal, to improve the quality of life of all citizens, impose to plan some negotiations with the companies. During the competition, we imagined some negotiations with a result of around 43% of public possession, which make easier the development of the area to introduce, for instance, some public equipments.

Conclusion of Controversy 2: The controversy will end with the publishing of a report, the "Parcels book", which illustrates all the parcels, which are now free of use and under the property of the city.

### 3.3 Controversy 3: Welcoming new partners

With a control of 43% of the territory, the city is now able to develop the territory according to urban principles, which target a better repartition of retail activities, and more porosity for the parcels. On a certain way, the city gets the chance to avoid being a gated city, by looking for more equality in the sharing of the space. But, we did advance the hypothesis that controlling 43% of the territory is too much, and the city should now welcome new partners to introduce a better diversity of activities. Therefore, the last controversy plans some negotiations between the city council, on one side, and real estate developers or citizens associations on the other side, which are looking for a plot to develop their activity. The new stakeholders take part in the negotiations, and become new partners of the city development.

Conclusion of Controversy 3: The controversy will end with the publishing of a report, the "Negotiation plan", which constitutes the support of all the future negotiations between the city and the new partners.

## 4 BUILDING THE SPATIAL RESULTS

The third and final controversy concludes with the involvement of new stakeholders. Projects can henceforth, successively or simultaneously, start. But the effective building of the results doesn't prevent attending of unexpected reversals. Each project, each plot, produces new situations, and new controversies. These iterations are considered as opportunities to improve the development of the project, beyond our preliminary intentions. Within the project's area, we have focused our proposal on

seven situations, which are different from each other by the process they may require in the future. The city of Bondy does consider them neither as programmatic nor as design proposals, but as proposal of what can happen in the future and how we may have to react in such a situation. Like in the “input”, we illustrated each situation with an architectural or urban reference, to show that the results of a project is never the one expected at the beginning. The major task is, finally, to lead negotiations and understand the various and divergent interests people see in the site.

#### 4.1 Example 1: Integrating temporary situations

For this first example, we worked on a project, which must deal with the uncertainty of the GEMO store, which is a brand of clothes belonging to one of the major clothing company in France (ERAM Group). As the strategy of development of GEMO depends on its headquarters, we supposed that this company is interested in moving first in a temporary building in order to integrate, in a medium term, a new building, which could not only gather all the affiliates of the ERAM Group but also offer a more visible and accessible plot.

Architectural reference 1: In 1991, Nasrine Seraji built a temporary building, announcing the future American Center, in the 12<sup>nd</sup> district of Paris. The building will be dismantled after the opening of the final one, designed by Frank Gehry.

#### 4.2 Example 2: First triggering, then observing, finally designing

We developed a second example, which illustrated a progressive transformation of the site. Each step of the transformation will be analysed and, according to the observations, will propose adapted strategies of change. For instance, fences today delimit a central block located close to the canal. We first suggested opening the boundaries of the site, to implement a public building, allowing people to cross easily the site to reach the canal. Consequently, the site may be more attractive and suggests, in the future, new activity we cannot today imagine.

Architectural reference 2: In 1994, Manuel de Solar Morales opened to the public the roof of the submarine base of Saint-Nazaire, by adding a footbridge. This action will finally be the starting point of a progressive whole transformation of the building, with a project of Finn Geipel in 2007.

#### 4.3 Example 3: Providing for continuous development

The third example illustrated in our proposal imagined a necessary discussion about the future need of a major electrical goods company (Darty). After studying various examples, we have noticed that this kind of company needs to be located in a plot where future extension can be possible, in order to be able to increase the area of sales. Therefore, we suggested keeping free space around this building in order to make possible future renewal.

Architectural reference 3: Major retail stores, like Galeries Lafayette or Le Bon Marché in Paris illustrate this need, by buying the plots located just next to the existing building, or by connecting several buildings with footbridges, in order to increase their area of sales.

### 5 CONCLUSIONS

Defining an input, which is founded on a multi-scale approach, appears as a crucial need to develop a realistic diagnosis of the area of the competition. We show in the first part of this paper how various phenomena, like social uprooting and urban fragmentation, may appear without navigating between a multitude of scales, physical or theoretical. But, collecting data and giving a personal vision of how an inhabited territory must be developed is not enough. A myriad of urban developments shows how a strong process of negotiations is required, which takes into account the uncertainty of the discussion. For that reason, we have to accept first the diversity of needs and then to share the power. Controversies become determinant to understand the strong diversity of interests belonging to each situation [3]. In our project, they act as a theoretical tool to collectively build a fairer public space, without which public space provokes both social and symbolic violence.

As we detailed in the paper, the discussions and their conclusions are hypothetic for the moment. But, they underline two other challenges. Firstly, controversies interrogate the way we can cross all individual needs according to the urban quality. Indeed, they don't mean building everything everywhere, but require being rigorous about the spatial quality each project must promote. This needs, finally, to define objective criteria of that quality [21]. Secondly, controversies and their spatial results will need to be evaluated by external experts to appreciate their efficiency. More than observing and analysing the controversies when they happen, experts and scholars will have to evaluate the social impact of the coming transformations. That means we all must make a strong distinction between the spatial transformation and the social transformation [22], which can be evaluated a couple of years later.

Finally, we enlighten, through this paper, a specific theoretical methodology of design. That means that practitioners still have to integrate physical dimensions in their project and, as well, they must be creative regarding the way we can reach those transformations. Navigating between those tangible and cognitive scales is the expression of the complexity of each project, in architecture, urban design and in so many other disciplines. Hence, this interrogates the teaching of knowledge, which has to mirror the reality of the situations [23] to help students and professionals to face antagonism and transform it into a catalyst substance, able to feed all projects.

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## SPACE APPROPRIATION AND URBAN PLANNING IN MACAO:

### A HISTORY OF IN BETWEENNESS

**Regina Campinho**

*PhD candidate, Center for Social Studies, University of Coimbra (PORTUGAL) and  
History of Contemporary Architecture Research Center, University of Lorraine (FRANCE)  
regina.da.luz.campinho@gmail.com*

#### **Abstract**

In the mid-16<sup>th</sup> century, the Portuguese succeeded in establishing themselves in the Pearl River Delta, developing in the Macao peninsula a burgeoning city with an exclusive status as the sole western permanent trading post allowed in the South China Sea. Macao will grow to become a cosmopolitan urban center, closely connected to Canton, at the heart of trade between China and the world. Only with the 1<sup>st</sup> Opium War (1839-1842) will this golden era come to an end, with the English imperial power forcing the “gospel” of free trade into China Sea ports, where more competitive western settlements soon blossomed.

The World Heritage property bears witness to Macao’s exceptional history, placing the peaceful encounter of cultures and intertwining of influences between East and West at the heart of its outstanding universal value declaration. Macao is, by these criteria, the quintessential “in between city”, as it has throughout its history developed in between cultures, identities, empires and, more importantly, in between autonomous spatial appropriation and centralized urban planning.

Putting it in a schematic way, Macao has known essentially two very different forms of urban development, closely related to the official settlement strategy deployed by the Portuguese imperial administration which, in its turn, reflected how it was coping and adapting to the changing geopolitical circumstances in the Pearl River Delta region.

From the early settlement to the mid-19<sup>th</sup> century, the city follows an “organic” pattern, meaning that it grew with no predetermined geometrical regularity in the configuration of the urban structure and the built space. Instead, it developed adapting itself morphologically and functionally to the site, while establishing strong military and religious visual elements in the urban landscape.

We may interpret this irregularity of the urban form as the result of an absence of political or colonizing purpose during these first three centuries: the occupation of the territory and the spatial organization of the city were the product of relatively free individual appropriation and shaping of the built space by the different communities that inhabited it, combined with an absence or relative debility of a centralizing authority. For example, it was only in the 1620s that the first Portuguese governors were appointed to Macao, the matters relating to the town government being treated up until the 1850s by the local Senate, a group of elected representatives among the resident Portuguese merchants. It was them who established with the Chinese local authorities the practice of a “divided sovereignty”, which in effect meant that the Chinese dictated the rules (or rather the restrictions) namely in what concerned land usage, as well as construction and urban renovation. Given this case-by-case and extremely negotiated management scheme, no global urban planning could prevail.

This state of affairs is radically overthrown in the years following the 1<sup>st</sup> Opium War. Even though Portugal had chosen not to take part in the western offensive against China, when it was time to negotiate its terms of surrender, the Lisbon authorities lost no time in taking their place beside the winning party, thus trying to secure the recognition of Portuguese sovereignty over Macao. This meant

the end by 1844 of the “divided sovereignty” system, with both the Chinese authorities expelled from the territory and their restrictions overruled, and the Portuguese Senate’s prerogatives reduced to those of a municipal council. The Governor had the upper hand now and at long last the Portuguese metropolitan grasp was reaching as far as China.

In terms of the urban form, this political change brought about a revolution in the development strategy paradigm. Determinately conveying the new colonial enterprise, and borrowing on the European hygienist trend of the 1800s, a new set of urban extensions started to materialize, outside of the old city walls, but also towards the River and the sea, through a vast land reclamation program. The same modern principles were used to reflect on the renovation of the old city itself, namely the Chinese Bazaar which was, in the eyes of the new administration, the perfect symbol of everything that was wrong with the permissive (and submissive) old system. A project of opening a grand avenue through it, directly connecting the inner river harbor to the outer sea coast, is then suggested by a group of intellectuals, as means to reorganize this “messy” and “dirty” district.

The plan for this New Avenue clearly represents the new vision of the territory by the central government, as do all its contemporary urban extension plans. From this moment, the will of the Government and its definition of public interest, public health, modernity and progress are placed above any other institution or social group. The city becomes a wholly politically submitted territory. Thus, space appropriation ceases to be a free and autonomous process, but a completely centralized one, controlled by judicial and economical instruments that aim to regulate the urban practice in all its aspects.

Based on the analysis of city plans dated from the 18<sup>th</sup> to the 20<sup>th</sup> centuries, and particularly focusing on the Chinese Bazaar New Avenue project, we will look at the contrast between these two great geopolitical paradigms that have presided over the destinies of Macao, how they have influenced its territorial administration throughout the centuries, and how finally they have produced two opposite urban development models and two essentially different urban structures: the first, a bottom-up process, resulting in an “organic” appropriation of the built space and urban form by its inhabitants, the second a top-to-bottom process, resulting in a more controlled urban environment and a more geometrically “regular” urban form, meant to stage the dominion of the built space by the centralizing power.

**Keywords:** colonial urban form, Portuguese empire, Macao

## 1 INTRODUCTION

In the mid-16th century, the Portuguese succeeded in establishing themselves in the Pearl River Delta, developing in the Macao peninsula a burgeoning city with an exclusive status as the sole western permanent trading post allowed in the South China Sea. Macao will grow to become a cosmopolitan urban center, closely connected to Canton, at the heart of trade between China and the world. Only with the 1<sup>st</sup> Opium War (1839-1842) will this golden era come to an end, with the English imperial power forcing the “gospel” of free trade into China Sea ports, where more competitive western settlements soon blossomed.

The World Heritage property bears witness to Macao’s exceptional history, placing the peaceful encounter of cultures and intertwining of influences between East and West at the heart of its outstanding universal value declaration. Macao is, by these criteria, the quintessential “in between city”, as it has throughout its history developed in between cultures, identities, empires and, more importantly, in between autonomous spatial appropriation and centralized urban planning.

Putting it in a schematic way, Macao has known essentially two very different forms of urban development, closely related to the official settlement strategies deployed by the Portuguese imperial administration which, in its turn, reflected how it was coping and adapting to the changing geopolitical circumstances in the Pearl River Delta region.

In this study, we will look at the contrast between these two great geopolitical paradigms that have presided over the destinies of Macao, how they have influenced its territorial administration throughout the centuries, and how finally they have produced two opposite urban development models and two essentially different urban structures: the first, a bottom-up process, resulting in an “organic” appropriation of the built space and urban form by its inhabitants, the second a top-to-bottom process, resulting in a more controlled urban environment and a more geometrically “regular” urban form, meant to stage the dominion of the built space by the centralizing power. We will further exemplify the latter by particularly focusing on the Chinese Bazaar New Avenue project.

## 2 METHODOLOGY

The underlying method of this study is the comparative analysis of city plans dated from the 18<sup>th</sup> to the 20<sup>th</sup> centuries. This consists of superimposing the information contained in these historic plans with the contemporary cadastral map, so as to interpret the city design at different times, *deconstructing* the project intents at each phase, and *reconstructing* its evolution. This *reverse engineering of the city* is then an inquisitive method that allows us to extract the principles of urban intervention at the base of each evolution phase, intertwined with the historical information from the written sources.

## 3 ANALYSIS

### 3.1 From settlement to the 18<sup>th</sup> century

As we can see in Fig. 1, the city developed in the south of the Macao peninsula, following a linear structure, in which the blocks are assembled along a main road, itself running parallel to the river banks, from the control outpost of Portas do Cerco, north, to the Barra fort, south. This road also connects the Chinese villages of Mong-Ha and Barra, which seems to indicate that it pre-existed the colonial settlement as a territorial structural path.

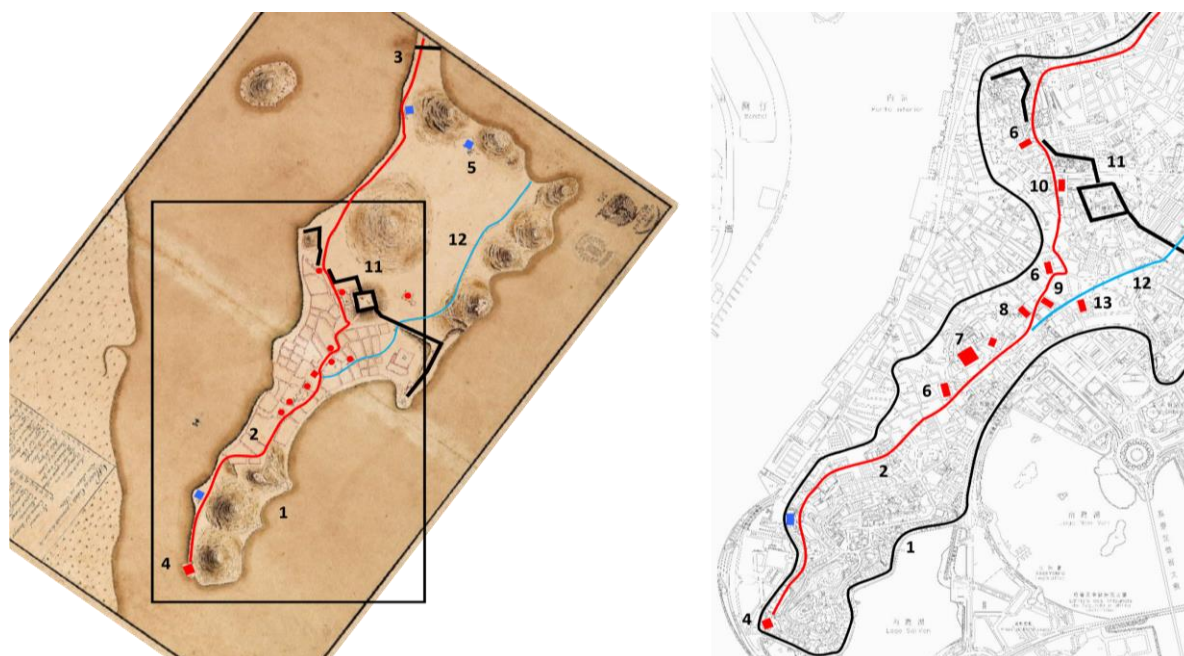


Figure 1. Comparative schematic representation of the main features of Macao in the 18<sup>th</sup> century, over “Planta da Cidade e peninsula do nome de Deos Macão na China”, 18<sup>th</sup> century, Arquivo do Gabinete de Estudos Arqueológicos da Engenharia Militar, Lisbon, Portugal (left), and over the 2015 Macao city cadastral map (right): 1. 16<sup>th</sup> century waterfront; 2. Main road; 3. Control outpost of Portas do Cerco; 4. Barra fort and Chinese village; 5. Mong-Ha temple and Chinese village; 6. Parish churches; 7. Seminary; 8. Senate building and Main Square; 9. House of Mercy; 10. Jesuit College of Saint Paul; 11. 17<sup>th</sup> century city wall and Monte Fortress; 12. Secondary road; 13. Cathedral.

We can also observe that all the main buildings of the new city are situated along this main road, placing themselves in strategic visual points so as to appear at an advantage in the urban landscape. Such is the case of the parish churches, the convents, and the seminary, but also of the Senate building and Main Square, the House of Mercy, the Jesuit College of Saint Paul and the Monte Fortress, up to the north city gate. From the Senate Main Square starts a secondary road that leads to the Cathedral Square and from there to the east city gate. The city wall is built in the 1620s, almost a century after the settlement, right after the first Dutch invasion attempt, thus defining for the first time a territorial division between the colonial urbanized portion of the peninsula, south, and the rural Chinese lands of the north.

This settlement scheme is in many ways similar to the first Portuguese coastal settlements in Brazil, in which, according to José Pessôa [1], the north/south road is the main structural element of the territory and consequently of the urban fabric. The harbor being the main function in these settlements as in Macao, it is the outflow of merchandise to and from the main land through this linear structure that determines the development of the urban grid.

Morphologically, however, there is no evidence of any geometrically ruled planning intention underlying the establishment of this grid. In other words, there doesn't seem to have been any preoccupation with the *regularity* of the urban space, in what the street network and the configuration of the blocks is concerned. We may then assert that, from its early settlement, the city follows an "organic" pattern, meaning that it grew with no predetermined geometrical regularity in the configuration of the urban structure and the built space. Instead, it developed adapting itself morphologically and functionally to the site, while establishing strong military and religious visual elements in the urban landscape.

Borrowing on the work of Paulo Ormindo de Azevedo [2] on regular vs. irregular urban structure in the Portuguese colonial city, we may interpret this irregularity of the urban form as the result of an absence of political or colonizing purpose during these first three centuries. Inversely, according to this scholar, regularity would mirror the existence of an organized territorial administration and the conscious yielding of its power. As such, we may venture that the occupation of the territory and the spatial organization in Macao were the product of relatively free individual appropriation and shaping of the built space by the different communities that inhabited it, combined with an absence or relative debility of a centralizing authority. For example, it was only in the 1620s that the first Portuguese governors were appointed to Macao, the matters relating to the town government being treated up until the 1850s by the local Senate, a group of elected representatives among the resident Portuguese merchants. It was them who established with the Chinese local authorities the practice of a "divided sovereignty", which in effect meant that the Chinese dictated the rules (or rather the restrictions) namely in what concerned land usage, as well as construction and urban renovation. Given this case-by-case and extremely negotiated management scheme, no global urban planning could prevail.

### 3.2 Mid-19<sup>th</sup> century

Comparing Fig. 1 and Fig. 2 we are able to have a better understanding of the harbor area and more importantly of the expansion of the built space into the river since the 16<sup>th</sup> century settlement. This urban expansion was made possible by the gradual appropriation and construction on the "river beaches", which were the natural landfills resulting of the silting of the peninsula river bank. This new ground would be occupied by the Chinese and the Portuguese alike, with activities connected to the harbor, like warehouses, shipyards and other workshops.

The Chinese merchants established themselves at Praia Pequena ("small beach"), directly connected with the Chinese neighborhood, which was called the "Chinese Bazaar". This was situated exactly within the limits of the old and the new river front, just behind the Senate Main Square. On its river front were established the foundations of the Macao Chinese government, the Chinese customs and the Mandarin house. The Portuguese occupied the land to the south, at Praia do Manduco, where the Portuguese customs was established at the end of the 18<sup>th</sup> century.

Naturally, this spontaneous growth doesn't follow any previous planning, nor probably any official building authorization for that matter, as we can see by the profusion of secondary streets that either run parallel to the bank or connect these new neighborhoods to the main road, which continues to be the life artery of the city.



Figure 2. Comparative schematic representation of the main features of Macao in the mid-19<sup>th</sup> century, over “Planta Topográfica da Cidade de Macáu, Levantada em 1831 e Reformada em 1838 por Candido Antonio Ozorio”, Arquivo do Gabinete de Estudos Arqueológicos da Engenharia Militar, Lisbon, Portugal (left), and over the 2015 Macao city cadastral map (right): 1. 16<sup>th</sup> century waterfront; 2. Mid-19<sup>th</sup> century waterfront; 3. Praia Pequena; 4. Chinese Bazaar; 5. Senate building and Main Square; 6. Praia do Manduco; 7. Portuguese customs; 8. Main road.

### 3.3 End of the 19<sup>th</sup> century

From the 1850s on, in the years following the 1<sup>st</sup> Opium War, the governmental state of affairs in Macao is radically overthrown. Even though Portugal had chosen not to take part in the western offensive against China, when it was time to negotiate its terms of surrender, the Lisbon authorities lost no time in taking their place beside the winning party, thus trying to secure the recognition of Portuguese sovereignty over their Chinese colony. This meant the end by 1844 of the “divided sovereignty” system, with both the Chinese authorities expelled from the territory and their restrictions overruled, and the Portuguese Senate’s prerogatives reduced to those of a municipal council. The Governor had the upper hand now and at long last the Portuguese metropolitan grasp was reaching as far as China.

In terms of the urban form, this political change brought about a revolution in the development strategy paradigm. Determinately conveying the new colonial enterprise, and borrowing on the European hygienist trend of the 1800s, a new set of urban extensions started to materialize, outside of the old city walls, but also towards the River and the sea, through a vast land reclamation program (Fig. 3).

In 1850 the first projected landfill is inaugurated at the Portuguese neighborhood of Praia do Manduco, where the new Port Authority is installed. In 1872, construction is underway on the regularization of the river bank project. This will reshape, by 1881, the whole city riverfront, especially the Chinese Praia Pequena, which from now on is topped by an alignment of regularly shaped blocks, built, however, in continuity with the street grid of the informal settlement, thus respecting its preexisting urban structure. On this new river front, between the Portuguese and the Chinese neighborhoods, is installed the pier for the Canton and Hong Kong lines.



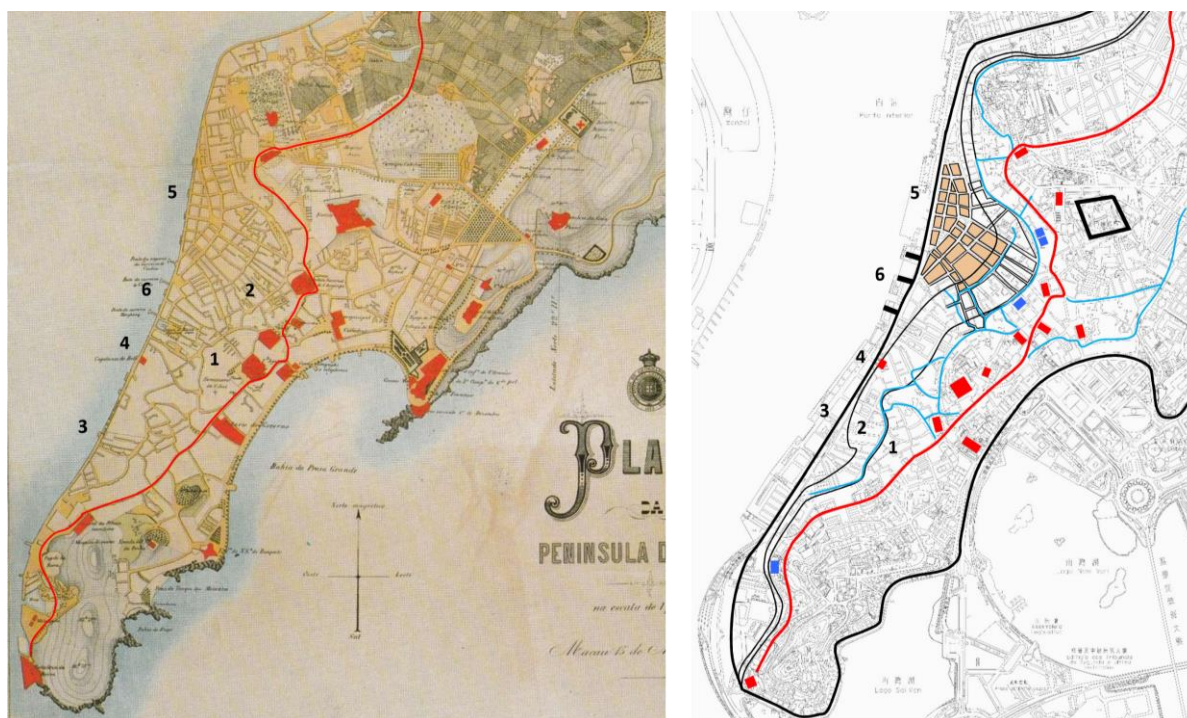


Figure 3. Comparative schematic representation of the main features of Macao at the end of the 19<sup>th</sup> century, over “Planta da península de Macau”, by the Public Works Engineer António Heitor, 1889, Arquivo Histórico de Macau, Macao, China (left), and over the 2015 Macao city cadastral map (right): 1. 16<sup>th</sup> century waterfront; 2. mid-19<sup>th</sup> century waterfront; 3. End of the 19<sup>th</sup> century waterfront; 4. Portuguese Port Authority at Praia do Manduco; 5. Praia Pequena; 6. Pier for the Canton and Hong Kong lines.

### 3.4 Early 20<sup>th</sup> century

The same modern principles that presided the restructuring of the Macao harbor were used to reflect on the renovation of the old city itself, namely the Chinese Bazaar which was, in the eyes of the new administration, the perfect symbol of everything that was wrong with the permissive (and submissive) old system. In the 1880s, the Macao colonial government creates the first “commissions for urban improvements”, composed of intellectuals and members of the municipal services. In a report published in 1884 by one of these commissions [3], is mentioned for the first time the idea of opening a grand avenue through the Chinese Bazaar, directly connecting the inner river harbor to the outer sea coast, passing through the Senate Main Square, as means to reorganize this “messy” and “dirty” district, which would in time become the Macanese trade center.

The first projects for this new avenue are made in the early 1900s, with construction beginning in 1915, after a long expropriation process, and inauguration three years later.

As the 1884 Commission had intended, the New Avenue cuts right through the Chinese neighborhood (Fig. 4), in alignment with the senate building’s façade, connecting its Main Square to the pier for the Canton and Hong Kong lines in the inner river harbor (west), to the new Government Palace, in Praia Grande, on the outer sea coast (east). This is the first main cross street in the city, the only one ever to cut across the continuity of the north-south path of the old main road. Its purpose is clearly to reorient the urban fabric, stating that, without a doubt, its structure is no longer determined by the connection to the China main land, but rather to the sea. The subsequent development of Macao, centered on the new Exterior Harbor, from its construction in the 1920s up until today, will confirm the accuracy and the foresight of this gesture.

Drawing a parallel with Helder Carita’s [4] analysis of the early-16<sup>th</sup> century reforms of the Portuguese urban planning system, we may ascertain that the plan for the Chinese Bazaar New Avenue clearly represents the new vision of the territory by the central government, as do all its contemporary urban extension plans. From this moment, the will of the Government and its definition of public interest, public health, modernity and progress are placed above any other institution or social group. Leaving behind its “medieval” tradition of individual liberties, the city becomes a wholly politically submitted

territory. Thus, space appropriation ceases to be a free and autonomous process, but a completely centralized one, controlled by judicial and economical instruments that aim to regulate the urban practice in all its aspects.

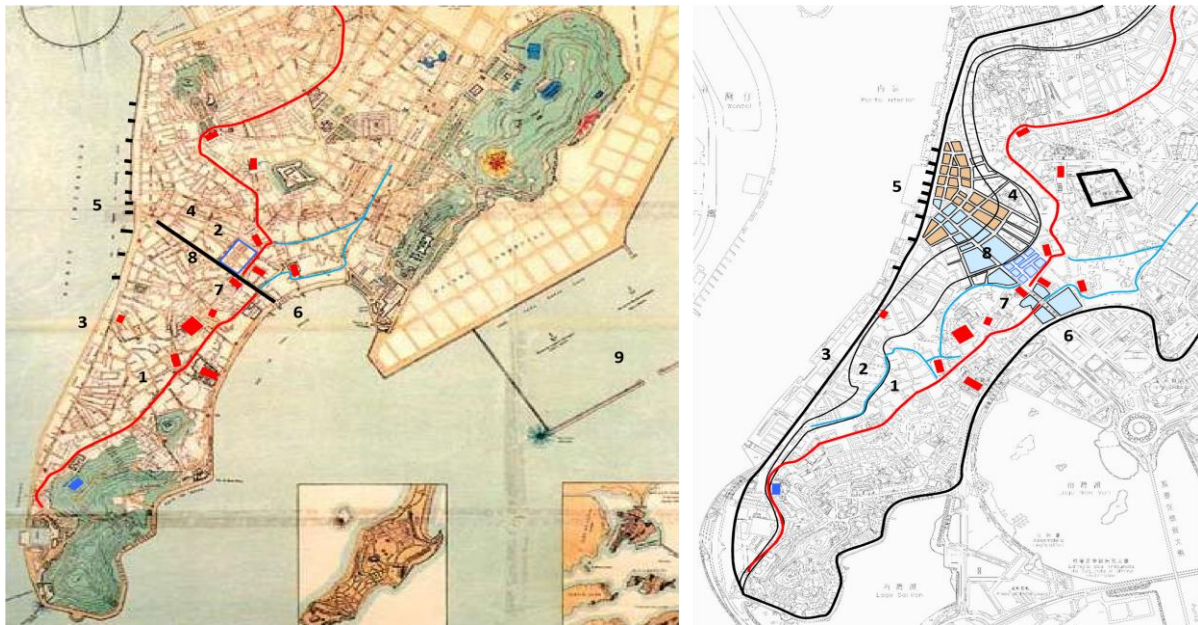


Figure 4. Comparative schematic representation of the main features of Macao in the early 20<sup>th</sup> century, over “Planta Geral da Cidade e Novo Porto de Macau”, by Hugo Carvalho de Lacerda, 1927, Arquivo Histórico de Macau, Macao, China (left), and over the 2015 Macao city cadastral map (right): 1. 16<sup>th</sup> century waterfront; 2. mid-19<sup>th</sup> century waterfront; 3. End of the 19<sup>th</sup> century waterfront; 4. Chinese Bazaar; 5. Inner river harbor; 6. Outer sea coast; 7. Senate building and Main Square; 8. Chinese Bazaar New Avenue; 9. New Exterior Sea Harbor.

#### 3.4.1 The Chinese Bazaar New Avenue

Even if the project for the New Avenue ended up being much less “grand” than what the 1884 Commission had envisioned, or indeed than the contemporary new avenues of Lisbon and Porto, this first “haussmannisation” intervention in Macao relates to another feature of the Portuguese colonial urban fabric, namely mentioned by Paulo Ormindo de Azevedo [2], which is its *pragmatism in adapting to the site*. In other words, and much following a practice developed in the late mediaeval period and established in the early 16<sup>th</sup> century, Portuguese settlers would favor a solution that would allow them to maximize on the human and financial investment of urban settlement, by applying a series of what Walter Rossa [5] and Luísa Trindade [6] call “*regulating principles*” of urban planning, rather than resorting to pre-established geometrical models.

Looking at the 1903 project (Fig. 5), and drawing on this pragmatic approach to urban design, we can easily *deconstruct* its conception process. The main element in this urban restructuring system is clearly the Senate building. From its façade, the architect drew a street alignment up to the harbor road. He then established the width and the special feature of the avenue: the fact that it would have an archway on each side. Finally, he proceeded to “cut” the pre-existing building blocks, redesigning their new avenue fronts.

Further advancing in the *deconstruction* process, we can venture an explanation for the chosen proportions of the New Avenue. Once again the starting point is Senate building’s façade (Fig. 6). As we can see, there clearly is a connection between the measurement unit proportions of its three sections and the Avenue’s width, as well as the height of its front buildings. We can infer that the architect has most definitely designed this ensemble as a whole, carefully choosing a proportion system based on the Senate building’s façade 15 meter side square module. Applying this sort of proportional systems is yet another feature relatable to the pragmatic approach to urban design to which we referred earlier. According to Marta Oliveira [7], this simple and intuitive way of creating connections between the urban elements is used quite frequently, be it in medieval or colonial



Portuguese settlements, its aim being to create a general impression of regularity and proportion, as in fact is the case in the reconfiguration of the Senate Main Square following the opening of the New Avenue.

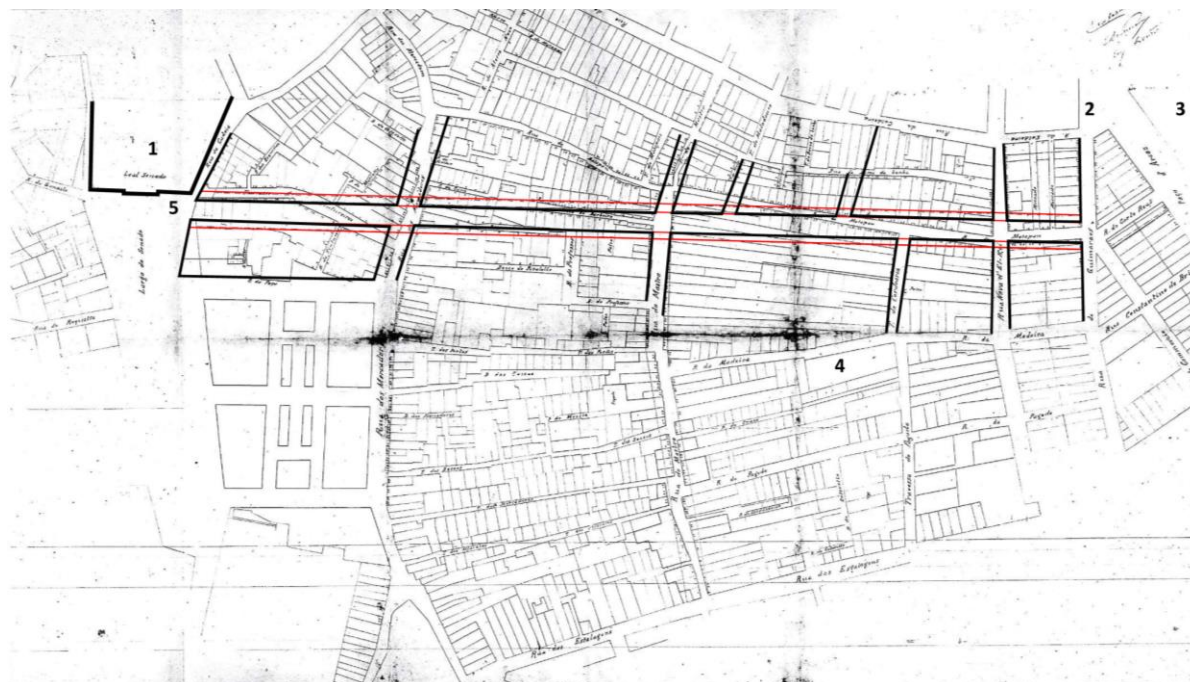


Figure 5. The Chinese Bazaar New Avenue. Deconstructing its conception process, over “Projecto de construção d’uma Avenida desde o largo do Senado à rua marginal do porto interior e do alargamento das ruas dos Mercadores, do Mastro, Aterro Novo e travessa da Cordoaria”, 1903, Arquivo Histórico de Macao, Macao, China: 1. Senate building and Main Square; 2. Harbor road; 3. Waterfront; 4. Chinese Bazaar; 5. Chinese Bazaar New Avenue.

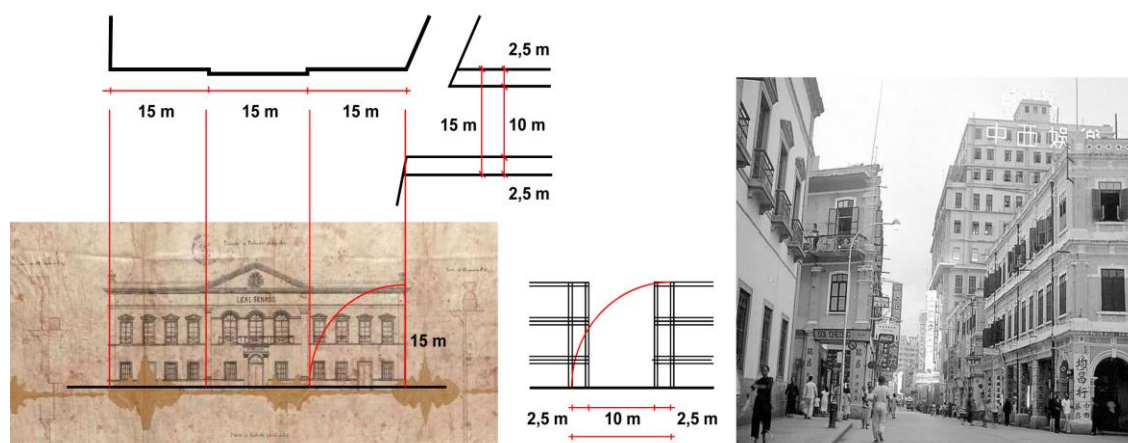


Figure 6. The Chinese Bazaar New Avenue. Deconstructing its conception process, over “Alçado do edifício do Leal Senado”, 1930s, and the Chinese Bazaar New Avenue in the 1950s, in <http://macauantigo.blogspot.fr>

#### 4 CONCLUSIONS

In between autonomous spatial appropriation and centralized urban planning, this quite sums up Macao’s urban history. As we tried to demonstrate by borrowing on the work of scholars dedicated to the Portuguese urban history, however, this is not an exclusive feature, rather it puts Macao in line with the Portuguese urban tradition, from medieval times through to the overseas expansion. Indeed, in many occasions throughout this roughly 700 years timespan, the original spontaneous settlements are followed by the rise of a more assertive metropolitan power, which will resort to the restructuring of the territory by regulating urban interventions, as means to create new centralities for the

modernized urban space, thus reaffirming its power and allowing its effective control of the city and its inhabitants.

As is the case with the Chinese Bazaar New Avenue project, the newly consolidated colonial administration puts itself above the Chinese community, deeming its neighborhood unsanitary, and thus legitimizing a hygienist urban intervention that will allow it to better establish its jurisdiction over its activities. Where before different communities shared the urban space through an equilibrium of forces that allowed everybody to get the better of it, now the Portuguese are calling Macao a colony and reclaiming their rights as a modern Empire. In the end however, this will end up being just another “in between” moment for Macao, as in 1949 the People’s Republic of China is proclaimed, and the Portuguese are slowly forced to give up their imperial prerogatives, until the full retrocession of the territory to China in 1999.

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## DESIGN OUT OF CONTROL

**Claudia Chirianni**

*Università Federico II di Napoli (ITALY)*

*claudia.chirianni@gmail.com*

### Abstract

This paper aims to investigate how new scientific knowledge and in particular that relating to the Complexity theory has helped to redefine the design process as in between control (an expression of top-down processes) and unpredictability (implicit in the new bottom-up strategies).

The traditional linear process (from general to particular) has been replaced by a non-linear one in which the different scales don't follow each other in sequence, but are integrated and woven together defining the architectural project as an open system of relations. However, the design techniques typically combine top-down and bottom-up processes.

In the last decades, modern science has offered a new vision of the world founded on ambiguity, uncertainty and unpredictability. This vision has inevitably ended up also informing art and design that today seem more and more characterized by a "loss of control" of the authors over their work. The purpose of the creative process in fact no longer seems to be the realization of a finished object, but rather an open system of possible relations. This design methodology sees the author in constant balance between design control and the unpredictability of the possible configurations that this system can take. Among the first to record this trend was Umberto Eco who, in his book *Open Work*, sees the integration between scientific and artistic methods as the ultimate reason for the redefinition of work-interpreter dialectic (intended both as viewer and as performer), characteristic of much contemporary art research.

This *loss of control* can occur at different times of the design process, implying the involvement of various types of interpreters. The choice of the interpreter and the time of his intervention to the process defines the margin of error (as a deviation from the initial forecast) that the author is willing to accept. In fact, we don't want to state here that this loss of control implies the abandonment to total randomness or indiscriminate intervention. A certain amount of control is, therefore, always present and perhaps necessary to define the constraints within which such interventions are possible. However, the way in which control is exercised changes and, at the same time, the roles of the different actors are redefined. The control is exercised by creating the system of rules and general constraints within which the potential interpreter is free to act.

But how can one reconcile the concept of unpredictability with the architectural design? And who are the possible *interpreters*? We will try to answer these questions through the analysis of various case studies. Very interesting in this regard is the Elemental's project *Quinta Monroy* in which the same hosted community is called to finish the project, actually becoming the interpreter.

In this case, Aravena seems to accept the invitation of the scholars of Complex Adaptive Systems (CAS), and of that particular CAS which is the city, to encourage a bottom-up design approach.

The fundamental contribution of the science of complexity to the design practice resides in fact in the adoption of the dialectical opposition between top-down and bottom-up processes in architecture. Specifically, it adopts a design method that starting from locally defined interactions determines the architectural form following evolutionary laws. As is the case of complex systems, the final configuration of the overall system, resulting from these local interactions, cannot be predicted from the behavior of the individual elements.

If Aravena's project is placed halfway between top-down and bottom-up processes (as these occur in subsequent stages and scales), more literal is the application of this principle in the context of parametric design. In this case the generative bottom-up process takes shape starting from the interaction human-computer. The script, developed by the designer to describe the behaviors/processes of the system, is implemented by the computer that returns a potentially infinite set of possible outcomes. The application of this computational logic to architecture, which may involve the intervention of the *interpreter* (the Computer) in several stages of the design process, finds perhaps its happiest expression in new form-finding strategies.

One of the most interesting cases is the *Silk Pavilion*, an experimental project realized by Neri Oxman at MIT, where we see two levels of system interpretation, one by the computer (for the realization of the primary structure), the other by a biological system (silkworms that make the skin of the pavilion), in a perfect integration of computational and biological process.

Examples of generative approaches to architecture are also found in the architecture of the past as the Mosque of Cordoba and even in some experiments of modern architects, from Frei Otto's early experiments in form-finding to Le Corbusier's reflections about the seriality in architecture which led him to realize the Modulor as a design grammar, which as such relies on the user as an interpreter.

In view of the above, this paper aims to show that, in the particular field of architectural research, a design process aimed at the definition of an open system of relations rather than an object in itself will lead to better integration between the different scales of the project and its higher adaptability and co-evolution with the environment (both physical and social).

**Keywords:** complexity, bottom-up, top down, open work, generative, unpredictability

## 1 INTRODUCTION

This paper aims to investigate how new scientific knowledge and in particular that relating to the Complexity theory has helped to redefine the design process as in between control (an expression of top-down processes) and unpredictability (implicit in the new bottom-up strategies).

The first step towards this change is represented by the work of Jane Jacobs, *Death and Life of Great American Cities* (1961) [1]. In the last chapter of the book, entitled *The Kind of Problem Is the City*, Jacobs defines for the first time the city in terms of organized complexity, by using the definition postulated by the mathematician Warren Weaver in 1948 [2]:

"Cities happen to be problems in organized complexity, like the life sciences. They present 'situations in which a half-dozen or even several dozen quantities are all varying simultaneously and in subtly interconnected ways.' (...) The variables are many, but they are not helter-skelter; they are 'interrelated into an organic whole'." [1, p. 433].

The city is considered today a typical example of adaptive complex system, in turn constituted by systems in co-evolution, whose global scale transformations are determined from local interactions of individual agents that compose them. As with all complex systems, "agents residing on one scale start producing behavior that lies one scale above them" [3, p. 18].

This implies rethinking the relationship between design phases and scales.

To know the city is to recognize patterns that express the generative processes of systems in which low-level rules lead to higher-level sophistication. In fact, its growth and transformation in time does not appear to be driven by some principle of optimization imposed from above, but rather "by the decisions and choices of the multiple agents that are involved in decision making. (...) Some are micro-agents, choosing where to live and work, while others operate at a higher level deciding on changes to transport infrastructure or the location of a large organization." [4, p. 68].

To understand this complexity and, ultimately, act on bottom-up processes that generate it, traditional methods of analysis and design therefore seem inadequate. The traditional linear process (which moves from the general to the particular) is being replaced by a non-linear one in which the

different scales don't follow each other in sequence, but are integrated and woven together defining the architectural project as an open system of relations.

But it is correct to imagine the design process as an entirely bottom-up process? Actually, as we will see, modern design techniques typically combine top-down and bottom-up processes.

## 2 OUT OF CONTROL

"The world of the made will soon be like the world of the born: autonomous, adaptable, and creative but, consequently, out of our control." [5, p. 8].

*Kevin Kelly*

### 2.1 Open Work

In the last decades, modern science has offered a new vision of the world founded on ambiguity, uncertainty and unpredictability. This vision has inevitably ended up also informing art and design that today seem more and more characterized by a *loss of control* of the authors over their work. The purpose of the creative process in fact no longer seems to be the realization of a finished object, but rather an open system of possible relations. This design methodology sees the author in constant balance between design control and the unpredictability of the possible configurations that this system can take. Among the first to record this trend was Umberto Eco who, in his book *Open Work*, sees the integration between scientific and artistic methods as the ultimate reason for the redefinition of work-interpreter dialectic (intended both as viewer and as performer), characteristic of much contemporary art research: "(...) the poetics of the "open" work tends to encourage "acts of conscious freedom" on the part of the performer and place him at the focal point of a network of limitless interrelations, among which he chooses to set up his own form without being influenced by an external *necessity* which definitively prescribes the organization of the work in hand" [6, p. 35].

This "loss of control" can occur at different times of the design process, implying the involvement of various types of interpreters. The choice of the interpreter and the time of his intervention to the process defines the margin of error (as a deviation from the initial forecast) that the author is willing to accept. In fact, we don't want to state here that this loss of control implies the abandonment to total randomness or indiscriminate intervention: an *open work*, and more specifically what he called *work in motion*, in fact, "is the possibility of numerous different personal interventions, but it is not an amorphous invitation to indiscriminate participation. The invitation offers the performer the opportunity for an oriented insertion into something which always remains the world intended by the author" [6, p. 58]. A certain amount of control is, therefore, always present and perhaps necessary to define the constraints within which such interventions are possible. However, the way in which control is exercised changes and, at the same time, the roles of the different actors are redefined. The control is exercised by creating the system of rules and general constraints within which the potential interpreter is free to act.

## 3 COEVOLVING COMPLEXITY

The fundamental contribution of the science of complexity to the design practice resides in fact in the adoption of the dialectical opposition between top-down and bottom-up processes in architecture. Specifically, it adopts a design method that starting from locally defined interactions determines the architectural form following evolutionary laws. As is the case of complex systems, the final configuration of the overall system, resulting from these local interactions, cannot be predicted from the behavior of the individual elements.

### 3.1 Quinta Monroy

But how can one reconcile the concept of unpredictability with the architectural design? And who are the possible *interpreters*? We will try to answer these questions through the analysis of various case studies. Very interesting in this regard is the Elemental's project *Quinta Monroy* where the same hosted community is called to *finish* the project, actually becoming the interpreter (Fig. 1 and Fig. 2).



Figure 1. Elemental, *Quinta Monroy*, Chile, 2003. The original units built by Elemental, which are designed to be added onto by the residents.



Figure 2. Elemental, *Quinta Monroy*, Chile, 2003. Expansions to the original units completed by the residents.

The design solution proposed by Aravena, who responds in the first instance to the problem of the limited budget to be allocated to the work (US \$ 7,500 per unit), finds in the “unfinished” a strategy of appropriation of territory and identity expression.

In Quinta Monroy the architecture renounces to be prescriptive, to impose one crystallized and immutable scenario. On the contrary, the design allows the manipulation by the inhabitants, the modification over time, the co-evolution with the context. It is an open work that not only redefines the role of the designer, but of all the actors involved as well: the identity of the community prevails over that of the architect.

Aravena seems to accept the invitation of the scholars of Complex Adaptive Systems (CAS), and of that particular CAS which is the city, to encourage a bottom-up design approach. The complex systems perspective on urban and architectural design in fact suggests that many choices about the final layout of the project are not specified during the design process: “that planning *should* leave many of these choices unspecified, to be developed locally by individuals, organizations and communities, is an altogether more radical statement. However, both urban history and fundamental scientific concepts about how complex systems are created and evolve suggests just that” [7, p. 11].

#### 4 PROCEDURAL THINKING

If Aravena's project is placed halfway between top-down and bottom-up processes (as these occur in subsequent stages and scales), more literal is the application of this principle in the context of parametric design.

In this case the generative bottom-up process takes shape starting from the interaction human-computer. The program, as a series of instructions, implies a decision on the part of the computer: it is in this sense that it can be called an interpreter.

However, the interpretive skills of the computer are quite limited. Indeed “computer-programming



languages are designed for the way people are taught to read and write from a young age, with the precision necessary for instructing a computer. Human languages are verbose, ambiguous, and contain large vocabularies. Code is terse, has a strict syntactical rules, and small vocabularies. (...) Unlike people, computers are not able to guess or interpret a meaning if it's not stated exactly." [8, p. 15].

On the other hand, the use of software and programming languages has allowed and encouraged a new way of thinking, a "procedural" thinking that has its own specific language. The term *procedural literature* was introduced by Michael Mateas to describe this potential as the ability to read and write processes and to give rise to a procedural aesthetic and representation of the world.

"With appropriate programming, a computer can embody any conceivable process; code is the most versatile, general process language ever created. Hence, the craft skill of programming is a fundamental component of procedural literacy" [9, p. 80].

Thus programming is not just a technical tool, is a way of representing/describing the world through algorithms: as procedural language it does not offer a single and unalterable vision of the events it is called to describe, but a range of possible options. Identifying the modality and the moments when the intervention of the computer can be useful or necessary, the interaction between man and machine can lead to the definition of open compositional systems otherwise unthinkable.

In fact the script, developed by the designer to describe the behaviors/processes of the system, is implemented by the computer that returns a potentially infinite set of possible and comparable outcomes. It was these potential that induced many artists from the '50s and '60s to prefer computers to traditional mediums.

Among these, Manfred Mohr, one of the pioneers of computer art, identifies four ways in which programming contributes to innovate the creative procedures and the approach to the aesthetic problems:

" - Precision as part of aesthetical expression.

- High speed of execution and therefore multiplicity and comparativity of the works.
- The fact that hundreds of imposed orders and statistical considerations can be easily carried out by a computer instead of by the human mind, which is incapable of retaining them over a period of time, for example during plotting time (calculation time).
- The continuous feedback during a man-machine dialogue involves a learning process on the side of the human being, resulting in a clearer image of the creator's thinking and intentions." [10, pp. 94-95].

The application of this computational logic to architecture, which may involve the intervention of the *interpreter* (the Computer) in several stages of the design process, offers new possibilities for the design process management, redefining the control modality on compositional systems and improving integration between the different design scales and stages.

#### **4.1 Form finding strategies: the Silk Pavilion**

One of the most interesting uses of these principles resides in modern form-finding techniques.

The term form-finding was introduced by Frei Otto to indicate a design method in which the shape of a structural system results from loads application and materials properties. This type of research, which in those years was conducted mainly through the use of physical models, today employs computer-generated simulation models.

In recent years the work conducted by the MIT researcher Neri Oxman in this field has made remarkable achievements, especially in overcoming the distinction between generation of the shape and structural optimization, usually addressed as processes that take place in subsequent phases.

The purpose is to get as close as possible to the integration between formal configuration, structural optimization and material distribution of biological systems, overcoming the division between processes of form-generation and processes of performance-based optimization that usually characterizes the digital design protocols [11].

Among the most interesting works done by Oxman, there is certainly the Silk Pavilion (Fig. 3), an experimental project designed and constructed at the MIT Media Lab by the Mediated Matter group (a group of researcher directed by Oxman herself), where we see two levels of system interpretation, one by the computer (for the realization of the primary structure), the other by a biological system (silkworms that make the skin of the pavilion), in a perfect integration of computational and biological process. Anyway, also in this case the design process is not entirely bottom-up, this type of process occurring only at certain times in the entire design process, integrating also a more traditional top-down approach: “here, the relationship between the global, top-down design of a constricting “environment” designed artificially by the designer informs its local, bottom up material manifestation as portrayed by the biological organism (the silkworm).” [11, p. 10].



Figure 3. Mediated Matter group (Markus Kayser, Jared Laucks, Jorge Duro-Royo, Carlos David Gonzalez Uribe, Prof. Neri Oxman), *Silk Pavilion*, CNC Deposited Silk Fiber & Silkworm Construction, MIT Media Lab, 2013

## 4.2 Limits of digital design protocols

Currently, much of the research in this area, however, seems to have focused more on the problems of structural optimization and cladding systems rather than the spatial composition. These areas after all are more likely to adopt direct mathematical simulation models of biological processes.

The results are often interesting, as long as you look at the scale of the prototype. However, when you switch to architectural scale they are much less, and mostly unrealizable. Or simply we are reduced to realize sophisticated cladding generative systems for buildings with a wholly traditional spatial conception, thwarting the effort. The result is once again an object, not an open work...

The problem lies in the fact that in the moment in which all the design effort is directed towards structure and cladding systems the resulting space becomes a sort of “side effect”.

There is therefore no specific attention paid to the architectural spatial organization, which it is a bit like saying that there is specific attention paid to architecture itself. A methodological problem emerges: the cladding/structure problem cannot be separated from the space problem. We could say that is an assumption of linearity where the complex nature of architecture is non-linear in itself.

## 5 GENERATIVE SPATIAL DESIGN

Generative design protocols operate at the level of compositional/organizational structure of the project. As a rule-based design strategies, they behave as design grammars capable of simultaneously informing both the compositional structure of the large-scale system and the detailed solutions to smaller scales. Such inherent interscalarity of generative processes makes them particularly interesting and useful for architectural and urban spatial design, as well as for coating and structural systems. If oriented to define the set of relationships and constraints that exist in the dialogue between the building and the city, between architecture and community, those design processes

could actually give birth to open works, architectures that can evolve and adapt to the urban and social system in which they are inserted.

### 5.1 Design grammar: Le Corbusier and Iannis Xenakis

A generative approach to architectural design is already found in some experiments of modern architects, most notably of Le Corbusier. His commitment in looking for a foundation for a design grammar in seriality and proportions, in fact, has greatly contributed to define a generative approach to design and led him to realize the Modulor as a design grammar, which as such relies on the user as an interpreter [12].

In this he certainly was influenced by Iannis Xenakis, who worked as an engineer at Le Corbusier's studio from 1948 to 1959. In the same years Xenakis also devoted himself to the study of musical composition, approaching the avant-garde movements of the time. Then he developed a stochastic generative approach to the musical and architectural composition that has its foundation in logic and mathematics, which will be theorized in his work *Formalized Music, Thought And Mathematics In Composition* (1971) [13]. This artistic theory, contrary to what happens with Boulez and John Cage, does not see in the application of probabilistic calculation a total abandonment to chance. The overall process is entirely predictable, even if the events that compose it are random.

In the years of collaboration with Le Corbusier, Xenakis was able to apply these theories to architectural design. It was him in fact who designed the "wavy glass window" that characterizes the facade of the Monastery de la Tourette. Here the size of the glass panels are defined according to the blue and red series of the Modulor.

Subsequently Xenakis also worked at Philips Pavilion, where he actually is the lead author. It is very interesting to note how he conceived this work: Xenakis developed a compositional technique in music which included graphical representations that conceptualized the compositional process itself. The concept of the Philips Pavilion was born from the graphical representation of the glissandi of his composition *Metastasis* (Fig. 4).

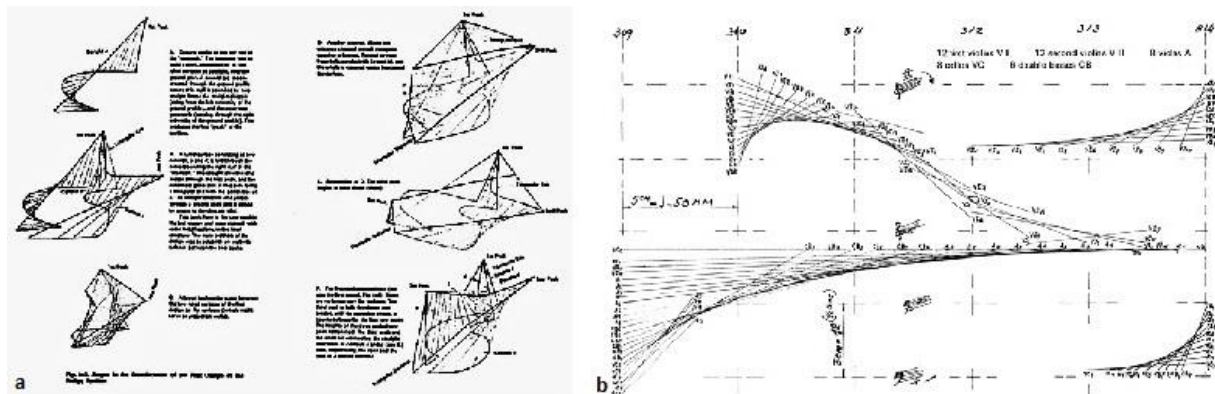


Figure 4. a) I. Xenakis, *Philips Pavilion*, Different stages of the first version of the project, 1967; b) I. Xenakis, *Metastasis*, graphical representation of glissandi

### 5.2 Mosque of Cordoba: From Object to Field [14]

Examples of generative approaches to architecture are also found in the architecture of the past as the Mosque of Cordoba. As Stan Allen notes, "unlike the idea of closed unity enforced in Western classical architecture, the structure can be added to without substantial morphological transformation" [14, p. 25]. It is the compositional structure of the Mosque of Cordoba, founded on interconnections of simple elements, that have allowed the growth and manipulation in the course of more than eight centuries, without there being an alteration of the initial spatial conception.

The mosque was genetically predisposed to growth and adaptation over time.

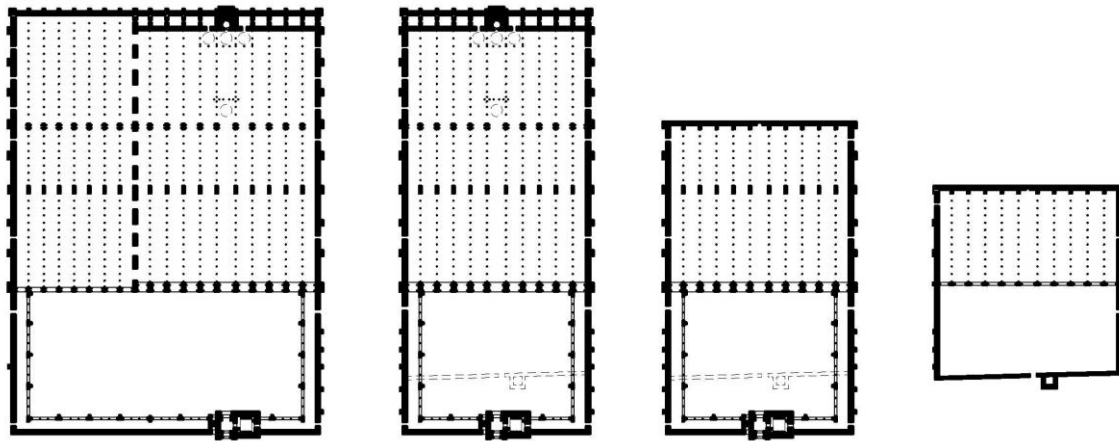


Figure 5. Mosque of Cordoba, plans representing evolution over time

Allen uses the example of Cordoba to introduce the concept of field condition he elaborated: “we may suggest that a field condition would be any formal or spatial matrix capable of unifying diverse elements while respecting the identity of each. (...) Field conditions are bottom-up phenomena: defined not by overarching geometrical schemas but by intricate local connections. Form matters, but not so much the forms of things as the forms between things.” [14, p. 24].

The idea of field condition reports the theories related to complexity to the proper field of action of architecture and urbanism. Based on the ideas of relational space and permutation, this concept helps to define possible compositional strategies capable of giving life to wide range of possibilities immanent in the systemic logics of the field itself. That is to say, it identifies a potential design methodology based on the definition of generative compositional pattern for the spatial design. Therefore, by operating at the fundamental level of the compositional structure of the space it would be possible to generate one or more sets of rules interconnected at the base of the architectural organism growth through modularity, proportions and logical-mathematical connections between the parts.

## 6 CONCLUSIONS

In view of the above it is deduced that, in the particular field of architectural research, a design process aimed at the definition of an open system of relations rather than an object in itself will lead to better integration between the different scales of the project and its higher adaptability and co-evolution with the environment (both physical and social).

In fact, as we have seen, the science of complexity tells us that the city is essentially an expression of spontaneous bottom-up processes that traditional planning cannot actually govern. But while it is easy to recognize the failure of the latter especially in our suburbs, on the other hand it is fair to wonder if a “spontaneous”, entirely bottom-up, growth would give rise to an uncontrollable and indefinite proliferation of slums ( as it is happening in the big cities of the countries of the so-called emerging economies).

Nevertheless, as it has been observed in the analyzed case studies, although often one tries to describe these new design methodologies as entirely top-down processes, modern design techniques typically combine top-down and bottom-up processes. This is not only inevitable but also desirable to ensure that the emergent behavior of the studied systems can be oriented towards positive results.

By using these new design techniques with this awareness, rather than chasing at all costs an unlikely identification between architectural processuality and the one of biological systems, it would help to identify the design logic of an urban architecture in which the relationship between the parts, and between them and the whole, it is no longer defined in terms of division and hierarchy, but instead in terms of connection and interdependence between the parts themselves.

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## THE MAN WITHIN URBAN SPACE

**Diana Ștefan**

*PhD student, "Ion Mincu" University of Architecture and Urbanism Bucharest (ROMANIA)  
stefan\_g\_diana@yahoo.com*

### **Abstract**

The perception of individuals within urban framework is complex and it's a point of interest to many experts in the field. This paper examines a small part of this theme, focusing on theoretical considerations seen through the relationship between public space – private space – intimate space. The research on the relationship mentioned above is viewed from a physical and a mental perspective.

Within the urban environment, where the man dwells and lives every moment of his existence, he's considered the only landmark in the urban and architectural research. To improve the urban setting we must turn our attention to its characteristics that make the individual identify oneself and relate to it.

The scientific literature emphasizes two means of analysis, in a physical and in a mental perspective. The study aims to identify the elements that underline the understanding of the urban setting by the individual. The highlighted features will form a number of issues that will be considered in the future urban and architectural design.

To address the studied problem, a purely urban and architectural approach is not enough. The author also focuses on studies in related fields such as psychology, sociology, anthropology and geography. As a method of research, in addition to bibliographic research, phenomenology, semiotics and the method of combining several theories were used. The analysis of the urban setting is made from part to whole. The personal attribute of the individual is incorporated into the collective aspect of the urban environment.

Phenomenology refers to the way an individual perceives the urban setting not only visually but also by auditory, olfactory and tactile means.

Semiotics studies how the individual links the urban, architectural and emotional reality, by attributing meanings to objects through signs, symbols and connotations.

Given the need for individuals to identify and relate to a certain place and the proxemics theory, the discussion is based on the experience of the individual and the need to have a feeling of comfort and safety. This state, from a physical and mental perspective, is obtained through the relationship that is created between public, private and intimate space.

Within the physical urban setting, we must see accessibility, connectivity, comfort and good image, functions and activities and ultimately the social aspect. The mental urban setting is represented by the community and identifies with the physical urban setting. The community is the result of the relationship between man and self and between man and his peers. This setting offers the individual the relationship with self, the confidence in his own ability to think, to act autonomously and independently, to make decisions in order to achieve his objectives to express his needs and aspirations, to aspire and fight for his achievements.



The three types of space are analysed from a physical and mental perspective. The physical dimension of the public space is represented by the public square and the mental dimension is represented by the life that takes place here. The private space is represented on the physical level by the segment of the neighbourhood in which the individual lives his early years of life (adolescence). The mental level of private space is the community which arises and exists in the vicinity of the dwelling. Intimate space is treated equally, from two perspectives, one physical represented by “dorm/house” and one mental represented by the notion of “home”.

Identification of the individual with the urban context is based on his experience in three types of space (public, private, intimate). Experience on an individual level forms the understanding and usage of space. The relationship from part to whole is intimate space – private space – public space. In the individual’s mind spaces can be perceived differently, a space considered public can become private and vice versa.

On physical and mental spaces transparency plays a very important role. The variations of these features lead to the proper functioning of the premises in question in order to favour social contact.

There are three types of characteristics of the urban environment that make it approachable to the individual: features related strict to the urban setting, pertaining to the type of user and specific for each type of space. The urban environment is perceived and used differently by individuals depending on geographic, meteorological, architectural and urban planning aspects. In addition to factors related to human education, they use space according to three factors generated by the life stages: mobility, physical activity, time spent. Depending on the type of space, accessibility, connectivity, good image and comfort, functions, activities and social aspect vary. For example, the public space is very well connected both inside and outside, with a very high degree of transparency unlike intimate space, which is sufficiently connected with the outside that the individual does not experience social exclusion, very well connected internally and with transparency from inside to outside almost zero.

Urban setting consists of three types of spaces (public, private and intimate) derived from one to another, conditioned by physical and mental aspects of the built/unbuilt space and aspects of the individual.

The urban setting is designed in the shape and kinship of the individual. The shape defines the physical dimension and the kinship the mental one. In conclusion, the individuals live every moment of their existence within the three types of areas analysed in this paper. Used items and activities within public space, private space and intimate space evolves from lack of attachment to the emergence of the attachment and belonging sense. It is necessary that the three types of space are very well connected to each other, and the needs for security and social character are met.

**Keywords:** public space, private space, intimate space

## 1 INTRODUCTION

As Gehl stated *“The starting point is simple, universal human activities. Cities must provide good conditions for people to walk, stand, sit, watch, listen and talk.”* [1, p. 118, our. subl.]

Based on the statement made by Harry G. Frankfurt *“... the criteria for being a person... they are designed to capture those attributes which are the subject of our most humane concern with ourselves and the source of what we regard as most important and most problematic in our lives.”* [2, p. 6, our. subl.] and assuming that people are living beings intrinsically connected to places, people, material things, geography and historical culture, the author seeks to answer the following question: Which aspects bring the urban environment close to the individual?

The proxemics theory enunciated by Edward Hall in 1966 on territoriality [3], underlines the enunciation of the urban characteristics that bring it close to the individual. In the scientific literature, the urban environment characteristics were studied depending on the type of space which is reported to the individual, public space, private space and intimate space. Some of the authors who stood out in this area are Henri Lefebvre with “The Production of Space” [4], Jan Gehl with “Cities for People” (2012) [1], Jane Jacobs with “The Death and Life of Great American Cities” (1961) [5], Lewis Mumford with the series “Renewal of Life” (1934 - 1951) [6].

To answer this question, the author considers that the urban environment consists of the range public space – private space – intimate space.

Public space is studied through the public square. According to the proxemics theory, public space is a public territory represented through spaces that individuals use daily in various forms (streets, parks, squares), for which they do not express any attachment and do not deem their rights when they don't occupy it. Studies made by Kurt Iveson, Don Mitchell, Ray Oldenburg [7] talk about ways in which public space is configured and types of interactions supported by each of them, about the “right to the city” which is the ability of individuals to occupy public spaces, about the importance of public space to happen on neutral land where people can gather and interact worries aside, about enjoying the company and conversation of others. Greek philosophers, theorists of urban modernity, like Benjamin, Simmel, Mumford, Lefebvre, Jacobs and visionaries of Contemporary urbanism such as Sennett, Sandercock and Zukini [8] suggest a strong link between public space and civic virtue and citizenship.

As Francis, Carr, Rivlin and Stone stated in their book “Public Space”, *“In well-designed and well-managed public space, the armor of daily life can be partially removed, allowing us to see others as whole people. Seeing people different from oneself responding to the same setting in similar ways creates a temporary bond.”* [9, pp. 344, our. subl.]

Private space, according to the proxemics theory, is a secondary territory accounted by spaces where individuals spend a lot of time (work/jobs and school), in which relatively large number of people have access and who show some form of attachment to the space and it's not clear to whom it belongs. The study regarding private space is achieved through a territory within the district in which the individual carries out life, the concept of neighbourhood “cradle to grave” stated by “The Urban Land Institute”, Florida [10]. The neighbourhood occurs in the lane between public and private space.

According to the proxemics theory, intimate space is a primary territory, strongly symbolized, with a definite owner, which satisfies the desires and needs for comfort, safety, attachment and relaxation for the same person or a group of individuals. The intimate space becomes home, place and idea, a complex structure, giving individuals more than the feeling of belonging and attachment to the family. Studies by Rob Imrie and Clare Cooper [11] point out that the concept of home is not the same for all people, especially when it becomes inaccessible. “Home” can be understood as an archetypical shared experience, where people express themselves through a series of symbols. J. MacGregor Wise [11] sets out the most complex definition of home, so this is an area that we carry with us, defined by something simple as a song that makes you feel safe in the dark. Home is a deep cultural place that goes beyond culture because it is made and remade continuously through our actions, something that moves with us and opens other spaces.

The research that underlies this paper provides important information that constitutes the foundation of the solution to the problem addressed. The studies conducted so far show only part of the complexity of this topic. From the research underlying this work we observe the deductibility of spaces that make the urban environment – intimate space derives from private which in turn derives from the public space –, we identify the general features of the urban environment that make it approachable to the individual and the characteristics of individuals which alter its perception.

Taking as a starting point the bibliographic research, it remains to note the differences in these characteristics for each type of the studied space and to develop a vision overview of the urban aspects that make the individual within space through public space – private space – intimate space.

## 2 METHODOLOGY

The paper uses bibliographic study in an inductive and deductive approach by collecting data to answer the stated question: Which aspects bring the urban environment close to the individual? In completing the bibliographic study, as research methods phenomenology, semiotics and the method of combining several theories are also used.

Considering the definition of the urban environment and the human perception, with the premise of the proxemics theory developed by Edward Hall in 1966, the study analyzes phenomenologically the way the individual perceives urban – architectural reality (visual, hearing, olfactory and tactile) through a material (physical) and mental (spiritual) perspective to identify the features that make the urban environment close to the individual. The mental perspective is analyzed through semiotics, the emotional – affective reality research studies the meanings an individual attributes to an urban environment, meanings generated by signs, symbols and connotations. The research of the aspects that make the urban environment close to the individual is achieved through the public space – private space – intimate space lane. The three types of spaces have been identified in practice as it follows: public space – public squares, private space – the territory within the district in which the individual carries out his life and intimate space – home.

The study speaks about the aspects that bring the urban environment close to the individual through a material outlook researching the urban – architectural reality characteristics and the physical qualities of the individual, and a mental outlook researching the emotional – affective reality characteristics and the social qualities of the individual.

Underlying research studies are focused on the qualities of space and the clear delineation of public, private and intimate space. Among the most important researches we mention Edward Hall [3] on territoriality, Henri Lefebvre [4] and Jacobs [5] on public space, “The Urban Land Institute”, Florida [10] on intimate space – “cradle to grave” concept and J. MacGregor Wise [11] on intimate space.

## 3 RESULTS

The study takes as its starting point the need of any individual to identify with a particular place and the proxemics theory that divides the territory into three categories: the public territory represented by public space, the secondary territory represented by private space and primary territory represented by the intimate space.

For the individual, the study’s central figure, to “feel” close to the urban framework, defined in this paper as the space between the public – private – intimate space, it must satisfy several needs. Identifying and analyzing the needs was performed through the lane between those three types of space.

The analysis of the urban framework was based on how the individual understands and uses the space through a physical and mental outlook. Besides physical (sex, age, height, illnesses etc.) and social (religion, culture, education, economic and political status etc.) aspects of people, we can say that they use space according to three very important factors generated by the stages of life: mobility, physical activity and time spent in a certain place.

Within a successful urban framework, requirements related to urban – architectural reality (built environment) and emotional – affective reality (perception) must be met. In a simplistic approach, the urban environment must satisfy the individual’s needs of accessibility and connectivity, comfort, security and image, functions and activities and not least sociability. In completing the commonalities that the three types of space share, there are some unique ones. Public space and public square

primarily satisfy the social needs. Private space, the territory within the district in which the individual carries out its life is a buffer space between the public and the intimate, satisfying needs that we might call “transition needs”. Intimate space, the home, primarily satisfies psychological needs.

We can firmly state that identifying all aspects of the urban environment that make it close to the individual is a very complex process involving researches in related fields such as psychology, sociology, economics etc. For the multitude of variables that define the individual, the paper is just an introduction to this subject, the study will be deepened in the future.

## 4 DISCUSSIONS

The urban setting is an accumulation of space, settled over time, that is based on the combination of open and built spaces, governed by a tangible regularity (physical – economic, aesthetic, geometrical) that serves the interests of both processing space and subjective interests of man. The system of urban setting elements is dependent on man’s ability to sense the environment not only functional (response to a socio – economic – biological need), but as an aesthetic, ethical, administrative layout.

The urban – architectural reality relates to the type of relief, season, time of day, density and condition of the built space, infrastructure, utilities, political and economical state, administrative policies etc. The second set of issues relates to sex, age, senses (the five human senses), health (disabled, atypical behaviour – mental diseases), ethnicity, religion, culture, education, social status, personality (extrovert, introvert), the competitiveness and cooperativity of individuals etc.

In completing the factors mentioned above, studies have shown that people use space based on mobility, physical activity and time spent. The mobility of a group of individuals provides indications on their willingness to travel a specific distance to reach the destination. Mobility is a cyclical process, which increases with age until adulthood and then decreases to old age. Physical activity, like mobility, tends to increase with age and then declines towards old age. Small children and the elderly need safe and small spaces to sit and play activities and teenagers and adults need large public spaces (activities involving movement). Most mobile groups allocate the least time use to public space, most of it spent in private spaces (work), and then they retreat to intimate space.

A number of factors that make the individual close to the urban setting are analysed for each category of space (public – private – intimate) through a physical and mental outlook. Here we must mention that the analysis through the physical outlook is similar to all three types of space.

Successful public space is first the space where economic and social exchanges are produced, events are organized, where friends meet, where cultural mix is produced and it becomes a “porch” for our public institutions (bookstores, libraries, schools etc.). If it works well, public space becomes a scene of our public life.

*As stated in “Public Space”, “When public spaces are successful [...] they will increase opportunities to participate in the communal activity.[...] In the parks, plazas, markets, waterfronts, and natural areas of our cities, people from different cultural groups can come together in a supportive context of mutual enjoyment. As these experiences are repeated, public spaces become vessels to carry positive communal meanings.” [12, pp. 343 - 344]*

Following the conducted research, for a public space to be successful and for individuals to identify themselves with it, space must be accessible, people spend time and money there, have a pleasant image, comfortable, secure and never the less sociable (space where people meet other people and where they bring others).



Figure 1. The Successful Public Space

The speech about accessibility and connectivity of successful public space refers to the ease with which it is found and crossed and its visibility from the far and near. In this sense, the availability of space can be measured by visual or physical links with the surroundings. Successful public space has a high rate of parking and is convenient to public transit. The edges of this type of space are very important (a row of shops along a street is more interesting and generally safer than walking past a near blank wall or an empty space). Following the study “Project for Public Spaces”, it was concluded that to determine the availability and connectivity of a public space, there should be addressed a number of questions with answers which reflect the opinion of the users. The questions concern the visibility of space from distance and its transparency, the connection with its surroundings and appearances, the use of surroundings by its occupants, the availability of space from inside and outside, the functionality of space for people with disabilities, the connection with other points of interest, the availability of public transport and the facilitation of pedestrian routes.

The comfort and image of space are key points in its success. Comfort involves the perception of safety, cleanliness and availability of space to sit in it, it gives individuals the chance to sit where they want. Also in this category, fall the appearance and condition of building entrances and utilities and the ratio of built – unbuilt space. In the same study, it was concluded that to determine the level of comfort and image of public space there must be addressed a number of questions to users that reflect their opinion. The set of questions include issues relating to the first impression left by space to users, the ratio of male and female, the variety, the capacity and positioning of sitting places, the sense of security given by the place, the maintenance and security routine, the ratio of pedestrian and car space, the opportunities to photograph the place.

Public space can't function if it is not equipped with functions and activities that take place here. Activities are the reason people come back into it, when there is nothing to do the space is empty and it is usually a sign that something is not working. Evaluation of the activities and functions of space is based on a series of principles on the number of activities undertaken by individuals (the more activities that people can participate to the better), the balance between man and women, the age of occupants (pensioners and people with children can use the space when others work), the using time lapse of space (as it is used throughout the day), the type of user (the space is used by both single people and groups, socialising level), space management. According to the same study, functions and activities related to the space must answer a series of questions regarding the use of empty space, variety of age categories of users, the variety of activities (people reading, relaxing, walking, eating, playing chess, football, basketball etc.), distribution of people (single or groups), the element of authority (can we identify a person responsible for the space?).

Similar to features already mentioned, the study in question considers the social aspect of an area based on questions about people's willingness to meet in this space with their friends, how often

acquaintances meet by chance in this place, the distribution and familiarity of individuals (in groups, they know each other by the physical features, they talk to each other), the frequency of which individuals use the space, the variety and diversity of users, the availability of individuals to look after this place (gathering trash when they see it), people's attitudes (whether smiling or not), the willingness of individuals to share this space with friends and family.

Completing all the aspects in question listed above, leads to a successful public space. A space with an image that resonates with the individuals, accessible and connected to the urban framework in which they feel comfortable in using services and doing business while being open to their fellow men becomes social.

Emanuel Levinas raises the question whether there is no private place, whether in fact, you can't hide anywhere from otherness, from the other. Assuming that the individual manages to find a "safe house/hiding place", the discussion about private space can only be directly connected with public space/place, the first one resulting from the second. Michel Foucault [13] elaborates the concept of heterotopia which states that places aren't divided only in private and public places but that there are also mixed, semi-public, semi-private (the cemetery, the Romanian household). The transition from public to private is represented by a sudden rupture of architectural elements such as thresholds, doors, windows etc.

Considering the theory of proxemics we state that the private space is within the secondary territory. The secondary territory is not entirely a public space where everyone is welcome, but more a place where a number of people are expected (for example in a school we are accustomed to meeting students, teachers and parents, everyone else raises questions), a space where we find the same group of people in the same place every time we visit (for example painting classes that meet weekly, when there is a new member this becomes extremely obvious).

Spaces are derived from one another, so it is important to note that every place can be perceived as a different territory by different people (for example: the most popular place in the neighbourhood is a secondary territory for loyal customers, a primary territory for employees and a public territory for sporadic customers). We attribute to the territory within the neighbourhood in which the individual carries out life the quality of private space based on its size and primarily on user's perception and experience. Neighbourhood residents establish the similarities between them and the differences from those considered outsiders. It is a small world where individuals become social beings and go through the process of self-identification. As a conclusion, *"... by definition a neighbourhood is the place to which a child spontaneously gives undivided attention; that's the unfiltered way meaning comes to children, just flowing off the surface of things."* [14, pp. 43, our. subl.]

Considering the issues mentioned on user's perception of private space and that it derives from the public space, the analysis will be bidirectional (through a physical and mental outlook), based on the study conducted by "Project for Public Spaces" of the space from which it derives.

The speech about accessibility and connectivity of private space refers to the ease with which the individual moves in an oriented way inside it, the ease of connecting with the outside, the visibility and exposure levels of the individual both inside and outside (level of transparency). In this sense, the availability of space can be measured by visual or physical links with the surroundings. Private space compared to public space gives the individual the opportunity to partially hide from outside. The edges of this type of space are very important, representing the barrier between inside and outside (depending on the perceived private space, these edges can be buildings, windows, gates, walls, streets, perception aspects, individual's experience and mental barrier). To consider a place as an accessible and related private space we need to consider the following aspects of its size (walking on a 5 minutes range), its visibility from the outside and the inside, level of transparency (lower than that of the public space, the individual sees more than he leaves to see), connection within the space, user's levels of privacy and anonymity.

The comfort and image of the private space are factors determined by the individual's perception of the place. Comfort involves the perception of safety, cleanliness and offers the individual the chance to "hide" within the space, to let down some of the masks used in public space. Similarly to the public space discussion we refer to the appearance and condition of buildings, utilities and built – unbuilt ratio. The level of comfort and image of the private space are determined by aspects such as the reliability, privacy and anonymity levels, the quality and message of the image perceived by individuals based on gender, age, social class, religion, ethnicity, education level, the nature of the individual's relationships within that space, familiarity, remembering past experiences, the opportunities to photograph that place.

The private space is also equipped with functions and activities that take place and can undertake this space. The type of the activities or their absence are the reason why people retire on this space. When space becomes too crowded and bombarded by many factors, it is generally a sign that it will lose its private attribution. In evaluating the activities and functions of private space, there are envisaged issues like the density of the built space and the perceived density of the space, the number and diversity of the activities, the type of undertaken activities – specific activities, the balance between man and women who become in turns observers, the familiarity level of individuals (people from the inner circle of acquaintances), the access of the outer deemed persons, the people's distribution (alone or in groups, socializing level), space management.

As with public space, defined above, the social feature of space is the most difficult to obtain. The social aspect of private space is analysed through the availability of individuals to bring new people into the space, the number of people using it, the nature of the individual's relationship and the familiarity between them, the ease of a new individual entering the space, time spent, the invasion of the space by individuals who are considered to be not-compliant (ethnicity, age, gender).

Private space, in comparison to the public space is more restrictive towards the "outside", less transparent, more familiar, relieves the individual of some economic and political activities and gives him the opportunity to opt out of social masks and be him with those close to him.

The discussion of public space – private space – intimate space can make an analogy to the human body (areas permanently exposed – hands and face, hidden areas – chest, back, upper legs, private parts) and also to the Romanian household seen in Fig. 2 (public space – the road lane, semi-public space – the courtyard, semi-private space – the porch, private space – the house) with an extension to the house plans (spaces become more private as they are positioned far from the main access to the house).

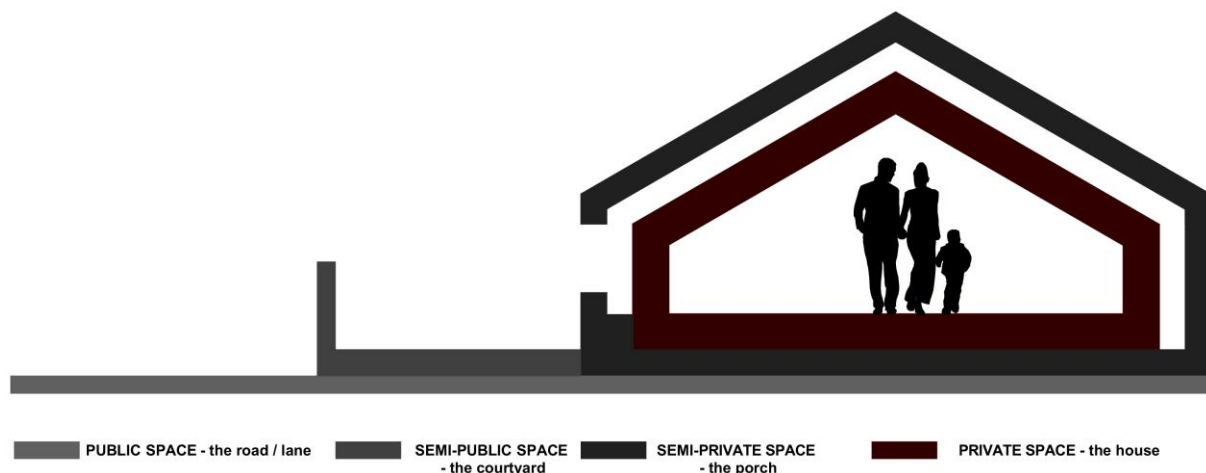


Figure 2. The Romanian Household



The concept of private space includes the physical notion of a house, while the intimate space refers to the idea of “home”. There are raised questions about when the concept of “home” was embedded in human consciousness, the instinctive nature of the sense of “home” and human nature, what if individuals are animals in denial, “nest/den” builders or nomads.

“Home” is not necessarily defined by an architectural object or by the lack of it, in the beginning of history “home” was no more than a small fire around which there were familiar faces. In humans, the idea of “home” almost completely displaces the idea of habitat. It is understandable that a bear’s den, held and used temporarily for hibernation as long as is cold and for raising cubs, is not the same thing as its habitat and its habitat is its true home. People are very malleable in this regard, able to live in many places, so that the habitat is almost always a metaphor. The statement “home is the individual’s habitat” is both true and false at the same time. However, the psychological habitat of humans is shaped by what could be called the magnetic property of the home, how they align everything around us.

Any meaning that “home” might have, in fact, is how the space is organized in the human mind, a deeply familiar place that becomes noticeable to the individual when he is no longer “home”, the place which people can’t see with foreign eyes for more than a fraction of a second (after a period of absence – leaving for training courses). There is a big difference between the feeling of “home” and being physically home. Some people, moving through life, rediscover “home” again and again, some never find a new “home” after leaving the original one and some never leave the “nest/den”. The disappearance of the owner of the home determines the alteration of the “home” feeling for the ones that remain (the death of the parents – causes children the sense of disappearance of the notion of “home” – the house where they grew up in).

The characteristics set out in the three types of space, excluding the social nature, refer to their physical side.

The intimate space represented by the home, unlike the public and private space, is a highly psychological space. Thus, in addition to the physical characteristics of the three types of space, intimate space has a number of psychological characteristics that consider issues of romance, psychical comfort (the perception of safety and cleanliness offers individuals the opportunity to be their self), communion (the close link with the family members), stimulation, privacy, productivity, storage and renewal of the memories and experiences.

The speech about accessibility and connectivity of the intimate space refers to the ease with which the individual move in an oriented way inside the home, the connection with the outside, the visibility and exposure of the individual to the outside (the level of transparency). In this sense, home accessibility can be measured by the barriers from the outside and the links to it (for example the doors and windows of a house are both barriers and connecting points to the outside). Intimate space versus public and private space offers the individual the opportunity to escape into a world created after his image and likeness. Home edges are very important, representing the barrier between inside and outside. Home is home, and everything else isn’t home, this is how the world is constructed. To consider a home accessible and connected we issue aspects related to the visibility of space from outside to inside and from inside to outside, the connection within the space, the need for privacy, anonymity and protection.

As with public and private space, comfort and image of the intimate space are factors in the individual’s perception of the household. Comfort from a physical space point of view requires satisfying the individual’s needs of living (utilities, scale, storage, special design elements). The comfort level and the image of intimate space are based on aspects such as the sense of security, privacy and identity, the quality of the message and of the image perceived by the individual based on gender, age, social class, religion, ethnicity, education level, the nature of the relationships between those who share the home (family members, tenants, guests etc.), familiarity, the memory of past experiences.

The home is also equipped with functions and specific activities that take and undertake place in this space. The types of activities are one of the reasons why people make from a house a home, the time spent with the children (the becoming of individuals mostly occur in this place), family holidays, food made by grandmother etc. In evaluating the activities and functions of an intimate space, there are taken into account aspects of housing quality, routine activities that give a specific structure to the individual and holiday activities, feeling familiarity to one another and feeling familiarity towards the space and its contents, preferential access to the space and visit time laps (closed circuit, children are forbidden to use certain spaces or participate in certain activities).

By definition home is a social space, here families interact, individuals meet with their close friends and are strongly attached to space, to the experiences and memories lived here and to the notion of "home". The social aspect of the intimate space is analysed by the availability of the individual to welcome inside the home people outside the family (the family is consisting of parents and children), the number of space users (in a large family there is a possibility for some members to not find their place), the relationship between individuals, the people's behaviour and mood, time spent, the possibility of invasion of space by individuals believed to be not-compliant (ethnicity, age, gender, the type of relationship).

Intimate space compared to public and private space beyond architectural materialization through an object is always present within the individual. It is intentionally restricted to the "outside", less transparent, the space in which the individual is turning to its self, to its soul.

## 5 CONCLUSIONS

Based on the characteristics of the urban environment and how individuals understand and use space viewed through a physical and mental outlook, the study highlights a number of characteristics of the urban framework that applies to every type of space and a number of characteristics for each type. The common characteristics include accessibility and connectivity, comfort and image, functions and activities and not least sociability. The particular characteristics relate to intimate space and define its psychological dimension.

For the individual, the central pivot of the study, to successfully use a public space, the latter must have an image that resonates with the individual, is easily accessible and very well connected in the city, it is equipped with functions necessary for the individual that uses it freely and activities opened to its peers and feels comfortable to carry, therefor sociable.

The individual wants that the private space, which derives from the public one, and by comparison, to be more restrictive to the "outside", less transparent and must provide the sense of familiarity. The individual wants from this type of space the control of transparency levels, it is a place where one sees more than is seen, a place which exempts the individual from some of the social "masks" and gives him the chance to be in the company of a familiar group of individuals.

Intimate space is created, more than any of the other types of space, after the image and resemblance of a man, it is the central core of dwelling (Heidegger [15]). Unlike public and private space, intimate space has an omnipresent character, moving throughout the materiality of an architectural object boundary. This includes both physical features present in other types of space and psychological characteristics such as romance, well-being, communion, stimulation, privacy, productivity, the storage and renewal of memories and experiences.

The answer to the question stated in the Introduction is a partial one. Assuming that man is unique, by extension also his perception is unique and it is difficult to grasp a full view of the characteristics that make the urban environment close to the individual. The research identified features which were related specifically to the urban environment (season, time of the day, noise, density etc.), related to the type of user (gender, ethnicity, age, religion, culture, education, social status, health, personality – extrovert/introvert etc.) and characteristics mentioned above, linked to the used type of space.

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## SENSITIVE BODIES IN THE CITYSCAPE

Javier Ruiz Sánchez<sup>1</sup>, María José Martínez Sánchez<sup>2</sup>

<sup>1</sup> *Universidad Politécnica de Madrid (SPAIN)*

<sup>2</sup> *Birmingham City University (UNITED KINGDOM)*

*javier.ruiz@upm.es, maria.martinezsanchez@bcu.ac.uk*

### Abstract

Cities evolve to just possible, always uncertain urban futures. Just like living systems, this evolution tends to achieve complexity, and it becomes itself the best tool to face uncertainty. Uncertainty has always been understood as worth of repression by modern town planning, being one of its main goals, the conquest for security and for well-planned futures. But cities in the 21st century, after significant, even catastrophic events, have to face a high degree of uncertainty just like a desire of a reasonable level of safety, many times a contradiction if not just a paradox. Knowledge of underlying processes is crucial for decision makers (planning and governance) but the complexity of these processes is of such a high level, that conventional tools of survey have to be complemented by innovative and dynamic methods in order to anticipate a wide range of possible futures as well as the path to orientate processes in the desirable direction.

Out of our past research, the main operation in urban systems evolution is difference, this is to say, the establishment of traces indicating differences, differences themselves consisting in increasingly more complex systems of rules, as if a game board. Differences operate both in space and time, conforming a cultural landscape, a cityscape. The complexity of our cities can hardly be approached by just increasing our power of calculation, the amount of data. It is not just a question of quantity but of quality, a need for the new alliance in terms of physician Ilya Prigogine.

It is in this context where we present the concept of sensitive bodies. This concept has triggered our approach to the city through new techniques of analysis of urban processes. They are based on the artistic experience of the city spaces, working with performers and dancers in urban environments. Their bodies, due to their bodily-kinesthetic intelligence – in reference to Gardner's multiple intelligences –, are more sensitive to the information received from the city, and through them, it is possible to unveil layers of information that otherwise would not be visible to us.

Urban spaces highly internalise processes, even the possibility of catastrophes, due to a collective memory of past events. Both collective and individual consequent decisions have conformed specific urban forms, these forms strongly linked to a specific relationship to uncertainty. And they can also be read by understanding their complexity, the dynamic system of topological relationships between the set of elements as displayed in space. The technique of analysis include both an hermeneutical approach to form and a sensitive approach to topology, the spatial system composed of the town plan, set of traces indicating differences, the building fabric and the pattern of building and land utilization, but more specifically the underlying system of rules that can be read just by playing the game, using techniques borrowed out of performing arts, making bodies interact with living bodies whose behaviour is just the main component of the cityscape.

Experiences in places in cities as Madrid (Spain), Winchester (UK), and some other, permit us to conclude and provide further hypothesis such as:

- The complexity of forms is strongly linked to spaces of high uncertainty, complexity being the main tool urban systems develop to face uncertainty by themselves.

- Urban forms and topologies reproduce the structure of the system of decisions and so it is possible to read conflict and anticipate possible futures by interacting, playing in civic, communicative spaces by using trained sensitive bodies.

- Spaces of recognition, in terms of the Frankfurt School (Institute for Social Research), can be achieved by increasing complexity, so that it is possible to develop better spaces and let cities evolve to spaces of better justice and better quality of life, so it can be considered a valid planning technique.

**Keywords:** sensitive bodies, cultural landscape, complexity, uncertainty, performing arts

## 1 INTRODUCTION: SENSITIVE BODIES IN CITYSCAPES

### 1.1 Contemporary cityscape

Complexity is the main characteristic of contemporary city. Highly rapid processes take place in space, a range of events ranging from the most devastating disaster to the most intimate decision, from the triumph of a group of people to the intense experience of an art masterwork [1]. And the nature of these events cannot be separated of the nature itself of the space where it is happening, as the concept of Mikhail Bakhtin's *chronotope*, this is, the unity conformed by space, time and event, and its possibility of re-presentation and communication. Following German historian Karl Schlögel [2], although it is undoubted that space and time run inseparable, it is true that because of the obvious sometimes the spatial component is just taken for granted in history. Communication, even representation, of events tends to follow the order of time, the nature of a chronicle.

But every event, whatever its dimension or consequences, not only takes place in space but also changes space itself. Space is not static at all, but it is precisely its dynamic condition that makes it uncomfortable. If to the intrinsic complexity of space we must also add a time component, then the understanding of space turns almost impossible, even more if we want to control, design or plan it. The main operation when facing spaces is to simplify them, avoiding, even ignoring their complexity.

So, contemporary urban landscapes, cityscapes, can only be read as palimpsests, dynamic palimpsests. This characteristic leads us to disagree with the idea of understanding complex urban spaces (in fact any urban spaces) by mere quantitative methods, by increasing the number of indicators and formula, ignoring the relational, communicative dimension of the city; and of course ignoring the time dimension of the city; still pictures attempting to catch the changing nature of space-events.

First of all we have to assume the complex nature of the city. Because of this nature, cities cannot be understood in their wholeness, we must think of the possibility that there is an intrinsic lack of knowledge. But if we assume that this lack of knowledge is preferable to the only apparent understanding of another thing that looks like a city but it is not at all, that cannot be considered as a city, just a still life, a static representation, what we must try is to adapt our mind and methods to reality instead of the contrary, try to adapt reality to the simplicity and narrowness of most of our points of view. In fact, most of modern urbanism has not consisted but of an attempt to simplify the city to just a few of *corbusian* rules. But cities are stubborn, obstinate; they keep on being complex, indefinite, hard to pin down, but they are the only possible scenarios of what is happening and going to happen.

Events change cities, so cities change, evolve. Cities evolve to just possible, always uncertain urban futures. Just like living systems, because of their complex nature, this evolution tends to achieve complexity in order that this complexity becomes itself the best tool to face uncertainty. Uncertainty has always been understood as worth of repression by modern town planning, one of its main goals being the conquest for security and for apparently well-planned futures. But cities in the 21st century, after significant, even catastrophic events just like the fall of the Berlin wall in 1989 and the September 11 attacks (9/11) in NYC, have to face a high degree of uncertainty just like a desire of a reasonable level of safety, many times a contradiction if not just a paradox. Knowledge of underlying processes is crucial for decision makers (planning and governance) but the complexity of these processes is of such a high level that conventional tools of survey have to be complemented by innovative and dynamic

methods in order to anticipate a wide range of possible futures as well as the path to orientate processes in the desirable direction. These events cited can be considered as exceptional, but they cannot be understood separated from the precise, unique place, and from the behaviour of a number of human beings, their bodies participating in an event. But it is significant that the behaviour of such a number of bodies follows similar rules under not so catastrophic, even daily considerations. They receive information coming from the place, from the other bodies, from the personal desires, knowledge and experience. Uncertainty is natural to cities, including people living, using, interacting in them.

It is in this context of trying to understand the real nature of cities, how complexity increases, how cities evolve, and the relationships between events and the spaces where they take place that we have developed the use of sensitive bodies as a tool of knowledge.

Urban spaces highly internalise processes, even the possibility of catastrophes, due to a collective memory of past events. Both collective and individual consequent decisions have conformed specific urban forms, these forms strongly linked to a specific relationship to uncertainty. And they can also be read by understanding their complexity, the dynamic system of topological relationships between the set of elements as displayed in space. Techniques of analysis include both an hermeneutical approach to form and a sensitive approach to topology, the spatial system composed of the town plan, set of traces indicating differences, the building fabric and the pattern of building and land utilization, but more specifically the underlying system of rules that can be read just by playing the game, using techniques borrowed out of performing arts, making bodies interact with living bodies whose behaviour is just the main component of the cityscape.

Following Schlögel's words, "in space we read time". But we must adapt our senses to read space in its complexity, instead of just picturing a still photograph and pretend that it is able to catch the sense of the city as a whole.

## 1.2 Sensitive bodies

Out of our past research, the main operation in urban systems evolution is difference, this is to say, the establishment of traces indicating differences, differences themselves consisting in increasingly more complex systems of rules, as if a game board. Differences operate both in space and time, conforming a cultural landscape, a cityscape. The complexity of our cities can hardly be approached by just increasing our power of calculation, the amount of data. It is not just a question of quantity but of quality, a need for the new alliance in terms of physician Ilya Prigogine.

It is in this context where we present the concept of sensitive bodies. This concept has triggered our approach to the city through new techniques of analysis of urban processes. They are based on the artistic experience of the city spaces, working with performers and dancers in urban environments. Their bodies, due to their bodily-kinesthetic intelligence – in reference to Gardner's multiple intelligences –, are more sensitive to the information received from the city, and through them, it is possible to unveil layers of information that otherwise would not be visible to us.

One of our main hypothesis is that, considering cities as palimpsests, the overlapped layers of information that *conform* them can also be explored through sensitive bodies experiencing the urban *form*.

It is a fact that we relate to the different geographical locations where we develop our everyday life, even in unconscious way. As human beings, we live our lives depending on space and time, as our body has a place and a location, which changes through time. The space, both physical and cultural, has some constraints, which are assimilated by the body and remain somehow on it during our lives. These constraints remain imprinted in our bodies, as a photographic film, which is exposed to light, so the body at the same time exteriorizes them, expressing this way the interaction with the reality in which the body is inserted.



The concept of sensitive body has its antecedent in the idea of *corpographies*. A *corpography*<sup>1</sup> is a corporal cartography – as its name expresses – and it has its departure point in the hypothesis that urban experience remains imprinted in the body, and at the same time, defines it in a subconscious level [3].

*Corpographies* are the different traces that our experiences of the world have left on us. The human body is like photographic paper sensitive to space, and the different spatial experiences are imprinted on it. This way, spatial experiences also play a role in the configuration of the individual's identity.

In an interview held in 2014 with Dora Andrade, the director of EDISCA, a Brazilian dance institution that develops a community project teaching dance to the children of the favelas in Fortaleza, she pointed out something that reinforces this research. The first time children – that had lived all their lives in the fragmented spaces of the slums – were taken to the dance studio, they would feel disoriented and looked around all the time as it was their first experience in a space of these characteristics. This anecdote highlights not only how important the spatial experience is in relation to the identity, but also, how our bodies could be tools to understand the mechanisms of space.

This leads us to the idea of working with people who have been professionally trained in the art of movement or performance – which are called sensitive bodies – in order to help us, architects and urbanists/urban planners to understand the space.

Richard Sennet states that “navigating the geography of modern society requires very little physical effort, hence engagement; indeed, as roads become straightened and regularized, the voyager needs account less and less for the people and the buildings on the street in order to move, making minute motions in an ever less complex environment” [4]. But Sennet also says that the “physical condition of the travelling body reinforces this sense of disconnection from space” [4]. The question could be, is it true that the contemporary urban space is less complex? Or is this directly related with the way we experience space, addressing with this the velocity of the moving bodies in the city?

Paul Makeham states that “performance studies, provide an interpretive frame for analysing the urban drama, encompassing not only formally designated artworks but am almost infinitive range of other phenomena as well” [5]. This is why a process involving this sensitive bodies in the analysis of the city could enlighten urban studies. A methodology involving dancers and performers could help us to understand the different layers of the city.

As Lewis Mumford wrote in his essay of the past century, in the '30s “What is a city?”, “a city can be understood as the scenario of the urban drama” [6]. One of the first documented texts where the word *scenography* is used as the scenic space containing objects and lighting effects to give the impression of some kind of reality is in Renaissance Italian architect and treatise writer Sebastiano Serlio's 16<sup>th</sup> century *Five Books on Architecture*. Serlio is well-known for his designs for a comic and tragic set scenes in the form of urban landscapes. If landscapes can be seen, even represented as theatre, and theatre can incorporate landscape itself, the main question is the role of bodies in this representation, their transformation from spectators to actors as in modern scene. Rites, collective rituals are no more than the moments where people as individuals keep away their individuality and re-produce their links with the others and their collective space to gather community, the social system [7]. And this system is no more con-formed by individuals, but by the set of links. Following German sociologist Niklas Luhmann, elements in a social system are not humans but relations. As we once did, translating Luhmann's vision into the urban system [8], elements in cities are not objects but events linking in time and space humans and objects. Explore these links is to experience events.

It was the Canadian sociologist Erving Goffman that in the past century, in the '50s and '60s, explored experiencing events, links in public space, courtesies, dramas, rituals, contexts. Through a micro-sociological approach Goffman [9] inquired on how individual bodies representing, playing their roles in a socio-spatial *chronotope* (the quote to Bakhtin here is ours) affected both the physical-functional aspects of the space and the former development of the action, re-creating a new scenario for further events.

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<sup>1</sup> The term *corpography* was first presented by Paola Berenstein Jaques in the “Colloque de Cerisy-la-Salle”, in September 2006.

Approaching the urban space keeping Mumford's idea in mind, it can lead us to different ways of understanding the complexity of space. For example, in one of the experiments carried out during the past years<sup>2</sup> with the main objective of bringing interdisciplinarity into urban studies, a contemporary dance notation system was used to present a layer of movement. This layer was not just composed by trajectories, but it showed a self-standing approach, unveiling features not visible just through the observance of space (Fig. 1).

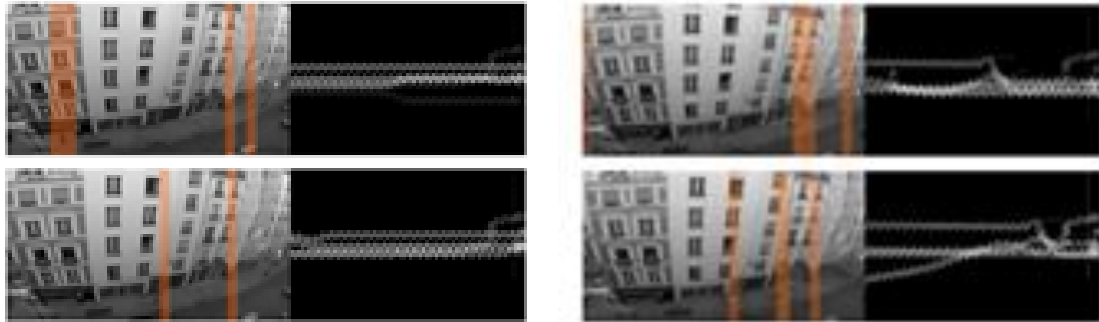


Figure 1. Kinetography III, Martínez Sánchez, MJ.

When looking at contemporary performance practices, Lehmann defends the idea that it is possible to approach the creative process from a different point of view, not just from the text [10]. The dramatic text loses its supremacy giving space, bodies or light a more important role within the creative process. In practical terms, this means that a theatrical piece can start with a movement score that would trigger the rest of the elements. If we think of space design, at the moment, we may have the role of the architect or urban/landscape designer, who develops the project. What is here proposed is to address design as a post-dramatic process, not just from the desk of the designer, but from the analysis of space including different interdisciplinary tools, in this case, sensitive bodies. In other words, to let the "dramaturgy of space"<sup>3</sup> emerge.

Developing a site-specific project in a specific environment underlines the characteristics of space. Pearson explains that "performance might then be in conflict with or indifferent to site as well as reciprocal – and vice versa – only through studied indifference would demonstrate its specificity" [11]. This means that depending on how the performative layer interacts with pre-existent space, looking for the conflict and reciprocity, and confronting both fiction and reality, it is possible to find out unexpected data.

At the end of Pearson's lecture at the Quadrennial of Scenography in Prague in 2015, he pointed out: "put twenty dancers in a corridor and you'll figure out the characteristics of the corridor". All the processes proposed to increase our knowledge of the space are based on the physical experience so, as those dancers with their moving sensitive bodies, setting up interdisciplinary projects with teams formed by architects, dancers and performers in collaboration with citizens or specific communities, we can be able to unveil some of the characteristics of urban space.

Because bodies affect and are affected by space, sensitive bodies can be a main tool to experience and understand space in its complexity.

## 2 BODIES IN SPACE. EXPERIENCES

### 2.1 Sensitive bodies modelling urban space

The mythical origins of the western city are strongly related to sensitive bodies in the way we are presenting them in this paper, and, precisely to the very beginning of performing arts. In Ancient Greece, more specifically in the island of Crete, human settlements (towns, villages, palaces, even the

<sup>2</sup> Kinetographies were a series of small projects developed in the PhD Thesis: *Dynamic Cartographies. Body and movement in the architectural space* by M.J. Martínez Sánchez and directed by Alberto Morell Sixto and Javier Ruiz Sánchez.

<sup>3</sup> Term borrowed from Mike Pearson. Lecture at Prague Quadrennial 2015. 'Prague Quadrennial of Performance Design and Space', <http://www.pq.cz/en/> (accessed 10.7.16).

mythical labyrinth) were designing according to the movements in a ritual dance called *χορός*, *choros* or *choros*, word from which they derive words like choir or choreography and related. By dancing this *choros*, performers, ritual dancers conceptually close to our idea of sensitive, trained, bodies, draw the seminal traces for the new space to be designed. It is the trace, not the building of any physical structure, the main operation in the basis of determining and conforming urban space. It is the trace that establishes the first system of rules, like in the also mythical foundation of Rome by twins Romulus and Remus. After tracing the *sulcus primigenium* by the couple of oxen, the line not only determines what is and what is not Rome, but also the consequences of crossing it without permit. After disobeying the first rule, Remus was condemned, sentenced to death by his king brother.

Complexity does not work by adding elements, city evolution is not determined by addition, but by segregation or separation. Urban space is limited, but its complexity is determined by the amount of relations, links between elements, systems of rules determiner as in a playground, as in a play-board.

Although in a simple vision cityscape can seem conformed by built elements, in fact these buildings or built structures are mostly ephemeral, short-lived. A mature city is not because of the extreme age of its buildings but because of the extreme age of the traces and the rules. And these traces are not always easy to be understood: only through well-designed tools it is possible to understand the overlapped structure of consecutive layers, traces on traces, lines on lines, rules on which links are permitted or favoured or simply repressed or forbidden.

And time tends to increase complexity as well to use this complexity to permit possible accesses to possible futures. Strong links tend to determine the future whereas a subtle relational network is more open to the demands of a future we cannot control. A wasteland is more able to evolve into almost anything, whereas a theoretically well-designed and functionally optimized space becomes more fragile under uncertainty. Complexity is not easy to be understood, that is why modern functionalist planning tries to repress it as possible. But complexity, in fact, is a gift time gives us, it is the weapon our city uses to face uncertainty, the tools that makes possible a continuous reconstruction after any catastrophe, that makes possible every single action, the most simple and the most complicate without losing our identity.

So it may be possible, by using sensitive bodies, to contribute to some kind of archaeology not only of the past, but also, quoting Fredric Jameson, an archaeology of possible futures.

## 2.2 Urban space modelling sensitive bodies

Michel Foucault defines biopolitics and biopower as the set of technologies which appeared with the modernity in the late eighteenth century for managing and controlling masses, people, mostly incorporating tools related to disciplinary power, this is, training the actions of bodies. And modern cities, modern town planning, can be understood as the compilation of the set of spatial tools designed to train living bodies into a disciplinary project, to regulate individual behaviours into a social determined common body. People's activities are so modelled through spatial (architecture, planning), time (timetables) and other disciplinary tools, being the city as a whole, the perfect disciplinary machine as conceived by totalitarian modern regimes. Every urban decision taken by power, even if well-meaning, brings us some kind of disciplinary organization. Drills, postures, movements are somehow determined by urban form and structure. Our movements, even if apparently casual, are well-determined by some kind of disciplinary technology displayed in space. So cityscapes may be subject of survey from this point of view.

A successful tool to inquiry on disciplinary techniques displayed in urban space is also the use of sensitive bodies, moving either according to the established, not always made explicit, rules, or trying to explore the limits of what is socially or legally permitted. Sensitive bodies permit us to know what is possible and what is valid in urban space, and the hidden dimension, as in Edward Hall, the nature of these possibilities and their valid characteristics.

Sensitive bodies are related to the figure of the *flâneur* as presented by Baudelaire, by Walter Benjamin, by Franz Hessel, and not far from the Situationist *dérive* by Guy Debord. The main difference is the use

of well-trained actors, coming from performing arts, so that experience of the cityscape becomes a real performing experience as well as a survey and planning technique.

### 2.3 Sensitive bodies in Madrid (Spain) and Winchester (UK)

We are presenting briefly two experiences that took place in Madrid and Winchester.

On March 2013, an Athens workshop took place in Madrid under the name *ENVOLVENTES* [*\*the body in the space*]. Athens is an European network of several Technical Universities, so students from different countries (France, Italy, the Netherlands, the Czech Republic, Portugal, and Spain) and different backgrounds met for a week in Madrid to attend the workshop.

The main objectives were:

- to encourage the creation of a language of the body that permits both communication and collective creation;
- to connect with the internal processes of the individual, channelling their expressive possibilities towards that specific language;
- to explore the space and time in which the act of communication takes place;
- to establish, through the exploration of body-space-time interrelations, the working elements needed to find the expressivity of movement and their utilisation as a means of knowledge.

Under the supervision of architecture lecturers Atxu Ammann and María José Martínez, the group of students created a set of kinospheres, *mise-in-scène* and choreography. Training took place at the School of Architecture of Madrid and the MNCARS Museo Nacional Centro de Arte Reina Sofía, and the experience took place for two days in Calle Preciados, the most important commercial street in Madrid, just a few metres from Puerta del Sol, the central point of the city (Fig. 2).

On April 2016 took place in Winchester, UK, the workshop *Wooosh! 2016*<sup>4</sup>. In this case, performers came mostly from the field of performing arts, the training was held at the University of Winchester and the performances – in different locations in the historical centre of Winchester, trying to explore the palimpsest created in this old city, from its old Roman traces to present times.

In this case, performers, sensitive bodies, tried to explore to the limit the relationships and links created for centuries among spaces, and by interacting with ordinary people in ordinary circumstances turned into extraordinary, explored the conditions under which urban life takes place and the possibilities of adaptation/evolution to new uncertain and unexpected events (Fig. 3).

## 3 RESULTS, CONCLUSIONS AND FURTHER HYPOTHESIS

After these two experiences in Madrid and Winchester it has been possible to establish some preliminary results which tend to become further hypothesis for the next workshops:

- The complexity of forms is strongly linked to spaces of high uncertainty, being complexity the main tool urban systems develop to face uncertainty by themselves.
- Urban forms and topologies reproduce the structure of the system of decisions and so it is possible to read conflict and anticipate possible futures by interacting, playing in civic, communicative spaces by using trained sensitive bodies.
- Spaces of recognition, in terms of the Frankfurt School (Institute for Social Research), can be achieved by increasing complexity, so that it is possible to develop better spaces and let cities evolve to spaces of better justice and better quality of life, so it can be considered a valid planning technique.

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<sup>4</sup> <http://wooosh2016.co.uk/workshops/>



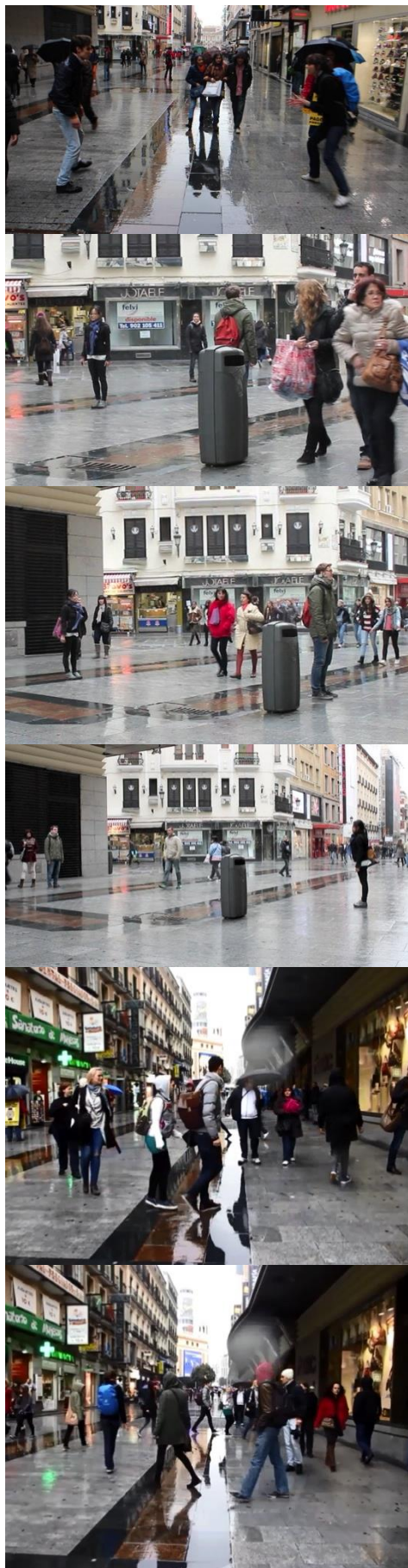


Figure 2. Stills taken from the video recording in Calle Preciados, Madrid.



Figure 3. Woosh!2016, Winchester, april 2016.

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## LIVING IN SPACELESS

**Francesca Avitabile<sup>1</sup>, Bruna Sigillo<sup>2</sup>**

<sup>1</sup>*University of Naples Federico II (ITALY)*

<sup>2</sup>*University of Naples Federico II (ITALY)*

*francesca.avitabile@unina.it, bruna.sigillo@unina.it*

### Abstract

Contemporary man lives in a new dimension, the 'spaceless' – without-space – : isolated in his own bubble and at the same time logged on the world by preponderant web net. This picture fits with the fluid society where the community values, ruling for centuries, are gradually collapsed: a community meant as amplification of the nuclear family, closely related to the man and therefore the assumption of architecture stitched tailored to his needs.

Connection places referred to the urban environment have always expressed the collective form of living, so if you ask for a re-interpretation of existing forms of coexistence and sharing, it is time to reverse that trend design that packs house-type and city-type for a man-type no more existent.

To get into the city it is necessary to analyze it from within, seeking the lost inner life and the denied sense of belonging. Among the infinitely small of a dwelling in the ratio 1:1 space/individual and the infinitely large of a city in the ratio 1: 100 space/crowd, there is a filter between the public domain and the private: the shared space.

The intimacy of the household is full of new values related to co-housing, interpreted as a spatial alteration that scales the concept of home in an entity-room cabin where "services", placed in common areas, are shared between the co-tenants.

This widespread lifestyle shows that the coexistence of multiple people in the household (co-housing), as well as in the business (co-working), has a major impact on living conditions in space, aimed at a borderline concept of privacy between real and virtual.

A network without geographical boundaries and personal limits connects homes, squares and workplaces, and encourages them to a reinterpretation of space and time.

How does the virtual world affect concretely the real one? Many argue that the Internet is an extraordinary opportunity for knowledge, freedom and full citizenship. Therefore, among the strategies to reactivate the territory aimed at re-collective identification, projects inspired by the sharing of ideas in the network contribute to the formulation of the requirements for the development of a project or improve it. The mapping of the territory made of crowdsourcing is a model of active participation of users through the network, used as an instrument of data collection from which the designer draws notes for his notebook, articulating a design that meets the expectations of those who confronted the web.

Thus, rather than increase the isolation, the social network becomes a planning tool where users co-operate, from concept to execution of possible new forms of living.

**Keywords:** living, sharing, virtual space, hybrid architecture, public space, private space

## 1 ECHOES<sup>1</sup>

Human relations and environment are the sides of the same coin which is people's life, and, intending to focus on what happens to its surroundings in terms of living space, you must enter a depth study on the sensory value, understood as epidermal external environment receipt, of its forms and its perceptible content both physically and from a symbolic point of view.

### 1.1 Relation between human beings and given environment

In the text *L'abitare*, Christian Norberg-Schulz [1] introduces a novel written by Tarjei Vesaas, a Norwegian writer, in which the young protagonist, Knut, suddenly perceives to feel 'at home' in the woods, among the trees, where he usually goes like woodcutters. That prodigious world, pure and simple, can shape his individuality. When the dusk comes, Knut cannot leave his forest. It seems to echo in the background the same atmosphere recalled by the sonnet *Alla Sera* [2, p. 65] that comes so dear because of the silence that 'holds the secret ways of heart'. This kind of discovery leads Knut to reflect on the silent people around him and on the familiarity that for generations focuses invisibly right there.

Starting from the observation of the surroundings we can certainly say that there are common elements in the experience of a place: the ground, the sky and the horizon line, are constant but also extremely variable. The land can be sand, stone; the southern sky has a very different light from that of the north and environmental changes are being experienced in relation to day or night, to the seasons and depending on the populations. Norwegians have a much larger spatial concept called *Mellomrom*, an atmospheric layer ideally traced between heaven and earth that is not just the horizon line, but the sphere in which life takes place.

Tarjei Vesaas describes the place of living as something permanent with the latter only when you establish a personal relationship and when it is perceived as something that you have in common with others.

When Knut must go back home, that is, to return to his protected nest, the family shelter, he inserts another verb: to inhabit. It implies the concept of home as a place surrounded by four walls in which, according to Vesaas, the human heart blooms and intellect composes and that, unlike wood, is not given, but the work of man. But we should not consider the house as another environment, like a box, that contains and surrounds. It is in relation with the city, with its context and only by interpreting the meaning of living in a qualitative and psychically way you will find out how to generate a relationship of dependency with the same: the outside world, the identity tissue, *as our flourish*, manages to get inside the mansion through our senses. Although these concepts may seem rhetorical, they are still able to spread in architectural design, at all scales, the absolute prerequisite of planning: build for the man and his sensory dimension.

The places of the city are dependent on the specific nature of the meeting and acceptance of living in a world where today the sense of privacy is increasingly being placed on the boundary between real and virtual. In past ages the social and cultural transformations, that nowadays happen in a very short time, took place in long centuries of human labor, allowing a progressive experimentation and adaptation of the spaces. Today the long-term dimension of space over time is almost completely missing and this is the main element that determines a break between man and his environment, creating phenomena of alienation of people. As Stefano Boeri says [3], we are in the heart of a transition that affects both the syntax and the grammar of our living spaces. This kind of transition has questioned not only the traditional categories of reading and understand the space, but also the operational tools and models that had long supported them. These tools and models are now ineffective compared to the articulation of contemporary landscapes and unable to describe the plural needs [4] of the inhabitants, that inhabit and at the same time transform these places. Public spaces take distance from the collective needs that generated them, which eventually manifest

<sup>1</sup> The title "Echoes" is inspired by "Correspondance" written by Baudelaire. This poem is about the unity of nature, human perceptions and multiple worlds those analogies reveal. Richter M. (2001), *Baudelaire: Les fleurs du mal*, Droz, Genève. This kind of connections is detailed in the PhD thesis of one of the author: cfr. Sigillo B. (2014), *Spazi di relazione: interiorità e valori condivisi. Dalla città alla società fluida al virtuale*.

themselves in unexpected and incongruous contexts from the uses to which they are put. The characteristics of the collective space do not concern only typological, functional and cultural aspects, but above all they can be traced in free accessibility to all categories of users, in relation with the environment and the feelings that local population has put in these places ideologically. Certainly you cannot reduce the city's history in strictly phases or major periods, but continuous and sudden changes compel us to rethink the city as a function of globalization and the increasingly widespread imperative of connection to the network. So if in the past for every different places where human beings carried out their activities generally corresponded a unique and given space and viceversa, the increasing complexity of contemporary social relations was reflected in processes of differentiation of places and consequently the distinction of spaces. They tend to mix, overlap, hybridize with each other, with outdoor spaces and virtual ones, in a perpetual movement of expansion and contraction between inside, outside and beyond.

In this context of historical memory loss, the transformation of the city accompanied by an approval that flattens the peculiarities of the places on history by adding advertising pages, screens and surfaces not designed to integrate with the pre-existence, and hide the past definitely, became the central theme of urban identity. The direct consequence is the denial of continuity of what are the specific functions of the city: ensure the preservation of its historical memory and assure a balanced and consistent development with the meaning of citizenship.

## 1.2 Man and sensory dimension

The Finnish architect Juhani Pallasmaa, analyzes the phenomenological dimensions of human experience in architecture through a paper that deals with issues of perception and sensorial interaction from a theoretical point of view to the reality of planning [5]. In his book, *The eyes of the skin*, he expresses the necessity and significance of the sense of touch in the experience and understanding of the world in order to create a conceptual short circuit between the dominant sense – the sight – and suppressed sensory modality – the touch. His research becomes the claim that all the senses, including sight, are extensions of the sense of touch. All are specializations of skin tissue, and all sensory experiences are linked to tactility. The contribution of these reflections was fundamental for an increasingly growing interest in the meaning and the importance of the senses both from a philosophical point of view and in terms of experiencing, doing and teaching architecture. The lack of humanity in contemporary cities can be understood as the consequence of the neglect of the body and the senses, as the result of an imbalance of our sensory system. The growing experiences of alienation, detachment and loneliness in our technological world, for instance, can be related with this sort of disease of the senses. This is the reason why the sense of alienation and detachment is often due by the most technologically advanced architectural scenarios, such as hospitals and airports.

The point of view of the anthropologist Ashley Montagu, based on medical evidence, confirms the predominance of tactile kingdom: “The skin [is] the oldest and the most sensitive of our organs, our first medium of communication, and our most efficient protectors [...]. Even the transparent cornea of the eye is overlain by a layer of modified skin. [...] Touch is the parent of our eyes, ears, nose and mouth. It is the sense which became differentiated into the others, a fact that seems to be recognized in the age-old evaluation of touch as ‘the mother of the senses.’” [6, p. 1]. In its most general meaning, the ‘perception’ is defined as a set of psychological functions that allow the organism to acquire information about the state and changes of its environment, thanks to the combination of specialized sense organs. It is distinguished from the ‘feeling’ by its complexity: it does not cover only one elemental state (heat, overcrowding, stress), it brings together many different feelings. The feeling (which can be auditory, visual or tactile) is given by the reaction to internal and external stimuli (physical and physiological) endorsed by the sense organs. It can be distinguished from the perception because it is characterized by a rather subjective elaboration of the data offered by the sense organs according to the interests and habits. Therefore it is possible to conclude that the feelings, because they become perceptions, must be integrated with mnemonic data of past experiences, based on the needs or predominant interests, to perform an action.

## 2 HYBRIDATIONS<sup>2</sup>

The architectural culture has always proposed strategies and outlined poetics in close relation with the developments of science, above all with life sciences and technological sciences. Thanks to this correspondence and mutual influence the informatics revolution is widespread in architecture linking, on one hand, to the development of sciences, and on the other hand, to the re-emerging of 'sublime'. In contemporary times, this concept of 'sublime' brings to light marginalized aspects like dissonance, disharmony, disproportion [7] in strict connection to the 'hybrid'. In this sense the use of the term 'hybridation' well expresses the tend to the complexity, the possibility to melt existing entities, in a cyclical evolution towards new identities: a coexistence in which the opposition persists.

### 2.1 Hybrid social space and fluid society

From the second half of the twentieth century the research carried out by the human sciences on space and society is basically split into four groups, each one with specific issues: the myth of public space in the pre-industrial society, which already appears in studies of Jane Jacobs in 1961 [8] and then in those of Michael Brill, Irwin Altman and Ervin H. Zube 1989 [9]; the issue of de-materialization of the public sphere by the media, addressed by Manuel Castells [10] and Diana Saco [11]; Privatization and Theming produced by consumer culture, as in the studies of Michael Sorkin [12] and Marc Augé [13]; the sphere of militarization/segregation that characterizes the city-panic, investigated by Paul Virilio and Zygmunt Bauman [14].

As well as established and widely shared within the scope of the specification under consideration, these themes can be considered as "clichés" on the public space compared to the most recent researches on the urban condition often deny the unpredictability that characterizes the urban phenomena, now nested in privatization concepts, theming, de-materialisation and the militarization of the city spaces. The dynamics of contraction/expansion of space trough different levels of interpretation to physical, to social and virtual one, reveal the inadequacy of solutions that tend to repeat spatial, typological and functional models closed, standardized and based on confirmation of boundaries, borders, barriers in a subdivision logic. However, it is necessary that such patterns evolve towards forms of spatial indeterminacy, encouraging diversification of space instead of erecting boundaries. In this framework, the notion of hybrid, borrowed from the field of life sciences, seems to grasp an interpretative and planning attitude that can answer to changing conditions of the urban structure and contemporary society. As stated by Bauman, the existence of social groups is powered by a frenetic dynamism that overwhelms every dimension of life, which sees individuals to the surface of what he calls himself 'liquid modernity', in which time is neither cyclical nor linear, as usually it was in the other companies of the pre-modern and modern history, but rather pointillist, or fragmented into a multitude of separate particles, each reduced to a point that always comes closest to the idealization of the absence of geometric dimension [14]. The most striking revelation is that until a few years ago these 'cultures of now' that affected the life of young people, immersed in a 'perpetual and breathless present' in which everything is entrusted to the experience of the moment, that seems to be the human condition extended to all ages. For several years Bauman devoted more and more specific studies to human behavior and attitudes, subjective and collective, in post-modern and globalized society, which he described as *liquid*, adapting in the later works this adjective to life, fear and love.

In social networks people seem to be free, they are master of their choices but, at the same time, they are insecure. We are bridled in a community imposed on us, while the network is something that we be the ones to create, we do have control, here's the basic difference [15]. Another important aspect is the control of the community on the individual, because it is very demanding itself. The community seems to give us a sense of *safety*, so the networks appear to mitigate the need

<sup>2</sup> The term "Hybridation" in common use, means an heterogeneous juxtaposition of elements, mainly used in adjectival form and sometimes with negative meaning of inharmonious and imperfect mix, as state by Fenton J. (1985), *Hybrid buildings*, Pamphlet architecture n.11, New York San Francisco. The definition of this concept in relation to the architectural field is detailed in the PhD thesis of one of the author: cfr. Avitabile F. (2013), *Prospettive ibride negli spazi urbani contemporanei*.

of 'Community' in a time of dispersion and insecurity. In a *liquid society* [15] it becomes necessary the need of both freedom and security: freedom without security would be complete chaos, security without freedom would be slavery [16]. So for men always bears this curse: the constant need to choose [16]. Nothing is ever acquired. The topic summit in the reflection of Bauman can be considered as a synthesis of all his reasoning on the split between power and politics. Today there are no institutions that can meet the collective demands and needs and it is in this gap between global and local that is fulfilled the planetary crisis of which we are all witnesses.

## 2.2 Social, Global, Total ... Virtual

Several contemporary authors argue that the true contemporary public space coincides more with the media space than the physical one. So, in contrast to the tendency to romanticize and idealize the real public space and material of the city, the role of media in being a place of formation of the public sphere is increasingly important. Some of them explain how discussions about the public space based on relationships of contiguity and proximity are linked to a social model in which the public space is a space of encounter and confrontation with something different.

More recent studies show that the geography of the public sphere cannot be exclusively defined in terms of coexistence and social interaction space. Public life depends on a series of decisions, actions and policies that can not only emerge as part of everyday socializing. Just think of how public life today mainly takes the appearance of a popular international event by the media, creating the illusion of participation in public life that goes beyond the simple consumption of images. Although political communication spaces are now predominantly owned by the media, you cannot oppose the real space to the virtual, or assume that one can be considered independent from the other and viceversa. Despite the media partially offsetting the public life of modern society, the analysis of the transformations of the public sphere cannot give up to confront with the changes that affect the physicality of the urban space. The increase of dialogue opportunities created by new technologies accelerates and facilitates the organization of actions, emphasizing the role of public space as a place where the action becomes visible through unpredictable ways, turning into media images and amplifying the process of formation of 'public opinion'. Different movements and social groups have a wide repertoire of protest strategies from the scene of the real space, able to mobilize the attention of the media. New technologies become part of the production process of the space contributing to the change of the way to conform and organize the public sphere. That is true for the private living space, the house, which would be the place more connected, often paradoxically isolated from the local environment of belonging. The house becomes in fact the space of public life as the media carry the external reality within the domestic borders, and then locates the conversations on issues of public interest. This gradual dissolution is not a kind of repudiation, rather an optimistic strategy based on the reestablishment of a disciplinary experience open to the joint between architectural object and the environment, in a way to cross each other producing new spatial samples [17]. As Cànovas states: a room is just a room, but the spaces that can be generated from it are without names and these are places where life develops more intensively [18, p. 29]. According to this view it is supposed that the private sphere is the space in which ideas can be developed and decisions made safe by social pressure; It is a space of 'negative freedom', freedom from social and institutional intrusions.

Apparently, the term 'virtual reality' seems to contain an immediate contradiction, presenting itself as a kind of paradox, an oxymoron: this impression comes out from our habit to consider the 'virtual' as a synonymous of 'not real'. Instead, it must be clear that, when we use the term 'virtual' in expressions such as 'virtual reality' or 'virtual space', we do not intend to deny any form of reality to the phenomena we are talking about. On the contrary, we want to mean that the specific reality of these phenomena, although not a physical reality, is structured on the model consisting of it. Thus, a 'virtual space' is not a physical space, but is structured so 'similar' to it. Very interesting is the possibility to extend this concept on architecture field, that always works on 'building spaces' where it is possible to move and act: also about cyberspace is often spoken on architecture and architectural constructions. However, the traditional architecture works in real space, though often works to change its way of perception, for instance through visual effects, prospects, clever use of volumes,

colors and lights. The virtual space of the computer and data is not entrusted to our imagination: the structures, forms and relationships that are established in it are largely independent by the subject, which perceives them as a 'given'. The alter-ego/'avatar' of the subject, in turn, has often defined characteristics, and its movement is much more influenced by physical space than virtual imaginary. And sharing these spaces is really intersubjective, in that cyber spaces are often real shared communicative spaces. This image of hybridation between man/space/body and technology defines an ever-deepening relationship between artifacts, man and the city, which changes the boundaries or even cancels them. The Cybercity described by Graham [19] represent a hybrid entity in which, beyond the cinematic vision of virtual worlds inhabited by androids in Blade Runner (Ridley Scott, 1982, USA), the theme of bodily experience of space is placed at the centre. In this kind of vision the movement, therefore, is just the first possibility opened up by virtual spaces created through the use of information technology and telematics. In fact, on closer inspection, the same movement is part of a broader category, that of action: in cyberspace is possible to act, and our actions can, if desired, have direct effect even on the physical reality.

Another way of action is communication, and virtual spaces, including those that fall into the category of virtual reality, are informative and communicative spaces. However to be specific, it is essential that the user's immersion in them is not an individual and lonely experience: the environments we create must be fairly shared environments, where you can interact with other users, with objects we meet, with tools – programs – to help us in exploring and "use" the virtual world in which we are immersed, and so on. In many cases, user interaction with a simulated environment (more or less realistic, more or less close to be a 'good' reproduction of reality) occurs through a 'representation' of the same user within the environment. The moment the virtual space generated by the computer no longer seeks to enable an individual experience, but instead begins to be populated by virtual representations of multiple users, able, through their representations, to communicate and interact in real time, even the cyberspace becomes a social space. Can the virtual world affects the real way? Many are convinced that the Internet is an extraordinary opportunity for knowledge, freedom and full citizenship. There is evidence that even a few people can generate a great influence if inserted at key nodes of an internet system. What aspects of the network can help us to imagine the prospect of a greater sharing and participation in future issues? The example of Wikipedia is successful claim since the system can self-evolve because it is based on corrective contribution of all those who use it. Projects inspired by the concepts of participation and sharing in the network, leaving the masked attempts to exploit the work and creativity of others, actually contribute to the construction of the project and allow an active participation of the participants.

Let us consider just two mapping projects of the territory and democratic sharing in 'crowdsourcing' that may prefigure the creation of a common space in which the reality of the web and the physical reality blend each other intrusions.

*Noilaquila.com* (Fig. 1) is a project born to not forget the artistic, cultural and human heritage of the city of Aquila devastated by an earthquake on 2009. It is a virtual space to keep alive the attention on the city and to stimulate the preservation and the reconstruction of its precious heritage. These are the main aims of the web portal 'We, l'Aquila' launched by Google in collaboration with the municipality, on the idea of an English architect Barnaby Gunning. Through 3D technology, it was created a three-dimensional model of the city, to show the effects of the earthquake on the city, to stimulate the reconstruction activities and to involve all citizens and tourists in the city's rebirth process.

*[Im]possible Living* (Fig. 2) is a crowdsourcing project to classify and rehabilitates abandoned buildings in the word. Houses, cinemas, theaters, railway stations, prisons, schools, parks, nightclubs, mines and even slaughterhouses ... is the incredible worldwide database of abandoned buildings that the duo Daniela Galvani (architect) and Andrea Sesta (engineer), alias [im]possible living, is collecting. They promote a new model of urbanization aimed to limit the use of new mineral resources and raw materials through the reuse of the buildings that have been dismissed. They look at these 'modern ruins' [20] with different eyes and want to suggest a global alternative to dereliction. Through the use of the network, [im]possible living is facing a huge collective work of cataloguing that requires the

contribution of all. The team provides a platform with a mapping system that collect reports from all kind of users.

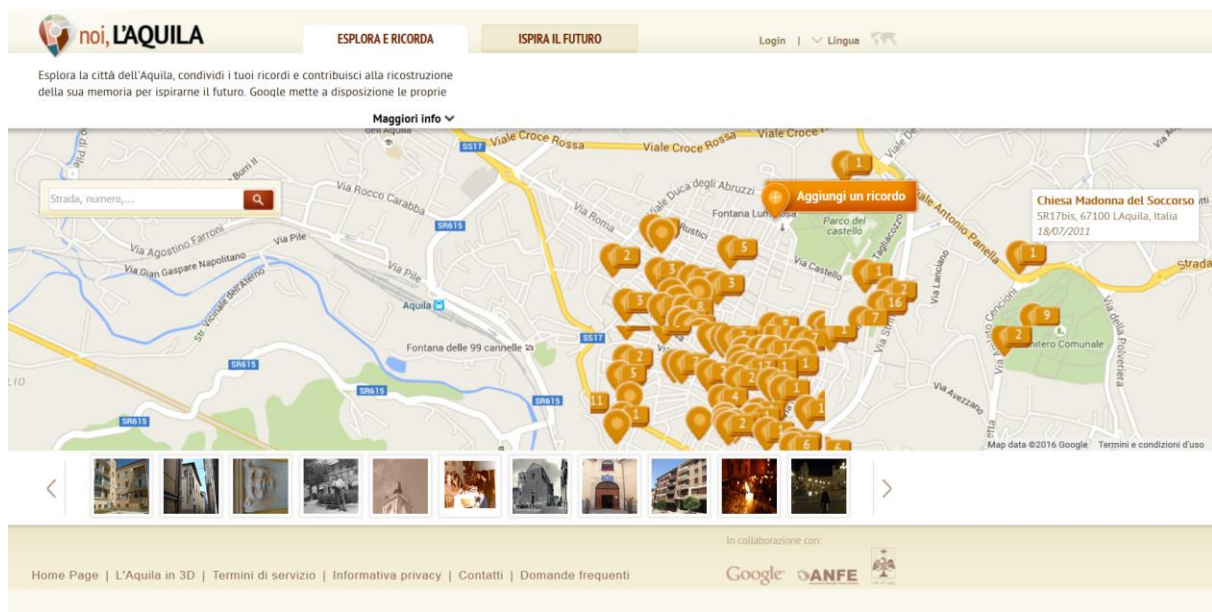


Figure 1. www.noilaquila.com

## How it works



Figure 2. www.impossibleliving.com

## 3 CONCLUSIONS

The common thread that binds the positive results of these projects is the construction of a meta-project. This is the image of the city that cannot be imposed from the outside, risking an aesthetic, stylistic and social approval, it is an image where the conditions of participation are part of the inside process, starting from the specific experience of the place and of that society. No outfit can be handed down from the high and able to integrate with the customs and society of that particular case. So the network becomes a fundamental tool for the collection of data, of the preferences, aspirations and wishes that designers put in their virtual notebooks, to articulate a project that meets the expectations exposed on web by the people. This design process is not readily predictable nor controllable a priori because it awaits approval by the participation and the response of the users for which it was designed for.



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## UNCOVER THE GROUND.

### ARCHEOLOGY AS RESOURCE IN THE DESIGN PROCESS

**Oana Anca Abălaru**

*Ph.D student, "Ion Mincu" University of Architecture and Urbanism Bucharest (ROMANIA)  
oana.abalaru@gmail.com*

#### **Abstract**

Accelerated processes of urban development and proliferation of underground space use within the cities lead, naturally, to the need for a right negotiation of archaeological resources. This process involves a consensus at multiple levels, from actors who do not always concur with an opinion. For Açalya Alpan, concerned with the topic of integrating the archaeological layer in everyday life of the city, this opportunity of involving archaeological resources becomes a complementary requirement, both in the issue of archaeological heritage conservation and in the evolution of cities with strong historical backgrounds.

On the other hand, archaeology heritage is, by its very nature, connected to the heritage issues and thus to conservation discourse. But his position becomes more uncertain of its own borders with the urban attribute that many of the archaeological sites have. Beyond its primary purpose, such an archaeological context, otherwise very frequent, opens a field as broad as it is complex, involving conditions such as: social, economic, political or religious, concerning both visible layers and significance.

Alpan Açalya distinguishes two types of relationships that can be established between archaeology and urban design resources. The first type of relationship follows the sequence: evaluation – resource – heritage and is often referring to less important artefacts seen as a database with particular items. The sequent process involves assessing the archive of data through urban planning criteria for finally making a decision. The second type of relation: evaluation – heritage – urban resource, remains valid in case of archaeological sites with a high cultural value and starts from the primacy of archaeological resource. Both situations presented take into account a dynamic role that archaeology can play in urban planning.

The evaluation process, common to both situations described above, involves four types of action: destruction – that would lead to the loss of ruins denying their urban potential –, archaeological discharge – that limits the possibilities of integration and minimizes resources –; *in situ* preservation without intervention – a situation that does not use the resource and often causes problematic urban areas –, and finally the *in situ* preservation with integration – an option that simultaneously considers archaeology, urban integration and city quality.

Of the vast and complex urban-architectural discourse, five work directions are distinguished, that become arguments for considering archaeological resources in urban and architectural design: 1. archaeology as an accessible and effective tool in the expression of continuity and urban identity, 2. the need to create conditions for attracting investments, 3. archaeological sites with a potential to transform spaces into places with identity, 4. the central role that archaeology can play in the process of urban revitalization, 5. the potential to improve urban quality through archaeology.

**Keywords:** archaeology, resource, integration, urban planning

## 1 INTRODUCTION

Depending on the field of knowledge we embrace, a definition of archaeology can gather multiple perspectives and components, sometimes in opposition. Even inside the borders of the same discipline, views can be substantially divergent. Daniel Glyn described in 1967 the purpose of the archaeology as an operation “to extract history from moments and artefacts” [1, p. 20] and rewrite it in order to create a coherent picture from disparate fragments. 10 years later, Schiffer spoke about a new archaeology that studied “human behavior and material culture, regardless of time and place” [2, p. 4]. Expanding the topic towards the field of architecture and urban planning has required the development of another concept: archaeological heritage. Gustav Trotzig [3] chose four relevant components of an archaeological heritage: the archaeological site, the artefacts, the tradition as knowledge and collective memory that assisted man during his evolution.

The conservative discourse emphasizes the multiple forces that can nowadays have harmful effects on archaeology. At global level, the most important change that interferes with the archaeology is the land use. From an urban perspective, this phenomenon of occupying new spaces posed important challenges in the last decades. And together with this, cities around the world had become more aware that the issue of archaeology should engage an international effort and a closer cooperation.

The future is urban. Although now more than half of the world's population lives in urban areas, prognosis show that urbanization combined with the overall growth of urban population will lead to 66% within 2050. Towns are facing new challenges and expansion becomes the primary type of response to urban development.

## 2 METHODOLOGY

The urban context provides specific components: social, economic, anthropological, etc. that bring together archaeology and urban planning. Some general issues should be still clarified. For a long period of time, the responsibility for archaeology was assumed to be fulfilled by the field of conservation. Recent realities have proved though that the archaeological integration process is an essential ingredient in an identity orientated urban planning. A non-integrative strategy of archaeological remains decreases the quality of the urban environment and misses important opportunities. The lack of knowledge and experience has determined a slow start for the cooperation between archaeologists and urban planners. Thus, this new type of design process, starting from the existing remains, is seen by Alpan Açıly as a complementary step of conservation [4].

### 2.1 Assessment

The need for a clear and complex overview of an existing situation places the assessment process as a primary tool for managing the status of the archaeological sites. In urban cases, the evaluation may use criteria such as: accessibility, cohabitation (the relation of the ruin with contemporary urban elements), enhancement (attractiveness), incorporation (hybrid existing structure), integration (existing positive relation with the context), interpretation (significance), presentation or preservation in situ.

#### 2.1.1 AMP – a possible urban tool

Archaeological Management Plans (AMP) have an important role in identifying areas within cities where the presence of archaeological remains is expected. AMP defines recommendations and policies as well as plans of action in specific situations. Their main advantage is the proactive character that prevents unwanted delays, additional costs or further unpredictable actions that interfere with the expected project development process.

Archaeological Management Plan is an instrument which addresses to state or local authorities on multiple levels: at its most basic, AMP's primary use is to identify areas with archaeological background, enriching the knowledge and informing the owners and possible investor about the potential and the implications that must be considered. But its most important feature is the assessment of archaeological sites and relics that allows a proper understanding of the archaeological

site character and provides early indications for the development. And no less important, AMP helps archaeologists to plan and assign the right time for the investigation phase. The integration of AMPs in urban strategies allows a smoother road for the city to grow, mitigating the conflicts that might appear between stake holders: heritage institutions, local authorities, archaeologists, site owners, investors and general public. The specificity of this type of instrument recommends it as an operational tool in urban management strategies of historical cities worldwide. In countries like Australia, AMPs are used as consultative and alerting tools for a responsible and adequate response to archaeological resources. It sets recommendations and an hierarchy of actions such as: surveys, monitoring actions, documentation of high archaeological values, *in situ* conservation, non-intervention options, protection, etc.

## 2.2 Strategies

Caramna [5, p. 22] identifies five key principles in heritage management process: inventory, evaluation, preservation, archaeological rescue and presentation. But when referring to an urban situation, all these steps should be seen as parts of an integrated plan that considers not only conservation and heritage management, but also the city's new requirements. In this context Altinoz speaks about a “dynamic integration of its past with its future” [6, p. 100].

Archaeological remains can be considered a resource in urban planning process, as their presence can give substance and meaning to a modern urban landscape. Alpan Açalıya distinguishes two types of relationships that can be established between archaeology and urban design resources [4, p. 23]. The first type of relationship, grounded on a non valuable archaeological layer, follows the sequence: evaluation – resource – heritage. It is often referring to less important artefacts that are seen as an urban resource, assessed through urban planning criteria and an opportunity in city's development for finally making an urban decision. The second type of relation: evaluation – heritage – urban resource, applies to archaeological sites with a high cultural value and starts from the primacy of archaeological resource. Both situations presented should take into account that an archaeological value cannot be renewable as it is the result of unique actions from the past.

As a result of the evaluation process, the urban choice may imply four types of action: destruction – that would lead to the loss of ruins denying their urban potential –, archaeological discharge – that limits the possibilities of integration and minimizes resources –; *in situ* preservation without intervention – a situation that does not use the resource and often causes problematic urban areas –, and finally the *in situ* preservation with integration – an option that simultaneously considers archaeology, urban integration and city quality.

An appropriate way of action regarding the archaeological strata can contribute to increase the quality of the urban life, transform the problematic areas into attractive places, generate new investments, develop new identity places within the city and provoke architecture to find new dialogue formulas.

Of the vast and complex urban-architectural discourse, five work directions are distinguished, that become arguments for considering archaeological resources in urban and architectural design: 1. archaeology as an accessible and effective tool in the expression of continuity and urban identity, 2. the need to create conditions for attracting investments, 3. archaeological sites with a potential to transform spaces into places with identity, 4. the central role that archaeology can play in the process of urban revitalization, 5. the potential to improve urban quality through archaeology.

## 2.3 Responses

In the past, the interaction with urban archaeological resources was commonly referred to as an isolating process that transforms the ruin into a symbol. Now, the response should come from a complex analysis, carried out while considering the external parameters. For instance, in an historical city centre, an intervention on archaeological heritage should be accompanied by the maintenance of a mix-use functional character that assures the successfulness of any proposal.

The first step of the city towards the archaeology is to assure a route that converts the ruin into a

dynamic object, which can be perceived not as an obstacle but as a mark, a reference point. For this thing to happen the distances between archaeology and pedestrian observers should be diminished. The proximity of the ruin becomes a decisive element. Moreover, any integrative proposal of archaeology should assume that it can create identity, transforming a space into a place.



Figure 1. Archaeological site under Piazza del Duomo, Milan

The possible responses depend on the archaeological vestige position, density and importance. Certain types of dialogue can start from the integration of the ruin within the surrounding public space. It's not only about exposing the ruin, but also about transforming it in a focal point by linking it along pedestrian routes. This type of dialogue based on visual contact plays with perception nuances. Ascending or descending views, central or frontal perspectives, together lead to a new participative condition of the ruin. A particular case is that of an archaeological site, where the spread of the remains makes necessary a ruin based path.

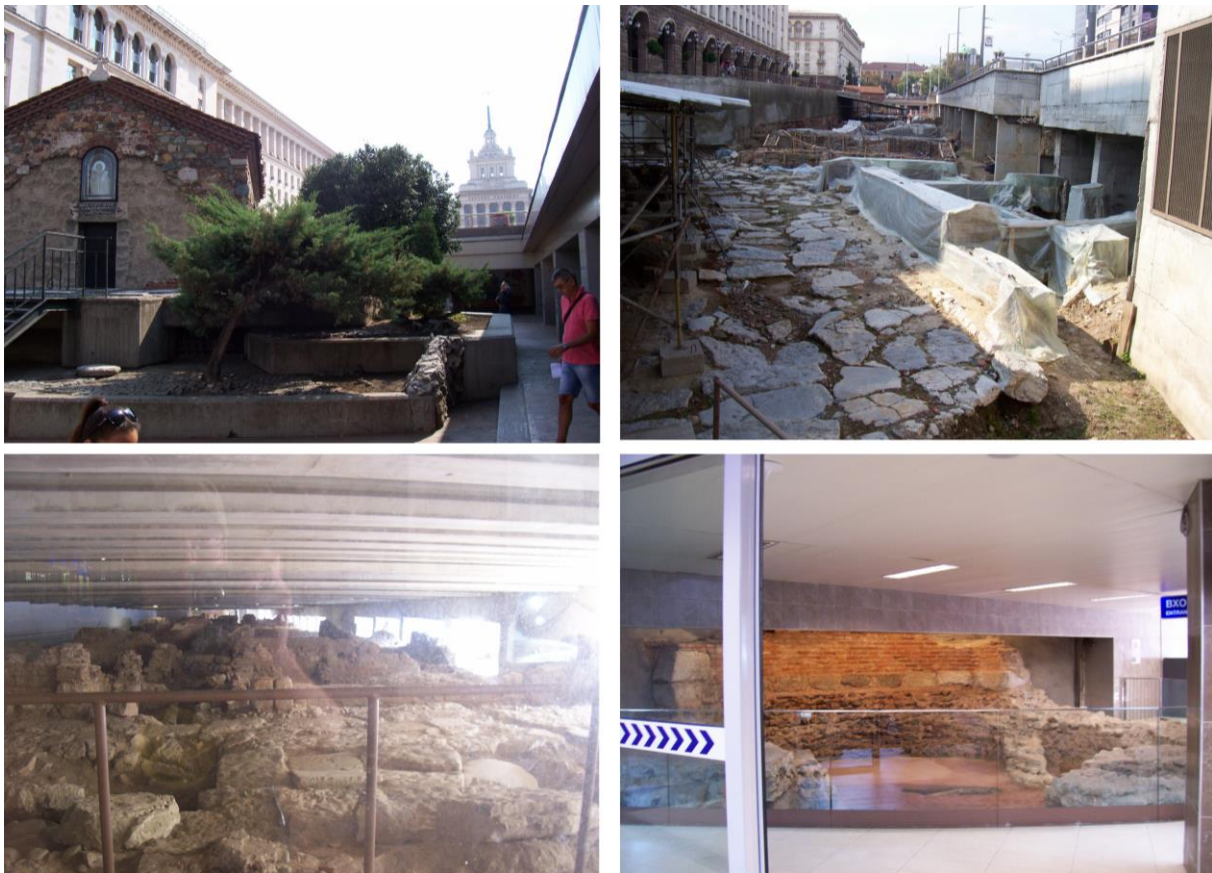


Figure 2. Archaeological site – Antique complex – Serdica, Sofia



Some interventions are based on an intermediate space that announces and introduces the ruin to the public. This is usually placed as an interface between a pedestrian route and the archaeological site but in particular condition this new space can cover partially or totally the archaeological remains. For the most cases this new object is an entrance pavilion or a site museum. However, a solution that considers the musealization should be carefully analyzed because excessive musealization can also generate isolation.



Figure 3. Archaeological site – Roman Theatre – Zaragoza, Spain

### 3 CONCLUSIONS

Considering the fact that each country has specific structures, institutions, legislation and policies concerning the interference between archaeological layers in urban planning process, a recipe of response is difficult and almost impossible to establish. Alpan Açalıya observes that the ownership situation has a radical influence and generates a different type of urban response. But a holistic study of the archaeological resource opens the way for an integrated medium or long term plan. In this situation, local authorities can provide and influence investors and owners to consider the dialogue of the archaeological resource with the contemporary urban life, as a first option.

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## **INTEGRATING THE TOPIC OF FLOOD RISK MANAGEMENT INTO URBAN PLANNING AND URBAN DESIGN EDUCATION**

**Milena Tasheva-Petrova**

*Assoc. Prof., Ph.D., University of Architecture, Civil Engineering and Geodesy, Faculty of Architecture,  
Urban Planning Department (BULGARIA)  
tasheva\_far@uacg.bg*

### **Abstract**

The development of approaches that enhance the resilience to floods and reduce the vulnerability of urban environment to climate change has become a global, European and National policy priority. Due to the climate change, more people and properties will be vulnerable to flood risk. From 1998 to 2009 Europe has suffered 213 large destructive floods, have caused 1126 deaths, evacuation of over half a million people and at least € 52 billion in insured economic losses. (EEA, 2010) The Flood Directive 2007/60/EC creates a framework in which owners, insurers and investors have to obey to the same conditions across Europe. Nevertheless, it also poses the question how to transpose it from national to local level. Within the last ten years, the urgent need of integrating flood risk with wider planning considerations on local and more detailed scale was recognized, thus addressing the cumulative effect of numerous small-scale impacts stimulated by a range of diverse drivers.

The necessary and non-disputable structural measures with a primarily focus on the protection of human health and safety, valuable goods and property, requirements of nature conservation and landscape management should be taken into account. At the same time, physical planning as well as urban and rural development and construction merely take into account the requirements of flood prevention, reduction and monitoring of real development.

Therefore, there is an urgent need to promote and harmonize changes in water policies, land-use practices and regulations, environmental protection and nature conservation, structures and building typology in order to improve flood management in the frame of Integrated River Basin Management.

The changes in professional culture and the European and national planning contexts require from higher education institutions to be more sensitive to global changes and the resulting impacts at local level as well as the preparedness to face issues of flood risk management and solve them in a multidisciplinary environment. Recently promoted across universities is the application of holistic approaches, explicitly designed to cover a wide range of topics – from drivers and natural processes to models, decisions and socio-economic consequences and provision of adequate institutional environment. Besides these improvements and important advance in the narrowly defined water engineering, there are still needs to improve the knowledge, understanding and ability for communication on the topics of flood risk management in the education of future urban planners and architects.

The paper analyses the projects (as process and final outcomes) that were developed within the framework of the joint interdisciplinary work of the students from two Study Programs within the faculty of Architecture at UACEG: Studio “Integrated Project” for Master students (second semester) in Urbanism and the studio “Landscape Planning” for Master students (tenth semester) in Architecture.

The aim of the joint studio work is to apply integrated approach to solving complex urban problems and addressing social, economic and environmental issues by means of planning, urban design and urban regeneration. Divided into three phases (research, planning and design), the joint studio work

grounds on the combination and switching between different processes simultaneously, thus making the transitions from planning to design, from theoretical considerations to practical solutions and small scale area-based interventions, and from research and analysis to urban design and policy making at local level.

**Keywords:** flood risk management, urban planning, urban design, architecture

## 1 INTRODUCTION: FLOOD RISK MANAGEMENT AND SPATIAL PLANNING

The meteorological, hydrological, and climatological disasters are increasingly threatening human societies. The occurrence of floods is the most frequent among all natural disasters and for the past thirty years the number of reported flood events has been also significantly increasing. In 2010 alone, 178 million people were affected by floods. The total losses in exceptional years 1998 and 2010 exceeded \$40 billion [1]. The coastal and fluvial floods have serious impact in terms of the number of people affected – over the period 1980-2010 an average of 34% of the total global economic losses are due to hydrological disasters [2]. More than 325 major river floods have been reported for Europe since 1980, more than 200 of which have been reported since 2000. The rise in the reported number of flood events over recent decades results mainly from better reporting and from land-use changes. Global warming is projected to intensify the hydrological cycle and increase the occurrence and frequency of flood events in large parts of Europe [3]. At present urban flooding poses serious challenges to development and people's lives in rapidly expanding towns and cities in developing countries, but also in developed societies. By 2030 the majority of urban dwellers will live in urban areas with populations of less than one million where urban infrastructure and institutions will be less able to cope with flood risk management (FRM).

Flooding in history is a serious urban growth and development challenge that has a significant impact on peoples' life, health and wellbeing; socio-economic life and land use; urban structure and infrastructure; heritage, landscape and green infrastructure. Historically FRM and communities' perceptions of flood evolve through the following phases: 1). Willingness to live with water and adaptation of individuals and communities to the rhythm of nature; 2). Desire to utilize the floodplain and settlements development next to water; 3). Need to control floods by implementation of structural measures for prevention and avoidance of floods; 4). Need to reduce flood damages by increasing community' resilience; 5). Need to manage risk and find solutions for maximizing the benefits of limited investment and potential for multifunctional use of flood plains and areas prone to flooding [4]. The contemporary ecological concepts include not only the restoration but also the adaptive ability and capacity of the system to pass through an extreme/shock situation retaining its identity with respect to the functional, structural and socio-cultural characteristics [5], [6].

An integrated approach to managing floods is necessary, and especially the integration in the following dimensions: 1). the scale of actions to combine bottom-up and top-down approach; 2). various management strategies including structural and non-structural measures; 3). the management of all relevant natural hazards including flash floods, landslides and debris flows in a particular area or region [6]. Furthermore, Integrated flood risk management (IFRM) seeks to: 1). Reduce the occurrence of flooding – acting on the probability of floods and their speed, depth and duration; 2). Reduce the harmful consequences and/or reduce the potential exposure to flooding or reducing the vulnerability and aiding individuals and organisations to act wisely during a flood; 3). Promote sustainable development to let future generations meet their flood risk management needs [5].

As a part of IFRM, "building design relies mainly on the implementation of non-structural measures such as land use planning and flood zoning; flood awareness campaigns; forecasting and early warning systems; evacuation planning; emergency planning and rescue; damage avoidance actions; temporary shelter (safe havens); business and government continuity planning; flood insurance; compensation; and tax relief" [1, p. 264] In the recently developed and forthcoming new plans and visions for water management with regard to the urban development and architectonic landscape design, three different accents and planning levels are of crucial importance: 1). The creation of new water

landscapes regarding the new relationships between water and land at regional scale with its consequential effect on the lower scale levels; 2). Proposals of new urban development concepts that integrate water as regulated and structured in public spaces; 3). The application of new civil engineering constructions and structures that protect the city and the hinterland and at the same time maintain the spatial and ecological qualities of an open relationship between city and water [7]. Full integration of FRM with other aspects of water management and spatial planning (SP) form the core of the concept of IFRM with its specific “integration” context and it incorporates three key factors: 1). Integration of interventions in space by analysing and adopting a portfolio of interventions across the sources, pathways and receptors of floods; 2). Integration of actions in time by means of a continuous process of assessing and adapting the portfolio of interventions through time through planning maintenance of all elements of defence systems over their life-cycle. 3). Integration across sectors and actors by embedding flood risk management into a broad view of the socio-economic and environmental systems – determined or influenced by FRM activities [5].

Although the potential of spatial planning in flood mitigation is recognised, its integration into mitigation plans meets practical obstacles as: the deficient integration between FRM and SP [8]; the insufficient coordination among spatial scales [8]; difficulties to translate central guidelines into local planning practices with respect to flood mitigation [9]; SP is rarely considered as a flood mitigation measure and flood mitigation measures, particularly those addressing adaptation to and recovery from flood hazards, are usually not well implemented into planning practices [10].

Planning as a rational and systematic process of guiding public and private actions and influencing the future by identifying and analysing alternatives and outcomes [11], [12] is usually referred to as land-use planning or urban/regional planning. In flood-prone areas, SP is expected to contribute to flood mitigation [13], [9] mainly because of its mission to influence the incidence of flooding and its damage by regulating the locations of activities, types of land use, scales of development, and designs of physical structures [14], [9]. Not less important is the role of planning in coordinating and switching between scales of planning and design, between strategic and operational planning instruments and between multiple governance/management levels and territorial scopes: regional/ basin and local (a municipality, a city, an area within the city). Long-term FRM can learn from strategic SP, which according to different planning researchers is “a social, power-based process through which people with diverse institutional relations come together in forums for discussion, arenas for decision making, and courts for dealing with residual conflict to design plan-making processes and develop new contents for the management of spatial change [15], [16], [17]. For the future research and identification of interrelations, the learning relationship between what planning research can learn from FRM in particular and risk management in general might bring fruitful results, especially when it comes to questions on how to relate specific strategic issues (e.g., conducting a worst-case scenario analysis for a specific risk problem), different knowledge and information problems (complexity, uncertainty, ambiguity), and social settings (forums, arenas), as well as specific local and regional socioeconomic and political context conditions [17]. Thus through strategic planning, different ideas and concepts can be “tested” through using narrow problem statements in research and exploiting the option to fix and adapt solutions according to the obtained feedback.

## 2 SPATIAL PLANNING AND DESIGN FOR FLOOD RISK MANAGEMENT: EXPERIENCE FROM TWO EDUCATIONAL PROJECTS

### 2.1 Integrating the topic for Flood Risk Management in Spatial Planning Education

In the recent decade the raising awareness about the importance of knowledge transfer and training activities in the field of FRM has been observed, especially in terms of trans-disciplinary education of students, graduates, and professionals. Different forms of knowledge transfer are organized: master degrees, short course(s), workshops, web resources, e-learning platforms, games and websites reporting floods and flooding news. Among the small number of master degree programmes in FRM worldwide, the majority are based in Europe and are coming from the earth sciences & engineering, whereas implicitly structured programs in the field of social sciences are not available/advertised.

Although they are capable of covering many technical aspects, the three existing master degree programmes lack a certain level of integration [18].

Since 2005 an important advance in water education for Europe has been the FLOODRisk Master Program linking educators from Germany, the Netherlands and Great Britain. The courses are based on theoretical framework, disciplinary contributions and real world requirements, while the various topics include: flood hazards, areas of vulnerability, risk and risk reduction, and management strategies [19]. Another specialized course, delivered by UNESCO Institute for Water Education, declares the following learning objectives: to present a broad and cross-boundary scientific knowledge on FRM; to provide a comprehensive knowledge base and understanding of the current theory and practice relating to flooding and flood management; the fundamental knowledge leading to the understanding of socio-economic issues related to flooding; a broad scientific knowledge about conservation, restoration and management measures to overcome challenges imposed on water by humans and by climate change; an extended knowledge on a basin-wide approach to flood risk management [20]. The resources for self-learning, information, role-playing games and computer simulation-based games support the processes of continuous professional development through self-learning and play a key role in maintaining and improving one's knowledge and skills. Unfortunately, the importance of such training and education has not been widely and effectively recognized in either undergraduate or graduate levels. The number of courses in urban planning and urban design curricula is insufficient. Majority of the researchers and academics explore and teach the topics on non-structural measures through Information and Communication Technologies (ICT) as tools that aid flood mitigation due to the support of previously formulated risk-mitigation approaches that combine structural with non-structural measures. Different Decision Support Systems and Geographic Information Systems inform decision makers with reliable information and are being used as communication tools that involve an array of stakeholders as well as educational tools that raise public awareness. These efforts prove to be fragmented and the analysis of different national contexts proves the absence of easy access to integrated and high-quality information [8]. Except the need of establishing training and education programmes equipped with up to date information datasets, it is also important to improve current knowledge and skills of existing flood risk professionals and also to build capacity and to prepare spatial planners for future professional dialogues and advisors of decision makers on IFRM.

## 2.2 The Local Educational Context

### 2.2.1 National Spatial Planning System and FRM

No matter the fact that Bulgarian regions and settlements suffered severe floods during the last decade, planning for flood risk management is a comparatively new paradigm and challenges both the institutions involved and the professional community of planners. The EU Floods Directive (2007/60/EC) requires that member states prepare flood hazard maps and flood-risk maps by 22 December 2013 due to the acknowledged limited availability of flood maps across Europe. The Floods Directive was transposed into Bulgarian Legislation in 2010 and together with the Water Act (WA) provided for drafting of Flood risk management plans (FRMPs) for the four basin management regions in the Republic of Bulgaria. Under the priorities of the Ministry of Environment and Water (MEW), areas with potential significant flood risk were determined as an integral part of the Preliminary flood risk assessment, which constituted the baseline information for the second phase of implementation of the Directive – determining the areas for which flood hazard maps and flood risk maps had to be prepared [21]. The preliminary FRMPs are now under preparation and only the preliminary FRMP of the Danubian Water Management has been prepared and opened for consultations until 30.09.2016 [22].

Meanwhile, in the period 2012-2015 and within the priorities of the Ministry of Regional Development and Public Works (MRDPW), 67 Integrated Plans for Urban Regeneration and Development were elaborated and developed, and another 55 approved preliminary Comprehensive Spatial Development Municipal plans (CSDMPs) (out of 145 contracted and the total number of the municipalities in Republic Bulgaria – 265), 14 Spatial Concepts for Development of municipalities (until 2015 when these planning instruments were withdrawn from the Regional Development Act) [23]. The preparation of the CSDMPs

has been accompanied by a Strategic Environmental Assessment (SEA) Report with an assessment of the Flood risk as part of the “waters” environmental component. The prescriptions given and the suggested mitigation measures from the SEA on the FRM are usually taken into account and incorporated in the Final Versions of the CSDMPs. The National Concept for Spatial Development and the Regional Development plans were adopted before the 2013 and therefore do not take into account the process managed by MEW. Furthermore, another 28 Regional Directorates of Civil Protection and the 265 Mayors of the municipalities are responsible for the emergency planning and evacuation.

In practice, the potential of spatial planning in flood mitigation is recognised, but not well coordinated with regards of information and not well translated into the planning instruments at local level. It is not only the different time frames of the preparation of the plans mentioned above, but also the different administrative boundaries and the territorial scope governed by the two ministries: MEW and MRDPW. Flood mitigation measures and their integration into CSDMPs and development plans at local level meet practical obstacles as: the complicated system and difficult communication between institutions, the deficient integration between FRM and SP, the insufficient coordination among spatial scales and particularly those addressing adaptation to and recovery from flood hazards, the problems of property (municipal, private) and the municipal councils’ obligations to manage the flooded and prone to floods areas. Structural measures for FRM could be identified in the Municipal development plans and few IPURD, where the size and the scale of the projects in terms of finances needed generally exceed the budget of the Municipal Development plans and IPURD and fixes these projects as large scale infrastructure (civil engineering) projects. The professional practice and culture within the national planning contexts requires from Bulgarian higher education institutions to be more sensitive to global changes and the resulting impacts at local level as well as the preparedness to face issues of flood risk management and solve them in a multidisciplinary environment.

### 2.2.2 Teaching FRM at UACEG

Two different faculties at the University of Architecture, Civil Engineering and Geodesy (UACEG) – The Faculty of Hydraulic Engineering (FHE) and The Faculty of Architecture (FA) are responsible for teaching the structural and some of the non-structural FRM measures. The education in the FHE includes a basic engineering training on all fundamental building-constructional disciplines which gives a solid basis for specialized training in the field of water engineering and water technologies. The faculty of Architecture is involved in various activities: regional, landscape and urban planning and research, building design, design and organization of interior and exterior spaces, organization of construction, institutional and corporate investment policy, investigation and control functions in the city councils with respect to urban planning and architecture. The department of Urban Planning has a leading role in the teaching process of the Bachelor’s and Master’s program in Urbanism and the Specialized Planning courses in Regional planning, Urban planning and design, Landscape planning for architecture students at the Faculty of Architecture. Due to the narrow engineering specialization of the academics and to some extent due to the difference in the professional domains (closely connected with the accreditation requirements and the difference in the curricula), jointly delivered by the two faculties (FHE, FA) Interdisciplinary modules/courses are missing, as well as those delivered by the FNE for planning/architecture students. Besides this fact, informal links and professional collaboration between lecturers has been established and referred as “academic working group for university educators of different faculties” [24]

Analysis of the curricula in Architecture and Urbanism (delivered by the FA), show that the topic of IFRM is identified partially (by lectures titles) in 2 modules in the BSc in Urbanism Curriculum: Sustainable Development and Urban Regeneration (project); 4 modules in the Curriculum of the MSc in Urbanism: Integrated Coastal zone management (optional), Comprehensive Spatial Development Plan (project), Globalization and Urban Development (optional) and Architecture – Landscape planning; one module in the Curriculum of MA in Architecture: Landscape planning (for the specialization in Urban, Regional and Landscape Planning).

The interdisciplinary work of the students from two Study Programs within the faculty of Architecture at UACEG: Studio “Integrated Project” for Master students (second semester) in Urbanism and the studio “Landscape Planning” for Master students (tenth semester) in Architecture has become a

tradition for the last 13 years. These two modules, gathered in one studio, are entirely dedicated to testing new ideas, multi-disciplinarity and team work. The tutors promote student-centred learning and methods of teaching that involve students as active participants in their own learning thus allowing to identify effective teaching strategies and test new ideas to enhance students' learning outcomes.

### 2.2.3 *Studio's learning objectives and project development phases*

The planning and design objectives of the Studio work are: 1). Detailed study of the potential and the restrictions for the development of specific urban and peri-urban areas; 2). Provision of sets of integrated measures and projects for integrated urban regeneration and development for identified morphological zones; 3). Provision of alternative solutions; detailed design, preparation of design assignment, pre-investment studies, proposal of new projects and argumentation of their added value to the proposal in the IRDP groups of projects and their sustainability; elaboration of programmes, development of proposal for better territorial governance in relation to the thematic cluster. The third objective is with a broader scope in order to allow options for each team member or subgroup within the group to develop in details one of the suggested planning/design tasks.

The studio work undergoes the following phases: 1). Analysis of best practice examples, analysis and synthesis of the issues for each thematic cluster, and report of the main planning/design principles and appropriate measures to be applied in order to avoid, reduce or mitigate flood risk; 2). Study, analysis and assessment of the territory and the resources of the municipality/city; identification of problems of different scope and territorial footprint and systematization of the measures for prevention or minimizing different impacts (according to the thematic scopes) – argumentation of the territorial scope for intervention and allocation of the measures proposed and summarized in the first phase; 3). Study, analysis and assessment of the selected target areas for interventions. Development of projects and/or exploring different options.

The type and the number of the midterm and final products are negotiated between the students' teams and the tutors' team according to the research thematic cluster, the individual interests of the students and the selected territorial scope for planning/design. The results from the work during the three different stages, each one of them within the time frame of four weeks, are reported during midterm-presentations according to the proposed time schedule of the project. Thus, divided into three phases (research, planning and design), the joint studio work grounds on the combination and switching between different processes simultaneously, thus making the transitions from planning to design, from theoretical considerations to practical solutions and small scale area-based interventions, and from research and analysis to policy making at local level. The work on the project is demanding in terms of abilities to apply, in a complex manner, the knowledge and skills acquired during the whole process of the university education (in the corresponding major).

### 2.2.4 *Selected case studies and results*

Integrating FRM into urban regeneration for the city of Pernik

The project "The Chimney Park" was developed during the summer semester of the 2013 – 2014 academic year. The aim of the joint studio work was to apply integrated approach to solving complex urban problems and addressing social, economic and environmental issues when re-developing brownfield sites and integrating them into the existing urban context. The project "The Chimney Park" was created within the broader topic offered to the students during the summer semester of the 2013-2014 academic year "Urban development and transformation in the context of adaptation to natural hazard". The students were asked to give their interpretation to the topic of social, economic and natural hazards and risk management and to propose adequate planning and design for a small urban area.

The specific project proposal of "The Chimney Park" is dedicated to the redevelopment of an urban area of 10ha along the Struma river. The site is affected by the deindustrialization and urban shrinkage of Pernik – a mid-size city and former center of mining and heavy industry. The city experienced severe damages on the built environment due to the 2012 earthquake and floods in 2010 and 2014. The selected site used to accommodate a factory, which was demolished in 2012.

The didactic aim of the redevelopment of the site was to analyse the site in terms of future needs of the city and the neighbouring areas, to integrate it into city life, and design high quality resilient urban environment. The topic of flood risk management was integrated into the broader topic concerning natural hazards and provision of multifunctional urban space in areas prone to flooding.

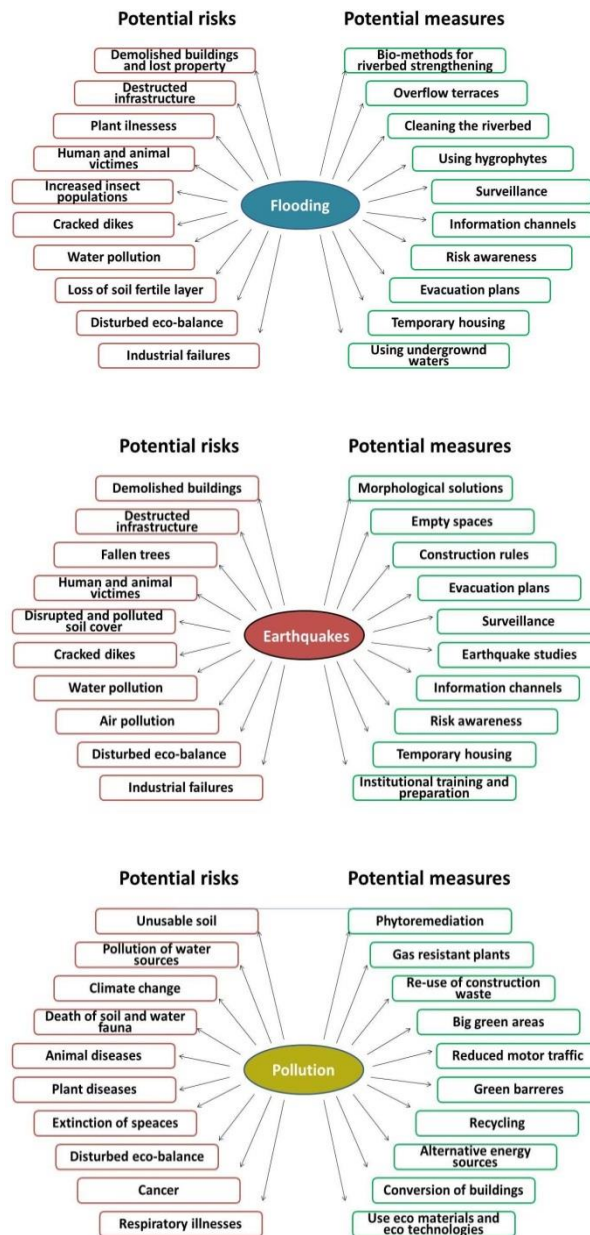


Figure 1. Chosen mitigation and resilience measures on FRM, Pollution mitigation measures and earthquake resilience measures; Elaborated by MSc students in Urbanism: Ivanova, J., Hitova, V., Lalev, N.

The Project “The Chimney Park” treats in integrated manner different aspects of sustainability as: recycling the construction waste, soil remediation, design for mitigation of flood risk damages, preservation of identity, provision of open space that may accommodate the crowd in case of earthquakes, design of a new public space (park and sport area) that would contribute to the growth of healthier communities, and suggests improved pedestrian and non-motorized connections with the neighbouring areas. The expected synergetic impact of the proposed planning and design was to transform the isolated non-accessible, unfriendly and polluted area into a vital, healthy and safe part of the town centre.



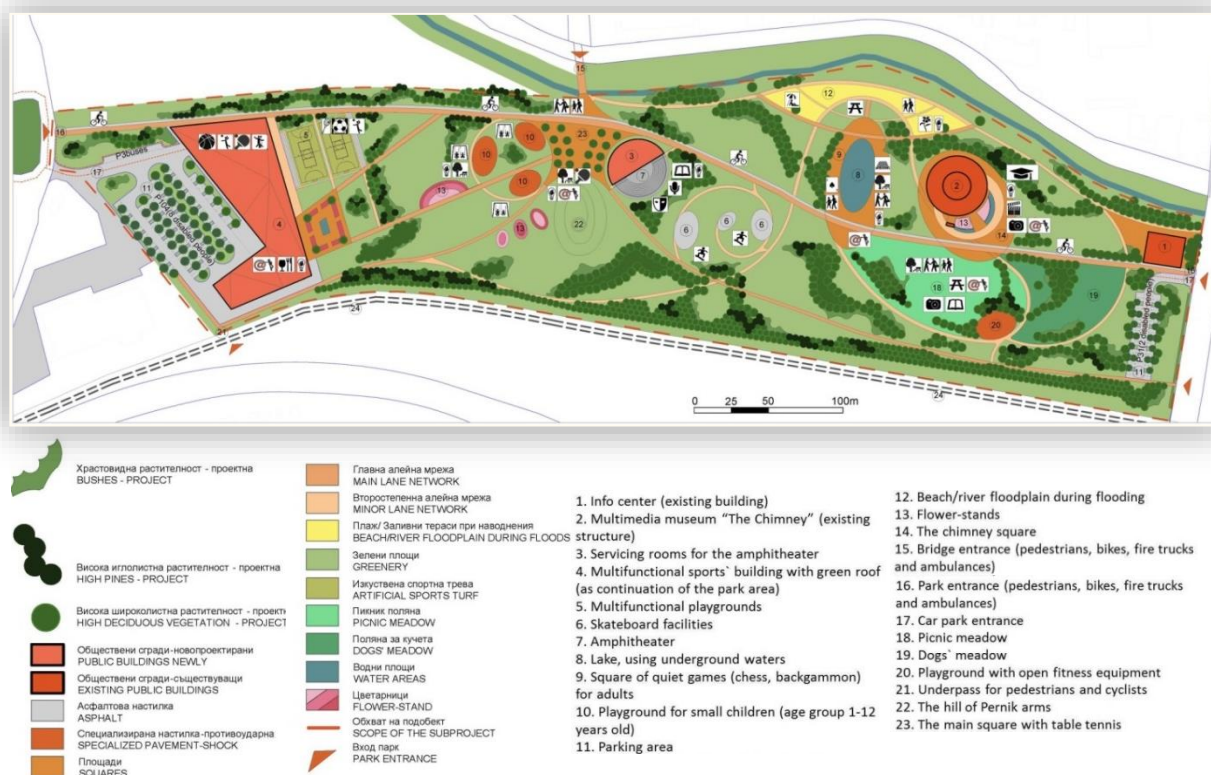


Figure 2. Landscape design for "Chimney Park", Pernik; Elaborated by: MSc students in Urbanism: Ivanova, J., Hitova, MA student in Architecture V., Lalev, N. and student in landscape architecture Simeonova, A. (University of Forestry)

### Integrating FRM into spatial planning for Sevlievo municipality

During the winter semester of 2015/2016 academic year students were expected to start with research and finish with ideas and design for specific areas in the town of Sevlievo and its peri-urban area. The students worked in groups for one of the topics related to landscape sustainability and integrated urban development, planning and design: unprivileged housing quarters (roma quarters); cultural heritage as a resource for local development, waterfront development, and urban-rural relationships. The topic for the waterfront development and regeneration of Rositza River was framed by the broader theme about planning and design for climate change adaptation. The main thematic clusters for the theoretical and best practise examples research were related to the following topics: 1). Types of natural crisis and hazards and appropriate measures for climate change adaptation, including functions of green infrastructure; 2). Landscape planning and integrated approaches to minimizing the negative impact on landscape components; 3). Historical retrospective and state of art on the dialogue between rivers and cities along river banks – examples, comparisons and principles from Europe, Bulgaria and rest of the world; 4). Types of risks and territorial governance, resource management and land-use planning before, during and after natural crises. Flood risk management of river basins; 5). Contemporary information and communication technologies and landscape management.

The main aim of the project was to arrive from the theoretical research to the application of the main principle for integrated planning and design with a focus of IFRM. Students were asked to critically analyse and built on the proposed groups of projects adopted in the 2015 Integrated Regeneration and Development Plan for the city of Sevlievo (IRDP).

The groups of 6 students were motivated to work on all levels (from water basin to the individual projects for the waterfront development) and covered a wide range of topics from the optional set of tasks to the third phase of the project development. On national level they tracked the Yantra watershed and its place in the biggest Bulgarian water basin and analysed the elaborated maps and reports on the preliminary identification and assessment of flood risk. Mismatches between the

watershed boundaries and the administrative boundaries have been reported and discussed.

At municipal level the following aspects were analysed: the settlement structure and the transport connections, the settlements along the Rositza River and its tributaries, current land use and main communication axis along and across the river, the historical development of the build-up areas and their current densities. At town level, the land use, the type of buildings, the green infrastructure, the flood risk assessment, and the strategic/critical infrastructure location were analysed and assessed. Problems and potentials were formulated and morphological zones and the permitted activities on their territory were defined. Typical sections and design guidelines, that illustrate priority one of a strategic document on IFRM, were elaborated for the waterfront development.

The vision of the formulated IFRM strategy “The Rositza River waterfront and the surrounding areas - vital place for urban development and flood prevention” is based on the “working together with the communities”. Four priorities are formulated: 1). Integrate FRM into SP in order to achieve responsive development and efficient use of the land at risk; 2). Design protection and mitigating facilities to promote vital and accessible environments; 3). Improve FRM at local level by awareness rising in increased responsibility of the local communities (business, residents and local authorities); 4). Develop and institutionalize IFRM system based on ICT modes that provide dynamic access to information thus allowing communities to prepare and respond to future flood events.

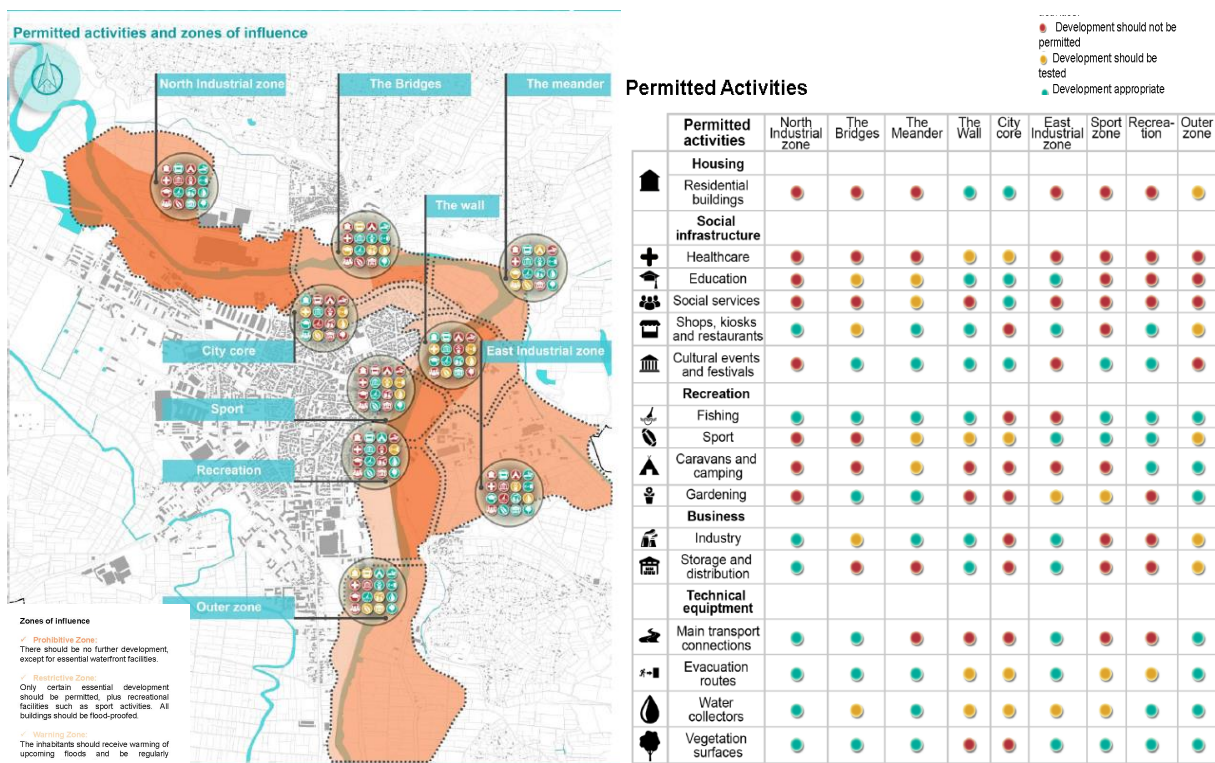


Figure 3. Morphological zones and permitted activities for IFRM; Elaborated by MSc students in Urbanism: Kaneva, D., Manolova, V., Mokrenova, N.; MA students in Architecture: Gerasimova, M., Tsoneva, V., Kinpe, L.

### 3 CONCLUSIONS

The main findings of the reflection on the studio work and its educational context are the lack of holistic approach to flood risk management and the missing integrated and multidisciplinary planning and design approach in particular. The results of the educational studio projects give reasons for fostering multidisciplinary approach and knowledge sharing not only at political and administrative level, but also in formal and non-formal education, between different professional domains, and within faculties in the UACEG.

The studio work was a challenge both as educational process and as an attempt to achieve final outcomes. From a pedagogical perspective, the focus on the flood risk management enriches

teaching curricula and students background. The student centred learning, based on students' active participation in the learning process enhances their creativity and interest and at the same time maintains high level of student motivation in order to maximize personal and teams' achievements at the end of the studio work.

The studio work inspired dreams that can easily be transformed into future challenges for the curricula and the new modules integrating SP into FRM. It is difficult to ground the teaching process at undergraduate level on personal experience due to the current evolution and adaptation of the relations between FRM and SP in Bulgaria. Therefore further MSc and PhD thesis and researches can better fit the situation of the planning system, and even bear the potential for implementation of the results in practice. Another aspect is the reduced deficiency in interdisciplinary training by meeting students from different faculties and disciplines (enrolled in different curricula) at one and the same university. The existing Erasmus+ programme gives room for even meeting students from different disciplines enrolled in different higher education institutions. In the framework Erasmus+ projects, Intensive programmes and e-learning, courses may be organized and benefit from the trans-disciplinarily, mutual learning and possibilities to engage corporate and institutional research under a broader Strategic partnership.

The studio work proved that an educational project may be an occasion for testing new (innovative for the domain) planning methods. The applied strategic approach in the Sevlievo case/project proved that the process and the outcomes of the two projects development are relevant to the contemporary Bulgarian planning practice. Strategic planning is a concept that encompasses content-oriented and process-oriented approaches – it explores strategic alternatives and distant futures and at the same time mobilizes a limited range of actors and legitimizes the planning episode/phase/act. The strategic approach applied allows focusing on a specific spatial level and selected issues and strategic alternatives without forgetting that planning results have to be embedded in an overall strategy for FRM at catchment level.

The studio work was an occasion to apply the holistic approach which is explicitly designed to cover a wide range of topics-from drivers and natural processes to models, decisions and socio-economic consequences and institutional environment. Besides these improvements and important advance in very narrowly defined water engineering, there are still needs to prove the knowledge, understanding and ability for communication on the topics of flood risk management in the education of urban planners and architects. At the same time it is necessary to improve sensitiveness and attitude of civil and water engineers towards sustainability issues.

The studio work outlined future challenges embedded into the contemporary need of inter-, cross-, and trans-disciplinarity. The notion of integration itself implies that important skills and understanding of the professionals involved are the abilities for cross-disciplinary communication and interaction with many technologists, professionals and the representatives of the stakeholders in order to achieve the multi-dimensional objectives of IFRM. It is important to keep in mind that integration of FRM and SP requires a communication and sound base for aspects related to these disciplines and subjects relevant to the field of FRM. "It also important to maintain sufficient levels of knowledge depth in teaching of each subject while enabling students to link their knowledge in different subjects both in research and practice." [18, p. 5]

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## ACTORS AND POLICIES IN THE URBAN TRANSFORMATIONS. FAST RADICAL CHANGES OR SLOW EVOLUTIONARY PROCESSES?\*

**Claudia Piscitelli<sup>1</sup>, Francesco Selicato<sup>2</sup>**

<sup>1</sup>*Polytechnic University of Bari (ITALY)*

<sup>2</sup>*Polytechnic University of Bari (ITALY)*

*claudia.piscitelli@poliba.it, francesco.selicato@poliba.it*

### Abstract

The aim of the paper is to investigate the passage from the theory of the urban planning to the practice of the implementations. Usually this passage needs a lot of time due to the large scale of urban planning as well as the multiple interests – often opposite – of the stakeholders, business enterprises, and inhabitants. The procedures have a fundamental role in this passage. On one hand, they have to guarantee the maximum quality of the transformations planned using the best technical and professional tools and figures, as well as assuring the total participation of the stakeholders and especially of the inhabitants; on the other hand, they could definitely influence the duration of the process. Furthermore, the success of the urban transformations definitely depends on the politics and their ability and possibility to act in practice. Anyway, the time of the procedures and the one of the politics are very different one from the other. Can the urban planning go beyond this limit? Which aspect has to adapt to the other one? How both can guarantee the quality of the implementations?

This investigation uses a case study located in France, called Le Plessis Robinson. It is a peculiar city, near Paris, born as a suburb area with about only social houses. In the last twenty years, it has completely changed its aspect and vocation, becoming one of the richest and most requested urban centres around Paris. The mayor and local public enterprises, responsible for the operational and economic management, have had a significant role for the success of the implementations, due also to the long duration of the mandate of the mayor (25 years). It has allowed him to have a middle and long-term vision, which has guaranteed to end the implementation begun in the 1980s.

The transformation consisted of building new districts in the inner part of the city, one after demolishing old public houses and re-building mixed houses, one building a new core in the middle of the city. The urban planning of the new areas used all the rules of the town making in order to plan a new district with mixed uses, pedestrian-oriented patterns, green areas, facilities, commercial fancies. The result has been new well-being districts, with a classic and reassuring architecture, semi-closed morphologies, connected private and public spaces, permeable volumes, liveable public spaces, pedestrian-oriented mobility, and comfortable green spaces. After that, the politics and the real estate agencies started a huge marketing action, which has transformed Le Plessis Robinson in one of the most favourite city to live and to buy a home in – nowadays the real estate prices are consistently higher than in the surrounding cities. The city in the newspapers, in the pictures and in the collective imaginations appears as an idyllic place, full of flower and fabulous facades.

But may we speak about a natural evolution of the city in this way? For sure the implementations have changed the face of the city, but it is interesting to investigate the coherence between the new districts and the everyday life of the inhabitants. The story says that the evolution of a city – i.e. looking to the historic centres – is a slow and complicated process, made by the stratification of cultures, times and especially people. So what does it happen to a city when a few people work for a

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\* This paper is the result of authors' joint work. Contributions come as follows: By Francesco Selicato: Sections 1 and 2; by Claudia Piscitelli: Sections 3-4-5.

forced and quick regeneration process? How do new districts converse with the existing city? Did they really involve the well-being of the pre-existing inhabitants?

Nowadays the “regeneration” in urban planning is necessary and urban planners all over the world experiment many implementations searching for the best way to solve the problem of the degraded suburbs. This investigation aims to understand the methods and results of this kind of “radical” regeneration, focusing on good and bad practices in procedures, politic actions, urban planning and design, involvement of the stakeholders, participation of the inhabitants.

**Keywords:** urban planning, urban policy, urban regeneration

## 1 INTRODUCTION

Many times we discuss about plans and projects – whether to promote the debate on the activities undertaken in a territorial context, as well as to reflect on the features of previous experiences – underestimating the need to examine if the outcomes have validated those project experiences.

The aim of this paper is to explore, after some time, the results of a master plan, especially with the intention to investigate the multiple factors that contribute to decree the successes and failures of the choices made. Actually, it is necessary to define before what “success” means. The implementation of the planning choices has to be for sure up to the initial expectations, immediately after the end of works. But it is certain that the living environment of a community must ensure over time the quality requirements of the implementation. Indeed, the urban environment is vital, flexible and consistent at the same time, rich of identity [1], coherent with the usual behaviour of the people and with the usual way of doing things, but also adaptable to changing habits and needs. Only the dynamism of the users and of the time can decree the success – or failure – of an urban implementation.

That means that the city should be understood as a living organism, an organism that always needs attention, a living space strictly inherent in the lives of individuals, so much as someone has defined the settlement, in its broadest sense, as the “ecological niche of human beings” [2, p. 175, our tr.]. That also explains why the city is not static, but it constitutes a reality in a continuous motion and mutation: the species evolve within it, the needs change, and for this purpose the species “transform the city, which in turn constitutes a new stage of evolution in a circle of continuous transformations from the species to the city and from this again to the species” [3, our tr.]. How, then, could the urban regeneration interact with these evolutionary and dynamic processes?

## 2 ACTORS AND TOOLS IN THE URBAN REGENERATION

Nowadays the regulatory framework is extremely detailed and complex, often enough to raise doubts about the prevailing law between different legal disciplines in conflict with each other. The repeated attempts to reach a simplification of current laws are disastrously failing and every time that a simplification is introduced, it make the regulatory framework more complex than before. The procedures have taken much more relevance than the project contents. Furthermore, the contents can no longer concern only the topics of the physical transformations of the territory; in fact, they include a wide variety of cultural, environmental, social, legal, economic, political relationships and implications.

Therefore, the complexity of the issues that are today's urban planning focal point require no more and not only specific and general skills, but also, and above all, an adequate capacity to make them concrete. We need “knowledge” and “technicalities”, meant as the ability to give meaning and substance to a political vision [4]. We need also operational tools able to transform ideas and city concepts in detailed master plans that will follow principles and guidelines, in an ongoing dialogue with the existing and future settlements. It is necessary to take into account a view of consistency, uniformity and recognisability. From this point of view, we can mention the nineteenth-century building codes, characterized by graphical representations more than descriptive rules, through



schedules, drawings, etc. They have produced the nineteenth-century urban patterns throughout all over the Europe. Where they have been preserved intact, we can still clearly see today the urban and architectural logic of the planning, translated into projects related to each other by the guiding principles and a perfectly perceptible identity.

All this, in a context where the uncertainty of the rules and the length of time for the decisions and the scarcity of financial resources constitute a strong deterrent to the effectiveness of actions. The public resources are slim, if not null, and it is possible to intercept the private ones, themselves limited, only through forms of partnership, which, in respect to the rules and their public-private utility, agree on solutions in certain times.

Other actors, which have a key role, are the politicians, closely linked to the implementation of the city's transformation. Often political times are much shorter than those of urbanism – thanks to the procedural delays above – and often it happens that those who have begun a process of transformation of the city, do not see the works completed during the years of their political mandate. The political and partisan games also sometimes override the common good, and so it happens that the newly established politicians are opposed to what was decided and begun by their predecessors. It happens more for “principle” issues than for “substance”, and so we see interventions left to a half point or procedures that return to the starting point.

An actual topic, within which it is possible to investigate the criticality mentioned, is the urban regeneration, where regeneration means a concrete process capable of involving the private property in the city revival projects. In this perspective, the private areas – abandoned, disused, degraded; residual agricultural areas, often scattered in suburban area; urban spaces devoid of economic value – could take an incisive and propulsive role, so that it could start virtuous redevelopments of neighboring urban areas [5]. In the urban renewal processes, however, the private areas can play a decisive role only if you manage to combine the collective utility with the legitimate private economic convenience. It focuses again the attention on the skills, abilities and responsibilities, too often caged in harmful technicalities, hindering the testing of innovative practices, which can express an urban culture and a knowledge able to combine, in practice, public and private interest opportunities.

### **3 THE PECULIAR CASE OF THE URBAN REGENERATION OF LE PLESSIS-ROBINSON**

In order to investigate the topics mentioned before, the paper focuses on the huge regeneration implemented in Le Plessis – Robinson, a village situated 10 km far from Paris. Its peculiarities, with refers to the political context, the dimension of the regeneration implementations, the tools used and the consequences after 25 years since the beginning of the most relevant urban transformations, makes it a good case study in order to reflect about opportunities and threats of the urban regeneration.

#### **3.1 History of Le Plessis-Robinson**

Le Plessis was born as a small village of the Ile-de-France, where people had gathered around the Roman tower. The adjacent village of Robinson was famous for taverns and dance halls with large gardens, where the Belle-Epoque of Paris was retreat from city life. In 1909 the two towns were united and in 1920 Le Plessis Robinson radically changed face, turning into a real town, due to the construction of the garden city, based on the English model. The Office Publique des Habitations Bon Marche de la Seine (OPHBM), established in 1915, decided to remedy the widespread problem of demand for housing in Paris. In 1918 the Office buys a hundred hectares of land in Le Plessis Robinson, one third of the entire municipality, and earmarked to the realization of the garden city. This intervention resulted in a sudden turn in the fate of Le Plessis, who will close for decades in a logic from which it was difficult to get out. Subsequently, between 1923 and 1939, more than 2,200 housing were built. The city therefore continues to be marked by rapid and widespread developments. The population, as shown by the censuses of 1921 and 1946, increased tenfold. The garden city is built in two steps: the Cité Basse was realized between 1923 and 1932, while the Cité Haute between 1930 and 1939. For this second operation the Office did not find enough tenants and therefore arranged to enter into a contract with the Gendarmerie, so they used the new settlements

as a barracks. In 1939, Le Plessis-Robinson looks like a city-garrison of 10000 inhabitants. After World War II, the Communist Party took control of the city and made a series of anonymous settlements, typical Parisian suburbs. In the 1960s Le Plessis was a dormitory town of 20,000 inhabitants, of which the majority were in employment in Paris or in the close municipalities. The entire municipal area was characterized by a strong lack of services, community facilities and commercial activities. After the boom of the post-war population, assets and taverns began their decline, until the pick of economic crisis of the 1970s. In this period, the maintenance of the garden city was getting insufficient; the population started to decline and Le Plessis-Robinson ends up being isolated from the rest of the Paris satellite-towns. In the 1980s, the city had 21,000 residents, of which 75% lived in economic and social buildings; 80% of rental housing were vacant and the city was on the verge of bankruptcy.

A turning point has been the surprise election of the thirty-three years old Philippe Pemezec in 1989. After 46 years of communist rule, he promised to give a new life to the city and presented an entire urban center redevelopment program, including the garden city.

### 3.2 The new aspect of le Plessis-Robinson

The first measures of the newly elected mayor concerned the maintenance and the aesthetic care of the city, such as cleaning of graffiti, planting flowers, building fountains, restoring the existing buildings. In particular, the real estate assets of Le Plessis greatly changes due to three types of urban and building interventions. A first action concerned the building in good condition, to be recovered and rehabilitated. For the many buildings in an advanced state of decay, it was scheduled the demolition and reconstruction. It was also planned a new building campaign, which has caused the construction of 117 houses per year between 1975 and 1990, and of 200 apartments between 1990 and 1999. The implementations of demolishing and re-building as well as the new buildings represents the huge and radical transformation in terms of urban regeneration, which have changed the destiny of the city, until to make it one of the most prized cities in Europe and one of the fastest growing municipalities in France in 2011. The radical transformation can be attributed, in addition to several operations on the existing recovery, to three key interventions, which have reshaped the configuration and appearance of the city: the *Coeur de Ville*, the College and the new Cité-Jardin Haute.

#### 3.2.1 The *Coeur de Ville*

In order to comply the problem of the disconnection of the two parts of the city, the City Council proposed to plan and design an area that could have constituted a connecting link between the two existing settlements. The inhabitants of Le Plessis-Robinson, in fact, resented the fact that they could not recognize themselves in a strategic and symbolic place, which could represent the identity of the city. The task was given to the architect Francois Spoerry, for direct choice of the mayor. The objective of the mayor was using a reassuring traditional and cozy architecture in the heart of Le Plessis-Robinson, like the "Architecture douce" of Spoerry was. The architect heartily embraced the task, so that only a year after the election of Pemézec, he produced the necessary documentation to present the master plan of the *Coeur de Ville*, accompanied by detailed analyzes, typological studies and sketched drawings which showed the effect that he intended to achieve with his project. In the design principles outlined in the various explanatory reports produced by the same Spoerry, the project seems to strongly approach the canons of the American movement "New Urbanism". Indeed, it reflects traditional town principles: the route patterns, the functional mix, the close relationship between road and building, and high link between the urban dimension and the architectural one. The functions are as varied as in the project: residences, businesses, facilities, administrative offices, public spaces, parks. The integrated solution is managed with reference to the two existing historic buildings (the ancient palace and the church are integrated in the *Coeur de Ville* and in its green area). The link with the surrounding context seems less successful, due to the totally different urban path and architectural language. With regard to the architectural language, Spoerry and his successors have chosen to recover the architectural characters of the tradition of the Paris region, as demonstrated by the full-empty ratio in the facade, the type and size of openings and entrances to buildings, the mansard roofs, recurring use of columns and mouldings, the continuous configuration

of the front of the business street. The result is a new district, really liveable and elegant. However, there is also someone who defines it as “a false historic centre” (Fig. 1).

The same principles, guidelines and architectural style have been used in the other two big implementations, the New Garden City (after demolishing the old one) and the so-called “College area”, both characterized by a mix of private and social housing.



Figure 1. Pictures of the Coeur de Ville in 2014. (ph. Authors and Municipal Archive of Le Plessis-Robinson)

### 3.3 The implementations: the role of the Mayor and the SEMPRO

March 1989 marks a radical departure in the history of Le Plessis-Robinson. After years in which the town council was led by the Communist Party, the right (RPF) came to power, with the advent of the young Philippe Pemezéc. Starting from the spring of 1989, he will be re-elected as well other four times: in 2001, in 2008 and 2014. Probably, the large number of years in power was the key to the success of his mandate. It is unusual, in fact, that an administration can plan and follow up till the end, so impressive urban implementations as those that Pemezéc promoted. He has had in fact, precisely due to the temporal length of its term, the possibility of planning the operation, designing it step by step, to control and manage the phases of large-scale processing and the subsequent design stages of the detail of construction. Also the “traditional style” of all the new implementations was his personal choice, which only later found favor of the population.

Pemezéc considered this traditional architectural language perfectly fitting with its goal of “refounding” Le Plessis Robinson, which will have a new face, through an operation that he himself has defined as “chirurgie esthétique”, as a cure for a “sick” city [6].

Citizens, as well as investors, added themselves to the collaborative relationship between major and urbanists. However, the start of the process was not so simple, indeed, full of difficulties and criticism. Pemezéc was accused to be a visionary, and the same private investors were highly sceptical about the success of the operation. The aim, in fact, was ambitious: totally changing the fate of a city, transforming it from dormitory town into an attractive aesthetically pleasing town with facilities, public spaces, green areas and business activities.

The mayor himself constantly performed the supervision of the operation. The “Dossier Mairie” (Mayor Dossier) contained in each building permit is a testimony of this. It is a dossier containing an explication more conceptual and perceptive of the project, with sketches and perspective views that have the aim to show coherence with the general urban vision which is expressed with the same type of representations in the master plan.

An example of initial scepticism about the success of the intervention is represented by traders of the Coeur de Ville. According to the current director of the Société Economique Mixte (S.E.M.) – Mixed Economy Company – “SEMPRO”, initially they could not find investors interested in investing in the Coeur de Ville, because they thought it was too dangerous. So, in order to not prejudice the commercial life of the new district, it was imposed to the building contractor to build residential and commercial parts together. They will be later sold to the SEMPRO for subsidized rents, so that the Company could then rent them for low costs. Today the trend is the opposite, and the commercial

operators demand is growing. The SEMPROM can be considered as another responsible for the success (at least economic) of the operation launched by Pemezèc: the Mixed Economy Company in the fact is the financial core of the operation. Therefore, the SEMs, according with the law about them, ensure to the community a real control both over the economic situation and the achievement of the mission. In fact, even in the case of Le Plessis-Robinson, for which the financial control activities, especially that of control of the project a special SEM, the SEMPROM (Société d'Economie Mixte du Le Plessis-Robinson) was set up in order to manage the planning process, as well as to control the financial aspects.

## 4 PROS AND CONS OF THE RADICAL AND FAST REGENERATION OF LE PLESSIS-ROBINSON

### 4.1 The construction of an identity and the link with the pre-existing population and buildings

The Mayor of Le Plessis had reasons that went far beyond urban regeneration: the use of the new urbanism and its traditional architecture aim to build from scratch a new identity of the city [6], through the realization of its “center” markedly recognizable. However, even in this case, there are discordant opinions about the achievement of this goal. In fact, it is clear beyond a doubt that Le Plessis, thanks to its new Coeur de Ville, has its own new connotation and a different face from the past. But is this what we call “identity”? Can you build an identity overnight, razing everything there was, such as a neighborhood, a public building or a football field, and erecting elegant buildings with an upper-class looking, with mansard roofs, and towers with clocks? It might be objected that it is better to take refuge in an identity of this kind, pre-packaged and inspired by the traditional city, than to risk to recommend the errors of most of the modern cities. Yet, someone argues that the modern city – with its sprawl and no-shape – should not be so demonized, because it itself is part of a natural process of identity being defined. It could be just one of the many stages of the long generative process – which for historical and traditional city has gone through several centuries – of a new part of the city [7]. In order to give today a contribution to the incremental path of these parts of the city, it is anyway necessary to improve the appearance and quality according to the current conception and perception. Thus, the implementations based not so much on the “style”, but rather on the “architectural syntax” of the town making [8] – as the set of good urban space design rules to create liveable and vital places – could give a good contribution to the wellbeing of the city.

If the overall objectives of urban quality can be considered in some way universal, the manner to achieve them are closely dependent on the one hand on the context and on the other hand on people who work concretely. The same concept of quality, in fact, varies greatly depending on your point of view: the vision of the urban quality of an inhabitant can be sometimes different from that of the public administration, or from that of economic operators, as well as from that of technicians. It is about finding a balance between expert knowledge and diffuse knowledge [9], between the needs of those who use the sites and aims to quality of life and the knowledge of professionals who aim to technical quality. Cooperation between the various parties involved in this sense has a key role for the success of the operation.

Many new urbanist architects, like Spoerry, have often been accused of imposing their own vision of urban quality, certainly shared and agreed with the policy, but not with the citizens, who often suffer it, but who also often take advantages and benefits from that in a long term.

The plans and projects should be, therefore, guided by the voice of citizens, who represent the context but it is also true that sometimes it is necessary the contribution of the technicians to place the issues in a more global and less individualistic vision, oriented to a higher common good, for which the citizens themselves could realize only in retrospect, and after some time.

In the case of Le Plessis-Robinson, the major has undertaken all the choices, making a participation process, which seemed more an advertising campaign than a pro-active involvement of the population.

If the campaign has not convinced all the population, it has been successful with refers to the new rich population and investors, which have come to the city, buying a house in the Coeur de Ville. In fact, the social, cultural and economic level of the new inhabitants and users of Coeur de Ville is considerably high. It have brought richness to the municipality and the average of the social and cultural level of the city has improved. Nevertheless, in the reality, these new wealthy inhabitants are not integrated in the social tissue of the city and there is a strong disconnection between pre-existing and new inhabitants. It shows how the boundary between economic convenience and social justice is very labile.

The difference between the new and pre-existing urban paths and morphologies also emphasizes this disconnection. The new Coeur de Ville seems closed in itself, it does not converse with the settlements around. The urban regeneration has its symbol in a huge implementation, concentrated in an unique area, which has become a new district. So one wonders if it is more effective to start an urban regeneration with a phase of micro-widespread implementations that can give benefit to different population groups and different parts of the city, or to concentrate the economic and planning efforts in more substantial actions but also in concentrated places, whose however final results could still be reflected on the community as a whole.

#### 4.2 The “entrepreneurial” managing of the urban planning

It is impossible to separate, in the real world, the urban planning from the economy; in times of crisis like the one that the Western world is experiencing, urban quality cannot be separated from the economic development production. Another quality parameter is thus inevitably linked to the attractiveness that the municipality must develop in order to attract private investors, real engine of contemporary urbanism, in the face of increasingly empty municipal treasuries and the public sector more and more in debt.



Figure 2. The advertising campaign included advertisements on the newspapers, which shows the new settlements as an idyllic place (Source: Le Petit Robinson newspaper).

In this sense, the new urbanist machine has demonstrated a perfect operation in the United States, less in Europe. European cases like Le Plessis-Robinson, Poundbury or Val d'Europe, in fact, are exceptions in the European scene, in which a conjunction of factors have contributed to the effectiveness of the intervention in the American way [10]. It is no coincidence, in fact, that in all three examples one director has acted behind the scenes, able to keep the ranks of the whole process and to coordinate the cooperation between the various parties involved (investors, administrators, government agencies, citizens): the mayor Philippe Pemezec for Le Plessis, the Prince of Walles for Poundbury, the Disney Corporation for the Val d'Europe. In the case of Le Plessis, in particular, the role of the mayor, during his entire time in office, has proved decisive in the management of the relationship between politicians, citizens, the Agency for People's Building, the SEMPROM semi-public companies, designers, municipal technicians, traders, who have worked so unanimously and on a common direction. For sure, it has been possible also due to the rare case of the same duration of the policy and planning timing. Also the choice of the architectural style has been a sort of marketing



choice: that will attract investors and buyers, due also to a massive advertisement campaign, in which Le Plessis seems like an idyllic and utopic place (Fig. 2).

However, we cannot think of entrusting the success of an intervention to the sensitivity and authority of one person, but rather it is necessary to identify tools and methods that allow to manage the urban process in an entrepreneurial managerial way, in all its stages, and consistently.

What tool can ensure urban quality, or at least try to manage it, control it? The new urbanist says that the most appropriate instrument for this purpose is their Smart Code, graphic and descriptive tool, with specific schedules for each component of the urban project, treated in a different way according to the distance from the city center and the countryside. On the opposite, there are the traditional and current regulations, predominantly quantitative, which provide guidance on some specific parameters, often losing the sight of the whole. However, if in the first case the freedom for the designers is significantly affected by the rigor of the Code, in the second case the qualitative aspects are greatly neglected. Probably it is better, rather than to write rules or codes, to find a common language, as a bridge between the plan and the project. The quality control pursued by Spoerry and his successors was entrusted mainly, as well as the evaluation and sensitivity of the mayor and technicians, to graphic representation, representation that did not stop the urban scale of the master plan, and did not even descend into the details of the architectural scale. The representations attached to the plan aimed to depict the idea of the city (Fig. 3 and Fig. 4), focusing on the overall perception of the whole, given the coexistence of all the components of the urban project, in the same perspective cone, as well as like it happens in each real view of the city at the pedestrian scale. Rather than about an architectural abacus, one can speak of a “perceptual abacus”, which contains representations and directions that regulate the interactions between the components, even more than the same components taken individually, with the intent of reaching the urban quality of space, inseparable from that perceptive.



Figure 3: Sketches by the architect F. Spoerry about the Coeur de Ville. The Mayor and the municipal officer have used them as a sort of tool of control of the urban quality. In effect, they show the idea of the city conceived by the architect as well as the Mayor. (Source: Municipal Archive of Le Plessis-Robinson).

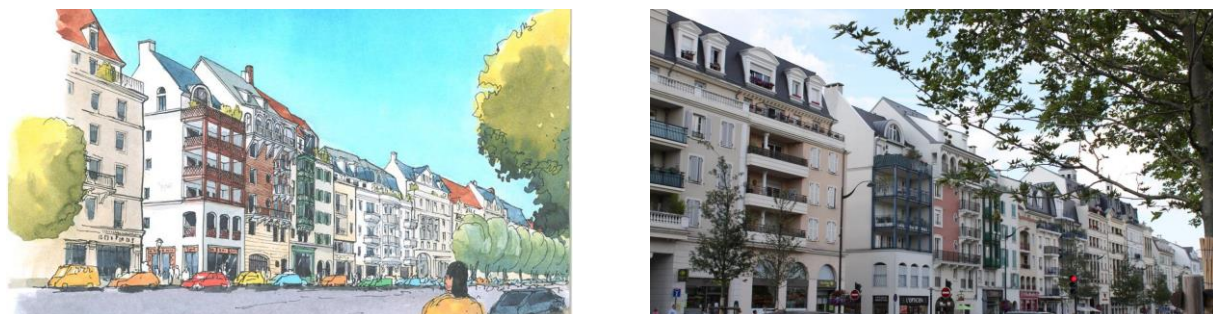


Figure 4: Sketches by the architect F. Spoerry of the Avenue Charles de Gaulle and picture of the street in 2014. They show how the implementations respond to the drawings attached to the master plan. (Source: Municipal Archive of Le Plessis-Robinson).

## 5 CONCLUSIONS

The urban regeneration processes are long and complex, they require financial, human resources, integrated knowledge (i.e., not only from engineers or architects, but also from economists, politicians, experts in environmental disciplines, etc.), creativity, incremental methods (small steps) as well as huge exemplar implementations, visions of detail and large-scale visions, specific organizations and instruments (municipal agencies with technical help desks and assistance to citizens and investors, geographical information systems etc.), solutions consistent with the local features and identity [11]. The problem of the regeneration of entire parts of a city cannot be tackled solely by the private or the public actors, due to the big dimension of commitment: thus, it is necessary to have a public-private partnership, where everyone “plays his/her part.” In this sense, the “management” of urban planning made by the mayor of Le Plessis-Robinson is exemplary, according to an entrepreneur business logic, in which every action has to give a short but especially a long-term profit. In this case, the profit is referred to the inhabitants’ wellness, and economic attractiveness of the city, in order to attract new investors to ensure the durability of the vitality of the city over time. In this case the regeneration operation is very successful. On the other hand, the risk of major managerial operations is that you lose the individual point of view, the one of the inhabitant, which should be the first party and recipient of the urban regeneration. Not always, the attraction of new and “rich” people represents an added value or a wellness-raising for existing residents. The risk of obtaining a clear separation between new areas for new residents and old areas for pre-existing inhabitants, which hardly interact with each other, is high. Then it is essential to involve the people themselves in the regeneration process step by step, making them partners and agents of change, without making them recipients of marketing operations accompanied by picturesque representations that seem to want to convince about the goodness of an action, more than asking their opinion. It is necessary, in short, that the managerial logic is used to satisfy operatively and effectively the natural evolutionary processes of the city, without forcing them to such an extent as to create a false new “identity.”

The same goes for the top-down and well-controlled choice of an architectural style. It is certainly necessary, in fact, an instrument of control of the urban quality and consistency between all the individual actions, with a unified view and an intermediate scale. However, this cannot and must not conflict with the identities and peculiarities of each place and project, which should be a reflection of the time and the context in which it stands. Each single building implementation will be a piece of the natural – and perhaps even slower – evolution, typical for the history of a city.

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## **BUILDING AN ARCHITECTURAL DISCOURSE\_ A REVIEW ON SCHOLARLY ACADEMIC SPACE, UAUIM**

**Beatrice Jöger<sup>1</sup>, Daniel Comşa<sup>2</sup>, Andra Panait<sup>3</sup>, Marina Mihaila<sup>4</sup>, Mihaela Zamfir  
(Grigorescu)<sup>5</sup>, Oana Diaconescu<sup>6</sup>, Anda-Ioana Sfinteş<sup>7</sup>, Daniel Nicolae Armenciu<sup>8</sup>**

*<sup>1-8</sup>Ion Mincu "University of Architecture and Urbanism – UAUIM, Bucharest (ROMANIA)*

*<sup>1</sup>Assoc.Prof., PhD. Arch., Dean of Faculty of Interior Architecture, <sup>2</sup>Assoc.Prof., PhD. Arch., Director International Office, <sup>3</sup>Assoc.Prof., PhD. Arch., Faculty of Architecture, <sup>4</sup>Lecturer, PhD. Arch., Faculty of Architecture, <sup>5</sup>Lecturer, PhD. Arch., Faculty of Architecture, <sup>6</sup>Lecturer, PhD. Arch., Vice Dean of Faculty of Interior Architecture, <sup>7</sup>Researcher PhD. Arch., Faculty of Architecture, <sup>8</sup>Assist. Prof., PhD. Arch., Faculty of Architecture*

*beatrice.joger@uauim.ro, daniel.comsa@uauim.ro, andra.panait@uauim.ro,  
marina.mihaila@uauim.ro, mihaela.zamfir@uauim.ro, oana.diaconescu@uauim.ro,  
anda.sfintes@uauim.ro, daniel.armenciu@uauim.ro*

### **Abstract**

Present article aims to present few initiatives, successful results and several works in progress on scholarly academic space within "Ion Mincu" University of Architecture and Urbanism Bucharest (UAUIM), one of the oldest universities in Romania, and the only independent institution in the country dedicated to education in the fields of architecture and urban planning. The methodology of the present article is based on defining the academic space and topics directions, presenting themes and research concerns, defining the role of the 21st Century and the role of the architect in a context of globalised and emergent world, initiatives on international and national events: discussions – communication – and – dissemination of research and research by design, various involvements of the university and its members in scholarly academic Romanian and international field, advanced studies, doctoral inquiries/research, facts and data on involvement participators and results in publication. The authors of the paper are part of a interactive team that have organised within and at its call International Relations Office, UAUIM, the international conferences, establishing a new tradition on Romanian architectural space: ICAR (International Conference on Architectural Research) conferences. The two developed conferences ICAR (2012, 2015) have gathered a wide number of architects specialists from the field of research to practice, architecture, constructions, management, academic, restoration, heritage and patrimony, urban planning, landscape design, interior and product design, arts, humanities, social sciences, construction field and interdisciplinary flow from life sciences and mathematics. Inquiries on building an architectural academic space are based on scholarly FAQ regarding the notable innovation research results, projects (both doctoral and advanced\_), notable papers, books, journals (new and journal issues-special topics), national and international workshops (some having a tradition of 10 years now), roundtables, discourses, the connection and communication with Romanian and International architects society. As a reflection of the intense actions of scholarly field within the university, we could mention the increasing number of initiatives from up to bottom, besides the conferences: the appearance of journals like: Argument (architecture based theme, since 2009; the articles published in the journal proceed the annual session of scientific communications), sITA – studies in History and Theory of Architecture (from 2013), JULPreview – Journal of Urbanism Landscape and Planning (from 2016), and improving the quality of wide publication of doctoral studies contained in books (isbn) for knowledge and research theme and methodology dissemination, professionals special results on design, research or research by design, and not least maintaining the traditional publications as: the "Analele Arhitecturii"

(Architecture's Annual), "Anuarul Centrului de Studii de Arhitectură Vernaculară" ("Center for Studies in Vernacular Architecture Annual"), UAUIM, Dealu Frumos. Centrul de Studii Arhitecturale și Urbane (CSAU) – Center for Architectural and Urban Studies of UAUIM, in collaboration with Romexpo, holds, four times a year, the International Symposiums which accompany the most important expository events for the presentation of materials and systems used in architecture, urban and interior design: Ambient, Romhotel, BIFE, ExpoEnergiE. The proceedings are published constantly at the EUIM – UAUIM Publishing House.

From 2011, the Technical Science Department of UAUIM is annually organising "Atelierele de la Sibiu", a scientific communication session dedicated to professors, researchers, specialists or students, which aims to debate different issues regarding using of technology as a bridge between concept and architectural implementation. Present initiatives from bottom to up are increasing effervescence of the young professionals enrolled and passionate on research and research by design: events with special topics on interdisciplinary architecture, workshops and round tables, from young researchers and academics, gathering a wide audience in the students' space and communication with other fields. We mention "The Museum Space at its Boundaries" event (comprised of the "Museum Space at its Boundaries. Between Architecture and Discourse" conference and the „Places beyond the threshold" workshop), held between March 31 and April 13, 2014 by "Ion Mincu" University of Architecture and Urbanism in collaboration with The National Museum of the Romanian Peasant. The event marked the openness of our institution towards both theoretical and practical interdisciplinary approaches. The subject brought together architects, sociologists, anthropologists, artists, ethnographers, and geographers, eager for debate and collaborations. Architecture of today extracts its innovative essences from interference with other disciplines – psychology, sociology, anthropology, philosophy, medicine etc. From this point of view, are significant the following conferences, organized by our University: *Arhitectura Incluzivă / Inclusive Architecture* (2013), *Arhitectura Vindecătoare / Healing Architecture* (2014), *Psihoarhitectura / Psychoarchitecture* (2015) and *Equal Design – Architecture for All* (2014). "Inclusive Architecture" proved an interdisciplinary theme due to the common concerns of the participants to an environment where physical or mental barriers can be overcome by a careful design to different users. "Healing Architecture" was dedicated to the therapeutic properties of the environment and was organized together with "Experiential Psychotherapy Society" SPER. "Psychoarchitecture" targeted multidisciplinary connections in the education of future architects and designers, the perception of built environment and the psychological effects, psychological aspects in the relation man-city-community and the multisensorial architecture.

Last, but not least, the tradition of International Diploma Juries (17 years old), now a coveted gathering of academics and professionals around the world, is an important part of scientific evaluation of the final projects of our students and a quality warranty for those. This academic year, December 2015, UAUIM has organised, in cooperation with European Association for Architectural Education (EAAE) and The Architects' Council of Europe (ACE), the European Architectural Medals for the Best Diploma Projects which is an annual "European competition that awards excellence in crossing the threshold from education to profession". The paper is proposing to review the present and new directions in building an architectural discourse within architectural academic space, results input and future thoughts of University of Architecture and Urbanism "Ion Mincu" Bucharest (UAUIM).

**Keywords:** academic space, architecture, architectural discourse, UAUIM, school of architecture, ICAR, EURAU, scholar architecture

## 1 DESIGNING AN INTERNATIONAL ACADEMIC SPACE. DEVELOPING AND SUPPORTING EURAU2016 INITIATIVE THROUGH UAUIM

Present article aims to present few initiatives, successful results and several works in progress on scholarly academic space within Ion Mincu" University of Architecture and Urbanism, Bucharest

(UAUIM), one of the oldest universities in Romania, and the only independent institution in the country dedicated to education in the fields of architecture and urban planning. The methodology of the present article is based on defining the academic space and topics directions, presenting themes and research concerns, defining the role of the 21st Century and the role of the architect in a context of globalised and emergent world, initiatives on international and national events: discussions – communication – and – dissemination of research and research by design, various involvements of the university and its members in scholarly academic Romanian and international field, advanced studies, doctoral inquiries/research, facts and data on involvement participators and results in publication. The authors of the paper are part of a interactive team that have organised within and at its call International Relations Office, UAUIM, the international conferences, establishing a new tradition on Romanian architectural space: ICAR (International Conference on Architectural Research) conferences.

## 2 BUILDING A SPACE FOR ACADEMIC INTERNATIONAL CONFERENCES

Starting with 2012, “Ion Mincu” University of Architecture and Urbanism initiated a new call for papers for developing international conferences – ICAR (acronym for: *International Conference on Architectural Research*) – for promoting research and research by design in architecture field, and assuming a role in guiding and mentoring architects from Romania in disseminating their results in practice profession as well as in research and innovation fields – from history and architecture theory, to technology and sustainability, and towards other interdisciplinary and transdisciplinary searching, studies and research development. The two conferences ICAR2012 and ICAR2015 have focused on considered emergent subjects of the beginning of 21<sup>st</sup> century: *(RE)writing history* (ICAR2012) [1] and *re[search] through architecture* (ICAR2015) [2], and opened a new path for collaborations with other schools of architecture, Romanian and international, from universities with both art & humanities and social-sciences profiles, but also construction-technology-sustainability setups. These new research paths made possible the organization of the three conventions of architectural design: ROCAD 2012, 2013, 2014 [3] where more than several notable architects and star-architects were lectured to the wide audience for both students and professionals in architecture, urban planning, construction and design. The two research conferences ICAR (2012 [1], 2015 [2]) have gathered a wide number of architects specialists from the field of research to practice, architecture, constructions, management, academic, restoration, heritage and patrimony, urban planning, landscape design, interior and product design, arts, humanities, social sciences, construction field and interdisciplinary flow from life sciences and mathematics. Inquiries on building an architectural academic space are based on scholarly FAQ regarding the notable innovation research results, projects (both doctoral and advanced\_), notable papers, books, journals (new and journal issues-special topics), national and international workshops (some having a tradition of 10 years now), roundtables, discourses, the connection and communication with Romanian and International architects society. Counting the space for ICAR2012 and ICAR2015, they counted, besides a wide audience from national and international architecture field, more than 160 registered, published and peer reviewed abstracts<sup>1</sup> and 91 articles – in ICAR2012 – Abstracts Book and Proceedings Book [4] [5], and more than 120 published abstracts (peer reviewed abstracts) and 81 published articles in ICAR 2015 Books [6] [7]. The objectives of organizing these conferences, ICAR, ROCAD, and continuing with events like International Conference EURAU2016 – European Symposium on research in Architecture and Urban Design – *In Between Scales*. [8] -, are:

- investigating important research topics as defined by the conferences theme, as important phenomena of architecture for 21<sup>st</sup> century and future challenges;
- applying and testing new theories of proposed topics in the main field of architecture, but also correlated in areal of knowledge, with focus in specific research and innovation;

<sup>1</sup> Abstracts were constituted in a proposal of a working paper with a minimum 500 words proposal, and maximum 1000 words, as illustrating the future extended article, and from abstract phase, the papers were evaluated through a double blind peer review process, necessary for publication in ICAR2012/2015 Abstracts Book or ICAR2012/2015 Proceedings Book.

- identifying successful results in the fields of research and innovation for defined topics/subjects of the conference(s), and discovering possible niche results for future use through creativity, dialog and interdisciplinarity increasing;
- collaborating with other schools of architecture from Romania, Europe and worldwide through institutional joint venture, collaborative scientific or organizational committees, and not at least through lectures of specialists in the fields;
- dissemination and results visibility growth in the targeted professional groups but also society through: 1. specialists attraction from the main domains of interest but also adjacent ones with priority applications; 2. attracting various specialists from academic, research, innovation development, professional practice, management; 3. attracting students and doctoral candidates in the dialog and the research of the proposed thematic(s);
- take over the valuable results for formulating possible targets and directions for research applications for the future CDI<sup>2</sup> projects in the institutional portfolio or/and in collaboration with other institutional partners.

Underlying the present event which this article is a part of, we could say EURAU2016 is the second international conference of worldwide prestige of UAUIM's portfolio (after 2nd World Conference on Design, Arts and Education – DAE-2013 – 9-11 May 2013), it is organized in collaboration with other six schools of architecture from Europe, and that is dedicated specific to the academic research for architecture, urbanism and design. Also the motivations could be emphasized through the stimulation of creating a specific academic space for this international event within UAUIM, one of the oldest schools of architecture from Europe:

- enhancing the participation of Romanian school(s) of architecture and urbanism to the programs and research directions in the field, at European level;
- integrating the Romanian community of researchers and professionals in architecture and urbanism in current trends activities and projects, at international level;
- the participation of UAUIM in organizing a dedicated scientific event at international level, and fostering the growth of professionals/researchers original contributions and also the growth of the institutional visibility;
- sustainability and promoting of a tradition and of a permanent contact, with a real European dimension, supported by the schools of architecture, urbanism, design network, as the previous EURAU events: École Nationale Supérieure d'Architecture de Marseille, with theme of doctoral research (2004); École Nationale Supérieure d'Architecture et Paysage de Lille, with theme "at big scale" (2005); Association des Instituts Supérieurs Brussels-Liège-Mons (IESA), with the theme of cultural heritage (2006); Escuela Superior de Arquitectura de la Universidad Politécnica de Madrid, with the cultural landscape topic (2008); Facoltà di Architettura dell'Università degli Studi di Napoli Federico II, *venustas* focus theme (2010); Faculdade de Arquitectura da Universidade do Porto, with the theme of public space and the contemporary city (2012); Faculty of Architecture of the Istanbul Technical University, with the topic of composite cities (2014);
- sustaining an own CDI strategy, framed and correlated with SNCDI 2020, and especially through defining premises on partnerships with UE research institutions, but also through impelling the research environment through growth of presentment and reliance in local innovation potential.

### **3 DESIGNING AN ACADEMIC CENTERED NETWORK FOR DEVELOPING ARCHITECTURAL \_RESEARCH AND \_RESEARCH BY DESIGN**

#### **3.1 An integrated research network for supporting and designing a high level for academic space**

As a reflection of the intense actions of scholarly field within the university, we could mention the increasing number of initiatives from up to bottom, besides the conferences: the appearance of journals like: *Argument* [9] coordinated by Prof. PhD Arch. D. R. Andronic (architecture based theme, since 2009; the articles published in the journal proceed the annual session of scientific

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<sup>2</sup> CDI – *cercetare-dezvoltare-inovare (Ro)* / research-development-innovation (field)

communications), SITA – studies in History and Theory of Architecture, edited by Prof. PhD Arch. A. M. Zahariade [10] (from 2013), JULPreview – Journal of Urbanism Landscape and Planning co-founded by Prof. PhD Arch. T. Florescu and Assoc. Prof. PhD. Arch M. Radulescu [11] (from 2016), and improving the quality of wide publication of doctoral studies contains in books (isbn) for knowledge and research theme and methodology dissemination, professionals special results on design, research or research by design, and not least maintaining the traditional publications as: the Analele Arhitecturii (Architecture's Annual), "Anuarul Centrului de Studii de Arhitectură Vernaculară" ("Center for Studies in Vernacular Architecture Annual"), UAUIM, Dealu Frumos. Centrul de Studii Arhitecturale și Urbane (CSAU) – Center for Architectural and Urban Studies of UAUIM, in collaboration with Romexpo, holds, four times a year, the International Symposiums which accompany the most important expositional events for the presentation of materials and systems used in architecture, urban and interior design: Ambient, Romhotel, BIFE, ExpoEnergiE. The proceedings are published constantly at the EUIM - UAUIM Publishing House.

From 2011, the Technical Science Department of UAUIM is annually organising "Atelierele de la Sibiu", a scientific communication session dedicated to professors, researchers, specialists or students, which aims to debate different issues regarding using of technology as a bridge between concept and architectural implementation.

### 3.2 Local academic initiatives and UAUIM promoters of Romanian architectural research

Besides the local institutional infrastructure, we could underline the direct results of research as collaborative financed projects [12]: REDBHI - PI Prof., PhD Arch C.V. Ochinciuc, URBASRISK – PI Prof., PhD Arch C. Gociman, SAFENET, and grants: *Studiul Regenerării Urbane și Impactul Asupra Mediului și Societății Privind Reconversia Clădirilor în România (EN: Study for Urban Regeneration and Environmental and Society Impact regarding the Building Reconversion in Romania)* – PI Prof., PhD Arch A. Spirescu, *Moduri contemporane de anvelopare a spațiului (Contemporary Manners of Enveloping Space)* – PI Assoc. Prof. PhD Arch D. Comșa [13], *Laborator Brăila (Brăila Laboratory)* – PI Assoc. Prof. PhD Arch A. Stan, *România Identitară*, cultural project which has been underway, where UAUIM, represented by Lecturer PhD Arch. M. Zamfir, is official partner etc.

As promoters of Romanian architectural research, we could speak also of publications and access for publishing the results of research and research by design through "Ion Mincu" University Publishing House (EUIM) [14], research publisher B CNCS, and the BDI journals published by EUIM. Also UAUIM benefits of accessible database and a supportive editorial resources database through UAUIM Library and EUIM.

A wide networking with international cooperation [15] was developed and was possible through the Office of International Relations and our colleagues: Prof. PhD. Arch E. B. Popescu, Prof. PhD. Arch S. Alexandru, Prof. PhD. Arch Ș. Scafa-Udriște, Prof. PhD. Arch Z. Bogdănescu, Assoc. Prof. PhD. Arch B.G. Jöger, Assoc. Prof. PhD. Arch F. Pamfil, Assoc. Prof. PhD. Arch E.C. Dușoiu, Assoc. Prof. PhD. Arch D. Comșa, and many others, that supported the connectivity with important worldwide and European associations and organisms as: AEEA, AESOP, IAESTE, EUA, IAU-UNESCO, ELASA, ELIA, etc.

### 3.3 Scholarly academic designed bottom up initiatives and collaborations with the local academic space \_establishing new traditions

Present initiatives from bottom to up are increasing effervescence of the young professionals enrolled and passionate on research and research by design: events with special topics on interdisciplinary architecture, workshops and round tables, from young researchers and academics, gathering a wide audience in the students' space and communication with other fields.

We mention "The Museum Space at its Boundaries" event (comprised of the "Museum Space at its Boundaries. Between Architecture and Discourse" conference and the "Places beyond the threshold" workshop), held between March 31 and April 13, 2014 by "Ion Mincu" University of Architecture and Urbanism in collaboration with The National Museum of the Romanian Peasant [16]. The event marked the openness of our institution towards both theoretical and practical interdisciplinary

approaches. The subject brought together architects, sociologists, anthropologists, artists, ethnographers, and geographers, eager for debate and collaborations.

The conference “Museum Space at its Boundaries. Between Architecture and Discourse” (Scientific Committee of the proceedings volume [17]: Prof. PhD Arch. D. R. Andronic – UAUIM, Assoc. Prof. PhD. Arch. A. Mitache – UAUIM, PhD. V. S. Nițulescu – MNTR, researcher PhD. A. Iuga – MNTR, PhD. I. Blăjan and D. Neamu – director of RNMR) addressed topics like: The National Museum of the Romanian Peasant – the museum beyond the boundaries; The connection between object – building – discourse; The museum and its public; The museum space – industrial heritage; Immateriality in the museum space. The sessions of the conference have been preceded by presentations held by anthropologist Prof. PhD V. Mihăilescu (SNSPA), Prof. PhD Arch. A. Spirescu (UAUIM), Prof. PhD arch. A. Ioan (UAUIM) and PhD V. S. Nițulescu (manager of MNTR at that time).

Architecture of today extracts its innovative essences from interference with other disciplines – psychology, sociology, anthropology, philosophy, medicine etc. From this point of view, are significant the following conferences, organized by our university: “Arhitectura Incluzivă” / “*Inclusive Architecture*” [18] (2013), “Arhitectura Vindecătoare” / “*Healing Architecture*” [19] (2014) and “Pishoarhitectura” / “*Psychoarchitecture*” [20] (2015), “Equal Design – Architecture for All” [21] (2014).

“Inclusive Architecture” (Scientific Committee: Prof. PhD Arch. A-M. Dabija, Lect. PhD. Arch. I. Șerbănescu, Lect. PhD. Arch. M. Zamfir and Lect. PhD. Arch. V. Thiery) proved an interdisciplinary theme due to the common concerns of the participants to an environment where physical or mental barriers can be overcome by a careful design to different users.

“Healing architecture” (Scientific Committee: Lect. PhD Arch. C. Iana, Lect. PhD Arch. M. Șchiopu and Assist. Prof. PhD MD R. Constantinescu) was dedicated to the therapeutic properties of the environment and was organized together with Experiential Psychotherapy Society SPER.

“Psychoarchitecture” (Scientific Committee: Assoc. Prof. PhD Arch. C. Dumitrescu, Lect. PhD Arch. C. Iana, Assoc. Prof. PhD. Psych. R. Gâtej) targeted multidisciplinary connections in the education of future architects and designers, the perception of built environment and the psychological effects, psychological aspects in the relation man-city-community and the multi-sensorial architecture.

Our university is also represented by Lecturer PhD Arch. Mihaela Zamfir in many interdisciplinary events, architecture-medicine-psychology. One of the most representative is an interdisciplinary training program, “GerontoASSIST”- *Multidimensional Assistance of Elderly in family and community* (2013), organized by Romanian Association of Young Geriatricians, dedicated to medical doctors, psychologist, social workers and architects. The training program was graduated by two students architects and one architect [22].

#### **4 INTERNATIONAL DIPLOMA: CONNECTING UAUIM FINAL PROJECTS RESULTS WITH SCHOOLS OF ARCHITECTURE INTERNATIONAL NETWORK; STUDENTS PROJECTS AS ARCHITECTURAL EXERCISES**

##### **4.1 Approaching the International Diploma**

Last, but not least, the tradition of International Diploma Juries (17 years old as process by now already), now a coveted gathering of academics and professionals around the world, is an important part of scientific evaluation of the final projects of our students and a quality warranty for those. This academic year, December 2015, UAUIM has organised, in cooperation with European Association for Architectural Education (EAAE) and The Architects’ Council of Europe (ACE), the European Architectural Medals for the Best Diploma Projects which is an annual “European competition that awards excellence in crossing the threshold from education to profession” [23].

Returning to the international diploma focus of our university, this made possible the RIBA Part II Diploma Accreditation since the year 2000, which meant (since then) many jobs in area covered by this regulation of architecture work rights. Also, a continuous educational specialization was possible



after the six years of architectural studies (twelve semesters) through professional and master in science, or doctoral studies, both in Romania (also within Doctoral Studies Schools UAUIM) and abroad for further specialization.

#### **4.2 The students projects as architectural exercise: international students competitions, also a tradition**

Through a continuous effort of managing involvement, UAUIM was successfully the partner of AEEA<sup>3</sup> in proposing, supporting and developing several important international competitions: *Forgotten Places* (2006) [15], *Present Architecture Challenges* (2008) [24], *Upgrade* (2010) [25], *Unknown – housing as open problem* (2012) [26] – credits: Prof. PhD. Arch E.B. Popescu, Prof. PhD. Arch S. Scafa-Udriste, Prof. PhD. Arch Z. Bogdanescu, Assoc. Prof. PhD. Arch F. Pamfil.

Another interesting international competition is the subject of these month (September 2016) submittals: *Laser Valley, Land of Lights* (2016), organized by UAUIM in cooperation with Ministry of National Education and Scientific Research and Technical University of Construction Bucharest [27]. The Competition Board which diligently assured the good progress of the whole process consisted of: Prof. PhD. Eng A. Curaj (MECS), Prof. PhD. Eng A. Anton (UTCB), Prof. PhD. Nuclear Physics I. Ursu (IFIN-HH), Prof. PhD. Arch. M. Moiceanu, (rector of UAUIM), Prof. PhD. Arch. T. Florescu (vice rector of UAUIM), Prof. PhD. Arch. Z. Bogdănescu, (UAUIM), Assoc. Prof. PhD. Arch. A. Panait, (UAUIM), PhD. Lecturer A. Mitrea, (UAUIM), PhD C. Teaching Assistant Y. Dardari (UAUIM), MSc C. C. Chirilă (UAUIM), PhD C. R. Pătraşcu (UAUIM), V. Ungureanu (web site and online application manager). The jury gathered internationally acclaimed professionals: Prof. G. Sağlamer (ITU, Executive Committee Member of IAUP, President of CMU), Prof. L. van Duin (Delft University of Technology, School of Architecture). Prof. D. Hanganu (University of Montréal, McGill University, Honoray Member of The Romanian Academy), Prof. Emeritus J. Horan (Ireland's representative on the Architecture Sub-Group advising the European Commission on architectural education and the Professional Qualification's Directive), Prof. E. B. Popescu (President of the "Ion Mincu" University of Architecture and Urban Planning, Bucharest), Prof. C. Spiridonidis (School of Architecture, Aristotle University of Thessaloniki).

### **5 BUILDING AN ARCHITECTURAL DISCOURSE\_ A REVIEW ON SCHOLARLY ACADEMIC SPACE, UAUIM, ALSO AS RESULTS FROM EURAU2016**

Developing EURAU2016 is, in our opinion, a successful result for UAUIM academic space of continuous built tradition on designing both an academic space together with designing a space for profession and to mentor future architects, both academic staff, professionals and also students: architects, urban planners and designers for Romania and also worldwide. Gathering almost 130 articles, EURAU2016 proves collaboration of 36 entities: institutions, NGOs, architecture companies: 5 from Romania, of which 5 universities, and a total of 26 universities from all over the world.

#### **Acknowledgements**

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<sup>3</sup> AEEA – European Association for Architectural Education <http://www.eaae.be/>

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### **3D MODELING AS EDUCATIONAL PROCESS OF DOCUMENTING STUDENTS PROJECTS: ARCHITECTURAL EXERCISES.**

**Marina Mihaila<sup>1</sup>, Stefan Mihailescu<sup>2</sup>, Sorina Vlaiescu<sup>3</sup>, Andreea Nitu<sup>4</sup>, Catalin Caragea<sup>5</sup>**

<sup>1-2</sup> *Lecturer, PhD Architect, Synthesis of Architectural Design Department, Faculty of Architecture, "Ion Mincu" University of Architecture and Urbanism, Bucharest (ROMANIA)*

<sup>3</sup> *Graduated Student, Faculty of Architecture, "Ion Mincu" University of Architecture and Urbanism, Bucharest (ROMANIA)*

<sup>4</sup> *MA Architect, (2014) Faculty of Architecture, "Ion Mincu" University of Architecture and Urbanism, Bucharest (ROMANIA)*

<sup>5</sup> *MA Architect, PhD Candidate, "Ion Mincu" University of Architecture and Urbanism, Bucharest (ROMANIA)*

*marina.mihaila@arhitectonik.ro, stefan.mihailescu@freedesignstudio.ro,  
sorina\_vlaiescu@yahoo.com, nituandreea@yahoo.com, catalin\_mihai\_caragea@yahoo.com*

#### **Abstract**

Article presents the instrument and verification learning through 3D modeling as educational process of documenting students projects as architectural exercises. The discussions starts with curricular topics and settings presentation within architectural studio in experimenting synthesis projects in last years of study at Faculty of Architecture, continuing with an observational tutoring in formatting abilities and points of view for approaching architectural design process for future architect(s). Experimenting projects and models is a current practice in architectural education, and the activity within architectural studio is the main learning process in the school of architecture. As acquired information at different courses need to be verified through practice and connected through decisions in the process of design, the architectural education is based on practicing visions, shapes and ideas as architectural exercises, for forming future design. The process of tutoring and mentoring within architectural studio is based on guiding the succession of ideas, the process of sketching and prioritizing different settings and inputs, but not at least as formative ability to enhance the perception on different types of models from the mental-hand-drawn perspective, feeling the space through different plastic materials (cardboard-plaster-canvas, etc.) and understanding the complexity of possible architectural space through 3D modeling (sometimes this process ensuring a generation of the real model or possible fabrication of architecture in the future profession. In this sense, the article presents three case studies of architectural exercise within school of architecture.

Findings: 3D Modeling as Educational Process of Documenting Students Projects: Architectural Exercises. Each case study illustrates a different focus on thematic and topic of the project general theme: structural-architecture and designing process.

Students' final designs have consisted in a complex architectural exercise, but the 3D modeling process was a particular process of documenting and constructing their designs. The fabrication of the design consisted successively in:

- sketches – as first ideas of the imagined space –,
- 3D modeling as fabrication process of the architectural shapes – also as mathematically construction of balanced form and volumetric.
- realization of a real model, with different rules of construction from the virtual world.

From the three method of evaluation within the architectural exercise, the 3D design modeling offered the possibility of:

- testing the ideas, first ideas as paths of conceptual demarche;
- experimenting the found solutions from documentation and from the city image resources;
- working with software tools and transforming them in architectural instruments;
- thinking of a wide possibility of fabricating architecture also in real or virtual space;
- enhancing their vision with special features of scaling, lighting, atmospheres, and not at least compensating urban environments evaluation before a real model to be thought in a place;
- comparing typologies of architecture and learning tools from the three different types of evaluating the same design project.

Both art, science and craft architecture education and teaching needs 3D modeling as a creative tool as constructing the design, imaging boundaries, interpreting set-ups, but also enhancing vision of what architecture is in all the stages of the project, from the idea to a possible reality or virtual space, as needs will require. Architecture as education supposes learning information, history, models as primary images and typologies, imaginative skills and writing scenarios and atmospheres, - while evaluating cultural contexts, but also creative tools that permits continuous transformation of the conceived shapes and different types of perspectives of design.

**Keywords:** 3D modeling, education, architecture exercises, architecture, visions

## 1 ABOUT THEME AND SHORT STRUCTURE EXERCISE IN THE 5TH YEAR SYNTHESIS ARCHITECTURAL DESIGN STUDIO

The Synthesis of Architectural Design Department is the Integrated Master (level) Department at Faculty of Architecture - "Ion Mincu" University of Architecture and Urbanism Bucharest, and, in eleven hours per week it develops studios with teams of tutors that provide guidance, courses, discussions and advice on students dedicated thematic projects. [1] There are two major themes each year of study, one per semester, in which, students' exercises develop their abilities of synthetic thinking and correlate information accumulated during architecture university years. Themes treat a variety of subjects that enclose also architecture programs and activities, but also diverse conceptual demarches focuses: from the relation between private space and public space in the first semester of the 4th year of study, and the problem of insertion and rehabilitation of notable and valuable sites within the city, towards the view of structure and special structures thought as a part of thinking architecture in the first semester of the 5th year of study. The first three semesters have two exercises, one short project with a studio team dedicated theme, and a longer project with an integrated common theme that involves an urban advanced study and experiences a large program with a complex series of activities. The final semester from the 5th year of study is dedicated to the longest project exercise that is a closer investigation in architectural problems, and it prepares students for diploma as final exercise and further practice. Every project involves a conceptual approach and the developing of an activity and design, together with a central idea. As tools, the tutors encourage the site and neighborhood lecture on architectural habits and details, sketches in the sense of atmosphere and continuity of urban path, development of an integrated urban architectural form, that could sustain the activities and functions and to realize the educational objectives. Not at least, the tutors encourage them to experiment the architectural complexity in computer drawing sketches and to verify model forms in 3d modeling in order to have a deep approach on site integration silhouette, urban altimetry and space sections. Experimentation the project in 3d modeling is also a preparing for after school practice for developing an integrated project with different level views and detailing focus.

The architectural studio projects exercises have a more artistic approach and include, sometimes (more than curricular general themes), an architectural attitude for students to choose experimenting the ideas and mentioned purpose. Imaging possible architectures means a succession of visions, hand drawing scenarios, re-draw models and enhancing the vision in 3D architectural exercises for re-establishing priorities and format set-ups. [2] Sometimes projects follow a different path, starting on the paper with hand drawing and experimenting on 3D virtualization, perfection meaning a balance

between the two; or could follow a completed conceptualization on the paper project [3] and a post-digitalization in virtual modeling for archives or for future designs. Sometimes exercising projects in virtual 3D models could enhance the architectural vision – as communication and behavioral architecture [4] – this exercising offers the students possibility of evaluating different scales and human reports, evaluating differences between possible reality and imaginary of virtual space. Case studies that follows are the short projects from the 5th year (2012), 2nd semester, of three students that developed three applied projects on the Structural Technologies – Structural Performances general thematic. [5] The main purpose of the project exercise was to design an urban pavilion that could involve open public activities for the people in the site area. In this case it is about the theme of the studio Prof. PhD. Arch. D. Radulescu-Andronic, team: M. Mihaila, PhD. Arch, and S. Mihailescu, PhD. Arch, that indicates an urban cultural purpose for the urban pavilion. Choosing the site and main activity for the pavilion were let in the concern of the students together with the architectural-structural form experimentation, and was sustained through discussions, advises, bibliography and guidance, that included also recommendations on developing 3d models, shapes determinations and dedicated site 3d accommodations in order to develop a sustainable architectural-structural form, that would include a general further theme for engineering determination as an architectural result. The 3d modeling was in general focused on learning outcomes thematic: “to experiment the formative values of the integrated project system – between architecture, urban-ism, restorations, interior, technical sciences, architectural technology; to under-stand formative values of the integrated project model; to practice the performant structures conception methods, which are used for big structural openings; to understand the impact of structural forms on the architectural space and forms; to acquire the necessary knowledge and skills that will enable the students to operate with checking measures of quality in building from the sustainable development perspective.” [5] Besides learning the formative histories and models, architecture education deals with patterns of thinking, balanced equilibriums and pre-formatted proportions, scales, dimensions, languages; some things are considered predefined [6] or pre-understood written paths through design models [7] that allow us mentoring and students learning – investigating and experimenting the contemporary and future manners in architecture. Besides current tools that architecture used to play with, 3D modeling is still a continuous developing instrument in exercising architecture as construction model [8], but still as generative architecture, in dedicated labs for parametric and art-architecture installations (in generative tools). But as a primary tool it could be a simple instrument as formatting and fabricating architecture, as patterns, limits, still having unlimited possibilities for express, experiment but also giving similarities with reality – as light, materials, scale, city set-ups. Also 3D architectural modeling and investigation of architectural forms of nature leads to thinking of new ways of imaging space as enveloping continuum [9], designing new materials and designs learning form micro-chemical technology architectures, new structural spaces [10], future reactions of communities on facing architectures, new identity landscapes, architecture mapping (or new imaginary fields. In continuous formation as architect, 3D architecture modeling could lead to archiving and constructing digital archives, city models, virtual worlds (and gaming), environmental setups and sustainable experiments on city’ and architectures’ futures. Also research by design plays an important role in experimenting construction thinking habits in real but also virtual space.

## **2 INTRODUCTION – A BRIEF VIEW ON COMPUTER MODELING IN ARCHITECTURE. ACADEMIC OPINION BY: MARINA MIHAILA [11].**

Dreaming of architecture is very important in the process of design. Whether it is about the first fragment or about the vision of a complete space, any architectural idea has to be expressed in successive sketches that, in the end, will give form/shape to a more palpable finite product of design. Experimenting the dreaming of architecture in a full graphic process of drawing by hand, is a more classical way to work on architecture. It is a way of understanding and educating the skills, the art within as atmosphere of the architecture, but it also is a state of craft as fundamental experience of life style (while studying in the school of architecture but much more during the professional life). Observing the process of design and how it evolved in the last 15 years, both in my capacity as architect and educator I would say: the sketches are needed, but the 3D models are vital. They

became a necessary part of the architecture design and project - currently very few projects are not conceived in 3D, as this is considered:

- important to the study of architectural shapes and details,
- a modality to verify the envelope of the space,
- a simulation of the exterior and interior spaces, of the human perspective and scale on the particular space,
- a way to design architectural-structural space,
- a complete part of the architectural theme,
- a more comprehensible part of the design, much more than the sketches; maybe without the same sense of touch and atmosphere, but with a more sensitive view on the continuity of paths, plazas or interior usability and affordability,
- a possibility to compare the section and fluidity of spaces, the pathway and relevant areas,
- a close approach to perceiving the finite result of the process;
- (and) maybe a marketing status of the product,
- and not at least, a way of experimenting the scenario and mental routes in the future possible project.

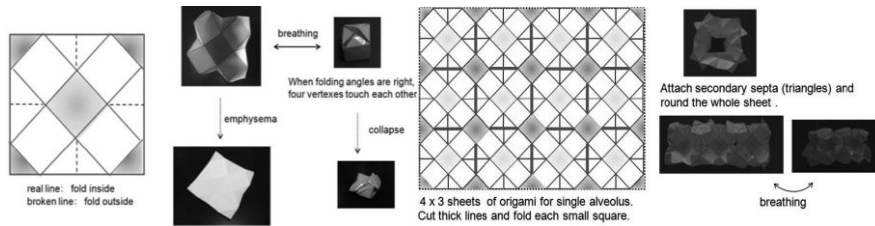
To demonstrate that a building is possible poses a challenge, even if this is about an architectural implant/ insertion, an architectural-urban master-plan development, or even more challenging, about computer generated algorithmic or parametric architecture, etc. Sketches are necessary from the very first stage of inception to define the specific or general form of the architectural object [6]. They are the predecessors of modeling, whether we are using classical or 3D tools. Sometimes, minor, sensible details that may be lost with the hand-drawing technique will be re-covered in the 3D model. But the hand-sketches/ hand drawings are relevant for the succession of thinking architecture, hierarchies of the ideas, priorities, scenarios and links between all these and possibilities of people interactions and actions within the future architectural space. When a 3D model is finalized it is a moment of truth, of sincerity, but probably not too emotional, at least at the beginning (the personal imagination should help here). Then putting the model in an urban simulated context...is a phase. And maybe, in the end, situating the model form in an augmented reality simulation, that should be enjoyable for the fashionable tourists. (or players of 3D games). Generating a 3D model shows the artist/ designer if she/he is on the safe path of the design, or furthermore, where or at which level could the risk manifest. Also, this way of thinking the architecture and urban space on layers, is a replication of the computational algorithms used by computers in organizing information. Regarding the contextual architectural educated views, experimenting a 3D object model in a 3D urban context, is (or may be) relevant for: 1. a correct analysis of scale, as general form, shape, and details; 2. a study on notable sites, continuity and discontinuities, holes and patterns; 3. the coherence of space, at any level; 4. a new way for a better perception of space and volumes: in movement, making sense of the cinematic perception and in the end, as a new tool of processing architecture in motion - as Zaha Hadid [12], Patrick Schumacher [13] or Mark Fornes [14] did/ do, or referring to the Manifest of the Cinematic Architecture of Pascal Schoning [15]. Going back to the ultimate use of 3D models, the present shows us that buildings are not the only targets. Virtual architecture is a new way of practicing and it does not require an architect's career or qualification. MVRDV and even more Asymptote Architecture showed us new ways of experimenting spaces never seen or imagined before (virtual spaces or even research realms designed for the experimentation of new ideas like SkyCar City [16], Metacity Datatown [17], or in these of Asymptote, the Guggenheim Virtual Museum [18].

### 3 EXPERIMENTAL STRUCTURES – PROJECT BY: SORINA VLAIESCU

Project quote: "Dynamic concept of architecture assumes that there are inflections in any form that directs movement and causes, influencing forces passing through, over, under and around the area. The shape is calculated multiple forces." Greg Lynn (*Animate Form*, New York: Princeton Architectural Press.) [19]

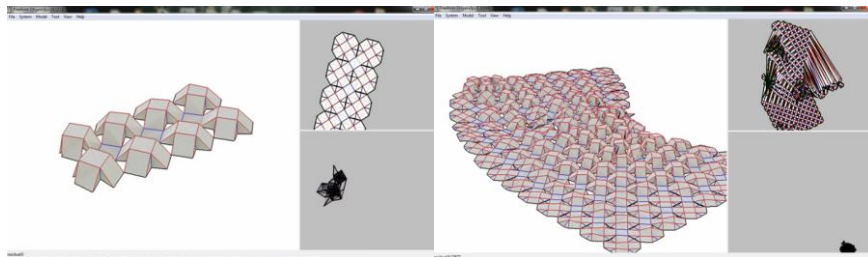
The project was a challenge for all students to understand the physical phenomenon behind the beauty of the designed shape. We had to conceive a shape that regardless the scale it will support mass weight and structural forces.

Research and inspiration. The basic idea started to develop after reading “Origami Model for Breathing Alveoli” by Hiroko Kitaoka, Carlos A.M. Hoyos and Ryuji Takaki in *Advances In Experimental Medicine and Biology*; ( 669; 49-52) [20] in which they present how the respiratory function of the lung can be explained as an origami model. They considered that the alveoli, when closed, are a 2D surface and by morphogenetic process they get filled with air and become 3D structures. Because they shift their form it is a 4D system. Comparing the principles of the alveoli with the principles of origami, made out of 2D sheet, paper folded in a 3D shape, and by changing its form it is also a 4D system.



Figures 1-2. The created model out of paper had to mimic the systems morphogenesis, the structure and function for a better understanding of the lung. fig.1 and fig.2 present the origami they created after the lung was determined as a box that has small squares on its faces that expand into other small boxes when air gets in. The main module is composed of five squares and four triangles arranged in an X cross, so if you unite the similar edges of the isosceles triangles from 45 degrees to 90 a small box would be created.<sup>1</sup>

Concept. The geometrical mimics of the breathing process helped understand, when folding, pressure is contended on the folded sheet of paper and the small squares are lifted as small boxes as if air would have gone through them. The forces that carried the pressure up to the top of the box make it from 2D to 3D. If blocked on two or three parts of the sheet it will determine other forces that will lift parts of the folded system creating larger spaces inside. A topo-structure created from the same module contracted in some parts and expanded in other was the perfect shape for the project. The surface could sustain itself, as forces tensioned the geometrical determined shape, plus the paper cuts made for creating the small boxes would be more or less opened according to their location on the sheet. A parametric designed shape as such could have been a pavilion, a mesh, a roof top that could change its shape according to the forces that act upon its geometry.



Figures 3-4. Ground tool helped to set chosen vertices as coordinate 0 on Z-axis but in the same time being able to move on X,Y plane and fold the small modules. In images fig.3 and fig.4 are the modules of the breathing origami simulated in the Freeform Origami software, and the geometry is restricted so that the edges of the square that connects the modules are set to 0 coordinates. The other vertices are free. It is interesting to observe how an algorithm of forces induced into vertices on a computerized simulation can create somewhat chaotic mesh. A parametric surface without complex definitions was created. So I continued shaping the surface in 3DS max by giving it thickness and texture. For the final product and visualization of the project a few small touches in Adobe Photo-shop were added.<sup>2</sup>

Software. A Win32 software created by professor Tomohiro Tachi (Department of General Systems Studies, The University of Tokyo) is a program dedicated to the study and development of 3D forms of

<sup>1</sup> Figures 1-7 are the project images of Sorina Vlaiescu, architecture student, 5th year, Faculty of Architecture, UAUIM Bucharest, developed within the Stu-dio of Prof.PhD.Arch. D.Radulescu-Andronic, team: Lecturer PhD.Arch. M.Mihaila, Assist.Prof. PhD.Arch. S.Mihailescu, Synthesis of Architectural Design Department, Faculty of Architecture, UAUIM Bucharest.

<sup>2</sup> Idem.



origami with other geometric constrains, called Freeform Origami (0.1.x Alpha). [21] Like in origami you start a pattern in a 2D dxf format that has three types of colored lines: Black, Red, Blue. Black is the crease, or where the forces from the plane sum up and fold the origami, Red is considered to be mountain so the vertices get a positive force and Blue is valley with a negative force. The program has a x,y,z coordinate system, with 0 as ground plane. The forces are activated in the vertices by two simple commands fold, space key, unfold 'B' key, and random white noise is added to the vertices by pressing 'N' key. Restrictions to the vertices are used to make edges rigid.

Scenario. For the scenario and the practicality of the experimental structure designed, I chose the historic building of the Institute of Pneumology "Marius Nasta", Bucharest, the oldest hospital in the city dedicated to treat pulmonary disease since 1902. In between the treatment pavilions there was a green area where a structure dedicated to design recreational spaces, introverted and private, or opened and socially dedicated, could be inserted. As seen in FIG.5 the origami structure would be placed on the site plan between the two pavilions where most patients are being hospitalized. The module dimensions are set to 1x1x1 m so that it comes near to more approachable human scale and the use of the structure can be used for sitting on the modules and for passing beneath them, according to their height from the ground. This is shown in the 2D views of the model (FIG.6).



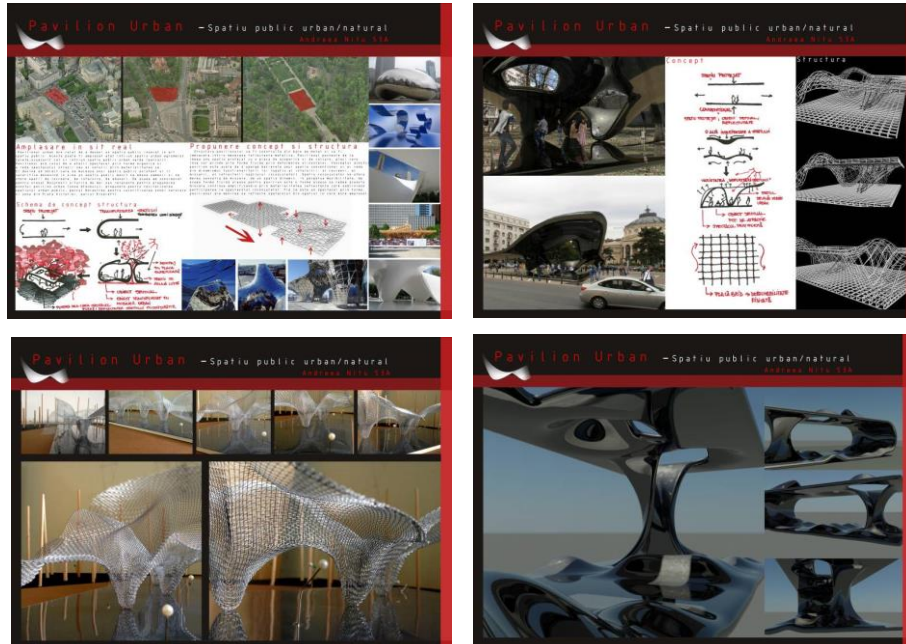
Figure 5. Site plan (upper image-left). Figure 6. Elevations, top plan (upper image-right). Figure 7. Render simulation (lower image-central).<sup>3</sup>

#### 4 URBAN MEETING PAVILION – PROJECT BY: ANDREEA NITU

The Urban meeting pavilion project that I developed in the terms of the architecture school project “Experimental Structures”, was very much related with the main problem that we had to resolve, and that was creating a special structure that can furthermore generate a functional space. The experimental structure was aimed to define our project and the entire concept needed to conclude our choice of representing the construction not only by its function but also through its form and structure. The structure was the key element because it generated the form. So I tried to understand how a structure can make an impact by generating a form and in the end an entire complex building. Therefore I wanted to make a statement pavilion, that was beside a meeting point, an artistic object which could make a difference and be an attraction for people when installing it in a real urban spaces. I begun my studies by understanding how people imagine a conventional space and how can I furthermore transform this space by making it unconventional, attractive but still a safe zone. I wanted to make an open covered space that

<sup>3</sup> Idem.

was the result of the horizontal slabs deformation of the roof and floor, and making them somehow connected, melting them in one fluid form that can cover social spaces of interactions and recreation. But this was only possible with the 3d modeling studies of the shape that I wanted to create, starting from the very basis of it generated by two horizontal plans. Deforming the horizontal plans, and making a fluid form was easy using the 3ds max platform which allowed me to “play” with them however I wanted.



Figures 8-9. Process and concept (upper images- left-right). Figures 10-11. Model and renders (lower images- left-right).<sup>4</sup>

Then I realized that starting from this fluid melting form that was the result of deformation the horizontal plans; the solutions were unlimited. Using the 3d modeling was one step beside the concept through finding the final form that I imagined. Also with 3d modeling I could experience the material that I wanted to give to my object , and I discovered how can it be seen in space, it proportions, also the scale of it when I inserted it virtually in an urban space, and helped me so much in generating a final form that was anchored in reality. The structure of the pavilion was meant to be made of metal and it was able to be generated from the form modeled in the 3ds max program so it was easy to understand if the actual construction would stand. Also this structure was design to be dressed up in a metal membrane that can mirror the surroundings. The pavilion starts from the idea of a protective space that anyone can imagine, with a roof slab and floor slab, that after modeling will catch fluid forms by deforming the horizontal plans. For this to be made easy in the modeling program I imagined that the slabs were like a wire net or a grid, divided in multi squares and inside points that can be stretched and designed after in a solid un-deformable tubular special structure. The concept of this pavilion was to break the barriers that a conventional space sets and also was imprinting the idea of a dynamic state of a form that connects and interacts with the function of the building itself: a space of meeting, recreation, motion and last but not least of reflecting the spectacle of the urban surroundings. The urban space gives us the feeling of a fluid space always in motion. The generated studied form chosen for the pavilion is meant to mirror this type of perpetual motion and amplifies it through its reflective metal material skin which emphasizes the participation at the spectacle that surrounds us every day. Either as spectacle through its structure and form, the urban meeting point pavilion is de-signed to reflect the spectacle of the urban space in which is located. In the following presentation I designed two forms for the urban pavilion that are the result of the 3d modeling

<sup>4</sup> Note: Figures 8-11 are the project images of Andreea Nitu, architecture student, 5th year, Faculty of Architecture, UAUIM Bucharest, developed within the Studio of Prof.PhD.Arch. D.Radulescu-Andronic, team: M.Mihaila, S.Mihailescu, Synthesis of Architectural Design Department, Faculty of Architecture, UAUIM Bucharest.

studies in the 3ds max program and both of them starts from the initial concept of the protective space with 2 horizontal slabs (the roof and the floor). This also explains the variety which virtual 3d modeling pro-grams give us and the countless possibilities of formal expressions that can be related to a concept.

## 5 CULTURAL OBSERVER PAVILION – PROJECT BY: CATALIN CARAGEA

The Cultural Observer Pavilion project that I designed in the terms of the architecture school project „Experimental Structures”, was made as a continuity to the manifesto project that i developed a year ago called Cultural Route down the Victory Street. The red ribbon is a manifesto which emphasizes that on the Victory Street, the priority is always to cars, people being forced to travel daily narrow and unpleasant pedestrian. My proposal is to create a pedestrian path to link all the cultural places everywhere on the Victory Street. The place where the ribbon stops is a small plaza „Piata George Enescu” situated in front of The Romanian Athenaeum (Ateneul Roman). Here the ribbon starts to disperse and than to recompose a structure (my experimental structure) made by triangular metal prisms, a structure support for the three glass cubes.



Figures 22-13. Process and concept (upper images- left-right). Figure 14. Plan (lower image left). Figure 15. Perspective (lower image right).<sup>5</sup>

The space has a cultural function (observation, information, exhibits, socializing). Characteristic to the contemporary man is the need for interaction, the exchange of views, and the accumulation of knowledge. This need has in this case the perfect environment to be consumed. For finding the final form that I imagined, firstly, I made a 3d model using basic (but very useful) functions (scatter, move, rotate) in 3ds max by Autodesk and Google Sketchup. After I materialized a form I intended, playing with prisms, I made a plastic model to study the resistance under load and then with other 3d modeling studies of shape (general shape), I made a progress by the final form of the structure. To conclude, virtual 3d modeling programs gives us countless possibilities to materialize forms related to a concept.

<sup>5</sup> Note: Figures 12-15 are the project images of Catalin Caragea, architecture student, 5th year, Faculty of Architecture, UAUIM Bucharest, developed within the Studio of Prof.PhD.Arch. D.Radulescu-Andronic, team: M.Mihaila, S.Mihailescu, Synthesis of Architectural Design Department, Faculty of Architecture, UAUIM Bucharest.



## 6 FINDINGS: 3D MODELING AS EDUCATIONAL PROCESS OF DOCUMENTING STUDENTS PROJECTS: ARCHITECTURAL EXERCISES.

Experimenting projects and models is a current practice in architectural education, and the activity within architectural studio is the main learning process in the school of architecture. As acquired information at different courses need to be verified through practice and connected through decisions in the process of design, the architectural education is based on practicing visions, shapes and ideas as architectural exercises, for forming future design. The process of tutoring and mentoring within architectural studio is based on guiding the succession of ideas, the process of sketching and prioritizing different settings and inputs, but not at least as formative ability to enhance the perception on different types of models from the mental-hand-drawn perspective, feeling the space through different plastic materials (cardboard-plaster-canvas, etc.) and understanding the complexity of possible architectural space through 3D modeling (sometimes this process ensuring a generation of the real model or possible fabrication of architecture in the future profession. In this sense, the article presents three case studies of architectural exercise within school of architecture. Each case study illustrates a different focus on thematic and topic of the project general theme: structural-architecture and designing process. Students' final designs have consisted in a complex architectural exercise, but the 3D modeling process was a particular process of documenting and constructing their designs. The fabrication of the design consisted successively in: sketches – as first ideas of the imagined space -, 3D modeling as fabrication process of the architectural shapes – as mathematically construction of form and volumetric balanced, and realization of a real model, with different rules of construction from the virtual world. From the three method of evaluation within the architectural exercise, the 3D design modeling offered the possibility of: testing the ideas, first ideas as paths of conceptual demarche; experimenting the found solutions from documentation and from the city image resources; working with software tools and transforming them in architectural instruments; thinking of a wide possibility of fabricating architecture also in real or virtual space; enhancing their vision with special features of scaling, lighting, atmospheres, and not at least compensating urban environments evaluation be-fore a real model to be thought in a place; comparing typologies of architecture and learning tools fro the three different types of evaluating the same design project. Both art, science and craft architecture education and teaching needs 3D modeling as a creative tool as constructing the design, imaging boundaries, interpreting set-ups, but also enhancing vision of what architecture is in all the stages of the project, from the idea to a possible reality or virtual space, as needs will require. Architecture as education supposes learning information, history, models as primary images and typologies, imaginative skills and writing scenarios and atmospheres, - while evaluating cultural contexts, but also creative tools that permits continuous transformation of the conceived shapes and different types of perspectives of design.



Figures 36-17. Photo: Model on Experimental Structures – Student Architect Sorina Vlaiescu. Figure 18. Photo: Model on Urban meeting pavilion – Student Architect Andreea Nitu. Figure.19. Photo: Model on Cultural Observer Pavilion – Student Architect Catalin Caragea.<sup>6</sup>

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<sup>6</sup> Figures 16-19. Photo: M.Mihaila

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## **SCALES OF BELONGING: NOTES ON SUSTAINABILITY AND GEOGRAPHICAL CITIZENSHIP**

**Stefan C. Popa**

*PhD candidate, Architectural Association London (UK)  
stefan.popa@aaschool.ac.uk*

### **Abstract**

The Olympic Games pose a question of belonging to the nations that host the event. The specific international character force a quest for the features that define their identity. This presentation makes direct reference to an instance in the history of the Olympic Games that describes the condition of the Games as placed between the global character of the institutions that drive the mega-event, and the local interests informed by tradition of the organizations which implement it. The Winter Olympic Games in Lillehammer, catalogued as a big success in the lineage of this type of events, was the result of intense debates regarding the notion of sustainable development. This led to a fierce negotiation between the global networks of power that promoted the Green Agenda of the United Nations, and the local cultural affiliation to Nature cultivated within the local tradition. The result of this dialogue, materialized in the affirmation of a set of traditional features characteristic of the local culture, was manifested at a geographical level. It will be argued that the Olympic event favoured the rediscovery of a sense of belonging to land through an architecture inspired in the inherited values of this territory. The spatial relationship established between the inhabitant of this landscape and the environment will be interrogated in order to extract those traditional elements specific to what David Matless describes as 'geographical citizenship.'

Sustainability emerges as a concept informing the quest for a national architectural identity in Norway. Triggered by the initial global objectives of the green agenda, this process was refined by means of an architecture that unified these apparently opposing tendencies. The unquestionable influence of the Norwegian philosopher Christian Norberg-Schulz on the protagonists of the design process should reveal the link to Norwegian architectural tradition. Furthermore, the Green Agenda of the United Nations set the constraints imposed in the design process of the venues. Thus, the Olympic event in Norway will be read as a complex process, placed between two scales – the global and the local (and their corresponding categories of the International and the National) – resulting in various registers of intervention in the environment. In spite of the long-standing relation to land, architecture will be envisioned in this case as trapped within a conflict understood as the need to incorporate political objectives and technologies that contradict the logic of place inherited over many generations.

The diversity promoted by global organizations such as the United Nations (UN) and the International Olympic Committee (IOC), came in opposition to the singularity of the self-sufficient character of Norwegian architectural culture. Can it then be argued that the Norwegian designers hijacked the initial intention of the international organizations of promoting sustainability at a global scale, using the event as a channel to promote their cultural and architectural identity? This paper will try to demonstrate that the 1994 Winter Olympic Games were an opportunity to set forward a vision of national identity and highlight the relevance of the concept of self-sufficiency at a global scale; for the IOC, the local scale and character of the architectural interventions were a way to formalize and

propagate the issue of sustainability in the politically and economically loaded context of the Games, while for the United Nations it was an opportunity to materialize the debates around sustainability of that time through the Norwegian model.

**Keywords:** belonging, geographical citizenship, tradition, sustainability, national

## 1 INTRODUCTION

In the following paragraphs I shall try to reveal the way in which the global views on sustainable development acted as a catalyst in the rediscovery of the Norwegian architectural identity. In this sense, the case of Winter Olympic Games held in Lillehammer, North of Oslo, will be closely observed to seek an answer to the question regarding the ways in which the imposition of the international green agenda of the United Nations issued in 1987 contributed to the construction of a National identity brand in Norway. The definition given by David Matless of geographical citizenship will help us unpack the core of the Olympic event, extracting from it the mechanism that in this particular case generated a strong National response in the form of an Olympic event [1]. In this discussion sustainability will be displayed as the most powerful source of regional individuality.

In preparation since the early '70s with the 'Limits to Growth' (1972) [2] document, and emerging as a result of the increase in concerns regarding the environment, a 352 pages document issued in 1987 by the United Nations was introduced in Lillehammer, defining the parameters within which the mega-event was to be organized, designed and consumed. Norwegian politician Gro Harlem Brundtland represents the political link between the agenda and the local identity. Being in the same time leader of the United Nations' commission on environment and Prime Minister of Norway, she played a defining role in the institutionalization of the environmental consciousness in Norway. Thus, it can be argued that this process of discovery is closely linked not only to the particularities of the geographical area within its National borders, but also to the Inter-National awareness towards the environment conceived as a universal crisis.

However, sustainability is not envisaged in this piece of research as a merely political tool. The response given to the global set of forces acting on the event broke the concept of sustainable development in a multitude of aspects. As a result, the notion acquires multiple readings concerning historical, cultural and natural aspects. Furthermore, practices of sustainable development pose an increased degree of difficulty in a context such as the Olympic Games. Organizing the mega-event implies the mobilization of an important amount of resources for a short period of time to satisfy the needs of a great number of people. Under these conditions the cultural and economic balance of the host Nation is seriously challenged [3]. In consequence, the local Norwegian culture, deeply imbued with the relationship between the categories of human and natural [4, p.41], seized the opportunity to rediscover, update and project the determining historical, cultural and natural factors that inform it.

## 2 GEOGRAPHICAL CITIZENSHIP AS ARCHITECTURE

It seems that the Olympic event under analysis determined a sense of affiliation based on increased awareness towards the environment as a response to the international forces at play in the definition of the so called 'eco-crisis'.<sup>1</sup> Indeed, David Matless argues that from "various political and cultural positions, citizenship appears as a desirable state or goal, with key dimensions being environmental concern and geographical belonging" [1, p. 109-10]. Furthermore, Matless argues that "the human becomes an inextricably 'geographical self.' Regional survey is [...] considered in terms of the production of the self through spatial practices of observation and imagination, the mutuality of

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<sup>1</sup> The idea of 'eco-crisis' is here raised in order to advocate for the return to tradition, with the aim of extracting its values and incorporating them into a modern approach towards the built environment. [5, p. 22]



practices concepts, the production and linkage of different scales of belonging” [1, p. 91-2]. He connects architecture and the land it occupies through human subjective perception. In other words, our imagination and sense of belonging are overwhelmingly impacted by the various conditions of the place we dwell in. Thus, the culture, nature and history of a place influence irreversibly the act performed through human agency of designing the environment. The philosopher of this way of perceiving the Norwegian environment is Christian Norberg-Schulz and his ideas will guide us in the attempt to problematize ‘the forms of citizenship, subjectivity and spatial practice’ [1, p.92] constituting the Olympic design process.

A certain concept in the work of Romanian philosopher Lucian Blaga provides the ideal departure point in this endeavour. The poet understands architecture as the expression of the way people have inhabited a land. He proposes the notion of *space-matrices* as that system of elements rooted in tradition that allow every culture to establish an affective bond with the physical space it occupies [6, pp.163-4]. The particularity of the hilly sub-Carpathian region Blaga comments upon in his seminal work ‘The trilogy of culture,’ can be extrapolated through the universality implicit to the space-matrices theory at the scale of the whole planet, promoting a model of sustainability adapted to the specific climatic, geographical and cultural constraints. Blaga’s theory of space-matrices finds a regional counterpart in Norway. Here, the dweller and the land are closely linked by what Christian Norberg-Schulz identifies as the notion of self-sufficiency. In the Olympic context of integration of traditional values and absorption of modern ideas not as opposing trends, but as complementary notions, Christian Norberg-Schulz formulated the concept of *self-sufficiency* [4] as belonging to the Norwegian identity in 1997 in his introduction to the book on Sverre Fehn [7]. The term self-sufficiency seems to have been borrowed from the field of drama. Ibsen’s character Peer Gynt has been read as a critical image of supposedly Norwegian negative traits. Constituting Gynt’s psychological portrait, Ibsen places self-sufficiency among the defects of egoism and narrowness [7, p.23]. Norberg-Schulz associates this concept with the Norwegian expression “to be oneself as much as necessary”, uncovering an individualistic psychological feature [4, p.51]. The theorist exhibits a critical attitude towards the notion of self-sufficiency, visible in the tone of his words: “the most profound explanation [for Fehn’s failure to build his projects] is to be found in the Norwegian psychology: the individualistic, “self-sufficiency” that Ibsen stigmatized in his Peer Gynt” [4, pp. 40-1]. Looking at self-sufficiency as a trait of character might denote negative moods, but it could be argued that, when extrapolated to the relationship between human being and the environment, it becomes, on the contrary, a positive attitude [7, p.23]. It would imply a limitation on the amount of things that can be demanded from the environment. Norberg-Schulz links this idea to the architectural culture by acknowledging that the farmer was at the same time the architect of the essential objects that surrounded him [4, p. 41].<sup>2</sup> Such psychological characteristics, he argued, are linked to the traditional way of life, preserved on isolated farms where the farmers were also builders: “This kind of life naturally created a profound and selective relationship with the environment, [which encouraged Norberg-Schulz to affirm that] even today, the Norwegians are urban dwellers who are nevertheless incapable to relate to urban traditions. [...]” [4, p. 41]. The question of arrangement of human constructs and the occupation of land becomes thus central to the debate that proposes the idea of an almost national sense of sustainability emerging from an intimate relation to the environment.

### 3 THE QUESTION OF TECHNOLOGY

Before identifying the aspects of the event that emerged as critical to the rediscovery of the Norwegian affiliation to the category of Nature through certain forms of organization, let us have a closer look at the notion of anti-citizenship commented upon by D. Matless. Defined as the connection to a specific geography, the category of citizenship entails the existence of the opposing category of anti-citizenship. To him, the valley section designed by Patrick Geddes is the key to

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<sup>2</sup> The category behind the concept of self-sufficiency originates in the times when the farmer was living under extreme conditions in his isolated settlement.

understanding this duality of ecologies (Fig. 1). Here, the “region and the human are constituted through a psycho-social ecology, with a corresponding anti-social ecology of supposedly immoral occupations and practices” [1, p. 101]. The moral values associated with citizenship generate “moral judgements” [1, p. 109-10] that in their turn form the models for anti-citizenship. The ‘moral geography’ represented in this drawing determines Matless to argue that “citizenship again makes sense only in relation to an anti-citizenship located underground, low against the deities on high” [1, p. 101]. This formula reveals the hidden agenda of the Lillehammer Winter Olympic Games. It seems that the event was used as a catwalk for promoting the interests of the Oil-industry at a global level. The noble aspirations towards the rediscovery of the category of tradition within the Norwegian culture in the climate of a sustainable relationship to the environment at a regional level opposed the geo-political interests of an oil-driven economy. The ‘deities on high’ cannot be conceived without intuitively discovering the underground hidden structure of the ‘anti-social ecology’ represented in this case by the specific political and economic objectives of the exploitation of natural resources.

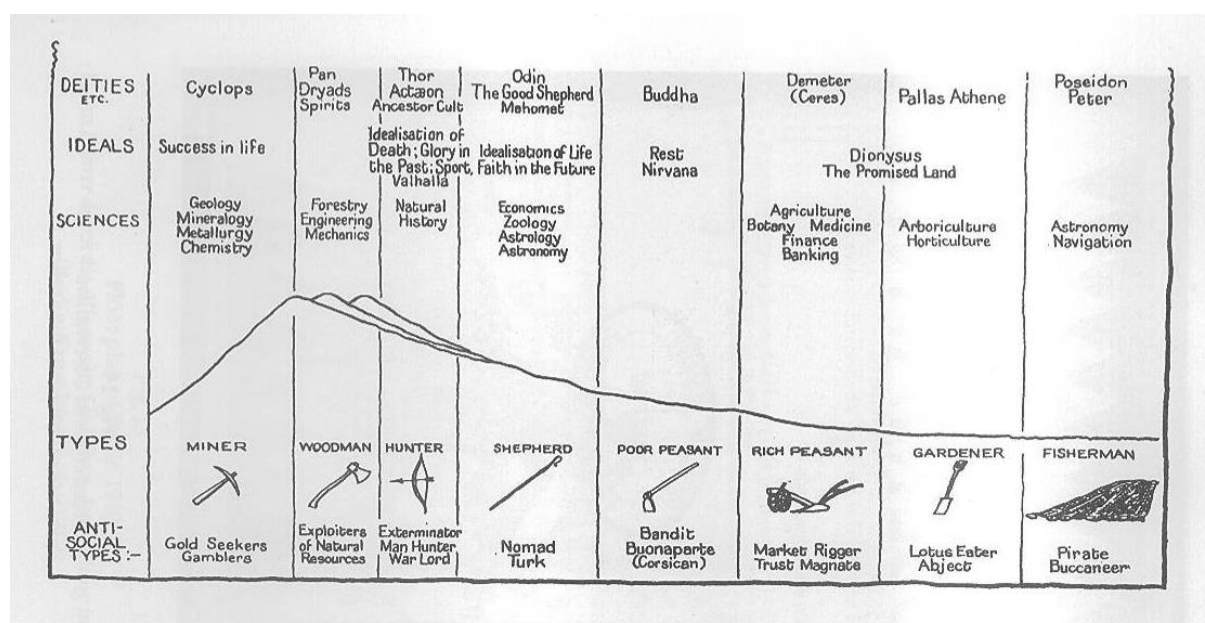


Figure 1. The valley section designed by Patrick Geddes. The line of the ground separates social from anti-social types. The existence of a moral ecology presupposes the emergence of an opposite ‘anti-social ecology.’ Source: Matless, D. (2000) ‘Forms of knowledge and forms of belonging: regional survey and geographical citizenship,’ in *The city after Patrick Geddes*, ed. Welter Volker, M. Lawson, J. Oxford: Lang, p. 309

At this point, the first element of National rediscovery of the affiliation to the category of the Natural in Norway emerges. The relation to the underground is incorporated in the guiding principles of the design process for this edition of the Games. Not only did the architects design projects over the line of the ground in constant negotiation with the environment such as the Hamar Olympic Arena and the Lysgårdsbakken ski-jump, but they also built extensive underground structures. According to the account from the ‘Byggekunst’ magazine issued in 1993 as a special edition on the Olympic event, the skating ring built at Røverdalen was “carved out” [9, p. 342] in the rock as the only possible solution to preserve the small-scale rural aspect of Gjøvik (Fig. 2). In ‘Notes on the Underground’ [10], Rosalind Williams puts side-by-side technology and the category of the natural. In analysing the fictive narratives around the idea of the “environment [...] deliberately manufactured by human beings”, [10, p. 5] she highlights the absence of any reference to Nature within underground spaces that are by definition artificial environments. She sees these spaces as inherently technological. The artificial ventilation and the invasive excavation process required to accommodate a skating ring in the flesh of the earth supposed a considerable effort and an intensive and experienced use of technology. Survival here is possible only by substitution of natural conditions by the means of technology. The arena at Gjøvik simply stands for another way of achieving a balance with the natural

environment in the form of sustainable development. The fact that the object is protected from the elements and virtually perfectly insulated makes it extremely easy to maintain in an efficient manner. The most important example of Norway's rock-tunnel tradition, the cavern hall is a very good model of energy conservation. We can see that the underground acquires in Norway ecological value instead of becoming the expression of an anti-social ecology. The organizers, the architects and the urban planners designing the environment for the Olympics have enacted the alternative model for sustainability in which technology plays a central role.

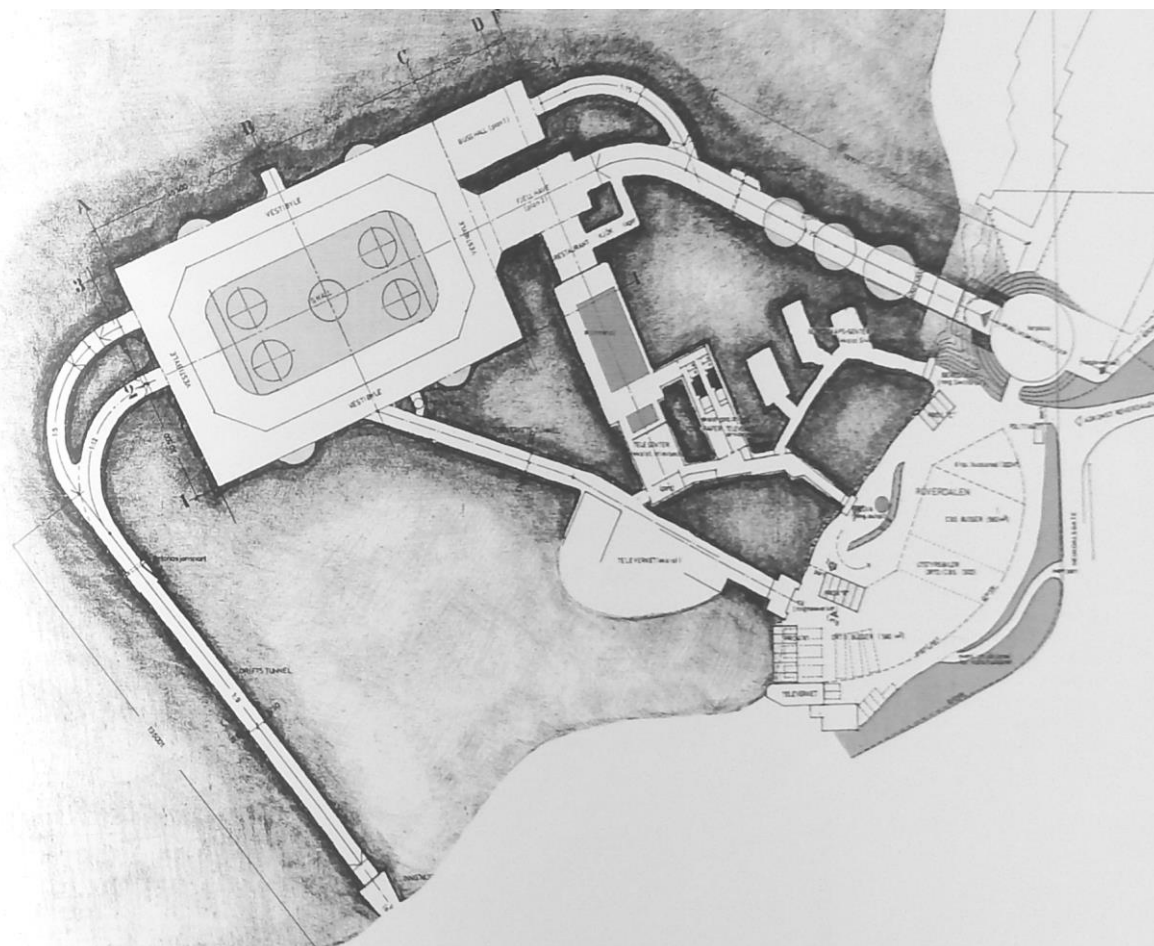


Figure 2. Underground ecology. The Ice Hockey Arena in Gjøvik occupies the core of the Røverdalen landscape. Technology was used to simulate the over-ground environment in the intent to reduce the visual impact that such a programme would imply on the landscape. Source: Moe, K. Levenson, As. (1993) 'Arena for Ishockey', *Byggekunst*, no. 5-6/1993, p.342-343

On the occasion of the 1994 Winter Games in Lillehammer, technology helped translate those features of belonging to a place into architecture, contributing incidentally to a strong response to the international formulation of the concept of sustainability. The Lysgårdsbakken ski-jump by ØKAW and the Hamar Olympic Arena by Niels Torp MNAL are two eloquent examples of the use of technology with the aim of highlighting traditional values and constitute the second type of relationship with the environment promoted in Norway on the occasion of the Winter Olympic Games. On the one hand, the ski jump in Lillehammer, makes reference to the relationship to the ground. A constructive mixed method was used to adapt the traditional structural system in Norway. The in-run cast in concrete is elevated from the ground using minimal structural elements made of iron. The ground is touched in a reduced amount of points. The detail of these supports recalls the image of a traditional barn once represented by Norwegian architect Magnus Poulsson [11]. The structure made of wood is elevated from the ground for constructive reasons in a climate where snow can reach considerable heights. In this way, the underside of the slab of the barn is kept dry. This technique was recycled using contemporary materials on the occasion of the Norwegian Olympics. Elevating the platform allowed for an intertwining of architecture and environment so

characteristic for the Norwegian tradition of belonging to a place. On the other hand the Hamar Olympic Arena is not an extruded oval as the rest of the similar programmes. Instead, it is the first building of this kind to make use of a roof that is curved in two perpendicular directions. The idea behind the project was to deform the line of the horizon (The same line of the horizon Le Corbusier was so fascinated by when he first approached the city of Buenos Aires in Argentina by sea). Instead of designing a highly visible venue, the design team for the Hamar Olympic Arena decided to embed the programme in the ground, making it as least invasive to the site as possible. The immense challenge implied the use of advanced computation techniques, a novelty at that time. The relationship between architecture and the horizon emerges as a powerful characteristic of local culture that was exploited by the National Olympic response enacted in 1994. We see that the architects that designed the venues for the Olympics did not simply reproduce the traditional way of building. They moved one step further by making use of technology, managing thus to update the strong building tradition in Norway. They succeeded in making out of it a strong tool to oppose the institutionalising tendency of the international forums such as the United Nations that promote an agenda in disregard of the relevance of the local tradition in the discussion on sustainable development.

Finally, British architect Norman Foster places the debate around sustainability and technology in the context of Winter sports. In the preface to Stefan Behling's 'Solar Power,' [12] he discusses the conditions of a sport very dear to him. Cross-country skiing is described as the most sustainable expression of winter sports as opposed to downhill skiing. He argues that the latter is not self-sufficient because it relies on an elaborate and invasive infrastructure of cable cars, high-altitude reservoirs and snow cannons. [12, p. 7-9] Instead, he highlights the fact that cross-country skiing exclusively requires the athlete's muscular power. In other words, displacement at the level of the ground is more sustainable than any transportation system that cuts the relationship of the skies with the ground. Interestingly enough, it is this relationship with the ground that informed to a great extent the character of the Winter Games in Lillehammer and conditioned the quest for a national identity in terms of a specific type of sustainable development rooted in the understanding of the category of the local.

#### 4 TRACES OF SUSTAINABILITY: BETWEEN EARTH AND SKY

We can start to understand the mechanisms that generated the strong local reaction to the imposition of the United Nation's Green Agenda. Interestingly, the notion of sustainable development proposed for debate by the international forums resonated with the local interpretation of the environment. A confrontation between folk individuality and global systems of governance took place in Lillehammer. The green Agenda of the United Nations was adapted to the local cultural and geographical conditions. On the other hand, the Norwegian tradition of affiliation to Nature was manifested at a global level, re-defining and propagating itself as the model for sustainability. It seems that in Norway the expression of the quest for a national identity through the idea of sustainability was conducted mostly in the field of architecture. The relationship with the sky, the horizon and the ground are paramount for this architecture. One photograph by American photographer Jim Bengston offers the ideal entry in this discussion (Fig. 3). By means of a series of clues, the essence of the Olympic event is transmitted to the observer. Three elements can be distinguished on the white background of the snow: the athlete in mid-flight, the shadow he projects on the landing slope of the ski-jump, and the logo represented on the snow using spruce. The image stands as a compelling metaphor of the event providing the clues towards the discovery of the third posture towards the environment rediscovered in Norway namely the relationship with the sky.

Referring to the study of a region through survey and drawing in the work of Patrick Geddes, the elements that David Matless identifies as critical to the depiction of the 'drama' inherent to the particular region coincide with the elements disclosed by a researcher in the process of the

circumscription of the study object. The “range of visual and textual media” [1, p. 95] among which Matless highlights photographs, books, postcards, lantern slides and regional relief models, provide the system of clues required to establish a coherent, valid, scientific depiction of the cultural landscape under observation [1, p. 104], and correspond to Ginzburg’s definition of the hint-based historical method [13, p. 99-102].<sup>3</sup> Similarly, the relationship with the sky interpreted in this photograph, inherent in the idea of flight, is manifested in Norwegian folk architecture. As Christian Norberg-Schulz detects at Kultan in Amotsdal, builder Jorand Ronjom composed the horizontal barns in an ascending curve [5, p. 36].<sup>4</sup> Norberg-Schulz also identifies two methods in which wood is used in construction in Norway [14]. On the one hand, the horizontal barns constitute the so-called ‘caves of wood’ used for domestic programmes. On the other hand, wood is employed vertically. This second technique serves as a structure for the public and religious programmes, making the vertical thrive evident. Interestingly, the designers from ØKAW decided not to express the element in height, achieving thus a literal translation of the idea of flight. Instead, they designed the structure as close as possible to the ground, allowing the jumping athlete to reproduce the act of flight itself through his masterful dominion of the National sport in Norway, ski-jumping. It is the ski jumping platform, an absent protagonist in the above-mentioned photograph, which becomes the emblematic venue of the 1994 edition of the Winter Olympic Games. Alongside the Hamar Olympic Arena, the ski-jump reinterprets the relationship of the built structure to the environment. We see in both cases a drive to go beyond what was commonly admitted as a model for similar programmes. The status quo was reinvented to suit the requirements of sustainability regarded not as a set of general principles universally applicable, but as a sum of conditions specific to the place.

But this principle was not applied exclusively on the architectural scale. It also intervened in the configuration of the event at a territorial scale. In the words of D. Matless, “Geddes developed the regional scale, and the ‘regional outlook’, precisely as a means to combine ‘rustic and urban thought’” [1, p. 92]. In the Lillehammer Olympics, the first idea envisaging a compact Olympics was introduced by Norwegian architect Håkon Mjelva in 1989 when he submitted his proposal called ‘Svaner can Fly’ (translation: swans can fly). A scheme for a compact Olympics took shape shortly after,<sup>5</sup> in the hope of achieving a sustainable event by means of an intensive use of a small part of the territory adjacent to the city of Lillehammer. Following criticism, the scheme was soon to be abandoned. On the 1<sup>st</sup> of April 1991 the employees of the Lillehammer Olympic Organization Committee (LOOC) submitted a poster to the president of the institution, in which the most compact scheme for the layout was proposed: a ludicrous mall-like structure mixed all disciplines in a pyramidal structure. The final territorial layout proposed the spreading of the venues over 100km along the Mjosa Lake, placing them in rural locations following the logic of integration with the existing social, rural and economic structures. Awareness about the relevance of the territorial scale on issues of sustainability was thus raised. The manifestation of the political tensions triggered by the opposing relationship between intimate subjectivity and collective forms of organization were translated in the case of the Lillehammer Olympic Games in a set of options concerning the general layout of the Olympic setting.

In this unprecedented situation, the need for a tool of control emerged. Norwegian graphic artist Petter T. Moshus was assigned the task to produce a document with the role of guiding the design of the event. When the ‘1994 Lillehammer Olympics Design Handbook’ [15] came out of print it was sent to all the institutions and agents involved in the organization of the Games. The design handbook achieved its purpose of unifying a vastly spread Olympics through a carefully designed

<sup>3</sup>Freud recognizes the influence of Morelli on his conception of psychoanalysis: “But what could a reading of Morelli’s essays have meant to the young Freud, still far from psychoanalysis? Freud himself tells us: it was the idea of a method of interpretation based on discarded information, on marginal data, considered in some way significant. By this method details usually considered of little importance, even trivial or ‘minor,’ provided the key for approaching higher aspects of the human spirit.” [14, p.101]

<sup>4</sup> “In the ‘loft’ at Kultan in Amotsdal (c.1790), builder Jarand Ronjom employed timbers laid horizontally to create a secure ‘cave of wood’, while he united the timber ends to form a springy, rising curve. The result is a building that both rests and ascends, thus embodying the Norwegian relation of earth and sky. Here, forms speak the language of land.” [5, p.36]

<sup>5</sup> ØKAW, the 15th of February 1990

signage system. The theme of this document emerged somehow unexpectedly, through the iconographic exploitation of a part of the cultural heritage in Norway. The cave paintings discovered in Alta Fjord in 1967 make reference to a time when sustainability was not an issue and where humans inhabited the land making use of very few technological means. Based on this, a historic rediscovery is achieved. Through this document the question of a sustainable relation to the environment not only projects itself out into the physical space through iconographic representation, but it also transgresses the space of history, placing the contemporary debates around the notion of sustainable development embodied in Agenda 21 in the universal cycle of human material exchange with the geographical context.



Figure 3. 'Between earth and sky.' The sports pictogram on the slope of the Ski jump as background for the act of ski-jumping; the orientation of the athlete's shadow in contrast with the footprint of the pictogram, sensibly captured by the photographer, speaks of the act of flying as defiant towards established norms. Source: Elton, L. and Moshus, P. *Norwegian Olympic Design*. Norsk Form and Messel Forlag, Oslo, 1995. 42. Credits: Jim Bengston on behalf of LOOC, Lillehammer, Norway.

## 5 DRAWING A RELATIONSHIP TO THE ENVIRONMENT

Thus, the *Design Handbook* can be read both as a criticism of *Agenda 21* and as a tool for adjusting the general principles outlined in the international document on sustainability to the local needs. Whichever its character, the document represents the outcome of local reaction to the UN Agenda on sustainability. The prescriptions embedded in the enhanced graphic documentation trace the guidelines for an architectural response from the part of the main local actors involved in the process of design of the venues. A lineage can be traced from the early days when Modernism first accessed the geographical boundaries of the Norwegian state up to the days when the Olympic setting was configured. The main actors of the Lillehammer Winter Olympic Games were not the athletes taking part in the competition, but the minds that established the parameters within which the global message of sustainable development imposed by the United Nations was adapted to the local conditions and projected out again. This process of translation was conducted by a number of architects representing three consecutive generations.



Turning again to the writings of Norwegian Philosopher Christian Norberg-Schulz, we see two directions in which the modern movement was manifested in Norway [4, p.37-40]. On the one hand the movement was represented by Arne Krosmo who was a supporter of an architecture of pure forms that fell square on the landscape. More than anything, his houses are objects from which the landscape can be observed. In his project for the Vila Dammann (1932) the play of forms with light and shadows is the strenuous protagonist. On the other hand, Knut Knutsen was less interested in architecture as a device to capture the landscape, instead he was seduced by the idea of an architecture that 'becomes' landscape. We see the forms of his summer residence in Portør (1949) half buried and almost invisible in the landscape. As an interpretation of this tradition, it can be argued that the work of Sverre Fehn is a fusion of these two ways of looking at architecture. His early drawings in Morocco show his fascination for the way architecture emerges out of the local material conditions. Writing about the Moroccan dwelling, he admires the way these are integrated in the landscape and organically distributed upon the land [16, p. 242-3]. His vision for the Viking museum, the sketches of which clearly show the sun and the land, is a building that sits on the ground and sets towards the heights simultaneously. We can observe here the two building techniques, 'stag' and 'laft' identified by Christian Norberg-Schulz as characteristic of Norwegian traditional wooden architecture [14]. The final generation in this tradition projected this architectural vision onto the Lillehammer Winter Olympic Games. Interestingly enough, Tom Wike, the architect responsible for the Lysgårdsbakken ski jump project from ØKAW, was trained under Christian Norberg-Schulz at the Oslo School of Architecture and worked for a while with Sverre Fehn. In this way, the lineage stemming from Knut Knutsen and Arne Korsmo was continued up to the architects designing the Olympic structures. The early drawings for the ski-jump show an unconcealed interest in the way the architectural object would relate to the ground. The broken, hesitant line of the sketches that Niels Torp produces, even now, 20 years after the construction of the Hamar Olympic Arena, speaks about a conscious and responsible intervention in the landscape (Fig. 4).

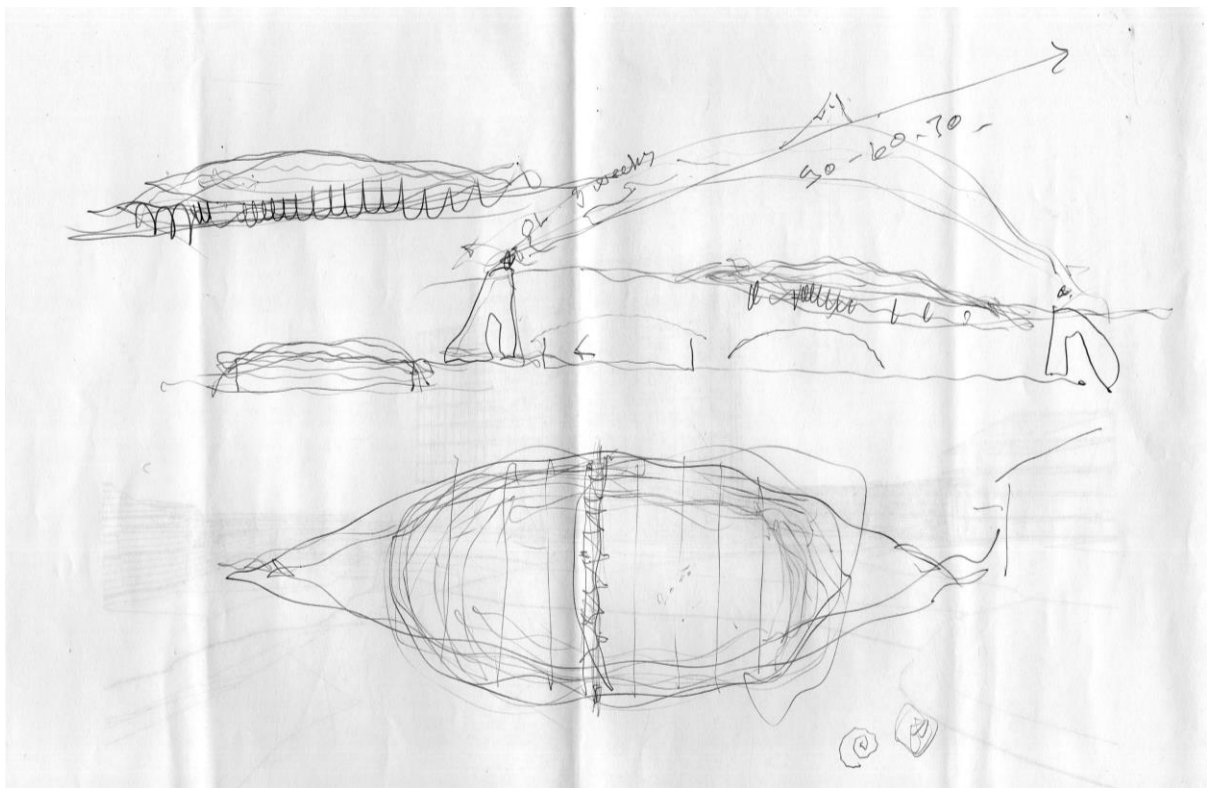


Figure 4. The Hamar Olympic Arena. The undulating line of the sketch reveals the attention given to the environment, as if the presence of the architectural object could be reduced, almost camouflaged within the land. Source: courtesy of Niels Torp.



## 6 CONCLUSIONS

We see the design handbook playing the essential role in the affirmation of the local architectural identity as well as in the consolidation of an identity linked to the problems of sustainability. The Lillehammer Winter Olympic Games (LWOG) represented the event during which the international aspirations towards sustainability met the National drive for cultural reaffirmation. The values of history as well as the components of tradition manifested on the territory of the Norwegian state merged together to counteract what could have been an overwhelming authority embodied by the international organizations. Nonetheless, the debates around the category of the local associated with sustainability took place within a problematic context. The Olympic events are known for the strong impact on the environment as well as on the economy and culture of the hosting country. Local and global are superimposed, national and international merge to result in a dual image of belonging. Matless argues that “scales of local and global relate not only through orientation from a local centre but also through the observation of the whole in the part. [...] [Thus] local belonging can be at the same time a global citizenship. The specific form of new local knowledge denoted by surveys enables a translation between sites and scales.” [1, p. 106]. He identifies the survey as the vehicle of transmigration through the various political scales. The same observation seems to become valid in the context of the reflexive relationship between the local folk culture and the unifying values of international organizations in the context of the Olympic Games. In Norway, the channels opened up by the event were efficiently exploited by a generation of architects and artists that connected to the cultural values of the geographical area they intervened on. Aided by the international context, they succeeded in projecting out the features of self-sufficiency at the same time discovering the sense of belonging that Matless associates with the concept of geographical citizenship. Aware of the specificity of the place that became the environment for their work, they identified those elements that constitute the *space-matrices* of this territory. The relation with the sky, the horizon and the ground became a driving principle in their architecture. However, the anti-social ecology of the event taking the form of the lobby by international Oil-companies contradicts this tendency.

The phrase coined for the first time by Gennaro Postiglione, ‘Between earth and sky’ [4, p. 53] acquires, in the light of what was shown, the title value of what the Olympics in Lillehammer stood for. Between earth and sky there is the human element. It transforms the environment to an extent that nothing can be truly classified as purely natural. The environment changes constantly and so do the challenges that appear in the path of ensuring the continuity of life. The natural cycle in the form of a primordial continuum as described by Błaga, intuited by Christian Norberg-Schulz and politicised by D. Matless in the phrase “local citizenship”, evolves by continuous transformation and will continue to do so as long as technology interferes in the process. In fact technology, as understood in the writings of Rosalind Williams, emerges as a parallel universe, a viable alternative to the original natural one that can lead to a new balance able to sustain life under and on earth. The reality of sustainability seems to have become the reality of change. The nostalgia for an outdated phenomenological approach to architecture can only come in the way of dealing with a situation that no longer responds to the logic of the natural but is more an invention that produces the opportunity for change and the need for option at all instances. Lillehammer has shown that a viable relation to the specific geographical conditions can only be obtained if technology is given a leading role in what becomes a constant process of reinvention of tradition. Unfortunately, tradition comes last under the pressures of an increased demand for comfort and is often forgotten in the intense quest for efficiency, so characteristic of the globalization process. As a result, the notion of local citizenship has lost its relevance. This study aims to signal the importance of re-evaluating a local response to these globalizing forces.

In Geddes’ diagrams technology is seen as a necessary intervention aimed at domesticating the environment. As many of the projects designed for the Olympics in Lillehammer in the last decade of the 20<sup>th</sup> Century, the category of the rustic is not contradictory to the category of progress. These projects affirm the compatibility of these notions. As Marina Lathouri puts it when she comments on

the region-city in the post-war years, progress incorporated a certain sense of belonging to the original values embedded within the specific regional conditions [17, p. 163]. This sense of affiliation erupts in Norway in the form of architecture. Lillehammer showed that sustainable architecture can only be achieved when the local identity becomes a precondition of territorial organization, the universal passport of geographical citizenship. The role of the green Agenda of the United Nations as an identity activator becomes self-evident. Projected onto other national and geographical contexts, this document can initiate a debate that would ultimately lead to the re-discovery of the space-matrices characterizing a culture, arguing for the acceptance of multiplicity instead of unity at a cultural rather than at a political level.

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## **TAME AND RECLAIM: DOMESTIC PERFORMANCES AS A MODEL FOR APPROPRIATION OF THE PUBLIC SPACE**

**Silvia Colmenares**

*Associate Professor, PhD. MArch, Escuela Técnica Superior de Arquitectura de Madrid ETSAM.  
Universidad Politécnica de Madrid UPM (SPAIN)  
silvia.colmenares@upm.es*

### **Abstract**

There is probably no better image of a threshold than a door. It always defines a limit, between inside and outside, between private or public, between a certain 'here' and a certain 'there'. As an image of filter, it can either conceal or connect both sides, which are then understood in terms of opposition or complementariness depending on its closure or openness. It is the very image of dialectical duality.

When applied to the physical idea of the house, the public-private dichotomy worked as a simplification of reality for a long time, but since the mid-19<sup>th</sup> Century this twofold vision started to stumble. Some point that it was photography which turned all upside down, because it enabled "the irruption of the private into the public, or rather, the creation of a new social value, which is the publicity of the private" (Barthes, 1980). Since then, the blurring of the difference between these two categories has done nothing but grow, and the idea that "intimacy has no objective tangible place in the world" (Arendt, 1958) is now an accepted statement reinforced by the increasing use of information technologies. But, coming back to the physical kingdom, how can a public space be intimate? What are the mechanisms through which public space is reclaimed? Can privacy be programmed and displayed?

These seem to be the kind of questions that inform the communal practices that are taking place at many abandoned plots, empty piazzas and traffic-crowded streets of some western cities. There is an activist attitude that claims the temporary appropriation of these spaces as a way of pointing out the failure of the institutional management of the public space. And this appropriation is executed through the performance of domestic scenes: pop-up living rooms, communal gardening, breakfast rendezvous, knitters gathering... De-contextualized from their natural environments, these actions acquire an aura of radicalness, making the possibility of other uses of the public space visible. But what is certainly striking about them, is that they simply reproduce the old scheme of private-public duality, although enhancing the primacy of the first one into the second.

The aim of this paper is to analyze the current tendency that reclaims what is public by showing its capacity to be used as private. We refer here to "private" not as the restriction of access but as the achievement of an individual experience of comfort or freedom. To test this hypothesis, we will confront two types of material: on the one hand, a collection of historical definitions of public space coming from philosophy, literature, art and architecture; on the other, a collection of images, either produced as artistic work, advertising or as a register of everyday life, that will evidence the thinness of the line that divides the public from the private. As a result, it will be made an evaluation of the impact that this attempt to 'tame' the public space has on the codification of communal behaviour, arising much more as micro-politics of the body than political or participatory judgement.

Ultimately, the radicalness of this tendency will be questioned, suggesting the urgency of an inquiry into other ways of reclaiming the public space that should go beyond a certain fellowship in the open. If it is true that "Modern urban space, as opposed to traditional 'place', cannot be understood in experiential terms" (Colomina, 1994) it is not less evident that the current ecology of the urban space

has taken the form of a shapeless archipelago of perishable domestic spots mainly, and simply, directed to increase local street life, where the economic raisons underlying the transactions promoted by this apparently bottom-up strategy of revitalization should not be underestimated.

**Keywords:** domesticity, public space, activism, urban ecology

## 1 DOOR AS FILTER

The first image that comes into mind when addressing the idea of a threshold is that of a door. Not by chance, in any conversation about the limits of the private and the public realm, there is an implicit door, a point or line beyond of which another thing starts. As a mechanism of control, no matter if it is a real object or just an access code, it always has the capacity to define a difference, between inside and outside, between a certain 'here' and a certain 'there'. As an image of filter, it can either conceal or connect both sides, which are then understood in terms of opposition or complementariness depending on its closure or openness. It is the very image of dialectical duality.

This kind of 'in-betweenness' has regulated the traditional understanding of the public-private relation that architecture continuously articulates in our everyday lives. Households have been sitting at the thresholds for ages, enhancing, by that simple act, the interior of their homes into the street. The doorstep is a classical scenario for private chatters and children games, but also for collective gathering around a common task (Fig. 1).



Figure 1. People at the threshold, illustrating the traditional notion of public/private dichotomy.

The role played by the concept of the house, understood as a privacy bulwark, has experimented many alterations through time. The traditional identification between the private domain and security is made evident in the law itself, which establishes the inviolability of the home. One cannot cross the door of 'the other' without permission. The interior of the house, and most of all, the personal belongings it contains, are something to be protected. Private property has therefore a specific place. And in this scheme, public space is defined in oppositional terms: it is what is left outside.

Although this approach is still in force today, it is also possible to recognize during the 20<sup>th</sup> Century many attempts to articulate critical inversions of the public-private spheres, coming specially from the artistic field hand by hand with mass-media.

## 2 SHIFTING SIDES

It was Walter Benjamin who established photography as the turning point from oral to visual communication. Images not merely represent reality, but produce new meanings, "because the true face of this kind of photographic creativity is the advertisement or association, its logical counterpart is the act of unmasking or construction" [1, p. 526]. And this statement was later reinforced by Roland Barthes who attributes to photography a key role in the "the irruption of the private into the

public” because it enabled “the creation of a new social value, which is the publicity of the private” [2, p. 98]. Not by chance, the great development of the visual arts that took place after the post-war period became a fertile ground for the exploration of what *public-ness* and *private-ness* had to tell each other within the new socio-political frame.

If we look for example the work of Dan Graham in the late '70s, we can see how the increasing visibility of the interior of the house is addressed through two main works. In *Alteration to a Suburban House* (Fig. 2) the entire facade of a typical suburban house has been removed and replaced by a full sheet of transparent glass. Parallel to it, a mirror wall divides the house in two, so half of the interior is revealed to the street while the outside environment is reflected in the inside. The spatial definition of the house transforms it into an artefact, similar to a camera, which enables the overlapping of these two simultaneous realities. Above the critical representation of the Calvinist notion of privacy, the building is turned into a showcase of domesticity that can be identified as a precedent for the Big Brother TV shows that would flourish in the upcoming years. As he puts it: “An architectural code both reflects and directs the social order. In the not too distant future one can envisage that this code will be modified and in part supplanted by a new code, that of television” [3, p. 120].

This is exactly the kind of inversion he explores in *Video projection outside home*, (Fig. 3), where a huge television set is placed right outside a suburban house, broadcasting the same channels the inhabitants are watching inside. The fact that the family's choices are made public challenges their real freedom to behave, and at the same time interrogates the very notion of privacy in the form of a reversed security camera. This time, the relation between the passers-by and the inhabitants is mediated by a purely technical device, which does not affect the physical configuration of the house. The value of these two projects relies on its constructed meaning, because none of them really shows a private space, but the public representation of conventional domesticity.



Figure 2. Dan Graham. *Alteration to a Suburban House*, 1971. Picture of the model.



Figure 3. Dan Graham. *Video projection outside home*, 1978. Picture of the model (1978/96)

### 3 OBJECTS THAT CROSS THE LINE

The American lifestyle promoted by the capitalistic development was at the core of the kind of suburban residential fabric that characterized the approach both to private property and communal facilities at the so called ‘welfare state’. Amid this context, objects proliferated at the interior of the average home where everything was subject to commodification and the ephemeral was pleasantly consumed.

The image of the Margulies’ home, which appeared in Life Magazine in 1952 under the title *Houseful of Plastics* (Fig. 4), has already been pointed out as a reference of Graham’s work [4]. But what calls our attention here is not so much the presence of the panoramic window as a screen where intimacy is displayed that became a typical feature of the modern American suburban house, but the way in which objects have been arranged at the exterior of the house. As the caption says “they are ready to move from the kitchen and bathroom to every room in the house”. Even to the front yard, we will



add. Objects have taken the floor to represent the family, they have step out of the interior and they build the set for the staging of domestic life. The house is there only as background.



Figure 4. "Houseful of plastics", Life Magazine, 8 September 1952, p.104-5.



Figure 6. Peter Menzel, The Ukita Family, from coverage of revisit to Material World Project family in Japan (2001).



Figure 5. Peter Menzel, Russian Family Portrait included in Material World: A Global Family Portrait (1994).

In 1994, the photojournalist Peter Menzel carried out a very similar operation. He took portraits of 30 statistically average families around the globe with all of their worldly possessions displayed outside their homes. The work was published under the title *Material World: A Global Family Portrait*, a seminal book that became a germ for further projects exploring human behaviour and an example of the power of photography to turn facts into evidence (Fig. 5 and Fig. 6).

The fact that he portrayed only 'families' characterizes the collection of images as an index of a still very traditional approach to society structure, but on the other hand gives a great unity to the results obtained. Of course, the amount of furniture and objects used by people for their subsistence reflected the non egalitarian geographical distribution of wealth, but these photographs can also be read as domestic outdoor performances.

#### 4 PRIVACY IS NO LONGER 'A PLACE'

It could be stated that the postmodern vision of interlocking contradictory categories has affected the public/private dichotomy, perhaps more than any other. With the loss of faith in the collective that came by the hand of the end of WWII, the individual became more and more ubiquitous while at the same time more homogeneous in the new globalized context.

As Hannah Arendt explains, "privacy was defined as the opposite, not of the political sphere, but of the social", because "society excludes the possibility of *action*", expecting instead "from each of its members a certain kind of *behaviour*" [5, p. 40]. However, there is a great difficulty in the definition of intimacy, because "it has no objective tangible place in the world, nor can the society against which it protests and asserts itself be localized with the same certainty as the public space" [5, p. 39].



According to this, intimacy would not depend on the specific conditions of a certain place (house/home) but on the relations established between people, no matter where they are. A phenomenon that has been described as the “extroversion of the intimate” [6, p.22] and leads to a situation of indifference between the public and the private, a kind of generalized “total intimate sphere” [7, p.32]. The problem is that being total it cannot be intimate in a traditional sense, but, being also strongly personalized, it can neither be public.

In addition, the blurring of the identification of the private with the house interior runs parallel to the increasing development of information technologies. Today, there is not such a thing that can be defined as private in its own right, because it depends on the condition that the individual gives to it. It is more a question of attitude towards information and how we share it with others than a matter of facts. Therefore domestic attitudes can happen everywhere. They no longer need any physical filter to be defined as intimate.

## 5 THE PUBLIC SPACE AS SCENARIO

On the other hand, the identification between *public space* and *city*, combines a double metaphor. We can refer to the public realm, – which is a conceptual construct dependent on the social, political and economical conditions at each moment –, by naming the physical body of the city. But we can also refer to the specific configuration of the spaces where people gather as a representation of the relations established between these people and the socio-economic forces they have to deal with. It is a binary structure that links the conceptual and the real in a two way vector.

The city is the medium of social conflicts, there where the individual confronts his/her own interests with those of the State. The term has been extensively examined under several perspectives. For Habermas [8] modern public space emerged as a field devoted to civil society, distinct from both the household and from the public power. As such it unfolded as a space of freedom. On the contrary, for Foucault [9], it is surveillance what characterizes the public space, where control is permanently exerted. In spite of their different insights, there seems to be a shared concern about the fact that, whatever ‘public space’ might mean, it experienced an unprecedented transformation during the twentieth Century. Today, it still remains clear that any public discussion requires a space and time where it unfolds, but more often than not this space tends to be virtual and feed from the private sphere.

The city has also been frequently described as a scene of encounter between strangers who have their lives intertwined in varying degrees. The idea that men and women behave at the public space like theatre actors performing a play can be traced back to Rousseau. As Richard Sennett explains, he wrote a treatise about how living conditions in Paris in the mid 18<sup>th</sup> Century drove people to behave like actors in order to be sociable to each other in the city, his work being the first to theorise the “discontinuities of the urban experience” [10, p.147]. Paradoxically, this idea of the public space as a scenario for the representation of public life hierarchies can be reread in more contemporary terms by looking at the play as an experience itself.

Instead of performing a pre-written script, the actors get conscious of their improvisation capacity and this awareness has empowered them towards an active attitude that claims the temporary appropriation of public spaces as a way of pointing out the failure of their institutional management. This kind of citizen involvement in the collective construction of public meaning, that flourished for the first time during the sixties as ‘action urbanism’ received several names through the following decades: ‘tactical urbanism’, ‘guerrilla urbanism’, ‘pop-up urbanism’, ‘hand-made urbanism’ or even ‘ecological urbanism’... Through the whole system of locally produced opportunities of engagement, a tendency to execute this appropriation by the performance of domestic scenes can be identified.

So in the shift from the *representational* to the *experiential*, the *domestic* is playing a key role.

## 6 DOMESTICITY AS AN INSTRUMENT

In May 1996 a group of artists around Friedemann Derschmidt began to breakfast in public places. They established very simple rules for what started almost as a game with a pyramidal implication of

people. Every person invited needed to organize in turn another open-air breakfast for at least four other people. The movement that started in Austria was baptized as 'Permanent Breakfast' and has become a viral urban experiment with replicas all around the globe (Fig. 7).

In November 2005 an art and design studio called 'Rebar', converted a single metered parking space into a temporary public park in downtown San Francisco, for a time lapse of two hours. This first micro-action called into attention the way in which public space is rented to private car-users and found out a legal loophole that allowed everyone to transform some 12 sq m into a pop-up resting area (Fig. 8). With the help of the internet and social networks this initiative transformed into a global event labelled as 'PARK(ing) Day', that has already been organized in more than 160 cities across the six continents.

This is also the case for many other trends that have succeeded to gather strangers around an activity that is usually developed at home, or at least with some complicity, to perform it at a public space. Even the World Wide Knitting Day that started in 2005 as a way to simply avoid being alone when practicing such a solitaire activity, has soon been invested with a renewed social meaning.



Figure 7. *Permanent Breakfast*. The ongoing breakfast in public places.



Figure 8. Rebar's original *PARK(ing) Day* Project at San Francisco in 2005.

Other practices, as 'chair bombing' build up authentic urban living rooms, showing that the experience of domesticity can be programmed, produced and reproduced as a tool for the conquest of public space. Seen as a global phenomenon, all these tactics seem to be directed to 'tame' the public space as an affordable way to reclaim it.

Although they might temporarily activate certain vacant lots or undeveloped areas, the way in which these actions are registered and spread through media, they mainly aim to mobilize people awareness of the general loss of public space value. But there is also a need to evaluate the real impact that this attempt to 'tame' the public space has on the codification of communal behaviour, sometimes arising much more as micro-politics of the body than political or participatory judgement, where the paradigm of accessibility has been replaced by that of visibility.

## 7 CONCLUSIONS

We have seen how, apparently, the public/private threshold has almost totally vanished. We assist at a legion of case studies where the different strategies at stake fall into what has been called *placemaking* (Fig. 9). More and more, these attempts to vitalize the city rely on the achievement of an individual experience of comfort or freedom to produce the illusion of a collective project. Of course there is nothing wrong about helping communities to canalize their hopes and needs, but it is worth to stand still for a moment and look at this 'activation fever' from the distance.

The current ecology of the urban space has taken the form of a shapeless archipelago of perishable domestic spots mainly, and simply, directed to increase local street life, where the economic raisons

underlying the transactions promoted by this apparently bottom-up strategy of revitalization should not be underestimated.

The public realm stands on three legs: the political, the social and the economic. Although apparently taking care of its social dimension, and even calling upon a certain political involvement, these small local projects unfortunately cannot prevent themselves from being instrumentalized by the forces of the market. We know that “the very private experience of having a personal identity (...) has become a subversive political force of major proportions” [11, p. XXVIII] but this identity is unavoidably mediated by objects, and therefore subordinated to trade.

In 2014, the powerful giant of domestic furniture IKEA included a reference to the PARK(ing) Day trend without naming it in its spring brochure. The colourful objects that a smiling multiracial group of friends had brought together prepared the stage of a pleasant outdoor encounter at page nº30 (Fig. 10). Objects were again at the forefront. The city/house had stepped backwards, acting once more as a mere backdrop for the commodified ‘atrezzo’ of a domestic life in public.



Figure 9. ‘Placemaking’ at Bedford Avenue. DoTank Brooklyn.



Figure 10. Image of the IKEA 2014 brochure.

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# **IN BETWEEN SCALES**

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# projects, methods, results



Most researches whether would be in architecture or in interdisciplinary field are usually guided by these steps- introduction, methods, results and conclusions. What are the specific methods for architecture projects in design, urbanism, restoration, rehabilitation or for interdisciplinary projects? Today architecture collaborates with fields increasingly various, from social-humanities- sociology, psychology, philosophy, communication to realistic fields- engineering, medicine, IT, mathematics etc.

This section is dedicated to the researches into the field of architecture and urbanism with all specialities- restoration, rehabilitation, design, landscaping but also to the niche areas, interdisciplinary with architecture.









## THE SYSTEM OF WATER MILLS ALONG ZAYA (LOWER AUSTRIA) AS AN ELEMENT OF MEDIEVAL SETTLEMENT

Mirela I. Weber-Andreşcov

*Ark of Motis (ROMANIA-AUSTRIA)*  
mirelaweber@gmail.com

### Abstract

Forty six medieval water mills existed along a small river in North-Eastern quarter of Lower Austria. Documentary evidence for the mills begins with the 13<sup>th</sup> century; until 1848 - all of them as property of the grand landlords, located in the vicinity of castles or fortified churches, usually at the margin of a village. The morphology of these settlements, together with the documentary evidence in every village of a motte (Hausberg), later developed as a foundation for castles, fortified palaces or churches, allow the hypothesis of an early system of administration of this territory, corresponding to the German eastward colonization. In this way the watermills can serve as “built documents” of the Bavarians territorial political system beginning with the Ottonic era and reflecting the medieval feudal system of privileges, defense obligations and administration in the fascinating process towards the foundation of the modern state. Based on the settlement morphologies, cartographic and cadastral surveys, and on archival and bibliographic research, this contribution proposes a hypothesis and draws attention to the importance of this pre-industrial heritage in a territorial perspective.

**Keywords:** watermills, landscape morphology, medieval history, military cartography, Lower Austria

## 1 INTRODUCTION

### 1.1 Zaya River and its valley- an overview

Situated in the north-eastern district of the Lower Austrian territory (Weinviertel), close to the Austrian – Moravian border along the Thaya river (Fig. 1), the Zaya is a today regulated small river (58 km long with a total fall of 230 m), originating south of the village of Klement in the Leiser Mountain and flowing into the March near Drösing.<sup>1</sup> A total of 46 watermills along the Zaya can be found plotted in the imperial military maps of the 18<sup>th</sup> and 19<sup>th</sup> centuries. At that time, the river meandered, surrounded by vast wetlands. In the early 20<sup>th</sup> century, the river was changed into a drainage ditch, allowing water to drain away as quickly as possible. Protecting the settlements and enabling more intensive agriculture, the regulation reduced in addition the biodiversity and reshaped the traditional landscape. Subsequently, all watermills identified in this inventory ceased working. Just one industrial mill is operating today on the site of an old mill recorded in a document of 1397. While in a few cases the water mills were abandoned or totally destroyed, most of them survived, at least as parts of their building ensembles, today transformed into dwellings. Though the watermills form one of the most important regional landmarks, they are insufficiently documented until now.<sup>2</sup>

<sup>1</sup> All section of historical cadastral plans or Austrian Military Map were obtained from the BEV – Bundesamt für Eich- und Vermessungswesen, Vienna Archive, and the Austrian National Archive – Österreichisches Staatsarchiv

<sup>2</sup> The study started as inventory of the watermills in the summer semester 2013, commissioned by the Association of the Austrian Friends of Watermills, in collaboration with the Vienna University of Technology - Institute of History of Art, Building Archaeology and Restoration (Department Denkmalpflege und Bauen im Bestand), class of prof. G. Stadler. Unpublished report: Gerhard A. STADLER, Mirela I. ANDRESCOV-WEBER, et al., *Dokumentation der Mühlen im Zayatal. Eine Inventarisierung historischer Mühlenstandorte*. Wien: Technische

The 46 water mills revealed in the inventory are situated along the river at almost regular intervals of about 1.2 km. Located in the former territories of 29 villages<sup>3</sup>, all of the mills were owned by a few noble families<sup>4</sup>. Their history stretches over almost 1,000 years, in some cases probably even more. By use of comparative analyses, it is tried here to answer questions regarding their role and function within the medieval administrative structure of the region. Based on a number of evidences such as, e.g. the regular topographic position of the mills and their vicinity to castles outside the villages, the hypothesis is formulated that the watermills were due to a planned system of colonization according to the principles of a medieval feudal society which based on late antique Roman relational systems of agricultural exploitation, taxes and military defense. [1]<sup>5</sup>



Figure 1. Map of Austria, with Lower Austria (Niederösterreich) and its four districts North resp. South of the Danube, the northeastern one the Weinviertel with the Zaya Valley

## 1.2 Lower Austria: continuities and discontinuities before the 10<sup>th</sup> century

Since its beginnings, Lower Austria has been a border region which soon had to take the role to protect the city of Vienna.<sup>6</sup> Traditionally divided in four districts [2]<sup>7</sup>, the two southern districts were part of the Roman Empire, while the northern districts belonged to different celto-germanic populations [3]. Till now, no archaeological evidence points to the existence of watermills on either side of the *limes* during the Roman Empire. After the leaving of the Romans, and later of the Germanic population before the 6<sup>th</sup> century, the archaeological findings reveal artifacts from mixed groups of Germanic, Slavonic, Avar and Hungarian origin. Scare fortified settlements on the top of hills as well as seasonal structures along rivers are known to have existed. Especially the latter ones reveal a wooden culture with semi-subterranean grain cellars and houses. The few hand-mill stones found so far also speak about the precariousness of the economical situation in the region [4]. Moreover, one must keep in mind the level of insecurity until the 8<sup>th</sup> century. Also for the period of the Moravian Kingdom in the Weinviertel, no findings demonstrate the existence of watermills. Thus, if a watermill would be evidenced in this region for the period before the 10<sup>th</sup> century, this would drastically change the local history. So far the earliest appearance of a watermill has been considered

Universität Wien, Institut für Kunstgeschichte Bauforschung und Denkmalpflege, Im Auftrag der Österreichischen Gesellschaft der Mühlenfreunde e.V., 2014

<sup>3</sup> Klement, Röhrbrunn, Eichenbrunn, Gnadendorf, Wenzersdorf, Micelstetten (with Aigen), Zwentendorf, Olgersdorf, Asparn, Hüttendorf, Paasdorf, Lanzendorf, Ebendorf, Mistelbach, Kettlasbrunn, Hoberndorf, Wilfersdorf, Bullendorf, Ebersdorf, Rannersdorf, Prinzensdorf, Hauskirchen, Ginzersdorf, Neusiedl, Palterndorf, Dobermannsdorf, Niederabsdorf, Ringelsdorf, Drösing

<sup>4</sup> At the beginn of 19<sup>th</sup> century: Sinzendorf, Polhaim, Breuner, Liechtenstein, etc. Earlier, ministerials as: Liechtenstein, Kuenring, von Michelstetten, von Zwentendorf, etc.

<sup>5</sup> According to [1], Emperor Constantin the Great had reorganised the system, influencing the whole late antique and medieval world

<sup>6</sup> Reflected in various devastations (Kuruzzens, Turkish leaguer, etc.). The Thirty Years War has damaged all watermills, the Nazi and later the Russian occupation are deeply related to very wicked memories. The isolated position of the watermills, often at the border of the village, permit more cruelty as usual.

<sup>7</sup> According to [2], p. 1-4, a new culture emerges in the Lower Austrian territory between the 10<sup>th</sup> and 14<sup>th</sup> centuries. "After the 14<sup>th</sup> century, the subdivision of the land in the late medieval age is in the hands of the corporative feudal military and taxes entity (*ständische Militär- und Steuerwesen*)"

in a nearby region for the second part of the 10<sup>th</sup> century<sup>8</sup>. The fortress up on the hill is related to a Slavonic local leader's center.

In respect to the Ottonian period of the 10<sup>th</sup> century, Lechner [5, 6]<sup>9</sup> attributes to the military border areas of the German Empire, to which Lower Austria belonged, distinct features such as a set of defensive structures, which served as nucleus for locally scaled settlements; in this way, small fortifications together with their surrounding dwellings formed the key elements of the German colonization of the territory, largely controlled by the margrave. The territory between the valleys of Zaya and Thaya – the latter forming today the Austrian–Moravian border – is a characteristic place of development in the way outlined above.

### 1.3 State of research in respect to the Zaya Valley

In general, no extensive scientific research on the Zaya valley and its watermills has been published so far. The essential information was provided by the publication of a non-exhaustive inventory by Bodenstein-Hohenbühel [9], focusing on the watermills in the entire region, all of them founded and owned by aristocratic landlords. For the adjacent areas outside the Zaya region, the oldest watermills are datable, by archival sources, to the beginning of the 12<sup>th</sup> century, i.e. well 100 years before their apparition on the Zaya valley. The Lower Austrian patrimony is described in two different Dehio publications [10, 11] which describe the most important settlements along the Zaya valley referring to the urban morphologies and listed monuments (just seven water mills in that area are on the national lists of monuments), respectively focus on the industrial heritage of the entire region, including another seven watermills. In contrary, precise and rich bibliography refers to different historical aspects, the morphology of settlements, medieval routes, castles, thus sustaining the understanding of the Viennese hinterland.

## 2 HISTORICAL RESEARCH

### 2.1 Historical perspectives in the Lower Austrian territories and the German Colonization

The usual attribution of terms such as “German” or “Slavonic” to historical facts related to the colonization or settlement of medieval Lower Austria refers to the origin of the leaders rather than to the ethnicity of the local population which was often mixed.<sup>10</sup> The majority of Zaya villages are named after a person usually of German, rarely of Slavonic or Hungarian origin. It can be assumed that the earthen fortification (Motte) as the nucleus of a dwelling which was owned and developed by a *familia* [14] gave name to the village.

In a similar manner, also the mills carried the names of their owners or – more frequently – of the millers. Thus, the mill names changed throughout their history. This makes it difficult to trace back the location of a mill by direct archival research, while the cadastral plans and military maps<sup>11</sup> provide excellent tools to identify the mills in respect to their location and the feudal owners. Once the owner has been identified, it is possible to find more information in the archives of the aristocratic *dominium*.

### 2.2 Central – regional system of administration

Between 1284 and 1498, the central administration was in the responsibility of a *Hubmeister* for the

<sup>8</sup> Gars am Kamp (*Waldviertel*), where recently two millstones were found; kind personal communication by E. Szameit and M. Obenaus, June 2015

<sup>9</sup> According to [6], p. 34

<sup>10</sup> The present analysis is based on modern research methods, which do not follow the traditional dual humanistic- interpretation (Christians vs. Pagans, Romans vs. Barbarians), exemplified by [12], p. 90 in his comparative study of French and German ministerialities and his remarks on nationalities regarding their technical potentials (watermills as marks of German vs Slavonic culture, see [13], p. 538-240)

<sup>11</sup> BEV, Austrian National Archive, Austrian National Library

land estate (*Hüben – Landgüter*) in the Austrian Dukedom (*Herzogtum*).<sup>12</sup> Following this threefold structure (administration, taxes, defense), the later Austrian cadastral plans<sup>13</sup> are transferring this legal system to the military maps of the Empire<sup>14</sup> which reflect the central system of administration, revealing the watermills as nodal regional element. As to the question whether the *Hubmeister* was a member of the clerical or rather of the secular administration, we have to focus on the relation between a proprietary church / *Eigenkirche* [16]<sup>15</sup> and its subordinated parish churches; according to the Investiture Conflict from 1122 and based on historical documents, the Austrian scholars tend to date the territorial occupation into the 1<sup>st</sup> half of the 11<sup>th</sup> century. The appropriation of the new territory was based on large scale properties / *dominium*, which can be followed by the early construction of proprietary churches. In order to facilitate the administration of these large properties, they were then divided into smaller fiefs under the administration of a local leader, usually a member of a hierarchically lower aristocratic family recognized as ministerial.

In the Zaya region, the proprietary churches of the Babenberg Dynasty<sup>16</sup> were in Oberleis, cca 1050<sup>17</sup>; Gaubitsch, cca 1055<sup>18</sup>; Mistelbach, cca 1050<sup>19</sup>; Drösing, cca 1050<sup>20</sup>. The owner list<sup>21</sup> allows to confirm the secular character of the administration along the Zaya valley, following the system of proprietary churches. Among all 46 watermills along the Zaya, just four of them were fiefs to a monastery. In accordance with the definition of a border district in the Ottonian period offered e.g. by Lechner [6], the topographic distribution of mottes and watermills corresponds to the subdivision of the newly appropriated territory into fiefs. Morphological analyses of the settlements and regional structures of the Zaya area reveal a complex organization: the mottes or castles, manors, barns and stables, watermills, routes and bridges, the judgment places, reflect the transfer of the power from the center to the regional level. The significant presence of castles demonstrates the hierarchical derogation of responsibilities to the local level of the *ministerials*<sup>22</sup>, derogating their responsibilities on local level, as leader of *familia*.<sup>23</sup> The ministerial' *familia* has used the *mottes* as dwellings and local center, an observation which allows to understand the development of the architectural and urban shape along the Zaya. This architectural typology mirrors the hierarchy of the medieval society as outlined below.

## 2.3 Regional and settlement comparative morphology

A comparative analysis between Zaya- and Thaya - communities<sup>24</sup> evidences two different

<sup>12</sup> <https://www.wien.gv.at/wiki/index.php/Hubmeister>

<sup>13</sup> For the first time regulated: the Mailänder Kataster at the onset of the 18th century under Empress Maria Theresia, see [15], later adopted for the whole Empire cadastral plan (1820 – 1840)

<sup>14</sup> end of the 18<sup>th</sup> century – end of the 19<sup>th</sup> century

<sup>15</sup> [http://universal\\_lexikon.deacademic.com/74528/Eigenkirche](http://universal_lexikon.deacademic.com/74528/Eigenkirche); <http://www.enzyklo.de/Begriff/Eigenkirche>: Proprietary church - built and owned by a nobleman who held the rights of its disposition and exploitation

<sup>16</sup> The House of Babenberg was the ruling noble family of Austria from 976 to 1246

<sup>17</sup> subdivided into the Parishes of Michelstetten (1128), Asparn (middle of the 12<sup>th</sup> century), Eichenbrunn (1469), Wenzersdorf (1783)

<sup>18</sup> With the Parish of Gnadendorf (1136)

<sup>19</sup> subdivided into the Parishes of Hüttendorf (cca 1400), Paasdorf (1285-93), Kettlasbrunn, Wilfersdorf and Prinzendorf (all 13<sup>th</sup> century)

<sup>20</sup> subdivided into the Parishes of Hauskirchen (12<sup>th</sup> century), Paltendorf (cca 1290), Dobermannsdorf (cca 1300), Niederabsdorf (12<sup>th</sup> century), Ringelsdorf (1642) and Neusiedl an der Zaya (1784)

<sup>21</sup> the most information is from the 17<sup>th</sup> century, albeit the earlier data confirms the supposition, see Fuchsmühle, 13<sup>th</sup> century, Zwentendorf; Reis- and Koppitzmühle, begin of 14<sup>th</sup> century, Olgersdorf, etc

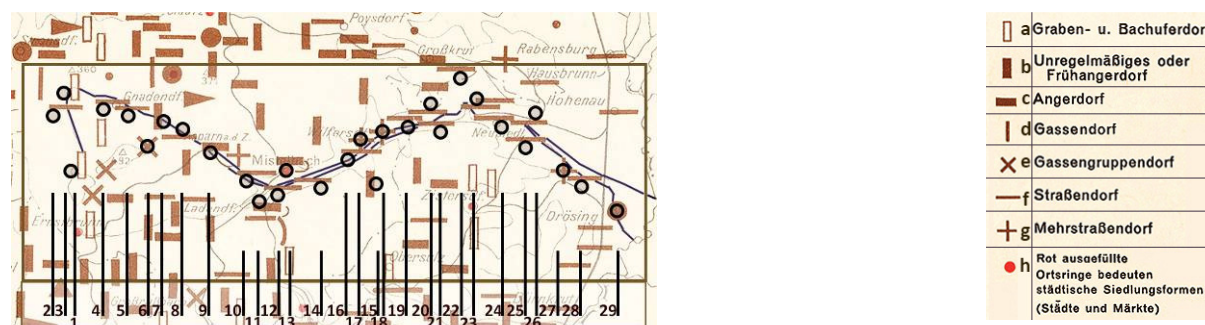
<sup>22</sup> At the beginning of the 11<sup>th</sup> century (or earlier), in the hierarchical subordination to the Duke of Lower Austria until later, as the economical and social history along Zaya valley shows

<sup>23</sup> Accordingly with [14] col. 254-256: Early and high medieval history used the concept *familia* (*ahd. hiwiski – to the house belonging*, reference in the Roman antiquity) for association of the people (and *res*/things) organized as house – association/*Hausgenossenschaft* working together on a *dominium/Grundherrschaft*, under defined legal rights, using one simple of complex ensemble of dwellings. *Familia* provide a strong relation between the people around their land; permit the system of the casts as well the accent on a personal competence inside the class, around a leader. Between 9-11<sup>th</sup> century more than 95% of people are living in *familia*-federation. *Familia* is active in the time of the German colonization, providing a system of order on a small territorial scale, co-related administration, self organized clan, as well the connection to the upper class.

<sup>24</sup> Villages situated along the south bank of the river Thaya, natural border between Weinviertel



morphological types. The villages along the Thaya River are of the so-called *Anger*<sup>25</sup> type, i.e. the houses are positioned around a village green. This corresponds to their younger age of the 13<sup>th</sup> or 14<sup>th</sup> century; they have neither watermills nor landlord residences.



Figures 2-3. Detail of a map by A. Klaar with the morphological typology of Lower Austrian villages in Weinviertel.

In contrary to Thaya, the majority of Zaya communities reveal a twofold character: an eccentrically positioned center grouped around an aristocratic court or fortified church (Klement, Michelstetten, Gnadendorf; Asparn, etc.), and a ribbon part<sup>26</sup> in a significant distance to the former. Along the water or river bank, the village itself refutes its previous character of an “*Angerdorf*”. Along the Zaya, the apparent *Anger*-disposition reflects a stage of development rather than a planned design of foundation.<sup>27</sup>



Figure 4. Thaya region. Section from the 1<sup>st</sup> Military Map, end of the 18<sup>th</sup> century. *Anger* villages



Figure 5. Classical *Angerdorf*

Along the river Zaya, Röhrabrunn (14<sup>th</sup> century), and Drösing<sup>28</sup> are the only true “*Anger*”-type villages, see fig. 6. Only four villages out of a total of 29 are of the ribbon-type. They represent later settlements<sup>29</sup> developed near a pre-existing watermill allocated to the motte or castle.

The bipolar morphology along the Zaya Valley is due to an early system of territorial organization around the *mottes*, frequently occurring in Lower Austrian under the name *Hausberge*.

<sup>25</sup> <http://www.spektrum.de/lexikon/geographie/angerdorf/360>; <http://www.enzyklo.de/Begriff/angerdorf>: *Anger* is a protected “planned” village of elliptical form, having in the middle a common green space, from ahd. *angar* = grass place

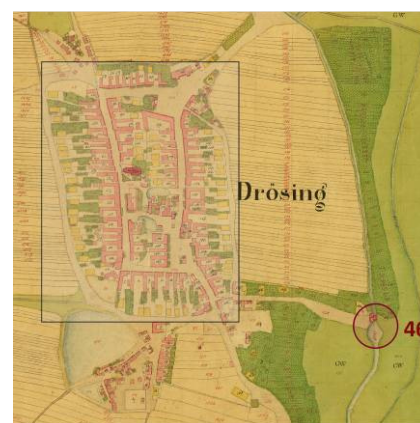
<sup>26</sup> arranged along a street, ribbon villages usually date into the 18<sup>th</sup> century, expressing later forms of administrative and agricultural exploitation, as well different re-population programs

<sup>27</sup> Kriegs-, BEV and Austrian National Library

<sup>28</sup> <http://www.imareal.sbg.ac.at/noe-burgen-online/result/burgid/179>; <http://www.imareal.sbg.ac.at/noe-burgen-online/result/burgid/103>: Drösing is a 12<sup>th</sup> century landlord foundation in the shape of a rectangular *Anger*; later grouped around the castle, it was originally located in another place defined by an earlier motte.

<sup>29</sup> Hoberndorf (1315), Bullendorf (cca 1170/80 – a double-ribbon village), Ebersdorf (1320), Rannersdorf (1210)

Figure 6. The large, rectangular shape of *Anger* of Drösing, originating from the second half of the 13<sup>th</sup> century, after the abandonment of the old mottes. The village has probably moats (see the south-western lake). The position of the watermill outside the village (built around the old castle – fortress) illustrates a disposition comparable to Eichenbrunn, Gnadendorf, Asparn, Mistelbach, etc.



## 2.4 Mottes / Hausberge, watermills and familia

Along the Zaya, the existence of mottes has been attested for almost each settlement. They can be probably seen as testimony of the taking in possession of this border territory by different *familiae*. It is assumed that the heads of these *familiae* were serving as *ministerials* who represented the landlords in the territorial administration. Later, some of the mottes were destroyed, some others were rebuilt as castles or fortified churches.



Figure 7

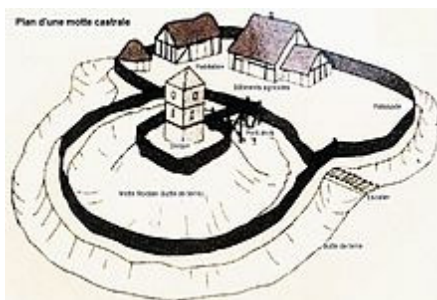


Figure 8

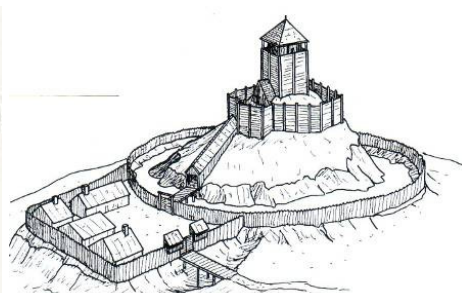


Figure 9

Figure 7-9. Reconstruction of a “château à motte”, A. de Caumont, 19<sup>th</sup> century (Fig. 7), of the motte of Tusque Kernburg in the center of Vorburg, Viollet-le-Duc, 19<sup>th</sup> century<sup>30</sup> (Fig. 8), and of a *motte-castrale* (Fig. 9)

The *motte*, a form of medieval territorial administration and defense system characteristic of the Lower Austrian territories, is an earthen construction known in various European regions; scholars date them into the beginning of the 11<sup>th</sup> - 12<sup>th</sup> century, remaining in function until the late 15<sup>th</sup> century. They were “initiated in the early stages of the 11<sup>th</sup> century, when the higher nobility built a motte as a status symbol and territorial focus, especially constructed for military purposes” [17, 18]. The artificially built hill is surrounded by wall and ditch, and has on its top a tower. Inside the protected area, workers dwellings, stables, barns and meeting places were located, according to the needs of a medieval *familia* site, thus forming a self-defensive construction for local authorities. *Mottes* are generally accepted as centers of cultivated landscapes whose territories were defined by borders, including forests, lots, lakes, meadows, etc.

<sup>30</sup> Accordingly with [16, 17], see also [https://de.wikipedia.org/wiki/Motte\\_\(Burg\)](https://de.wikipedia.org/wiki/Motte_(Burg)); [https://fr.wikipedia.org/wiki/Motte\\_castrale](https://fr.wikipedia.org/wiki/Motte_castrale); [http://passion-medievale.com/architecture\\_defensive.html](http://passion-medievale.com/architecture_defensive.html);

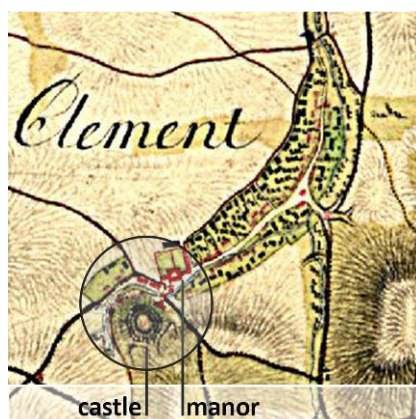


Figure 10. Klement. Position of the watermill is uncertain, probably situated at the confluence of the two rivers



Figure 11. Michelstetten. The watermill (no 9), close to the fortified church, is demolished

This article proposes that, for the special case of the Zaya Valley, the village borders were laid out in the time when the system of administration and defense of the mottes started to operate. Comparing the morphology of the Zaya communities, their bipolar extension between the centre of local power and the ribbon part of the village implies the pre-existence of a motte as the determinant element. Built during the active period of a *familia* motte system of administration, the watermills, frequently located near bridges which were under the custody of the miller, reveal their position in respect to the mottes. It is believed that the mottes were forming a network of defense and administration among each other, though so far no research exists to underpin this hypothesis for the Zaya Valley<sup>31</sup>. Today, some of them are lost, some are totally destroyed (Zwentendorf, Olgersdorf, and Hüttendorf), while still some others were used as foundations for later fortifications (Asparn, Mistelbach).

For Gnadendorf, the view from the north illustrates the superposition of different historical levels and the preservation of landmarks (fig. 12), showing the motte hill as the basis for the church, the modern grain tower and the place of the watermill. 17<sup>th</sup> century' drawings (Vischer) illustrate the contraposition between the landscape, fortification and village. This continuity of administration, defense and representation defines the Zaya Valley and its feudal system of regional planning.



Figure 12. Gnadendorf. The arrows are indicating the position of the "northern watermills". The village had three other watermills on the south part of the church



Figure 13-15. Klement, Asparn an der Zaya and Niederabsdorf in their rebuilt expression

The academic debate about the different construction phases of the mottes doesn't exclude their pre-existence in some villages along the Zaya before the 11<sup>th</sup> century (1045 as documentary attested begin of the re-organization of Weinviertel territory), related to the First Bavarian Colonization [20, 21, 22]. The most important of them, situated by the crossing of medieval routes [23], were rebuilt in the following centuries as churches (Eichenbrunn, Gnadendorf, Mistelbach, Drosing, etc.).

<sup>31</sup> www.burgenonline.at



The hierarchical medieval structure along the Zaya can be illustrated by the example of Gnadendorf (fig. 16-17).



Figure 16-17. Gnadendorf: territorial distribution of fortified church, castle and their watermills. Mottes - justice place - watermills - bridges<sup>32</sup>

The location of mottes at a regular distance of 3.8 km from each other, i.e. about half an hour or even less by horseback riding, supports the hypothesis that the mottes were forming elements of a well organized defensive structure during the 11<sup>th</sup> century colonization, following the conquest of the territories by the German Emperor after the victory over the Hungarian leaders in the region. In comparison to the mottes, the watermills are organized in a denser structure, at a distance of about 1.2 km from each other. By their regular distribution along the Zaya Valley, in some cases at the base of the motte (Gnadendorf: Schuster Mühle; devastated village of Aigen: Fuchsmühle; Michelstetten: Taxlmühle, etc.), in other cases at the border of the village, the watermills formed a supportive structure of administrative and defensive nature. This concept is supported by the fact that, for some of the watermills, a system of underground tunnels connecting them with the nearest castle is known – e.g. well documented for the Grülmühle (fig. 19), connected to the Lichtenstein-castle of Wilfesdorf in such a way.



Figure 18. Historic painting of Grüll watermill, today a listed monument; the tunnel entrance to the right of the building is now destroyed.

Figure 19. The watermill today

The co-related disposition of a watermill with the fortification, a bridge and a water canal is reflected also in historical drawings from different Austrian cities.

<sup>32</sup> The central function of a mottes is reflected in its typology, on a built hill, near from the water, regularly positioned in a structure, aristocratic owner, heritage transmission



Figure 20. Waidhofen an der Ybs, Vischer, 17<sup>th</sup> century



Figure 21. Krainburg, Merian, 18<sup>th</sup> century<sup>33</sup>

The watermill position outside the fortification reflects not only a functional necessity, but also a practical vision in respect to the built environment: related to the mills is the technology of water regulations with artificial ponds, canals, fishing ponds, bridges and footbridges, see fig. 20-21. The close link of a watermill to a bridge allows hypothesize the miller's responsibility as a *custos* for the bridge.



Figure 22. Fortified castle in Michelstetten<sup>34</sup>



Figure 23. Romanic church Michelstetten



Figure 24. Similar, the rests of the stone water canals, rest of the demolished watermill



Figure 25. Section 1<sup>st</sup> Military Austrian section<sup>35</sup>

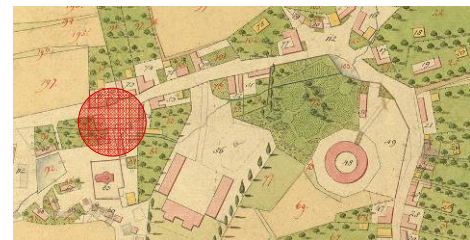


Figure 26. 1<sup>st</sup> cadastral plan<sup>36</sup> Michelstetten, Michelstetten section

Fig. 22-26 show the systematical evolution of a medieval complex ensemble composed of church, watermill, castle and moat. Without archaeological research is however impossible to distinguish between different building stages. The Romanic church of Michelstetten is dated to 1128, as well the aristocratic landlord dominium, while the fortified castle is believed to be younger, built between 1520 and 1540.



Figure 27. Cadastral plan<sup>37</sup> Gnadendorf, Fuchs watermill



Figure 28. Cadastral plan<sup>38</sup> Gnadendorf, Fuchs mill

<sup>33</sup> Austrian National Library

<sup>34</sup> <http://www.imareal.sbg.ac.at/noe-burgen-online/result/burgid/853:1672>, image of the castle Michelstetten II. and its administrative environment, Georg Matthäus Vischer. Documentary attested in 12<sup>th</sup> century

<sup>35</sup> 1821 - 1822

<sup>36</sup> end of the 18<sup>th</sup> century

<sup>37</sup> 1821 - 1822

<sup>38</sup> 1868





Figure 29. Fuchs watermill in a photograph from the end of the 19<sup>th</sup> century;



Figure 30. Fuchs watermill in a painting first steam mill from the beginning of 20<sup>th</sup> century, after a fire

### 3 CONCLUSIONS

The watermills along the Zaya were erected probably at the end of the 11<sup>th</sup> or the beginning of the 12<sup>th</sup> century as investment and privilege of the landlords. Their ensembles are important built-document of landscape, recalling the early efforts to establish safety, stability and legal structures. As structures supporting the defensive systems of *mottes*, the mills connected the feudal landlord *familiae* during the German colonization of the Lower Austrian territory. Whether some of them constituted possible earlier structures erected by the Slavonic/Hungarian landlords during the Moravian kingdom, or date back to the German colonization, is not an ethnic issue but rather the expression of administrative continuity through politically changing times.

The watermills formed connective elements between the local administration and the centralized state. As sources both of comestible products and technological knowledge, the mills were key elements in the territory, guaranteeing the maintenance of bridges, stables and water regulation systems. Their presence in the territory reflects a stable administration and a relational structure between the state and its regions, through the differentiation of the social classes with their diversified and function-orientated responsibilities. Thus, the watermills in their architectural shapes witness the hierarchical system of the medieval public organization.

At the present stage, without systematic archaeological research, it is impossible to provide a precise chronology for the foundation of individual mills. We can, however propose a chronological sequence, starting with the erection of the first mills in the neighborhood of the local centers of power, and followed by the construction of further mills at acceptable distances by the landlord or members of their *familiae*, always subordinated to the aristocratic residence (*motte*, castle, church) and inside the border of the village. Further interdisciplinary efforts focusing on the networking system of watermills should bring new insights to the Zaya Valley and its populating during the Middle Ages.

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## THE CONCEPT OF PLACE IN URBAN SPACE DESIGN: NOTES ON THE WORK OF FERNANDO TÁVORA

**Bárbara Fernandes LEITE**

*Faculty of Architecture – University of Porto ( PORTUGAL )  
barbaratleite@gmail.com*

### **Abstract**

This article sets out to explore an idea and methodology process of intervention in urban space, particularly through the work of the Portuguese architect Fernando Távora, carried out during the second half of the twentieth century in several Portuguese cities. It is also intended to reflect upon the cultural and conceptual dimension of these urban designs and the consequences they bear to the image of these cities, set from the relationship and interference between Place and Architecture Design, specifically from interventions in urban space with distinct scales, pre-existences and different contents.

Távora had an acute sense of place while intervening in an existent part of the city, as well as a profound understanding of the city's culture and history, using both as operative tools in his approach to urban intervention. His work intended the construction of a particular narrative about each city, made visible through the interpretation and recognition of certain project options.

From the observation of his work, it will be undertaken an explanatory, interpretive and relational disassembly of different places, in order to substantiate and structure the importance of place in his view of architecture. The issues addressed will relate not only to the shape of these spaces (their nature, location, design, scale, materials, construction systems, historical, political and social context), but avowedly with the relationship between place and the architectural design process, in order to map a common strategy that enables the demonstration of the concept of place as the methodological key of his work.

The architect's personal methodological approach to architectural design has shown us the importance of architecture to the development of new perspectives on urban reality, aimed at solutions that could modify more effectively the social, cultural and political strategies in the continuum of time. Thus, it is recurrent in his work the articulation between a previous and a present time, often not so temporally distant, which the architectural object materializes and can make ambiguous the perception of such discontinuity. Still, his projects, while additions to the existing place, qualify and give them actuality, that prior to its materialization was absent, composing a non-linear narrative of the history of those places.

As he stated "The project is born from the knowledge of the place but, at the same time, my architecture defines the place. Thus, architecture is the process of place redefinition."; Thus, the purpose of architecture is making visible specific features of a certain place, composing and setting them in a new order that values and enhances new meanings. Hence, the chosen case studies conform two scales of intervention: from territorial plans to local interventions, both designed as part of a larger and wider strategy, which could promote a contamination effect of urban regeneration.

In this sense, his work builds a particular narrative about each city, made visible by the interpretation and recognition of certain architectural design options, where history, sensitivity to place and knowledge of the culture sublate a methodological approach that supports new intervention perspectives on urban reality.

**Keywords:** Sense of place, Fernando Távora, Public Space, Architectural Design, Urban Strategies.

## 1 INTRODUCTION

The work of the Portuguese architect Fernando Távora (1923-2005) is regulated by a deep sense of continuity with the architectural legacy, not only in temporal terms, but also in spatial terms. By recognizing that space is continuous and irreversible and that the forms created by man, after being built, become themselves circumstance and condition future forms, he places the meaning of architecture on the ability to organize space in a harmonious manner, by creating forms of cultural significance.

The works of Fernando Távora are focused on the desire to clarify the circumstances and to give them a new order, based on a rigorous historical and archaeological research of the site. For him, "[...] History is useful to the extent that it can solve the problems of the present and to the extent that it becomes an auxiliary and not an obsession."<sup>1</sup> In its relation with the place, history is revealed as an instrument that, while informing about the past, allows the consolidation of knowledge and the critical understanding of the reality in which we intervene. It is History that allows the architect to recognize the true value of the facts, leading him to reshape the pre-existence with the full awareness of continuities and/ or ruptures. However, in his work, the vision of history overcomes this particular and circumstantial dimension associated with immediate relationship with the place. It is important to recognize, as a global architectural vision, that the act of architectural design makes reference to a collective process of long duration that is above time and beyond tendencies. As Távora argued, for a harmonious organization of space it is needed a collective effort and a spirit of collaboration, in order to achieve perfect integration, which is the result of an intense and complex combination of work of all the factors that contribute to the definition of the built form resulting, in the end, on the most profound underlying reason of all parts and in the sense of comfort it is capable of providing.

Thus, the architectural project is not an abstraction, but rather it is understood as a set of problems that find solution between a resign to the past and an anticipation of the future. It is more than a formal exercise, assuming a judgement expression (on Architecture, on the City and above all History), and it is from a renewed awareness of the present circumstances and the way the author relates to the past and with the place, and therefore with History, tradition and culture, that he builds its own idea of Architecture.

### 1.1 A particular methodology process of intervention

The shape and form of a city crystallizes fragments of different realities, heritage of its different realities, heritage of its past history or more recent records, in a precise development phase. These fragments, whether they are buildings or urban spaces, create the identity and the features of the place, each of them with its own peculiar meaning and specificity. In this stratified view of the city (of its history and functions), the architectural project is considered as a means of reading and interpretation of its places and of its vocation to change.

In this process of understanding and analysing the cities, Fernando Távora has shown us the importance of Architecture for developing new perspectives on urban reality, from project design methodologies that seek solutions that modify more effectively the social and political structures in the world, because architectural practice lays down the solution for solving spatial problems, with the aim of organizing human relations.

Távora developed a synchronic reading of the city, interpreting the values and contemporary creations as part of the temporal continuity, thus predicting the social impact of his project options for the collective memory of the city. His work is one of anticipation, working between the gaps and filling the voids, that defends the adequacy of the urban form to the general requirements of the city, starting from a problem and continuing in approach attempts, suggesting and outlining possible solutions through a broader view that inter-relates multidisciplinary references, so much that: "This

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1 Távora, Fernando (1947). *O Problema da Casa Portuguesa*. Lisboa: Editorial Organizações, p.7.

notion that is so often forgotten, that the space that separates – and links – forms is also form, is a fundamental notion, because it is what allows us to be aware that there is no isolated forms and that a relationship always exists, either between forms that occupy the space, either between them and the space around them, although we do not see, we know they constitute form - negative or mold – of apparent forms.”<sup>2</sup>

## 2 THE CONCEPT OF PLACE

The image of a city is represented by the set of expressive characters, formal, tangible and intangible, that are specific to each architecture, but whose outer surface and materialisation, in particular, distinguishes that specific place, thus expressing in a unique and unrepeatable manner the aesthetic identity of that particular urban space.

Urban regeneration within traditional settings has transformed places and constructed meanings embedded in the existing social and cultural settings. The concept of place is physical as well as psychological. The physical form, activity and meaning are mixed together to form the sense place and it is predominantly defined by a physical environment constructed based on its interrelationship with individual's internal psychological and social, historical and political processes and attributes done at the place.

This paper reviews the concept of place in establishing a conceptual framework for urban regeneration in light of the pre-existing site (its genesis, evolution and history) and the consequences and implications the architectural proposal bears to the continuity of the meaning and identity of a place, advocating the importance of the psychological and historical dimension of place in regenerating urban settings, as a means for accomplishing meaningful urban spaces.

In that sense, the main merit of architecture and urban design is to achieve a strong sense of place and a particular atmosphere. Even if it is consciously addressed by the architect, the anticipation of the ambiance of places is difficult to communicate and assess. Intangible values are expressed and revealed in very different ways by architects during the conceptual design process. Hence, if the construction of the ambiance of place is the result of the sensitivity and creativity of the architect, we must investigate and analyse their contribution to the expected outcomes of their designs. The real challenge of anticipating the ambiance depends a great deal on the ability of the architect to grasp and depict the sense of place, mostly defined by intangible features.

Carlo Ceshi (1904-1973) has exposed in *Teoria e Storia del Restauro* a position close to that of Távora, affirming that it is necessary “an analysis of previous experiences to acquire a cultural background, which can allow sufficient intervention possibilities, since each time rediscovers or renounces the past with the intention of defining the present in a specific position, in order to continue in the future”.<sup>3</sup> In that continuity of thought, Fernando Távora has stated that “The project is born from the knowledge of the place but, at the same time, my architecture defines the place. Thus, architecture is the process of place redefinition.”<sup>4</sup>; the purpose of architecture is to make visible specific features of a certain place, composing and setting them in a new order that values and enhances new meanings, through the analysis of continuities and disruptions, connecting elements, rules and differences.

### 2.1 Project Design and Sense of Place

Beyond the design of the physical space, architects have to deal with the intangible outcomes of projects, which include allowance for the future experience of people in time and space. The purpose of a project design is to project the future conditions of the built environment on which we intervene. Hence, architects are required to express their sensitivity thanks to the ability to imagine and depict non-existent environments such as future conditions, originating in their minds, as well as lost environments from the past. Imagining and representing non-existent environments refers to both the material features of places as well as intangible values, so much that: “The city provided

2 Távora, Fernando (1982). *Da Organização do Espaço*. Porto: Edições Curso de Arquitetura ESBAP, p.12.

3 Ceshi, Carlo. (1970). *Teoria e Storia del Restauro*. Rome: Bulzoni Editore, p.9.

4 Esposito, Antonio & Leoni. Giovanni. (2005). *Fernando Távora, Opera completa*. Milão: Electa.

materials, models of process, and a primitive aesthetic of juxtaposition – congruity forced by mixed needs and intentions.”<sup>9</sup>

Apart from architecture, there are other fields of knowledge, such as anthropology, history and geography, that accumulate reflections on place, but their focus is primarily on perception, production, use and meaning of urban spaces. In this sense, these efforts also add an expanded knowledge about the city and give way to new poetic narratives, sometimes parallel, other times converging with the architectural discourse, but which clearly differ from architecture in terms of purpose. To clarify this difference take for instance the close case of geography, which also deals with space and territory. But still, it remains a descriptive discipline as explained by Vittorio Gregotti (1927-) in *The Territory of Architecture*<sup>10</sup>, since it "does not build propositions", while Architecture, does. Thus, Architecture has this propositional nature that implies not only the ability to reflect on the city but above all an intention to formalize, materialized in a project design that encloses and complies a transformation. Moreover, Gregotti tackles this issue, recognizing Architecture's purpose to rationally order the surrounding environment, in order to qualitatively improve the urban structure by establishing connections between various elements and their functions of the physical environment.

The experience of place supposes a direct involvement with it, thus opening multiple possibilities and being in permanent definition. Thus, the sensory stimuli that the individual experiences is largely arising from his intervention and interaction with the environment, as much as of his understanding of others. But there is an important consideration to be made: place it's not a mere abstract allocation where events occur and things relate with each other, it is a totality of meanings which suppose a new look upon architecture, city space, culture and art, thus understanding that it is essential to the composition of a public space culture.

For architecture, from a disciplinary view point, the notion of place (in its multiple meanings) had an essential role in the reconsideration of the postulates of the Athens Charter in the Post-War decades, since place corresponded to an inhabited and lived type of space where the body represents the measure of subjectivity always imbued with memory and where the emphasis was set on the reconsideration of the concept of place as tied to the abstract concept of modern space design, where place implies memory and identity.

## 2.2 Threshold and Transitions

All urban situations have conditions where the buildings create planned or unplanned in-between spaces which eventually become a part of the city's landscape. The quality of life in these spaces is directly affected by the way it is designed, conceived, constructed and used. The way a space is used cannot be controlled as it mutates social, political and historically over time however the architecture of the space remains in its formal elements: form, material, details, joints, colors and other transitional elements. When an urban transition occurs, there is a formation of a threshold. The built space can have blurred ambiguous contours and boundaries, random and vague forms, inside and outside forms could merge and new flexible thresholds can occur. These spaces between the built fabric, have evolved over time, often into an integral part of the city's urban space. In effect, these in-betweens can be seen as thresholds, urban transitions and articulation points.

## 3 CASE-STUDIES

The following projects demonstrate how Távora's heritage appreciation and place consideration conform an approach that relates the pre existent site with the project design. For the architect, the architectural design is born by the re-design and interpretation of existing elements, in order to reevaluate the city's landscape through actions of complement. The use of a modern dialectics is not translated into a mimetic transposition of the surroundings, he intends to highlight the particular context of the place through elements in his own intervention, in order to give way to a new form. By proposing an architectural design, he summons the surrounding environment, transforming the landscape. As Giorgio Grassi has stated in his article "La Ricostruzione del luogo = The Reconstruction of the Place", published in 1992, "the subject of a project design is first and foremost its place, since

an architectural design begins to be part of the history of the place, and by making part of it, rewrites it, and that is its responsibility. Thus, it means that rather than suggest or inspire our work, in fact the place teaches, demands and sometimes decides for us".<sup>5</sup>

As Távoras has stated "The city is, without a doubt, the biggest physical creation of man and one of the most important creations of its spirit (...) the current city is a generator of frictions of all type of order that does not favour the physical and spiritual life of its inhabitants."<sup>6</sup> In that sense, the physical and temporal context of the architectural design and the space that surrounds it (buildings and public space) are fundamental to the preservation of historical and functional identity of places, seeking to consolidate the relationship with the environment and the reintegration of the object in the urban environment.

Thus, his work is a testimony to an idea of cultural heritage appreciation that assigns a new creative value to the built space, coexisting with the idea of heritage protection, manifested in the continuity of History and tradition, through his critical thinking and work. The architect demonstrated an extraordinary ability to rearrange the different places through the project design, mainly set from his deep knowledge of classical and popular cultural, from the systematic motivation he sought in history and in his interpretation of contemporaneity, in order to better understand the specificity of each problem he faced.

### 3.1 Guimarães' case-study: General Plan of Urbanization, 1979-86

Guimarães' General Plan of Urbanization, dated from 1982 and commissioned by the municipality in 1979 to his Office, was inserted in a political program of urban management that created local Technical Offices in municipalities, with the aim of forming multidisciplinary teams to ensure the preparation of studies, projects and actions to precede the rehabilitation operations covered by the program. Here, Fernando Távora experienced a new approach to urban territory, through an analysis of the evolution of the territory in various historical periods, beginning with the "castrejo" period to the current state, synthesized in drawing by eight plans.

The plans synthesized different and important events that changed the city's morphology, for example, in the roman period he recognizes the importance of medieval roads integrated into the door systems of the urban core and the distribution network of churches and hospitals, as for the plan comprising the seventeenth and eighteenth centuries, he pointed out the churches and convents located outside the wall which guided the process of urban expansion and expressions of social, economic and cultural comfort of the population towards space. Closer to today, in the last plan, he established and anticipated the future design of the urban sprawl, detecting the way which the architectural design should follow to redirect the city back to its historical center. He aimed to carry out a territorial plan, as can be best understood in the descriptive memory of the General Plan, which "establishes lines of development and occupation of the physical world and not an economic and financial development plan or a social development plan. It is a plan that caters mainly to the physical form and proposes ways for its future form evolution; or even a plan where the quality of the form is considered as a key determinant of the quality of life."<sup>7</sup>

This strategy, as an architectural design methodology, aims to recognize the process of identity formation of the city of Guimarães through its form, dismounting the process of city conformation through the records of permanence, disruption, evolution and history, to allow continuity and inherent memories that promote the recognition of Guimarães' inhabitants with its space.

5 Grassi, Giorgio. "La ricostruzione del luogo = Reconstruction of the Place", In LOTUS Magazine La memoria dell' architetto = The memory of the architect. N.74, Milano: 1992, p.129.

6 Távora, Fernando *apud* Portas, Nuno (2011) *A cidade como arquitectura*. Lisboa: Livros Horizonte, p. 9.

7 Távora, Fernando & Ferreira, Alfredo. (1982). *Plano Geral de Urbanização de Guimarães. Memória Descritiva*. Guimarães: CMG, p.4.



Figure 1 & 2– Former Town Hall at Oliveira's Square and Santiago's Square (1985-1990), at Guimarães.

The major proposal of Guimarães' General Plan of Urbanization consisted of a new circular highway that marked the city entrances. This system would work as a new wall and as a consolidation element. Távora also produced detailed plans, proposing the rehabilitation of squares and the rehabilitation of some residential buildings, serving as an example for further private investment. Thus, he established a contamination engine, by setting structures and collective tools to guide future resolutions. Overall, these interventions intended to promote the densification and consolidation of the urban core and redirect the urban structure to the center, controlling its form of growth and expansion.

However, the later Master Plan turned out to contradict the strategies recommended earlier. From the 1980's, these plans promoted a structure in terms of mobility pathways, networks and infrastructures, thinking the territory as a systematized and sectorized entity, encouraging urban sprawl and large-scale planning and thus by thinking the city in extension. This way of thinking overestimated the functional and economic issues at the expense of cultural and social issues, because it introduced difficult planning models to cope with the inclusion and exclusion of groups and individuals.

Despite this, Fernando Távora still carried out the designed road node of Creixomil and the rehabilitation of a system of squares, inserted in a structured "promenade" inside the wall, thereby contributing to the consequent revitalization of the urban life of Guimarães.

### 3.2 Coimbra's case-study: Arrangement of the 8<sup>th</sup> of May Squares, 1989-92

The experiences of the interventions in Guimarães paved the way for the urban arrangement of the 8<sup>th</sup> of May Square (Praça 8 de Maio) and surrounding area, in Coimbra. At the last decade of the twentieth century, following a series of restructuring measures in the downtown area, from urban policies aimed at addressing some urban problems and promoting municipal programs. These programs fostered the revitalization of the city through specific issues to promote multifunctionality, pedestrian areas and condition the car traffic.

In the same line of thought, this project proposed to recover the initial height of the square, reconstituting the central interpretation of the Santa Cruz's Church, dated from 1131, in reference to the Direita, Moeda, Louça and Corvo Street that flocked frontally with the facade of the public equipment and remove the car traffic of this area. The square space was divided in two dimensions: the highest was the connection of Visconde da Luz Street with Sofia Street to facilitate car traffic and the lowest was the connection towards the river. Under the project proposal by Távora, the tangential interpretation of the Church by the axis Visconde da Luz Street - Sofia Street is replaced by an orthogonal reading of the street system of medieval structure.

In the case of Guimarães, Távora's intervention was "invisible" in a principle of leaving way for form to speak for itself, this is, taking care of the elements that make up the squares or the buildings from different historical periods, respecting the vernacular architecture and permanence of urban



typologies that have always been part of the collective memory of a city. In the case of the 8 de Maio Square's intervention, it resided in a deeper way of recomposing, significantly changing the relationship with the existing morphology.

In this medieval urban morphology with irregular formal characteristics, Távora sought a rigorous and careful formal composition method based on the principle of symmetry, where he built a system of proportions that set the dialectic between the parts and the whole, as a way to spatially reorder and organize the physical space of the downtown center of Coimbra.



Figure 3,4 & 5. – Aerial view of 8 de Maio square; Entrance view of Santa Cruz's church; Lateral view of the ramp and water element. Praça 8 de Maio (1992-1997).

He intended to allow a return to the centrality of the Santa Cruz's Church, resuming the height relationship between the church entrance and the space of the square, organized by two lateral side forecourts of the church. One of the church's forecourts serves the town hall and the other the coffee shop of the chapel, attached to the main church. The link between different heights is made by two ramps, guiding the urban morphology toward the river.

The condition of the core center was linked to the shapes of the different squares, as meeting spaces, in close dependency of a church or religious structure. From this understanding of the urban fabric, Távora sought a constant element by proposing the implementation of a water source in each of them.

In Guimarães, he used Granite stone and in Coimbra he used Ançã stone, the same used at the facade of the Santa Cruz's Church. In both cases there was a careful design and placement of the stone by introducing lines of force to drive the "promenades", continuing the plane of the facade with the pavement. This plastic uniformity intended to create a coherent environment, this is, a space of symbolic meeting for city life.

The project, based in classic rules of symmetric, brought uniformity and spatial clarification returning the original character of "square", as a public space with features that promote centrality and a better adaptation of city life with its physical ambience. For this reason, it was a work that potentiated the contamination of the urban environment, influencing (even with an intervention as seemingly small and insignificant for the rest of the territory) the urban design of the city of Coimbra.

### 3.3 Porto's case-study: House of the 24 (former town hall), 1992-03

The initial architectural design approach of the House of the 24 (Casa dos 24, 1995-2003), in Porto, located in close proximity with the city's Cathedral and main entrance courtyard, is a project design that does not intend to seek the lost original forms but rather a (re) organization of space which wants to minimize the absences and fix the essential. The progressive knowledge of interventions made in the historic centers of European cities consolidated the awareness of the complementary relationship between monuments and urban fabric and between testimonies of different times, as an essential condition of preservation.



Figure 6 & 7. – Aerial view of Casa dos 24, Porto (1995-2003); Exterior view of Casa dos 24.

In 1995 there were only the ruins of a former Town house which resulted from the demolition process that had taken place before and which had an irregular configuration – the existing stone walls measured in average 1,10m of thickness. At House of the 24 (1995-2003), Fernando Távora had to rebuilt a former town hall building near Porto's Cathedral with an undefined use, which allowed him to focus on the relationship between built object and the place, addressing to the effects that remained in the demolition process that took place in the surrounding areas of the Cathedral. Thus, enabling him to consider urban regeneration as a sign of confidence towards the voids which resulted from the city's transformation dynamics.

The first sketches of Fernando Távora showed the attempt of a reconstruction of the missing preponderant elements of the urban surroundings of the Cathedral. In addition to making (re)emerge the volume of the House of the 24, the architect proposed a volume that condensed a moment of spatial bottleneck that evokes the old passage of Vandoma (old door of the walls), accentuating the diagonal incidence of the access ramp in the approach to the porch of the Cathedral and clarifying the access and entrance to the main monument. The organization of the various elements reveals a hierarchical system of relations that proposes a reordering of various scales – the connection between different heights of the terrain, between the monument and its surroundings, the resolution of a former relationship between buildings of power (religious and political) and the creation of the city's viewpoint par excellence, opening a generous glass facade facing the city.

With this built object, the architect focused on the awareness of the totality of the city, in the historical evolution of the place and urban settings and in the reinterpretation of the critical context.

#### 4 CONCLUSIONS

At each work, Fernando Távora experienced new analytical approaches to the city, visible in the way he investigated and developed a narrative about each city in particular and the way he suggested articulation points with the city and its vast territory. Thus, the narrative depicts important moments of reflection and construction of an approach to urban intervention, allowing us to understand the construction and importance of a disciplinary methodology for urban space design. He developed, therefore, a method of his own to design and solve the problems of architecture, building a line of thought with immediate implications for the development of architecture in Portugal and the architecture schools where he had influence.

Therefore, in the interventions that have been the object of analysis, we can identify a common intervention methodology, which seeks a unitary reading in the different spaces, while at the same time, the characteristics intrinsic to every place acquire specificity. The intervention proposals are linked to the preexisting tissue, in which the design process is the element that will indicate what entities will prevail and which are going to be "reinvented". In sum, the proposals arise from the place and in dialogue with contemporaneity. Therefore, modernity and the *locus* are the matrix which the architect applies methodically.

According to Fernando Távora, the architectural project is a clarifying element of re-validation of a built and cultural territory. His projects use history and knowledge of a specific place as operative tools, understanding the meaning of form in the sedimentation of the territory, as well as the existence of an affective and emotional space that influences form, in a more or less empathetic manner, with the place and creation of memory and identity.

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## IMAGE CREDITS

**Figure 1** – Former Town Hall at Oliveira's Square a (1985-1990), at Guimarães.

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Photo taken on 21<sup>st</sup> September 2011.

**Figure 2**– Santiago's Square (1985-1990), at Guimarães.

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Photo taken on 6<sup>th</sup> August 2006.

**Figure 3** – Aerial view of 8 de Maio square.

Available at <http://fotos.sapo.pt/aquihahistoria/fotos/?uid=TZnw42joflzLzzPrnJkT>, last seen 12-04-2016.

Photo taken on 8<sup>th</sup> January 2014.

**Figure 4** – Entrance view of Santa Cruz's church.

Photo Credits by user "syvwlch", Available at <https://www.flickr.com/photos/27164521@N00/768026965/>, last seen 12-04-2016.

Photo taken on 9<sup>th</sup> July 2007.

**Figure 5** – Lateral view of the ramp and water element.

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Photo taken on 6<sup>th</sup> August 2006.

**Figure 6** – Aerial view of Casa dos 24, Porto (1995-2003).

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Photo taken on 4<sup>th</sup> March 2008.

**Figure 7** – Exterior view of Casa dos 24.

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## SHRINKING AND PERIPHERY: A RE-ACTIVATION FRAMEWORK. METHODS, TOOLS AND MICRO-ACTIONS

Angelica Stan<sup>1</sup>

<sup>1</sup>*Assoc. Professor, PhD Architect, Msc. Urban Planner, "Ion Mincu" University of Architecture and Urban Planning, The Faculty of Urbanism, Bucharest, Romania  
angelica.stan@gmail.com*

### Abstract

"Periphery" is a condition increasingly common to cities today, as long as by this term we understand what "comes out" of the system or is neglected, abandoned and felt as useless by the system. In Romania, speaking on peripherals condition in urban areas involves a twofold approach: first, the topological one, related to the physical dimension of growth, and second, the axiological one, in relation to the centrality understood as a optimum measure of development. Beyond this, at the micro-scale level, periphery still manifests as a diffuse phenomenon that affects both sites and places that are traditional in marginal areas, and in the hyper-central, or new central nucleus in suburban areas. Also, spaces and peripheral conditions emerge both in large cities with relatively good urban management, and in small ones, and especially in shrinking cities where undergo a socio-demographic and economic process of decline. Even this is the case of Brăila, a city in a demographic decrease accelerated since 2005, and which has many such "peripheral cases", coming to contradict its high quality compact urban form, crystallized in centuries of evolution.

This paper explores the relationship between the state of physical, economical, cultural and socio-demographic contraction specific to shrinking cities as Brăila is, and the periphery as paradoxical condition: on the one hand, as "wanted" expansion (even sprawl), and escaping from city (sometimes re-creating the city beyond its existing limits), and on the other hand, as decay and abandonment of the "inside city", generating a continuum decline in the small-scale space and urban life. This paper presents some of the results of the project named "BRĂILA LABORATORY - Alternative Approaches the Urban Peripheries within a Shrinking City (B-LAB)", project financed in 2015 by the EEA Grants, through "Promotion of Diversity in Culture and Arts within European Cultural Heritage Program". At the same time, it raises necessary questions related to new methods and tactics of urban planning able to mediate between the top-down and bottom-up approaches. Three such methods are presented here, aiming to lie at a crossroads between urbanism, urban art, architecture and civic action, advocating for a synergy of these fields and pooling their specific languages and tools. One of the tools used in this project is that of urban markers. Once identified within the large "field" of situations and urban conditions, the urban markers are able to provide a wide range of qualitative data related to space, people, lifestyle, mobility, problems and development potential.

More than the statistical indicators, the urban markers warn us about vulnerabilities, risks or latent opportunities existing in marginal or central urban areas affected by decline or contraction. They are used at the "molecular" scale of the city, studying the micro-elements of urban space and micro-social relations, highlighting their functions of changes in the urban metabolism. On the other hand, the urban markers play an active role: either they extract from the urban reality a certain configuration and put it into a new context in order to generate a critical and challenging discourse, either they re-create or simulate a specific state of the city or area, implementing an "intrusive" element, in order to activate the local changing potential.

**Keywords:** periphery, shrinking, markers, contraction, micro-scale, paradox

## 1 THE PERIPHERY AS A DIFFUSE MOVING LIMITS

### 1.1 The periphery of the intermediate spatial condition

Most of the cities and their growth within the hinterland shows that the periphery is emerging as a "traveller space" - creation of different types of limits (natural or manmade) that the city perpetually generates, by moving and transforming them in the territory. The history of the marginal spaces of cities (i.e. the topologic periphery) overlaps the cities' history itself: from the *continuous linear limit* as wall or stockade (the case of traditional/ pre-modern cities), to *fragment - limit* (the case of satellite towns -garden cities & new towns, during XIX century), to the *surface - limit* (the phenomenon of "boom suburbs" and sprawl during XX century), to actual *diffuse, intermediate limit*.

This last type of limit defines a pattern of spatial production, based on both economic and political forces, with strong social implications (social enclaves, gated communities, segregation by living standards, etc).

The new understanding of the periphery leads to the concept of the in-between territories, a "middle landscape" [1] a tertiary landscape, a "third condition" of the city [2] Named in different ways, the periphery is in fact the very condition of the intermediary, of residual, neglected, vacant or "pending for something" spaces, a condition of ex-use (ex-industrial, ex-commerce, ex-social housing, ex-infrastructure). Peripheries could become ghettos or luxury villages, but deep in their essence are the same conditions of refuses/rejecting everything that the city cannot metabolize. The difference between peripheries from the margin and those from the centre is only a difference of political outlook. When cities are blooming and expand, it arises the problem of the space expansion management, the outer peripheries. They enter on the neo-liberal agenda. When cities are decreasing and declines, the main issue is of the inner peripheries, as result of social inequalities and socio-spatial fractures, and therefore they enter on the socio-democratic agendas.

### 1.2 Brăila periphery: a loss of balance

#### 1.2.1 Shrinking Brăila

Brăila city has grown and developed relatively organic, as each growing stage have assimilated the ones before. This process has been relatively continuous and natural up to 1965, with the communist period of forced industrialization. Then, a lot of disparities occurred, and have appeared fractures at all levels - at economic, social, cultural, and ecological one. The city resources were being either over-valued (as the industry, the agriculture), or terrible undervalued (tourism, culture).

Demographically, the population of Brăila is steadily growing until 1990, due to the centralized national policies, specific to the communist regime, which obliged the workforce (generally absorbed from the rural space), to settle where the large industrial units were implanted. After 1990, besides the loss of population due to birth rates declining (linked to a national similar phenomenon), it appears a strong wave of migration towards abroad [3].

The loss of Brăila's population is correlated to a loss of jobs, as long as many of the former state industrial units have been privatized quickly, without consolidated business plans, or by too little feasible methods. Basically, we can say that demographically, the shrinking of Brăila manifests strongly since 1991, with some accents in 2000- 2005 [4]. followed by a period of improvement in terms of population loss through emigration, once with the country's entry into the EU.

Compared with other cities of the same waist in Romania (over 200 000 inhabitants in 2010), Brăila is not in a high disadvantage. The (yet) harbor profile, the position at the Danube, the regional association with Galati and Tulcea, the varied access (road, rail and river), and the traditional multi-ethnic opening made from Brăila city quite attractive place for investors - especially in trade, urban services, and small dimensions production units.

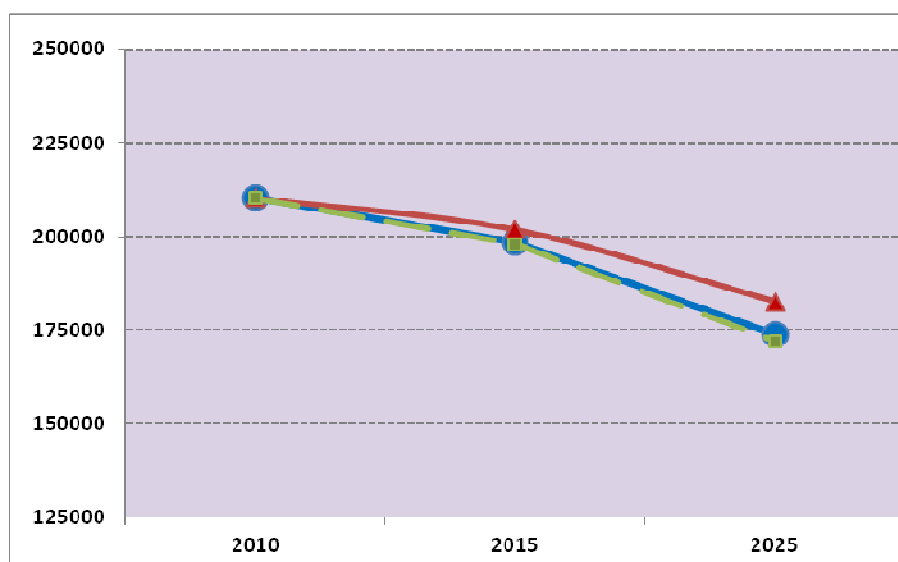


Figure 1. Probable forecasted variants of Brăila population evolution: with red the optimistic variant, with blue- the medium variant, with green- the pessimistic variant. Source: "The Substantiation Study of socio-economic analysis" - as part of The General Urban Plan of Brăila, URBAN – INCERC, 2012

Looking of the city's evolution after 1990, we can say that Brăila's profile is shrinking significantly within the demographic plan, proven by statistics, but does not reflect identically in the other plans of urban life. In other words, the growth of Brăila, although negative, did not correlate with its development, which has continued to occur (with a low speed, indeed), but on a positive trend. Nonetheless, many other fields did correlate to the specifics of a decay process, most poignant and painful being the cultural, and the built heritage protection [5].

As in other Romanian cities with economic difficulties, many other negative forces have rounded the picture of decline: the corruption of public administration and justice, the agriculture decay, the lack of vision and coherency of city development. The decline - even possible to be accepted in the demographic plan, was rolled over the social, economic and cultural plans, amplifying the statistical data with specific quality issues. The urban space, as a clear mirror of this phenomenon, reflects (especially in the public domain) the lack of responsibility, the demagoguery and corruption. The abandonment, the ruin, the scattering of precariousness modes of building and planning, the worthless architectural formulas, the void of marks in spatial plan, led to the installation of a decline image, even more striking than the statistics.

### 1.2.2 Between desire of expansion and abandonment of inside values

The loss of balance in the development of Brăila appeared with the increasing of the illogical distance between the desire of territorial enlargement of the administrative territory, and the ignoring of the values contained in the existing urban fabric. Starting with 2000, the surface of Brăila city begins to increase, although its population is declining. The phenomenon is not unique, but a real trend in many Romanian cities, as long as local governments are thus trying to broaden the tax collection base, not thinking about the spatial and urban consequences, of including into the city limit of the agrarian territories, without any urban utilities [6].

The city peripheries become places of a huge both spatial and social experiment, with consequences still difficult to estimate. Partially urbanized areas appear, or simple implants built into an uncertain territory. At the micro-scale, the scattering of city boundary transforms the peripheries into a porous field of ruptures and goals, leading to lose of city's power of expression resides in its form, stabilized through centuries in a compact and complex pattern.



## 2 THE NEW METHOD OF ACTION-PLANNING

### 2.1 A tactical mid-position between top-down and bottom-up urbanism

One of the possible mechanisms of recovery from the past mistakes and loss of values consists in encouraging the self-urban management, thereby surpassing the decline and its associated state, among which vulnerability in terms of safety, bureaucratic corruption, weaknesses adaptation, etc. If we accept what Fuchs said in 2002, that the social (urban) system, compared with the living systems in general, possess the ability to be consciously self-creative [7], this implies that individuals and communities have the power to create new structures, changing rules, values and behaviours. Social self-management may also entail intention or purpose, where a group of individuals deliberately engage in self-help, self-empowerment or self-determination, in order to change their own social condition [8]. Urban regeneration of a city means regaining the essential instincts at the psycho-social level, among which are the self-government and cooperation [9]. These would include, inter alia, the self-management and autonomy, as an expression of collective action which are not necessarily hierarchically made, but with a certain clarity in establishing the necessary relationships between groups. Somewhat similar NGOs, urban society that organizes itself considering that what makes official organization fails, can be refilled through creativity and through individual involvement in solving real problems. And in this way, rules and regulations are not contradictory to city's order, but are the result of another system: one that signals a problem, invite to find solutions and creates the example that can be followed for final resolution. It is known from socio-psychology that "evidence of caring inspired further caring" and "evidence of neglect invites further neglect" [10]. Only the norm that is not imposed top-down, but emanates from the individuals or communities behaviour themselves it's the one that can be adopted and that planners need to support and care for it, in a creative way. The creativity has here a tactical position: one of the renewal (of values, norms, of uses, etc.), and one of the maintaining of those have proved to be resilient (as in any living system, where the development is carried out both through storage/ maintenance, and by removal / loss). "Encouraging the participation of inhabitants at the self-management of disused urban spaces, over passing contradictions and stereotypes by proposing nomad and reversible projects initiating interstitial practices which explore the potential of contemporary city (in terms of population, mobility, temporality)" [11]. Finding the optimal position between top-down and bottom-up is a matter of tactics - ie a way to plan directly on the "playing field"- or action- planning- and not by strategies imposed from above, by authoritarian projects. This approach has been generically called "tactical urbanism" and it generally promotes a *"grassroots, participatory, hands-on, do-it-yourself vision of urban restructuring, in which those who are most directly affected by an issue actively mobilize to address it, and may continually mobilize to influence the evolution of methods and goals. For this reason, tactical urbanism is often presented as an open-source model of action and as a form of re-appropriation of urban space by its users"* [12].

### 2.2 Urban markers as tool for the intermediate planning

The concept of Urban Markers starts from the idea that "the evidence of caring inspires further caring and evidence of neglect invites to further neglect" [13]. The Urban Markers are here tools for putting in evidence the decline, the neglected places and poor situations, in which people - as individuals or groups and communities - should involve and see the potential of transforming and improvement. This tool can be used at the "molecular" scale of the city, putting in evidence the micro-elements of urban space and social relations, highlighting their functions and changes within the entire urban metabolism. The Urban Markers either extract from the urban reality a certain configuration/ situation by putting it into a new context, in order to generate a critical and challenging discourse, either re-create/ simulate a specific condition of the city, implementing an "intrusive" elements, in order to stimulate and activate the potential of diffuse urbanity.

There are used three types of Urban Markers: first-one is used for highlighting problems, symptoms due to a specific "illness" already manifest in the city, eg. extensive abandoned areas/ buildings, ghettos areas, disused spaces; second type is related to the possibility of a risk, at spatial social or

environmental level, eg. places under /over used, historical building in risk of forgetting memory; third one pointed the latent potential of certain areas or social conditions, either for further development or immediate uses, eg. unused paths or lands expecting an investment, unused or temporary used objects/ buildings, advertisement objects, etc.

In this context, the main functions of Urban Markers are: warning, stimulation, challenge, activation, comparison, testing and verification. These functions should be understood in relation to local conditions, as they need to be confirmed by the "field tactics", either it's about improvisation, spontaneous interventions on site, interviews with local population or small-scale scenarios for inducing a challenging attitude. Urban Markers could function independently or they can overlap and co-operate, indicating (by mapping them at the scale of their neighborhood), the ideal place to intervene in order to reveal a potential change.

This disposal of Urban Markers are conceived in the spirit of the experiments realized within "Uneven Growth" exhibition promoted by MoMA [14] for which tactical urbanism promotes specific projects which evolve fluidly in relation to broader shifts in political-economic conditions, institutional arrangements, or coalitional dynamics. These qualities of malleability and open-endedness are widely praised in discussions of tactical urbanism, generally in contrast to the comprehensive plans, formal legal codes, and rigid blueprints that were characteristic of modernist-statist projects of urban intervention" [15].

### 3 THREE ACTIONS PLANNING FOR BRĂILA

In the above mentioned project "BRĂILA LABORATORY - Alternative Approaches the Urban Peripheries within a Shrinking City (B-LAB )", the urban markers crosses over the three stages of the students' approach playing different roles in each of these stages. In the exploration phase, the urban markers are linked to the identified and visible problems of urban life that correlate to various (individual or social) attitudes related to the city and its spaces. In the second phase, in order to outline the tactics and micro-intervention strategies, urban markers are used for sorting and classification the problems previously discovered, for their further specific approach. For example, where were identified negative aspects on how the public space it's cared, a marker was considered to be the residents in the vicinity of those spaces, as actors who could participate in specific actions for urban re-qualification and/or spatial improvement. In the third phase - of actions- these markers become tools for configuring the very real intervention scenario. Thus, the defects of a space (eg. the fact of being an unused courtyard of an abandoned factory, or an over-crowded tram station at the periphery) are transformed into qualities, necessary for carrying out the intervention scenario, and even contain answers to the questions which raised in the exploration phase.

#### 3.1 "Brăila Re-Act"

BRĂILA "ReAct" was carried as a collaborative action (16) developed in the courtyard of the old Muller brewery (General Gh. Avramescu Street), part of the former industrial area in south of the city. This territory is entered for more than fifteen years in a decline process and many units - buildings, land, industrial machinery - are closed, abandoned or are in an advanced stage of decay. Although it is located very close to the downtown area, and tangent to the Danube River, this territory is perceived by residents as a periphery - an inaccessible place, with an unattractive and dangerous, if not repulsive image. However, looking with carefulness and opening to the true potential hidden behind fallen walls and fences, and vegetation regaining the space, there is sufficient evidence that qualify this place to be reactivated. Together with pupils from "Hariclea Darclee" Art High School and from the "Vespasian Lungu" Popular Arts School, the UAUIM team created an event - both recreational and educational - that included workshops, artistic performances, and outdoor screenings, in order to draw attention to this site and to its creative development potential.

The concept of the event was to create an "urban living-room", setting out as framework for the show and the performance offered by the pupils involved. Thus, the workshops were focused on making urban furniture (places to sit - sofas, benches and tables), a lighting installation made from

recyclable materials, as well as a graffiti (on the wall of the former factory), conducted by the visual artist Sandu-Milea Lucian, with the support of "Hariclea Darclee" Arts High School students.

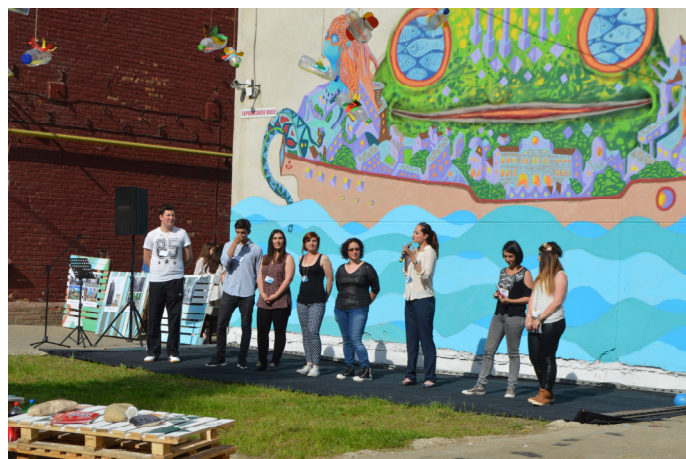


Figure 2. Image from the event Re-Act Brăila, May 2016. The court of a former brewery in the ex- industrial part of the city has become an attractive place, both fun and creative for pupils and students. The former factory wall, visible from the street, is transformed by the architect-artist Lucian S. Milea in a huge graffiti, and thus, it remains as a new (land)(urban)mark, attracting the attention on this place and to the necessity of re-link the city with the Danube.

### 3.2 "Albina Link"

The project and action "Albina Link" [17] started from the observation on the southern periphery of Brăila and the tram line 24 that separates two different residential areas - the blocks and the houses. Revitalization actions have been proposed as a series of specific actions in order to increase the interest of residents for multiple possibilities of improving the quality of local public space, through actions which involve a minimal effort, but can have maximum impact.

One of this "acupuncture actions" have been designed for or "Albina" tram-station, situated on the route of the 24 tram (Grigore Alexandrescu street). This route is linking the resort Salt Lake to Monument Park, two important green landmarks in Brăila. The revitalization consists in creating a green installation with plants and recycled materials, relying on a least cost of intervention. Therefore, the installation was made of recycled plastic bottles and turned into pots for plants (by cutting and dyeing them), after which they were suspended by rope, which served as support in the existing tram-station. The plants used and the land needed were purchased from local residents.



Figure 3. Image during the creative re-activation "Albina Link", based on recycling and re-use of plant material, May, 2016, Photo credit: Ana Opreș

### 3.3 "Pop-up Historical Centre"

The action correlated to the project "Pop-up Historical Centre" [18] addresses the issues of perception and expectancy of Brăila residents regarding the city evolution, and especially the mod

valuable place in city (Mihai Eminescu pedestrian street, which received in 2008-2011 investment from public budget for rehabilitation). The first step was an interactive social study called "EuVreauAici..." (I want here...) which use a question-mark in order to led to a series of conclusions about possible future uses of abandoned spaces. In the second stage, the student team proposed an interactive installation including five frames which "cut out" the main street perspectives, and a number of boxes into which people can look to a transformed image of the same street space, based on their own opinions. This installation - called "Think outside the box and look inside it" - it was placed on a dynamic path on Mihai Eminescu street, in order to change the inhabitants perspective on the transforming possibilities of the street space. The project intends to make inhabitants conscious that the observer position is not sufficient to ensure an optimal urban development.



Figure 4. Image during the action-project named: "Pop-up Historical Centre" - with the message "Look inside the box and think outside it", held on the pedestrian Mihai Eminescu, Brăila, June 2016. Photo credit: Angelica Stan

#### 4 CONCLUSIONS

The results of this both research and educational project, materialized in students work, but also in interviews, videos, photos, and especially in the effective actions "on the field", have demonstrated few things that were not so obvious: namely, that the population of a shrinking city not worth to be abandoned to a shrinking attitude, of the aging peripheries, marginalization and abandonment, but it must (and can be) stimulated. A shrinking city population becomes creative and interested in their own urban spaces, and this is a good prerequisite for residents' involvement in more complex projects. But for this, the condition is the closeness between those who conceived and those who use the urban spaces, and the transparency, interactivity and professionalism. For urban development to take place with endogenous resources and potential social and human alike of the city, it's need to reduce the discrepancies between the micro and the macro thinking, and approaches as this should take place continuously.

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- [17] Project of UAUIM team students: Simion Andreea, Tudor Alexandra, Bădescu Cristian, coordinated by by asist.PhD urb. Irina Pata, asist.PhD urb. Andreea Acasandre, architect artist Lucian Sandu Milea, asist.PhD urb. Ana Opris, asist.PhD urb. Andreea Bunea, and assoc.prof.PhD.arch. Angelica Stan.
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## BACK TO THE BASICS OF ARCHITECTURE: INTEGRATING SCALES

Hanna Derer

*"Ion Mincu" University of Architecture and Urbanism, Bucharest (ROMANIA)*  
*hanna\_derer@yahoo.com*

### Abstract

As anyone knows, edifices, ensembles, fragments of human settlements, as well as whole villages and towns are meant to be used. As few are aware, at least in now-a-days Romania, buildings have to be in the service not only of those who own and / or utilize them, but, in one way or another, of any passer-by. These relationships between individuals, communities and the broader public to the edifices surrounding them do not simply occur, but have to or should be conceived carefully within the design and thoroughly implemented during the erection of the given built item. Otherwise, as both history and the present prove, whenever people can no longer make use of a product of architecture and / or urban planning, such creations are abandoned mercilessly, completely replaced or changed beyond any recognition. As a consequence, any edifice, ensemble, etc. that has lasted over time, must be "user-friendly", at as many levels as possible, even if this feature is not necessarily that obvious. Accordingly, contemporary architecture and urban planning, contemporary architects and urban planners, may (or should) learn about sizable houses, villages and towns from such that have successfully endured the flow of time measured in the number of generations that have been served to their satisfaction. It is, among many others, but probably more eloquent, the case of the chief building to be (still) admired at No. 8 in Eroii Sanitari Boulevard in Bucharest. By choosing a certain site for the Medicine Faculty, by that time a component of the Bucharest University, a site probably not by chance related to current urban planning designs, the architect has strengthened the position of the latter – by making the first to play a rather significant part in shaping the rising capital city i.e. the most visible symbol of emerging Romania. Due to this facet of the refined design conceived by Louis Blanc, his creation stands for all (citizens). On the other hand, he also considered the needs of the future district. To this purpose, the edifice was conceived with four different façades, each meant to attract on the opposite front the appropriate kind of urban fabric and especially the suitable edifice types. As the area has developed precisely as Louis Blanc has encouraged by his concept, his work stands for the many (inhabitants of the neighbourhood). Last but not least, the building was designed to be exceptionally user friendly. Besides its clearly hierarchized façades, it comprises four different types of entries as well as inner spaces that allow natural and fluent traffic flows of prominent guests, students and visitors, teaching staff and, of course, other employees, supplies, etc. Accordingly, the adjoined inner spaces have been dimensioned and endowed with respect to their position within the representation ranking. As a consequence, the creation of Louis Blanc for the Medicine Faculty stands for a few (persons composing the academic community). Only, the probably most significant feature of this master piece consists in the subtle and yet simple way Louis Blanc managed to integrate the needs of his three "clients" in one single architectural object. For as long as architecture (also) deals with different scales of space appropriation, then it should aim to integrate these.

**Keywords:** Medicine Faculty, Bucharest, nationwide symbol, district landmark, academic community building

## 1 (JUST) AN(OTHER REGULAR) ASSIGNMENT

Some roots of the contemporary medicine education in Romania go back to the 19<sup>th</sup> century, to three schools for minor surgery acting within three different hospitals in Bucharest, as well as to the so called Surgery School, but mainly to the National School of Medicine and Pharmacy, established in 1858 and led at its beginnings by Carol Davila [1] himself [2]. Six years later, due to the Public Instruction Law, a significant contribution to modern education [3], the latter was turned into a college of the Bucharest University [4], in order to start its activity in 1869 [5], as the Faculty of Medicine, accompanied by its annex, the School of Pharmacy [6].

During the very same year 1869 the headquarters of the Bucharest University, finally completed [7], started not only to serve its teachers and students, but also to act as a genuine landmark for the centre of the capital town. As a (kind of) consequence, only two decades later, in 1889, the (quite large) building was overused, the academic body being outnumbered by its guests, as Alexandru Orăscu – both chancellor and the edifice's main architect – was more than entitled to estimate [8]. As a matter of fact, by that time, as well as in the following years, several other public institutions were hosted by the university property, such as the State Printing House, the Romanian Academic Society or (even) the Senate of Romania [9].

Such circumstances were, undoubtedly, a reason (more) to seek efficient solutions able to decrease the pressure put on the building by that many and that different users. At the same time, requiring certain facilities (laboratories, for instance), the Medicine Faculty was in search of more room, even after it was allowed to extend into a nearby house, acquired to this very purpose [10]. These efforts are certified at least as soon as 1886 [11] when, on November 9, the architect H. Schmieden wrote, in Berlin, a letter to the faculty's dean, doctor Felix, with regard to the sketch for an anatomy and pathology institute in Bucharest. The draft was promptly analysed, during the same month, by the Teaching Council which reached, among others, the conclusion that what the faculty really needed was its own headquarters, large enough to host all theoretical and practical lessons, except the chemistry ones, as well as the clinical activities (which were, of course, to take place in hospitals). This idea must have led to a second draft, delivered in December and showing an enlarged building, most probably never erected. This last statement is supported by a second attempt the Medicine Faculty made, four years later, in 1890, to receive its own and fully equipped headquarters. The idea was not only mentioned by the minister of public instruction himself, in a written answer to the dean's request, but once again approved by the Teaching Council. Also, the same archive file contains a series of sketches as well as written documents, describing the requirements of several divisions, such as the one of practical anatomy, accompanied by a museum and laboratories, or those regarding the pharmacology lecture, the physiology institute, as well as their (own) chemistry lab and the forensic medicine department.

## 2 (AND) AN EXTRAORDINARY PRODUCT ...

In spite of all efforts made in the late '80s of the 19<sup>th</sup> century the contract on the design for a new headquarters dedicated solely to the Medicine Faculty of the Bucharest University was signed only in 1893. But, as it will prove to be the case, (at least this time) it had been worth waiting.

### 2.1 Shaping the Capital City

According to the agreement reached on April 15, 1893, the first task of the architect assigned to deliver the design – Louis Blanc [12] – has been to identify the proper site for all future buildings, a site that, consistent with his calculations, had to measure around 10 to 12 hectares [13]. Except that, several facts suggest that Louis Blanc's way of fulfilling this task may have been broader by far than expected and did include even main ideas of the urban development of Bucharest during the second half of the 19<sup>th</sup> century.



This process has been defined, as peculiar as it may seem, also by higher education edifices [14]. In this regard, the first one to be referred to is the already mentioned headquarters of the Bucharest University, raised, not by chance, in an area traditionally hosting college type institutions. The building conceived mainly by Alexandru Orăscu stands (up to the present day) near to the former site of the Princely Academy from the 17<sup>th</sup> century that was later on turned into the National College [15]. The latter is clearly depicted in the historic map of Bucharest drawn in 1846 and updated in 1852, at the north-eastern margin of the trade quarter, the economic engine of the settlement. It was consequently here, in a historically meaningful setting, surrounded initially mostly by residences and common dwellings, that the modern Bucharest University was established in order to dominate the surrounding urban tissue ... but not only.

As a matter of fact, the imposing edifice seems to have been perceived as a landmark even before it was completed, in 1869, for it was mentioned as a marker for the (future) east – west axis of the capital city already in 1864 [16]. Abandoned one year later, only to be resumed in 1867 as an extended version for the occidental half of the settlement, this major avenue was (finally) meant to connect the Cotroceni monastery and palace, both lying at the western edge of Bucharest, to its centre (fig. 1 – F) – the latter being identified (no longer) with the commercial district, but with the headquarters of the Bucharest University. Unfortunately, its main façade was not standing parallel to the straight line connecting it to the princely residence. As a consequence, the commission assigned in 1868 to define the route of the future boulevard split and delivered two different proposals – while both parties were also willing to accept a solution that allowed the future avenue to develop along the university frontage, only to adjust afterwards its course, in order to head for the palace. It is probably important to notice that in the end, in 1870, the city council decided to adopt the version able to highlight both brand-new landmarks of rising Romania, higher education and country ruler, by agreeing on a “broken” boulevard (fig. 1 – G). This was developed in its eastern end with regard to the university frontage, changed direction at the crossing with Victoriei / Victory Road – the oldest (man-made) spine of the settlement – only to be able afterwards to aim at the Cotroceni palace. Eventually, the university has imposed itself on the design of the first major avenue of modern Bucharest, defining also its crossing with its senior representative axis, the Victory Road.

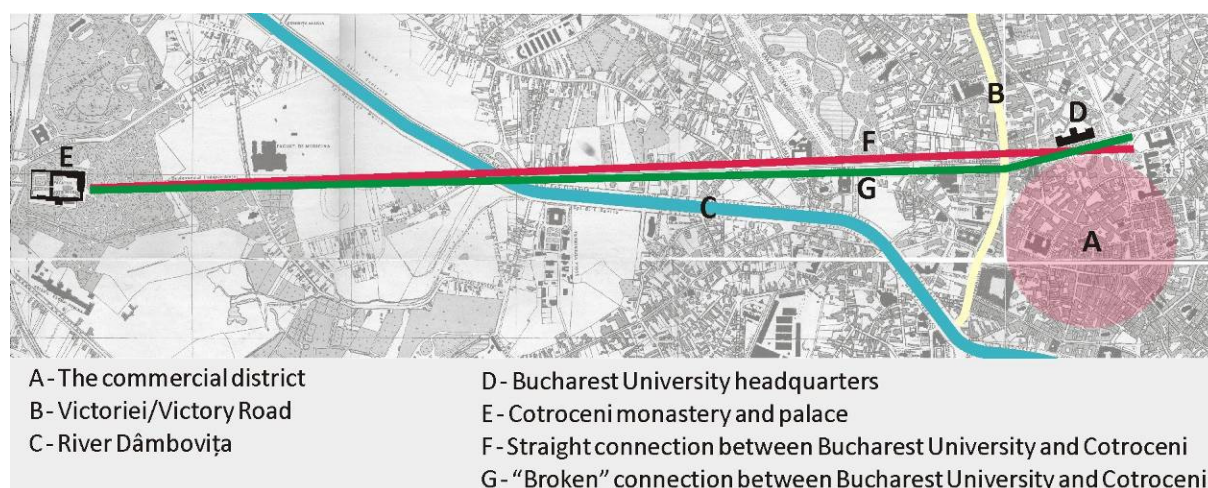


Figure 1. Bucharest: evolving relationship between university and city during the second half of the 19<sup>th</sup> century (processed excerpt of the historic map published in 1899, based upon Lascu 2011, p. 27 and 30).

Moreover, if one also takes into account the designing process of the east – west boulevard, that roughly took ten years, as well as the time required for its implementation, roughly completed towards the end of the 19<sup>th</sup> century [17], as shown by the historic map published in 1899 (fig. 2), it becomes obvious that the Bucharest University has influenced the urban development far more. As a matter of fact, before the turn to the 20<sup>th</sup> century, Romania became not only (finally) an independent country (1877), but also a kingdom (1881) and was thus able to fully involve its resources in

self-modernising. Part of this process must have been also a resolution, occurred in 1893, on May 18, to replace the old Cotroceni mansion with a new palace [18]. The very same year Louis Blanc did accept, on April 15, to conceive the headquarters for the Medicine Faculty. It is consequently quite possible that a well informed and sensitive professional would have taken the opportunity to intelligently meet both the demands of the Bucharest University and those of the city of Bucharest. The first needed to expand, the latter required a second representative axis not only in terms of the connected extremities, but also as imposing frontages. In other words, in order to fulfil its political and urban planning mission, i.e. to unite the royal residence to the core of the capital city, the future east – west boulevard had to be “furnished” in-between with significant edifices. Only, the nearer to the Cotroceni ensemble, the farther from the city centre and thus the lower the chances to erect buildings of major public interest as, for instance, those hosting the government or, even, the local authorities. But higher education properties provide an excellent solution to the given problem, through large and monumental architectural objects, symbolising the progress of the whole nation, usually located in key cities, as capitals, and able to embellish these but, in the end, used directly by a community smaller than that of their neighbourhood. These may have been the reasons why Louis Blanc has chosen for the headquarters of the Medicine Faculty a site lying between the Dâmbovița river, freshly straightened in its turn, and the royal palace – as shown in the historic map of Bucharest published in 1899 (fig. 2). As a matter of fact, by that time (and even later) the edifice designed by Louis Blanc was the only support and sustenance of the east – west boulevard beyond the watercourse, in the middle of nowhere ... .

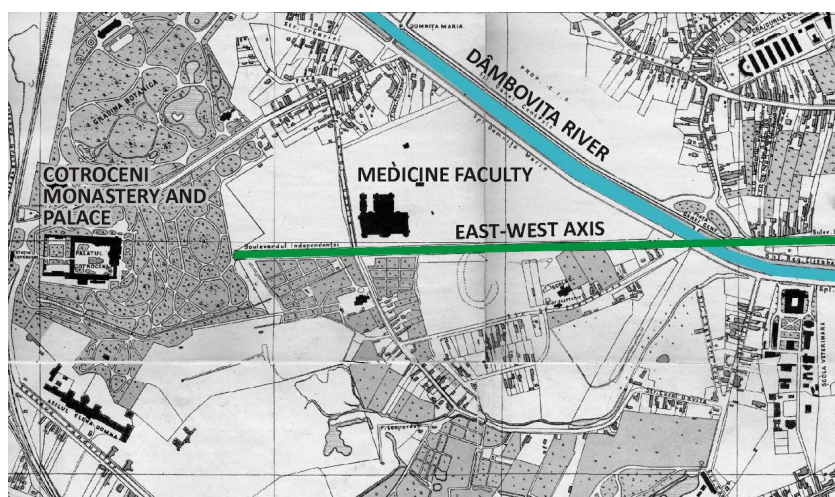


Figure 2. The east – west boulevard and the headquarters for the Medicine Faculty towards the end of the 19<sup>th</sup> century (processed excerpt of the historic map published in 1899).

## 2.2 A Far-seeing Landmark for the Future District

Given these (other) circumstances, it becomes also obvious that the Medicine Faculty building was of use not only at the scale of the whole city, but also at the more modest one of a new neighbourhood, that literally started to emerge and to evolve only at the turn from the 19<sup>th</sup> to the 20<sup>th</sup> century.

One reason for the late birth of this area in Bucharest [19] must have been the river Dâmbovița. The deep meander in this section, turning the stream with 180 degrees was, of course, comprising fertile, but unstable alluviums. As a consequence, as the historic map drawn in 1846 and updated in 1852 keeps in (our) memory (fig. 3), this part of the city has been used for orchards and vineyards until the watercourse was eventually regularized and thus controlled. Naturally, it was only afterwards that this surface could be conquered for genuine urban purposes and, as expected, the first instrument employed was the street net. Except that, in contrast to the ordinary kind of process, in this case, the main traffic way, i.e. the east – west avenue was accompanied from (almost) its beginning by a major public property, a fact proven by the 1899 published map (fig. 2). According to the contract, the campus of the Medicine Faculty was to be developed on the large plot, measuring roughly 141.000



square meters – the reason why, at least in the direct vicinity of the river Dâmbovița, the street net remained rarefied even at the beginning of the 20<sup>th</sup> century (fig. 4). As a matter of fact, the densifying process of the traffic ways started only later and so did, consequently, the housing stock. Thus, although the area had been won by and for the city already at the end of the 19<sup>th</sup> century, the neighbourhood was born only 25 years later.

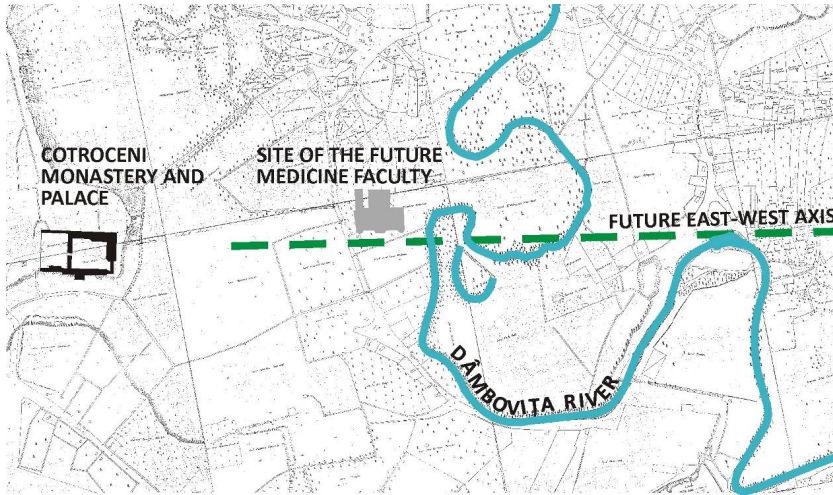


Figure 3. The site of the future headquarters for the Medicine Faculty around the midst 19<sup>th</sup> century (processed excerpt of the historic map drawn in 1846 and updated in 1852).

But this fact did not induce Louis Blanc to ignore the future urban tissue. On the contrary, his concept must have carefully taken into account the development of the immediate surroundings [20]. Moreover, this valuable feature is acting although the desired campus was never completed according to an initial design, but was restrained, probably for financial reasons, to the main component. This building, which, given its size and position with regard to the crossing between the east – west boulevard and the only street already existing at the time of its erection (see figures 2 and 4), must have been conceived as the key piece of the entire ensemble and consequently must have been designed to set the tone of the group of edifices meant to house the Medicine Faculty of the Bucharest University. As a result, even if any other building belonging to the vision of Louis Blanc has been never embodied, one still receives and perceives the local landmark features of the initial design.

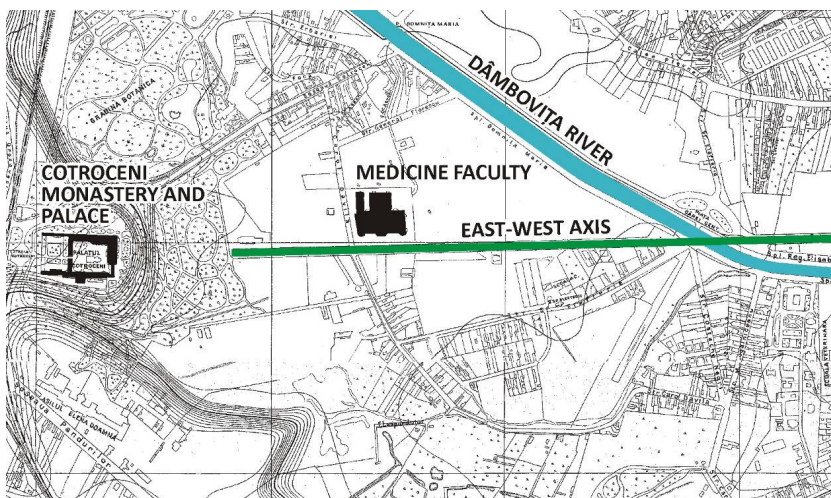


Figure 4. The area around the headquarters for the Medicine Faculty at the beginning of the 20<sup>th</sup> century (processed excerpt of the historic map published in 1911).

In order to act as such, the given building has been endowed extremely rich even with respect to most of other buildings facing significant boulevards. These usually [21] enjoy only three façade types defined by the position towards the avenue – main frontages, secondary ones and the by far most modest backs. Unlike these (many other), the masterpiece of Louis Blanc offers not three, but four different sorts of façades. The dominant one (fig. 5 – on the left) supports and honours the connection between the core of the capital city and the royal palace i.e. the east – west boulevard and has consequently attracted on the opposite frontage highly representative residences and luxury apartment buildings (fig. 5 – on the right). In order to welcome anyone heading the royal palace, the main façade of the Medicine Faculty (fig. 6 – on the left) is looking towards the town centre and has displayed to its east the “red carpet” of a generous green area (fig. 6 – on the right). On the opposite side, facing a less significant traffic way, the secondary frontage of the chief edifice serving the Medicine Faculty (fig. 7 – on the left) obviously enjoys the intimacy specific for a less pretentious but still comfortable housing area (fig. 7 – on the right). Last and not least, the rear façade of the Medicine Faculty (fig. 8 – on the left) actually ensures that all other elevations stay clear (as much as possible) of auxiliary structures (fig. 8 – on the right and in the back).



Figure 5. The dominant façade of the chief building for the Medicine Faculty (on the left) and representative residences (71 and 73 Eroii Sanitari Boulevard) facing it, in 2015 (the author).



Figure 6. The main façade of the chief building for the Medicine Faculty (on the left) and the green “red carpet” rolled out in its front, in 2015 (the author).



Figure 7. The secondary façade of the chief building for the Medicine Faculty (on the left) and unpretentious still comfortable dwellings (77 and 79 Carol Davila Street) facing it, in 2015 (the author).





Figure 8. The rear façade of the chief building for the Medicine Faculty (on the left) and auxiliary structures, in 2015 (the author).

### 2.3 Hosting the Academic Community

Last but not least, the key edifice of the never ever built campus conceived by Louis Blanc proves to be exceptionally coherent with regard to the relationship between the refined hierarchy of its outer appearances and its inner spaces, both in terms of use and design. In effect, although paying a lot of attention to the city and the district, the architect never forgot his client – the teaching staff and the students belonging to the Medicine Faculty of the Bucharest University.

As a consequence, the complex and yet imposing volume composition of the southern part of the building, the one facing the east – west boulevard (fig. 5), by the dominant façade, corresponds to the most representative inner spaces, basically consisting in the monumental entrance hall (fig. 9 – on the left) that essentially leads to the two impressive council halls (fig. 9 – on the right and fig 10 – on the left, now-a-days the chief reading hall of the library) and the primary amphitheatre (fig. 10 – on the right).



Figure 9. The monumental entrance hall (on the left) and the council hall (on the right), in 2015 (the author).



Figure 10. The former second council hall, now the chief reading hall (on the left) and the primary amphitheatre (on the right), in 2015 (the author).

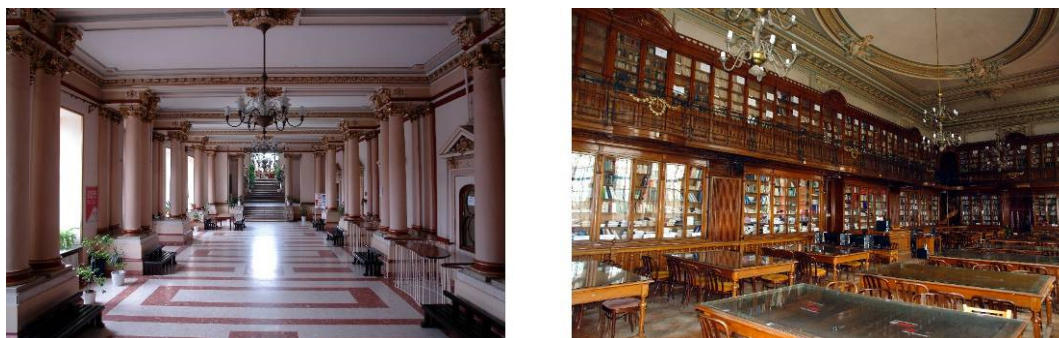


Figure 11. The former students' entrance hall (on the left), still preserving the cloakroom windows (right hand) and the stair to the library (in the back), as well as the reading room at the first floor, in 2015 (the author)

Only, most probably, the entrance on the dominant elevation was employed rather seldom, on special, festive and / or solemn occasions regarding the academic life (in fact, a tradition preserved up to the present day). Most likely, both the faculty members and their visitors were expected to use the other entrances by simultaneously respecting the inherent academic hierarchy very clearly reflected by Louis Blanc in that of the four elevations. To this end, the eastern façade, the one by which the building turns itself to the city in order to welcome anyone coming from its centre, hosts what must have been initially the students' entrance. This hypothesis is substantiated first by the western wall of the belonging hall (fig. 11 – on the left) that still preserves the numerous cloakroom windows able to allow hundreds of students and / or public conferences guests to leave their coats before going to the amphitheatre (by using the side doors). The hall windows to the cloakroom must have been used also by students heading the Neo-Baroque stair that takes to the library (fig. 11 – on the right), which, initially must have been exclusively at the first floor.

As well, according to the sophisticated hierarchy of the façades, the architect has most probably provided a distinct entrance for the teaching staff. Having earned the right to more privacy when reaching or leaving the faculty and sometimes really requiring it, the professors must have been provided with their own access possibility through the less public western elevation. Facing the secondary traffic ways crossing the east – west boulevard, this façade did comprise, at least according to the historic map published in 1911 (fig. 12 – on the left), two discreet accesses of which one (fig. 12 – on the right) is preserved. Although, in this part, the inner space of the building has been quite altered, one can still follow how the initial two professors' entries once allowed an efficient traffic to significant areas of the building, as the representative front wing and the ordinary amphitheatres, adjoined by labs.

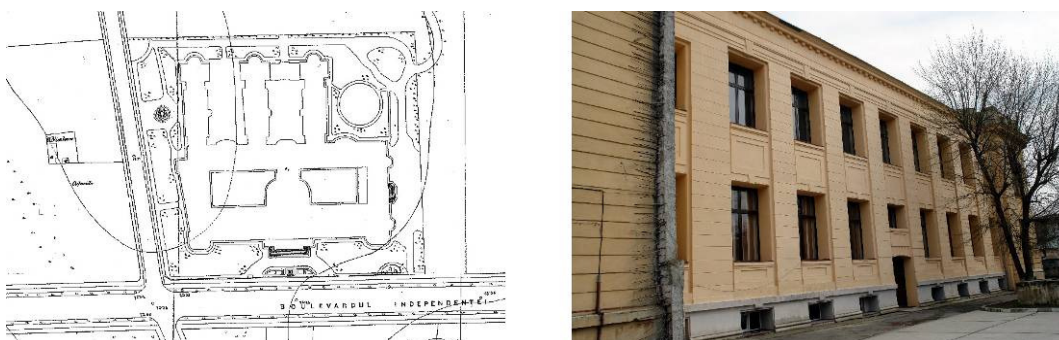


Figure 12. The two alleys (left) connecting the secondary traffic way to the presumed entrances for the teaching staff, excerpt of the historic map published in 1911 (on the left) and the one preserved, in 2015 (the author).

Last and not least, the less homogeneous rear elevation reflects nothing else than a high density of subsidiary and consequently by far less stable inner rooms. The intensity of the changes these have

undergone can be clearly read both from the outside and the inside, but has been vital for the preservation of the more representative areas of the building.

### 3 ... STANDING FOR ALL, THE MANY AND A FEW

Designed according to the concept (only briefly) described above, the chief (and eventually only) building Louis Blanc created for the Medicine Faculty of the Bucharest University proves to be perfectly adjusted not for one, but for three “clients”.

Firstly, it seems that the architect considered himself to be working for nothing less than the whole nation. As expected, this idea may have been induced simply by the assignment, for the headquarters of a higher education institute is naturally meant to serve the well-being of the entire population of a country. Only, in this very case, Louis Blanc thought beyond the mere function of the building. By choosing a certain site for the Medicine Faculty, by that time a component of the Bucharest University, a site probably not by chance related to current urban planning designs, the architect has strengthened the position of the latter – by making the first to play a rather significant part in shaping the rising capital city i.e. the most visible symbol of emerging Romania. Due to this facet of the refined design conceived by Louis Blanc, his creation stands for all (citizens).

On the other hand, aware of the fact that the edifice was to be erected in the midst of an urban void, only recently conquered from the wetland of the river Dâmbovița, Louis Blanc also considered the needs of the future district. This was supposed not only to fill a gap in the urban tissue, but to correctly ensure the connection between the two city areas lying each on a river bank. To this purpose, the architect has conceived a building with four different façades, each meant to attract on the opposite front the appropriate kind of urban fabric and especially the suitable edifice types. As the area has developed precisely as Louis Blanc has not only foreseen but also encouraged by his concept, his work stands for the many (inhabitants of the neighbourhood).

Last but not least, the building was designed to be exceptionally user friendly. Due to its clearly hierarchized façades, it comprises four different types of entries that allow natural and fluent traffic flows of prominent guests, students and visitors, teaching staff and, of course, other employees, supplies, etc. Accordingly, the adjoined inner spaces have been dimensioned and endowed with respect to their position within the representation ranking. This concept as well as its implementation have proved to be flawless as these managed to survive all changes the edifice had to endure, basically because it never got the rest of the required campus. As a consequence, the creation of Louis Blanc for the Medicine Faculty stands for a few (persons composing the academic community).

Only, the probably most significant feature of this master piece consists in the subtle and yet simple way Louis Blanc managed to integrate the needs of his three “clients” in one single architectural object (fig. 13) and to merge needs of the capital city (fig. 13 – red), with those of the district (fig. 13 – yellow), as well as the four distinct areas required by the faculty i.e. the dominant, highly representative one, for significant events (fig. 13 – deepest purple), the main part serving students and regular visitors (fig. 13 – second deep purple), the secondary and thus more intimate component for the teaching staff (fig. 13 – light purple) and the modest but far more flexible rear (fig. 13 – lightest purple).



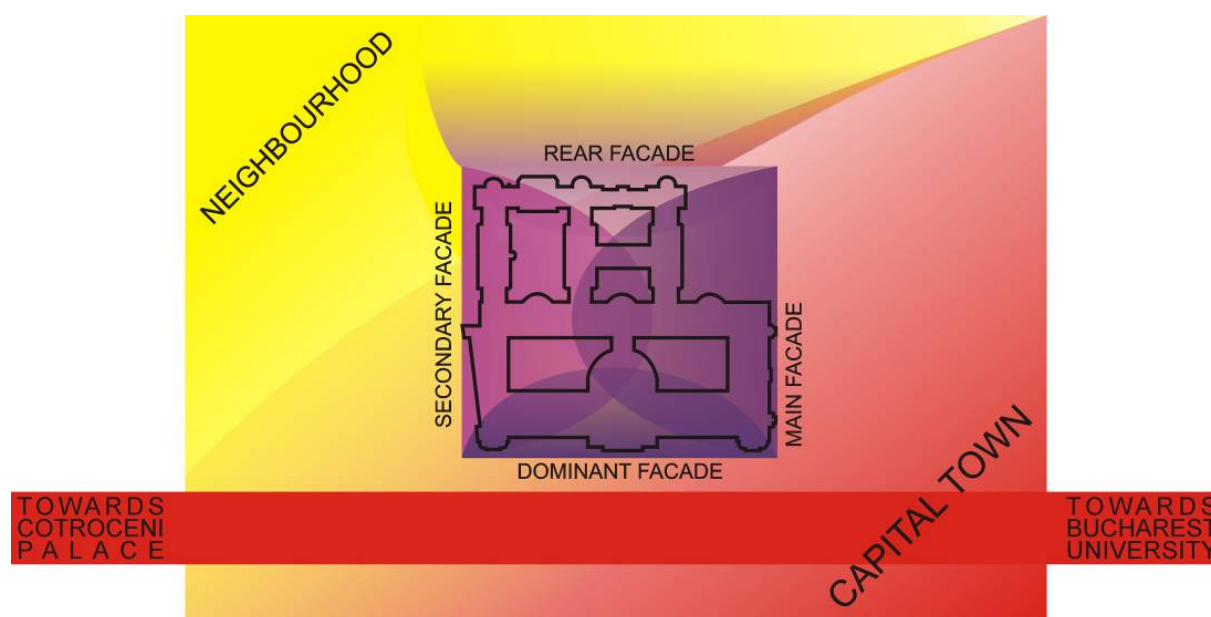


Figure 13. As long as architecture (also) deals with different scales of space appropriation [22], then architecture should aim to integrate these.

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## SELF-SCALING AS A PROJECT METHODOLOGY IN OMA

**Belén Butragueño<sup>1</sup>, Javier F. Raposo<sup>2</sup>, Mariasun Salgado<sup>3</sup>**

<sup>1</sup>*Belén Butragueño, ETS Arquitectura de Madrid, UPM (SPAIN)*

<sup>2</sup>*Javier Francisco Raposo, ETS Arquitectura de Madrid, UPM (SPAIN)*

<sup>3</sup>*Mariasun Salgado, ETS Arquitectura de Madrid, UPM (SPAIN)*

*b.butragueno@upm.es, javierfrancisco.raposo@upm.es, mariasun@rougart.com*

### Abstract

In 1998 Rem Koolhaas was asked by a private Dutch investor to build a house that gave response to three obsessions of the client: a pathologic hate for mess, a peculiar family lifestyle (he wanted to have a place where they could meet but also other places where they could live separately) and an irrational anxiety towards the so called "Year 2000 problem" (Y2K). In response to those specific demands Rem Koolhaas designed a house that turned around a central "tunnel-like" shape with many other elements surrounding it contained into a thick layer (to hide the mess). The main uses such as living room or the departments appeared to be excavated from that mess. The result was a polyhedral transparent shape with a box inside. Unfortunately, this project was never built. Among some other reasons, was the fact that the "Year 2000 problem" was not such a real problem after all.

Luckily Rem Koolhaas found a way to give a second life to that project in the shape of the very well know "Casa da Musica" in Porto (Portugal).

When OMA received the invitation to participate in that competition, the conditions were of unusual urgency: the project had to be done in three weeks and the building had to be erected in two years. Suddenly they came up with the idea of scaling 10 times the Y2K House. They were sceptical at the beginning because it was indeed a cynical way of beginning but the more they got deep into the project the more appealing it became. They could overcome the historical tyranny of the shoebox shape of the auditoriums obtaining an acoustically efficient project and yet a fascinating architectural shape.

Is this act just opportunist or brilliant? In fact the Y2K House was not "only" a project, it was a research itself. It opened a wide field for experimentation and speculation.

It would have been very easy not to say a word about their internal methodology but it was worth doing it. Not only they mentioned it, they made a flag of it.

Somehow this project cooperated to open a new era inside of OMA that triggered the formation of AMO (OMA's nemesis) whose work is based on the research of phenomena that catch the attention of the office even if there is no external assignment, merely based on speculation and processes with no attach or dependency on results.

Of course it was not the first time that they re-used their own material and it definitely won't be the last one. But it was the first time that they used it as a pedagogical act of redeeming themselves. Koolhaas has a deep obsession with registering everything that arises in the office. "Registration" is included as a part of the creative process and not necessary at the end of it, using information recurrently.

What we find more interesting about this case is the research on graphic tools as the trigger for new processes. We can compare this phenomena with the "scaling" used by de-constructivist architects such as Peter Eisenman or Bernard Tschummi. What those architects seek for, was to break the architectural code, unlinking definitely the classic language of architecture. To break that code they make use of different strategies, one of the most known ones is "scaling". This graphic procedure

basically consists on the superposition of different patterns into an existing drawing generating scale transformations on each step. The result generates brand new suggestions for other projects, in an endless world of possibilities.

Departing from almost an anecdote, an strategic game, we immerse ourselves in a research on the graphic possibilities of breaking reality into pieces to create a new scenario or decontextualize any of the parameters of the drawing, such as "scale" to generate a new reality or as we have recalled: "self-scaling".

This will lead us to get conclusions about the creative process in OMA and their methodological strategies and extrapolate them to the architectural world and the possibilities of creating from graphic strategies.

**Keywords:** self-scaling, transformation, opportunism, speculation, registration

## 1 PETER EISENMAN: A THEORETICAL CONSTRUCT BASED ON DRAWING

Peter Eisenman is an architect whose architectural background emerges from the literary, philosophical and scientific theories of his time. His intention is to free architecture from its own traditional language and canons. He developed his first theoretical approaches since 1967 from his position as Director of the institute of Architecture and Urban Studies in New York (IAUS) and they became fundamental for the development of the architectural vanguard movements of the following years. In that moment, the main thematic was the domestic environment and he was inspired by the analytical methodologies of Collin Rowe. Through those years he experienced a conceptual change decomposing more and more the cubic shape and breaking the Euclidean supremacy, in his series of Houses. It is very important the election of axonometric drawing as the method to represent those projects, chosen due to their abstract and objectual conception, completely unlinked to the territory.

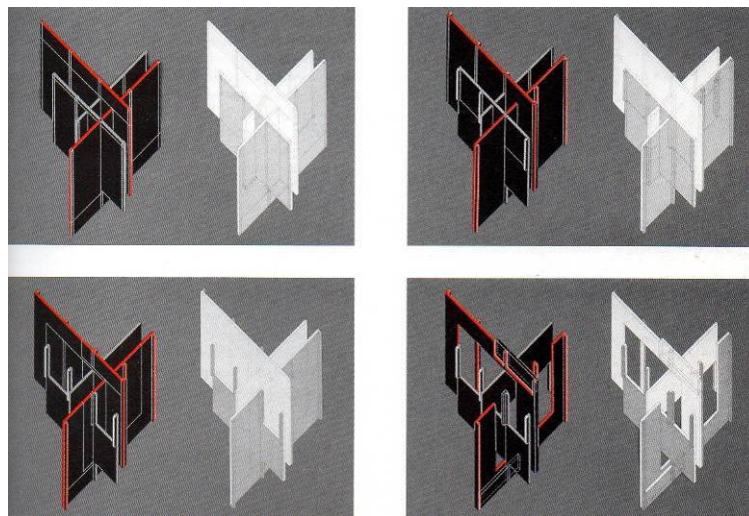


Figure 1. House VI, Cornwall, Connecticut, 1972-1975. Conceptual axonometric diagram

However, from that moment on, his works focuses on the relationship between architecture and city. His work "Cities of Artificial Excavation" (developed between 1978-1988, once IAUS disappeared) in composed by a series of eleven urban projects, competitions and theoretical works in which he researches the tri-dimensional isolated object (developed during the seventies) into the wide range of physical and historical topographies of the particular places. Those projects represent a change of scale: from the domestic size to the urban space. [1]

The title ("Cities of Artificial Excavation") recalls three main ideas: the relationship between architecture and the city, the removal of the value linked to the rational design processes and the creation of the fictitious remains tied to the place. All those ideas are developed through the drawing.

His intention was to eliminate the three myths of classic architecture: a timeless, significant and true architecture. Eisenman considers that even the International Movement was attached to the values of its time and therefore attached to history. In opposition he proposed an *artificial architecture*: without beginning and end, without meaning and arbitrary.

To illustrate this concept he uses the metaphor of the *graft*, that appears clearly in the graphic strategies used (as we'll explain afterwards):

*"One example of an artificial origin is a graft, as in the genetic insertion of an alien body into a host to provide a new result. (...) A graft is not in itself genetically arbitrary. Its arbitrariness is in its freedom from a value system of non-arbitrariness (that is, the classical). It is arbitrary in its provision of a choice of reading which brings no external value to the process."* [2]

Moreover, those projects represent a reflexion on the architectural representation and how we can discover new architecture topographies through the application of different drawing techniques based on a geometrical reading of the territory, such as "carbon copy", patterns superposition at different scales, modification or reproduction. For Peter Eisenman the act of drawing is a creation system where no shape is predetermined. [3].

The systematic use of those techniques developed in the conformation of a strategy named "scaling" that represents a radical change in the classic architectural discursive approaches. The scaling represents a procedure of continuous transformation that gathers three independent principles:

- The recurrence to mathematical shapes through the subdivision (suppressing the supremacy of the original) *Recursivity* is the elaboration of self-same forms, it confronts origin only when it is in a condition of self-similarity.
- The proliferation of equal forms but not identical (abolishing the human scale) *Self-similarity* refers to analogical repetition and not to the geometric mimesis usually found in an aesthetic object. Rather than being an aesthetic object, the object becomes a text, a structure of its own being.
- The fragmentation of the figures to undermine the perfection of simple geometric shapes.

Basically, in the "scaling" procedure certain properties of an object are selected or isolated from their context and transposed to a different location. There, they are represented at a different scale in juxtaposition with the elements of its new context. The result is never a definitive architectural shape but a continuous transformation project. In opposition with the Houses projects, the techniques developed in "Cities of Artificial Excavation" requires a development in plan.

The procedure is quite simple: first he uses images extracted of old maps, changing their scales in base to the geometric relationships dictated by procedure. Then, he uses carbon copies to register those traces and superpose them. The result are complex and heterogeneous drawings linking a colour to each trace that are replicated in different places and at different scales. As a result, the traditional figurative appearance of architecture is vanished.

Discontinuity, *recursivity*, and self-similarity confront presence, origin, and the aesthetic object in three aspects of the architectural discourse: site, programme, and representation.

We can see a clear example of this methodology in the Romeo and Juliet project.

### 1.1 "Romeo and Juliet" Pavilion, Biennale di Venezia, 1985

The "Romeo and Juliet" project is one of the most relevant examples of the "scaling" device. It tries to respond to the rehabilitation program of the castles traditionally attached to the Montesco and Capuleto families in Montecchio Maggiore (Veneto). With that intention, Peter Eisenman analyses the intrigue of Shakespeare's Novel "Romeo and Juliet". The original story of Romeo and Juliet, by Da Porto, was inspired by two towers in Montecchio but was set in Verona. The "site" in the story is therefore fictional, not only because it is in a story, but also because it is ambiguous; it refers to two real places. The quality of spaces in those two cities are juxtaposed with the fictional story of Romeo and Juliet, and by treating "the site" not simple as presence but as both a palimpsest and a quarry,



containing traces of both memory and immanence, "the site" can be thought of as non-static. He related each to the main characters to a plan of a castle and then he directs these two "Architectural characters" through a series of "scaling" scenes located in the places where the story was developed (the wedding, Juliet's death and so on). Finally he makes a tridimensional development of the plans born from the scaling processes with the help of axonometric drawings and models.

Peter Eisenman makes a strong bet on a more complex and less literal forms of architectural representation, avoiding the assumption that must be anthropocentric.

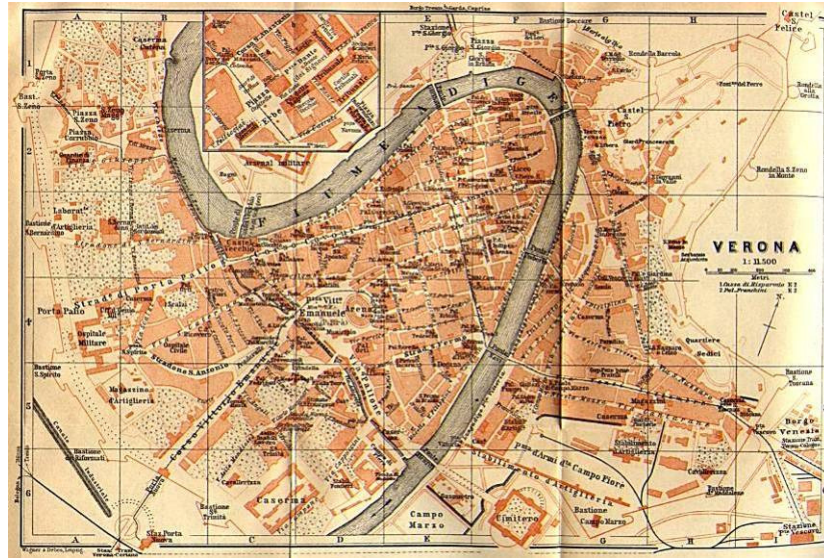


Figure 2. Romeo and Juliet Pavillion, Venezia, 1985. Original Verona Map

This scaling process is based on three super positions, in this case. [4]. The first one works on the idea of division reflected in the texts. When the walls of Romeo's castle are superposed on the walls of the old city of Verona, the three elements of the site of Montecchio fall in a divided relation to the walls of the real Juliet's castle; a simulated Juliet's castle falls inside the real castle and so does a simulated church and a simulated Romeo's castle.

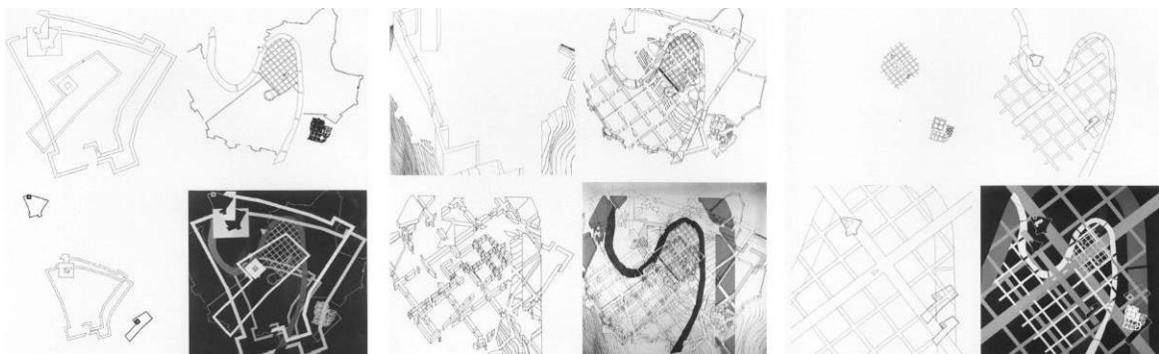


Figure 3. Romeo and Juliet Pavillion, Venezia, 1985. Scaling process. Three consecutive transformations.

The first scaling involves the transposition of place and superposition of scale revealing the structure of the textual narrative. The second superposition works on the idea of union of the texts. In this case, Juliet's castle appears as an active trace at the actual church of Montecchio. The tower of the castle surrounds the church. Superposed over the tower of Juliet is the tower of an active trace of Romeo's castle. The church of Montecchio is an active presence registering the idea of union.

The third superposition works on the dialectical relationship between union and division. Juliet's castle is an active presence over the cemetery of Verona. The representation is always referred to an origin but not the text that refers to its own structure. Text has the capacity to create infinite



combinations of previous texts into new text; the three-dimensional experience yields open-ended readings. The final image it's shown as an open process that suggests much more developments

## 1.2 "Chora L Works", Parc de la Villette, Paris, 1985-1986

This project represents the summary of eight years of work on "Artificial excavations" In 1985, Bernard Tschumi invites the French philosopher Jacques Derrida and Peter Eisenman to collaborate for designing a thematic garden in a portion of Parc de la Villette. Derrida was writing an essay on Plato's theory of the cosmos and this text enriched the stratification strategy of Eisenman.

The "scaling" here is applied through the permutation of the four spaces analyzed: Villete, Cannaregio, Venezia and Tschumi's Villette project. The different projects are organized through past, present and future, creating a grid that regulates the proportions of the different super positions.



Figure 4. Chora L Works, Parc de la Villete, 1985. Scaling process.

The ulterior use of digital methodologies allowed the increasing complexity of the projects (Columbus Convention Center, Columbus, Ohio, 1989-1993) and also help him to define the tactile and sensitive qualities of the projects. His theoretical practice was always meant to be built.

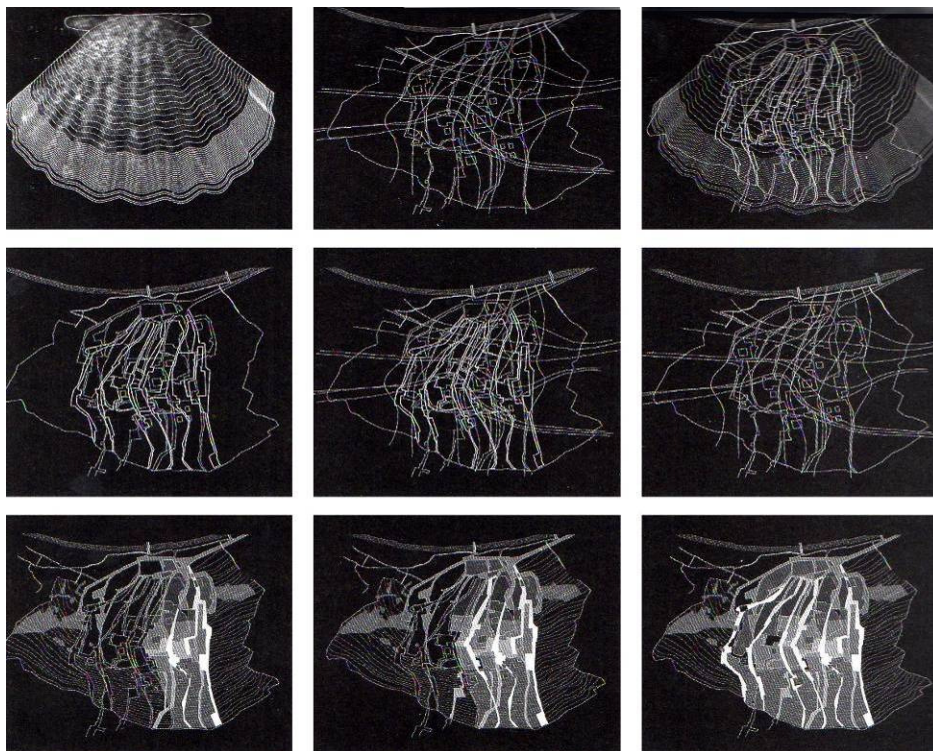


Figure 5. The City of Culture of Galicia, Santiago de Compostela, 1999. Site diagram development

## 2 SELF-SCALING: A REINTERPRETATION OF THE STRATEGY

In 1972 Rem Koolhaas travelled to USA with his wife with a Harkness Grant, to attend a workshop on Oswald Mathias Ungers at Cornell University, where he got in touch with Collin Row. As soon as he had the chance, he moved to New York and became a visiting professor at IAUS, under the Direction of Peter Eisenman, who was a transcendental influence in his theoretical conceptualization. The IAUS represented at that time a vanguard architectural think tank, encouraging the utopic experimentations.

Peter Eisenman had a strong influence in Rem Koolhaas' methodological strategies, as it is remarked in his first projects during the 80's. Also, his drawing strategies had left a mark on OMA's working system, as we can appreciate if we analyse the creation process of Casa da Musica project, which origin can be found in a very different project of domestic nature.

Rem Koolhaas considers that *"the architectural process is a kind of permanent dialectical confrontation between the search for form and the process of fitting program into this form"*. [5].

But there are some other aspects, related to psychology and science, that can trigger and inspire the process, including a factor that Koolhaas himself describes as "opportunism". In the next lines we will go deep in the description given by Rem Koolhaas himself in a lecture called *"Transformations"* (Antwerpen, 1999) to have the possibility to compare both working systems.

### 2.1 The Y2K House, 1998

In 1998 Rem Koolhaas was asked by a private Dutch client who was living in a house in the suburbs of Rotterdam. One of the most important topics was the view, to the point that the client had bought all the land 1 km around the house to ensure it. OMA had just finished a series of very sophisticated houses, including the House in Bordeaux (based on a room that moves throughout the house on an elevator) and the house in Paris with the swimming pool in the roof. They decided to abandon the series of projects that led to those houses and look for something *"stupid and simple"*. [5].

The client imposed three conditions to the project that were equally important for him and that OMA wanted to turn into opportunity: he hated mess, he had a real anxiety about the Y2K (the year 200 effect) problem and he had a peculiar relationship with his family, so they needed a place to be together and also some places to be alone.

The first concept produced consisted on a single space which looked almost like a tunnel where the family could get together. The rest of necessary uses were surrounding that space like external elements or, as Rem Koolhaas described it, *"a body where all the organs are on the outside and where the skin is used on the inside"*. [5]. Once they had the main concept they started dealing with the program, which didn't seem to fit properly. They decided to put the bigger elements closer to the tunnel but still the result was unattractive and not challenging at all. At that point they had an important breakthrough: instead of all the turbulence on the outside, they made a kind of thick layer that surrounded the tunnel on four sides and that would contain all the elements of the house, so that the house would be at the same time an object and a word. To some extent there would be no house there and the tunnel would be a simple focus on the view. Then, they would simply generate the rooms that were necessary and then adjust the form of the house to those necessities. This approach could be considered much more as "OMA-AMO".



Figure 6. TheY2K House, The Netherlands, 1998. Models development

In their own words, *"the house would consist of completely empty, abstract spaces and completely solid, mysterious spaces that contain mess, junk, services and other necessities"*. They applied a kind of Stealth aesthetic, which gave the project a much more abstract appearance. It was a solid element, still containing the main tunnel, but also other perforations that led to these other spaces and that had different relations to all the spaces.

The project was presented to the client with a series of sketches and models. At first, he seemed to be very excited about it but later he started doing objections about the location of the house. With the different versions and consecutive meetings his reactions were similar: a mixture of excitement and scepticism, to the point that it seemed to be a strong sense of confrontation.

In this tense situation something unexpected happened: Rem Koolhaas made a trip to Nigeria and in two weeks he changed his outlook completely. He expected to find a distress condition but he discovered a highly organized system of survival in which the population seemed at once incredibly creative, motivated and energetic. So he came back to the Netherlands *"euphoric, and intolerant towards anything that was not direct, efficient and beautiful"*.

The project was never done but just at the same time OMA received an invitation to participate in a competition for the construction of a concert hall in Porto. The conditions were of unusual urgency: the project needed to be done in three weeks and the building needed to be erected in two years.

With this new "sense of efficiency" brought from Nigeria, they simply decided to use the concept of the Y2K house for the concert hall. They explain it this way:

*"In the beginning we were shocked and members of the office were shocked that we could be so cynical. And that what had seemingly been made specifically for one aim could be suddenly turned opportunistically into something completely different. But the more we thought about it and the more we looked—because at this point the visual becomes the dominant force—the more appealing it became to simply shift scales and use all the earlier research as a form of immediacy and maybe it could be actually exciting to do it that way". [5].*

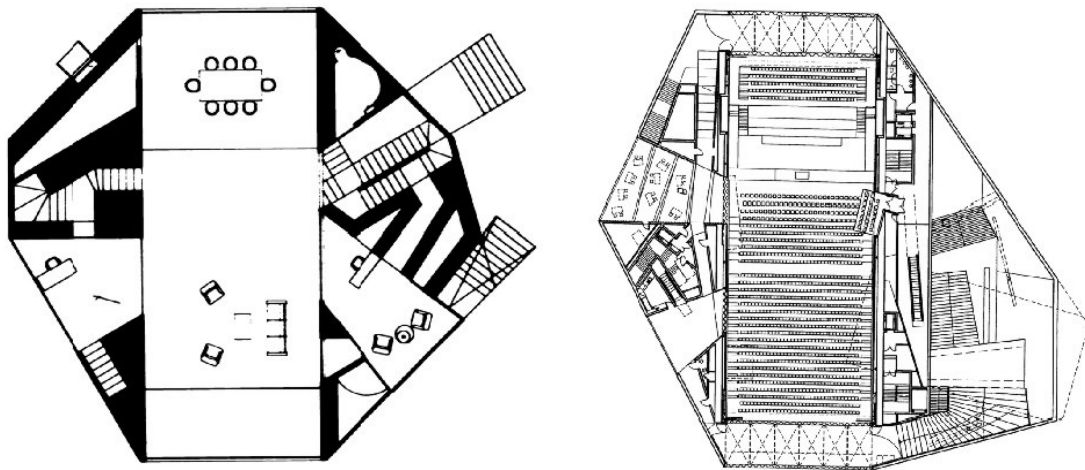


Figure 7. TheY2K House (The Netherlands, 1998) versus Casa da Musica (Porto, 1999).

Somehow, the more they researched on that configuration the more they saw the possibility to escape from the "tyranny of the shoebox" that always surrounds the concert hall conception because of its acoustic ideal characteristics.

They had found a void shoebox drilling through the volume like a tunnel. Instead of being a problem, it became an opportunity: *"The last 20 years architects have tried to make the shoebox interesting,*



*here the shoebox made the project interesting. It was an incredible opportunity of having both a shoebox and being acoustically correct and yet architecturally fascinating."*

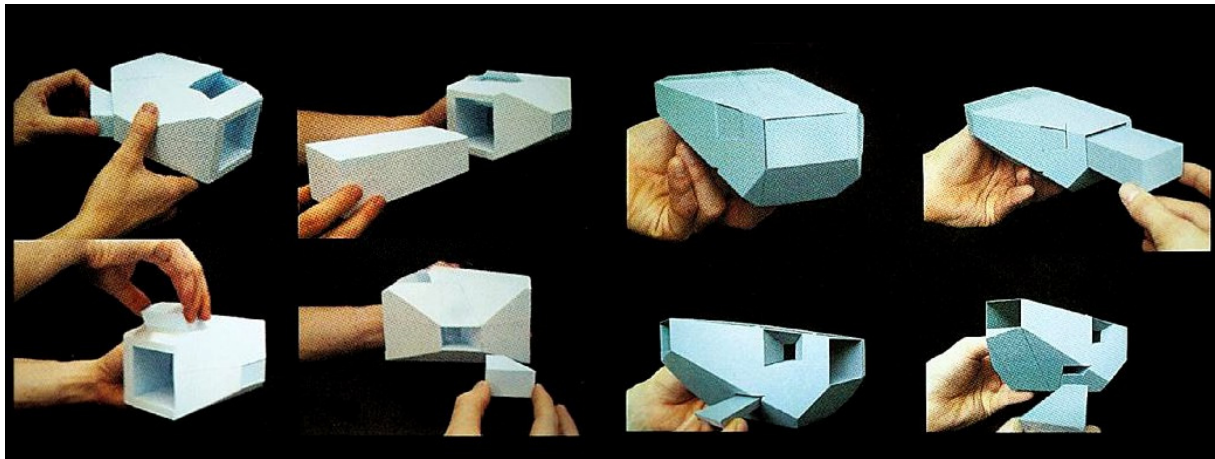


Figure 8. Casa da Musica, Porto, 1999. Model development

The simple act of "*scaling*" the concept opened a world of opportunities and somehow everything fitted in even better than in the housing project. It is fundamental to remark the importance of the drawing during the process because in many occasions, due to the very specific family of shapes they were using they only could deal with them through the drawing and the beauty or ugliness of the drawings themselves was an undeniable condition during the process.

## 2.2 The impact of the strategy: AMO

As we just mentioned, the team itself got shocked first with the possibility of adopting this apparently simplistic strategy and later with the positive results obtained. The impact that this procedure had in the working system of OMA, together with some other conditions (such as the complicated relationship with the client in the Universal HQ project) led the office to understand the necessity of creating a nemesis of OMA: AMO.

AMO would be an entity independent from the external forces, such as unpredictable political or sociological changes, unstable clients or the necessity of building all the projects. AMO would undertake speculative and research projects and work as a parallel and independent entity focused on questions of identity, culture and management.

AMO represents the way that Koolhaas reclaim the architectural thinking, separated from the objective of building the project. Freed from the charge of erecting an object the results of its researches can be actually radical and efficient, with much effective and fast processes.

Koolhaas has always had that intention of keeping a space for speculation and mere theoretical practice. That is why already in 1978 he created the Groszstadt Foundation, only three years after OMA's foundation. This was an independent section of the office which objective was to coordinate the cultural activities such as publications and exhibitions. [6].

## 3 REGISTERING AS THE FIRST PART OF THE STRATEGY

Casa da Musica had other side effect in OMA's organization system, as they realized of the importance of registering all the processes followed in the creation of projects. Every time OMA starts a new project, thousands of speculative processes are opened and most of them just find a dead end. But, of course, most of them have a great value and can be considered for new experiences, find a second and successful life, as it happened in Porto.

Of course it was not the first time that they re-used their own material and it definitely won't be the last one. But it was the first time that they used it as a pedagogical act of redeeming themselves.

OMA's files were specially chaotic until they discovered that the registration of architectural concepts could help them to develop more speculative and efficient processes, becoming an essential part of the creative process, and not necessary the last one. The "self reference" has become a must in OMA's working process.

The "Registration" concept has much to do with his previous experience as a journalist in "Der Haagse Post", newspaper with a peculiar philosophy. The compromise was not so much to moralize or interpretate reality but to accept it in an unconditional way, prioritizing facts over opinions. Of course, it is important to notice that is always the writer who decides the focus and the description guidelines as it is the architect who chooses which part of reality he is focusing on and which ideas he chooses to re-use.

This practise has become more and more important for OMA, as it is remarked by Beatriz Colomina in the exhibition "OMA Book Machine" (curated by Brett Steele and Zak Kyes, Architectural Association of Architecture, London 2010) a unique experience resulting in the importance of communication in architecture. They created a mega-book of more than 40,000 pages that gathered most of the books, pamphlets and publications of all kinds that OMA had developed since 1978. Of course, information itself is useless, as it's shown by this huge and impracticable book. It is necessary to distinguish and punting the information in hierarchy. There is where the communication strategies arise.



Figure 9. Beatriz Colomina, "The architecture of Publications", El Croquis nº 134-135. Diagram of publication activity

#### 4 CONCLUSIONS

Was the process developed in Casa da Musica just an act of opportunism or a brilliant strategy? Is this process inheritor of the drawing strategies developed by Peter Eisenman in the 80's? Which are the similarities and the main differences?

We base our statement on the assumption that they have many characteristics in common:

- They both believe that psychology and science research are fundamental in the creation process.
- They both use the self-referring system as an strategic process. We can refer to Peter Eisenman's Venice project (1981) where he uses the "L" shapes of "House X" as vector-objects of the buildings designed for Berlin.
- They both have a precise and systematic methodological strategy, coincident at some points and divergent at some others. We might say that the scaling process is more systematic than Casa da Musica's which embraces uncertainty, surprise and unexpected movements.
- They both understand the architectural thinking as a process which final purpose is much more speculative than obtaining a final "object".
- They both have understood the importance of registering ideas and communicate them in order to incorporate them to the creative process

However, they have some differences related to the application of the methodology: while Eisenman comes from the academic world and considers the theoretical research a branch itself, Koolhaas

departs from a practical thinking. His background as a journalist and experiences such as Nigeria determine his predilection for effective and decisive projects. He has the ability to separate the pure speculative branch from the practical one and find meeting points such as Casa da Musica in Porto.

In conclusion, what definitely gathers them together is the fact that their experimentations are inspiring for the rest of creators in all fields. They open up new research lines that promote the development of architecture and emerge the importance of communication in the architectural process, as a creative tool itself.

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## THE SCALE OF AN URBAN PROJECT

Ciro Vidal<sup>1</sup>, Ivo Vidal<sup>2</sup>

<sup>1</sup>Arch, PhD, ETSAV, Valencia, (SPAIN)

<sup>2</sup>Arch, PhD, ETSAV, Valencia, (SPAIN)

ciro@estudiovvv.com, ivo@estudiovvv.com

### Abstract

Cities are readable by its inhabitants in a wide range of scales. The large-scale regulates the connection pathways and the volumetries perceived by its inhabitants and, therefore, determines a strong level of interaction with users. The small scale introduces the atmospheric quality of the different spaces of daily use of the city and the interaction with users occurs in a weak or sensitive manner. The scale at which both interactions contact, can be set in 1/500, because at this scale we can already read the strong and weak effects that will have the intervention projects in the city

In the category of the urban project there is a constant attention to the completeness required by each scale so that both interactions manifest themselves consistently. This article will try to explain the significance that a construction has in the city when it has been thought or intuited with that theoretical base. The witness which bears the burden of the proof is the urban reconstruction project of the working-class neighborhood of La Sang Alcoy (Spain), because it has no historicist distractions that can overshadow the urban reality, and so we can clearly grasp the flash of thought that, following the thread of the architectural order, achieved to see through time.

**Keywords:** interaction, industrial city, urban project, sense of citizenship, urban things, urban facts.

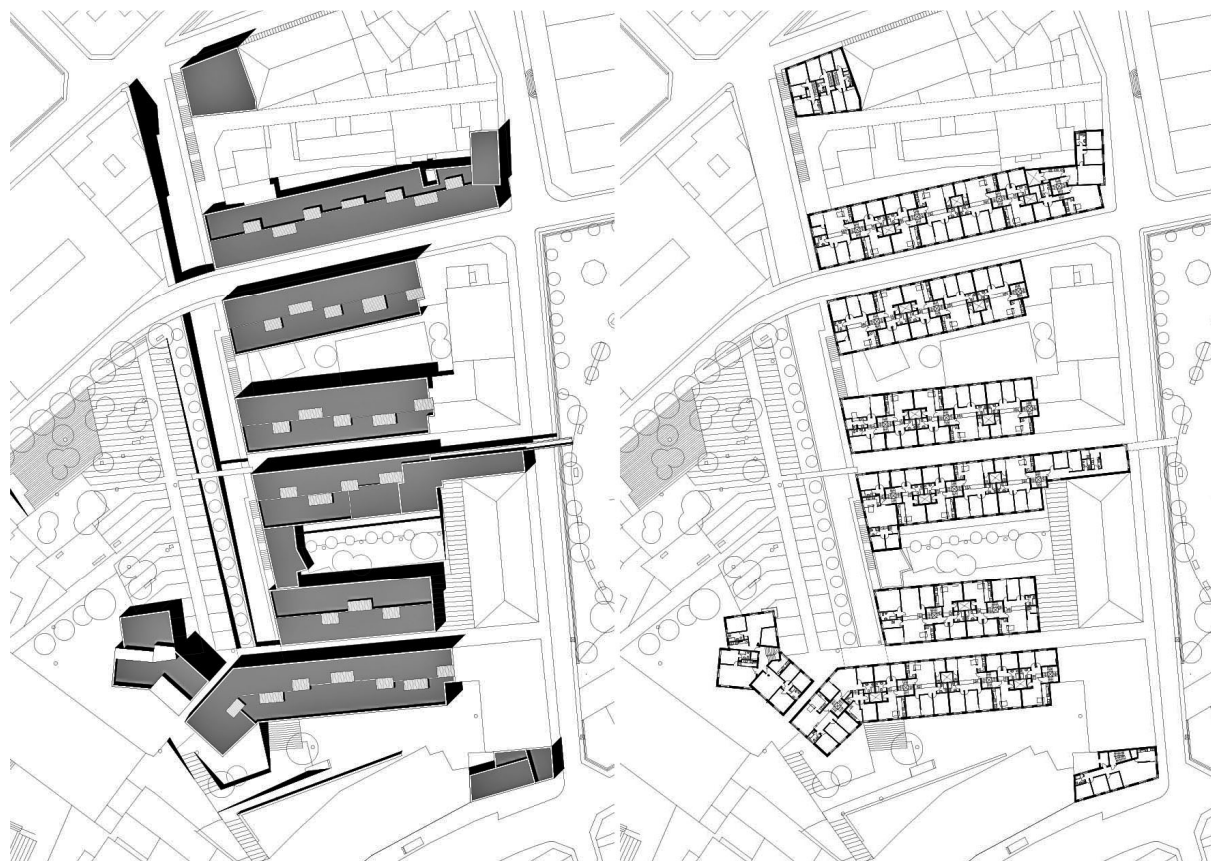


Figure 1. Strong interaction represented by the volumes of the roof plant and weak interaction represented by the overall plant of the dwellings in the neighborhood of La Sang in Alcoy (Spain).



## 1 THE STRONG AND WEAK INTERACTIONS IN THE CITY

Two interactions are involved in the city, a strong one which is responsible for the shape and disposition of the masses, and a weak one whose presence is manifested in the intention and clarity of the architectural solutions (Fig. 1). Despite acting on the urban medium with seemingly autonomous objectives, they need to cooperate in order to complement its various scales of action and assert with craftsmanship and coherence the successive layers that make up the city. The strong interaction pursues the transformation and growth in urban areas and does not stop to reflect on the historical memory or on the quality of the urban spaces or of the new buildings. The economic engine that drives the growth of the city is the necessity, but at the same time is a golden opportunity whose flashes are the claims of wealth, the pretension of status, or the anxiety for recognition. Individuals not particularly sensitive to the sense of citizenship channel their economic empowerment towards achieving their personal interests disguised under the collective interest and, therefore, their powerful transference to the urban scale produces banal solutions that the city assumes without criticism.

By contrast the weak interaction is sensitive to the urban environment and housing as they are appropriate spaces that the human being needs for the balance of his identity (Fig. 2). Therefore it acts slowly and slightly, driven by that argentiferous sand of beauty in which the architect strives hard at his work of finding the formal coherence, reconverting destroyed or alienating vacant spaces throughout the city in areas with quality for coexistence, whatever anonymous the life of its interpreters can be. However it can not satisfy the collective interest of everybody, but rather a fraction, because its scale is that of the intrinsic order of housing and public spaces whose use is linked to something that has no mercantile exchange. Thus, by producing a material without revenue we can not associate the weak interaction to the growth of the city, but to its improvement.

In fact, only when these forces no longer act separately and truly cooperate within the limits of their respective scales is when the collective interest makes sense. In an advanced civilization degree it is when the individual becomes his own antagonist and draws away his personal interest in favor of a general necessity becoming a citizen and identifying himself with his *polis*. A city whose growth and continuous transformation is carried out in response to these two forces, will move away from the banality of the urban form and will approach to the *concinnitas*, ie, the orderly balance of the different layers of consistency that the works of architecture demand through criteria of truth.

These two interactions are more active or, at least, more visible to the vast majority of citizens, between the 1/50 and 1/5000 scales, more or less the range of scales the thought uses to shape the urban form. The 1/500 is the scale at which both interactions connect because from the 1/500 scale the scope of the strong interaction is clearly readable as it involves the volumetric grain of the building. And up from the 1/5000 scale it becomes a connective interaction of a higher level not responsible for organizing volumetry, but for establishing road links between buildable or built-up areas and the bare spaces, either green or paved.

The weak interaction, or the one linked to the daily lives of human acts, sets forth below the 1/500 scale. It's then when the appreciation of what Manuel de Solà-Morales defined as urban things takes place, because in these urban facts the definition of materiality is as important as its spatiality or the volume itself. And so it happens that, as the detail gains definition from a certain scale, which can be from 1/50, the weak interaction is transformed and becomes strongly linked to the sensory dimension of man. In this new perceptual level the material definition that characterizes an urban place gains weight and that sensitive approach is appreciated by a large part of the population not only through visual and manual touch, but also in a more distracted way through the timbre and intensity of the sounds that accompany that place throughout the day. When the quality and complexity of the urban things are reached those places no longer have a generic position in the memory but acquire the oneness of a very specific reality. This fact is verifiable in urban situations that require careful definition as, for example, that point of maximum urbanity which are the corners, the treatment of urban empty spaces used for gardens or focused on children's play, and also the many ways to deal with urban ramps through thresholds, stairs, slopes, bridges or catwalks (Fig. 3). In fact the point is to look for a kind of planning conscious of all these situations and capable

to detect the greatness behind the approach to these small daily events. This requires knowing what things count and what not, because their significance on the city does not depend on the size, but on their ability to anchor in the memory, conscious or unconscious, of its inhabitants.



Figure 2. The neighborhood seen from La Sang ramp.

We can define the urban project as a figure capable of embodying these two forces that operate in the city. The influence of the weak interaction on the strong one draws the attention towards the historical memory of the city and towards the solution of the new needs that come from its own time. It is not about meeting the rigid building standards that simplify the burden of history with its emphasis on historicist appearance, but to rethink and interpret urban areas of the whole of the city in the light of both history and contemporaneity. An urban project is a complex problem that is solved through a series of questions closely related amongst them through propositions that can not be falsified. The approach to this complexity is multiscalar, ie, things must be thought simultaneously

at all scales. There are no simple ideas that become complex through the resolution of details, but there is a core of thought that consistently develops through the increasing definition that the smaller scales allow along the design process and work.



Figure 3. View of the pedestrian walkway that extends La Sang street across La Sang ramp.

## 2 CASE STUDY: THE NEIGHBORHOOD OF LA SANG IN ALCOY (SPAIN)

In the ARA plan (Alcoi Rehabilitation and Architecture) (Fig. 4) the cooperation between these two forces was stimulated from a local policy guideline. The momentum and credibility of the first projects of intervention in the historic center of Alcoi made possible the design of this ambitious masterplan that meant to cope with the deficiencies of the General Plan in force. The ARA plan emerged as the necessity to provide material quality to the city through strong actions led by some urban projects whose interest resided in their way to understand the continuity and transformation of time. At that time the most significant projects of the ARA plan had the character of modern pioneers because their intervention procedures in the inherited city had in common that the history, the morphology, the urban layout and the material quality should be thought simultaneously.



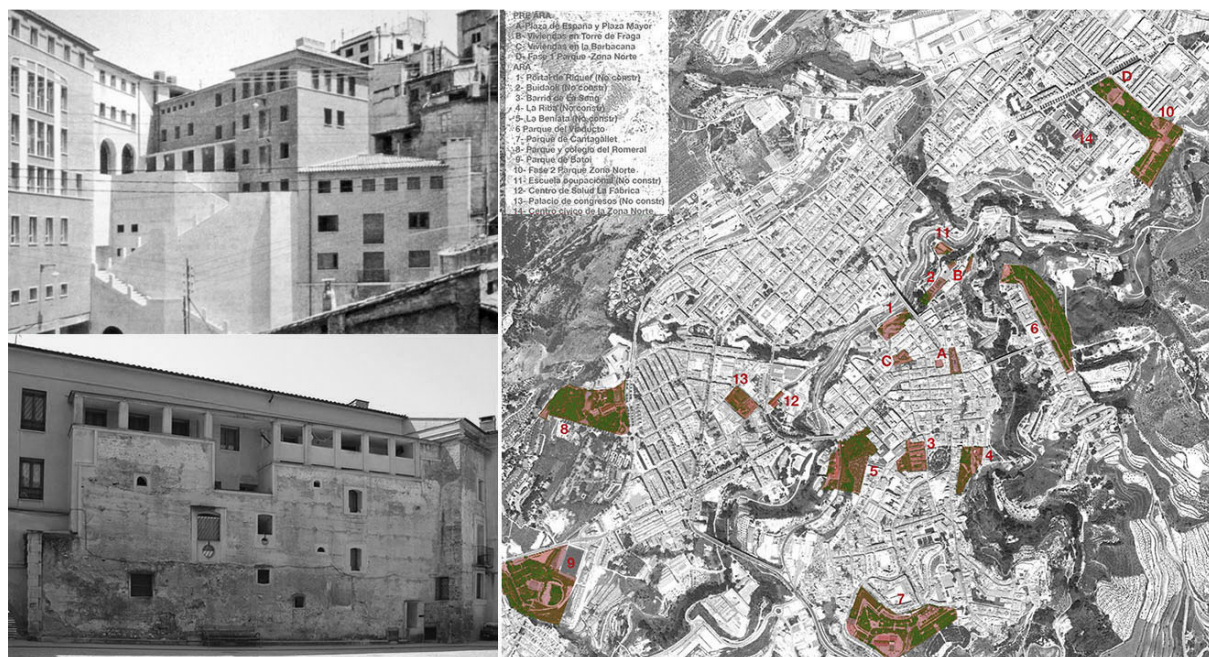


Figure 4. Rebuilding of the Barbicane area, view of the ancient rampart and projects of the ARA plan in Alcoy

To illustrate the qualities of an urban project we can take the case of La Sang neighborhood in the city of Alcoy (Spain) (Fig. 5). The project responded to a collective desire and to the need for a serious renewal of an industrial city with a deeply rooted worker and bourgeois basis. The thought of order that was behind the project was the consolidation and modernization of an urban space able to meet future challenges. The attention to the memory of the people who inhabited this particular place didn't have to be given through the revival of a few forms without material quality but it had to be addressed to the rationality of the layout of the streets that connected with the rest of the city and had been so busy in another time (Fig. 6).

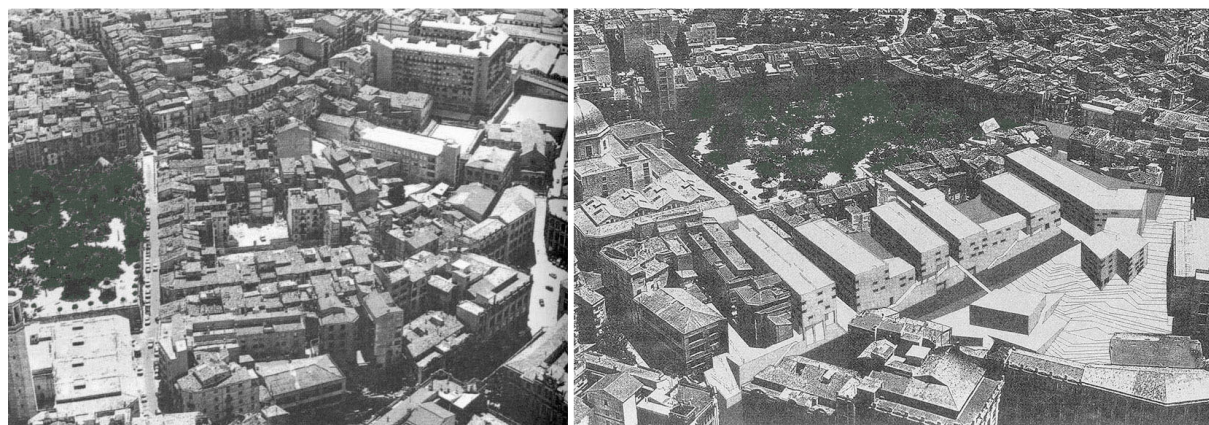


Figure 5. Old district of La Sang and first proposal of the new neighborhood.

The renovation of the neighborhood of La Sang, which received the FAD Architecture Prize in 1999, was developed simultaneously between Alcoy and Barcelona by Manuel de Solà-Morales, Vicente Vidal Vidal and Juan Lorenzo in 1992. The particular way in which they responded to a thought of order and an architectural sensibility away from the conventions, clichés and stereotypes renders it necessary to recall the reflections that Manuel de Solà-Morales poured on the historic center:

- [1] "The idea of an old urban nucleus is not only a medieval historical center or a 19th century center, it should also be an essential contemporary idea in the design of our cities, old and new. And this idea of core, which involves heterogeneity of measures and uses, along with internal and transversal movements, the acceptance of the automobile and the public nature of the substantive parts, is a theoretical category of the urban project." Solà-Morales, 1992



Figure 6. Cova Santa street, la Sang street with a walkway over San Mateo street and enlarged sidewalk under portico in Sant Domenech street.



Figure 7. Entrance to nº 5 Cova Santa street. View of the turbine stairs from the threshold.

The propositive value of the project of La Sang pivoted on the historical memory of the previous working class neighborhood and the current urban reality. These principles were based on the conservation of the plot of pedestrian streets, the evolution of the turbine stairs (Fig. 7) used in the original dwellings, the acceptance of the servitude of car parking under the building, the mix of residential use with commercial activity, the constructive restriction to only two window modules, the freedom of visual composition of the façades, the acceptance of the internal gardens and its communication with the general garden and also the conservation of the mass that gave character to the buildings on San Mateo street.



Figure 8. Elevation and section through la Sang ramp.

To endow this approach with coherence there had to be no interference between the driveways to the garages and the inherited pedestrian and shopping streets. All these reasons gave support to the bold opening of La Sang ramp that, with a 14% slope, connected Gurugu street with the car access and freed the upper level of the annoying interference that any car traffic would have posed on the narrow inherited pedestrian streets (Fig. 8).

The neighborhood of La Sang was formed in the early twentieth century as a working class neighborhood in the historic center of the city of Alcoy. The existent buildings had doubled in height to accommodate a huge number of industrial workers whose low economic capacity even forced them to rent rooms to sleep in shifts of eight hours. The intensive use of the property, its dense crowding and the precariousness of its construction led to the progressive abandonment of the neighborhood due to the deterioration of the buildings. The collapse of many of them advised against a rehabilitation project and invited to a project of re-building. The knowledge of how both interactions, strong and weak, model the buildings and the use of cities pointed to two issues that often remain silent in the practice of modern urban development.

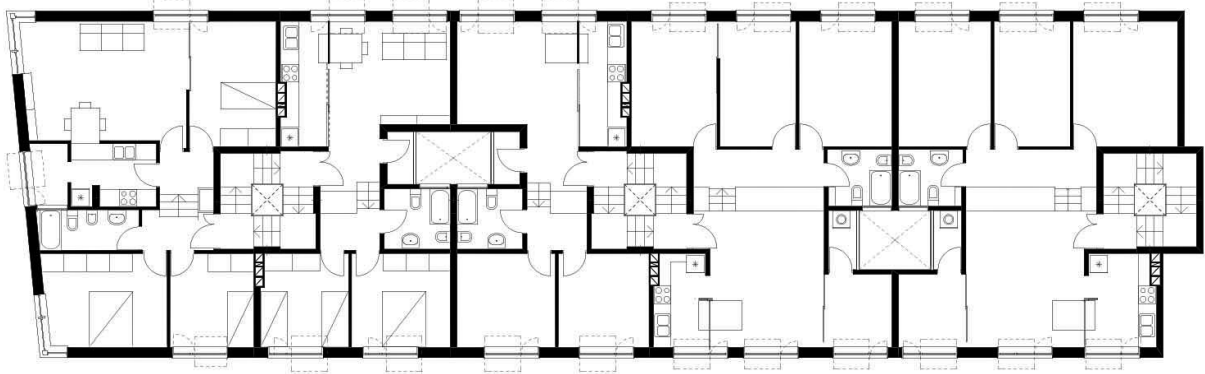


Figure 9. Third floor of la Sang street made with type E and A dwellings.

In first place the weak interaction manifested when trying to see how the weight of historical memory should be interpreted so that it could have permanence over time. To achieve that it was crucial to prioritize the continuity of historical significance as an abstract fact against the formal continuity as a figurative fact. A formalist reconstruction would not have needed to delve into the origins of how the district worked because it would have maintained a fiction of coherence through a usual repertoire of formal solutions that provide iconicity. The quest was to re-build with new welfare indoor conditions homes, leaving behind the nightmare of unhealthy overcrowding that had been useful only for the need of roof (Fig. 9). Therefore, the weak interaction led during the process of project to an idea of luminosity, ventilation, solar protection and spatiality for interiors of homes.



Figure 10. Interior of a type A dwelling after conclusion of the works and a type E already inhabited.

And it did it through the memory of the previous dense blocks of flats with the stairs located in the central bay, whose arrangement in four landings addressed each to a small apartment that occupied a quarter of the floor area and that, according to the kind of renting, could even connect inwardly through the addition of a short stair without affecting the floor above or below. It was an unusual



disposition of a four apartment per floor staircase that served to think, during the development of the project, about the internal volumetric qualities. Finally the built project didn't draw upon the split into quarters, but used a distribution of two apartments per floor, and in all types of housing located in the linear blocks has remained a level difference between the first bay and the third one of 72 cm, that is, a quarter of the height of the staircase. The internal staircase divides the night area and the day area or, in bigger homes, splits the living area without losing visual continuity (Fig. 10).



Figure 11. Rear facades between Cova Santa and Ia Sang streets. South building in Sant Domenech street.

In second place, guided by the visual strength of the strong interaction, there was a search for an urban form different from the previous volume disorder, an urban form designed with a rational will in which, however, the same system of narrow pedestrian streets that had been fixed by the collective memory could be recognizable. This new urban form had an architectural intention that didn't previously exist, as well as ample outer spaces won to the previous chaos of the overcrowded neighborhood (Fig. 11). In fact, for the facade the choice of a single type of horizontal window made up of two different types of windows intended precisely not to take off prominence to the clarity of the linear volumes that fit on the topography of the streets and the material quality of the elements that build the outer urbanization (Fig. 12). Clearly it was not only about responding to that scale of the project, but at the same time it was a hint on the inner volumetric richness, because the facades become clean vertical planes in which there is a free composition of voids that don't invite to think of a repetition. Now we can interpret it as a resonance of the old facades freshness whose composition was the result of its random construction over time.



Figure 12. Closer view to the materiality of the elements that compose the ramp and the park.

To strengthen this new form that did not share iconic codes with the other houses in the historic center as it was committed with the knowledge of the type-morphological rational block, the transformative power of the strong interaction acted decisively on the steep topography site. So the stratification of the successive levels was cutted via a new ramp that connected with the low city



through a constant slope breaking the high wall beside Gurugú Street and giving access to the garages of each pair of buildings (Fig. 13 ). On the left side of the ramp a long pedestrian stairway connects the houses in the neighborhood with the lower tow. The big ramp of La Sang is also crossed by a pedestrian catwalk that continues La Sang street and a bridge for road traffic on Sant Domenech street. This street, the only one with a shopping activity, has the south sidewalk under a portico of concrete pillars that enlarge the space for pedestrians due to the limited width of the street. Therefore the stairways, the ramp, the walkway and the bridge are the new elements that intertwine with the strict architectural order of the simple and straight housing blocks.



Figure 13. The architects Juan Lorenzo, Manuel de Solà-Morales and Vicente Vidal Vidal during the opening of la Sang ramp. View of the building in Gurugú street from which the ramp of la Sang begins.

There was another fundamental issue for the new buildings to assume a modern language in line with the urban planning and this was the decision of the permanence of the houses in San Mateo street. The facades of these buildings were built with ashlar and presented no danger of demolition, so all these houses that contributed to the materiality of San Mateo street were part of a second phase of rehabilitation that respected their old structures and even shared them with the new linear buildings.

With this latest decision to keep the inherited form that, without major virtues, had built part of San Mateo street, the project was looking for that elusive principle of *concinnitas*. The rehabilitation of the dwellings in San Mateo street was intended to collaborate to the spontaneous amalgam between the solidity of the old restored buildings and the robustness of the new ones. The defense of the heritage of the city not only means to keep protected buildings, but to improve or maintain the real quality of the façades that build the streets and are the decantation of the work and life of the ancestors who made and lived in those buildings. This is not about defending an inbred iconic conservation that is only sensitive to the latest and thin layer of a façade. This is about vindicating the essential value of construction and its ability to pick up the baton of time when we invoke its memory through the honesty of touch, either from the hand or the experienced eye (Fig. 14).

However, at every scale of its materialization the urban project is subject to the danger of being forced to lose the consistency that has been patiently maintained by a spark of thought. With the change of local government the houses of great typological uniformity that built San Mateo were demolished, cleaned and sold like plot of periphery to the local promoters. This explains the ridiculous chamfers imposed by a late local regulation and the squalid stones that, like makeup,

replaced the ashlar corners, causing the sensation of a poor theater stage and the extinction of the quiet sensation of solidity and light existing since the nineteenth century. Consequently, the banality of the new buildings of San Mateo mutilated the complex urban operation of La Sang and although, over time, the loss of quality is masked with the distraction of everyday life, an explanation must be given. Manuel de Solà-Morales said that restoration and reconstruction are the terms of the same problem, and finishing the Sang neighborhood without the fullness conferred by the restored part, that is, without the subtlety of its straight corners and the honest materiality of San Mateo street, has left the enclosure of La Sang in that place without time where it is now.

- [2] "...I suspect that the space, actually, doesn't take part of our vital concerns, only time, that spills and escapes between the fingers when we try to catch it..." 2012 Mansilla



Figure 14: La Sang ramp as seen from Cova Santa street.

### 3 CONCLUSIONS

The cities need a more complex tool of urban planning that can guarantee a steady level of coherence through all the scales in which the interventions are thought and materialized. The responsibility of the urban morphology mustn't be up to the sites owners but to a wider and enlightened entity that can control the suitability and quality of the projects undertaken in the city.

The best examples of urban projects that look for this degree of *concinnitas* are the ones in which the authors have the possibility and capacity to think simultaneously every scale involved in the design process. A high level of formation in architecture is necessary to reach a sensitive, firm and continuous quality of the urban atmosphere that, entangled with time, defines the cities in our memory.

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## THE LANDSCAPE PLAN OF THE TUSCAN REGION: IDENTIFICATION, ROLE AND PROJECT OF THE IN-BETWEEN SPACES

Massimo Carta<sup>1</sup>

<sup>1</sup>*Vice president of MHC, spin-off of the University of Florence (Italy)*  
*carta.massimo@google.com*

### Abstract

The assumption that drives our discourse is that the form of contemporary European cities, the broad metropolitan areas, is still "under construction": it is a huge amount of buildings and infrastructure, a patchwork of different landscapes, unfinished territories and indistinct spaces. The huge number of unfinished items immobilizes the capital invested for their realization; it makes evident the many mistakes made in the planning phase. For some of these spaces, maybe is recognizable a sort of rhythm, derived from what these spaces were previously, such as rural areas marked in the past by modifications, adaptations, reclamation. More frequently, we face an ubiquitous and unfinished "non-project" that has expanded enormously in the open spaces (in the natural areas, in the countryside) changing its meanings, and often erasing the possibility of referring to the past to find the right way to design the future. Therefore, our approach to address the conference themes, involve the interscalar aspect of the perceptive dimension of the landscape, that in Italy is a very important field of research, also for the urban planning; in fact, through the landscape planning in Italy we try to overcome some difficulties of regional planning like coordination between municipal plans, infrastructure policies, management of housing in rural areas, etc. Huge elements (i.e. large industrial areas, linear infrastructure, sprawled residential areas) they determine the emergence of spaces in-between, still to be submitted to the interdisciplinary statutes of urban planning. Sprawled urban areas, strongly infrastructured and low-skilled, parts of mutilated suburbs, almost uninhabited city centres, abandoned rural areas, over-exploited fringe areas... this elements wonder about the next step to take. The urban project, and the landscape design, at a different scale, could create some order over this work in progress, this unfinished immense "construction site": but the difficult task is to orient a completion that would give meaning of entirety, that would re-enabled this powerful cumulative number of different parts to function as a well-built environment. The challenge is to involve residents and city users community to share a common goal. This action on the city resembles the retrofitting of a poorly constructed and never working apparatus: acting by addition, subtraction and finishing, working where it is necessary to give new meanings to existing materials (vegetation, water, soil) and providing new volumes built, new roads and paths, new infrastructures. This operation of repair involves all the ways of living, all manner of use the built environment, in its interactions with the different natural elements; this involves the integration between urban and rural dimensions, which are the interaction fields not only from the physical point of view, but also sociologically and scenically. The work that we present is based on these assumptions, and investigates the ways of qualifying contemporary urban areas in central Tuscany, considering to the principles of the new Landscape Plan.

The work examines some types of recurrent urban tissue in the flat portions of denser settlement, assuming minimal but key actions for elevating their landscapes' quality: continues in reporting some possible new spatial configurations, drafted in specific guidelines, that are now become official recommendations for urban planning in Tuscany.

**Keywords:** landscape plan, guidelines, retrofitting, rural–urban fringe.

## 1 THE LANDSCAPE PLAN OF TUSCANY REGION (PIT/P)

In Italy, the Cultural Heritage and Landscape Code, Legislative Decree 42/2004 (called "Codice"), revised in 2008, has once again raised the issue of the regional landscape plans, introduced by n°1497/1939 law and then specified by n°431/1985 law (the 'Galasso' Law). The European Landscape Convention (ELC, Florence 2000, ratified by Italy in 2006), considering the landscape a living environment, «an important part of the quality of life for people everywhere: in urban areas and in the countryside, in degraded areas as well as in areas of high quality, in areas recognized as being of outstanding beauty as well as everyday areas» (Preamble of the European Landscape Convention), has helped change the way in which public policies consider the landscape, as well in Italy the "Codice" requires the landscape plans to deal not only with excellent landscapes and their preservation, but 'everyday landscapes' (like ELC "concerns landscapes that might be considered outstanding as well as everyday or degraded landscapes") (Lucchesi and Carta 2010).

The Government of Tuscany region, like most other Italian regions, in 2007 prepares its own plan as landscape integration to the already existing "Territorial Address Plan (PIT)", which was adopted in 2009 at local level without the required agreement with the central government (in Italy the protection of the landscape is a national competence, according to Article 9 of the Constitutional Law), but it has never been definitively approved, also because of this missing agreement.

In 2011, the new administration has started the drafting of the PIT which serves as landscape plan (from now PIT/P): it appears therefore as a regional planning tool that maintains its own recognizable identity<sup>1</sup>. The contents of the Landscape Plan converge in the statutory part of the Plan, that is the part oriented to bring out those values and long-term relationships that characterize the Tuscan territory and its landscape (Carta 2010): the connecting element between the structural dimension (territory) and perceptive dimension (landscape) is identified in the *structural invariants* ('Invarianti strutturali', in Italian) already present in the previous plan and reformulated in the new "statute" of the Landscape Plan. The main features of the new PIT/P are:

- the reorganization and rewriting of legal safeguards, in coordination with the MIBACT (Ministry of Cultural Heritage and Activities and Tourism);
- the articulation of the statutory part of the plan, at the regional scale, which incardinate policies and actions to raise landscape's quality;
- the directions to be supplied to municipalities to achieve its quality objectives, related to the twenty areas in which it was divided the Region (called "ambiti di paesaggio");
- a renewed cartographic representation of the territory and regional landscapes;
- the disputed effort to communicate the content of the Plan and to involve stakeholders in addressing the plan itself.

This paper investigates the perspective taken by the PIT/P editors in the drafting of the various parts of the plan, especially the part related to the structural description of regional urbanization ("The polycentric and reticular systems of urban settlement and infrastructures"), for the definition of a better quality of contemporary urbanized tissues, without neglecting the contribution from other topics (rural dimensions, geology, ecology). It is in this part that is argued somehow of the spaces in-between, as we will see below. This part of the PIT/P is very interesting, albeit not unambiguous: like the definition of "contemporary city" and its difficult relationship with the historic structures<sup>2</sup>. This involves the calling into question of interpretative models of the contemporary city.

<sup>1</sup> The PIT/P was drafted from 2011 to 2015 by the Regional Offices, coordinated by the Regional Minister, Professor Anna Marson; the regional offices have been supported by a consortium of all the Tuscan universities, the CIST (Inter-University Centre of Territorial Sciences), composed by professors and researchers. The urban planner who most influenced the setting of the PIT/P is the professor Alberto Magnaghi, one of the prominent members of the CIST. For the CIST, as a researcher, I am the autor of the «Guidelines for the redevelopment of the urban tissues of the contemporary city», Annex No. 2 to the PIT/P. The complete work group is reported in plan documents: <http://www.regione.toscana.it/-/piano-di-indirizzo-territoriale-con-valenza-di-piano-paesaggistico>.

<sup>2</sup> Worked on this invariant the following people: Alberto Magnaghi (scientific coordinator, DIDA/UNIFI), Gilles Callegher, Elisa Cappelletti, Gabriella Granatiero, Emanuela Morelli, Giovanni Ruffini

It is clear the emphasis put in highlighting the interruption of continuity between the traditional old settlements in the mid-twentieth century (recognized by comparative sequence of historical cartography and found to be corresponding by the authors to good growth rules), and the contemporary city, successively built. Right from the start, the plan's documents clearly states how the Tuscan landscape is a result of an extraordinary stratification of history, which produced "a variety of landscapes united by essentiality and measure" at least "until a recent period" (page 10 of "Relazione Generale"). The Plan locate in the 50's the time for this change in settlement patterns, defining the structures in settlement system resulting in the long historic period "as still recognizable in the fifties of the twentieth century" (see page 25 of the "Documento di Piano").

The plan describes these historical structures: in the map that summarizes and interprets the forms and types of historical settlement ("Carta del sistema insediativo storico e contemporaneo" - map of the historic and contemporary settlement system - 1:250.000) and in two specific "abacuses": (i) the abacus of the different formal types of historical settlement<sup>3</sup>; (ii) the abacus that organizes the different types of contemporary urbanization, starting from the urban expansion of the historic town.

### 1.1 Historics and contemporary rules

The Regional Plan attempts to define the rules of the transformation of the territory and the landscape quality objectives (as ELC defined: «Landscape quality objective» means, for a specific landscape, the formulation by the competent public authorities of the aspirations of the public with regard to the landscape features of their surroundings» Art. 1, "Definition") by interpreting the historical rules that have generated this settlement system (Regional Abacuses, page 91). The planners have shared among themselves an historical-structural method, using the various sources available. They fulfill a schematic analysis of each territorialisation phases, for specify the "historical depth" of each point of the regional pattern represented in the map ("Carta delle figure componenti i morfotipi insediativi 1:250.00"). In the documents that constitute the plan, they acknowledge the 'consequences' of socio-economic processes and the plan itself is oriented to act to counter the welding processes between cities and the ubiquitous urbanization of the countryside, protecting and consolidating the environmental and landscape characteristics, along with the network of «ecological corridors that characterize the variety and vitality of vegetation and wildlife» (p. 35 documents of the Plan). It emerges a problematic aspect of the PIT/P, in my opinion, which is that the observation of "morphological structures", detected by comparing the maps of the territories, prevails on the systematic study of the factors that led to the materialization of that settlement, the "reasons" of the urban forms that today appear. For example: why and how (from the point of view of the decisions about the land use) have been encouraged or contradicted the "forms" of the historic city? And how accurately we can attribute to the shape of the historic city a coherent intentionality? What kind of intentionality, regulation, planning decisions has supported these forms over time? What were the dynamics of the formation of the spaces *in between*?

These are aspects to be clarified. Perhaps, it emerges from the draft at the regional scale of the "third invariant" (see "Abachi Regionali") an excessive formalism and a certain arbitrariness in the choice of the settlement system element's descriptors, which does not affect the disciplinary interest in this plan, but appears slightly effective from the regulatory point of view of the PIT/P itself. This both for the rigid separation of the contemporary city from the historic structures (on which the contemporary city has been grafted in the recent past) and also for the purposes of a full implementation of the European Landscape Convention, which indicates the need for "integration" among the different landscapes, also degraded. This point is important about our interest in the way it was created the contemporary urbanization, and its resulting forms at a larger scale. Having taken note of the discontinuance of the PIT/P to investigate any evolutionary sense of contemporary urbanizations, the latter are relegated over a time considered "critical" and contradictory, as they have produced different outcomes compared to the historical settlement; the generative rules of the

<sup>3</sup> In Italian, they are called «morfotipi insediativi».

contemporary settlements, in our opinion, should instead be studied with the utmost attention, precision and care.

However, may be envisaged in the plan some directions of research for the intervention on what we have called "the interrupted yard of the great transformation", the form of contemporary cities, the broad metropolitan areas, that are still "under construction", also in Tuscany: it is a huge amount of buildings and infrastructure, a patchwork of different landscapes, unfinished territories and indistinct spaces, represented here by the contemporary city fabrics, but incorporating structures and elements of the "historic city" (Calafati 2014). From this point of view we treat the two most interesting tasks - although not free from contradictions - brought into play by the PIT/P:

- the detection of the limit of the urbanized areas;
- the draft of the abacus of the urbanized tissues of the contemporary city.

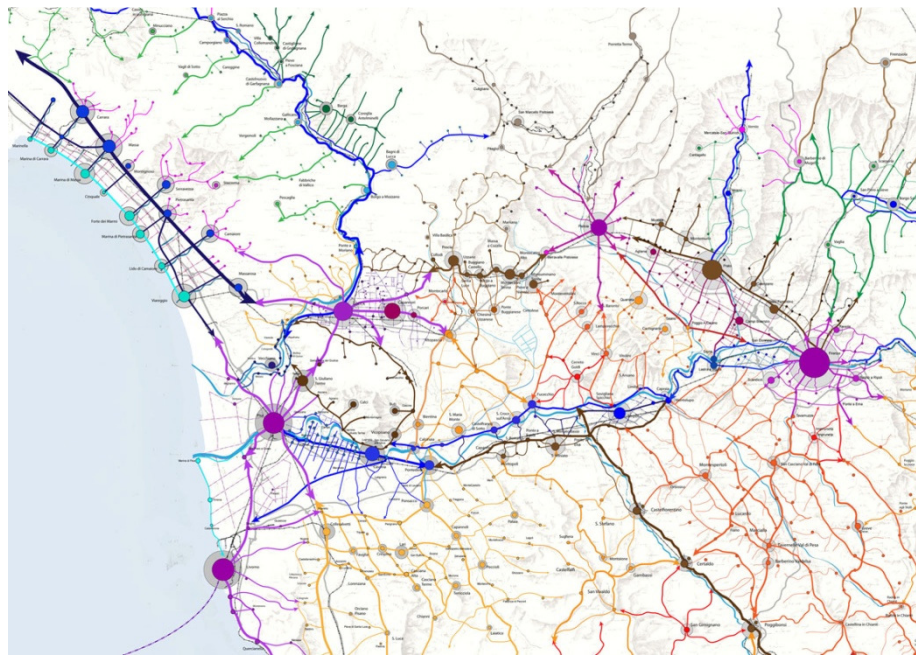


Figure 1 Part of the PIT/P map "Carta delle figure componenti i morfotipi insediativi", scale 1:250.000

## 2 DETECTION OF THE LIMIT OF THE URBANIZED AREAS AND DRAFTING OF THE ABACUS OF CONTEMPORARY CITY TISSUES

The PIT/P attempt to find "the form" (or patterns) of the Tuscan cities: this attempt is operated through the work carried out, as seen before, for the "third invariant", through the topics of the individualizations of the historic settlements and of the margins of the urbanized areas and hence of the urban sprawl. The individuation of urbanized borders (or urban fringe) is central in urban planning, at both national and regional levels: due to a problem relating to the limitation of land use (In Italy, the government is working on a national law to limit the soil consumption), for the maintenance of ecological functions, for (as in the case of the Tuscan Plan) the contrast of urban sprawl as an agent of trivialization and contradiction of historic settlements structures.

It is uncertain that the definition of the perimeter of the urban areas is sufficient everywhere (for example, in large metropolitan areas) to distinguish what can be considered "city" and whose re-use does not involve new land consumption, from the countryside or the land used for agricultural purposes, with environmental and multi-functional values; but this operation it is certainly useful and perhaps necessary, and it concerns the very concept of what can be considered "the city" today.



## 2.1 The definition of the limits of the urbanized areas

The definition of the boundaries of the urbanization, which is in the vision of the PIT/P what helps to determine the urban "form", is apparently an easy operation regarding the "historic city", but becomes more and more complex when one faces the dispersed urbanization of the contemporary city and its urban fringes. The PIT/P provides (addressing mainly to municipalities) an operational contribution to the identification of the limit of the urbanized area through the definition of a specific map (see the map "Carta del territorio urbanizzato", scale 1:50.000). This operation relies on a geostatistical model (Giusti, Angeletti et al. 2012), based essentially on indicators of continuity and density of the urbanized area (pages 133-135 of the Abacus). Aside from the obvious difficulties of scale in a large region like Tuscany, the processing is valid therefore as indicative framework for which a subsequent specification work is needed; it will be necessary a survey to check and specify, to be carried out during the drafting of the urban plans of Tuscan municipalities.

There are some minor critical issues noted by the authors of the plan: this perimeter includes settled areas ("urbanized countryside" and "inhabited campaign", as defines the PIT/P) which properly concern the rural area, and the definition of "urban" used in the model makes it contradictory and detrimental to the objectives provided in the landscape plan, that do not contemplate new urbanization.

But the most critical problems, in our opinion, lies in the difficult and unresolved relationship between what the plan identifies as 'historic' and what it identifies as 'contemporary'; an element that emerges in the way the plan identifies the contemporary urbanization fabrics.

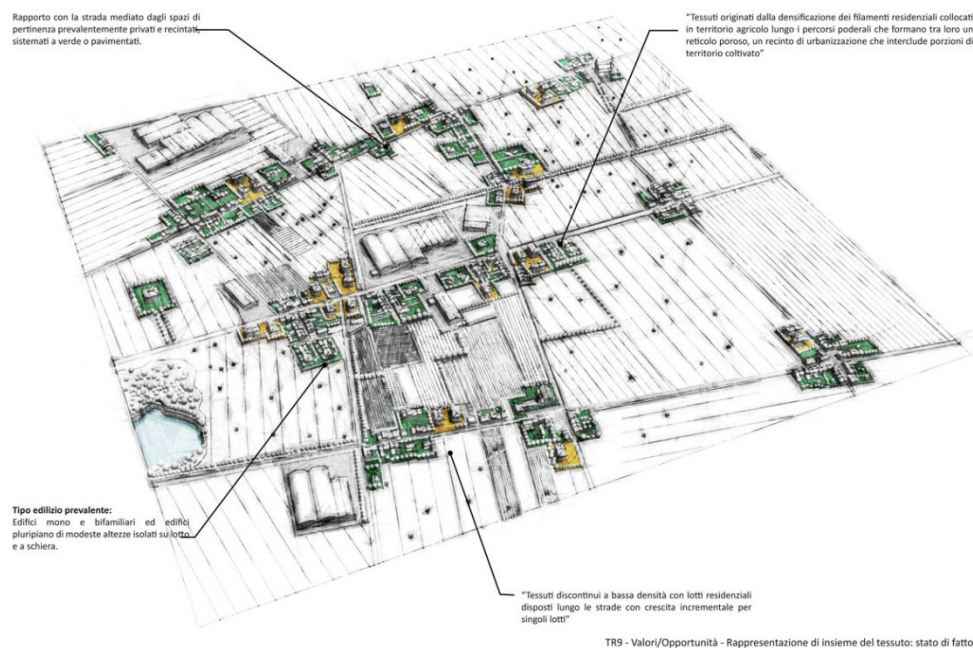


Figure 2 Example of a contemporary urban tissue of the PIT / P: current status

## 2.2 Defining urbanized tissues within urbanized areas

The map introduced above is one of the devices put in place by the PIT/P, that would allow, when specifically indicated by the objectives for each recognized type of urban tissue, of not simply assumes the boundary as identified and currently configured, but to intervenes on it in redefining a margin of greater landscape's quality. The task of defining the limits of the urbanized areas has necessarily resulted in the identification and description of what are the various elements that constitute urbanized areas, with the classification of what are called the "contemporary urban tissues."



The classification criteria that led to the identification of the different tissues on the regional territory consider their location and their main function, the fabric structure, the relationship with the road and the degree of functional complexity, the prevalent building type, the location of the tissue and its edges. Given the extent of the regional territory, the exact location of each separate type of identified urban tissue was made approximately, referring to the further specification of municipalities plans.

For each type of identified urban tissue, there is a specific sheet in the abacus containing the planimetry and an aerial photograph of some real existing illustrative tissues from which is derived the type itself; the type in turn is represented by an abstract sketch, representative of its specific characters; there is also a description, referring to the sketch and a list of critical issues and objectives for the specific type.

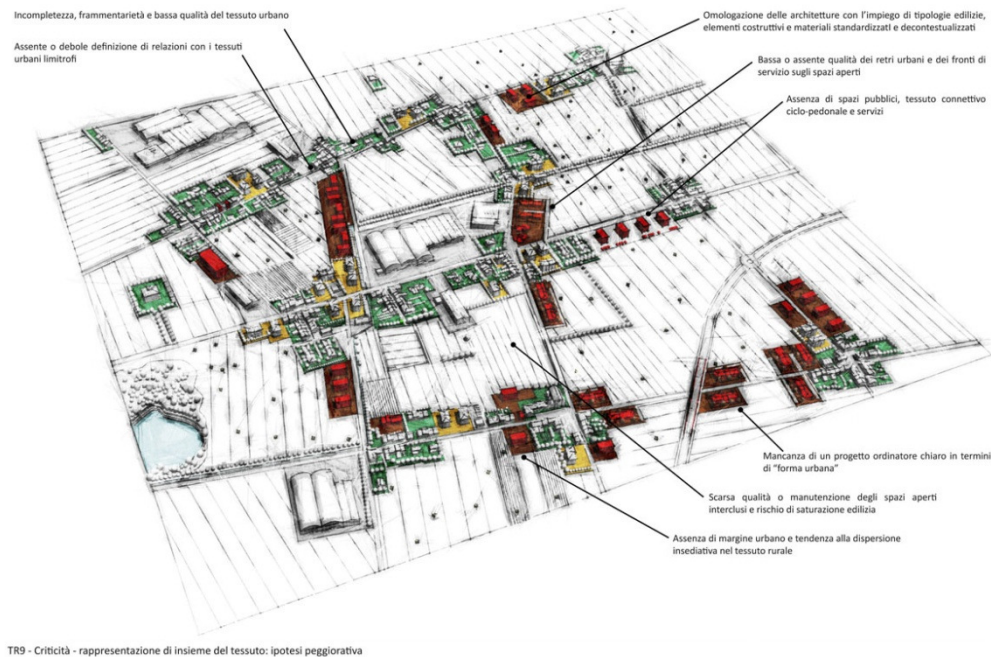


Figure 3. Example of a contemporary urban tissue of the PIT/P: undesirable outcome

### 2.2.1 Historical Vs Contemporary

After discussing briefly of the work that led to the identification of the different types of contemporary urban tissues, the choice to differentiate the "contemporary" urban tissue from the rest of the tissues (ie all those that were present to 1954, according to cartographic sources available today) results, as already noted, some problems: one of which is that some tissue in the real context is also made up of "historical" components whose clear distinction is not possible, nor desirable. This concerns the meaning itself of the term "contemporary". Namely, this emphasizes the irrelevant role who have had the urban tissues of the contemporary city (taken into consideration all together) in the identification of territorial types listed in the map quoted before ("Carta delle figure componenti i morfotipi insediativi 1:250.00", Fig.1), at smaller scale: in this elaboration the contemporary urban tissues (or, the city) appear as a sort of "ambient noise" in any manner considered useful to the structural quality of the settlement. This is an extremely significant aspect in this landscape plan, which still reveals the cultural position of the authors (Magnaghi 2005) which ties the quality consideration of the settlement to its "duration". For example, the ideal condition for the PIT/P is when is present an historic fabrics still adjacent with the countryside, where there is no doubt (according to the plan) that the existing boundary between the urbanized areas and the countryside is semantically necessary in order to signify the settlement itself, and therefore understand the nature of the same settlement (page 133 of the Abacus). The urban settlement's understanding is so connected in a fairly automatic way to the relationship between the countryside and the historic settlement; this leads to some confusion in the plan among the terms "urban settlement" and "urban

tissue"; what is old is called "settlement", what is not historic is called "tissue". Afterwards we shall argue that it is more useful for the purposes of landscape planning thinking about the contemporary city tissues as something that includes the historic city, not as something distinct from it.

### 3 INTERVENING IN THE URBAN FRINGE, IN IN-BETWEEN AREAS, IN URBAN TISSUES: THE GUIDELINES FOR THE REDEVELOPMENT OF THE URBAN TISSUES OF THE CONTEMPORARY CITY

The decision to locate on the map the boundaries of urbanized areas has great importance for the purpose of PIT/P, also from the point of view of its rhetoric and cultural setting. Both the implementing rules (in Italian "Norme Tecniche di Attuazione") that the plan report highlights this aspect, or how important it is to pay attention to the different qualities of margins (fringes) of contemporary urbanization. The "Guidelines for the redevelopment of the urban tissues of the contemporary city" (which constitutes annex n°2 of the plan) are intended to provide, through a series of graphical representations, a first contribution for this purpose.

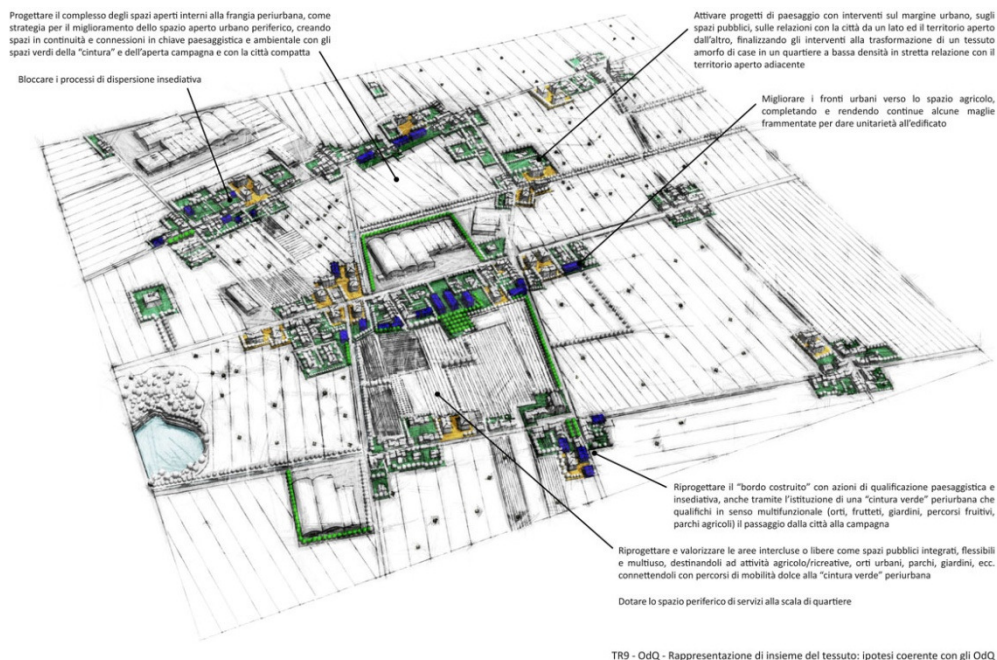


Figure 4 Example of a contemporary urban tissue of the PIT / P: desirable outcome

In the Guidelines are represented possible spatial outcomes of good and bad planning actions, measured according to the landscape quality objectives of the PIT/P; the Guidelines are addressed in the first place to the planners working on the plans of the municipalities, especially structural plans (PS) and Operative Plans (PO). Among the objectives of Guidelines are:

- an attempt to anticipate the possible criteria and ways of landscape's qualification of the different tissues of the contemporary urbanization, with particular reference to their borders with the rural spaces and/or natural spaces, and more generally to the margins with vacant lot, or in between spaces, in urbanized tissues themselves;
- the best specification of the urbanized area, an operation entrusted by law to the plans of municipalities, though at this level it does not decide anything about the assets of the property;
- serve, in general, to the regeneration of urban tissues, and not only of its margins, comprising therefore - albeit implicitly - some criteria for the realization from scratch of urban parts;

- enable assessments of the perceptive aspects of the urban tissues: the representation of the prevailing spatial qualities of the urban fabric can help to envision the consequences of planning decisions on the visual aspects (landscape).

### 3.1 Representing the characteristics of urbanized tissues

Even with regard to this last point, for a more effective communication of values and critical issues associated with each urban tissues, in the Guidelines is accomplished an effort of abstraction and generalization, using common techniques, such as 3D block diagrams. Representations reproduce the characteristics of the existing urban tissues classified in the abacus; then simulate some actions that increase the critical aspects, and some other actions which enhance landscapes quality. The models simulate territorial portions of 1km x 1km, or smaller portions of 800m X 800m and 500m X 500m; The terrain forms have been simplified by reproducing flat areas.

The Guidelines attempt to represent:

- (i) the distribution of the continuous urbanized lots, performing a generalization of their morphological conformation, which determines, in the interaction with the local contexts, the type of fabric to recognize and deal with. Attention is paid in the models to the design of building types, shape and arrangement of built lots, the indication of permeable or impermeable soils. This allows the models of discriminating the types of buildings that make up each prevailing urban tissues, including the modalities of relationship of the tissues with the streets and the single lot;
- (ii) different spatial quality of the individual tissue, which is composed of different types of buildings (coverage proportions, sealing of ground surfaces, presence or absence of public spaces, presence of common use areas or private spaces, relationship with the rural space, etc.).

### 3.2 Foresee the change to guide the landscape effects of the plan choices

Models we made for the Guideline represent the most relevant features of each classified urban tissue: subsequently, on that basis, we performed alternative simulations:

- a. we have highlighted (in red, Fig.3) the choices that could exacerbate the problems concerning each theme identified in the landscape plan, with particular reference to the quality of the urban fringes: the highlighting of critical issues is expressed through the representation of planning behavior not consistent with the own PIT/P goals.
- b. we envisioned (in blue, Fig.4) hypothesis of modification in response to the most obvious and recurring problems, or assumptions consistent with the PIT/P goals. We assumed volumetric additions (buildings) and soil amendments (in the design of aggregated lots, infrastructure and vegetation, linked to an assumptions of the provision of urban standards) that do not consume new soil or they do so within a framework of protection of the landscape and in a general elevation of "ecological" quality of the urban tissues.

## 4 OUTCOME AND RESEARCH PERSPECTIVES

The first outcome of the «Guidelines for the redevelopment of the urban tissues of the contemporary city» is to lead to reconsideration of the potential value of some urbanizations of the contemporary city. The guidelines integrate in a certain way the operational accuracy of the PIT/P to a scale not easy to manage, also from the point of view of a possible effectiveness of the Guidelines as "rules" for the project of the landscape; focus themselves on the transition from a small scale to a larger scale; stress the need not to demean the significance of urbanized fabrics as an integrated entity in the historic structures. It is not allowed to go back in the past, restore the past, it is not possible unravel the tangle and come back to a "primal" order. It is a new paradigm, in urban places and situations different from those we are used to consider; for example different from the situation in the historical centers, with respect to which there has been in Europe a very depth discussion on the relationship between the new and the old settlement.

The Guidelines deal as "contemporary" the city made up of recent tissues grafted on former territorial structures often recognizable and identifiable by their documented "long duration", by the presence of roads, public spaces articulated around episodes of collective architectures, obvious signs of traditional crops, etc. So, the Guidelines express the need to experience the contemporary urbanizations for the way these interact for the better with the historical structures, but not necessarily the contemporary urban fabric is subordinated to the enhancement of the historical settlement's recognizability. The work done illustrates how a wise modification of the existing settlement («build on existing buildings») could lead to a better quality of the entire urban settlement; this result can be achieved by looking for the better relationship with the in-between spaces, with few actions applied in this area. The regional plan tries to provide evaluation of the changes affecting the "historic" urban fabric through improvement of contemporary urban tissues, which implicitly recognizes the importance of the latter. The advancements we have tried to introduce through the Guidelines are referred to the operating mode by which we can contribute to the «landscape regeneration of urbanized tissues of the contemporary city».

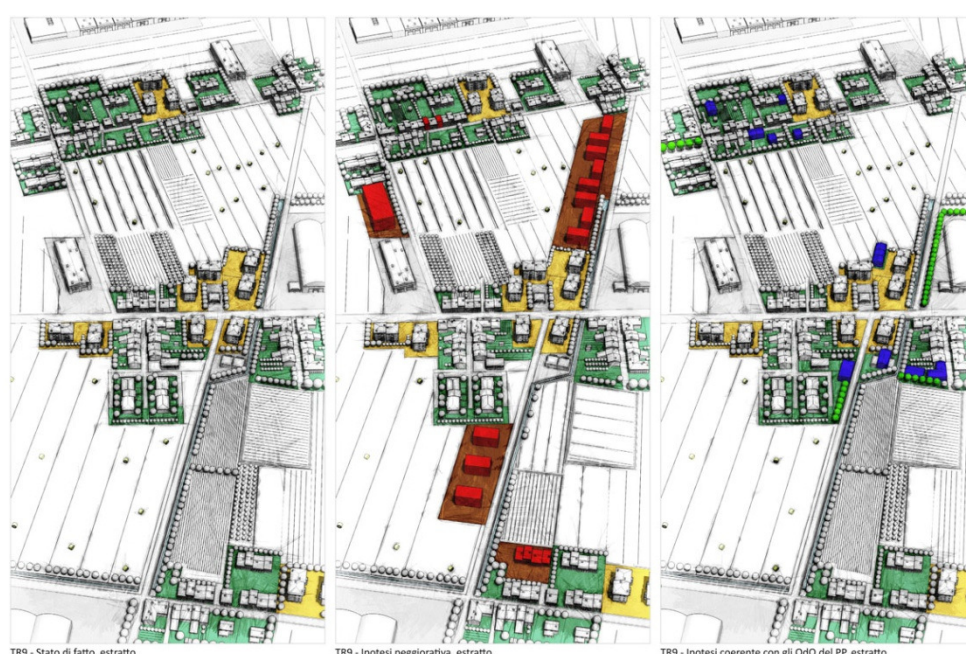


Figure 5 Example of a contemporary urban tissue of the PIT/P: comparison of the three representations above.

#### 4.1 Connecting historical and contemporary urban fabrics

Thus, the Guidelines also try to represent some configurations of spaces that can be recognized in the long duration, in their relationship with the contemporary urbanized tissue, assuming interactions in turn critical or virtuous in their cumulative effect. In this sense, the guidelines attempt to deal with the proper balance of the 'edge' of the city, in its various possible meanings, depending on the type of urban tissues that determines it: the building types and their arrangement on the lot, the articulation of the lots, the road network and the relationship with the open and close space around, are some of the elements that determine the type of edge of urban tissues; it can be in turn a well-defined line constituted by an infrastructure or other type of barrier; or they may be a strip, even connecting landscape elements.

The fringe area, the in-between space are also in the Tuscan plan, and specifically in the guidelines we designed, the place of paths and connections of various types and nature: pedestrian and cycle paths, connections with the nearby countryside and with natural space; the margin is often constituted by elements (such as riverbanks, small roads in the countryside, etc.) that can be used as paths between the urban tissues and its surroundings.



A particularly important factor for the purposes of this essay is the attempt to represent the shapes of urbanized tissues, in mutual relationship with the countryside: the importance and role of the latter is not underestimated by the PIT/P, which has a specific section dedicated to 'survey' of the rural landscape types<sup>4</sup>. In this urbanized tissues are present the in-between areas: are rural areas and/or residual natural areas, surrounded by urbanization. The PIT has assigned to these particular areas a very high value, as they often guarantee the permanence of natural character, allow agricultural features, act as multifunctional spaces used by local communities. Thus, albeit with a different assessment of the "goodness" of the different tissues, the PIT/P has assigned to these non-urbanized areas a core function. The identification of the limits of the urbanized areas created by the plan through an automatic processing (cfr. above) leave out from urbanized areas the big in-between areas (both agricultural areas and natural areas), allowing for a different treatment compared to their potential edification, given the development pressure to which are subjected these areas in Italy (Rovai, Agostini et al. 2013).

In conclusion, the experience of the drafting of the Guidelines, shows that, even in situations with a renowned quality as the Tuscan landscape, the attention is to be placed on the conservation and protection of historical settlement forms; but it must also take as a certain the fact that the human settlement has changed profoundly, both in its form and in its meaning. This evolution is incomplete and dispersed: affects even the heart of the art cities such as Florence, resulting in changes of meaning, in tourist specialization, in abandonment, or in museification or gentrification; but it is an evolution that forces us to consider more carefully the possibility of relevant completion and modification of the existing contemporary urban tissues, which gives new meaning to the cities considered in the full arc of their historical evolution, and helps to fulfilment of the transformations within to the large «building site» which we used as a metaphor at the beginning of this essay.

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<sup>4</sup> Called "*INVARIANTE IV: i caratteri morfotipologici dei sistemi agro ambientali dei paesaggi rurali*". The researchers who made this part are: Paolo Baldeschi (DIDA/UNIFI), Gianluca Brunori (DISAAA-a/UNIFI), scientific coordinators; Laura Fastelli, Maria Rita Gisotti, Stefano Grando, Massimo Rovai

## **SURVEY OF BUILDINGS, ELABORATION OF URBAN MAPS, DATABASES FOR DESCRIBING THE SEISMIC BEHAVIOUR OF HISTORICAL SITES**

**Elena Teresa Clotilde MARCHIS<sup>1</sup>, Giorgio GARZINO<sup>2</sup>**

<sup>1</sup>*Politecnico di Torino (ITALY)*

<sup>2</sup>*Politecnico di Torino (ITALY)*

*(elena.marchis<sup>1</sup>; giorgio.garzino<sup>2</sup>)@polito.it*

### **Abstract**

This research, whose ultimate purpose is historic city centers protection through the evaluation of the potential seismic risk to which they are subject, it needs for different disciplines technical support.

As the treated theme is characterized in territorial circle too, importance respect the completeness and the amplexness of the necessary knowledge is obvious. It deals with a job that has picked up and elaborated the contribution of multiple competences, that has broadly been discussed and sharpened in his results, that it gives an adjourned answer so much from the methodological point of view that from the historical-critic.

The development of the research allowed to evaluate and highlight some critical operational, that have emerged by analyzing the new case study identified in the southwest of the historic center of Chieri. Survey work has always been closely reported with the definition of the cognitive context linked. Note therefore means to represent the interest environment geometry, but also to investigate the funding of it historical dynamics, material and characteristic of the behavior of it. This research, whose ultimate goal is protecting the historical urban centers by assessing the seismic potential risk to which they are subject, it is necessary for the different disciplines technical support.

As the subject matter is characterized at a local level also important to respect the completeness and breadth of knowledge required it is obvious. The development of the research allowed to evaluate and highlight some critical operational, that have emerged by analyzing the new case study identified in the southwest of the historic center of Chieri.

The survey was not extended on a single block, as was the case previously examined, but on a larger portion of territory characterized by diversified manufacturing of building. The urban texture of the historic city center of Chieri, the object of analysis, ranges from the Middle Age, with buildings made of brick masonry and horizontal elements in wooden structure, until, in the sixties of Nineteen Century, with modern buildings made of reinforced concrete. Inside the block it is possible to find buildings rich in architectural and construction typical of an urban transformation that, since medieval age, consolidated, through the Baroque period to the end of the nineteenth century, as a result of strong urban and architectural transformations.

The research was developed according to the following steps:

- Identification of a sample portion of land characterized by a wide assortment of historical buildings of different architectural features and different uses, with load-bearing masonry structure and stratigraphy of significant historical periods from the Middle Ages to the twentieth century.
- Geometrical survey of the actual state and return of buildings in their current state with the identification of the buildings, their height, width, openings at ground level and over, survey of common areas such as hallways, stairwells and courtyards.

- Analysis of the fronts, the openings and the development plano-elevation of buildings, the aspect ratio of each architectural element constituting the block;
- Identification of materials, the elements making up the organism resistant, both in material and constructive state, with attention to construction techniques and to the connections between the elements, as defined by the DPCM 09/02/2011, for the assessment and mitigation of seismic risk of the cultural heritage in relation to technical standards for construction as reported in section 4.1.1
- Identification of the hierarchy and constructive relations between the building and the urban context.
- Identification of carriers as unidirectional or bidirectional load-bearing walls, vertical columns or masonry pillars or galleries. The presence of spaces with a significant height interstory and the presence of buildings sleeve simple or double sleeve.
- Identification, where possible, of the areas of discontinuity and inhomogeneities of materials due to different construction phases (additional bodies, cant, substitutions of certain parts of buildings or floors, insertion of new structural elements and balconies etc.).

The symbology overlap has been made necessary by the presence of several elements which characterize and describe the morphological nature of the asset analyzed as the presence of "vertical bearing elements in columns" and at the same time the presence of "environments with significant height interstory". The research is continued by examining not only one block but a larger portion of the territory, located in the historic center of Chieri. The study has uncovered further problems that were analyzed. The development of a new working method consists in the proposal of new symbologies more articulated and with greater detail of information. The deepening of the study led to the differentiation of the openings of the inputs by placing an arrow close to the access driveways and walkways. In the presence of point features vertical was placed a dot, coloured in black if the vertical element is placed in the lower floors (arcades, cloisters, etc.) and in white if the structure is situated at the highest floor (lodges). The presence of buildings of reinforced concrete or the presence of parts bearing walls was represented with a filled crossed line placed at 45°. After the analysis the end product of the research will be the graphical depiction of the analyzes performed, or a representation of fast and easy reading under the symbols studied

**Keywords:** Architecture, Seismic risk, Cultural heritage, Mapping, Representation, 3D modelling.

## 1 THE SCIENTIFIC BASES OF THE SEARCH (Giorgio GARZINO)

Survey activity has always been tightly reported with the definition of the connected cognitive context. This research, whose ultimate purpose is the historic city centres protection through the evaluation of the potential seismic risk to which they are subject, needs of the contribution with different disciplines technical support. The cultural background grown in the former Structural Engineering School directed in the past decades by professor Augusto Cavallari Murat, and followed by the scholars of his team, left a significant mark with the project named *Forma Urbana* [1], from which an innovative method of representing the building and urban structures of historical centers arose. This method generated a standardized graphical representation that in year 1974 was codified by the UNI Norm 7310/74.

In more recent times with reference to the cultural patrimony, the Directive P.C.M. of February 9th 2011 constitutes a deepened scientific and technique reflection on the matter. In these years the literature had registered important improvements [2] [3] [6] [7] [8]. In this renewed cultural climate the General Assembly of the Superior Council of Public Works of April 20th 2012, with the purpose to answer to the cited Directive, has approved a study preparatory to the elaboration of tools for the application of the normative seismic to the historical settlements.



The present contribution intends to explain an activity of search outstanding in collaboration with the Department of the Civil Protection and with University Laboratories of Seismic Engineering Net (Rete dei Laboratori Universitari di Ingegneria Sismica –ReLUIS-) [9]. The theme of structural and seismic safety requires today that are conjugated knowledge of two cultures remained too long separated. Is now scientific heritage shared the fact of how to the left of the characteristics that describe the mechanical behavior of materials should decline the magnitudes of the efforts and stresses intrinsically linked to the geometry and at the same time a path of a history of the building, in order to know to fully the nature and spend so the specificity of the particular to the general complex. In this renewed cultural climate the General Assembly of the Superior Council of Public Works of April 20th 2012, with the purpose to answer to the Directive P.C.M. February 9, 2011, has approved a study preparatory to the elaboration of tools for the application of the normative seismic to the historical settlements. The proposed job uses of some searches taken place during the years by numerous researchers. In fact, the scientific research proceeds through the contribution of the many diligent and strenuous actors and each report about the state of knowledge at a given time does nothing but mark a further step, small or large, compared to the level of previous knowledge. To forehead of the activity of survey it is possible to pass to a classification of first level, conducted either on the basis of comparative analysis or of simplified analytical models.

	Part of the building structurally separated RESPECT context that presents no signs of transformation.		Masonry brick in good condition with the presence of horizontal strengthening of masonry elements.		Horizontal Structures built with vaulted systems. The letter n is the number of planes involved.
	Part of the building structurally aggregated with the context that shows no signs of transformation.		Masonry brick in average condition with regular and almost horizontal course.		Horizontal Structures built with vaulted systems with the presence of the crack. The letter n is the number of planes involved.
	Body of the building is structurally separate from the context that shows signs of transformation / repair.		Masonry brick in mediocre condition and / or of poor quality with the presence of niches, brisaches, etc.		Horizontal structures with floors wooden beams. The letter n is the number of planes involved.
	Part of the building structurally aggregated with the context that shows signs of transformation / repair.		Mixed masonry brick and stone in good condition with the presence of horizontal strengthening of masonry elements.		Horizontal structures with floors wooden beams with the presence of the crack. The letter n is the number of planes involved.
			Mixed masonry brick and stone in average condition with regular and almost horizontal course.		Horizontal Structures mixed realized both with vaulted systems that with the wooden floors. No letters indicate the number of planes involved.
			Mixed masonry brick and stone in mediocre condition and / or of poor quality with the presence of niches, brisaches, etc.		The presence of top sections. The letter n indicates the height in storeys above ground and the sign on the letter reports a super-elevation, an order of dormers or lofts above the cornice.
			Bearing walls of hewn stone or hewn in good condition with the presence of horizontal strengthening of masonry elements.		Presence of mezzanines. The letter n is the number of planes 'major' out of the ground and the letter m indicates the total number of planes including mezzanines.
			Bearing walls of hewn stone or hewn in average condition with regular and almost horizontal course.		Regularity of the distribution of strength and stiffness in the plant where the letter n indicates the ratio between the dimensions of the major and minor side.
			Bearing walls of hewn stone or hewn in poor condition or made elements split or shingle poor quality with the presence of niches, brisaches, etc.		Presence of underground floors. The letter m indicates the number of planes involved and its location within the pattern indicates the type of horizontal structures related.

Figure 1. Symbols defining symbols for defining different types of buildings, types of masonries, and for defining horizontal structures built with vaulted systems.

With the purpose to allow the passage to a level of further close examination, the survey campaign not only foresees the elaboration graphic-symbolological of logical-deductive data as the harvest and the organization of metric data. This operation, as best documented in the case study presented, is based on the processing of frames and subsequent organization of photographic models 3D, likely to query metric. The model of survey campaign proposed in this research therefore provides the organization of databases multirelational, where the information obtained under the tab CAR.TI.S. they relate to the geometric layout of the building and with the feedback metric that provides the 3D model (from the size of the openings to the ceiling heights of). This wealth of data, scientifically collected and organized, beyond the fact that it constitutes an important analysis of a logical-deductive, then makes possible the preparation of mechanical models-behavioral rather detailed, able to respond positively to the demands of knowledge on which are founded the analysis of seismic risk and protection. After the recent earthquakes, such as the one that destroyed the historic centre of L'Aquila in 2009 which caused very critical damages to buildings and the other of 2012 that occurred in Emilia Romagna, has led to a consciousness of the knowledge of the state of the buildings, their use and their conservation, particularly those undergoing preservation order pursuant to Legislative Decree no. 42/2004 against seismic issues.

Although the *Guidelines for the evaluation and reduction of seismic risk of the cultural heritage* in line with the new technical regulations for the buildings date back to 2008 (DM 14 January 2008).

Innovation and attention, creating a database of seismic risk is the subject of official recommendations that have just emanated<sup>1</sup>. The identification card must, in addition to the identification data of the property: name, address, cadastral identification, details of the declaration of interest in accordance with Legislative Decree no. 42/2004, ownership, destination, urban, location, extent and type of intervention should provide a "brief description of the intervention" and indicate whether the same interferes with the supporting structure and the various elements: bearing walls, floors, times, partitions, roof foundations or floors in addition to indicating the need or not an audit structural. Particular attention is paid to the importance of the vulnerability of building types.

	Building a simple sleeve bearing walls with unidirectional.		Bearing structures in C.A.O. - made previously to mandatory earthquake standards in good condition.		Geometry of the roof indicating the ridge and ridges.
	Building a simple sleeve with bidirectional load-bearing walls.		Bearing structures in C.A.O. - made previously to mandatory earthquake standards in average condition.		The lines of maximum slope plotted with solid line indicate main warping made trusses.
	Building sleeve double or multiple walls of plug and load-bearing walls unidirectional.		Bearing structures in C.A.O. - made previously to mandatory earthquake standards in poor condition.		The lines of maximum slope plotted with double solid line indicate main warping made trusses made an identifiable with each other in solidarity.
	Building sleeve double or multiple walls of plug and bidirectional load-bearing walls.		Bearing structures in C.A.O. previously made mandatory earthquake standards in good condition characterized by irregularities in elevation (the surface of the floor varies by more than 30%).		The lines of maximum slope dashed lines indicate the main warping made rafters.
	Buildings characterized due to the presence of areas with significant height between floors.		Bearing structures in C.A.O. previously carried out the compulsory earthquake standards in the state of preservation medium characterized by irregularities in elevation (the surface of the slab varies by more than 50%).		The lines of maximum slope plotted with double dotted line indicate main warping made rafters fixed to the ridge and the ridges.
	Buildings characterized because of the presence of carriers in vertical columns and / or brick piles.		Bearing structures in C.A. previously made mandatory earthquake standards in poor condition characterized by irregularities in elevation (the surface of the floor varies by more than 50%).		Presence of the curb connection between vertical walls and roof.
	Buildings characterized because of the presence of the lodges.				

Figure 2. Symbols for defining information about openings, floors structural arrangement, and for defining the organization of the roofing system.

After that, due to the drawing knowledge, it will spring the possibility to compile urban maps (invented to belong to an integrated territorial informative system with data on geophysics, geology, geotechnical design), capable to represent the seismic risk of single city contexts.

It deals with a scientific research in to become and in progress of definition, which however has already clearly fixed its guardianship and safeguard objective: it must be investigated system terms, the only ones which experience has taught us to be effective.

## 2. A FIELD RESEARCH IN THE HISTORIC CENTER OF CHIERI (Elena Teresa Clotilde MARCHIS)

The research here developed analyzed a small urban center in the Turin area. The chosen place is located in a flat area at the foot of the hilly offshoots of the eastern slope of the hill of Turin and the last layers of the Monferrato hills. The city of Chieri is about 20 kilometers from Turin. The city was founded in the flat area, according to a method of implantation feature of Roman settlements. Chieri also had an intense urban development in medieval well seen especially in the presence of religious buildings of great importance. The presence of civil buildings of medieval times is easy to read in detail in front of the walls, in the presence of wooden coffered ceilings in ribbed vaults. It is not always possible to date precisely the age of the buildings with a simple observation. Sometimes medieval elements may be concealed from operations attributable to later periods, from the Renaissance until the mid-twentieth century, which altered the outer skin and changed the structure.



Figure 3. Satellite view of the historical centre of Chieri

The development of the research allowed to evaluate and highlight some critical operational, that have emerged by analyzing the new case study identified in the southwest of the historic center of Chieri. To reduce the effects of the earthquake, state action focused on the classification of the territory, according to the intensity and frequency of earthquakes of the past, and the application of special rules for construction in seismic areas classified. The Italian anti-seismic legislation, aligned to the most modern standards internationally prescribed technical standards under which a building must endure without serious damage earthquakes without collapsing and less strong earthquakes stronger safeguarding first of all human lives. The measure sets out the general principles on which the regions, in which the state has delegated the adoption of the seismic classification of the territory DLgs 112/1998<sup>2</sup>, have compiled the list of municipalities with its assignment to one of the four zones, in danger of decreasing, which has been reclassified in the country<sup>3</sup>. *Earthquakes are rare*. The current Technical Regulations for Construction (Ministerial Decree of 14 January 2008), in fact, changed the role that the seismic classification had for design purposes: for each area - and then municipal area - previously was provided a value of peak acceleration and then the elastic response spectrum to be used for the calculation of the seismic actions. Since July 1, 2009 with the entry into force of the Technical Standards for Construction of 2008, for each building should be referred to a reference acceleration "their" identified according to the geographic coordinates of the project area and a function of life Nominal work. A value of the basic dangers, therefore, defined for each point of the national territory, on a square grid of 5 km of side, regardless of administrative borders.

The seismic classification (seismic zone membership of the town) is only useful for the management of the planning and control of the territory by the authorities (Region, Civil engineering, etc.). <http://www.protezionecivile.gov.it/jcms/it/classificazione.wp> The need to build a speed mapping of the urban territory aimed at understanding, prevention and methodologies of behavior in case of earthquake is essential to cope with emergencies and the immediate that may occur. In this case is the fundamental understanding of the composition of structures, construction methods, the architectural phases of stratification that often hidden from those existing layers recent. It is also important to identify the nature of the buildings and their actual intended use to feign can keep under control and organize the phases of survey collection and arrangement of the populations in the area in case of earthquake. In critical situations such as those indicated it is very important the availability of buildings functional the needs expressed also, according to their current use. The good knowledge of the area and the availability of these architectures can be of great help to convey the flow of people to safe areas and easy to adapt to situations. Parallel to the good knowledge of architectural structures is important to have a good knowledge of the possibilities of movement and traffic flow. As in critical situations is very important to know which are the buildings, according to their current function, most at risk for non-vehicular flows of people or to secure them, and identification for strategic emergency actions.

The survey was not extended on a single block, but on a larger portion of territory characterized by diversified manufacturing of building. The urban texture of the historic city center of Chieri, the object of analysis, ranges from the Middle Age, with buildings made of brick masonry and horizontal elements in wooden structure, until, in the sixties of Nineteen Century, with modern buildings made of reinforced concrete. Inside the block it is possible to find buildings rich in architectural and construction typical of an urban transformation that, since medieval age, consolidated, through the Baroque period to the end of the nineteenth century, as a result of strong urban and architectural transformations.

The research was developed according to the following steps:

- Identification of a sample portion of land characterized by a wide assortment of historical buildings of different architectural features and different uses, with load-bearing masonry structure and stratigraphy of significant historical periods from Middle Ages to the twentieth century [4] [5].
- Geometrical survey of the actual state and return of buildings in their current state with the identification of the buildings, their height, width, openings at ground level and over, survey of common areas such as hallways, stairwells and courtyards;
- Analysis of the fronts, the openings and the development plano-elevation of buildings, the aspect ratio of each architectural element constituting the block;
- Identification of materials, the elements making up the organism resistant, both in material and constructive state, with attention to construction techniques and to the connections between the elements;
- Identification of the hierarchy and constructive relations between the building and the urban context.
- Identification of carriers as unidirectional or bidirectional load-bearing walls, vertical columns or masonry pillars or galleries. The presence of spaces with a significant height interstory and the presence of buildings sleeve simple or double sleeve.- Identification, where possible, of the areas of discontinuity and inhomogeneity of materials due to different construction phases (additional bodies, cant, substitutions of certain parts of buildings or floors, insertion of new structural elements and balconies etc.). The transition from an abstract scheme, such as that of the categories identified, to the drafting of an important document, required an adjustment sensitivity and a critical interpretation of the situations encountered. Following the speed survey conducted in the first phase of the study, they were identified some critical aspects, because the hierarchization of the information related to the type of construction can vary within each individual building, both in the structure and in the vertical stratification. In the first part of the research, conducted on a sample block of the historical centre of Turin, it was assumed to indicate only the typological features of the building on time, limited to the portion or sleeve examined. By a more in-depth analysis it was considered to investigate more the situation and to indicate the characterization according to a notation superimposed near the openings so as to describe punctually, with greater detail, the architectural object.

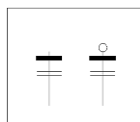


Figure 4. Primary symbology

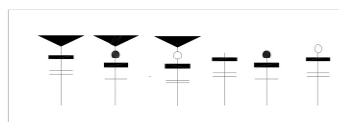


Figure 5. Symbology of the morphological nature of the asset.

The primary symbology overlap has been made necessary by the presence of several elements which characterize and describe the morphological nature of the asset analyzed as the presence of "vertical bearing elements in columns" and at the same time the presence of "environments with significant height interstory". The deepening of the study led to the differentiation of the openings of the inputs by placing an arrow close to the access driveways and walkways. In the presence of point features



vertical was placed a dot, coloured in black if the vertical element is placed in the lower floors (arcades, cloisters, etc.) and in white if the structure is situated at the highest floor (lodges) (Fig. 4-5).



Figure 6. Graphical depiction of the analyses performed, sample carried on a part of the historic centre of Chieri.

The presence of buildings of reinforced concrete or the presence of parts bearing walls was represented with a filled crossed line placed at 45°. After the analysis the end product of the research will be the graphical depiction of the analyses performed, or a representation of fast and easy reading under the symbols studied and elaborated on the basis of the Directive for the assessment and seismic risk reduction. The second phase of research, expand across regions, has identified classes and types of buildings according to use either public or private or organizational and managerial functions and flows of people, all in order to identify places and buildings of larger seismic risk.

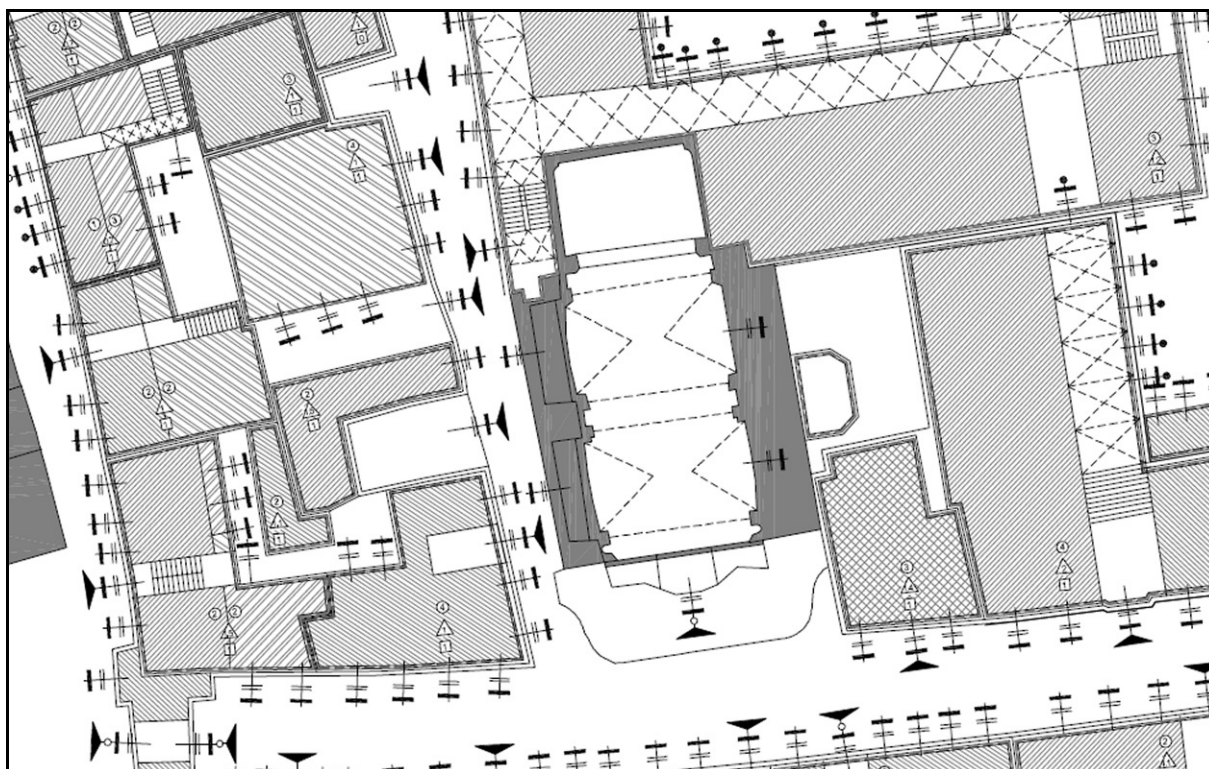


Figure 7. Graphical depiction of the analyses performed, particular.

The analysis has identified the classes of buildings; that subsequently generated a mapping of the territory (Fig. 8) and its colouring, so forming a complex database that allows to filter and interpolate the data of different nature: structural, typological, flow, etc.

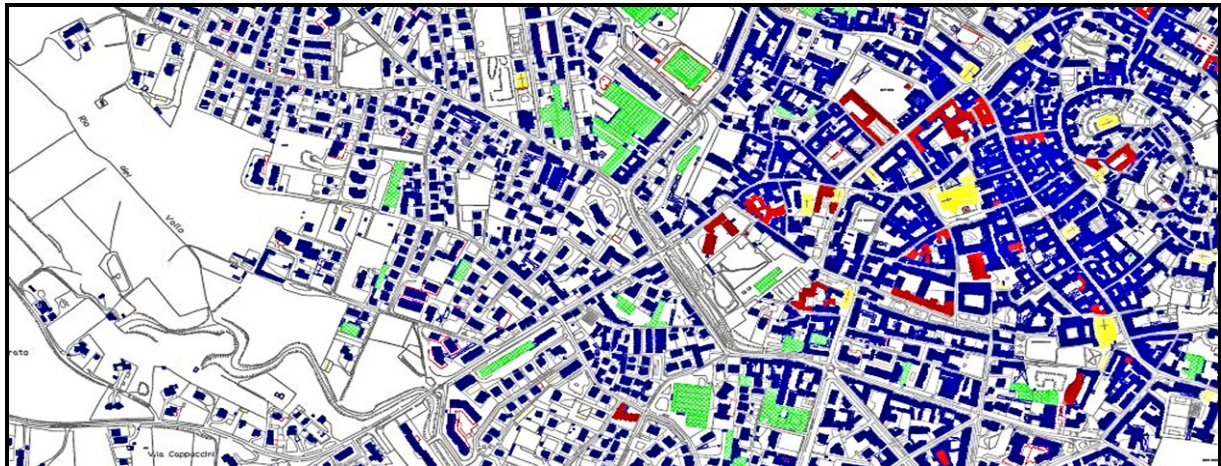


Figure 8. Mapping of the territory, particular.

The database is illustrated in (Fig. 9), and shows some examples of user interface, representing the first phase of the work of data collection, analysis and return of multiple analyses conducted.

The data in this way can be compared and correlated and the user interface can be easily accessed and used even by non-technical users. The research will be expanded and the next step will be the creation of a GIS (Geographical Information System) created on the basis of the database so you can relate and query data, the result of analysis and research, including on thematic maps calling cards and operational intervention analysis as the "CAR.TI.S. Cards". Today, the CAR.TI.S. can be interrogated in database user interface "masks" depending on filtered data for "FAMILY" and "TYPE" in the building.

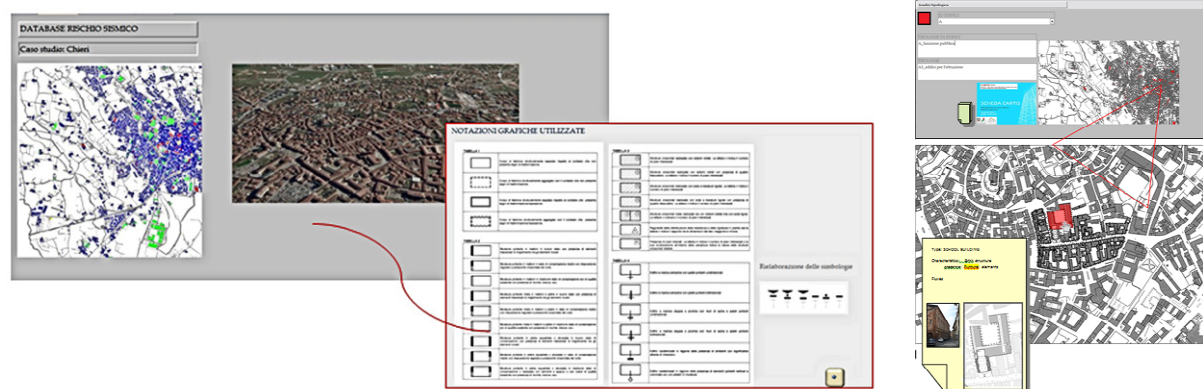


Figure 9. Example pages of database, index and records

The database has the task of being able to query for types of building and in the user interface (Fig. 9) is possible to find two examples of queries. A first filter allows you to select the "function" of the building and display it on a mapping and then select the "type". Zooming on maps you can view and select with the mouse the cell building that you want to interrogate allowing you to view a board containing the features, scanning and 3D visualization of the architectural object, a data CAR.TI.S. reference, etc. For creating a geometric model it was used software photscan that performs photogrammetric processing of digital images and generates 3D spatial data. Its result is the creation of a 3D model can be edited and queried by which you can get sizes and shapes of architectural order to build structural models. A test done on a portion of the building allows you to obtain a 3D model from which we can extract metric data and display as the structural height of interstory, the size of the openings, the relationship between full and empty. Speed survey in conjunction with a digital model will be the basis of a subsequent structural verification of the building concerned with creating a geometric pattern of the structural elements and a structural model. This research, especially in its



early description of the functions of use of the buildings, beyond a simple characterization of use, is projected into a dimension that goes beyond the simple mapping of structures and become a necessary tool for the management of the dynamics of the public and private spaces. Often in historic buildings, and therefore inevitably burdened with features not meet the latest regulations, they are set for public interest or, in exceptional cases, such buildings can be seen changing their functions. It will thus be of primary interest to the technician, but also for those who hold an administrative role management, to have all information to be able to act in real time with any variations in the use of the buildings themselves.

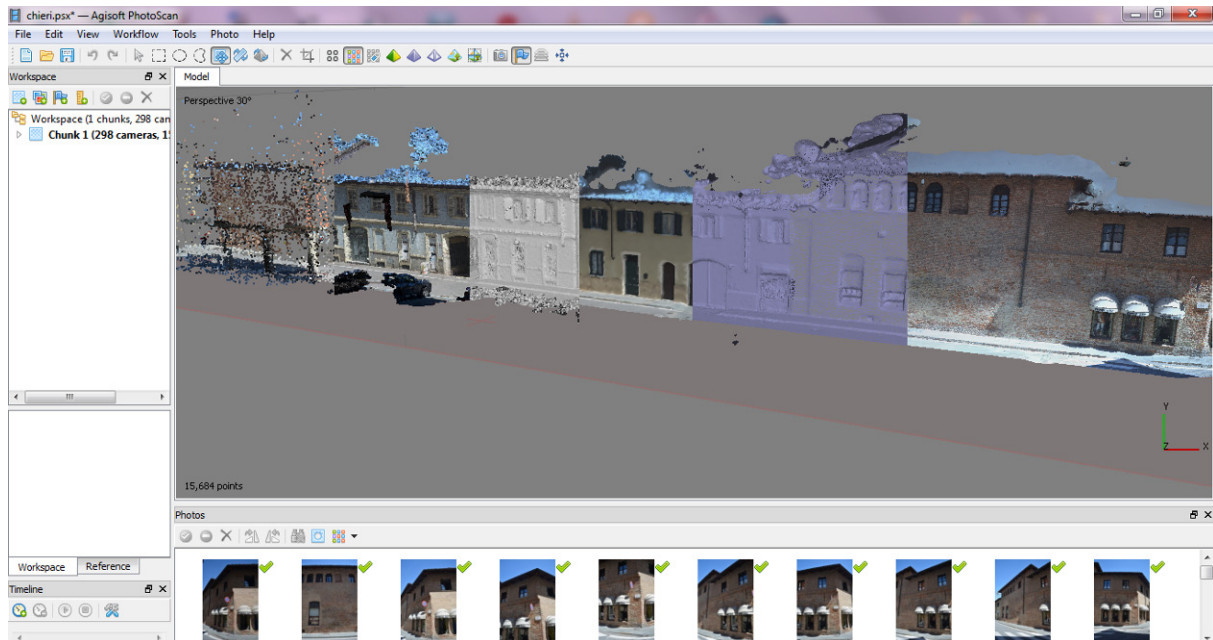


Figure 10. Computer actions for the final model, starting from point cloud data to the mesh structure

Load-bearing walls can be detected if the masonry or stone structures have deterioration and / or degradation, in case of absence or of ineffectiveness of joints, slots and / or recesses or cavities.

The beams, if detectable may be wood, steel or reinforced concrete and depending on the detected material present rot, cracks and / or supports are not suitable.

The covering structure may be constituted by wooden beams, metal beams, or times or by slabs of reinforced concrete. In this case the vulnerability can be due to pushing structures, lack of bracing of the water, in connection with the underlying masonry unsuitable or ineffective connections of the nodes of the truss. As regards the foundations, if known, they can be in masonry or reinforced concrete and vulnerable to sagging bottoms. Finally, as regards the non-structural elements (such as cornices, parapets, chimneys, or projecting elements) it is possible the occurrence of connections is not effective with the structure and detachment, or deterioration.

In the section "From the knowledge of the situations the proposal phase with the study of" mitigation of seismic risk repairs and local interventions "are analyzed:

- Action to reduce the shortcomings of the links-walls walls and floors and walls-related proposals
- Measures to reduce the pressure of arches and vaults and their consolidation, by including chains, masonry buttresses or pads, to tackle with bands of composite material, the achievements of soffits masonry for vacuum pressures, the reduction of extrados loads, the consolidation of the masonry;
- Measures to reduce the excessive deformability of the floors and their consolidation. In this case it can be provided for interventions of lightweight stiffening as the placement of a second plank overlay to the existing one, arranged with trend orthogonal or slotted false. Or the arrangement of reinforcements with crossed straps, with metallic elements, with composite materials;



- Interventions in roofing;
- Projects aimed at increasing the resistance of masonry elements;
- Interventions on pillars and columns;
- Interventions in the foundation;
- Work on non-structural elements;
- Organizational measures;

It all ends with the evaluation of the intervention in order to: invasiveness, effectiveness of performance, chemical, physical, and mechanical compatibility, reliability in performance, controllability of performance, reparability and costs.

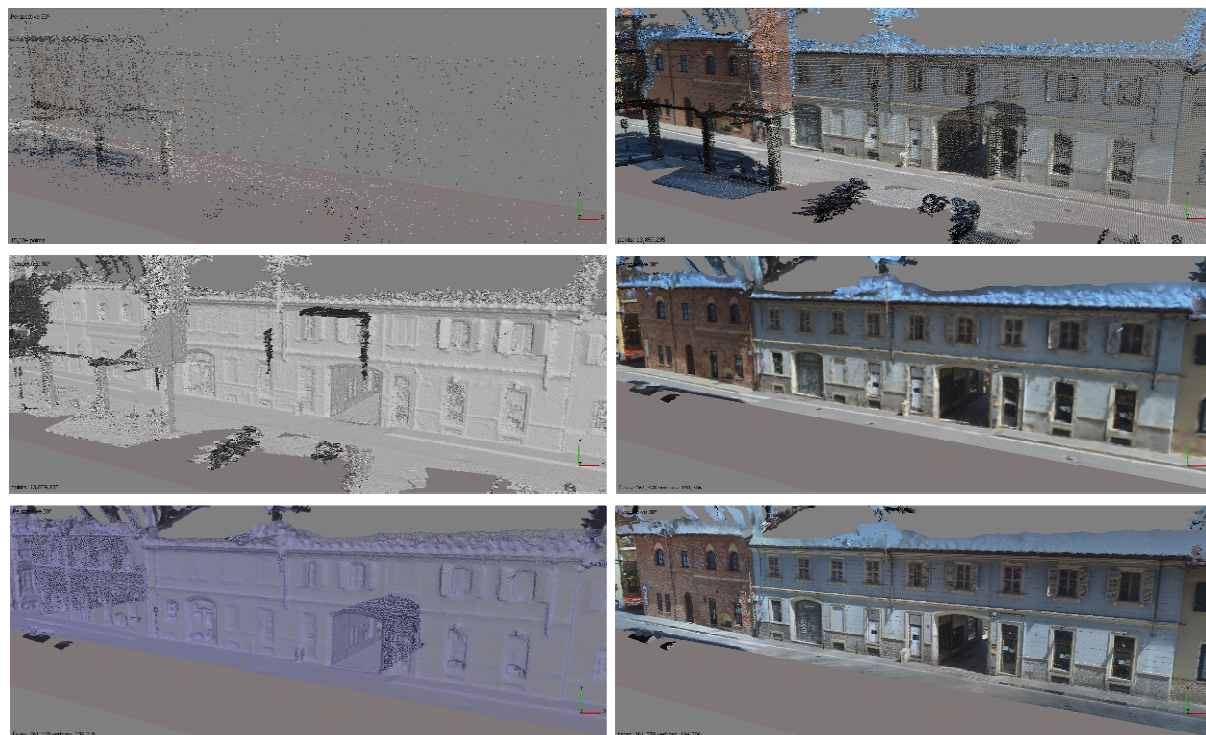


Figure 11. Subsequent operative steps during the creation of the three-dimensional model.

In the analysis of the street examined, reported in Fig.10 -11, starting from 298 photographs<sup>4</sup> a 15.684 point cloud have been generated, that with digital elaboration have produced 13.859.235 points of a dense cloud. The so produced model consisted in a mesh of 2.161.378 faces with 134.306 vertex that led to a 3D model with a real texture.

The speed survey to be performed on ground, due to the nature and dimension of the set of buildings and architectural structure to be taken into account, can be performed with the aid of now well assessed techniques of a “street view” vehicle equipped with scanning cameras or with drones. The so taken pictures can subsequently transformed in the point cloud data usable for a photogrammetric analysis. Among the different software available for this operation the Agisoft Photoscan<sup>5</sup> has been used and it has been found easy to use and reliable in the results obtained by a smart automated data processing. The 3D model so obtained will add to the survey the information necessary for the symbolic codification and for the final mapping, GIS referenced and part of a general database for public utilisation.

### 3. CONCLUSIONS

In summary the Synopsis Record of seismic risk, which analyzes the structure and inherently intervention on it is going to do, can become a moment of knowledge and reflection, staple of

knowledge flowing in the database of MIBACT (Ministry of heritage, cultural activities and tourism) can be effectively made available for emergency situations in case of disaster.

Collecting cards of seismic risk over the complete territory requires in any case long time, because it is drawn up only in the presence of a restoration or maintenance, by skipping all those buildings that have already been restored prior to 1 September 2015 and those who have undergone renovations.

The mapping, or speed survey, of an area is an element of knowledge even if not becomes more specific in the history of a building and of its conservation. However the combination of the two types of investigation can become a fundamental element of knowledge of the area and of its building and architectural heritage, and will be a support for the activities of emergency teams and of Civil Protection in the event of disasters. In a country like Italy, strongly influenced by seismic risk, if from one hand the geodynamic researches since long times have mapped the territory on the basis of the earthquakes effects [2], the territory and urban mapping from the point of view of architectural and structural characteristics in a perspective both of seismic resistance and of public / private utilization is a new deal. The approach here adopted has its historical grounds in the urban mapping graphic method adopted at the mid Twentieth Century by the Civil Engineering School of the Politecnico di Torino [1] and now on the same graphic base has been transferred in the multidimensional ambient allowed by the actual computer facilities. But, at the end of this contribution that after the general theory, in accordance with the general norms and laws, has been proofed and verified on the field. And the general and final products, i.e. the coloured maps will give an immediate idea of the field to interact in case of tragic disasters. The practical aspect of the results and their friendly usability can help to trust in the possible use extended to large scale. Only in this case the effort of the initial research will offer the practical effects for a safer utilization of our urban spaces. Because the memory of the past not only is matter for erudition and for celebrating glorious times, but is mandatory for a complete consciousness of the present time, and for a critic view of the future.

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<sup>1</sup> Circular No 15 of 30 April 2015 of the Ministry of Cultural Heritage and Activities issued by the General Secretariat provides that, with effect from 1 September 2015, applications pursuant to Art. 21 of the aforementioned Legislative Decree no. 42/2004, for authorization to work on goods subject to protection, must be accompanied by a Synoptic Record of structural and architectural. The Synopsis Record has been prepared according to the directives of the Council of Ministers of 9 February 2011 on the *Valutazione e riduzione del rischio sismico del patrimonio culturale con riferimento alle Norme tecniche per la costruzione* (Assessment and mitigation of seismic risk of the cultural heritage with reference to technical standards for the construction) by decree of the Ministry of infrastructures and transportation 14 January 2008".

<sup>2</sup> Legislative Decree no. 112 of 1998 and Decree of the President of the Republic n. 380 of 2001 - "Consolidated Standards for Construction"

<sup>3</sup> Zone 1 - The most dangerous part. May occur strong earthquakes, Zone 2 - This area may experience strong earthquakes, Zone 3 - In this zone can occur strong earthquakes but rare, Zone 4 - And ' the least dangerous area.

<sup>4</sup> The photographic campaign for the survey and modelling has been performed with the collaboration of Ugo Comollo in the staff of

Department of Architecture and Design of Politecnico di Torino.

<sup>5</sup> A stand-alone software product that performs photogrammetric processing of digital images and generates 3D spatial data to be used in GIS applications.

## AN EXPERIMENT BETWEEN DIFFERENT SIZES AND WISDOMS.

### NAPLES RIONE SANITÀ

**Gioconda Cafiero<sup>1</sup>, Giovanni Multari<sup>2</sup>**

<sup>1</sup>*DiARC University of Naples "Federico II" (ITALY)*

<sup>2</sup>*DiARC University of Naples "Federico II" (ITALY)*

*gioconda.cafiero@unina.it, multari@corvinoemultari.com*

#### Abstract

The urge to investigate the matters that characterize contemporary architectural debate has supported a joint experiment lead by the Architectural Design and Interior Architecture courses of the MAPA degree course at the University of Naples "Federico II". The main tool is the project and its educational aspect that takes to a redefinition of the consolidated limits between approaches and methods that belong to different scales. It's a research that sprung from a significant reality in the city of Naples and has triggered a fertile interpolation process between categories apparently distant from each other. Instead, they lead to productive synergies and pushed the educational activities to being at the service of the actual city and vice versa. The Rione Sanità is a particularly rich part of the city, both historically and architecturally, built mainly in the sixteenth century in a valley located immediately outside the city walls, used as a burial place already in Greek-roman era. The height of the neighborhood splendor was in the seventeenth century with the construction of churches and palaces, to be then literally overridden in the early nineteenth century by the construction of a bridge that had to quickly connect the city center and the Royal Palace of Capodimonte. The construction of the new road turned it in an enclave, physically and socially, initiating its decadence. To cope with this process, which has transformed the neighborhood in a problematic place with a high crime rate and a strong marginalization, various initiatives have been taken by the Community Parish supported by some voluntary associations; among them the Sanitansamble project, which in ten years has led to the formation of a juvenile orchestra composed of 90 boys and girls from the neighborhood. Following the Abreu method, it successfully uses classical music as a glue and a tool for education, training and social redemption. The first interpolation we mentioned was determined by the encounter of the research objectives with the reality of this phenomenon. These include the identification of a suitable space for the music school, intended as an opportunity to build a network together with the neighborhood and its resources. Among those resources, the Catacombs are definitely a strong element of tourist attraction: the tourist tour includes a route that currently ends at the ancient Church of San Gennaro *extra moenia*, the apex of the monumental complex of San Gennaro dei Poveri hospital. The second fundamental interpolation was between new elements and the restoration of existing architectures, a central theme in a highly stratified environment such as Naples, where the reading and interpretation of the typological and morphological tissue proposes new space assets and formal decisions. The research project, involving the complex of San Gennaro dei Poveri, proposes a building dedicated to music, to its listening and studying, adjacent to the monument. A design strategy that works on the size of new elements in continuity with the cloisters system, which have built the historic complex over time. The scale of this complex is a constant reference for new architectures that investigate the definition of the architectural own dimension and system. Two integrated interventions: the first aimed at giving a "main corridor" back to the city, and the second, which aims to offer the city a cultural "aggregation point" together with the whole system of existing associations and social initiatives. A place open to the city and to the neighborhood, which experiences the value and significance of the project as research in architecture

that, investigating urban complexity at different scales, determines a vision based on a number of specific facts: the relationship between soil and buildings, the role that certain architectures have in the cities, the strategy that each building can implement by investing a larger context. The urban dimension of the San Gennaro complex gives the chance to re-discuss the urban role of a stratified complex through small interventions but of great impact on the level of triggered dynamics. The possibility of new pathways through the courtyards of the existing complex has questioned the introverted nature intrinsic of its historical destination. The experimental design starts from the idea of dedicating the median and the upper courtyard to the new cultural, accommodation and connection functions between spaces for music and the Church. Redefining the paths between new and existing elements allowed to surpass the original boundary between the street and internal spaces of the complex with a public path that runs through the historical tissue: the project made it possible to explore the possibility of connecting a tiny design to a broader urban system, confirming that even a height gap or a new point of view can turn mere contiguous areas into a dynamically related system of spaces. The importance and potency of a multi-scale approach to the project is therefore confirmed with an approach in which investigating the availability of existing space to accommodate new ways of being lived is taken into account simultaneously to the study of urban relationships, of the site's links with its landscape, in a continuous relationship of hermeneutic circularity between the different measures and wisdoms involved in architectural design.

**Keywords:** Naples, Rione Sanità, between, sizes, taking care

## 1 INTRODUCTION

The urge to investigate, with the project as educational tool, the matters that characterize contemporary architectural debate –and more precisely the redefinition of the consolidated limits between approaches and methodologies that belong to different scales– supported a joint experiment between the Architectural Design and Interior Architecture courses of the MAPA degree course at the University of Naples “Federico II”. This occasion turned out to be a valuable opportunity to face difficulties and potentialities of a trans-scalar approach, addressed simultaneously at new elements and at the transformation of existing ones.

The choice of the theme, but especially the attitude deliberately put behind this experiment, bind to the need to link theoretical thoughts and experimental teaching to a real physical and human environment. The choice was moved by a clear desire to pursue the idea of the responsibility of architecture to offer concrete answers through the project. At this particular time the need to create links between architecture and civil world is particularly acute, as clearly shown by Alejandro Aravena's Venice Biennale 2016, *Reporting from the Front* [1]. The exhibition stresses the importance that the architect has in addressing project issues in difficult environments, without the ambition to act as a demiurge, but taking responsibility to respond with a project based on a careful listening of the needs and requests that emerge in those contexts. It is a pragmatic attitude, but based on an accurate view of the ethics of the profession, in which architecture acts as a bearer of public good.



Figure 1. Dwelling the Places – Design Strategy

With this in mind, architecture fights from within the lurking risk of being self-referential, trespassing the closed and introverted horizon of reflection on languages to reflect upon effectiveness, which cannot be separated from the research for quality.

### 1.1 Context

This research is rooted in the physically, architecturally and humanly significant reality of Naples. This fertile substrate has triggered an important interpolation process between categories apparently distant from each other that, instead, lead to productive educational synergies and pushed the research activities to be at the services of the actual city.

The Rione Sanità is a particularly rich part of the city, both historically and architecturally, built mainly in the sixteenth century in a valley located immediately outside the city walls. The area was used as a burial place already in Greek-roman era, as shown by several catacombs located in the neighborhood, including San Gennaro and San Gaudioso. The height of the district splendor was in the seventeenth century [2] with the construction of several baroque churches -of which the most important is the Church Santa Maria della Sanità with its elliptical cloister on a design by friar Giuseppe Nuvolo- and monumental *Palazzi*, Palazzo dello Spagnuolo and Palazzo Sanfelice by architect Ferdinando Sanfelice among the most important. This abundance of buildings is justified by the fact that the neighborhood was on the main route to Capodimonte Royal Palace, reason that encouraged many noble Neapolitan families to build there their *palazzo*. The importance of Capodimonte Royal Palace in the city life pushed, during the Napoleonic era, the construction of a straight road to connect it quickly with the main Royal Palace in the centre of the city: this road extends the existing Via Toledo up to Capodimonte hill with a bridge over the Rione Sanità,

significantly sinking one of its pillars in the cloister by Fra' Nuvolo. The construction of the bridge, although endowing the city with a direct and efficient link between the two royal residences in the great boulevards style and tradition, has shown that architecture has the power to determine a suburban life condition also within the city: the new road turned Rione Sanità into an enclave, physically and socially, initiating its decadence.

The monumental complex of San Gennaro *extra moenia* is one of the main architectural features of the district, being the pivot of its urban development. The Paleo Christian church of San Gennaro *extra moenia*, the head and the oldest part of this large complex, is located at the entrance of the catacombs for centuries accessible through the church. Later, the construction of a Benedictine monastery and a non-religious hospital turned the complex into a place of sheltering and assistance, which still is today. Successive enlargements, which have determined the longitudinal shape of the complex that compensates the slope with a system of courtyards, brought it to its present shape in the second half of the seventeenth century, becoming the Royal Hospice of St. Pietro and Gennaro [3]. The Church of San Gennaro *extra moenia* is currently part of the catacombs visitors tour, while the rest of the complex hosts a hospital in progressive disuse for topography-related logistic difficulties. Being at the northern end of the district, this area is particularly marginal and isolated. The new entrance to the Catacombs built in 1969 in Piazzale Madre Landi, moreover, literally cut the catacombs out from the district they have always belonged to.

To cope with the process of transformation of the neighborhood into an enclave, and with all the subsequent social problems, the Parish Community undertook various initiatives, supported by some voluntary associations; among them the Sanitansamble project, which in ten years has led to the formation of a youth orchestra made up of about 90 kids from the neighborhood that, following the Abreu method, successfully use classical music as a glue and a tool for education, training and social redemption.

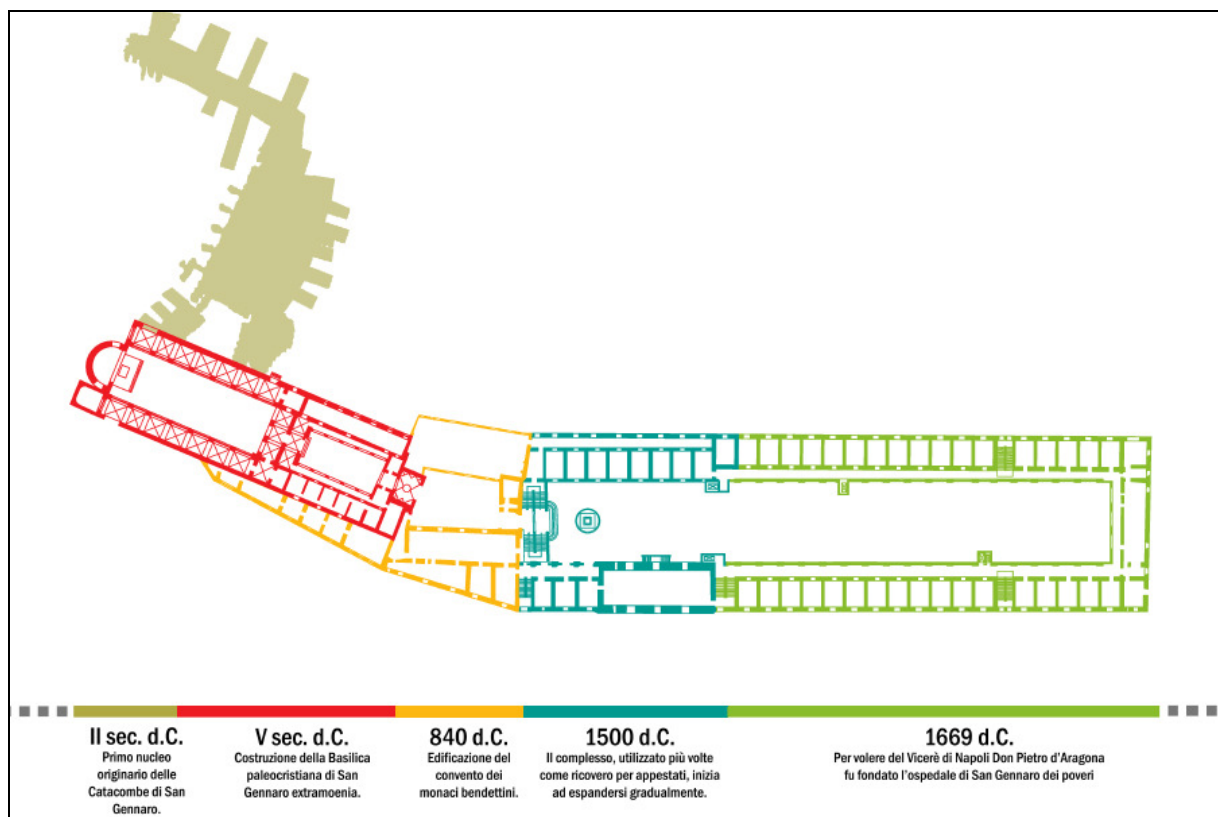


Figure 2. Crossing History: San Gennaro Complex through time



José Antonio Abreu, an economist and teacher, launched his method, known as "El Sistema" in 1975 in Venezuela, showing the power of music and of *ensemble* job in helping young people with difficult backgrounds to create and learn new forms of communication and coexistence, overcoming the social and cultural isolation [4].

The Rione Sanità Sanitansamble orchestra's work, which currently takes place in the spaces of the Church of San Severo, is joined with the constant struggle of the parish community led by Father Antonio Loffredo to use the considerable artistic and architectural resources of the neighborhood to power a new consciousness and provide opportunities to liberate the Rione from its plague.

## 2 METHODOLOGY

The special theme of this research, together with the working methods, enabled productive interpolations between sizes and wisdoms. Particularly useful was the encounter between the training objectives and academic research with the concrete reality of the investigated phenomenon, where the actors are real people whose demands were collected. Listening was a fundamental starting point to instill responsibility in the design process, together with an unavoidable link between underlying theoretical and methodological positions and formal solutions that were investigated in the design process. Significantly, in the intentions behind the exhibition *Taking Care: progettare per il bene comune (design for common good)* [5], the three key words "to think/meet/act" are the fundamental relationship that, at the base of the proposed projects, explains the project as a way to increase the human, social and environmental values in marginal contexts. It is a very effective way to summarize the usefulness of a design approach that binds the theoretical dimension to the needs expressed by people and the context and doesn't want to just trigger a process, but aims to find answers through a project. It is important to stress that the conditions of marginality and the difficulties that characterize the area of intervention are an incentive to the project. It is not the justification to escape the pursuit of quality that, in this interpretation of architecture as resistance[6], is necessary for civil life in a planned space. This specific experiment is fed by history, art and culture, particularly intense in the context of intervention, that became the subject of careful practice of listening.

The search for a space suitable for the music school has been interpreted as an opportunity to build a network between the school, the neighborhood and its resources, not least the Catacombs. They are a strong element of tourist attraction, currently reachable via a path ending in the Church of San Gennaro with no contact with the rest of the complex and, above all, with the neighborhood. An urban void of about 4150 square meters, located west of the complex, has been chosen for the construction of a "*Casa per la formazione e l'ascolto della musica*" (House for Education and Listening to Music) with two halls that will accommodate respectively 250 and 100 people. The relationship between the new elements and the monumental complex was programmatically not intended as a simple juxtaposition, but as a supplement; therefore, the functions provided were distributed in the new building as well as in the redesigned existing complex. The Basilica is intended as the main hall with 400 seats, while two smaller courtyards host complementary and support functions for reception and training.

This choice favored a process of fundamental interpolation between the proposal of new architectural objects and the restoration the existing complex: it is a pivotal subject in a stratified context such as the city of Naples, where reading and interpreting the morphological and typological tissue must necessarily be a support for the experimentation of new spatial layouts and formal structure determinations.



Figure 3. Building bonds: Plan and image of San Gennaro complex

iconographic legacy is key material for the project, a base to understanding the systems, parameters and ways of transformation already experienced by the site, a base to set up the possibility of further processing. Cartography is a text that gives signs, tracks and rules, which can be selected and used as a starting point for the project. The construction of the city is a collective process spread out over time, and recognizing these tracks is critical to inscribe new architectures.

The territory of Rione Sanità is composite and articulated also due to its orography, which generated constructions with complex geometries, with particular importance to the topological and perceptual relationships between architectural elements.

The construction of San Gennaro is a heavily layered urban artifact that still defines the extremely precise relationships that have built the great convents in Naples. Constantly vied between topography, soil to conquer, the basic layout and a building type to be adjusted, the great Neapolitan factories are almost always characterized by a system of cloisters, which mark the special relationship that exists between the building and the city: *"the cloister is grounded on an idea of architecture based on the construction of a porch system that includes and defines a free space, a regular shape.... The arcade creates relations between a series of bodies or of different rooms, providing them with an upper unit, so that the body as a whole tends to introversion, and all its parts recreate the integrity of the inner core in which the building is split up and records the passing of everyday life."* [7]

Rione Sanità and San Gennaro complex underline the deep bond between the city transformation processes and the ancillary relationship between soil and built environment, between the existing architectures and the vision that the architectural project must implement.

The design strategy pointed to a new dimension in continuity with the cloisters system, which have built the historic complex over time. The measure of the cloisters is a constant reference in the implementation of new architectures, constantly confronting the layout definition with the directions of the program.

The definition of the theme then is the real scientific contribution to architectural research in an explicit and recognizable process.

In this sense, the Project has represented the series of reflections and variations that, on the base of a common reasoning, in architecture correspond to the system of knowledge.

The process of knowledge is a collective and cumulative construction that explores the places in order to decide the limits and the invariants of the process of change, the borders of a strategy of mutation of such a structured environment.

The common theme of the research was to design an architecture capable of interacting with the monument and with the more general strategy of intervention, making the whole complex a public place and space. In this way it is possible to give the monument back to the city in its historical and permanent character, projecting it to present days as the central place of social and cultural identity of the community it represents. The project has set itself the goal of promoting awareness of the

historical consciousness, art and culture of the place from the whole system of associations and social initiatives, among which the Sanitansamble is one of the most important and meaningful experiences.

The *Casa per la Musica*, full of activities, has been interpreted as a place open to the City and to the Rione. A place that experiences the value and significance of the project as research in architecture investigating the urban complexity and returning a vision based on a series of specific facts: the relationship between soil and building, the role that certain architectures have in the cities, the strategy that each building can exploit to affect a larger context. All these factors show how the consequences of a problem set to the urban dimension inevitably fall into the architectural dimension, and how the scale of the intervention is one of the most important aspects of a project together with, last but not least in such a dense and layered urban area, the hierarchical connection of its components.

The urban dimension of San Gennaro Complex carries the chance to re-discuss the urban role of an artifact through physically small intervention, but with a great impact as for triggered dynamics. The design process, therefore, involved also the built environment through a rewriting operation that renews its relationship with the city. New roles are assigned to internal spaces that become pedestrian streets and squares that allow to cross the block and to find directions in it, creating a network for the new designed functions. The aim is to host different ways of a shared kind of dwelling that are strong enough to push the revitalization process of the district involving music and the rediscovery of its fundamental values.

The relationship between public and private spaces, between indoor and outdoor, being stationary and movement, has not been understood in terms of negation or opposition, but of integration. This vast and complex theme made it possible to verify that even small interventions, apparently only marginal, can take an urban role and that mending actions can assign a different role to the building, in the context of which it is part. The disciplinary approach was characterized by a look that links the projects to the perceptions, crossing and use of the spaces, connecting them without mediation to the human scale.

The project has investigated the possible ways of opening a complex closed and, until now, separated from the city. The central trapezoidal courtyard, located among the top one that leads to the Church and the lower one at the feet of the Hospital, is a strategic and particularly interesting place, but also in extremely poor conditions: the research turned it into an internal square that hosts the main routes that distribute the assets involved in the complex redesign intervention. The design is based on a hypothetical reduction of the hospital function, limiting them to the lower part of the complex, and on the introduction of cultural and accommodation functions in the upper part, that includes the Church and the lower access to the Catacombs.



Figure 4. Sharing processes: Detailed section on the trapezoidal courtyard

The central courtyard is a mediating space between different historical phases that mark the stratification of the monumental complex of San Gennaro and between the different planes of arrangement and units that follow the not simple topography places. This part has gained the role of place of connection between the existing complex and the project of the *Casa per la Musica*, also due to the collapse and reconstruction of a wing of the complex on the eastern side. It is also the limit of the main height gap between the upper area, location of the Church of San Gennaro *extra moenia*, and the lower one that hosts the hospital courtyard. The project dealt with the theme of a cross connection between the *Casa per la Musica* footprint area and the monumental complex, that leads to the access to the Church and the Catacombs San Gennaro. Some supporting functions have been located on this path, like info-points and ticket offices for the catacombs or ancillary spaces for the Church. Other functions have been included thinking of a wider range of uses for the complex: small workshops in the Church courtyard, co-working, temporary exhibitions and seminar spaces in the buildings next to the middle courtyard that hosts a guesthouse for musicians and for potential users and workers of the complex.

The different design that involved the monumental building were therefore integrated by a careful survey and comprehension process of the neighborhood main characters. The result turned into the idea of an archive and of an identification and wayfinding system for significant buildings and paths, to enforce the idea that new usages and new paths –both indoor and outdoor– can really push for a more participatory way of living, learning and using such a rich and meaningful part of the city.

The small interventions on existing buildings provide a way to implement the reliable practice of introducing quality in daily life through small actions that significantly change the perception of places.

The two integrated operations, the construction of new elements and the redesign of the existing complex, are aimed to give the city a "key corridor", which could visibly benefit the usability and livability of the entire neighborhood, turning into a system of dynamically related spaces those that previously were merely contiguous, meant as an opposition to the degrading enclave status detected at the beginning.

### 3 CONCLUSIONS

This experiment confirmed the importance and productivity of a multi-scale approach to the project, in which the investigation of the availability of existing space to accommodate new ways of being lived is not taken into account at a later time, but simultaneously to the study of urban relations and of the links with the site and the landscape. The process is carried out in a continuous relationship of hermeneutic circularity between the different issues involved in architectural design. It also stressed the inconsistency of a methodical opposition between design of the new and transformation of the existing, in particular within the historic city, often object of a continuous process of adaptation that mediates between the expectations that come from below, from the force of things and the will to command and control through the design.

It also gave the chance to test the productivity of the encounter between social and architectural project, that pushed to observe the links between the definition of shapes and spaces, the construction of material relations between the parts and human phenomena, the needs and demands that move them but that can also come from them.

The importance of human experience related to this experiment and the considerable charm of the processes taking place in the district gave a special motivation to what although remained a work focused on the project, through its specific tools and methods, based on the solid hope that research on "naked architecture" [8] –that openly shows its essence the use of space and tectonic– can make a valuable contribution to increase the effectiveness to positively affect the quality of life of the recipients of his work.

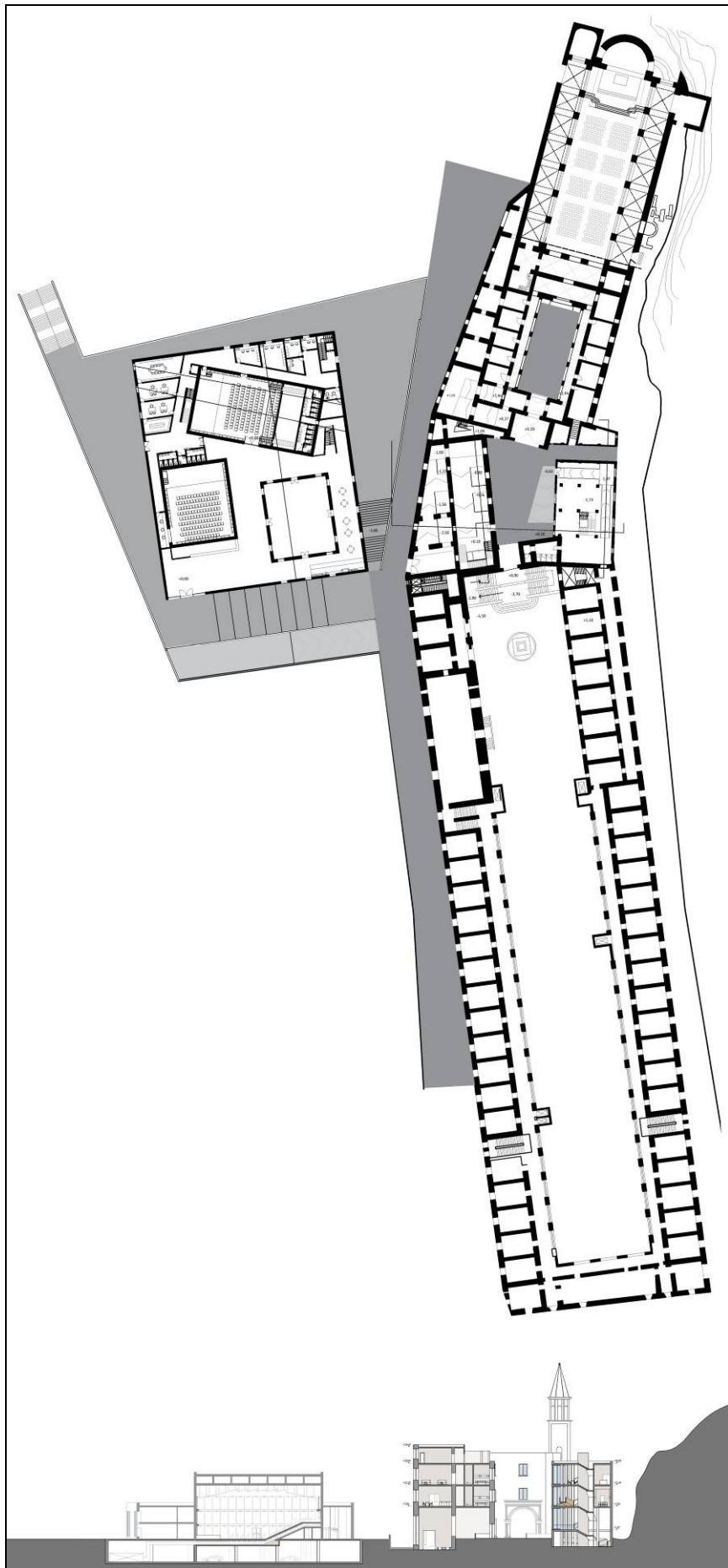


Figure 5. Taking care of the common good: A design proposal, plan and section

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## THE FUTURE OF EXPO MILAN

**Claudia Sansò**

*Dipartimento di Architettura Università degli studi di Napoli Federico II (ITALY)*

*claudia.sanso@virgilio.it*

### Abstract

In 2015 Milan was the seat of the thirty-fourth edition of the World Expositions with the theme “Feeding the Planet, Energy for Life”. For six months it hosted the pavilions of the 134 participating countries and in November 2015 they are in the process of dismantling. The Expo Milano area is placed immediately outside the boundaries of the city center, in the northwest suburbs and is inserted into a system that, starting from Porta Garibaldi, intercepts a series of “urban events” such as Scalo Farini, Bovisa, the fairgrounds Milano-Rho, the Greater Cemetery and the recent intervention of Social Housing “Cascina Merlata”; the area is also defined by a large infrastructure system: the high speed trains, the Milan-Turin and Milan-Lakes highways, the Rho-Monza, the road of Sempione. Expo 2015 it has provided an important opportunity to redevelop an area of Milan hinterland inheriting and enhancing the quality of Lombardy, one of many, the important system of green and water concerning the city of Milan. In particular, the area of Expo is part of a broad green band that starts from south meeting the Agricultural Regional Park up to the Regional Park of the Groane north and encountering the ancient “Bosco della Merlata” that started from north-west and arrived at the cemetery crossing near the center of the area. Other significant elements were the streams Guise and Tirone that joining too are called Merlata starting at the northwest and coming to the Cemetery, bordering it. This natural system of green and water has played a key role in the masterplan of the Expo, with the purpose of inheriting the stratification of the signs on the surrounding area. The masterplan consists of a geometric system of Roman memory, consisting of a decumano, approximately 1,6 km long from east to west that crosses the whole area extending ideally the Corso Sempione axis in the center of Milan. From north to south, a cardo, which ideally seems to link the suburbs. Along these two axes, in a geometric mesh, there are the pavilions. The entire lot is circumscribed by a water ring that connects the Villoresi channel with the exhibition site and by a green path remembering the aforesaid systems. What's the future of the expo area now that the pavilions will be dismantled? Hence the interesting debate on the legacy, understood as material and immaterial heritage. The future that will be intended for the expo area is definitely an opportunity for urban regeneration of an area which could gradually no longer be considered a peripheral area negatively. The material legacy that we leave the site is represented by the Italian Pavilion, the tree of life, the Open Air Theatre and Cascina Triulza farthest heritage, prior to the event of Expo 2015. About future of Expo has already begun to discuss before it was built, but today it seems certain the hypothesis that in this area it will relocate the University of Milan, now “widespread” in the historical center of the city, with campus residences, auditoriums and sports activities, which Assolombarda will be born there the new Silicon Valley, an innovative center for computer science and that will make a large international research center about big data, nutrition, food and sustainability. The paper intends to present the results of a project work carried out within the course of Laboratory of the course of Science in Architecture Urban Design at the University of Naples Federico II, starting from the project for Expo area, he has had the opportunity to address many of the themes from the Call of EURAU 2016: in particular, within a complex project both functionally and morphologically, connections, on the one side, between what is public, what it is collective and what is private within a new “piece” of the city and, on the other side, the relationship between built space and unbuilt space



that, in a hypothesis of city open to nature, the construction becomes an element of the urban design.

**Keywords:** future, legacy, built space, unbuilt space

## 1 THE EXPO EVENT AND THE RELATIONSHIP WITH THE URBAN SCENE

The Expo events are often located in more or less extensive areas bordering urban centers of the cities in which they are located. The relationship with the surrounding urban scene has not always been a worry so strong as to be determinant in the design of the masterplan of the big Exhibition. But they represent for these parts of cities a stimulus to trigger the transformation processes. Examined from the point of view of the urban scene, the Expo events since the nineteenth century represented an important moment in the process of renewal and modernization of the city. Due to the large size necessary, the universal manifestations were placed in outlying places and the infrastructural system to be realized to connect the Exhibition site to the city imposed to the latter some changes that led to rethink in a short time most of the surrounding urban scene. The event of 2015, compared to earlier, tries to change the scale of the event toward a more complex system of urban relations, by not a few references to the legacy of the surrounding area and the consolidated city. The project of the masterplan manifest and embodies the attention to the local heritage and the connection with the city center, introducing into the project what has emerged from the analysis and study of such reflections. Looking at its context, the expo area is part of a system of enclosures that involves, in a closer scenery, the Major Cemetery, the Milano-Rho exhibition center and jail Milano-Bollate. Even the Expo site, within a triangle whose sides coincide with the Milan-Turin motorway, the Milano-Laghi and the west ring road, participate in this system. In the project of the masterplan, a reference to the ancient matrix of the area is defined by the system of green and water. The large enclosure of Expo in fact, was crossed in the middle by the Bosco della Merlata, disappeared with the beginning of deforestation in nineteenth century that originally was developed outside the city walls of Milan heading towards northwest. The exhibition area divided the "Bosco della Merlata di sopra" from the "Bosco della Merlata di sotto" and was crossed by Guisa and Tirone streams that together took the name of Merlata.

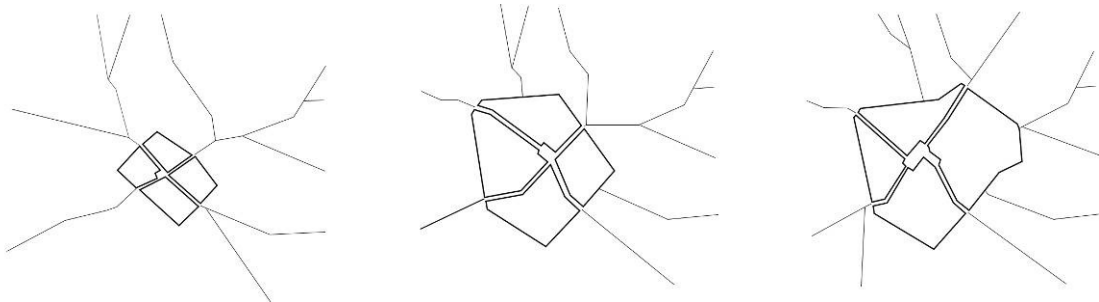


Figure 1. The ancient matrixes: the Guisa and Tirone rivers and the Bosco della Merlata

### 1.1 The system of the masterplan

Compared to previous editions, the event of 2015 interprets the design of the large exhibition area as a part of the city, with its traces of a consolidated urban form. The structure has recovered from *castrum*, the Roman camp founded on hippodamian scheme summarized in two main arteries, the *cardo* and the *decumano*. This system, which is the basis of the masterplan project of the last international exposure, does not trigger hierarchies but configures areas close to these two axes that govern the entire system of the pavilions. The Expo Milano structure, referring to the consolidated city, through the east-west axis 1600 meters long imposes a system in which all the pavilions overlook the *decumano*. This orthogonal scheme is not entirely detached the *forma urbis* of the city of Milan. But despite over time, Milan **have** increased in line with the radial scheme, it's possible to retrace a cross-shaped urban grid, that was visible until the nineteenth century. The axis from sud-est consists of via Tre Alberghi, via Speronari, via Spadari, via Armorari and it arrived to the current via della Posta. This axis which was the *cardo*, it was cut out from piazza A. Diaz during the first half of the twentieth century. The *cardo* was surrounding in the middle was crossed by an axis which was the *decumano*, corresponding to the current via Falcone and via Cappellari. It's possible assume that the area adjacent to the center of the ancient city, there could be a public *foro*. The evolution of urban morphology has transformed the orthogonal grid of the first settlement of the city. While throughout the Roman period, despite the expansion of the urban core, continues to remain the cross system of axes, in the later stages of development, the arteries diverge more and more the orientation of the *cardo* and the *decumano*. As it grows, the original urban center then takes the form of a polygonal city: gradually deforming the cross-shaped scheme first appears as pentagonal and hexagonal then cities. Track today an orthogonal system in the consolidated core of the city is certainly a stretch, but the system of arteries that cross the city from the northwest to the southeast and south-west to north-east it looks very strong meeting in the middle of the urban center of Milan, almost forming of bundles of *cardini* and *decumani*. The cardodecumanic system masterplan of Expo moves from these principles prompts and intention to conceptually connect the area of the big exhibition with the

center of the city, through the parallel axis which started from the longitudinal artery and it intercepts Rho and Major cemetery, they too with orthogonal plan, joins the Corso Sempione and arrives until the urban center of Milan. Equally ideally, the *cardo* connects the peripheries, as a hinge. In this scheme it's possible to find a principle of order and rationality that allows to give rigour, size, rhythm



and proportion to the structure of the masterplan.

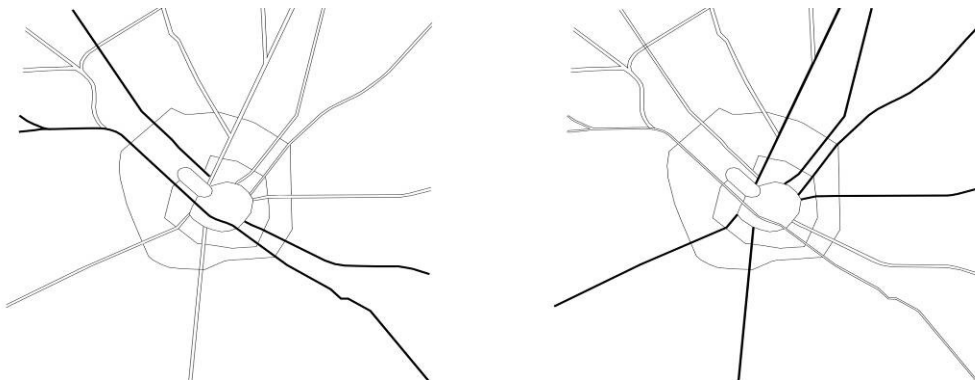


Figure 2. The evolution of the Forma Urbis: primitive castrum, the pentagonal city, the hexagonal city

Figure 3. The new arteries that cross Milan: cardini and decumani



Figure 4. Cardodecumanic system Expo site and conceptual axes



## 2 THE QUESTION OF ENCLOSURES URBAN AND THE ROLE OF THE LEGACY

The Expo area is located in an urban scene affected by major infrastructure including the high-speed railway line and the new works on the completion of the existing road system. Although this system proposes to improve the link with the site of the big event, it makes it a separator element. This, reinforced by the masterplan design insert the area in that fences system that concerns most of the peripheral areas of the contemporary city. In the north of Milan, from the monumental cemetery, right next to the same axis intercept the airport Farini, Bovisa, Cimitero Maggiore, the Milano-Rho exhibition center, the Expo area and Carcere Milano-Bollate. It is true that peripheral placing area than the city, with the strong infrastructural impact that underlines this condition, the area identified as disconnected, the legacy of the surrounding area could take a decisive role in a debate that sees the project after Expo aspiring to be a manifest of city idea. A new reading tool that investigates the urban spatial design from the relationship between architecture and the city, given by Professor Uwe Schröder, University of Aachen has been conducted on the area north-west of Milan, which includes the Expo site. According to Schröder, the spaces they are linked to the city by their opening or closing degree. The spatial texture extends from the plaza, “inner-inner” space to the room, “outside-outside space”. In this interpretation, in a paradigmatic way the plan display a tendency that runs from red to blue, from inside to outside. As is evident from rotblauplan, the area in question includes large external spaces and a fragmented morphology, largely loose bodies denouncing aspects of an urban scene unrelated to the consolidated city. On the issue of enclosures, the Cimitero Maggiore, the Milan-Rho exhibition center and Carcere Milano-Bollate are here identified as interior spaces, sharing, despite the clear thematic and typological differences, by a degree of internity typical of confined, confined, enclosed spaces. Although the Expo area is part of the system of enclosures, with the end of the event, it lost its interior spatial degree. So today is identified as a blue space, a large open space, “unbuilt” space. It now opens the debate about urban transformation which the future of Expo Milano is involved. Starting from the considerations on the urban scene, one of the strategies of intervention is one that sees the exploitation of the legacy left by the territory. at the heart of the issue. The green and water system could be a crucial component



to trigger reconnection and interconnection in a process of urban regeneration.

Figure 5. The system of enclosures

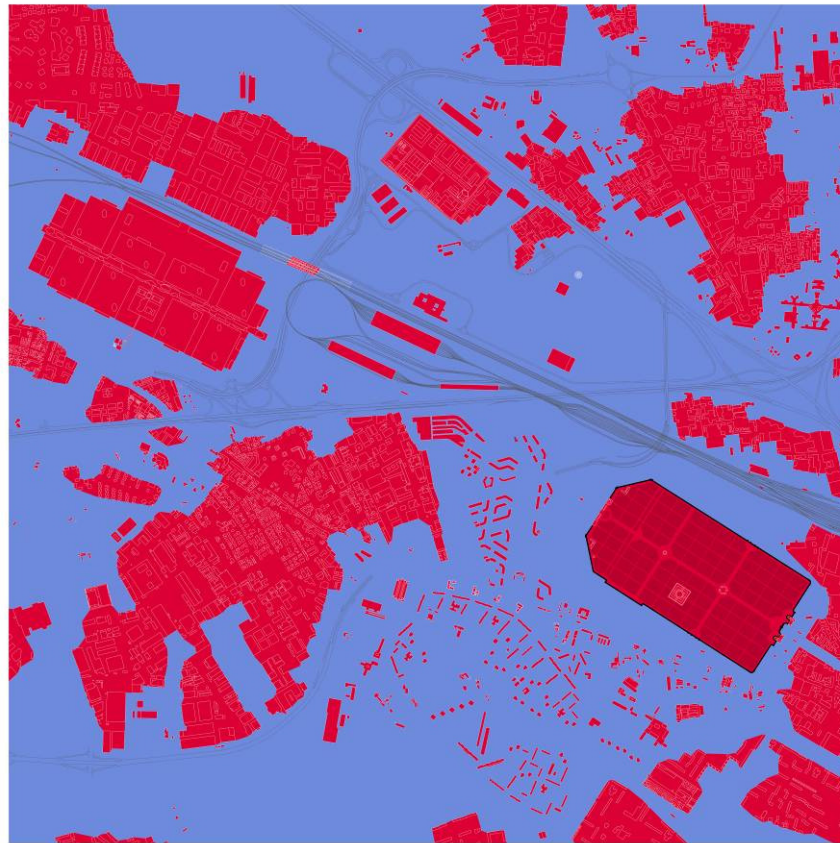


Figure 6. Rotblauplan

### 3 AFTER EXPO EXPO: TEACHING EXPERIENCE

The future of Expo Milan is the current opportunity to introduce students to the theories of urban design and it offers an interesting points for a teaching experience. During the Urban Design laboratory of Professor Federica Visconti - Master Degree in Architectural Design -University of Naples "Federico II" the theme of the urban project has been approached suggesting an idea of the masterplan which takes into account the dual hereditary matrix - that of the landscape and that of the Expo site structure- in a logic that not only affects the individual building in the architectural scale but who cares about especially the relationship with the urban structure. Even before advancing proposals project, it was identified a quadrant that would include the area of the event in a larger scale in order to conduct a lecture on urban spaces in which it is inserted. In Strassenbauplan turns out in the infrastructural system that we know is significant in the western quadrant. The development of the Milan links with time has undergone a frequent change due to the plane and open nature of the landscape, especially in peripheral areas of the city. In the north-western suburb, the red lines indicate the high-speed tracks which cut diagonally across the quadrant, marking a break between the north area where the enclosure of Expo is includes and the underlying area which includes the Fiera Milano-Rho and the Cimitero Maggiore. The clearest sign that emerges from this map is in fact the triangular system of highways which covers the Universal Exposition with the Carcere Milano-Bollate, forcing it to a condition of closed and inclusive space. The schwarzplan, induces reasoning on the morphology of the urban system, here summarized in two criteria - one corresponding to Pero and Quarto Oggiaro districts, still belonging to the consolidated system of the city, where the buildings are arranged along a road, and the other, Gallarate district, which belongs to a modern urban structure. The rotblauplan, already analysed in the previous paragraph, has perhaps been the most interesting lecture with the purpose to trigger a reasoning for the first design approach. The big blue field that identifies the Expo area at present, can change and how its spatial structure, as a result of a new project that reflects about the urban scale. Three different interpretations investigate the questions, in a common attempt that is committed to "overcome" the enclosure in which the area is inserted inserting the traces of nature found in the analysis analysis of



historical maps. The new project features are: a center for genetic research, the new Silicon Valley and a university campus. The master plan A works on a acropolic composition with elements that although remotely establish a tension between them. Two different orientations mark the beginning and the end of the area, both traced by the lecture of the urban system. The position which marks the entrance to the area is suggested by Cascina Triulza, farthest legacy which in a reasoning about architectural scale suggests the design of a building to it mirror; the other position follows the orientation of a urban system belonging to the districts that have a compact morphology. also researching the old tracks of the Bosco della Merlata and of the Giusa and Tirone rivers, which are reported through a green and a water system that extends beyond the borders of the area with the purpose to overcome the enclosure and establish greater connection with the urban surroundings. The master B still complies with the axes of the Expo project but assuming here almost the urban street character, with the buildings arranged along it, generating the pauses between the one and the other along the *decumano*. The road here is the structuring element of the project. The exception which denies the rule of composition is represented by the rotation of the last part of the site that closes the area. Here, too, the project return pieces of nature, sometimes community gardens, sometimes green areas open to the public and still the revival of the wood. The natural system here acts as a hinge developing more in the north of the area, establishing a connection with the existing built texture. To the south, the ring of water of the Expo project is left to close to the the bundle of the railroad tracks. The masterplan C does a work on the urban texture. It establishes a polarity between two different *forme urbis* - one that draws the entrance area through the buildings, although typologically different among themselves establish a clear relationship with the road and the one that is configured as a cluster, an urban agglomeration that acts like a piece of city within a city. To determine a break between the two systems, the largest of the green system.



Figure 7. Strassenbauplan

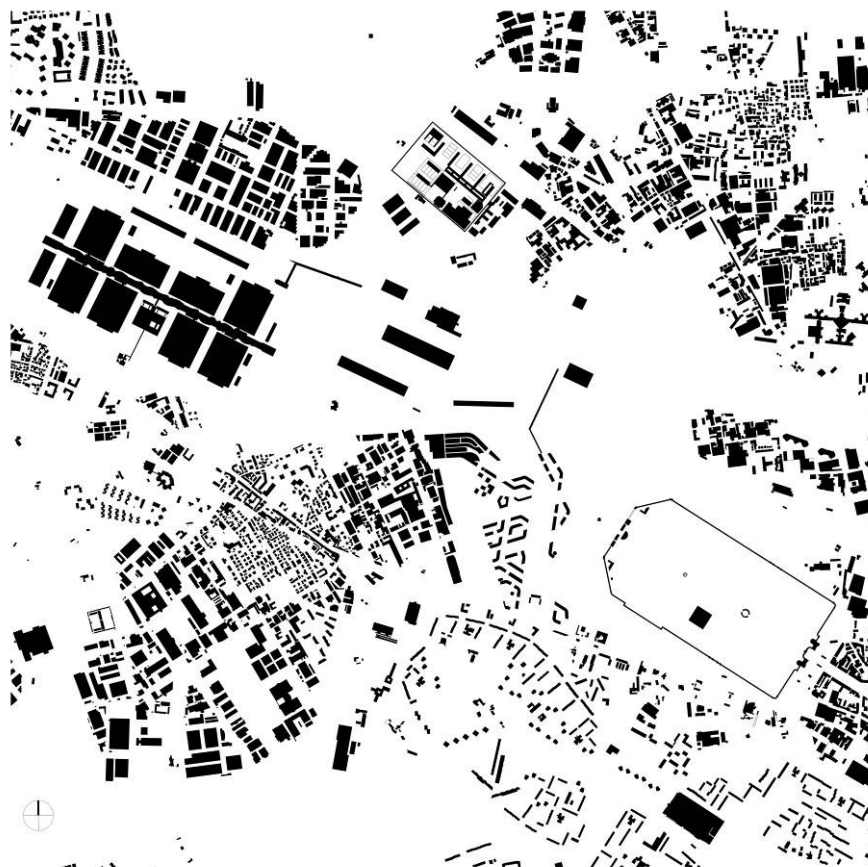


Figure 8. Schwarzplan



Figure 9. Masterplan A





Figure 10. Masterplan B



Figure 11. Masterplan C

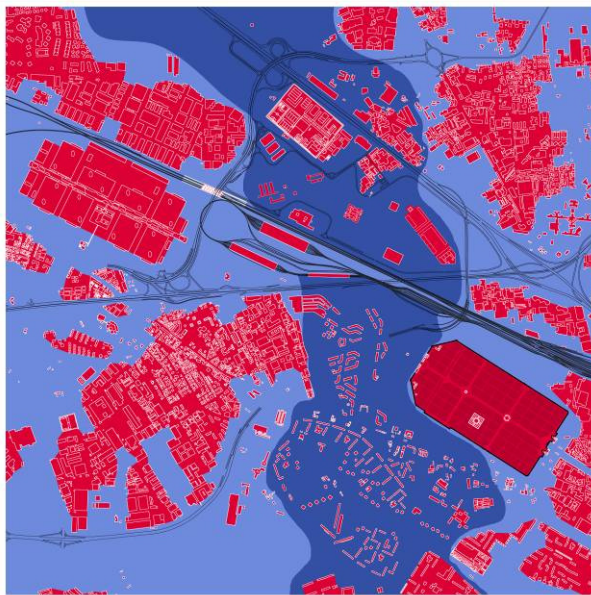


Figure 12. Rotbauplan of masterplan A

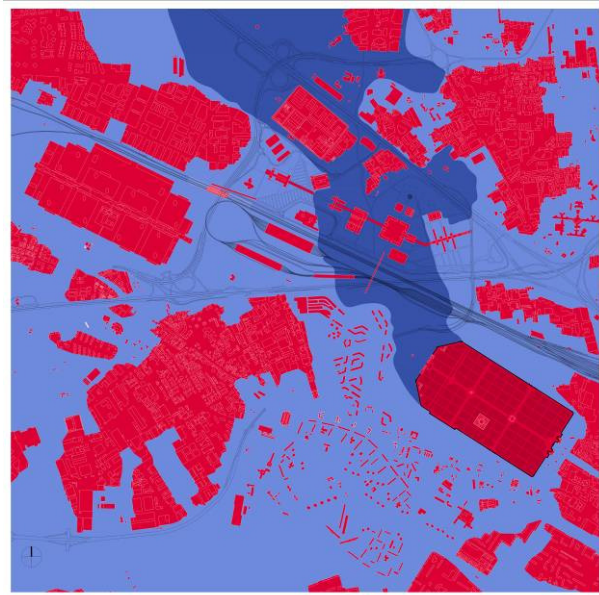


Figure 13. Rotbauplan of masterplan B

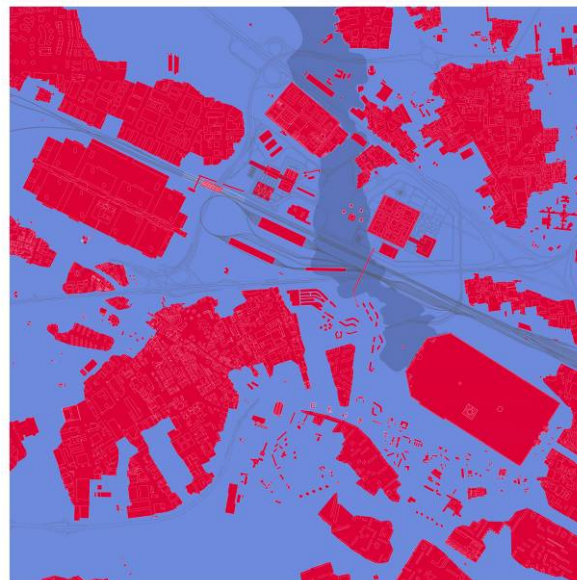


Figure 14. Rotbauplan of Masterplan C

#### 4 CONCLUSIONS

In response to the section of call about "Projects, methodology and results", the paper aims to reflect, from the issue of large size, on the theme of the contemporary city, where the suburbs are those that are most in need of intervention, compared to historical core of the city that "resists" in its definite form. The general idea is that of the relationship between built space and the space of nature, in which the latter becomes a construction element as much as the buildings also taking on a character and a fundamental role in the project, especially in areas where the urban structure retaliates reconnection operations. So it is not only to rebuild an abandoned area today, but to reform it in a way which aims to project for a piece of the city, from a lecture of the city. Then, through a method that requires theoretical knowledge of urban design, it can lead to results that, through a passage between the scales, they can lay the foundations for the start of an idea of the contemporary city. Uwe Schröder in his innovative interpretation of urban spaces, confronts two opposing realities - the city of Parma marked with a strong predominance of the color red, or "internal" space, closed, typical of the consolidated city and the masterplan for Saint-Die Le Corbusier, however characterized by a predominantly blue, or "external" spaces. The result is an

interesting collage work, which Schröder shall develop between the two cities (hence the title of his work Pardié), in which the two structures come together in a perfect relationship between nature and built space. In all three works of the masterplans for Expo there is Saint-Die in the relationship with nature, in which even the strongest sign of the wood is perceived as an "outer-outer" but there is also Parma, in the intention to conceive this suburban area as a piece of the city. The result is that of the contemporary city idea that responds to both the degrees of spatial relationship - "internal" and "external" in lecture of Schröder - in which coexist built space and the space of nature.

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## THE REALM OF THE THRESHOLDS; CASE STUDY OF SANTA PALOMBA, ROME, ITALY

Arian Heidari Afshari<sup>1</sup>

<sup>1</sup>*DASTU, Polimi (ITALY)*  
*arian.heidari@polimi.it*

### Abstract

This Article is aimed to open up a debate on the very notion of contemporary architect's mediated mentality, the way in which he or she, reads and interprets scales within the framework of Architecture and Urban design. For the academic year of 2015/16, a selected research group of Politecnico di Milano had participated in a call for research project of Roma 20-25; new life cycle for the Metropolis. 12 Italian and 13 international universities were involved and each was given one macro area of 10 km by 10 km to analysis, gain a broader understanding, and identify potentials for transformation. The area in which Politecnico di Milano was assigned to was located near Santa Palomba, down to the south east of Rome. The research team, focused its readings of the territory on four main layers; Memory, soil, recycle and threshold.

In specific, this article is based on the exploration of threshold layer, as its nature had directly identified directly neither by built up nor voids of territory, but rather it revealed itself in the forgotten elements existed in-between, or in a better word, the materials that could not be consumed by the two. The main essence of threshold was found in its dialogical relationship with the dominant elements of their context. This article argues that the superficiality and deep structure of threshold layer and its elements such as leftovers, vacant lands, and liminal spaces with their diversity in scales and natures, their resistance to external forces and constant internal disposition for transformation, should have been considered more aggressively in any reading of constructed European territories, transformation and modification projects. As the layer of threshold unsurprisingly cross-passes all other layers of territory, so naturally does its contained scales and thus the active role of this layer in territory is inheritable throughout scales inter-relationship. The article therefore, explores the way to unlock the hidden opportunities of those relational scales for future transformation of territory.

The main purpose of the research on thresholds was to image a mode of more dialogical understanding of our contemporary territory in which the dialectical relationship between void and solid, permanency and temporarily, rigidity and fluidity, new and ruin, specific and generic, would resolve to co-existence in the fragmented threshold landscape. The substance layer of our contemporary urbanized territory, the so called extra-urbanity, in this research, has been seen with the medium of thresholds. As a case study, the area of Santa Palomba, Provided the opportunity to read and re-interpreted 10km by 10km of Rome territory with that approach and hence the rescaling project was introduced as the innovative mode of exploration; the project which attempted to rediscover the conceptual relationship among in-between scales- where the thresholds exist, and reveal the non-circumstantial relationship among the dominated elements of territory such as ruins, monuments, industrial platforms-abandoned or active, natural and artificial soil transformations, historical settlements and cores, infrastructural projects and sprawls.

Having traced down the hidden and forgotten geometrical orders and the natures of threshold's scales, this article is therefore, not only reporting of the project base research, but more importantly, it consists of theorizing project on the contemporary constructed territory's in-betweens; on the mode of reading, re-scaling and visioning their capacity to form any future extraurban modification and re-composition on the contemporary European territory.



**Keywords:** threshold, dialogical relationship, superficial and deep structure, sprawl, image modification

## 1 THE COMMON IMAGE OF THE TERRITORY; THE OPEN QUESTION.

What is the image of today's one of the most ancient capitals of western civilisation? For sure lots of historical layers are involved in that image which we try to draw in our mind, even if we never have been there. There are lots of monumentally and stratified memories involved in our memory or imagination about the city of Rome. Maybe even we could imagine modern build-ups in that mental context and of course they should have the quality enough to be comparable with Roman Architecture. In fact today's image has all of them and for sure much more. The Rome of today as metropolis has the core city of Rome but also it has lots of materials outside, in its periphery for example- if we are able to recognize its limits. Here again we face an image, this time sprawl is the slogan. Everyone has a generic conception of sprawl, mostly negative, maybe dark, boring, too much ordinary and repetitive, automobile dominated and generally without architectural quality. Something that once was the hope of to-morrow now a days is quite monolithic and dis-functioned or on the other hand too much functional with maximum of wastes. The steam and dross are the main elements of the image in which we assume to live on. However, how much those assumptions are true? Is there any relation between the two images of contemporary territory? Or better could anyone argue that we have the Roman sprawl?

At least that much is clear which the territory in which we are facing today, is neither of those two mere images or both of them and something more. Something fragmented, vague, and maybe hidden. The sublime in which the negative or positive aspect of this dual imagery would show up in, is the main missing point here as neither of the two images are the marked of the other's unmark. The attempt of this paper is to explore the notion of that sublime, its concept and figures. The very simple reason is that as far as we could not comprehend that dialogue between the two mental images of the territory we are not able to scheme their relationship and therefore our reading of limits and potentials would become either unrealistic or limited and thus not critical enough to engage with the problematic of contemporary conditions. In the case of the first image, even if it is too much dense, intense and meditated-something super-hot as McLuhan cited, still it could be consisted very much as part of our collective memory. It is the Image of the City, either as an analogous one or recognized by its fundamental elements. Classical, modern and even the so called postmodern conception of the city would give us similar clarity as all of them have very object oriented metaphors, from human anatomy and ecology to the machine and then text and culture all those metaphors could explain variety of aspects of the city transformation, especially in the case of city like Rome. At least, they could help us to understand some aspects, if not all of it.

However, the second image as it was embodied in the Roma 20-25 call and later in the final exhibition in both matters of scale and variability was not clear at all. It was rather chaotic and not comprehensible. The projects of every research groups recognized something different from others and projected it internally and autonomous. It was well reminded us the projects of Rome Interrotta of 1978, where every of the groups involved in the project, produced the images which the only thing that they did not have was the factual continuity even if they were all based on continuum of Nolli map. It is not the intention of this paper to claim negative aspects of the experiment or anything on the notion of each individual projects themselves not the organizational system yet it clearly demonstrated the fragmentary, vague and self-referential concept of the contemporary territory. It was not like the individual projects' binary opposition, rather it was revealing the arbitrary relationships among the layers of the territory. What I refer to is the relationship between the signage of Robert Venturi and analogy of Aldo Rossi or the decomposition project of Coline Rowe just beside the superimposed conception of James Stirling. What was missing was the rational dialogue among them, their projects finished exactly where their assigned block ended up, even if the context of Nolli map continued.



The same thing happened in Roma 20-25 project, with one important difference; in Roma Interrotta project the context was Rome as the city continuous with blackness of solid and whiteness of voids, with clear relation with the outer city landscape, in fact in that project the Nolli map represented as a classical imagery of what the concept of the city was, yet in Roma 20-25, we faced a sprawl as the context was vast enough to hold binary oppositions and arbitrary enough to accept the self-referential imagery. And of course, the continuity of the each individual assigned blocks was the first thing under transgression. Here is the main question; why despite of all continuous deep structures of the territory like geographic and historical figures, all the projected images were fragmented? And if there is something more on the superficial layer, would it be able to provide us with continuity? Simply, do we need continuity?

## 2 THE 20<sup>TH</sup>-CENTURY SPRAWL: STOP MAKING SENSE.

Let's return one more time to the main question and its origin; the so called sprawl! Does it make sense? Or easier what is its problem which made it very hard to catch up with, what is the problem of its image? What made it fragmented and vague? Well in fact the 20th-century sprawl stop making sense. If one thinks of city previous to 20th-century sprawl, the issue of figure ground is not such a big problem to conceive, the relation between solid and void is quite easy to understand and imagine. If you look at Nolli map, you can understand right away what things look alike. Even in collage city when Colin Rowe made comparison between Le Corbusier, project for Saint-Die` and city of Parma figure-ground, the relation among voids and solids in both sides of comparison were quite obvious. While later on, when Peter Eisenman in his figure-figure urbanism contested that in contemporary city there is only figure or only ground, it was obviously referring to the dramatic scale change in the relationship between figure and ground in contemporary territory. And because the scale has changed, it means it is much more difficult for us to perceive the image of the territory. When we look at figure-ground map of an area of sprawl, it does not make sense. We can't see it at all in relation to its voids and solids, it does not project through either the plan or section. In a better word, we could not easily image our experience of the territory or conceptualize it by only looking at its plan or section.

Nolli map of Rome was about almost universal access, it shows us the courtyards, the interior churches, fountains and everything which is both connected and related. What we have in our contemporary sprawl is, the totally different landscape that consists of fragments of urban elements like enclaves, housing settlements disconnected from isolated shopping malls surrounded by vast area of parking lots and grey industrial platforms of which you can't really pass through or connect or relate them to each other. So we have a completely different type of cityscape compare to the traditional city, Maybe its main character is in its difficulty for us to actually, feel connected or have access to, and that is one of the other reasons why we can't see it, because we don't have the access to. We do have the access to automobile vision though. It makes sense that not majority of territory is perceivable because we are limited to the passage system of automobile, and that is also very effected by the speed of automobile and the nature of roads. The image though is fragmented but also multiplied because of mirrors inside the vehicle; the analogues to jump cut because when you are driving you are simultaneously provided with the two opposite direction views with much framed imagery of the road and its soundings.

So while, the scale of relationship between void/solid and figure/ground has changed dramatically, the nature of their images are also became too much fragmented yet overloaded by multiplication of nonlinear frames. We are forced to experience the territory that is full of not related or connected objects, from inside of Automobile, and therefore, our accessibility is quite limited and so do our image-making capabilities. Simply speaking, the 20th-century Sprawl does not fit in our perception. There are lots of dark corners omitted or over simplified, never seen, hidden from our eyes, or forgotten to see. I would like to call them negative spaces.

Looking at the ways various people's theorized models and systems of dealing with the sprawl, maybe starting from Kevin Lynch, Robert Venturi and Denise Scott Brown, Colin Rowe and Rem Koolhaas, to whole series of people who have urban theories with an attempt to help us, to deal with urbanism,

the investigation easily could reveal what they are missing; the eyes that do not see, is exactly what they tried to get us back to, or the third landscape, is exactly what they would like us to deal with, yet the people who made these theories, have not got us to the point that we could actually see, or could actually compose, with convincing imagery, or better image-making capabilities. I do argue that in spite of all those models, systems and indicators usefulness, they are not able to provide us with the sharp eyes that do see the in-betweens-negative spaces-voids; leftovers, residuals, wastelands etc.

Why those theories are insufficient simply because they over concentrate on object, they are unable to create a continuity between landscape and buildings, sense of landing the landscape in buildings. Their master plans or any conceptual type of maps have this constant focus on objects, not like the Nolli map by the way; in Nolli map except from the monuments, which Aldo Rossi would teach us all about our collective memory with, the rest of the city was made of the same thing, repetition of the same objects and they are all connected, produces a fluidity within which they all make sense, the new territory and the relationship among its objects, don't really make sense as the things that are between them, are not existent. Also If one looks at Nolli map every elements of void making, the street, piazza, everything that is in-between solids, make sense, one can imagine them, while in the explored sprawl by those theories you simply can't, because all of them are looking at individual objects and their collections, what Anthony Vidler conceptualized as the subject of the anxiety of the object is those theories main withdrawal.

### 3 THE EFFECTIVE MINORITY; RE-IMAGING THE TERRITORY.

Simply speaking, we are facing the territory of sprawls in which both the dimension of overall urban scale and the scale of relationship between figure/ground, solid/void and object/field has changed. Also the urban elements of territory are neither connected nor related to each other. In this sense it is not possible to imagine or conceptualize that territory with the use of conventional tools like plans and sections, as simply observing a plan or section of an sprawl will not resemble any visual image in our mind. Moreover, all human eye images which we have or could have from that territory- either collective memory or personal imagination, comes from inside automobile with its mirrors in a road system; too much fragmented, multiplied, fast, linear and therefore very limited and object oriented. In general at least four main issues are retraceable: Overall scale: the sense of wholeness, Scale change in relation to figure/ground, solid/void and object/field, Discontinuity, disconnection and un-relativity of figure/ground, solid/void and object/field, Our access to them and the medium of image making. If there is not continuity between voids and solids anymore, if also the scale of their relationship has changed dramatically, if we do not have any easy access to them and our image of them is too much fragmented, then are we able to concept the condition without using more confusing terms like chaotic?

The case of Santa Palomba in the metropolitan area of Rome is a simple manifestation of that condition, while it is located on the geopolitical position in the historical root of Rome to the Tyrrhenian Sea, while it has its historical artefacts like Torre Maggiore and while perpendicular to its geographical figures, the two parallel systems of territorial infrastructures, main highway and railway, cross it. Its General image is full of holes, vagueness, and non-monumental materials. Huge amount of industrial platforms, suburban detached single family housings, agricultural patches, train backyards, parking lots, old mine system of *Solfiorata*, water roots natural and channelled ones, lakes and villages beside new residential developments, with also the presence of illegal settlements, they all coexist beside each other.

Yet if one looks closely, they have at least something in common in transgression in their edges. The most important problem is not their individual identity or characters which could be either proper or not, beautiful or banal, attractive or boring, clear or vague, monumental or ordinary, rather it is in either their over isolation or being gated or in their aggressiveness and selfishness of their relationship with each other. In a simpler way, it is their edges or frontiers which do not provide meaningful dialogue rather than their main bodies of discourse. It is like to say that neither the void nor the solid are the main question under the spot but rather their touching lines are the main issue

to deal with. If we would be able to map those lines or areas which I would like to argue them as Thresholds; the places of statement from each sides, the space of infraction or interval, then we may be capable of addressing their condition individually or in pairs without falling into the maze of total imagery which would end up with nothing more than confusions.

Santa Palomba area is the collection of almost all those kinds of thresholds. One could find in every direction the traces of frontiers' clashes. In every corner of that area exist a system which confronted with the other. Agricultural landscape reaches the townscape, industrial platform meets the road or railway and historical core confronts the new housing developments. Parking lots of factories and shopping malls are just located beside gated plot of Rai radio transmitters and the lines of high voltage electricity poles pass from all of them, the lake confronts the mine and the water channels feed the lands and got polluted by industrial wastes, the spaces shares faith with wastelands and brownfields are as freely distributed in the territory as plots of woods, active industries neighbouring the abandoned warehouses and un finished projects are hosting the third landscape. All of their frontiers would provide us; architecture and urban designers, an opportunity for modification, tensional enough for projecting the deconstruction. Reversing the codes of their internals could give us the open door to image those thresholds as the containers rather than the contained and therefore, their role in our reading of territory would become much more active than rather than as passive as the outcome of dialectic relationship between the two dominant confronted systems.

If all geographical and historical codes are to be considered the deep structures of the territory then the layer of threshold should be considered as the most superficial of all, yet its existence varies from ephemeral entities to the most residual phenomena of the territory and of course it is because its definition and character normally is recognized by the condition in which it emerged. While it is true that it is the outcome of the two systems confrontation yet, if one start from its own identity, recognize its own properties and then move to its relationship with the two sides then the story of the territory would be re-written by effective minorities.

#### 4 THE LOST CHILD; AN OPEN PROJECT.

Let's concept a small example, the historical idea of western city block was always connected to the peripheral built-up in which the limit of private and public realm emerged from the immediate presence of the container which means the plot boundary and built-up were superimposed in one single line. Slimily speaking, the role of container was to separate the private and public and what it contained inside considered as private or semi-private and what was outside between the two blocks for example, had to be conceptualized as public. As in collage city Colin Rowe contented the codes of modern city design was totally reverse. The idea of the city blocks faded away with the pavilion type system of building with the void around, something that once was the Greek mentality of built-up had translated with the metaphor of machine to the objectified built environment and of course the plot boundary was no longer demarked by the solid but rather fenced to separate the void of private from the public void.

The suburban housing system is the best example of this kind of condition when the single family dream house has to be detached from the others and centred in the plot and therefore the back and front gardens needed to be demarked again to clear the property. This condition morphed the role of boundary and its manifestation to something much more hybrid than it was in its classical terminology. It got variety of typologies and shape to itself, from the most banal wooden fences to the total blockage by walls, from the most transparent to the solid elements have appeared to be used for that purpose. Variety of heights and materials were used and designed for, just in order to dematerialize the property of that simple line between the two frontiers; the street and walkway as public and the plot as private domain. That happed just because of the simple fact of discontinuity of modern and postmodern built environment, while still the legal status of properties were continuous.

In the today's sprawl, there are much more conditions among more and more urban elements in which one could observe those boundaries with variety of forms and characteristics. They could varied from a small wall, construction fence, threshold of road or railway, residual spaces,

wastelands, brown fields, even patch of woods could be considered as threshold, as far as it brings out the relationship of the two other systems in which it exists in-between. It could be geographical figure or very flat land, it could be horizontal or vertical, soft or hard, with variety of scales. Although it mostly could be conceptualized with linear system yet it could have diverse shapes as well. It is in fact the thick surface of our contemporary reality in which all gated systems confront each other and therefore, it should be the most diverse and complex layer of the territory, yet it is some kind of invisible.

Architects and urban designers either resist to look at, or acknowledge it, or prefer not to include it in their concept of the design, or simply forget it as it is too marginal to the main topic of the design or consider it as the consequence which they should not compensate for. In any case what they do is simply to let it be as it was in territory, or exclude it from their reading. And as the result, it is left to exist either forgotten or too much aggressive, like a 4<sup>th</sup> child of 5 children family, what is well known with psychologists as the Lost Child! The 4<sup>th</sup> child is the most silent of all and mostly exposed to depression, he or she could suffer from all the psychological issues which other children has less chance to get effected by, yet one thing is the lost child advantage; he or she is the most propositional inside the family members as every day, he or she needs to re-evaluate and re-establish his or her position toward the other four children and their role plays. Similarly, those lost spaces, out of our wonders, are the most dialogical of all layers and materials in the territory and therefore the most available to accept different forms and roles in both the design and the manifestation in reality.

## 5 GOD IS IN THE DETAILS; THE CONCLUSION.

To sum up, I would like to argue, that the most relevant and affordable action for contemporary architects and urban designers dealing with the sprawl condition, like the areas like Santa Palomba, is to recognize the potential of those lost Childs, the interval and liminal nature of them and try to address them more and more propositional rather than dialectical. Till now what we have done at most was to provide the dislocation in the dialectic relationship between to opposite sides of the dialogue, what Richard Sennett called as dialogical relationship is needed to be provided on the threshold layer. Desire it or not, that complex and contradictory layer exists in our contemporary territory where both the definition of classical city and its hinterland faded away in the new urban landscape; extraurban imagery. That fact needs to be acknowledge firstly and then take a responsible position for. Roma 20-25 has at least this positive aspect which provided us the mirror in front of the eyes that do not see! And what they do not see, or in a better putting, what our profession ignores, omits, fails and forget to see, are all those happens because either they are hidden from our eyes or better our tools of reading the territory or they are too much close to our eyes while we fix our eyes to the horizon. Things are to be considered not important, they called hidden ones or labelled too much ordinary, simply because we decided to, not necessary just because of their existence or conditions. They are indeed the main essence or better the details of our territory where the ordinary God reappears!

This paper is therefore, is not a manifesto or an opposition against our professional statuesque, rather its attempt is to point out an alternative type of looking at the contemporary territory, opening up a fresh possibility of the modification projects' cycle in which may portrait us a better image of 21<sup>st</sup>-century European sprawl!

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## SMALL SCALE HYBRIDISATIONS

Ana Horhat

*Sapienza University Rome (Italy)*  
*ana.horhat@uniroma1.it*

### Abstract

Today there is a duality relating to landscape, on one hand we have the markets globalisation together with the behaviours standardisation and on the other hand an increase of nature research, an attempt to connect ourselves with a memory of a distant nature. Although this is perhaps too diagrammatic and not always the case, this axiom of landscape's bilateral crisis is the crux of the problem also for all the fields related to landscape, architecture and urbanism. This paper wants to emphasize the need of a small scale approach, starting from the gardens sensibility, for a sustainable aesthetics, ethics and vision in the design process.

The effects of globalisation on landscape often involve the creation of spaces without local peculiarities. This phenomenon is due to the hegemony of some large international architecture studios, but also to big plant producers that are offering global models, similar landscapes and familiar plants, causing the creation and the unstoppable multiplication of aesthetically uncertain artistic forms (*horror pleni*) and a landscape homologation. Many of the various proposed scenarios exalt some famous artistic canons (Picturesque charm, topiary forms), giving shape to obvious temporal and formal hybrids. [1] The rise of the digital era has also brought the homologation of the landscape architecture representation and the creation of a super-landscape where nature is depicted in high definition, idealized and perfected.

The research of naturalism instead is rather oscillating between the aesthetics and the emotions of nature, between conservation and biodiversity. The nature we are looking for seems an abstract concept, a nostalgic and static image, without depth. Even more so the plant component, the plants themselves, are seen as non-contemporary and old-fashioned even if they are so necessary and represent a possible model of action. [2] Over the last few decades plants seems to have lost popularity and their use continued to developed almost separately from the landscape architecture.

The place where a high knowledge of the plant world is expressed are the gardens. Besides its spatial ambiguity caused by the recent ecological visions and its ambivalence between nature and culture, formal and natural, the garden "contains the landscape" [3] and reflects in its natural microcosm all the landscape problems but also the culture and the politics of its time. The gardens have that intimacy but also the openness towards the world and towards its present time, are that space in between that could help, give relief but also mediate the architecture with its territory, public space with urban planning. The historian Jean Delumeau, stated that "every culturally accomplished civilization flourishes in the gardens". [4]

The language of landscape architecture and urbanism naturalness therefore needs hybrid and interdisciplinary joints, trying to juxtapose to the poetic of the garden art, the ecological view of nature, but also the practicality and the tangibility of floriculture, as they are specifically the plants producers - with *breeders* - who create new biodiversity, to propose and impose the plant material. Together with the ecology, garden and horticulture should provide a small-scale model of hyper-nature to design aesthetically and environmentally sustainable [5] and alternative landscapes. In this context, Monique Mosser said:

"The different approaches of the many researchers, coming from multiple disciplines, who for more than twenty years actively deal with landscape and gardens, remain too isolated one from each other. We now feel the need to overcome this stalemate, without appealing the 'multidisciplinary', too often left to the phrase of good intentions, but a 'germinal' trans-knowledge, where there are no more meetings of disciplines, but new ways of thinking and of converging the knowledge ". [6]

This model should approach the problems of the contemporary city, with a closer look to the environmental issues which are almost always related to the aesthetic ones. A classic example is the one of the English lawns in the (Mediterranean or not) urban gardens which provoke water problems or drought, biodiversity loss, high maintenance costs, the monopoly of unfit plant products or producers but also the propagation of a static, stereotyped and infinitely repeated image of a meaningless landscape. The alternatives in this case are the meadows, which through the knowledge of a gardener, an accurate plant selection, a minimum maintenance and a passing time vision can offer a "sensitive" urban design. This is just one example of a small-scale simulation of a large-scale natural system, hybridised with a sustainable and proper botanical approach and with an aesthetic sensitivity, a good formula in times of climate change, economic crisis but at the same time, easy chance for the standardised markets. Their widespread and equal current use, from the large scale up to private gardens or traffic islands and in different climate conditions, distorts the perception of the natural landscape and creates some strange formal and meaningful combinations, recall the Heraclites affirmation, "nature loves to hide", superficially interpreted as the difficulty of finding the reality.

**Keywords:** garden, globalisation, landscape architecture, landscape urbanism, naturalism, hybridisation.

## 1 INTRODUCTION. ON CRISIS

In a time overcharged by confused and hybrid concepts and disciplinary metamorphosis (urban landscape, landscape urbanism or landscape ecology), and in a period when landscape architecture is in strong competition with construction practices, there is still a significant confusion between landscape and territory. [7] The view from above and the instrument of the plan as a simulacrum of the whole is seen by Michael Jakob as a way to accelerate the development of a so-called "omni-landscape". In this kind of landscape, formed by simple reproductions of predefined patterns, the decisions are guided exclusively by fashion or by strong ecological inspired speeches and the result is often just a painted map of green. It looks a lot like the map in the Jorge Luis Borges fable, "On Exactitude in Science", a map which is so detailed that it exactly covers the territory it surveys, and soon becomes all but indistinguishable from it. And yet, set aside the concept of *mimesis*, the effects do not cease to be seen, the sun and the wind turn the imaginary territory in a desert, the only legacy for the future generations:

"In that Empire, the Art of Cartography attained such Perfection that the map of a single Province occupied the entirety of a City, and the map of the Empire, the entirety of a Province. In time, those Unconscionable Maps no longer satisfied, and the Cartographers Guilds struck a Map of the Empire whose size was that of the Empire, and which coincided point for point with it. The following Generations, who were not so fond of the Study of Cartography as their Forebears had been, saw that that vast map was Useless, and not without some Pitilessness was it, that they delivered it up to the Inclemencies of Sun and Winters. In the Deserts of the West, still today, there are Tattered Ruins of that Map, inhabited by Animals and Beggars". [8]

This confusion also affected the gardens world, always through a physical and conceptual reduction. After the World War II and until the 1980s, in Europe, the garden experienced a profound crisis between the search for a possible new identity on the one hand, or complete oblivion on the other. The post-war reconstruction had a strong social connotation, looked to the suburban areas of the cities, insisting on private property, and the garden became a "space *banalisé* able to host any sort

of event." [9] Creating a garden was the equivalent of decorating or filling the gaps left free after urbanisation.

During modernity, urban nature has become a diffused "green" space, a chromatic assignment that expresses a loss of consistency, the absence of the subject, of the body. [10] The vegetal element has become an accessory and its function is to just hide or cover, to provide oxygen or simply decoration. Even Le Corbusier claimed the diffuse green as a background for the development of the modern city. Although the MOMA Museum in New York recently dedicated to him an exhibition entitled "An Atlas of Modern Landscapes", his landscape vision remains an academic one, blocked within stereotypes, contemplation and picturesque, a landscape to watch and to frame, not to be physically experienced.

With regards to the green tint tendency, experienced in all fields connected to landscape and its shallowness, Lucien Kroll has commented and his example is compelling: "If you paint in green the Ceausescu Palace in Bucharest, if you surround it with water and a bit of grass, it might be an architecture that takes ecology into account?". [11]

In this context, the discipline and the practice of landscape architecture should perhaps start from its origins, from its enclosure and paradise, from wonder and amazement, and return to a small-scale approach and to high-resolution typical of the garden. The garden is the soil in which these problems can and should be addressed. This is where the relationship between vegetal elements and space, and especially between project, implementation and care are taking place, a possible prescription against contemporary naive repetition of automated and standard gestures.

## 2 GLOBALISATION

There are different definitions of globalisation and its manifestations which are usually connected with the economic aspects and more recently with the political, cultural, ideological and also ecological problems. Globalisation is a phenomenon that has become increasingly evident since the nineteenth century and today the term is praised or condemned but often abused. On one hand it merges with multiculturalism and human rights and on the other simply identifies with the cancellation of the differences or the so-called "McDonaldization" of the world. [12] The globalisation effects on the landscape imply the creation of spaces without identity or local peculiarities. The true essence of the urban landscape and ecology as a science that works and respects the natural processes is lost in the process of globalisation and in the consumerisation of landscape architecture.

The reasons that led to globalisation in the field of landscape architecture, could be the urban planning crisis but latterly also a crisis of image. The increasing dissolution between urban and rural, or between city, industry and nature and the annulment of the past tracks are leading to a evanescence, in terms of personal and intimate uprooting or in terms of landscape loss. At the same time we produce or we are hunted by an exaggerated quantity of landscape-images. From the "diffuse green" of the urban projects we are passing now through the various filters of our phone cameras. So even though on one hand, the landscape becomes diffuse, blurred, monochrome, and on the other the visibility is exaggerated, overflowing and showy, there is still the same equalisation or cancellation of the landscape articulations, until reaching entropy. "*The being-in-the world* gave place to *being-into-images*". [13]

Martin Heidegger, in his essay from 1938, "The Age of the World Picture", has defined modernity as the era of the world image (*Weltbilder*), an era for which the world is valuable only in the picture form that the subject can make of it - a reproduction, whose conformity to the original can not be verified, since it is impossible to access. Also the landscape, in an era of exaggerated reproduction, remains always elsewhere, being replaced by its various portrayals. The replacement of the world with images find a further expression in a project, after many years still under construction in Dubai, *The World*, that wants to represent the whole world circumscribed in a default space.

According to different authors, the styles that led to a global aesthetic, which led to the cities and landscape redesigning in the nineteenth and twentieth centuries, were the Picturesque and the Gardenesque styles. The concept of the Picturesque enjoyed an unexpected mass fortune. When

Roland Barthes analysed, after the second world war, the tools of mass tourism, he noticed that: "The Guide Bleu knows only the landscapes under the form of the picturesque." [14] The Gardenesque style was directly connected to the industrial revolution, to geographical discoveries and to the conquest of new territories by the British Empire. The main principle of this style was eclecticism: a mixture of formal elements (French parterres, topiaries and flower beds), picturesque imagery (winding path, woods and meadows) and even some Chinese motifs. Gardenesque also introduced exoticism and a wide use of new species of plants. In 1817, when Hegel started to run its course of Aesthetics at the University of Heidelberg, he also became interested in modern gardens and wrote: "A large park, however, particularly when it is trimmed with Chinese temples, Turkish mosques, Swiss chalets, bridges, hermitages and who knows what other equally exotic things, requires already to be and to mean something. However, this attractiveness, which is immediately satisfied, soon disappears and such things can not be revise twice." [15] So the British Empire introduced, according to Maria Ignatieva, not only a model for the public parks but also some elements that later will become a symbol of Western civilisation and an important feature of the global landscape: garden centres and flower shows, gardening books and magazines, the image of the touristic tropical Eden and especially a worldwide stock of exotic plants and commercial nurseries. [16]

The history of the plants discoveries could also be read as a story of globalisation. [17] Like any mass product, the plants are produced and marketed worldwide by using industrial processes, regardless of their native climate area. The cultivated plant became a product totally unrelated to the natural world, "human masterpieces" and "luxury toys", as Rudolf Borchardt called them, with purely artificial appearance and characteristics, imposed by tastes and fashions. "The man, sure of himself, displaces *hybris* with satiety". [18] An artificial paradise or a "Mass Producing Arcadia" might apparently seem a *locus amoenus*, but it hides the horizon, provokes a sense of bewilderment and the lost of orientation.

In 1964, in a New York gallery, a new work by Andy Warhol is presented. It's called *Flowers* and is based on an image that has the same matrix but is conceptually repeated and varied *ad infinitum*. In Vercelloni's opinion, this was Warhol's vision and manifesto about globalisation: the semantic pollution of the world through the multiplication of a figure. [19] Warhol isolated the four grass flowers, magnified and multiplied them, until they became almost aggressive, exactly like the mass produced plants that behind their innocent aspect are hiding a highly disturbed world.

This global phenomenon is also due to large international studies which are playing an important role in creating unifying models of urban landscapes, offering similar and comfortable landscapes, with "global" plants, especially in Russia, China and the United Arab Emirates. [20] The lawn is the main element of open space design in all types of green areas (up to 70%) and at the same time the "sacred" lawn is declared by many researches as the most ecologically extravagant element of our cities and one of the most serious contributors to global climate change. A research on urban biotopes in different cities in the Northern and Southern hemispheres, developed by Maria Ignatieva, studying particularly urban lawns, shows striking similarities in species composition and the structure of lawns.

Another interesting aspect shown by Maria Ignatieva is a comparative analysis of the plants offered for sale by nurseries in Seattle (USA), Christchurch (New Zealand), and St. Petersburg (Russia), made in 2007. It showed tremendous similarity of plant material, especially for conifers. [21] A relatively similar work is the one made by Günther Vogt and Dominique Ghiggi from the University of Zurich, who through travel journals from Europe, Africa and Asia, analysed the influence that tree nurseries have exercised in the field of urban planning and landscape architecture. [22]

So even the practice of modern landscape architecture is contributing to the ecological globalisation, being linked to environmental problems such as water and air pollution, lost biodiversity, the spread of invasive species and even climate change. The landscape is thus not only one of the characteristic expressions of a standardised world but It is also a medium that facilitates the increasing globalisation of concepts and visual schemes.

### 3 NATURALISM

The relationship between man, nature and landscape, from contemplation to perception, has produced various aesthetic categories, from beautiful to sublime, from naturalness to artifice, from picturesque to romanticism. The biggest changes have been made by industrialisation and the most recent globalisation. Nature, reinterpreted through the vision of ecology, is now, on one hand preserved, protected, bounded, classified, a phenomenon often termed like "landscape museification", and on the other hand there is a search for a lost wilderness, with profound changes in landscape's aesthetics.

The increasingly widespread attention for the recovery, preservation and enhancement of the environment is, without doubt, an aspect that makes the naturalistic approach absolutely necessary. The idea of a natural garden, in harmony with the environment, develops over time but finds, at the beginning and at the end of the twentieth century, two periods in which it manifests itself strongly, particularly in some European countries and the United States. The bucolic landscapes of Picturesque inspiration were created in a time when England was suffering the first effects of the Industrial Revolution, and the national parks in the United States, a century later, were set up to save, preserve and protect parts of their wilderness when the destructive practices of industrial development were becoming uncontrollable. At the beginning of the twentieth century the pursuit of naturalness is seen as a response to a changing environment always attributed to the development of industrialisation and urbanisation, and, particularly since the '70s, due to the effects of pollution. The technology and scientific development creates a strong desire to connect with the memory of a distant nature and nourishes a kind of nostalgia for a partially wild past.

The naturalistic tendencies range from the *Wild garden* style inaugurated by William Robinson at the beginning of the twentieth century, from Gertrude Jekyll's *English cottage garden* and from Karl Foerster in Germany to Gilles Clement's *garden in movement*, to Piet Oudolf, the *New Perennial* group, Oehme and van Sweden and up to James Hitchmough and Nigel Dunnet and their Sheffield School. Guido Giubbini identifies two main types, the natural individual garden, which takes shape in England with William Robinson, and the urban public garden and the natural park, which are born in the United States with Frederick Olmsted [23] and in Europe with the Amsterdam Bose Park experience.

Commencing with the '70s, in the context of the gardens general crisis, the work made by the Dutch artist Louis-Guillaume Le Roy and by the French landscape architect Gilles Clement are particularly important as they bring innovation and change the perceived relationship between nature and the new modern garden. They borrowed from the ecological world the concept of dynamism, highlighting the garden's ability to change and evolve spatially and temporally. The landscape ecology then moved to the stage of physical manifestation, of the representation and *mise en scene*, creating a "perfected" landscape. This is called *visual ecology*, a term coined by the British writer John Brook, which requires a balance between the various landscape elements and the perfect integration of the new components in the natural and cultural environment.

There is a cyclic and ironic return, as Marc Treib noticed [24], in searching the natural world. The more nature is exploited, the more man turns to a passed image of a saving nature. The need and longing for the natural disorder are caused by the negative effects of industrialisation but are also enhanced by the seriality and the monotony of their time. During the Robinson period, for example, the fashion was still the Gardenesque taste, obsolete, rigid and strident and later, before Oudolf, the *Arts&Crafts* inspired gardens, unceasingly repeated for sixty years. It is indisputable that the role of the flourishing flowers trade and the new cultivator figure who, in England, Holland and Germany, replaced the collector, or even before, the explorer, and interposed between the consumer and the powerful, globalised economic system. From this world came all the main figures of the natural garden style: Karl Foerster, Ernst Pagels and Piet Oudolf.

Also the borders of the plant world have been completely knocked down. Most of the plants that were produced and transported all over the world have now become unwanted guests who are guiding the native vegetation. The debate on the use of exotic or native plants is long and complex

and produced many contradictory positions over the last century, often extremist or even racist. The contemporary urban botanical garden is now possible to find even on *terrains vagues* or *frische*: "Plants are travelling. Herbs, mostly. They are moving in silence, like the winds. You can not have anything against the wind." [25] The post-modern, says Gunter Vogt, requires us to pay attention to a nature whose language we do not understand anymore. [26]

The idea of revealing natural processes runs through the last century in combination with the plant world. At the beginning they were mostly native but also some exotic, then all the herbaceous of the "unofficial landscape" appeared, so called by Richard Mabey, ending up with the perennial grasses and the rediscovery of annual plants.

Recently botanists and nursery catalogues begin to highlight a predominantly formal reinterpretation of nature, such as the case of the *new German garden* style or Piet Oudolf's style, who are using perennials in controlled masses, or a mainly chromatic image like the one of Nigel Dunnett's *Pictorial Meadows*, wildflower meadows created with various annual seed mixtures and perennials in order to obtain an impressionist effect. They are not designed to be the exact copy of meadows found in nature, but rather they want to "improve" them through exaggerations and long-lasting colour combinations.

#### 4 CONCLUSIONS. ON GARDENS

Comparing the classic English lawn with the annual flowering meadows, now very *en vogue*, it may be useful to draw some conclusions between globalisation and naturalism. The Picturesque style represented at the beginning the desire to recreate the image of nature, threatened by the industrial revolution. That image was instead a static one, not surprisingly inspired by a painting. Now, in a time of environmental crisis, characterised by the loss of biological diversity, air and subsoil pollution, soil erosion and water problems, the desire of nature is getting stronger. Although ecology has brought many teachings, and there is an increasing attention to the site condition, in the new naturalistic models are prevailing the formal aspects, appearance and image. If, in the picturesque approach the dynamism concept was in the physical movement, the park had to be discovered by passing through it, the contemporary dynamism is in the temporal change, seasonal or chromatic. One of the legacies of the nineteenth-century park was the beautiful green carpet, reproduced everywhere, an object of worship anywhere in the world. It was so precious that it was always put in the spotlight, protected by human activities with the typical sign: "Do not walk on the grass!". Now, the annual flowering meadows are also starting to be reproduced everywhere, and are creating the same wonderment and astonishment effect, and their reproduction may also become an easy opportunity for global markets. Other common characteristics are the lack of interaction and the absence of a landscape design. Although the plant selection aims to achieve a certain maintenance autonomy and the construction costs are much lower, their widespread current use on all scales and regardless of the climate and site conditions, it brings some questions about the role of the urban garden and its relationship with the landscape. The nostalgia of an even more distant nature, much debated recently, is starting to be replaced by emotion, astonishment, by an immediate and ephemeral image. Towards what new Arcadia we are directing?

As a privileged meeting space between art and nature, the garden becomes a central theme and the reading key for the man-nature relationship in the context of industrialisation, globalisation and uncontrolled urbanisation. Some experiences from the twentieth century of experimentation and exploration of the botanical world show us how the confidence with nature developed, starting from the garden, an appropriate perception of the urban landscape problems. The gardens may reveal the roots of some contemporary attitudes, provide helpful insights to soften the current climate and economic problems or, if not, at least bring back "the lost art of seeing". [27]

Parks like Millennium Park and Lurie Garden, High Line, Duisburg Park, Olympic Park are seen as the epitome of the best examples of sustainable, ecological, economical and social interventions that lately shaped the urban and industrial degraded spaces of our cities, slaving landscape architecture but mostly landscape urbanism and ecological urbanism approaches. But, as Thaisa Way noticed, "Lurie Garden [...] introduced the idea of a garden in the city, the garden as part of the public realm,



which is different than a botanical garden or a park. Lurie Garden is why the High Line could come into existence the way that it did. Lurie Garden made us see the public realm differently". [28]

"Garden is a one term" [29] although its expressions are different. The private garden seems to maintain an experimental character but communicates the values of its time, "it declares his social identity", while the public park, set aside its modern transformation in a sterile green space with a strong social and recreational connotation, "lends to the city the modes of intimacy and meditation" [30], typical of the private garden. The garden is also a condenser "of the landscape information that it contains" [31] The practical and always designed dimension that the garden itself possesses can provide a useful starting point to develop a different perception and criticism of the landscape. While the garden provides a concrete and high resolution sensory experience of a natural and artificial set, governed by aesthetic, ecological, ethical and social principles, the landscape almost always needs adjectives to highlight its predominantly productive nature rather than functional, natural or anthropogenic, planned and urbanised.

The gardens have always been the mirror of their society but are also real laboratories of forms, ideas and models, often anticipating the architectural, artistic or landscape thinking of the following periods. The garden carries within it a dynamism, the possibility of writing and re-writing, it is an action, a process but also a preparation, a cure, a speech or a manifesto and it is a material and a spiritual condition for an experimental landscape design.

For these reasons, for the history and the culture, for the action and the process, for the aesthetics but also for the economy, there should be drawn new rules, in terms of balance and understanding of the plant world, but also of tension and looking for a new tangible, sustainable, designed and artistic form. There is the need to question the new values and the new aesthetic, the economic and environmental forms of the harmony between man and nature, in both the public and private space of a garden.

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## THE AIM OF THE SPACE IN BETWEEN OF NAPLES

Francesca Addario<sup>1</sup>, Mirko Russo<sup>2</sup>

<sup>1</sup>PhD Student at University 'Sapienza' in Rome(ITALY)

<sup>2</sup>PhD Student at University 'Federico II' in Naples (ITALY)

francesca.addario@hotmail.com, mrkrusso@gmail.com

### Abstract

The paper proposes the study of a part of Naples, the *Spanish Quarter*, advancing spatial considerations that have taken advantage from the analysis methodology and representation of Uwe Schröder, Professor of RWTH at University of Aachen in Germany. This methods approach, using red and blue colors, applied an interpretative classification of the urban space where red defines the 'hot' spaces, while the blue the 'cold' ones.

This method supposes different levels on different scales: the wide scale identifies the relationship with the territorial systems of the study area; the intermediate scale defines urban 'inclusive' spaces and 'exclusive' individual ones; the urban typological scale, finally, proposes a further classification of the spaces deepening and specifying the 'inclusive' and the 'exclusive' character of the space. These issues, related to the quality of the space *in between scale*, were explored through several projects outcomes by the students as part of a planning workshop coordinated by Federica Visconti, Professor of Diarc at University 'Federico II' of Naples in Italy, where the authors of this text have participated.

The application of this analytical technique has revealed, at the urban scale, that since the Greek-Roman origin, Naples has started to spread gradually, first to the west and east sides and then to the north, until to completely saturate almost the available areas. This territory is strongly influenced by the orography, which has determined the development in parts of Naples, where the natural hilly is nowadays fully incorporated into the compact urban fabric. The development of the city to the south side, however, was affected by the sea presence: along the coast, in fact, it is defined a less dense belt of the harbor infrastructure built, that for their feature and size, do not return an urban fabric.

The same technique was also applied to the urban typological scale. The *Spanish Quarter*, identify a compact and homogeneous pattern of the city, developed on an isotropic grid of square blocks, with no exceptions, differently from the original historic core grid of Naples, anisotropic and organized on a rectangular block. The Quarter represent a densely built and downgraded area, at the same time, and they have been involved in lots of projects aimed on the buildings thinning and on plans based on demolitions, useful to have strategic connections rather than regeneration operations of the same area. *Largo Barracche* is a break within the dense fabric of the Spanish Quarter. Its origin is doubtful: in fact it is not clear if its presence is due to a demolition of one of the blocks, or if , on the contrary, was designed, from the beginning, as a void. The exceptional character of this *space in between* appears as a resource to be appreciated through architecture: the goal, then, becomes making a general retraining replacing seven of the eight residential blocks downgraded overlooking the void.

The operation, in general, intend to reflect on the quality of the space *in between scale* that is the relationship between “*built and unbuilt objects, territory and settlements, settlements and communal built environment, public and private places and spaces, and private and intimate spaces*” and on the capability that the same space has in terms of new relations and new possible arrangements.

**Keywords:** space, analytic methodology, scale size

## 1 INTRODUCTION

Naples has a special system that changes depending on the territorial orography and on the ideas of the city which, every period it has set its reasons, according to the times. Among these parts, each one clearly identifiable, the *Spanish Quarters* represent a recognizable fabric because the spatial organization on which they are based is given by a regular grid of square blocks, without any kind of differentiation, as opposed to the plan grid of the original historic core, anisotropic, instead organized on rectangular blocks. The attention to *Spanish Quarter*, will focus in particularly on a singular void that interrupts the clear and ordered scanning of the fabric, *Largo Barracche*. This space, identified as an urban space *in between*, interrupts the isotropic indifference system and the compact built without any urban break. Therefore this study takes a multiscalar character which each time returns considerations about the nature of Naples urban space: from a territorial scale, which focuses on Naples, the analysis arrives to an urban scale that focuses at firstly in the *Spanish Quarters* and then explores the space of *Largo Barracche*.

## 2 SPACE CLASSIFICATION METHODS

Drafting the necessary conceptual theories [1] clarifies how space is defined initiating from its limitation. This act defines a positive 'internal' and a negative 'external': the fencing of a space is linked to the idea of bordering the space. Space, or the shape of the space, assumes a representative value because it has to be adapted to the needs of a human life in its individual and social being. For Uwe Schröder the city was founded starting from the form of urban spaces, by their influence one each other and by the "sequences" that they build. The arrangement, the succession, the extent and reciprocal connection between different space, determines the architecture of urban space. The confined and hierarchical urban spaces are opposed to the open spaces of nature and the surrounding landscape. It is highlighted, as well, the character of interior spaces and the one of exterior natural spaces.

The analytical tool used in this study applied the methodology [2] introduced by Uwe Schröder, professor of RWTH Aachen who proposes reading of the urban and architecture space by classifying them in *hot* and *cold*<sup>1</sup>. The hot spaces, red areas, belong to the city and represent the interior spaces of urban dynamics while the cold spaces, blue areas, belong to the landscape and infrastructure, and are intended as the areas outside the city. The drawings of these concepts could be found in a design called *Rotblauplan* in which urban spaces are distinguished according to those two colors, based on the *nature* of the city or of the landscape, and thus based on their character as 'urban inner' or an 'urban external' space. This kind of schematic drawing is always compared to another design, the *Schwartzplan*, that distinguishes the free spaces of the city not built, in white color, than the one constructed, in black color, which instead highlights the type-morphological structure investigated in urban system. The comparison of these two drawings shows that the white roads, paths and squares in *Schwartzplan* assume, at the big scale, the red color in *Rotblauplan* because they appear belonging to the concept of *interior* incorporated in the urban dynamics. This makes them a 'hot' urban space. Those same areas, however, at the urban scale, in *Rotblauplan*, are involved in several considerations: the scale deepening allows, in fact to perceive the distinction between what is built, with its own physical limits, and what however it is unbuilt. The 'spatial hierarchy' becomes crucial to classify the spaces of which the city is made. The big breaks in constructed zones, or squares, compared with the fabric that defines, can have a blue color, unable for their size to identify themselves as an urban interior, but as a space in between 'cold', external to 'unity of the surroundings urban.

In such analysis there are three spatial entities to which it is given a value: the *square*, the *court* and the *cell*. Uwe Schröder proposes his own definition which refers to the concepts of interior and

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<sup>1</sup> U.Schröder (2015), *Pardiè. Concept for a City after the Time Regime of Modernity*, König , Köln

exterior space, as said before, according to the character and the role they have: the square as an *external internal*, the court as an *internal external* and the cell as an *internal*. Added to these there is the *external* space outside of the landscape. Looking more specifically the public space, the urban square and the house court, are understood as *including spaces* as inclusive and open to meeting others while the private space, the cell, is interpreted as an *excluding space* as it excludes the meeting with others only promote the meeting with oneself.

### 3 ANALYSIS AND PROJECT

The analysis on the big scale are focused on Naples and have identified relations with the territorial systems of the study area. The city is strongly influenced by the orography which has determined, in fact, the development of parts of the city, where the natural hilly is now fully incorporated into the compact urban fabric forming a system of residual breaks. Identifying some moments of development of the city related to the centuries XI, XVI, XVIII, until now the development of Naples took place regarding its relationship, on one hand, with the sea and on the other, with hill system. The graphic sequence “Fig. 1” built with Rotblauplans shows the expansion mode: the city from the original core Greek-Roman began to spread gradually, first to the west and east, and then to the north to completely saturate the available areas. However, urban development to the south, was influenced by the presence of the sea: along the coast in fact defines a less dense band of built full of harbor infrastructure which cannot return a traditional urban fabric. In fact, like what happens in many northern European cities with the demolition of the walls, this lower concentration of built is also explained as a downgrading where most of the harbor areas have suffered the change from the commercial function to the tourist one: the significant brake in the built, or the spatial expansion on the coast, therefore, also assumes the transitional character of space to be rethought and fix the spatial relationship between the city and the sea.

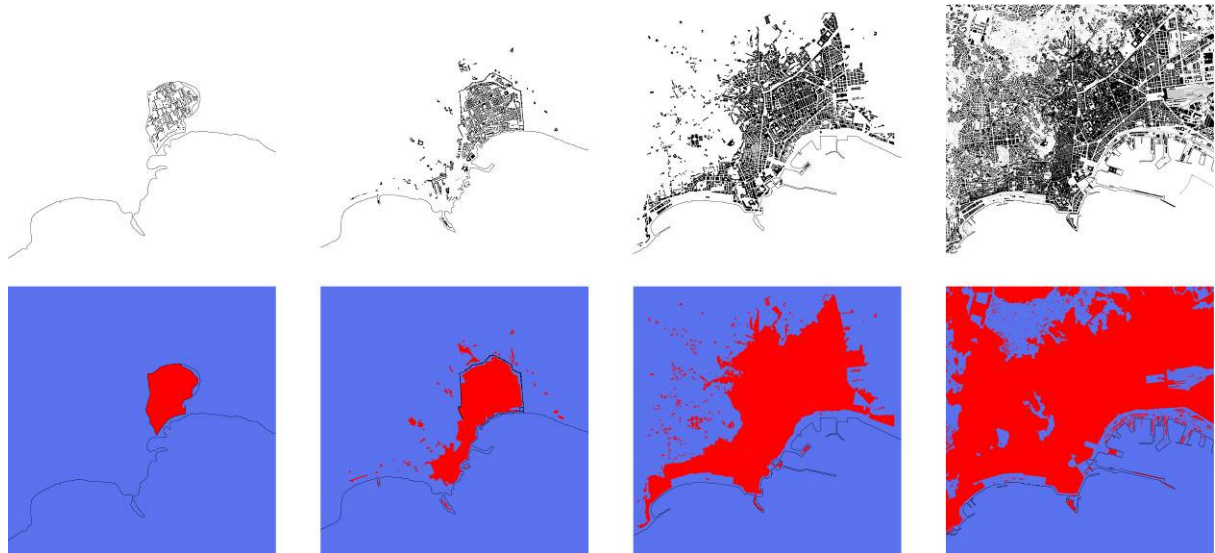


Figure 1. Naples, historical evolution

The intermediate scale is focused, on the analysis of the *Spanish Quarters* highly dense and degraded area in Naples. The district, for the accepted morphological value of the whole, has been the object of different studies aimed at thinning to make strategic connections as well as recovery operations. The Rotblauplans, at this scale, specify the limits of the spaces making it clear the formal definition among inclusive spaces, and therefore more properly urban, and the exclusive ones, or individual ones “Fig. 2”.



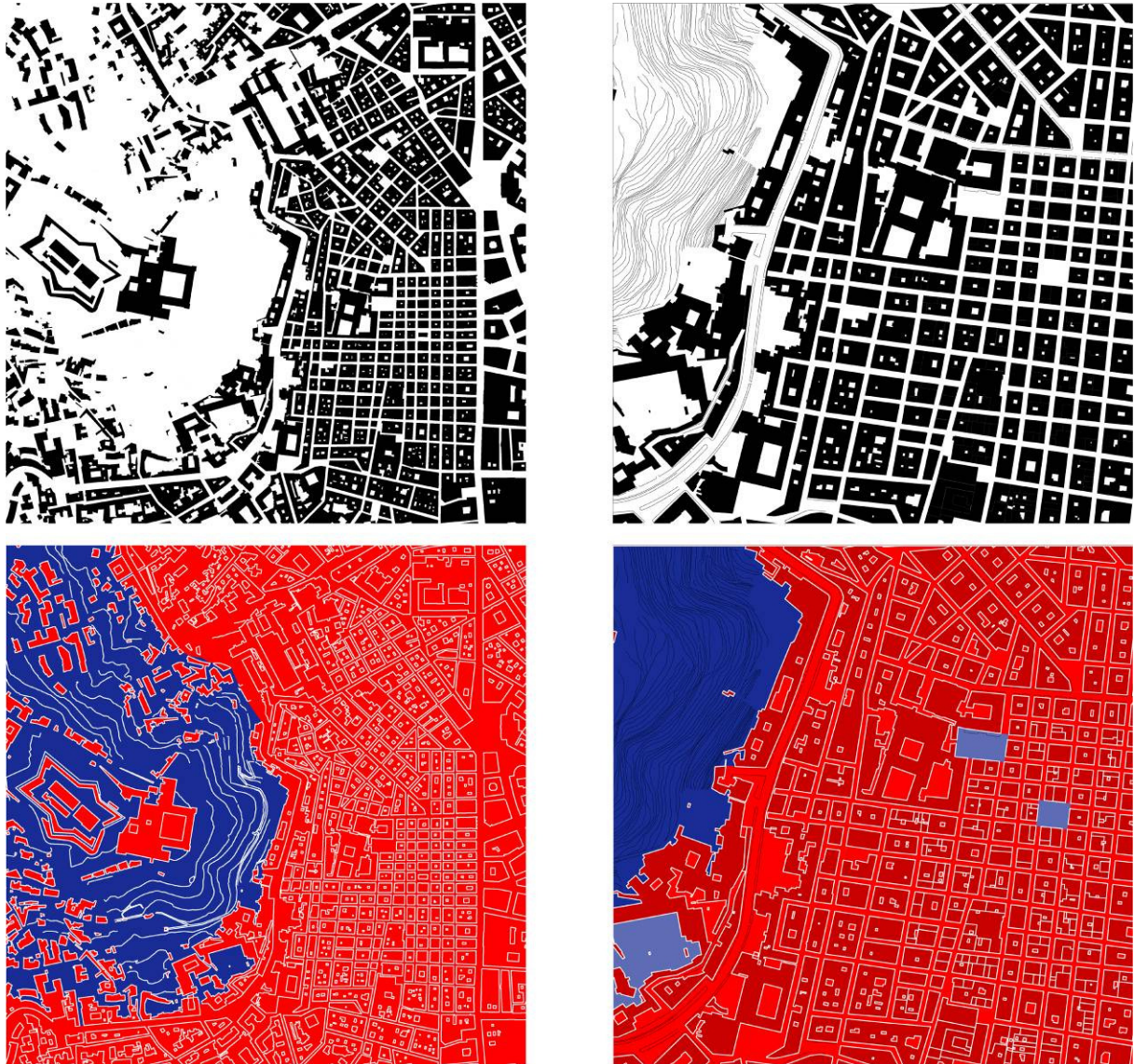


Figure 2. Spanish Quarter, environmental framing

The typological scale, finally, analyzed *Largo Barracche*: the analysis on the area has deepened especially the inclusive character of the space and the exclusive one above all that of the buildings surrounding the area. The void represents a place of 'discontinuity' within the dense fabric of the *Spanish Quarters* area, a space in between of dubious origin. It is not clear, in fact, if its presence is due to the demolition of one of the blocks or whether, by contrast, was conceived from the outset as a break or as a void. *Largo Barracche* spatial redefinition was researched in the project carried by the students as part of a planning workshop coordinated by Federica Visconti and Renato Capozzi, DiArc professors of the University of Naples Federico II, investigating three possible proposals for project in the area of spatial reconfiguration. The three morphological buildings proposed represent three different approaches in urban design, in order to redefine a part of the city formally indefinite. Given the exceptional nature of this condition, as already repeatedly emphasized, that void is a resource to be exploited through the architectural project: the goal was therefore to make a general upgrading to reconfigure the space as a representative for the community that it would be entitled. This operation, in particular, has taken place by replacing seven of the eight blocks of buildings in a state of degradation facing the void, and among these, the building where the project does not intervene, it is the only one that presents considerable historical and artistic value and has been hypothesizedly proposed for restoration "Fig. 3".



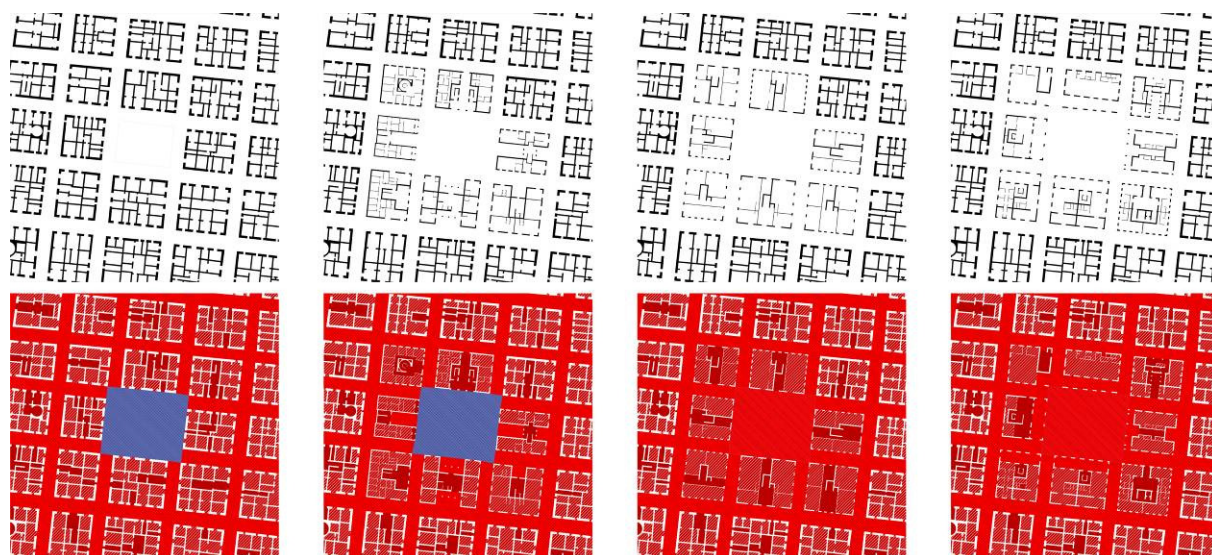


Figure 3. Largo Barracche, current situation and project proposals

## 4 CONCLUSIONS

The whole redevelopment of the blocks around *Largo Barracche* becomes in general an useful operation in the redevelopment of the void, as a space in between, and it should have the power to qualify private and collective living of this urban part.

The first proposal accepts the condition of the historic fabric, so it respects the rule of city making just a few typological variations on individual buildings. The second scheme is a variation of the rule of the *Spanish Quarters* facility and tries to hold together the different blocks through a macro-block design. The buildings in this case beads the central space and are meant as a terrace buildings in which the inner part has a jagged height to underline the gap between the buildings. The third and last proposal represents a "denial" of the fabric. The design of the buildings, in fact, introduces a new direction, east-west.

In a city the square is identified as the most important urban space: despite being an open space, is configured through the buildings that define its form. This makes it an urban interior space, so a red space 'hot'. The present condition of *Largo Barracche*, however, has led us to classify it as a blue space 'cold' because, apart from its urban role of 'square', it doesn't have the characteristics of a built structure from inside, but rather a lack. All projects, described above, take the void as the value and to work on the buildings that surround the space. The three proposals, affect the quality of that vacuum but by applying to them the Schroeder spatial classification it could be possible to trace different degrees of change. In general, the space in *Largo Barracche* represents a lack in the *Spanish Quarter* so it is classified as blue, but except this, however, it expresses the urban quality due to the exceptional grid plan. If in the first project, in which the historic plan is confirmed, the space continues to be considered cold, in the other two cases, however, where it is tested the possibility to change the plant type-morphological and practice a change of scale, the same space can be considered to be red. In the second project the buildings terraces allow a particular relationship with the sky dramatizing the central vacuum instead in the third case, the conforming buildings make *Largo Barracche* an interior space. This becomes possible in particular conditions founding of the Spanish Quarter in which the orthogonal grid system defines the spaces in proportion to each other without actually determining hierarchies. The buildings, different from the current condition, set themselves the intention of making a living space of that part of the city, an interior urban space even as an outsider. So we are clarifying the words of Uwe Schröder when he says that *nothing can be*

*achieved without occupying it with their own interior. Make public the interior is the actual act.*<sup>2</sup>

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## THE UP-CYCLE PROCESS. IN BETWEEN PAST AND FUTURE, THE HORIZON OF DECOMMISSION.

**Maria Luna Nobile**

*University of Naples Federico II - Department of Architecture (ITALY)  
marialuna.nobile@unina.it*

### **Abstract**

Starting from the meaning of the term “decommission”, the paper wants to focus on a specific phase of the life of a building or of an area, on one hand this term indicate the end of a process, that it is mainly related to a use, on the other hand it is open to endless possibilities of reuse and reconversion. The renewal and refunctionalization of an architectural object, area or public and private estate are today considered as an act of enormous value if we consider the even more less availability of greenfield areas and the global emergency that is connected with the climate change. In addition to the customary way of looking at the “decommission” as the end of a cycle, we want to reflect on the positive meaning of this term, that it could be mainly considered as an occasion, more than as a disvalue.

This positive meaning is connected with the moment that is “in between” the end of a life cycle, that is related with the birth, growing up of the architectural object and a second life cycle that is projected to the adaptation of the building to new different uses.

Considering this, the paper want to focus on the theme of the “up-cycle”, the specific moment that defines the end of a cycle and the starting point of a new cycle that can be considered “in-between” decommission and renewal for a different use, when we start to imagine its architectural refunctionalization and new design.

During the Eighties the phenomena of the decommission becomes more relevant in the European and Italian architectural debate. Cities starts to discover and taking again possess of these spaces that were mainly occupied by industrial plants and a new phase is coming, the phase of reconversion. In many cases this process starts immediately, in other cases it is already an open process.

This availability of empty areas was an occasion for the cities to set up tenders for project ideas and architectural competition, that is going to became, during the Eighties, a new tool as an alternative to the rules of the general masterplan. One of the aim of this tool is to become a link between public administration, public servants, experts, planners, technicians, and citizens.

In other cases, when it is not possible, it happens in a different way, for example using specific implementation plan (included in the general masterplan), especially it happens for the private areas. In subsequent years, this issue broadly involves the issue of decommission and relocation of different typologies of architectural objects, military areas, shopping malls, train stations, empty urban spaces or abandoned never-used buildings, framework of buildings structure that were abandoned before they were used, whose cycle of life never started and which are in a never-ending phase of “in-between”.

The architecture becomes not only the design of a new space, more or less “respectful” of the original building character, but is intended as a device, the process that drives the action in the different phases.

Thinking about the architectural project as a broader process first requires a different way of think the role of architecture in the urban transformation. Main actors of the current debate are theoreticians and architects demonstrating that it is possible to direct our gaze as to go beyond a new way of conceiving architecture as a device.

Today alarming data regards the conversion of these assets and, despite recent laws on the reconversion of neglected buildings, the re-use practices and the growing interest in the topic of commons and the re-appropriation of these spaces is not yet defined a common strategy at European and national level.

Since the debate on the total preservation or reconversion of buildings, urban areas and brownfield sites, through projects that redefine new rules and dictate new forms, the paper want to focus on the following issues: the **Adaptive Reuse** mainly in relation to the architectural scale and its possible redevelopment in terms of forms, dimensions, materials; the **Renaissance** mainly considered as a broader regeneration integrated to the context not only phisical but also economic and social, and the **Commons** mostly focused on the connection between architecture and community.

The paper wants to focus on the above mentioned issues through different research perspectives:

- Time, materials, forms, dimensions of the up-cycle. In between before/after, inside/outside, preservation/reconversion
- The Value of the up-cycle. In between heritage/community
- Projects for the reappropriation and of neglected and abandoned areas and buildings. In between public/private estate

The various issues mentioned in this abstract will be described through a series of European and Italian examples through the Poster.

The final case study, as a synthesis of the issues addressed, will be a project for the redevelopment of the area of the "Collegio Ciano", a complex built in 1939 to host young people of the city of Naples in the area of Bagnoli, that became after a brief period of occupation of the German army, a NATO military base after the Second World war, and that was finally decommissioned two years ago. The complex is actually empty, and its renewal is actually at the centre of a very strong political debate between the owners and the city of Naples with the citizens movements.

**Keywords:** decommission, in between, commons, value, architecture, up-cycle

## 1 INTRODUCTION

Starting from the meaning of the term "decommission", the research focuses on a specific phase of the life of a building or of an area, on one hand this term indicate the end of a process, that it is manly related to a use, on the other hand it is open to endless possibilities of reuse and reconversion. The renewal and refunctionalization of an architectural object, area or public and private estate are today considered as an act of enormous value if we consider the even more less availability of greenfield areas and the global emergency that is connected with the climate change.

The theme of "Reuse" of brownfields areas, abandoned spaces, ever used buildings, is one of the strategies that goes in the direction of reducing the consumption of land, one of the issues on which the attention of the large-scale project is focusing in recent decades.

The paper wants to dwell on the theme of the object possibility of an opportunity for re-use, in the phase of his being "in-between" as a physical element that is "between" the small and the large-scale project, but also like an object that has no function, but full of meaning and memory "between" past and present, and as a commons "between" the city and citizens considering the value and the socio-economic potential.

*"Recycling involves the use of the object multiplication, its aspiration to a kind of obsessive possibility of perpetual recovery through the repetition of a fixed sequence of events or the establishment of different processes. If the ex-novo production is forced to follow an obliged path in which single materials converge to the definition of the final product, a succession of operations and steps that*

*leads along the brute of materials to the final configuration, or affirmation of utilitas , recycling strategies stood on the different phases, are declined to expose the process itself”<sup>1</sup>.*

In addition to the customary way of looking at the “decommission” as the end of a cycle, we want to reflect on the positive meaning of this term, that it could be mainly considered as an occasion, more than as a disvalue.

This positive meaning is connected with the moment that is “in between” the end of a life cycle, that is related with the birth, growing up of the architectural object and a second life cycle that is projected to the adaptation of the building to new different uses.

Considering this, the paper want to focus on the theme of the “up-cycle”<sup>2</sup> (in particular referring to architecture), introduced by the research of the architect William McDonough and the chemist Michael Braungart, the up-cycle is the specific moment that defines the end of a cycle and the starting point of a new cycle that can be considered “in-between” decommission and renewal for a different use, when we start to imagine its architectural re-functionalization and new design.

The term Upcycle underlying the construction of a new life cycle system, starting from that ended his previous "Mission", the one that has dictated the production, the action is therefore intended to return a new quality, giving a further sense to what pours into disuse conditions.

*“Upcycle, hypercycle, subcycle e from cradle to cradle are just some of the possible procedures - which focuses a multidisciplinary literature - who argue on specific phases of the product life cycle”<sup>3</sup>.*

This condition of being "in-between" a cycle and the other of the building life is to be considered as an opportunity for the project to intervene on the ways and on the "rules" of this change. In this sense it is considered a crucial phase which lies between the disposal of assets, abandonment and new life, rebirth of the building itself, as a breeding ground for urban design and architectural design.

## 2 DECOMMISSIONING AND RELOCATION. STUDIES AND RESEARCHES

### 2.1 The Eighties and the relocation of dismissed industrial areas

During the Eighties the phenomena of the decommission becomes more relevant in the European and Italian architectural debate. Cities starts to discover and taking again possess of these spaces that were mainly occupied by industrial plants and a new phase is coming, the phase of relocation.

The phenomena of the divestment takes on a central role in the development of the city, following the urban expansion. We are faced with more and more central and urbanized areas, areas largely empty, which characterize the type of industrial settlements.

In these cases large industrial enclosures become elements of territorial infrastructure, the connection between industry development and the development of the city, resembles the relationship between monasteries and villages in the development of modern cities in Europe. Bernardo Secchi talks about it in an article of "Rassegna" focusing on that topic and titled "Territori abbandonati", and in doing it he focuses on the importance of the relationship between industrial plant and urban space settlement.

*“The diecommission of industrial areas process is analogous to that of all the elements that over time had structured urban space of which were of a reference point, to which other more minutes materials were reported and that in many situations had become morphogenetic elements of entire parts of the city that were built starting in fact by some of these materials. In some cases also of the monuments were made as in the case of the conventual factories” (Secchi)*

<sup>1</sup> S. Marini, *Post-produzioni o del problema della scelta*, in S. Marini, V. Santangelo, *Recycland* (a cura di), ARACNE editrice S.r.l., Roma 2013

<sup>2</sup> William McDonough and the chemistry Michael Braungart after *Cradle to Cradle: Remaking the Way we Make Things* (North Point Press, New York 2002) wrote in 2013 *The Upcycle: Beyond Sustainability. Designing for Abundance* (North Point Press, New York 2013). It refers to the research entitled *Re-Cycle Italy* and in particular to the text *Recycland* Sara Marini e Vincenza Santangelo (a cura di), ARACNE editrice S.r.l., Roma 2013 ([http://docu.iuav.it/153/1/Recycle\\_Italy\\_4.pdf](http://docu.iuav.it/153/1/Recycle_Italy_4.pdf))

<sup>3</sup> S. Marini, cit.

It is the city growing between industrial fences, gradually filling the empty space that has arisen between the different industrial centers built around the main factories, as well as had been previously for city arose around the conventual cores.

Cities grow not so much according to plan, but making use of the land left empty by abandoned factories or obsolete structures. The phenomenon began to manifest itself in the nineties and takes on a canonical dimension in the Bicocca project.

In many cases this process of relocation of abandoned spaces starts immediately, in other cases it is already an open process.

This availability of empty areas was an occasion for the cities to set up tenders for project ideas and architectural competition, that is going to become, during the Eighties, a new tool as an alternative to the rules of the general masterplan. One of the aims of this tool is to become a link between public administration, public servants, experts, planners, technicians, and citizens.

In other cases, when it is not possible, it happens in a different way, for example using specific implementation plan (included in the general masterplan), especially it happens for the private areas<sup>4</sup>.

## 2.2 The ninties. De-malling and other stories

In subsequent years, the theme of the "up-cycle" broadly involves the issue of decommission and relocation of different typologies of architectural objects, military areas, shopping malls, train stations, empty urban spaces or abandoned never-used buildings, framework of buildings structure that were abandoned before they were used, whose cycle of life never started and which are in a never-ending phase of "in-between".

The theme of "de-malling" has been addressed extensively in recent research that explores the phenomenon from the beginning of his birth in America in the 90s after the failure of numerous shopping centers.

Part of this research was the contribution of Gabriele Cavoto and Giorgio Limonta that have discussed the condition in Italy, where the transformation of vacant shopping centres and big box stores represents a new urban challenge that lacks precedents in terms of design strategies. Well aware of the specificities in terms of building size, urban planning legislation and contractual conditions, Cavato and Limonta proposed to learn from the 'dead mall' experience of the United States to devise a new set of design approaches for the European shopping centre. Vittoria Rossi similarly has investigated numerous projects that have been realised in the US to re-interpret the growing number of dead malls, the so-called process of 'de-malling'.

By focusing on several case studies from the US, this research has identified four operating models: reuse, integration, redevelopment and replacement.

What is interesting about this research is the ability to take action on a well, a building, upon disposal, and his being "in between": *"From Growth tumorous to the Dawn of the Dead"*, as the authors themselves of search define this phenomenon.

## 2.3 Recent stories. Commons and reuse

In recent years the debate on the topic of Commons has taken on a major importance. The term refers to all those elements that are available to citizens, such as soil, air, water. Starting from research conducted since the 60s in England, in Italy you start to discuss the possibility of intervening on "common goods" and in particular on the possibility of "civic uses" of properties in public ownership. It is a topic widely discussed, but that it is hard to find a single definition.

In particular the paper, addressing legal terms, which are very complex and currently being finalized, wants to take idea from the recent remarks of the Biennale of Architecture in Venice, curated by Alejandro Aravena, that has as slogan the issue of commons and architecture as tool directed to the citizens mainly.



Considering the experiences described above, the research wants to dwell on few points that are related to the role of architecture in the context of the broader discussion on brownfield sites, heritage, and regeneration.

### 3 OPERATION ON THE “ABANDONED” HERITAGE. THE “IN BETWEEN” AS AN OCCASION OF REGENERATION.

Today alarming data regards the conversion of these assets and, despite recent laws on the reconversion of neglected buildings, the re-use practices and the growing interest in the topic of commons and the re-appropriation of these spaces (the City of Naples represents in the last two years an interesting laboratory in Italy in the direction of establishing a series of policy actions on the theme of the commons) is not yet defined a common strategy at European and national level.

Since the debate on the total preservation or reconversion of buildings, urban areas and brownfield sites, through projects that redefine new rules and dictate new forms, the paper want to focus on the following issues:

- the **Adaptive Reuse** (Marini) mainly in relation to the architectural scale and its possible redevelopment in terms of forms, dimensions, materials.

Considering the issues addressed and highlighted in the paper, we want to investigate the theme of architecture as a tool for intervening on architectural objects and on the relationships between the context in which it was included.

First of all it is the study of the typologies and the adaptive reuse of the interior architecture of the building to a new function. Secondly, the location, the relationship with the context. In many cases this becomes the central theme, because it makes possible the creation of new poles.

The architecture becomes not only the design of a new space, more or less "respectful" of the original building character, but is intended as a device, the process that drives the action in the different phases.

- the **Commons** (Secchi) mostly focused on the connection between architecture and community.

Thinking about the architectural project as a broader process first requires a different way of think the role of architecture in the urban transformation. Main actors of the current debate are theoreticians and architects demonstrating that it is possible to direct our gaze as to go beyond a new way of conceiving architecture as a device (Koolhaas, BIG, MVRDV, Aravena).

*“By definition architecture is a collective practice. Unlike a sculptor who wakes up in the morning and decides to do a sculpture and does it, I do not wake up in the morning with an incredible desire to do an office building. Somebody has to need it. Architecture is an expression of needs and desires and forces that are outside yourself, be it a government, a private person or a community.”*<sup>5</sup>

In his seminal essay ‘Public Spaces, Collective Spaces,’ which was published in 1992, Spanish architect and critic Manuel de Solà-Morales suggested that the civic, architectural, urban and morphological richness of contemporary cities resides in their collective spaces that are not strictly public or private, but both simultaneously. De Solà-Morales described these places as ‘the ambiguous spaces where the public form of our cities is played’<sup>6</sup>

- the **Renaissance** (Landry) mainly considered as a broader regeneration integrated to the context not only physical but also economic and social.

Working on areas and on abandoned buildings means taking into account the character and the identity (Marini), and a new idea of that “beauty of the absence” (Zumthor) considering

<sup>5</sup> A. Aravena interview on *deez*, 13 january 2016. <http://www.dezeen.com/2016/01/13/alejandro-aravena-interview-pritzker-prize-laureate-2016-social-incremental-housing-chilean-architect/>

<sup>6</sup> Tom Avermaete, Fransje Hooimeijer & Lara Schrijver, Editorial ‘Urban Formations and Collective Spaces’, *Oase. Architectural Journal* 71 (2006): 2-6

the particular connotation that refers to a research of the latent possibilities, which is closer to the idea of a “ruin that it is waiting for” (Vitale).

“Beauty [...] is at its most intense when it is born of absence. I find something missing, a compelling expression, an empathy, which instantly affects me when I experience beauty[...] Longing. The experience of beauty makes me aware of absence. What I experience, what touches me, entails both joy and pain. Painful is the experience of absence and pure bliss the experience of a beautiful form that has been ignited by the feeling of absence” (Zumthor).

#### 4 RESEARCH PERSPECTIVES AND APPLICATION

The final case study, as a synthesis of the issues addressed, is a project for the redevelopment of the area of the Former “Collegio Ciano”, a complex built in 1939 to host young people of the city of Naples in the area of Bagnoli, that became after a brief period of occupation of the German army, a NATO military base after the Second World war, and that was finally decommissioned two years ago. The complex is actually empty, and its renewal is actually at the centre of a very strong political debate between the owners and the city of Naples with the citizens movements.

The complex has been the subject of a series of projects developed during the Design Laboratory of the second year of the master degree course SUE in Architecture in the University of Naples Federico II which had as its central theme the redevelopment of a planning strategy for the area.

The paper wants to focus, through the case study proposed, on the above mentioned issues through different research perspectives.

##### 4.1 Time, materials, forms, dimensions of the up-cycle. In between before/after, inside/outside, preservation/reconversion

###### 4.1.1 The architectural project as a tool, the scales of the project and the project “in between”.

The first question posed to the students was the consideration about the position and the role of the former complex “Collegio Ciano” in the city of Naples in terms of time, materials, shapes, sizes, starting from the consideration of the possibility of intervening on existing assets in a perspective of “Up-cycle” process. (Fig.1)



Figure 1. Ideas for the project of the Former complex “Collegio Ciano” in Bagnoli area, Naples. (Sources: elaboration of the author)

It is a closed complex built in the 30s between the city and the coastal west area.

The complex was built in the same period of the “Mostra d’Oltremare” and due to its location, between the hill of Agnano and the sea, an intermediate element, is to be considered as an appendage of the avenue that links Forigrotta area to the center of Bagnoli, who as in it the terminal point. (Fig.2) It is primarily a problem of scale, the area covers a total area of 210,745 sq m for a

covered area of about 62,200 square meters and a large piazza of 18,000 square meters around which are organized the main buildings. *“A college in the form of the city that was to build to close toward the sea the fascist area of Fuorigrotta with its huge square of honour, the pitches, and the twenty buildings, all beautiful” (E.Carreri)*

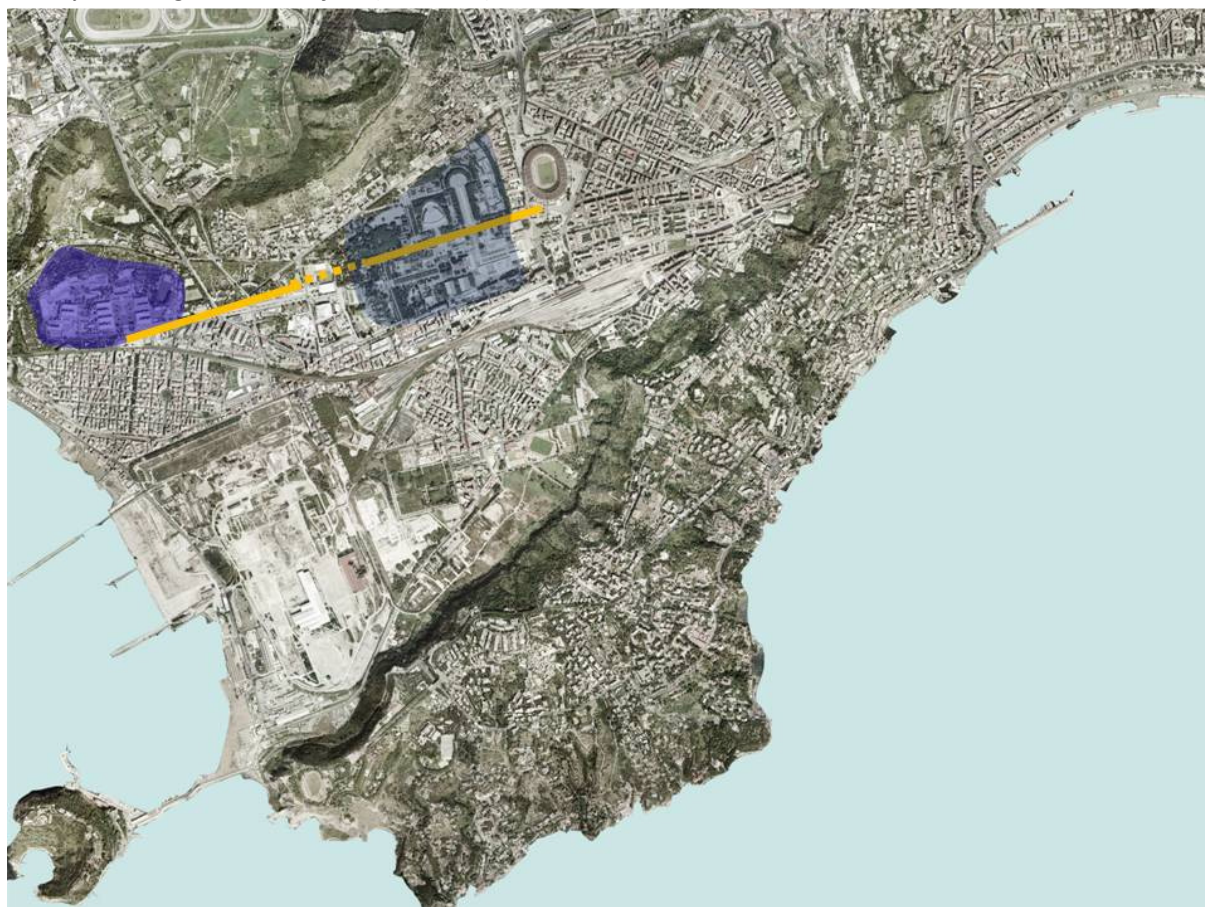


Figure 2. Napoli Ovest. The connection between the “Collegio Ciano” and the “Mostra d’Oltremare” area. (Sources: elaboration of the author)

#### 4.1.2 In between before/after

The considerations about the relationship of the former Collegio Ciano with its context have primarily focused on its location in relation to the city, and in particular on its being "in between" the town of Bagnoli and the former Italsider area and the coast, as well as the connection with the areas of Fuorigrotta on one side and the other of Pozzuoli and the Campi Flegrei on the other side. (Fig.3)



Figure 3. Fuorigrotta and Bagnoli, the project area. Description of the points of interest to be considered in the project. (Sources: elaboration of the author)



#### 4.1.3 In between inside/outside

The laboratory is intended to orient students to the understanding of the project's tools: description, theming and writing, through the study area, and to guide them towards the research of a design solution that had as its primary purpose (starting from the architectural themes defined following the description of the place) the "renaissance" of the former Collegio Ciano area, actually empty after the decommitment of the NATO military area, forecasting an imminent opening to the city.

The relationship between the huge amount of public space, access, paths, fences, buildings of the complex, and its "monuments", mostly empty, will be the starting point on which the students has to develop a design overview.

The research and study of the "materials" of the architectural composition of this place and its elements, and the knowledge of the architectural design tools will be the subject of the laboratory. One of the main evident material on which the themes of the students are focused on, is the fence, the wall that physically separates the area from the city, and the delimitation due to the type of use (military) that until 2013 made it impassable, and even non-existent on official maps. it is only today that reappears area and which can be returned to the community.

#### 4.1.4 In between heritage/community

The complex since the days of its building, it has never been used for the purpose for which it was built. In fact, soon after the end of its construction in 1939 was occupied first by the German troops and later by NATO that occupied the space until 2013, making the area inaccessible and impenetrable, as a military area. (Fig.4)

The projects were developed from a "demand" defined according to the recommendations derived from the study of the site and its role within the current urban policies. Among the current signs a major function for the transformation of Ex-NATO will be the deployment of "special residences" and operations arising there from. The theme of "housing" has been addressed since the theme of the relationship with the pre-existence.

Currently the area is at the centre of a very strong care, both by the properties (Fondazione Banco di Napoli for Childcare) and by local authorities, including the City of Naples and the Campania Region.

*"The truth is that architecture cannot be independent, for the simple fact that its primary motivation is to correspond to human needs and its first condition is to set out in one place. However, there is the autonomy of architects and it is a cyclical phenomena"* (De Carlo).

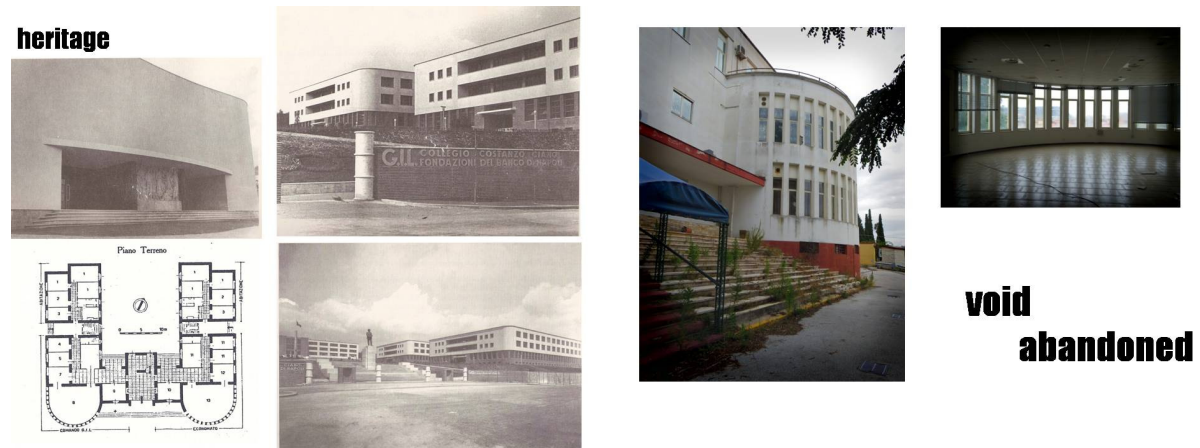


Figure 4. The "Collegio Ciano": views and plans of the original buildings (Sources: Napoli Guida e dintorni, Clean Ed.) and recent pictures of the project site (Ph. Maria Luna Nobile)

## 5 CONCLUSIONS

Using the creative process as a disciplinary tool of architecture, means to consider acting on the city considering the context (made of places and people) as prime contractor of architecture

*"The glory of the city depends on the imagination of the citizens and that, itself, by the circuit*

*of experiences and exchanges of which are participants: it depends, at the end, by the energies of the places"* (De Carlo)

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## ANALOGICAL ASSEMBLY

**Manuela Antoniciello**

*DiARC, Università degli Studi di Napoli Federico II (ITALY)*

*manuela.antoniciello@gmail.com*

### Abstract

The topic that it intends to propose is the possible transformation of historic center Naples through analogical assembly. These analogical assemblies participate in the process of knowledge of the place directing the initial work analysis and construction of the project. Moreover, the use of different scales contributes to the choices made in the selection of projects used for the construction of analogical thinking.

The research is in continuity with the thesis of the Neapolitan historian Renato de Fusco for the historic center, which consists of the proposal to attribute to the ancient district the main features of the "citizen of studies" (cittadella degli studi) integrated with crafts and industry activities. He intends to keep the road network, consisting of "decumani" or planeai and "cardini" or stenopoi, which is the most powerful sign of the ancient city's identity; while he intends to insert a modern intervention inside the isolates. The area obtained from demolition and consolidation of the smaller isolates, became the pretext for the design of an architecture based on the monastic complex model. In the 1974, Agostino Renna held the lesson "the city as a lesson of architecture" in which he explained the reasons for the so-called analogical assemblies. They become a synthesis between theory, urban, analysis and analytical-additive process that allows identifying two different times of transformations. The first related to the monumental building, which are the "fixed points" and the second to the residence, which interprets different ways of living and it's more available to transformations. Regarding the project submitted to the "XV Triennial of Milano", in which Agostino Renna replaces the Duchesca area with the "Monza-S. Rocco of A. Rossi and G. Grassi" project, the author claims in the "Essay of Naples" « the main issue isn't the design of the residential plot, but understanding the relationship that is going to be established, which the design of this area, between residence and monument in the moment when the residential area changes. Here there is also a design of a city in the city. »

The monument does not necessarily have to coincide with the single architecture, but it can consist of as Rossi writes in the "Architecture of the city", a combination of not only forms but also significance that characterize the city. In the case of Naples, the monument is represented by the Greek network system considered UNESCO heritage, which must be considered as a fixed point, in the design of new every development project, not to be a museum but to refund its collective character of large road construction.

A first exercise to measure the scale of the historic centre foresees, through a planning of the city on the city, the identification of the road network as a monument, also together with complex convents and the substitution of new residential parts.

The attempt was to amplify the methods proposed by Agostino Renna, by inserting different architectural projects of the modern movement in substitution the residential fabric clearly in a state of degradation. Some of the buildings taken are: the convent of Santa Maria de la Tourette of Le Corbusier, the project of the Halles of A. Monestiroli, the MIT of Ludwig Mies van der Rohe, the library for the Nou Campus in Valencia of Giorgio Grassi, the residential complex in Algeri of Fernand Pouillon.

Instead of the scale of the study area taken into consideration (the block of Mezzocannone) overlap

failure occurs between the centre of the Greek implant and the subsequent interventions of nineteenth – century with caused a significant fracture of morphological nature within the rules of urban thistle. This variation has been translated into the next phase of the project research according to the thesis A. Renna through a design of a city in the city. The reference to the block of Mezzocannone is the city of Urbino for some formal significant similarities: the walls, convents and ducal palace. With this comparison, it was recognized a hierarchy of routes with an increased emphasis on via Paladino and likewise it is visible on the head of Mezzocannone pieces and parts even also in the Ducal Palace or layout for courts found in the convent of Urbino. In conclusion, the aim of the project is to capture the peculiarities and differences of the historic center of Naples, deepening the theme in the discussion of the “Master of excellence design of the historic city” with takes place right in the neapolitan city.

**Keywords:** analogical assembly, red-blue plan, citizen of studies, Donnaromita’s convent, city centre

## 1 INTRODUCTION

The topic that it intends to propose is the possible transformation of historic centre Naples through analogical assembly. These analogical assemblies participate in the process of knowledge of the place directing the initial work analysis and construction of the project. Moreover, the use of different scales contributes to the choices made in the selection of projects used for the construction of analogical thinking. It will be display, with the graduated scale of mapping, the relationship between architecture and city, analysing the typological and topological essential. In the last pages, there is an application case with a particular project in which it will work out the relation both with the city both with ancient courtyard.

## 2 THEORIC CONTEXT

The research is in continuity with the thesis of the Neapolitan historian Renato de Fusco for the historic center, which consists of the proposal to attribute to the ancient district the main features of the “citizen of studies” ( *cittadella degli studi* )<sup>1</sup> integrated with crafts and industry activities. He intends to keep the road network, consisting of “decumani” or planeai and “cardini” or stenopoi, which is the most powerful sign of the ancient city’s identity; while he intends to implement a modern intervention inside the isolates. The area obtained from demolition and consolidation of the smaller isolated, became the pretext for the design of an architecture based on the monastic complex model.



Fig. 1 Pianta greco-romana, Bartolomeo Capasso 1904.



Fig. 2 Pianta del Duca di Noya, Giovanni Carafa, duca di Noya, 1775.

In the 1974, Agostino Renna held the lesson “la città e una lezione di architettura”<sup>2</sup> in which he explained the reasons for the so-called analogical assemblies. They become a synthesis between theory, urban, analysis and analytical-additive process that allows identifying two different times of transformations. The first related to the monumental building, which are the “fixed points” and the second to the residence, which interprets different ways of living and it’s more available to transformations. Regarding the project submitted to the “XV Triennial of Milano”, in which Agostino Renna replaces the Duchesca area with the “Monza-S.Rocco of A. Rossi and G. Grassi “ project, the author claims in the “Essay of Naples” « the main issue isn’t the design of the residential plot, but understanding the relationship that is going to be established, with the design of this area, between residence and monument in the moment when the residential area changes. Here there is also a design of a city in the city. »

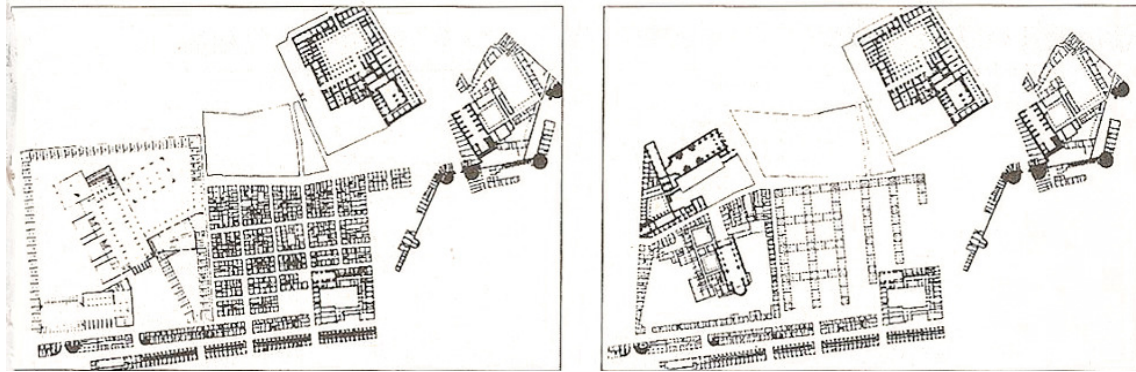


Fig. 3 Urban Compositions by Agostino Renna with Italo Ferraro, Alberto Forni, Enzo Mendicino and Francesco Domenico Moccia. Lilia Pagano, Agostino Renna, rimontaggio di un pensiero sulla conoscenza dell’architettura, Napoli, Clean Edizioni, 2012, pag 113.

### 3 ANALOGICAL ASSEMBLY

The monument does not necessarily have to coincide with the single architecture, but it can consist of as Rossi writes in the “Architettura della città”<sup>3</sup>, a combination of not only forms but also significance that characterize the city. In the case of Naples, the monument is represented by the Greek network system considered UNESCO heritage, which must be considered as a fixed point, in the design of new every development project, not to be a museum but to refund its collective character of large road construction. A first exercise to measure the scale of the historic centre foresees, through a planning of the city on the city, the identification of the road network as a monument, also together with complex convents and the substitution of new residential parts. The attempt was to amplify the methods proposed by Agostino Renna, by inserting different architectural projects of the modern movement in substitution the residential fabric clearly in a state of degradation (Figure 5). Some of the buildings taken are: the project of the Halles of A. Monestiroli, the MIT of Ludwig Mies van der Rohe, the library for the Nou Campus in Valencia of Giorgio Grassi, the residential complex in Algeri of Fernard Pouillon. Instead in the study area, the Mezzocannone isolated, was taken into consideration the Luigi Snozzi’s project for Monte Carasso’s ancient convent.

#### 3.1 Red- blue plan: city

Napoli, like all ancient cities that are defined by or greek-roman network, or medieval fortification or also planning of Renaissance era, has a clear structure with visible boundaries and limits. For this reason, Leon Battista Alberti in his *De re aedificatoria* writes that “the house is a small city and the city is a big house”. In this period that coincides with the demise of the modern time regime, there is a reflection about the architectural and urban space because the city does not have clearer shape and a real boundary. The loss of a formal boundary finds a correspondence in an undefined space opening of the architectural boundaries. The spaces of architecture are always interior spaces, regardless of whether they are completely open, half open, close, roofed or not, side by side or overlap. Therefore, the architecture spaces are not only the space between the walls of the buildings but also of the outside of them, as well as streets, courtyards and squares.

According to these considerations, the architect and professor Uwe Schröder proposes a different way to represent the architecture of the city that does not replace the traditional territorial analysis, Figure-Ground plan (Schwarzplan), but adds more information manifesting the quality of the spaces. The figure-ground plan represent the city's structure, through the design in black the built up space and empty areas in white; while the Red-Blue plan (Rotblauplan) represents the interior spatial and exterior spatial structure. Uwe Schröder makes a difference between the warm and cold spaces. He writes in his book *Pardie*<sup>4</sup>: "architectonic spaces, that is to say interior spaces that are derived from the architectural boundaries of walls, and which appear as such by virtue of their proportions – for example as openings, rooms, courtyards, streets, and plazas – are in principle represented in red as a "warm" spaces. Outer spaces, whether linked to landscapes or urban structures, and which by virtue of their breadth, openness and emptiness do not constitute architectonic spatial formations, appear as fields – for example as parks, housing estates, roads, railway lines and waste land – and are in principle represented as "cold" spaces in blue".

The analogical assembly allows inserting a modern architecture in the historic context re-founding and defining a relationship between human and nature (figure 10). Many interventions aim to convert inner spatial situations (red) in exterior space (blue) to define an opening up in the compressed framework of the city. It is possible only through demolition of some residential building in a state of degradation and replace them with modern architecture characterized by a big and open plant. At the end, some of these architectures are going to be choose because they define the insula of inner center with measures and proportions.

#### 4 EX DONNAROMITA'S CONVENT



Fig. 4. The portico of Donnaromita's convent

Fig. 5. The courtyard

Fig. 6. The part of building demolished

Deepening the theme in the discussion of the "Master of excellence design of the historic city" with takes place right in the neapolitan city, the study area is the isolated of Mezzocannone, characterized by different convents and monasteries. After becoming the first venue of the Napoli's university, there were many transformations of these convents ruining the typological and spatiality of these architectures (figure 6). The aims of the project in Donnaromita is to re-configure the spatiality of the ex-convent, to make accessible the building by different parts of its and at the end to re-design a part of it due to a structural problems. The new part of the ex-convent is a precious moment to experiment a modern architecture in the ancient city and the main reference is the project for Monte Carasso of Luigi Snozzi. The similitudes between the Snozzi's and the Donnaromita's project are the completion of a convent, the relation with the measures and proportions between the new and the ancient building and the dimensions of the portico. However, unlike of Snozzi's project, the design of the architecture has to resolve the relation with the strict street, the difference in level between the street and the courtyard.





Fig. 7 Naples' inner center. Grey / light grey = outside the historic center / historic center. Typological architecture= the convents and monasteries



Fig. 8 The Naples' inner center. Ocher= modern architecture. 1- A. Monestiroli The project of the Halles 2- L. Mies van der Rohe the MIT. 3- G. Grassi, The library for the Nou Campus. 4 – F. Pouillon, Residential complex in Algeri. 5- Le Corbusier, Project for Saint Diè. 6- A. Siza, Centro Municipali districto sur. 7- Aldo Rossi, San Rocco. 8- G. Terragni, Cortesella. 9- M. Ridolfi, Casa a torre. 10- L. Hilberseimer, Vertical city. 11 – F. Pouillon, Residential complex in Paris 12- L. Kahn, Dominican Sister's Convent 13- Luigi Snozzi, Monte Carasso's ancient convent





Fig. 9 Napoli, Red – blue plan, plan segment “country and city”: red = interior space; blue = exterior space





Fig. 10 Napoli and modern architecture, Red – blue plan, plan segment “country and city”: red = interior space; blue = exterior space



#### 4.1 Project for donnaromita's convent

The Donnaromita's convent is delimited by via Mezzocannone on the left, via Paladino (the first cardo of city center) on the right, Sant'Angelo a Nilo on the top and at the end via Orilia, a strict street that divides Donnaromita by Cortile delle statue. All interventions can be seen in three different horizontal parts: the basement, the courtyard level and the crowning characterized by different terraces.

In the current state, the basement is not accessible from via Paladino and via Orilia and it is disconnected both with its rooms both with the courtyard level. Therefore, the main idea for the basement is to have a space connected to the city through the enlargement of the street and with different accesses. Thanks to a jagged basement (figure 11), there are five accesses from via Orilia and re-opening the old accesses, there are two accesses from via Paladino. The basement of new part of the convent (figure 13) is characterized by an open space in dark floor, with some services and there are stairs and elevator. On the courtyard level (figure 14), there are be restored the paths around the three courtyards defining a walking open-roofed that average the relation with the courtyard and the roofed rooms. In the new part of the building, there is a roofed cantilever space, in which it is possible walking around and see what it is happening both in the basement both in the exhibition space in the upper level. In the last part (figure 15), there is the big aula on two level where is possible studying. The accesses are from the stairs that connect all the building and from the pre-existent terraces. In order, it is allowed to overlook from the upper level and see the courtyard in different highs.

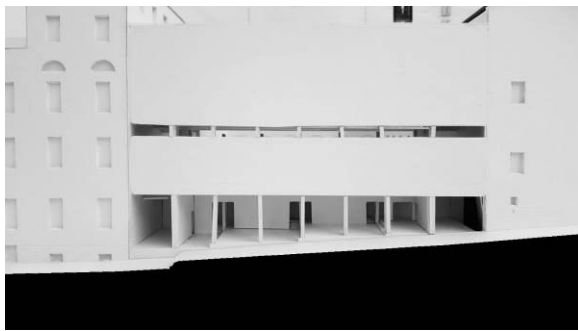


Fig. 11 A model of the new building seen by Via Orilia



Fig. 12 A model of the new building seen by the courtyard

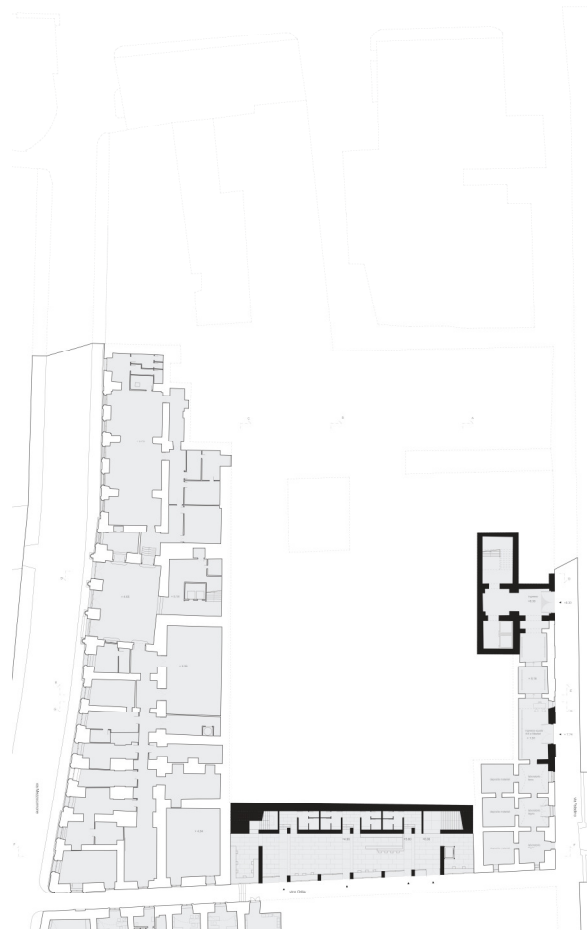


Fig. 13 The Basement plan



Fig. 14 The courtyard plan

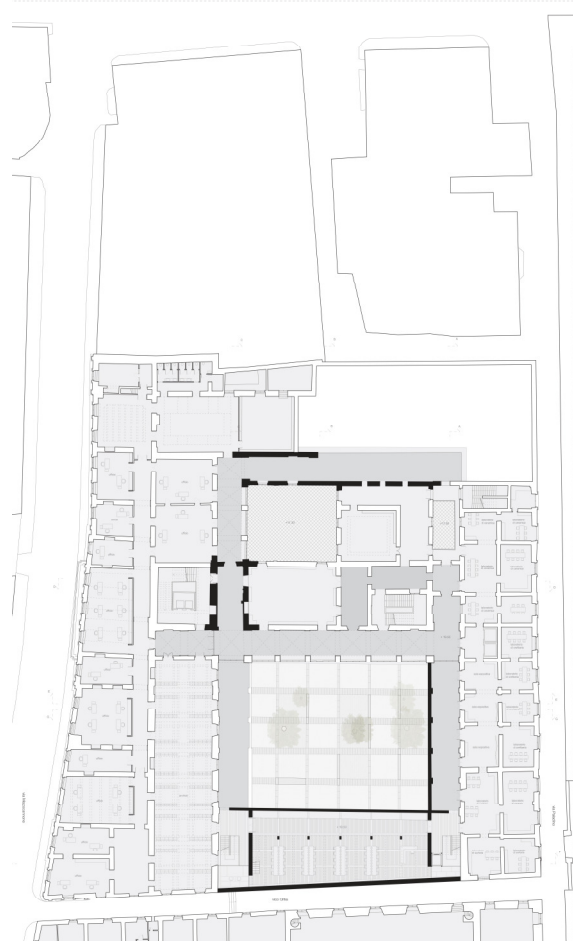


Fig. 15 The crowning plan



Fig. 16 The facade by via Orilia



Fig. 17 The facade by the courtyard

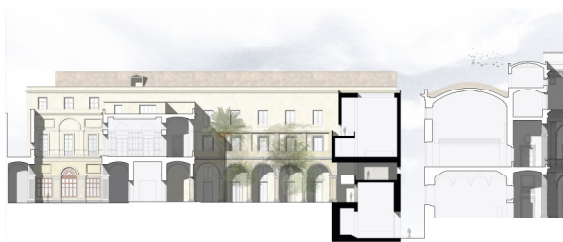


Fig. 18 The transversal section

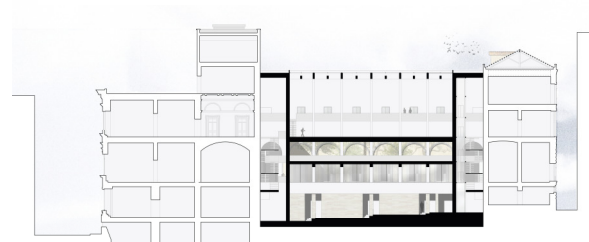


Fig. 19 The longitudinal section

#### 4.2 Red-blue plan: wall and opening

It is possible to see the spatiality of the new architecture by the small-scale plan segments of the red-blue plan. This map manifests dark or light red that depends on the degree of enclosure of the interior space. While the white line refers to “active” boundaries, for example walls. Black lines show “passive” boundaries, for example parcels, stairs etc. At the end, there is a difference between white shaded that are private spaces, like house, and black shaded that are public spaces, like plaza.



The courtyard not needs to have shaded. In the project (figure 11), it is possible observe how the new part of the building became open to city, identifying an accessibility from the strict street but at some time have a relation with the courtyard and the portico.



Fig. 20 Current state Donnaromita's convent, red – blue plan “wall and opening”



Fig. 21 Project for Donnaromita's convent, red – blue plan “wall and opening”

## 5 CONCLUSION

The study about analogical assembly investigates the relationship between the ancient city and modern architecture, the city and the university in the historic centre and the courtyard of monumental building and a new architecture. These relations are analysed in two different scales and levels. The first one that investigates the relations in the city, the red space, with the assembly of the modern architecture in relation with the cold spaces. The second ones analyses the relations between wall and opening with a magnitude of the enclosure of the interior spaces, from the most private to the most public space.

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## THE INVISIBLE LAYER: TUBERCULOSIS SHAPING THE BUILT ENVIRONMENT

Ioana Virginia Craiovan

*Faculty of Architecture, "Ion Mincu" University of Architecture and Urbanism, Bucharest (ROMANIA)*

*i.v.craiovan@gmail.com*

### Abstract

As late 19th century brought milestone discoveries in microbiology, one of them - that of the agent causing tuberculosis - was to make an impact on how people viewed buildings and settlements with regard to their influence on human health, now that the contagionist theory was thoroughly and indisputably proved. The painfully high burden of tuberculosis, with its largely spread presence, made the disease impossible to ignore and helped it carve a place in the architects' minds as well. Some of its traces are still discernible in existing architecture and in the legislation defining our built environment.

The invisible layer refers on one hand to the existence of microbiological communities in the built environment, a presence that cannot be seen with the naked eye yet can be acknowledged by other means. Then on the other hand, in contemporary design unfolding terms, architects use layers in order to organize the components of both complex drawings and projects, designing not only the process of mere drafting but also that of thinking out the future built outcome. It is this second, metaphorical meaning of 'layer' as mental construct - in our case the visualization of elements beyond our perceptive capacities - that will be employed here, in conjunction with the real yet invisible presence of infectious germs of tuberculosis in the built environment, allowing a more accurate description of the link between architecture and public health strategy since the sanitary movement era.

Therefore the paper will examine how *Mycobacteria* that cause tuberculosis took that role in the architects mind, shifting preference towards certain architectural or urban scale solutions and influencing decisions regarding layout, volumes, details and materials to be used. It will proceed by taking a close look at the key moments when development in knowledge of medicine in general, phthisiology in particular intersected that of architecture in order to enrich and enhance the latter, all taking into consideration the context of the general impact tuberculosis had on society. Tuberculosis is the malady of choice in this instance owing to the fact that built environment has been considered over time to be responsible for allowing it to cause an enormous amount of victims and suffering, but also became an instrument or notable adjuvant for healing.

The paper will also discuss the contemporary resonance of that specific way of viewing the built environment and its potential in relation with present day and future challenges regarding health in general and airborne infectious disease threats - tuberculosis - in particular. Architecture that takes into account the invisible layer studied by microbiology is today a rather rare and specialized occurrence, usually related to healthcare facilities, yet incorporating that way of thinking into architectural and urban design in general has the potential of a significant positive change. Lessons taught by anti-tubercular architecture still deserve to be learned, especially now that plenty of yesterday's intuitions or observations have been scientifically proven and understood, therefore they can be put to use in an effective manner. When designing buildings or settlements of any type, the resulting environments become themselves the creators of certain microbiological communities that can either favour and nurture or threaten human health, therefore the architects plan, knowingly or not, this invisible layer as well. Making this invisible microbial landscape layer present in the

architects' mind and considering the rapidly developing knowledge of built environment microbiology, could lead to a subtle yet powerful, higher level of quality.

**Keywords:** built environment, design process, layer, tuberculosis, germs, microbiology

## 1 INTRODUCTION

Tuberculosis as agent involved in shaping the built environment worked on several levels and on several scales by acting on human settlements as a whole or on certain of their elements, on architecture objects or building details as well as on furniture. This presentation is about the way in which architecture, landscaping and urbanism ideas were conceived in the past and could be conceived in the near future as a result of the influence exerted by the above mentioned infectious malady.

The aim of the study is twofold: firstly to shed light on a built environment of the past, that is in a significant proportion still with us, so we can understand it better and evaluate it appropriately and secondly to seek a relevant upgrade of the built environment that we produce today. I argue that tuberculosis had a noteworthy impact on our built environment and that the lessons of anti-tubercular architecture could be put to work today in order to achieve a better quality in contemporary architecture and urban planning.

The invisible layer mentioned in the title points both at the physical presence of microbiological communities in our built environment, a presence acknowledged by scientific means yet escaping our regular sensory perception, and at a mental construct associated to a set of knowledge that we use in order to devise architecture or human settlements. The complexity of the built environment calls for means of organising our design process, that include in one way or another bundles of information that will finally be integrated, but will be processed separately as well. We direct our attention to technical constraints, functional concerns, cultural input, safety regulations and others, more or less detailed according to the importance that we attach to them, and the outcome - the projected building or human settlement - is the result of this negotiation. An extra layer can result in a different outcome, as it adds extra points upon which a solution will be judged.

## 2 METHODOLOGY

A two steps structure will be used in order to sustain my statement. The first step will correlate historical, medical and microbiology knowledge on tuberculosis with the built environment and architectural theory produced during late nineteenth century and in the first half of the twentieth century - the heyday of tuberculosis affliction - resulting in the depiction of a characteristic layer. The second step will consist of updating the layer to today's scientifically validated knowledge and applying the improved layer to our existing built environment in order to see whether it enhances our perception and understanding of it, resulting in an upgraded reference for contemporary creation in our field.

## 3 THE TUBERCULOSIS ERA AND THE BUILT ENVIRONMENT RESPONSE

What I call here by the name of Tuberculosis Era is the interval that stretches between two key moments. The 1882 announcement of the discovery by Robert Koch of the agent causing tuberculosis - *Mycobacterium tuberculosis* - ended the long debate regarding the contagious nature of this disease and put an end to the largely accepted hypothesis of tuberculosis as a product of hereditary predisposition associated with poor living conditions or exaggerated effort. The 1943 discovery of streptomycin by Schatz and Waksman meant tuberculosis was, finally, entirely curable by means of chemotherapy, with an effectiveness that surpassed by far any other previously existing therapies.

In order to encompass the presence of tuberculosis in the minds of built environment professionals of the Tuberculosis Era, we should be able to understand what the malady meant for the afflicted society and what it looked like from the perspective of the sufferer. The society as a whole was

already aware of the highly elevated toll - tuberculosis made armies weaker, decimated the workforce and was responsible for the pain and suffering of countless families - therefore it was a major problem impossible to ignore and taking action in searching for remedies was unavoidable. Contracting tuberculosis during that time meant that you might no longer have the future you had imagined, as only 20-30% [1] of the tuberculosis sufferers were able to regain health. You would have to spend the rest of your life striving to survive, perhaps avoided and regarded as a potential threat by the healthy. Consequently, the idea of fighting a war on tuberculosis was no longer the assignment of the medical profession alone, but the mission of every responsible member of society. Built environment professionals were deeply involved in this war on the microscopic enemy called *Mycobacterium tuberculosis*, and now they had significantly more and better information than before on their adversary. Instead of vaguely considering tuberculosis an evil appeared as a companion to the industrial civilisation in general, now they could point exactly on the features of their built environment that made people more vulnerable to the disease and could contribute to the annihilation of the invisible opponent.

English doctor George Bodington, the precursor of the sanatorium cure, stated in his 1840 essay [2] that, in order to win against tuberculosis, cool, clean and dry air was essential. His then laughed upon observations were now refined, validated and properly explained: tuberculosis was an airborne disease, whose germs lingered in stagnant air, therefore the better ventilated a space, the lesser the chance to contract the disease. The architectural response to this went beyond hospital facilities - like the new sanatorium networks - and lead to noteworthy adjustments of various other programs, like schools and dwellings. I will mention here two early examples of open air schools: *Waldeschule* in Charlottenburg (1904) by architect Walter Spickendorff, that consisted of an area in the wood with some canopies and a few barracks for annexes and Uffculme school in Birmingham (1911) by architects Barry Peacock and Bewlay, a school made of separate pavilions with entirely glazed walls that could be totally opened. There was also a significant increase of open air spaces in dwellings, be they individual, with an abundance of porches and deep verandas, balconies, roof gardens, terraces, garden shelters or revolving summer houses, as described by Margaret Campbell in her essays on tuberculosis and modernism [3], or multi-family, like the Shively Sanitary Tenements (also known as Vanderbilt Model Tenements, 1911) in New York, by architect Henry Atterbury Smith, with open air stairs, balconies large enough to allow sleeping, the possibility of creating an air draught by the



windows positioning, roof terraces with greenery, seating and toilet rooms [4].

Figure 1. The Vanderbilt Model Tenements, from *The Popular Science Monthly*, 1912

Around 1890 it was showed that sunlight acted as a germicide on the *Mycobacterium tuberculosis*, that could survive not more than a few minutes in direct sunlight, opposed to months in dark, shaded places. Well sunlit interiors represented now more than mere modernity, comfort and generally

speaking healthy places, they also meant less tuberculosis causing germs. This idea went hand in hand with modernist features both at the building scale and at the city scale. These were assiduously predicated, among others, by Le Corbusier who explicitly mentioned tuberculosis in his line of reasoning, as for instance in articles 9 and 26 of the Athens Charter [5]. In the first category are worth mentioning the extended use of horizontal windows *en bandeau*, large windows to entirely glass walled houses and even the provision of places for sunbathing. At the human settlement scale it contributed to conceiving an urban tissue that consisted of isolated high rise buildings floating in greenery and to putting forward legislation that would make the presence of sunlight inside buildings mandatory for a minimum specified time.

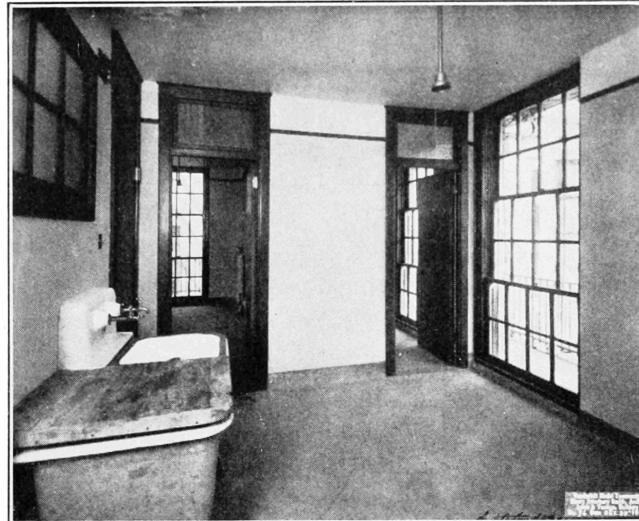


Figure 2. The Vanderbilt Model Tenements windows, from *The Popular Science Monthly*, 1912

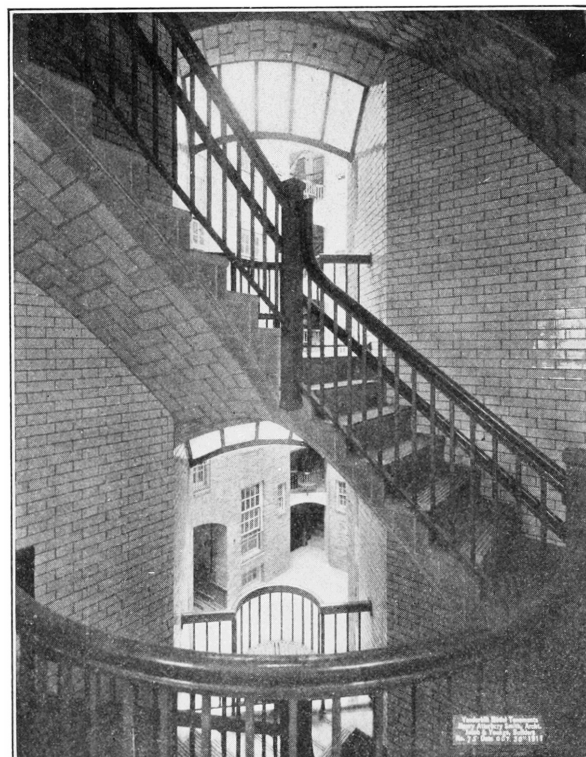


Figure 3. The Vanderbilt Model Tenements open air staircase, from *The Popular Science Monthly*, 1912

In order to avoid tuberculosis contagion it was also necessary to thoroughly clean and disinfect the surfaces inside the buildings and carefully manage dust, that could act as a vehicle for the germ. This led to a preference toward certain finishing materials - glazed ceramic coverings, terrazzo, linoleum -

for flooring or even wall and ceiling cladding. Dust gathering and difficult to clean ornaments were not a good option in this context, and specific details such as rounded joints and corners or wall mounted radiators and furniture became popular outside medical buildings as well.

Besides the quest for air, sun and cleanliness, one more prominent feature of the antitubercular movement was associated with the built environment: its particular relationship with the natural landscape. As during the Tuberculosis Era the invisible layer managed by microbiology was not yet grasped with regard to this characteristic, it will be detailed in the next step.

#### 4 THE ANTITUBERCULAR BUILT ENVIRONMENT IN THE LIGHT OF TODAY'S KNOWLEDGE. APPLYING THE INVISIBLE LAYER

During the Tuberculosis Era there were two components in the strategy of dealing with the disease that were related to the built environment: the first, detailed above, consisted of a quest to eliminate the infectious germs and the second had as focal element supporting or enhancing the body's natural defence system by a specific, new lifestyle that had to be accommodated. If we follow the evolution of the sanatoria for pulmonary tuberculosis we will notice that, although medical explanations of the mechanisms by which certain cures seemed to be more effective than others varied largely, there was one constant in the design of this built medical instrument: a strong relationship with specific kinds of landscape. One such typical landscape was the pine forest, be it originally in the mountains, as in the famous Swiss sanatoria of the time, or recreated in order to generate the illusion of the alpine environment, as in the case of Beelitz, close to Berlin (1898) [6]. The pine forests close to the sanatoria were part of the treatment, as the patients were usually supposed to take long walks and spend time there whenever that was possible. Explanations in the specialist literature of the time favoured the beneficial effects of ozone or the advantageous psychological effect of the beautiful landscape. While contemporary research supports the role of the positive psychological effect that nature has in healing [7], a series of recent studies bring light on the existence of physiological benefits as well. Some such effects were found in natural landscapes only, not in urban parks, and the mechanisms described were attributed to active ingredients such as environmental biodiversity, microorganisms (*Mycobacterium vaccae* was found to have some positive effect on tuberculosis sufferers) and phytoncides (natural chemicals released by plants as a response to interaction with microbes) [8].

Applying the updated invisible layer on existing components of the built environment leads to a different perspective, hence different design decisions. If we take for instance the *Erlenpark / Parcul Sub Arini* in Sibiu, a public park that came into being in late nineteenth century by bringing a few designed elements into what was then a natural area along the valley of a small stream, we can notice that it stretches out without discontinuity toward a nearby wood where we find today some sparse recreation areas and the only improvement outside the first segment of the park is a track. The invisible layer informs us that here we have the rare opportunity to maintain a beneficial biodiversity, microorganisms and natural chemicals that will not occur in ordinary city parks and, instead of crowding the place with new alleys, ornamental flowers, furniture and various constructions, we should rather resort to the minimum interventions that can keep the place safe for users and make use of the existing transition from city park to forest.

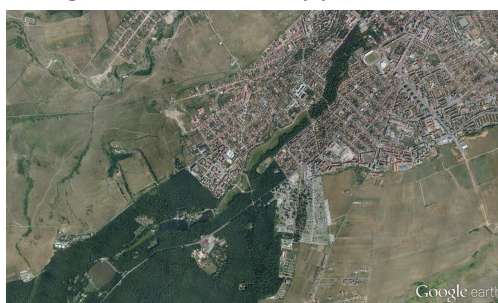


Figure 4. *Erlenpark / Parcul Sub Arini* in Sibiu, Google Earth image, 2016

Since the Tuberculosis Era, research has been extended to the study of microbiological ecosystems, with the important upgrade that it is not focused any more on human pathogens only, but on beneficial microorganisms as well and on the complex interaction of the two. It has been established that the architectural design, the materials a building is made of, the way it is ventilated, the interior climatic parameters and the type of human occupancy all influence the diversity and structure of a specific building microbiome [9] that will, in turn, have an impact on users health. As Jessica Green, who coined the term "bioinformed design" said, "we're designing indoor microbial ecosystems right now, but we're doing it unintentionally"[10]. After mastering the invisible layer by the means listed above, a next step to investigate could consist of making an active use of it, in order to promote human health and a better building performance by deliberately planting certain species and strains [11] that would inhibit the growth of unwanted fungi, occupy a niche otherwise possibly colonized by pathogens or act as sentinel for monitoring the condition of a building.

## 5 CONCLUSIONS

Tuberculosis gave rise, in its heyday, to a preoccupation of built environment professionals to determine and put into practice effective ways of hindering its spread by using techniques informed by the microbiology discoveries, resulting in a preference toward certain design features and also in legislation that enforced specific solutions on the built environment. In line with the medical and microbiology knowledge of the time, their efforts were directed towards annihilating airborne pathogens. The contemporary counterpart of that line of thinking received a significant upgrade from the recent scientific progress in the field, by becoming aware of the fact that the invisible layer of microorganisms harbours allies as well as enemies, a complex reality that was only unconsciously used by the antitubercular movement. Today's bioinformed design aims at deliberately creating beneficial microbial communities in our built environment by architectural design choices, while future research questions tend to tackle the possibility of actively cultivating a convenient invisible layer.

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## **IN-BETWEEN RURAL AND URBAN - RESEARCH AND DESIGN ABOUT TRANSITIONAL SPACES BETWEEN URBAN FABRIC AND FARMLAND: THE CASE STUDY OF BERGAMO**

**Marco Bovati**

*Department of Architecture and Urban Studies (DASU)  
Politecnico di Milano, Via Bonardi n. 3 - 20133 Milano (ITALY)  
marco.bovati@polimi.it, www.dastu.polimi.it/*

### **Abstract**

Facing the widespread diffusion of urban agriculture phenomena, the urban and architectural design culture, is questioning itself about its role in defining new in-between spaces, as transitional places between urban fabric and farmland.

Urban and rural strict relationship, in fact, implies a context of proximity in which are present several projectual themes concerning the in-between: the necessity to manage the multiscalarity of the relationship; the control of complex relationships between farmland and urban fabric used in very different ways; and, above all, the aim to design transitional spaces between two different environments.

The urban agriculture presents a set of interesting cases (urban gardens for the social gardening, urban farms, agricultural parks) that can produce original spaces, along with renewed uses of urban areas and public spaces.

The tool chosen to investigate experimentally this complex relationship and to implement the design of original and complex forms of space, which can be originated from the interaction between urban and rural, is the practice of the architectural project. Therefore, the formulation of possible physical-formal configurations for the areas involved, becomes a research tool capable of anticipating unprecedented spatial situations.

In the recent past the phenomena of urban agriculture has shown several positive effects on the quality of urban and social life, in the sense of: contrast of land consumption and induction of processes of urban regeneration and architectural recycle of abandoned productive soils; creation of food and environmental benefits, as result of the production of proximity and of the direct relationship between urban and natural spaces; positive social impact on the quality of life of the communities involved. This research aims to investigate, in particular, the effects in shaping of new urban and rural in-between spaces, and the possibility to develop new theoretically and operative design instruments, to apply in these situations.

A working group in the framework of a research called "RE-CYCLE Italy. New Life Cycles for Architecture and Infrastructure of City and Landscape" (PRIN 2013-2016), has dealt with this issue in a specific urban field. The case study is the city of Bergamo, a small sized city in the north of Italy, where the control of growth and an important impact of the landscape component, play a very important role. In this paper we intend to present part of the results of this research, that has involved eleven Italian universities – among which the Politecnico di Milano – and, as partner, several foreigner athenaeums. The research proposal obtained a ministerial loan from Italian state, in 2012.

The research outcomes are expressed both in the form of theoretical studies than in the form of different descriptive maps and projectual applications. In more detail, they were produced:

descriptive maps of urban agriculture presence, and maps showing the spread of the phenomenon of abandoned areas; interpretative diagrams of relational dynamics between urban fabric and farmland, and interpretative maps of structural patterns that determined the shape of the rural areas; maps that show the transformative strategies for some of the sample areas identified in the urban body in close contact with agricultural fabric; design experiments conducted through the development of transformative proposals, both in the framework of the research team, that in connection with a master graduate laboratory.

The aim was also to focus, through a theoretical and analytical approach, but accompanied by examples, different design situations. These have been summarized according to three principles capable of orienting intervention strategies, then applied in the research. The principle of “percolation”, aimed at the construction of a network or light framework of public spaces in large private and productive rural areas. The principle of “tessellation”, which consists of the productive and micro-productive agricultural use of small and middle-sized open spaces, embedded in the body of the consolidated city.

And, above all, the principle of “hybridisation”, aimed at the definition of in-between spaces and borderlands, i.e. margins of interference and mediation between consolidated urban structure and farmland.

**Keywords:** urban farming, food security, sustainable regeneration design, recycling, in-between spaces

## 1 RE-CYCLE ITALY

The work presented in this paper is part of a wider research project called: "*RE-CYCLE Italy. New Life Cycles for Architecture and Infrastructure of City and Landscape*", (PRIN-MIUR: Progetti di ricerca di Rilevante Interesse Nazionale - *Research Projects of National Interest* - 2013-2016).

The research proposal obtained a ministerial loan from Italian state, in 2012 (Ministry of Education, Universities and Research) and involved eleven Italian universities – among which the Politecnico di Milano – led by IUAV Venezia (with Renato Bocchi as national coordinator) and, as partners, twenty-nine foreigner athenaeums and twelve Italian institutions (Fig. 1). This research *“intends to explore the operative impact of the recycling process on the urban system and traces of urbanization that mark the territory so that these ‘materials’ can once again become part of a unique metabolism together with the environmental system. The idea of conservation of an “urban resource”, similar to the conservation of forests and rivers, naturalizes the phenomenon, but represents a fundamental step in the policies and the designs for the city. It recognizes the existence of a progression, from birth to old age, but also reacts to the decline by supporting the possibility and the utility of projects, policies and practices capable of activating new life cycles.”* [1]



Figure 1. National and International partners of the “RE-CYCLE Italy” research

The aims of the research project are: building an inter-disciplinary framework of knowledge on the topic of recycling; setting up comparisons between similar situations in other realities in Europe; developing a joint research with shared objectives with institutions, companies and administrations in Italy; defining tools for building the transformation, and building strategies and methods for consolidating recycling as a design practice; devising recycling design exercises, apply on various case studies in different Italian territories; synthesize and communicate the work done.

In this framework the work of Politecnico di Milano unit (UR), leaded by Ilaria Valente as scientific director, is named: *"The project of grounds, fabrics and buildings among uncertain destinies and operable resources."* The Milan UR research is related to the issue of recycling of construction and architectural elements located in urban dwelling areas, focusing the definition of design tools and territory management policies applicable to the lifecycle of new fabrics, constructions, land for production present in national and Lombard context.

*"The goals of the Milan UR coinciding with three research products:*

- 1. The setup of an atlas of Lombard and Padan shrinking city, resulting from a descriptive and interpretative practice of the dwelling frameworks involved;*
- 2. The definition of the issues arising from the reduction/reuse and recycling processes of low technological and spatial content production areas existing in Lombardy, with particular reference to their relationships with the other elements of the dwelling area and downstream comparison with research and projects in a European and an international context;*
- 3. The definition of multidisciplinary explorations implementing the knowledge of the financial, regulatory, technological ecological-environmental constraints in architectural and urban design, open to the dialogue with the actors of the transformations and the different competing skills concurring to a redefinition of the process used to shape the process in the architectural and urban development practices and in their implementation in specific contexts."* [2]

## 2 RESEARCH TOPIC

A working group in the wider framework of the research has dealt with this issue in a specific urban field. The case study is the city of Bergamo, a small sized city (population 120.000) in the north of Italy, where the control of growth and an important impact of the landscape component, play a very important role. In this paper we intend to present part of the results of this research, concerning a specific topic: *the role and the design strategies for in-between spaces among rural and urban*, focusing on a case study area in the north-est of Bergamo.

Urban and rural strict relationship implies a context of proximity in which are present several projectual themes concerning the in-between: the necessity to manage the multiscalarity of the relationship; the control of complex relationships between farmland and urban fabric used in very different ways; and, above all, the aim to design transitional spaces between two different environments. The urban agriculture, as already mentioned, presents a set of interesting cases (urban gardens for the social gardening, urban farms, agricultural parks) that can produce original spaces, along with renewed uses of urban areas and public spaces.

Hence, the design experimentation strictly focuses on urban limits, boundaries, in-between spaces, that are in in very close contact with productive agricultural soils, where the problem is the change of scale and the proximity of different spatial conditions. These areas present specific problems, strictly referred to the specific kind of open spaces here could be settled: medium scale rural plots are usually private and lead by a farm; urban orchards, usually very small, are often public or collective soil, allocated to private citizens; open spaces included in urban fabric could have several owners; gardens and parks are usually public and leaded by local government.

All of this makes, the in-between space design, really complicated, because it makes necessary to relate the design strategies with different people, different stakeholders, various times of using, different scales and spaces.

### 3 AIMS AND METHOD

This research aims to investigate, in particular, the effects in shaping of new urban and rural in-between spaces, and the possibility to develop new theoretically and operative design instruments, to apply in these situations. The tool chosen to investigate experimentally this complex relationship and to implement the design of original and complex forms of space, which can be originated from the interaction between urban and rural, is the practice of the architectural project. Therefore, the formulation of possible physical-formal configurations for the areas involved, becomes a research tool capable of anticipating unprecedented spatial situations.

The tool chosen to question the complex rapport between architectural form and urban experience is the cognitive and transformative practice of architectural and urban design. From the methodological point of view, we believe that the original and complex forms of space, which originate from the interaction between urban and rural, may be investigated experimentally through the practice of architecture. The latter, by questioning the urban-rural relationship through the formulation of possible physical-formal configurations for the areas involved, becomes a research tool capable of anticipating unprecedented spatial situations.

The design is considered as a strategic-functional operator, useful for the rethinking of the forms of urban space, capable of supporting and integrating historical-critical and descriptive approaches. This tool, despite some recent critical positions which tend to downscale its role, seems to be the only one capable of anticipating the spatial effect of the modifications as a consequence of programmatic and procedural hypotheses.

The design action, pursued through architectural practice in contexts of proximity and contact between urban and rural, displays a variety of themes which go from the multiscalarity of the intervention to the need to respond to new functional programmes. We are referring to a variety of themes which ranges from the search for unprecedented spaces, such as places of transit and mediation between different spatial conditions, to the recognition and assignment of identity to places, and on to the control of the relationships through the introduction of elements which can order and recompose spaces, and which are capable of establishing complex relationships between farmland and urban fabric used in very different ways.

We can thus single out scenarios which anticipate planning interventions in, or at the edge of, areas devoted to urban agriculture. These interventions can be summarized according to some principles capable of orienting the strategies: the principle of *percolation* (construction of a network or light framework of public spaces in large private and productive rural areas); principle of *hybridisation*, (definition of borderlands, i.e. margins of interference and mediation between consolidated urban structure and farmland, and places of spatial hybridization capable of controlling the rapport between spaces with different scales and potentialities); the principle of *tessellation* (productive and micro-productive agricultural use of small and middle-sized open spaces, embedded in the body of the consolidated city).

Especially, for what concerns the second strategy, rural areas included in urban fabric or on the limit of it, create boundaries and interaction places between rural-productive and urban-residential environments; this makes necessary to develop in-between design strategies.

These areas are internal limits between urban and rural, where is possible to design public in-between spaces and develop food production.

We're facing two different kinds of spaces, with different scale and uses. They meet on the linear edge that divides and makes possible the relationship between them, thanks to a liveable thickness.

Therefore, the topic is the design of interposed borderlands with the role of mediation and transition, which by vocation tend to take on a collective character. Are opportunities that make possible a discontinuous and osmotic welding project between urban fabric and proximity rural, they imply to design, according to a collective vocation the "space between things."

Here is possible to set up different functions that can activate the relationship between rural and urban: retail trade of horticultural and agricultural products, grown in the vicinity of the market; leisure spaces for the community and the neighbourhood; restaurants with local "carbon neutral" goods; playgrounds for children; areas with educational vocation; slow and sustainable transport systems that can find, along the edges, the ideal place to be located.

The research outcomes are expressed both in the form of theoretical studies than in the form of different descriptive maps and projectual applications. In more detail, they were produced: descriptive maps of urban agriculture presence, and maps showing the spread of the phenomenon of abandoned areas; interpretative diagrams of relational dynamics between urban fabric and farmland, and interpretative maps of structural patterns that determined the shape of the rural areas; maps that show the transformative strategies for some of the sample areas identified in the urban body in close contact with agricultural fabric; design experiments conducted through the development of transformative proposals, both in the framework of the research team, that in connection with a master graduate laboratory.

#### 4 URBAN FARMING

The phenomenon of Urban Farming shows, over the last few years, a widespread diffusion. This is of great interest due to the critical aspects and to the opportunities determined by the condition of proximity between two very different "natures" of space and of land – the rural and the urban – and by the different degrees and modalities of combining them.

The definition of Urban Farming expressed by the United Nations Development Programme (Smit et al., 1996) says that it is *"An industry that produces, processes and markets food and fuel, largely in response to the daily demand of consumers within a town, city, or metropolis, on land and water dispersed throughout the urban and peri-urban area, applying intensive production methods, using and reusing natural resources and urban wastes to yield a diversity of crops and livestock"*. [3]

In essence, Urban Farming consists of the production, transformation and marketing of food and fuel from urban or peri-urban land, in response to the demand of a settled community (city or metropolis); according to FAO [4] this activity directly involves about eight hundred million people spread in five continents.

The terms of the debate about the rapport between city and farming, just as the elaboration of hypotheses on urban farming as coexistence of living functions and agri-food production, have been present for some decades in the architectural debate. This can be related to the contribution of some authors and designers who have anticipated scenarios rich in intuitions and anticipations.

In this regard it should remember the basic contribution of Patrick Geddes, with his concept of bioregionalism, re-elaborated by Alberto Magnaghi in his research about the "Progetto locale". So as the researches and projects by Kisho Kurokawa (Agricultural City, 1961), Yona Friedman (Architecture of Survival, 1978), Andrea Branzi (Agronica, 1995) Pierre Donadieu (Agripolia, 1998 e segg.), Richard Ingersoll (Agri-civism, 2004) and Aldo Cibic (Microrealities, 2006). [5]

The presence of Urban Farming inside urban fabric, can take on typologies with different forms and scales, as, *urban farms* (professional farming activities located in the city), *agricultural parks* (large portions of land safeguarded in order to integrate the environmental, economical and agricultural-food aspects and the cultural and social aspects) and *urban orchards* (or social gardening).

They show several consequences on different topic: social life of communities, territorial assets. There is a direct connection with the problems of food supply and of food security, at the same time there is an important role concerning the innovative and sustainable use of free time. And also Urban Farming can play an important role in countering land consumption and can act as antidote, although partial, to the practice of agricultural abandonments.

Furthermore, there are interesting effects concerning urban and architectural design, these are referred to the spatial structures of cities and more generally to the idea of urbanity, which may be profoundly renewed by the rapport between urban and rural.

As much important are the involvements about the interventions of regeneration and transformation of decommissioned or abandoned areas, which thanks to the introduction of productive or micro-productive agricultural functions may become opportunities to experiment new forms of space related to the integration of different land uses.

## 5 THE CASE STUDY OF BERGAMO

The city of Bergamo is characterized by specific geographical and morphological conditions. On the limit of the pre-Alpine system, it presents a first pre-Roman settlement on an "orphan" hill, and it expanded by lying down to the plain and describing a semi-circle around the old medieval city on the hill.

Its specific condition is to be located in a place of transition between the plain and the hills, and to configure itself as a threshold for the reality of the pre-Alpine river valleys, very populous and productive. (Fig. 2)



Figure 2. The structure of Bergamo and the "Martinella" area

Although affected by the typical urban growth phenomena of the average small city in the period between the mid-nineteenth century and the end of the twentieth century, some geographic and political factors have made it possible to contain this growth, which is characterized according privileged axes and generative nodes but without assuming completely the spread that urban characters own of the last decades of the last century. This still allows you today to have an urban form almost always recognizable by its specific morphological features and its territorial limits.

This structure shows today some phenomena of abandoned industrial and agricultural spaces, also included in the urban fabric, which offer research and experimental design opportunities, in a very consistent manner with the themes of the research presented in this paper.

The first descriptive drawings showing the relationship between the built-up area, the abandoned industrial areas and the open spaces included in urban fabric or adjacent to it; of these we wanted to investigate the aspects of agricultural use, though still present, or the condition of abandonment. (Fig. 3)



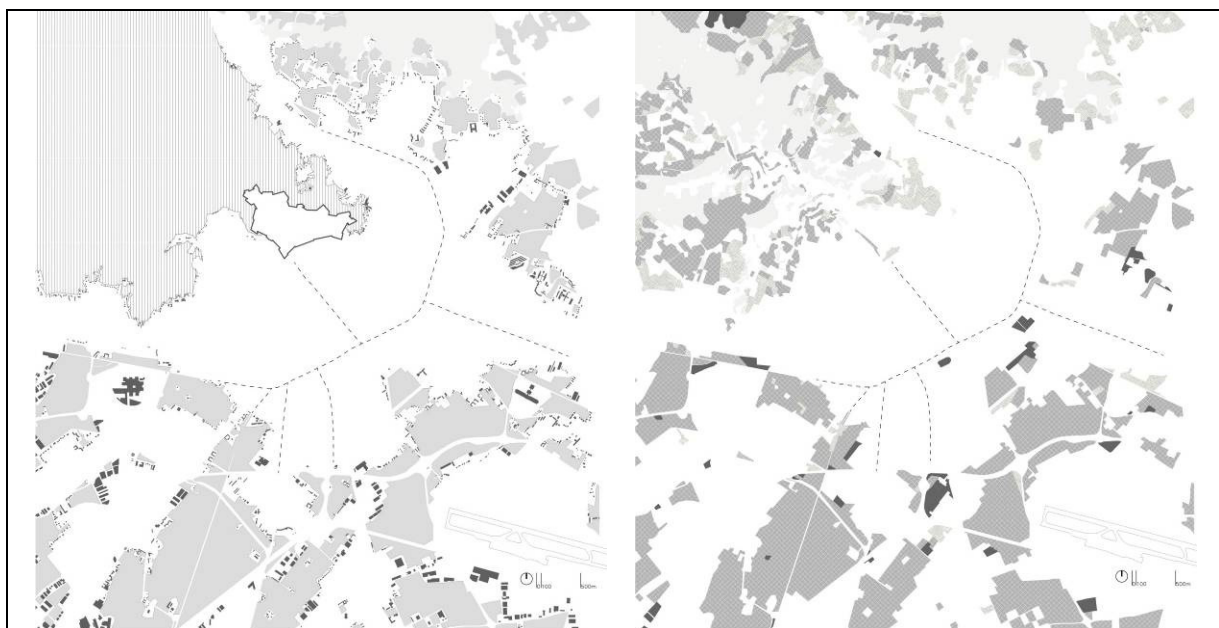


Figure 3. The open spaces and the city of Bergamo: limits and use

Beyond that, we have questioned the morphologies and signs that, during the time, have helped to structure the shape and to define the extent of such open spaces.

At the root of one of the pre-Alpine river valleys who are present in the Bergamo area, Seriana Valley, it was possible to find an area called the "Martinella", extremely interesting for the purposes of design experimentation. It is an agricultural plot of average size (about 65,00 ha), located in the proximity of a road network infrastructure node, that articulates the road relations with the Valley and their engagement on the outer ring road system. (Fig. 4)

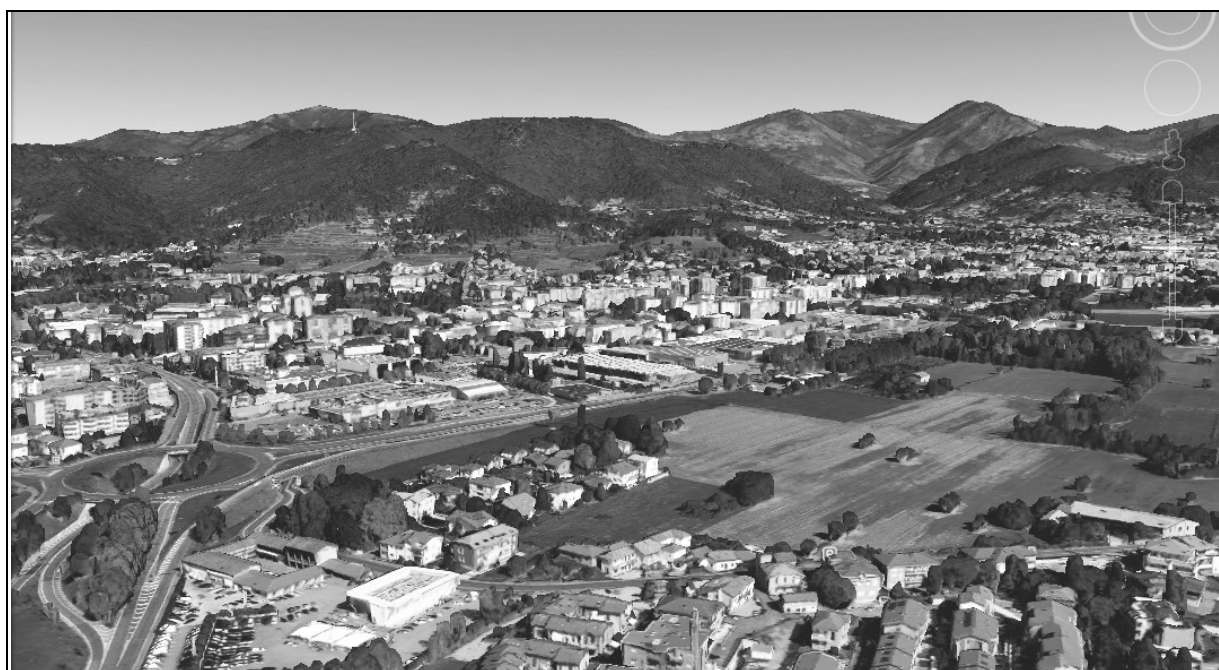


Figure 4. Martinella area: view from south, Google Earth

This area is also in a special boundary conditions, or margin, between the cities of Bergamo and the surrounding municipalities settlements (Gorle, Torre Boldone). (Fig. 5)

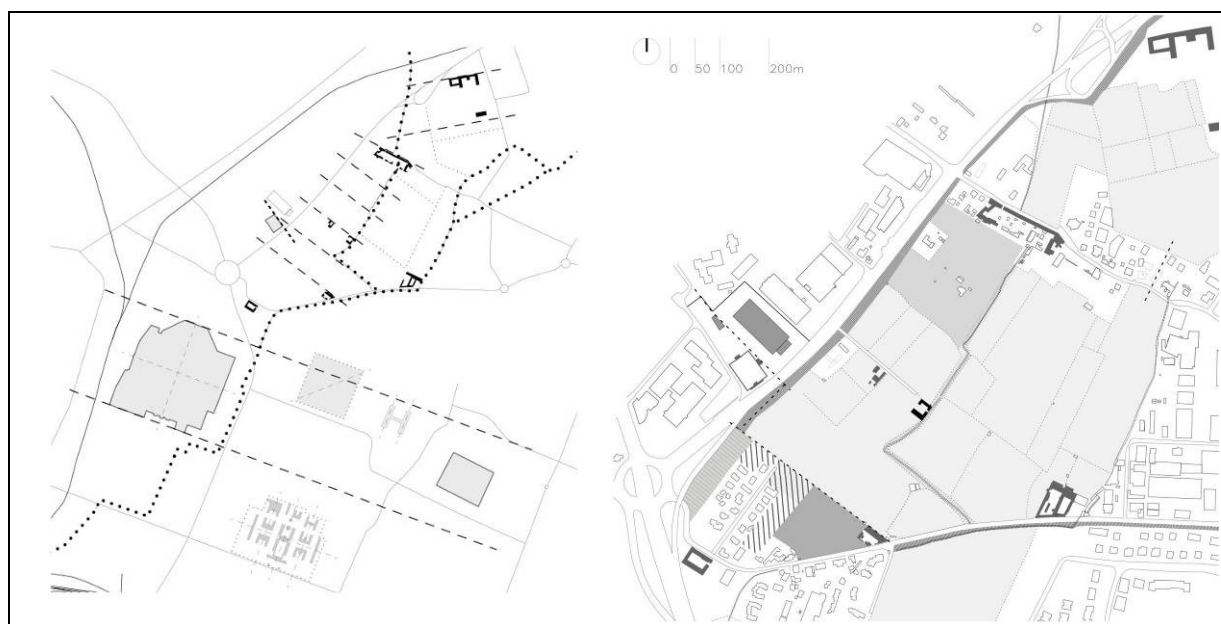


Figure 5. Martinella area: structure of relationship and first project diagram

The provisions of the last urban planning tool (PGT – Piano di Governo del Territorio, Comune di Bergamo, 2012) has planned for this area the acquisition by the administration and its transformation into an urban park, called "Stanza verde della Martinella" (Martinella Green Room). The special ownership condition of the area, however, seems to have led to an obstacle to that perspective, so much so that at present the only possible destination seems to be to confirm it in the role of productive rural plot.

The area has been affected, however, in the recent past, by some erosion phenomena, determined by the construction of several residences along its southern margin. Inside the area there are also some interesting example of abandoned traditional architecture (*Cascina lombarda* - Lombard farmhouse).

What we can found, therefore, is a scenario in which the initial area erosion, halted without a coherent completion, seems now replaced by the idea of a restart of rural productive activity. This poses a very significant design theme that is expressed on at least three levels: the consistent completion of the built-up spaces on the south margin of the area; the construction of the transition space (in-between) among residential area and agricultural soil; the construction of a system of relationship between the whole area and the wider context, made by the margin design, and by the construction of pedestrian and cycle connections. This can allow the use of the area - and in particular of the abandoned farm in it - as a part of wider agricultural park, in which is possible to plan and design rural *loisir* activities, reception activities and environmental recreation activities.



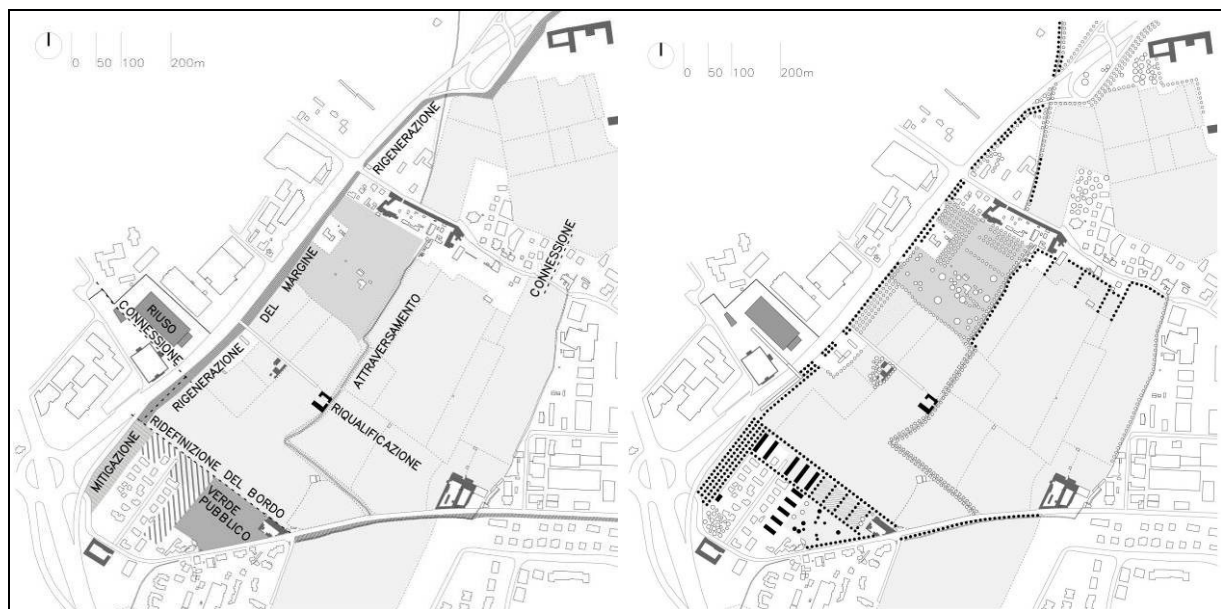


Figure 6. Martinella area: actions and masterplan [6]

## 6 CONCLUSIONS

The project proposal has been moving in the direction of planning a series of actions (Fig. 6), coordinated and consistent, enabling the relaunch of Martinella and this part of the city. This has been done through a work on transitional spaces, which has as stated purpose achieve compatibility between the production functions and the agricultural park, noting the need to complete, with a consistent design, the residential building that has affected this portion of open space in the recent past.

This has resulted in a series of planned actions focused on the area and on its relationship with the surroundings. These range from the definition of southern margin fabric, through the completion and implementation of a public park, to the redefinition of the northwest edge that will line to the infrastructure. This has been done with the margin regeneration, with the design of spaces of transition, and with the design of a pedestrian and cycling infrastructure, that allows to cross the road, linking the area with the nearby neighborhood.



Figure 7. Martinella project: view from the south

These are supplemented by the redevelopment of a rural building to be used for cultural, environmental and touristic activities, and the restoration of the canal that runs through the area, that can be lined by a sustainable mobility paths system.

Finally, in the area behind the roadway, a vertical building marks the presence of the area and stands as landmark able to build a perceptual relation to the urban scale. (Fig. 7)

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## METHODS OF ANALYSIS AND EVALUATION: CURRENT HOUSING AND URBAN CONDITIONS IN BRAZIL

Katrin Rappl<sup>1</sup>, Leandro Medrano<sup>2</sup>

<sup>1</sup>*School of Architecture and Urbanism (FAU), University of São Paulo (USP), (BRAZIL)*

<sup>2</sup>*School of Architecture and Urbanism (FAU), University of São Paulo (USP), (BRAZIL)*  
*katrappl@gmail.com , medrano@usp.br*

### Abstract

Recently, in Brazil, there was a great public investment for housing construction, mainly related to *Programa Minha Casa, Minha Vida* (My Home, My Life Program – PMCMV). The program was linked to the federal government and aimed to reduce the national housing deficit through the construction of 6.7 million units in the country, as well as to establish itself as anti-cyclical economic measure due to the 2008 international crisis. Currently, it is possible to observe the results from the first and second phase of this program, launched in 2009 and 2011 respectively. It is noticeable that, since the program's launch, in 2009, until now, the quality of the projects and their connection with the city are left aside, which aggravates even more the Brazilian social and territorial problems and has generated several critical reviews in the specialized literature. On the one hand, it must be recognized that over the last 15 years there was progress in public policies, urban instruments and housing construction in the country, related to the approval of the City Statute in 2001, the creation of the Ministry of the Cities in 2003, the approval of the National Housing Policy in 2004, the creation of the Municipal Master Plans in 2006 and the launch of PMCMV in 2009. However, most of the results have not produced quality and democratic projects, indicating that there are still barriers from architecture and urbanism perspective to be overcome in the country. From this context, this article presents a critical analysis about the current housing and urban conditions in Brazil, since these two fields clearly cannot be dissociated. Furthermore, it addresses the field of methods of analysis and evaluation in the search for alternatives to the lack of architectural and urban quality in housing developments. It considers the hypothesis that, the currently existing tools for assessing social housing projects in Brazil are insufficient for their application in the required scale by large national programs, like PMCMV. It is a critical, methodological and disciplinary impasse, which led to the following questions: (a) How to claim for autonomy in processes based on decisions of economic policy linked to global systems?; (b) How to enter the critique in large public policies (such as PMCMV)?; (c) How to make the social housing architecture contributes to an urban *virtuality* (the city as *oeuvre* in Lefebvre's terms)? In this context, three recent housing projects built in the city of São Paulo and its metropolitan region were selected for case study. Some of them move away from the key trends and solutions provided by PMCMV and point out to a new vision of Brazilian architecture in the housing field, which has historically been influenced by schemes related to architecture and urbanism of the Modern Movement. The valuation criteria used for the analysis and critical assessment prioritizes the project's "urbanity", as well, as their potential to generate contexts of Social Innovation (SI). This paper concludes that the scale and characteristics of these ongoing experiences in Brazil have new disciplinary perspectives, especially in relation to criticism, since the global economy, social problems, urban policies and architecture end up having their inter-relations accelerated and intensified - and the gap for a *social architecture* in the twenty-first century persists.

**Keywords:** Social Housing, Architectural Criticism, Methods of Analysis, Social Innovation.

## 1 INTRODUCTION

In Brazil, due to its historical and economic formation, the comprehension of the relation between housing policies and urban development is fundamental to the understanding of Brazilian cities, especially its large metropolises. The expansion of its urban areas, which were intensified by the twentieth century, occurred in parallel to the accentuated expansion of its housing needs - which have not always been followed up by political intentions, by economic resources and the necessary technical solutions. The urban space resulting from this process is revealed in the current daily life of Brazilian cities: extensive precarious and informal regions contiguous to limited areas resulting from the "official" planning, sorted by master plans, zoning laws and building codes. The consequences of this singular spatial condition sharpen the complex relation between the territory and society, and characterize the country's urban dynamics; since throughout the national territory the urbanized space reveals and accentuates the disgust of a socially divided country.

When the first initiatives aimed at public housing appeared in the 1930s, the relation between the social housing territory (state-controlled) and the city's real estate market (controlled by the private sector), turned to be an essential factor to the country's urban dynamics and economy. This relation was intensified from the 1970s, when the standardized model of large housing projects was spread across the country by the housing policy implemented during the military dictatorship. The urban formulations of those projects have elapsed – in a not always orthodoxy way - from the modernist Central European experiences assimilated by Brazilian architects since the 1930s [1]. More than three decades after the end of the military regime, the advances in the field of urban policies were significant, however, the territorial configuration of Brazilian cities is still guided by segregation and the lack of an urban-space which contributes to a more equitable social reality. Moreover, public policies as well as housing policies have not yet found the theoretical and technical tactics to act in the *urban space* – in order to understand it in the terms formulated by Henri Lefebvre [2], as *virtuality* in a changing society.

Since 2009, as part of counter-cyclical economic measures resultant from the global crisis of 2008, the Federal Government created the program My Home, My Life (PMCMV – *Programa Minha Casa, Minha Vida*), whose goal was to build housing units through private enterprises financing. So far, the PMCMV has built about 4 million homes, and there is no doubt about the economic and administrative scheme efficiency, which allowed this cooperation well engendered between the private and the public sector. However, the PMCMV architectural and urban results have been widely criticized from the specialized literature. The projects' distance in relation to urban areas with adequate infrastructure, the low density, monofunctionality and also the absence of urban values that exceed the legal regulation of the private housing unit, are some of the most recurrent criticisms of the program. This article aims to understand the criticisms to PMCMV in the light of the formative matrices of national architecture and urbanism, also, intends to introduce the discussion on evaluation procedures, that could contribute to the improvement of the program.

## 2 MY HOME, MY LIFE PROGRAM | BRAZIL

My Home, My Life Program (PMCMV) is a federal funding to encourage the construction of housing units in Brazil in order to reduce the housing deficit and at the same time to stimulate the economy through the construction industry. It adopted a model based on a partnership between states, municipalities, federal government and entrepreneurs (private initiative). The program is in its seventh year of existence, with two phases already completed and the third one launched this year. Since its initial launch, in 2009, until the end of 2015, 4.16 million houses were contracted and 2.5 million units were delivered. The total investment reaches 84.7 billion dollars (dollar 3.4 *reais*), until now, an unprecedented amount of money invested in the housing sector in the country's history.

The first phase of the program (PMCMV1) was announced in 2009, with the initial objective of encouraging the construction of 1 million units by the end of 2011, for families from 0 to 10 minimum wages, with a 10 billion dollars subsidy [3]. The number of units, type of funding and interest rates were divided according to the family income brackets (Table 1) [3] [4].

Table 1 – Initial target PMCMV1		
Income Tier (US\$)	Housing Units	Interest Rate
1 (0 – 410.3) 0 to 3 minimum wages	0.4 million	0%
2 (410.3 – 820.6) 3 to 6 minimum wages	0.4 million	5% - 6%
3 (820.6 – 1,367.6) 6 to 10 minimum wages	0.2 million	8.16%
<b>Total</b>	1 million	
Source: Ministry of the Cities, Law n°11.977/09, CAIXA, minimum wage to US\$137 (2009).		

The second phase of the program (PMCMV2), announced in 2011, further expanded the role of the housing sector and had as initial purpose the construction of 2 million homes by the end of 2014<sup>1</sup> (Table 2) with a 37 billion dollars investment [5].

Table 2 – Initial target PMCMV2		
Income Tier (US\$)	Housing Units	Interest Rate
1 (0 – 470.6)	1.2 million	0%
2 (470.6 – 911.8)	0.6 million	5% - 6%
3 (911.8 – 1,470.6)	0.2 million	7.16%
<b>Total</b>	2 million	
Source: Ministry of the Cities, Law n°12.424/11, minimum wage to US\$159 thereafter to US\$ 160 (2011).		

Among the country's political and economic crisis, the third phase of the program (PMCMV3) was finally launched in March of 2016 [6], after several postponements throughout 2015, due to the cutting of resources.

The PMCMV3 aims to build 2 million housing units until 2018, with an investment of 62 billion dollars. When compared to the previous stages, the main changes of this phase were: the creation of a new income tier (*tier 1.5*), the definition of new income limits, new maximum property values, new interest rates and subsidies (Table 3).

Table 3 – Initial target PMCMV3		
Income Tier (US\$)	Housing Units	Interest Rate
1 (0 – 529.4)	0.5 million	0%
1.5 (529.4 – 691.2)	0.5 million	5%
2 (691.2 – 1,058.8)	0.8 million	5.5% - 7%
3 (1,058.8 – 1,911.8)	0.2 million	8.16%
<b>Total</b>	2 million	
Source: Ministry of the Cities, Law n°13.274/16, minimum wage to US\$ 259 (2016).		

On the one hand, it is a program that presented changes over previous housing practices, by highlighting the issue of housing deficit [7] [8], by the unprecedented amounts of funding and subsidies adopted, the scale of intervention and for considering the attention for income *tier 1*, which in general has always been out of housing programs in Brazil. Also, it innovated by introducing subsidy concession and promoting access to housing for families from *tier 1*, regardless of their ability to secure a mortgage [9].

However, on the other hand, the program results do not seem to meet expectations [10] [11] [12]. The vast majority of built homes generate concern from the architecture and urbanism point of view, due to the lack of quality and few integration of these new housing clusters with the cities and urban spaces where they are located. Most of the criticism about the program agrees that these new neighbourhoods arise in the country apparently without concern with urban quality, aligning standard models with low construction standards, regardless of the site location and residents profile [13] [14] [15].

So far, most of the projects, especially the ones related to *tier 1*, used low-priced land, away from centralities and therefore of areas with infrastructure, public transport (metro, train) and services. This reinforces the historical process of peripherization in Brazilian cities and confirms the peripheral location pattern of PMCMV projects, especially the ones related to *tier 1* in São Paulo and its

<sup>1</sup> In April of 2012 the initial target was expanded to 2.4 million homes and in 2013 to 2.75 million units.

metropolitan region [16]. Therefore, this fact reinforces the key role of the municipality in the "management" of the land for *tier 1* and the provision of additional infrastructure through master plans, housing plans and the City Statute instruments [12] [17] [18].

In PMCMV, the architectural program is also predetermined, despite the demand logic, family diversity and the project location [15] [19]. Added to this, there is the impossibility of re-adaptation of units to meet the needs of the residents.

The need to generates outcomes immediately, without the sufficient program establishment, resulted in indifference with some items that were present in PlanHab (National Housing Plan) [13], among them, the program connections with urban policy [14] [20].

Thus, the main criticisms about the program addresses the following points:

- Lack of projects' evaluation [21];
- Peripheral location of the projects;
- Lack of program articulation with urban policy;
- Low urban and architectural quality of the projects;
- Probable housing surplus unrelated to effective demand logic;
- Program discontinuation in relation to SNHIS (National System of Social Interest Housing);
- Lack of architecture competitions and other mechanisms that could contribute to the projects' improvement [22] [23];

Along the program implementation, changes and complements were made to the legislation and to the minimum program specifications, per example: the possibility to incorporate commercial use in the housing project, limit of units per module, universal accessibility, among others. They demonstrate an attempt to improve the quality of these projects, however, these measures are given as a single standard solution for all users and for all projects profiles. Note that, the housing quality assurance and its articulation with the city is a broader issue and should be considered from a wider perspective, from the program's connection with urban policies and from the projects' initial conception and planning.

### 3 URBANITY AND SOCIAL INNOVATION

In the search for a more democratic, inclusive and proper urban and living spaces, in which all people can use and be part of the city (urban life) equally and where the urban dimension is valorised, it was essential to bring Lefebvrians terms, as well as the concepts of social innovation and urbanity to the study context.

In the space production process, Lefebvre [2] deals with spaces designed as *conceived spaces* and *lived spaces*. The difference between the two is essentially the nature of space production process, the social relations in which the process is based and hence the quality of relations between inhabitants.

In *oeuvre* city residents feel part of the urban space production process, that is, there is a connection with the population, as well as the collective identification with the urban form, through a sense of belonging and participation in this space (appropriation, socialization and even conflicts). On the other hand, when the process favours space production only to a specific group, and this connection with people is broken, there is the creation of a "product" city. In this term, the area is characterized by homogeneity, segregation and lack of social relationships.

The social innovation, in turn, is a relatively new concept in the field of social sciences and has gained greater strength from the 90s [24]. It is an organizational method that meets social needs and public good, at the same time it creates new relationships and new networks of cooperation in order to improve society's capacity to act [25] [26]. Among the various existing definitions, it is a common sense the presence of three basic elements: the existence of new ideas; meeting social needs (which were not met efficiently); the existence of social transformation and the generation of new forms of relations [24].

The author [24] points out that the most important element of social innovation is social transformation, which cannot be considered only by the improve of well-being, but as potential for relations changes in a given space. In this sense, social innovation seeks to give new answers to social problems, by identifying and enabling new services, resources, processes and new forms of participation that can help to improve people's quality of life.

With regard to the urbanity, it is intrinsically related to active spaces, urban life and urban culture, that is, without activity there is no urbanity and in the absence of urbanity, the city could eventually become a suburb [27].

The essential condition to achieve urbanity is to generate sufficient diversity, with mixed of land uses and activities. Thus, it is noteworthy that density itself does not necessarily produce urbanity, it is a necessary condition, but not a sufficient condition, as well as other terms, such as active spaces and urban vitality, initially addressed by Jacobs [28] in 1961.

In this sense, it is known that the housing and urban design, as well as public policies have an effect on the inclusion and exclusion of the population [29], since there is no doubt that social segregation has clear spatial manifestations [30] [31].

The quality of urban space should, then, be considered in broader terms than just physical attributes, such as social, psychological and cultural dimensions of space [27], in a way that the public sphere enables bases for social interaction, for people to connect with the space and to feel part of the city.

## 4 CASE STUDY

The first two projects are located in peripheral areas (as most of the projects related to PMCMV), which usually are zones of social segregation, homogeneity and centralities areas distancing. As a result, the inhabitants of these regions are excluded from the full access to the city and urban life.

By contrast, the third project relates to the context that this work seeks to identify: housing experiences with potential to build more democratic spaces within the city and consequently generate relationships transformation, since this type of projects (social housing) has historically produced social and spatial segregation in Brazil.

The valuation criteria used for the analysis and critical evaluation of the housing projects prioritized their "urbanity", as well as their potential to generate contexts of social innovation (SI) from the urban point of view, based on Lefebvrian's concepts cited.

Considering the exposed values, sought to answer the following questions:

- 1.) What message do these different case studies pass?
- 2.) Do these projects consider the building as a relevant part of the urban spatial structure?
- 3.) What principles and concepts do these projects stimulate? Do they encourage the collectivity?

### 4.1 Iguape A

The first project (Table 4, Figure 1) is located in the west region of São Paulo city, about 15km from the centre (zero-mile marker). It reinforces the default location of the program's projects and its distance from areas with centralities. The dwellings were designed for *tier 1* of PMCMV, related to families with income up to 3 minimum wages.

The project was designed by Cronacon construction company and has 15 blocks of 5 floors with H typology. The blocks were deployed as separate units in the lot without concern with open spaces and to the creations of urban axes, just assuming the northeast and southwest orientation, a common model in housing projects produced in BNH (National Housing Bank) period.

The connection between the project and the city occurs only visually, through the grid which delimits the lot. Buildings, in turn, have a visual monotony and are "repeated" in the lot in a way to occupy the most space as possible.

Table 4. Project's data

300 housing units   <i>tier 1</i>	Building: 2010-2012	Plot area: 13,503.46 m <sup>2</sup>
Typology: 2 bedrooms	Density: 159.6 dw/ha	Building area: 15,713.90m <sup>2</sup>
10.4 m <sup>2</sup> /person	Cost: US\$ 4,65 million	Cost per m <sup>2</sup> : 296 US\$/m <sup>2</sup> <sup>2</sup>

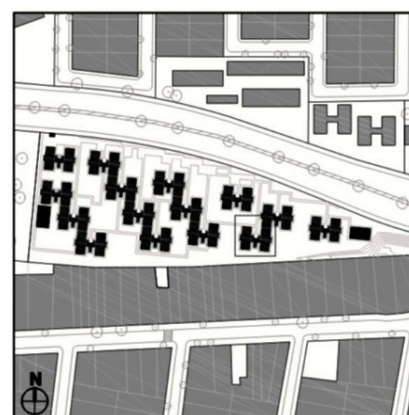


Figure 1. Iguape A. Source: Authors' own photography.

From the project analysis and visits realized to the site, was observed a lack of appreciation to the public space and to solutions that consider diversity of uses, income diversity, generate density and urban vitality, that is, the project presents a weak solution to stimulate collectivity.

The internal distribution of each building is done by a vertical core of circulation (stair), which serves four units per floor. In total, there are 300 units of the same typology, with two bedrooms distributed in 45,11m<sup>2</sup>.

The building structure is made by masonry block, which does not allow units' modifications and compromises its flexibility. In other words, the project does not take into account the possibility of reform and neither the changes of necessity a family can have over time.

## 4.2 Housing Complex Teotônio Vilela I – Residential São Roque

The second project (Table 5, Figure 2) is also located in the west region of São Paulo, about 14.5km from the centre (zero-mile marker). It is a location with low urbanity, poorly served by transport, infrastructure and urban services offers, that are necessary to the economic and human developments.

Table 5. Project's data

300 housing units   <i>tier 1</i>	Building: -2011	Plot area: 16,673.99 m <sup>2</sup>
Typology: 2 bedrooms	Density: 144.8 dw/ha	Building area: 13,771.22m <sup>2</sup>
9.8 m <sup>2</sup> /person	Cost: US\$ 4,588 million	Cost per m <sup>2</sup> : 333.2 US\$/m <sup>2</sup> <sup>3</sup>

The project was designed by Pentarco office and has the same typological repetition of Iguape A, without spatial delimitation: 15 blocks of 5 floors, with H format. It has low collective areas quality, lack of public areas and single program, excluding, however, that families' arrangements can have various sizes and different necessities. These factors reinforce the trend already criticized of monofunctionality and which happens to be reinforced by most of these projects [15].

The lot has an uneven terrain of almost 20 meters' difference and the buildings are located in two flat levels, the largest one with 12 buildings and the smaller with 3 blocks, totally disregarding the conditions of the terrain.

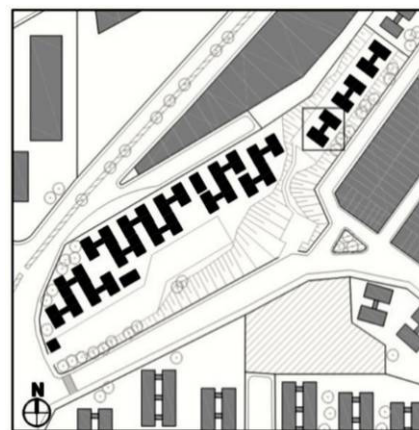
<sup>2</sup> Square meter cost in relation to the minimum wage (in 2016): 1.14 Brazilian minimum wage/m<sup>2</sup>.

<sup>3</sup> Square meter cost in relation to the minimum wage (in 2016): 1.29 Brazilian minimum wage/m<sup>2</sup>.





Figure 2. São Roque. Source: Authors' own photography.



The internal distribution of the buildings has exactly the same solution as the other project and in total, there are 300 units of the same type with two bedrooms distributed in 39m<sup>2</sup>.

It is noticed the project's isolation from its surroundings, through a wall that delimits the entire lot and do not contributes to visual and physical integration, which occur only in the two entrances, the rest of the design solutions do not generate connections to the city. It is possible to say that the project turned its back on the surrounding streets.

These two studies exemplify the reproduction of a standard model on a national scale, which does not consider parameters of urbanity, connections with the urban space and does not always respond to the needs of the families. Therefore, these facts contribute to the architectural and urban precariousness of the projects.

### 4.3 Jardim Vicentina – Osasco

The project (Table 6, Figure 3) is located in southwest region of Osasco city, in Metropolitan area of São Paulo, about 2.5km from the city centre and 17.6km from São Paulo (zero-mile marker).

By contrast, this project is an exception when compared to the PMCMV production, because it explores the urban dimension and the possibilities to valorise and create the city, as well as to support the public sphere and the vitality of the area. It can be stated that the buildings' implantation in this project are directly related to the definition of spaces, creating axes and contributing to urban spatial organization of the area. Similarly, the presence of collective spaces valorises even more the project as a place to socialize and to meet people.

Table 6. Project's data

272 housing units	Building: 2008-2010	Intervention area: 94,618 m <sup>2</sup>
Typology: 1 e 2 bedrooms	Density: 132.4 dw/ha <sup>4</sup>	Building area: 15,517.1m <sup>2</sup>
13.85 m <sup>2</sup> / person	Cost: US\$ 38,235 million	Cost per m <sup>2</sup> : 2,464.1 US\$/m <sup>2</sup> <sup>5</sup>

The project was carried out by Vigliecca architect's office and had investments from PAC (Growth Acceleration Program – federal government) related to the axis of "Urbanization of Precarious Settlements" and from the city resources. The project considered the area reurbanisation and the construction of 19 housing blocks, with a total of 272 units, ranging between 1 and 2 bedrooms, with an average floor-area of 50m<sup>2</sup>.

<sup>4</sup> Reurbanisation of an area, not a lot.

<sup>5</sup> Square meter cost in relation to the minimum wage (in 2016): 9.52 Brazilian minimum wage/m<sup>2</sup>.



Figure 3. Jardim Vicentina. Source: Authors' own photography.

In this project, the architect demonstrated concern with the social and cultural aspects of the population, as well as to the environmental features of the site. The project proposed an implantation of three different typologies, grouped linearly along the channelled stream, defining two new urban fronts on either side of the road axis. Also, the implantation of six housing blocks around two central squares, with areas for commercial use in the hill part of the site. The decision of using low maintenance materials (ceramic block), as well as, hollow brick (*cobogós*), was in order to achieve a better thermoacoustic performance and solar protection of buildings' facades, respectively.

Regarding the housing historical process in the country, it is possible to pay attention to a different design approach in this project, especially when compared to projects from PMCMV and previous housing programs. Thus, the Jardim Vicentina adds to a new vision in the housing field of Brazilian architecture, historically influenced by schemes that ignored the urban dimension.

## 5 CONCLUSION

The case studies analysed in this article, as well as the specialized literature analysis, indicate that the few well qualified proposals under this research are results of exception situations – that is, they do not represent the daily practice of social housing production. Moreover, they are the result of specific circumstances in which the relation of public administration with the urban problems led to the hiring of prominent architectural firms in the national context, as the case of *Vigliecca & Associados* office. Unfortunately, these good point results do not affect the overall outcomes of PMCMV and of other similar projects taking place in Brazilian cities.

Nevertheless, the study of this exceptional example may lead to the construction of theoretical and methodological evaluation models, that could be applied in the critical analysis of other housing projects. Especially with regard to urban issues and urban design, since the imposed limits on the size of the housing unit does not allow great flexibility to its internal arrangements. Thus, according to this research, the *land issue* and the *urban form* should be prioritized in qualitative analysis tools. The first one, because it determines the relations with the infrastructure and the symbolic elements of the cities (centrality, transportation, culture, education, etc.). Besides, without an intervention policy on land value (and its social role), the housing developments dedicated to the poorest people will remain located in distant neighbourhoods, on the city outskirts. The second one, for considering that certain design options can propitiate collective uses and conformations of stimulus for social practices in community. Towards a "socialization of society" – that is, a city that can be revealed in its common values. The full inhabit (*habiter*).

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## FROM IN-BETWEEN SCALES TO IN-BETWEEN SPACES THROUGH HUMAN DIMENSION

**Maria Pia Amore<sup>1</sup>, Marianna Ascolese<sup>1</sup>, Chiara Barbieri<sup>1</sup>, Adriana Bernieri<sup>1</sup>, Marica Castigliano<sup>1</sup>, Vanna Cestarello<sup>1</sup>, Francesca Coppolino<sup>1</sup>, Raffaele Spera<sup>2</sup>**

<sup>1</sup> PhD Candidate at the Department of Architecture, University of Naples "Federico II" (ITALY)

<sup>2</sup> PhD Candidate at DRACO, University of Rome "Sapienza" (ITALY)

*mariapiaamore@yahoo.it, marianna.ascolese@gmail.com, c.barbieri1986@libero.it, adbernieri@gmail.com, marica.castigliano@unina.it, vanna.cestarello@gmail.com, francesca.coppolino19@gmail.com, raf86@hotmail.it*

### Abstract

Born in the mid-nineteenth century as opportunities for dissemination of knowledge, crossed the modernity of the twentieth century and the post-modernity of the twenty-first, the Universal Expositions have become important events to think about global concern issues. Expo Milano 2015, which on October 31st closed its gates, asked participants to reflect on the theme of food and brought together 20 million visitors from all around the world. The following closure of the area imposes us to reflect on its imminent ruin's condition, inherent within the short temporal contraction that an exposition requires, and on its material and immaterial legacy. In the transformation process of Milan, the big enclave of the Expo, closed in its boundaries and unrelated to the surroundings, except for the issue of the accessibility of the area, has left significant traces on a territory with which it only faced by a large scale.

The Expo area moves from an island state to that of an urban gap. Its existence as a hub of ideas about future, events and experiences (first virtual and then real) is related to a transnational scale: Expo became a landing place for users from all over the world. Subsequently, its dismantlement generates an inevitable reshaping that has the decline of its international relevance among its effects as well as its transformation into an in-between area, enable to establish close relations with the surroundings but at the same time highlighting its potential urban role for the city. From the in-between scales, given by different temporal and relational phases of Expo 2015, it is possible to discuss about in-between spaces since the area is a space between different bordering urban realities, among public and private uses of soils, different typologies of infrastructures.

From the reading of the space, the structure of the project emerges. We defined a porous border at the north, which is a connection system with urban boundary elements (mixed-use neighbourhood, prison, agricultural areas); a hard border at the south, defined by the strong presence of the high-speed rail; two fluid and open borders at the east and west, related to the hospital complex and the agricultural areas. The northern "porous" edge, which interacts with the peri-urban patchworks of mixed-use settlements and green spaces, and the big sign of the infrastructure in the southern part put in tension the project area. Within the ex-expo area, the permanent pavilions and the urban grid, originated by perpendicular axes (*cardi* and *decumanus*), are the fixed points through which new masses and spaces interact to create a flexible scenario.

Project's first action is the definition of an urban park, along the northern border. The park is activated by a bottom-up process and it consists both of inherited green areas from Expo and of the adjacent ones, in order to restore the human scale in the area. The project process, thus conceived, assumes the "construction site" idea as the active tool of use and transformation of the area: this is the strategy to design both public open spaces and built ones. The public space changes from being a construction site – where to observe the pavilions and the signs of Expo's legacy – to a fluid space

adapting to new buildings, taking on new forms and uses according to the different users. Instead, the built space is carried out through the creation of a large architecture, a single modular grid building, disposed along the entire southern border, that progressively hosts top-down functions from time to time, pandering the variable needs of stakeholders and users.

Between the two big systems of the project, the north and the south of Expo area, in a fertile dialogue among new activities, slow mobility infrastructures (tram and cycle lanes), green and agricultural areas, water paths and re-used buildings, some “white spaces” are identified in the central area. They represent the place of possible interaction and future transformation: it is the space of waiting, the space of modification, the space between public and private, between the power and the community. A space given to the man.

The transposition of the grid concept identifies in this way how-to-do instead of when-to-do: the man appropriates the space, assaults it and modifies it by building the place of public action. The idea of a new spaces typology appears as a necessary reality – or a real necessity – with which we have to deal; in this sense, the project does not finish with the construction but it becomes a real process within which further variables, such as daily life's dynamics and their modifications, reveal as fundamental elements, in need of in-between spaces where to express themselves.

**Keywords:** relations, borders, interaction, human dimension

## 1 INTRODUCTION

With the expression Universal Expositions – Expo in short form – are identified the great events that have taken place in the principal western cities starting from the half of the XIX century. Set themselves up since the first London edition in 1851 as stage of the target of the human progress in scientific and technological fields, the Universal Expositions represent still today an opportunity to engage an international dialogue among citizens, countries and institutions around a theme of actuality and interest, indeed, universal. In account of a deep philosophy of the innovation, the most striking feature of the nineteenth-century universal expositions was the celebration of the triumph of the technique that was expressed through the self-representation of the economic and cultural potential of the most advanced nations. The first expositions were an event able to put to comparison the market production of the various countries, in order to facilitate the exchanges and to point out the productive progress of every participant, making the architecture, through the bigness of the structures and the novelty of the forms, a colossal propagandist demonstration [1].

A demonstration born in the nineteenth-century social and cultural context, then passed through the modernity of the XX century and finally come to the post-modernity of the XXI century, must deal with a deep change of the formalities of circulation of the knowledge and, in general, of the way of communication itself. What still unifies the first expositions to the most recent ones, it is the communicative and symbolic course of the event, powerful instrument for mass media. “The popular component of the mass media is shown in its flashiest aspects, in all its strength of redundant call and at the same time provisional and ephemeral in great Expositions” [1].

The spectacular communicative and symbolic constructions with unusual dimensions, technologically advanced, prefabricated, removable, designed as temporary, have remained, sometimes, in inheritance to the entertaining countries: the Tour Eiffel in Paris (1889), the Atomium of Bruxelles (1958), the Space Needle in Seattle (1962), the Tent of Alvaro Siza in Lisbon (1998) are the most fortunate cases of the unprecedented architectures for the formal, typological and technical viewpoint, that have become symbol buildings of those cities.

According the urban planning aspect, the Expositions have represented and still represent a significant and problematic moment in the process of transformation of the cities. The exceptionality of great international events as the Olympiads or the European Capital of the Culture, events free to adopt different urban strategies, also with diffused interventions inside the urban settlement, become an occasion to start a process of innovation and qualitative improvement of the socio-economic and territorial fabric of a city. Instead, the Expo regulations foresee the concentration of the event only in one area, often individualized in the outskirts for lacking space in the consolidated



city, to be configured as an enclosure containing the pavilions of the participant countries. Despite of the meaningful traces of the infrastructures realized in order to connect the city, the selected areas, drained of attractions of the event (that never extends for more than six months), are often incapable to renew themselves and to avoid the peripheralization.

Referring to the latest Exhibitions, we can weigh up the material legacy of the event in its contemporary meaning. Generally, we can notice that only some objects or parts of the Exhibition areas survived the passing of time. From the 1967 Expo of Montreal, only 4 of the 90 pavilions survived – being converted to new uses – along with the *Parc Jean Drapeau* and *La Ronde*, which maintain their configuration as parks. An Expo Memorial Park, with large green areas and tourist, recreational and educational activities, has occupied the 264 hectares of 1970 Osaka Expo.

Moreover, other two cases, both Iberian but with very different outcomes: Lisbon and Seville.

The 1998 Lisbon World Expo gave a new face to the city, promoting an extensive urban recovery program and inciting international tourism over the years. The pavilions, built in an abandoned dockland area along the Tagus, were sold before the beginning of the Expo, to avoid a possible deterioration of the site: a careful planning of the entire Expo system allowed the immediate conversion of the buildings and the area, avoiding neglect and abandonment. Neglect and abandonment that characterized the less fortunate case of 1992, Seville Expo: only today, these architectural ruins of the modern era are having a partial conversion, although with great difficulties [2].

In most cases, the “after Expo” matter is, therefore, more relevant than the Expo itself. For this reason, while starting the Expo Milano 2015 disposal, in the midst of the ongoing debate about the future of the area and its possible role within the metropolitan environment, the School of Architecture of Milan organized a design workshop, “Expo after Expo”, asking 15 Italian schools to contend with a theme of obvious relevance through two project proposals. The two projects of the School of Naples are the result of a joint work developed through some “oppositions” suggested by the “ambiguity conditions” of the area, as it appeared after the Expo. “Building the ruin” (“*Cantierare la rovina*”) is the project realized by 12 PhD students in Architecture<sup>1</sup>, including the authors of this paper: the design choices descend from the interpretation of the Expo legacy and from the features of the area edges - ‘frayed’ northwards, ‘hard’ southwards, ‘fluid’ eastwards and westwards. The permanence of the *cardo-decumanus* structure and of some architectures allows to imagine an immediate and temporary re-use of the area, by transforming the porous northern border into a linear park, in connection with the surroundings. Temporary functions and the park coexist together with the “construction site”: along the southern edge, a compact “architecture-wall”, one-mile-long, can grow as a modular skeleton reaching the necessary volumes and hosting different functions. Then, only a “white space” remains between the two edges: a potential place for future uses.

## 2 THE TRANSCALAR PERSPECTIVE OF THE EXPO AREA IN MILAN

The expo events are based on the concept of transcalarity involving different spatial dimensions. The idea that a macrocosm could fit in a bounded area implies a temporary revolution of the urban space hosting a mix of functions and testing its capabilities to become a piece of the city in term of accessibility and socio-economic allures. From a spatial planning point of view, the transformation of the space is the main challenge of international expositions, indeed, for a limited range of time, an area of the city is conceived as an empty wall on which different cultures from all over the world are transposed by architectural expression. The ways of using spaces and the pavilions design become communication tools that use the architecture as a brand in a complicated attempt to scale a country in a building. In this transcalar perspective, if pavilions are Countries, the expo area is a planet enclosed in a metropolitan area. To fit the global into the local, in an apparently paradoxical situation, the spatial design of the “expo-planet” reproduces the form of a new urban core within a pre-existing territorial structure. Thus, the expo events entail a conceptual passage through spatial scales that

<sup>1</sup> Supervisors: Roberta Amirante, Renato Capozzi, Angela D’Agostino, Carmine Piscopo, Paola Scala, Federica Visconti. Project by: Maria Pia Amore, Marianna Ascolese, Adriana Bernieri, Chiara Barbieri, Eduardo Bassolino, Marica Castigliano, Vanna Cestarello, Francesca Coppolino, Marika Miano, Giuliano Poli, Sara Smarrazzo, Raffaele Spera (<http://www.expodopoexpo.org/2016/03/08/cantierare-la-rovina/>).

detach the site from the local context. The consequence, in the case of Expo 2015, is that from the in-between scales, given by different temporal and relational phases of the event, it is possible to talk about in-between spaces since the area is a space between different bordering urban realities, among public and private uses of soils and different typologies of infrastructures.

In the 2006, the city of Milan decided to situate the Expo area in the north-west of Milan, at the border with the municipality of Rho. It was an ex-industrial site, subsequently occupied by cultivated lands and some logistics hubs, and it was well served by infrastructures: the highways A8 (Milan-Lakes) and A4 (Turin-Venice), the west belt-way, the high speed rail (Milan-Turin) and the extension of the metro line M1. Beyond its accessibility features, this 110 ha-area has great potentialities, as it is located along a transformation axis of the developing city near strategic poles as Fiera Milano – the exhibition centre of Milan – and new urban projects as Stephenson and Cascina Merlata neighbourhoods. These urban-scale cores represent the post-metropolitan condition in which the conceptualized form of the city is a “metropolitan archipelago” [3], a polycentric system linked by infrastructural networks. Hence, the city appears as a sum of fragmented elements: in the undefined spaces, liminal areas, as ex-expo sites, are “waiting zones”, suspended in time, between what they were and what they could be, and in space, among the urban islands of the metropolitan area.

The image of an urban space made of fragments, called “nuclei”, also inspired the reading of the city of Milan that form the basis of the Milan Urban Development Plan (UDP). The identification of 88 LINs (Local Identity Nuclei) leads the urban planning strategy and includes the Expo site thanks to the resonance of the event and the urban measures that improved the area. Within the plan, the LINs are defined as the local-scale aspects of Milan as a multi-centre and are selected as social and cultural identity patterns. The UDP designed a masterplan for Milan 2030 re-imagining the city in the post-industrial era by converting many industrial facilities and areas to other uses. The aim to make Milan more efficient, attractive and liveable is pursued by a holistic vision of the city that means “bringing a new economic and ecological sustainability for the metropolis, and also improving liveability via mixed use, a move to compact city density infrastructure nodes, and connectivity between inner core spaces, not simply consuming more land” [4]. The guidelines provided by the plan arise from previous insights aiming the improvement of the urban quality of Milan. Among these, “A Green Ray for Milan” is a green strategy proposed by LAND in 2009. The landscape architects team designed 7 rays of environmental corridors connected by bicycle and pedestrian paths. In particular, the 7th ray, which links the north-west suburban area with the historical centre, intercepts epicentres of the future city as the Expo site. In this vision, the open in-between spaces will be connected to create an easily access to the urban green belt spaces which link the main parks outside the city border.

Within this urban planning framework, the strategic role of the Expo site is often highlighted underlining its potentialities of urban void as permeable space of opportunities. Moreover, the dismantlement of the Expo site generates an inevitable demand to establish close relations with the surroundings. Thus, the in-between Expo area is conceived as a “generating tail” able to activate process of transformation and become part of the city system according to the idea of the archipelago in which the concept of islands as fragments of urbanity, gives relevance to the space among things that is the space of spatial and social relations among individual identities, gathered in a space of co-existence [5].

### 3 WHAT HAS BEEN DONE AND WHAT TO DO. THE LEGACY OF EXPO 2015

The goal of the workshop was to give design solutions for the Post Expo 2015, able to interpret the theme of legacy or rather the material and immaterial heritage that the site area would leave in Milan.

The answer given to the issue of legacy developed in the project for the workshop “Expo after Expo” 2015 “*Cantierare la rovina*” (translatable as “Building the ruin”) has great similarities with the work of Herzog & de Meuron and Ai Weiwei for the Serpentine Gallery Pavilion of 2012 – What has been done is much more than to do – becoming the guide line of a critical reuse of abandoned buildings and plan structure that ruled the settlement of the exposition of 2015, as well as the design of the pavilion in the Hyde Park was born on sediment traces of the eleven pavilions built until 2011. The original idea of Stefano Boeri, Jacques Herzog and Ricky Burdett for the masterplan of Expo 2015 was

linked to a design of “an infrastructure set to last and produce rich cultural attractions” [6]; the plan, even if it was altered in the later phases of the design process, with its *cardo-decumanus* structure pursues the original goal and demonstrates characteristics of flexibility and adaptability; the negation of its existence inside the new project would mean the loss of a material heritage with an high potential power (Fig.1).



Figure 1. The site legacy

The legacy materializes in what remains to the city: the central decumanus – the street that welcomed twenty million people – represents one kilometre and five hundred meters of machineries with low reversibility; the canals and gardens built on the border of the site area; Palazzo Italia; the Open Air Theatre; the Cascina Triulza; thematic clusters. These buildings become constraints and powerful players in the design process and the *cardo-decumanus* structure is the necessary rule – with some exceptions – to rethink the whole area.

The urban grid of Hippodamian inspiration looks at a wider and longer perspective of the exhibition event; it is the urban structure that retraces the foundation principles of our cities and that is able to recycle, reuse and adapt what is inherited giving new sense and reinventing the remain matter for new uses. The total reuse of the area starts from what still remains; the presence of cluster, service facilities and other public spaces of the exhibition provides the continuity of uses for the integration of much more durable future processes. In this way the Expo area is guarded and becomes a landing place for bordering neighborhoods; it allows the development of relations of nearness and it continues its cycle of life thanks to train accessibility, street connection and main bicycle and pedestrian connections. Gradually the site could be completed and hold the needs of a near future, assuming a finished shape in a longer time.

In this way, after the event, the site is returned to the city and urban life.

This goal, that looks at the way in which our cities have grown as a stratification of consecutive layers, not as a big contemporary architecture project, ensures the elimination of any discontinuity in the process.

The idea of legacy, of a heritage that is not received in an automatic way but that “we have to conquer with a great effort” [7], is expressed with thin actions that follow big changes. The project of architecture for the Post Expo 2015 is looking for “an architectural narrative, much as an archaeologist can convey purpose and vitality latent in what – to a lay observer – might seem ramshackle, dusty overgrown wreckage” [8].

The use of the theme of legacy as a material of the project permits to go through the value of neighbouring communities; the project interventions try to transform the site area from a super-place to a common-place due to citizen’s action that are able to take possession of contemporary urban ruins of the city.

#### 4 BUILDING THE RUIN

The project "Cantierare la rovina", conceived for the Expo area, has considered, first of all, the requests demanded by the call of the Workshop "Expo dopo Expo". It mirrored the proposals of the Government and the complexity of in progress debate, involving many institutional levels, large sectors of production and research. For this reason, it has been necessary to adopt a design approach careful to the concrete terms of the problem, through which it has been faced both the quantitative matters and the qualitative choices of urban and architectural character.

Besides the main dimensional parameters, in the planning specific considerations the connective infrastructures, the times and the actors that will participate in the regeneration of the site have been taken into account, understood as essential aspects for the realization of the urban project.

The critical and interpretative reading of the space of Expo area has led to the individualization of the architectural themes, operation from which the design idea has been defined. The site, confined and marked by enclosures that, by rule, delimit it in a definite space, separating it from the around, it is read and interpreted through the different conditions that take place along its edges.

The passage from the concept of enclosure to that of open edge becomes really important. It allows to reason about what could be and where that is possible, about the relationships with the context in order to consider new perspectives for the area.

Different conditions have been identified that delineate the edges of the Expo area, in relationship to which two design opposite methodologies have been developed: bottom-up and top-down.

In the northern side, in proximity to Bollate detention house, to the mixed use district and to the existing agricultural areas, the edge is defined "porous" since a condition of great permeability already exists in the area and, therefore, it gives the possibility to imagine a connection system that insinuates itself through the existing urban elements.

In the southern part, contrarily, both the subway and the high-speed railway bundle constitute a strong limit and that determines the definition of a "hard" edge. Towards eastern side and western side of the area, edges are recognized as "fluid" and open, in relation with the hospital complex and the agricultural areas, through which, the system of the green, identified in the urban scale, enters and appropriates the area back (Fig. 2).

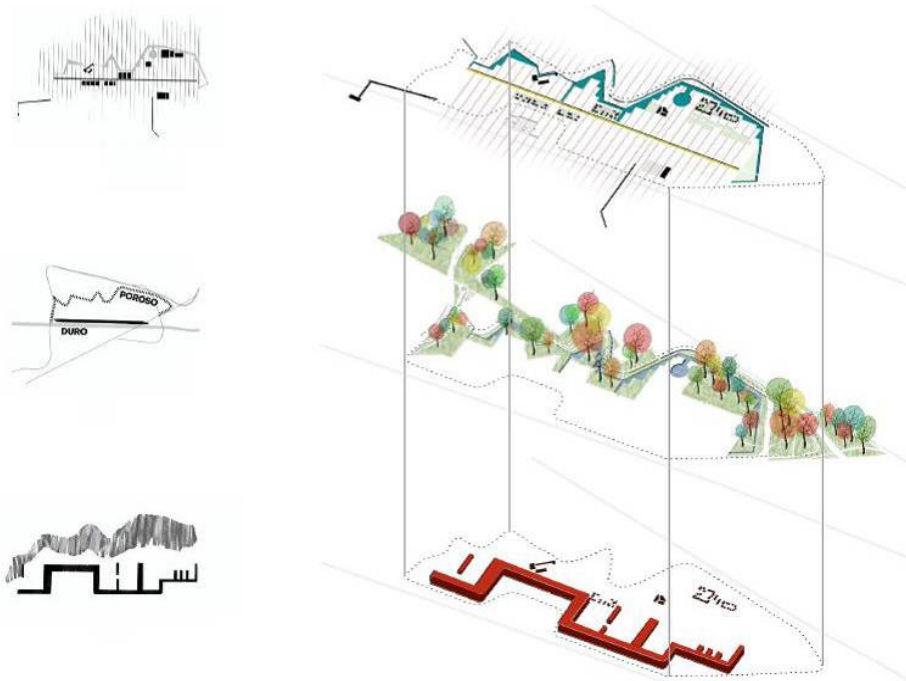


Figure 2. The concept of the strategy and multiple layers of the project

The possibility of interaction with the existing fabric and with the system of the green, from a side, and the insurmountable presence of the infrastructures, from the other side, push the space from different directions, putting "in tension" the project area and determining the design vision. From these considerations, it emerges as fundamental element of the project idea for the whole Expo area

to assume the reading of the different characterizations and tensions individualized along the edges, in order to be combined with other variables. In this sense, the two design methodologies individualized are in opposition, interpreting this logic “in tension” and determining two different parts: one concerning the northern edge and the other the southern one, separated by a “white space”.

The first design methodology *bottom-up* focuses on the crossing and on the boundaries erosion and it brought to the redefinition of an urban park, along the northern edge, thus fulfilling the call request of allocating at least 400 thousand square meters for green area.

Compared to the other edges, the northern one is more adaptable through a “weak design”, a design modality which does not impose a shape to the context but it interacts with it. The urban park is extended in longitudinal direction, from east to west, and it consists of both the outdoor green areas near Expo’s boundaries and the inherited ones from the Expo site, such as gardens, canals and access roads linked to a new pedestrian and cycle system (Fig. 3).



Figure 3. The urban park with the inherited areas from the Expo site on the northern side

On the contrary, the second design method *top-down* remarks and redefines the southern edge, where the infrastructure elements are more compact, through building a big architecture along the edge. A complex “wall-building” becomes, at the same time, a threshold for those who come from Merlata district, a front for train passengers, a infrastructure-building able to hold all the functions required by the call of the Workshop. In fact, this new element is designed in order to host a Technological Centre (150 thousand sq. m.), a University Campus (120 thousand sq. m.), a Business District (80 thousand sq. m.) and some re-used clusters for innovation/start-up activities (50 thousand sq. m.). These functions will be introduced in the building gradually, depending on the political and economic dynamics and on the users and stakeholders needs. The three-dimensional grid structure of the building, with its square mesh, is suitable to be used for meeting spaces, study areas, work and leisure activities, by setting a rule in the process of gradual appropriation of space, without referring to the times during which this process has to take place (Fig. 4).



Figure 4. The “wall building” along the railway in the southern side

The size of this architecture – one-mile-long wall – allows to reinterpret the southern edge and to put it in comparison with the urban scale of the near infrastructures.



The design process, thus conceived, takes the “construction of the site” idea as an active tool of use and transformation of the area: it defines the general design strategy to both public open spaces and built ones. The public space changes from being a construction site – where it is possible to observe the pavilions and the signs of Expo’s legacy – to a fluid space that modifies and adapts itself to the new buildings, taking new forms and uses according to the different users. The idea of a new spaces typology appears as a necessary reality – or a real necessity – with which it is important to deal; in this perspective, the project does not finish with the construction but it becomes a real process within which further variables, such as daily life’s dynamics and their modifications, become fundamental elements, in need of *white spaces*, proper in-between areas (Fig. 5).



Figure 5. Masterplan

## 5 THE WHITE SPACE

The project defines in a clearly way the edge and the relationship with the immediate context and wants to leave a “white space”, the space in between: an undetermined place that has the possibility of a future transformation. This space is intentionally unbuilt but, in it, the weaves of a possible modification emerge. According to Vittorio Gregotti, the word modification means “the transformation of the relationship (the confrontation) [that] becomes language itself, or rather tension towards language. This tension will take shape as a story of non-coincidences, of relationship which cannot be described by unitary gestures, but instead define specific areas of conflict through



which one can get to know the quality which is born out of these non-coincidences" [9]. The white space, based on these "distances", is the waiting space, the space between the public and the private, the power and the community, a space in-between. "The architecture should be thought as a configuration of intermediate places clearly defined. This does not entail a continuous transition or an unfinished position in the respect of the place or the condition, but a break of the contemporary concept of spatial continuity and with the tendency to eliminate each articulation between the spaces, for example between inside and outside, [...] a space in-between represents a common field where opposite polarities could become twin phenomenon again" [10] (Fig. 6).

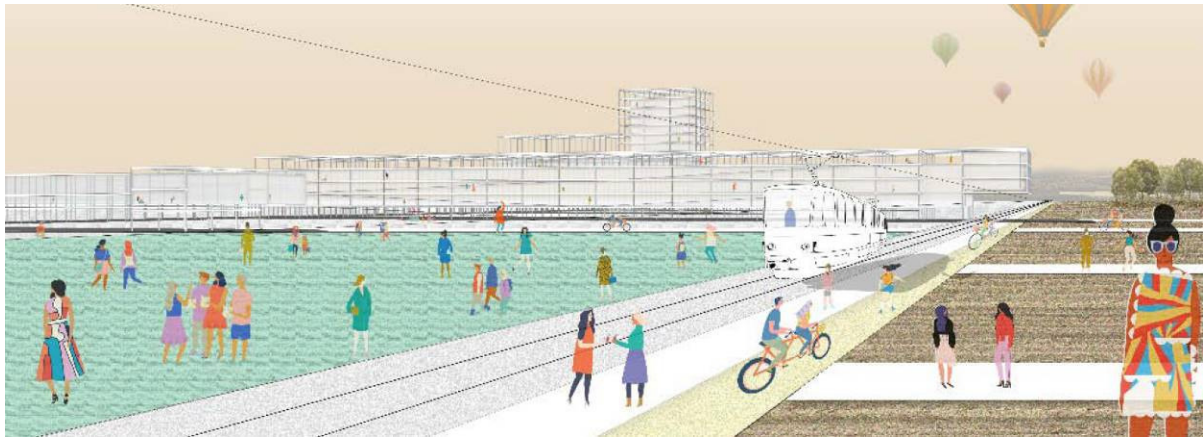


Figure 6. The white space

The variable and adaptable times and conditions become together actors of the process and define this new part of the city and integrate it with the immediate neighbourhood. The intermediate space becomes value for the project, intentionally interpreted as transition place between the different grades and different stages. In this vision, the collective space assumes a different role: it is at the same time breaking place but also a re-thinking place able to explain the meaning of the "community" today. The attempt is to experiment a new idea of plaza and a new typology of paths that, even if they maintain the urban structure and the *legacy* of Expo, adapt themselves to the variable conditions and uses. This space in-between, built in time and place different, is defined by the public park in the north, in relation to the existing city, and the big wall-building in the south, that marks the boundary with the railway. For its high adaptability grade, this transformation place has the role to put together two distinct parts, the urban park and the building-infrastructure, clearly recognizable for their morphological and spatial structure and their uses. In this sense, the space in-between is the heart of the project, the place where the connections between the different parts find a weave and the relational system could be observed in a very different way. This relational system becomes the guide structure of the project that tries to hold together several aspects and visions from the idea to its realization. In this conception, the project, made up by different parts and times, uses the construction site as a tool of the urban process that explicates itself in the white space. The widening of the idea of construction site-place to something that may be public in the very moment in which it is getting transformed, in which it is possible to observe the pavilions and the legacy signs of Expo in order to become a fluid space adapting and changing according to the new public buildings, makes possible new suitable fruition modalities to different users to become subject of the project. The citizen and the visitor are invited to a continuous visibility condition, not only of the completed object, but of the entire process, in a complete perception and fruition, very different from the logics of the construction site we are used to. This would allow the citizen to interact and never to be excluded by temporary and ephemeral fences that in most cases characterize building sites, where the inaccessibility excludes the inhabitant from particular places of his own city. In the end, the space in-between explicates itself between two parts of the action, public and private, "the in-between is the space in the middle, an intermediate area between two zones with different territorial demands. It is the intermediate space, for example, between a private area and a public one" [11]. The project for intermediate places, serving the user but also the transforming process, becomes necessary not only for the definition of physical spaces but for the creation of emotional spaces, spaces that have been thought for the man. The individual is the real propulsive element of

the transformation. The use of the space modifies the place itself, defining its variable character and lessening the limits between public and private. The space tends to mitigate transitions, passages and properties, by establishing new possible dialogues, both among different places, various architectures and numerous users. The mitigation supports the creation of diversity and, quoting Jane Jacobs, it becomes the sustenance of the city, the space of diversity. "In our American cities, we need all kinds of diversity, intricately mingled in mutual support. We need this so city life can work decently and constructively, and so the people of cities can sustain (and further develop) their society and civilization" [12]. The white space is therefore the common space that "is for nature an empty space, but its value is defined in the moment in which it gets occupied, used and filled up. I believe that only a new form of occupation, [...] that tries to establish new modalities of use starting from a collective and community perspective, may give shape to a more active public space" [13]. The space of the project is an in-between space able to interact simultaneously among different scales and fields of architecture: between the collective and the individuality, between nature and city, between public and private, between defined and undefined. A complex and dense space, meaningful by its own, that moreover assumes its significance when it gets inhabited. A space left for the man, but especially, the space conquered by man. Not only a public space but a space of relation.

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## MULTIFUNCTIONAL SPACE RELATED TO THE SCALE OF COMMUNITY CENTERS. FROM MERGING-CONCOMITANCE TO POLYVALENCE-ADAPTABILITY

Mihaela Zamfir (Grigorescu)<sup>1</sup>

<sup>1</sup> Faculty of Architecture, "Ion Mincu" University of Architecture and Urbanism, Bucharest (ROMANIA)  
mmg\_architecturestudio@yahoo.com

### Abstract

Multifunctional space is perhaps the most appropriate representation in architecture of the rapid, continuous, evolutive changes through which passes the contemporary society. When it is a part of community centers or even defines itself a community center, for architect it is a challenge to develop new spatial possibilities for communication, social-cultural relations and loisir, thus reviving the community spirit.

The present article investigates the relation between multifunctional space and the scale of community centers. The volumetric-spatial scale of community centers it is a quantitative criterion (but not just this) of classification for contemporary community centers relevant for community, for social policies of district/ area/ city level and for the community architecture.

From about 100 analyzed examples of community centers, was proposed a classification in three scale categories: **S**- small community centers (100-1000mp), **M**- medium community centers (1001-3000mp) and **L, XL**- large and very large community centers (3001->15000mp). For each category were established subcategories.

Multifunctionality respectively multifunctional space was defined as an essential principle in designing contemporary community centers. From the same about 100 analyzed examples were identified **three types of multifunctionality: merging-concomitance, polyvalence-adaptability and hybrid solutions**, resulting from combining the first two.

**Merging-concomitance** principle assumes the existence of several spaces with different, precise destination, functioning simultaneously under the same roof. The exact functional destination customizes spaces, makes them recognizable, confers a certain character, a special ambience, expresses the users' wish at least at a certain time. These spaces may not be so easy to change, have some functional inertia.

Unlike the principle of merging-concomitance, the **polyvalence-adaptability** principle assumes interior or exterior spaces which by different organization (interventions on furniture or subdivision items) allow the deployment of several activities, concomitantly or delayed in time. The polyvalent space is easily adaptable and can meet the changing requests of today society. Polyvalent space supposes an initial neutral conception, customizing of this being made ephemeral for each event in part.

Contemporary community centers can use both contemporary principles separately or simultaneously, in which case occurring **hybrid solution** of multifunctionality. Most times it is necessarily to take place concomitant several types of activities that requires well-defined spaces and also are needed spaces that can morph, adapting according to the requirements.

Very few of contemporary community centers examples have a spatial functional structure fully functional determined. Although prevails quantitatively spaces with clear, customizable functions,

polyvalent, multifunctional spaces are almost always present, even if subordinated. Community centers generally function after scenarios commonly agreed with the community, being available, at least for a certain time, in the life of that community.

Multifunctionality strictly interpreted as merging-concomitance works especially for large centers that allow a wide range of spaces intended for various destinations (e.g. *Clayton Community Center, Australia*-S=6650sqm). Are functions that are requiring specialized spaces (e.g. sporting, cooking facilities) or meet better the community's requires if are customized (we talk especially about elderly people, more conservative by definition).

The hybrid multifunctionality is the most widely used, almost always for the medium centers (e.g. *Community Center Herstedlund*- S=875sqm) and most times for large centers (e.g. *The Gateway Center, Wetschester Community College, USA*- S=70000sqm). From the functional scheme point of view, it correspond the best to the community as a whole, offering both specificity, stability as well as flexibility, adaptability.

Multifunctionality, however understood as polyvalence, always brings an extra to the community centers in adapting to the changing requirements of today. **Multifunctional spaces represents the unexpected, the anticipation of future non-anticipation.** These occur subordinated in the case of large or medium community centers or can be independent for small centers. Small community center constitutes an interesting exercise in terms of multifunctionality, shifting to the **POLYVALENCE-FULL ADAPTATION**. In this case, the functional scheme can be simplified even to use only polyvalent space (e.g. *Youth Centre Amsterdam-Osdorp, Holland*, S=285sqm).

In conclusion, the multifunctional space in community centers expresses the refusal of predetermination and the awareness of the rapid changes of the present society, eliminating complex functional schemes, proposing instead adaptable, flexible ones, possibly to be used in various ways, that fold specifically over the scale of space and on the specifics of the community.

**Keywords:** multifunctional space, merging-concomitance, polyvalence-adaptability, community center, scale

## 1 A FEW CONSIDERATIONS ABOUT MULTIFUNCTIONAL SPACE RELATED TO COMMUNITY CENTERS

Multifunctional space is perhaps the most appropriate representation in architecture of the rapid, continuous, evolutive changes through which passes the contemporary society. When it is a part of community centers or even defines itself a community center, it is a challenge for architect in order to develop new spatial possibilities for communication, social-cultural relations and loisir, thus reviving the community spirit. (Hanson & Hillier, 1987)

But what means multifunctional space? What is the most appropriate definition? A space that accommodates various functions simultaneously, concomitantly or a space that can offer multiple uses while? Which of those two representations is most appropriate when it comes to contemporary community centers?

The present society is a society of futile, rapid changes, sometimes difficult to predict, of the technological progress, steadily rising. (Miège, 2000; Georgiu, 2004; Zamfir, 2013a) Communities of today- and especially the urban ones- tend to lose much of that *Gemeinschaft*, increasingly identifying more with *Gesellschaft*<sup>1</sup>. (Zamfir, 2013b)

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<sup>1</sup> The two terms were introduced in sociology by Ferdinand Tönnies. In the 80s, Tönnies made a clear-cut demarcation in terms of moral, political and sociological between the concepts of community and society.

Community centers are reflecting quite sincere the current trends of society. In order to function, they have to respond to the community requirements, and, as a consequence of the above, also to the contemporary, globalized society. (Zamfir, 2012)

Thus, the space in a community center has a delicate mission, which is to enable flexible uses, slightly adaptable, as well to confer identity and perhaps stability when it comes to elderly users. So, we should build neutral spaces, adaptable to any activity or we should build various spaces, designed particularly for each function? Surely the prescription would be the biggest mistake, it is recommended a detailed analysis of the community, taking into account criteria as varied- culture, ethnicity, values, size, concerns but also an analysis of the location and of the budget at their disposal. The scale of community centers is linked to the preference for a certain type of multifunctionality. For example, a single versatile space can define a small community center but when is possible to design a large size community center, multifunctional space can be express in various ways, as we will see in the following section.

## 2 CONTEMPORARY PRINCIPLES IN THINKING OF COMMUNITY CENTERS RELATED TO THEIR SIZE

Contemporary societal trends- transience, speed<sup>2</sup>, globalization, ageing population are reflected also in the contemporary principles used in thinking and designing community centers.

From about 100 analyzed examples of community centers, was proposed a classification in three scale categories: **S**- small community centers (100-1000mp), **M**- medium community centers (1001-3000mp) and **L, XL**- large and very large community centers (3001->15000mp). For each category were established subcategories.

The scale of community centers reflects a significant criteria of analyze by synergistic connection with other defining elements of those: principles, typologies and functions, users- public, community, space.

Multifunctionality respectively multifunctional space was defined as an essential principle in designing contemporary community centers. From the same about 100 analyzed examples were identified **three types of multifunctionality: merging-concomitance, polyvalence-adaptability and hybrid solutions**, the last resulting from combining the first two.

The principle of MERGING-CONCOMITANCE multifunctionality involves the existence of several spaces with different functional purpose, accurate, operating simultaneously under the same roof. The exact functional destination customizes spaces, make them recognizable, confers them a special character, a special ambience, expresses the users' wish at least to a certain point. These spaces may not be so easy to change, have a certain functional inertia.

Unlike the previous principle, the principle of POLYVALENCE-ADAPTABILITY assumes interior or exterior spaces which by different organizations and facilities (intervention on furniture or other items of subdivision) allow the conduct of several activities concomitantly or phased in time. alignment]

### 2.1 Multifunctionality as merging-concomitance

With a total area of 43000sqm, **Palo Verde Library and Maryvale Community Center** (2006, USA, Gould Evans Architects) represents an example of multifunctional ensemble that offers various facilities. The ensemble includes a generous library, an auditorium with a capacity for maximum 150 persons for recitals, theatre and conferences and a mainly sportive community center that includes a park, swimming pool, basketball court, running trails and a gym. ([www.archdaily.com](http://www.archdaily.com) -a) Also the accesses are located in separate buildings, library and community center form a unitary ensemble, possible anytime to be functional connected by a closed joint, protected from the weather (currently the connection is open, just covered).

<sup>2</sup> "The medium is the message" said Marshall McLuhan in *Understanding Media: the extension of the Man* (1969).

Thus, the ensemble offers to the community social-cultural facilities. Besides sporting spaces, the community center provides loisir spaces both for seniors and youth, a craft workshop, a ballroom and administrative area. Although the spaces with well-defined character are prevailing, the center offers polyvalent space.

An important point in this project was the enhancement of the park that integrates the complex. If in the front of the library the park has a contemplative character, in relation with the community center the park acquires recreational meanings. It is intelligent speculated the ratio between filled and glazed surfaces, used in the bottom of the envelope, facilitating eye and functional contact (especially in the case of community center) with the park. Perhaps it would be interesting an opening of the glazing facade of the library to the park and a outdoor seasonal functional extension during the warm season.

Much modest as size, **Sõmeru Community Center** (2010, Estonia, Salto AB Architects) with a built area of 1500sqm, proposes a different type of planimetry, functional structured by three patios with different destinations: front representative used for formal events especially for the administration, the court dedicated to the club with a strong recreational character and the library courtyard, intimate, quiet, prevailing green spaces. ([www.archdaily.com](http://www.archdaily.com) -b)

Thus, the community center combines the administrative headquarter of the local parish, the library and the club. Although the building is developed only on the groundfloor, the volumetry changes in the third dimension, proposing a vibrated, inclined roof that offers different spatialities. The originality of the building is given by the exterior finish made by wood elements, different colored but integrated in a natural color palette, perfectly complementary to the existing context. The wooden elements are found also inside, in a perfect nude color, this time hung from the ceiling.

Functions have good lighting, opening almost totally to the courtyard.

Very few of the examples of modern community centers have a determined functional-spatial structure, integral determined. Also quantitatively prevails spaces with clear functions, spaces with polyvalent, multifunctional structure are almost always present, even if subordinated.

Community centers generally function on agreed scenarios together with the community, being available at least for a certain time in the life of the community. Multifunctionality strictly interpreted as merging-concomitance works especially for large centers that allow a wide range of areas intended for various functions. Are functions that allow specialized spaces, (eg. sport hall, kitchen) or that responding better to the needs of the community if they are particularized (we talk about elderly, more conservative).

Multifunctionality understood as polyvalence always brings an added value to the community centers in adjusting to the permanent changing of today.

Multifunctional spaces represent the unexpected, the anticipation of non-anticipating future. These appear subordinated in the case of large and medium community centers or can be independent in the case of small centers. Will be discussed all these situations.

## 2.2 Hybrid multifunctionality

In the previous section we have established that most of the contemporary community centers provide spaces for clearly defined spaces but also spaces with polyvalent features.

**Avelgem Community Center** (2007, Belgium, Dierendonckblancke Architects) offers to the community a theatre (305sqm), a multifunctional space (150sqm). The wish of the community was the center to have a minimized footprint on the ground in order to increase the empty space to be used for outdoor activities. Thus, the multifunctional space and the cafe are on the underground floor (cafe operates independent) and at the level 1 and 2 are the foyer and the theatre hall. ([www.archdaily.com](http://www.archdaily.com) -c)

Although the theatre hall is in stairs and cannot be arranged different as a plan, this offers polyvalent facilities for various performances due to a well planned acoustic. Thus, the space can be used both



for theatre spectacles and also for concerts. The underground multifunctional space is horizontal and can receive different uses by divisions and flexible furnishing.

**Herstelund Community Center** (2009, Denmark, Dorte Mandrup Arkitekter Aps) is a small center where the aspect of flexibility, adaptability was taken into account even from the beginning in the design process. ([www.archdaily.com](http://www.archdaily.com) -d)

*"The community center should be able to incorporate many different ages and interests over time, and many types of communities from the informal meeting around an event, summer festival, a big football or presentation to the special interests and common eating."*; Source: Archdaily, <http://www.archdaily.com/34043/community-centre-herstedlund-dorte-mandrup-arkitekter/>.

Community center of small dimensions constitutes an interesting exercise in terms of multifunctionality, shifting to the last proposed principle of POLYVALENCE- FULL ADAPTABILITY.

Summarizing, the principle of hybrid multifunctionality is the most often used in thinking of contemporary community centers. Multipurpose, adaptable spaces are included in multifunctional plans schemes. Polyvalent space may be subordinated to the assembly or may constitute the most important element of the composition. The centers that offer a hybrid multifunctionality can best meet the community as a whole, providing specificity, stability as well as flexibility, adaptability, being capable by an optimal metamorphosis.

### 2.3 Polyvalence- adaptability

As was stated above, the most used multifunctionality formula in thinking of contemporary community centers is one that integrates an array of spaces with specific functional destinations, flexible, adaptable, non-finite spaces.

There are also exercises of complete flexibility, adaptability, versatility. The predetermination is completely removed in thinking of these centers, precisely because the premise from which we start is that the society and communities of today are always changing. Total flexibility exercises are encountered especially in small centers where one or two polyvalent spaces represent the whole center and create the support for community interactions. This total polyvalence is sometimes also the result of financial conditionings, but the architects make from these conditionings opportunities for outstanding spatial exercises, always started from the changing requests of the community.

Multifunctional architectural space, generator of standalone buildings is not a discovery of the XXI century. Since the 60s and 70s of the last century, architects have validated this formula in experimental theatres. Gheorghe Roșu, in his PhD thesis, Multifunctional space, analyzes various examples of experimental theaters generated by multifunctional spaces, like *Nanterre Theater* or *Vitry Adaptable Hall*.

Currently, the contemporary theatre uses multifunctional space, developing the concept of polyvalence-adaptability in different formulas.

A recent example is **Polyvalent Theatre from Lille** (2013, France, Architects Lacaton & Vassal ) that can be characterized as a flexible, multifunctional space, adaptable for three types of activities that can take place concomitant or separate in different versions: theatre hall for 400, 600, 1800 seats, ballroom and exhibitions. The center with mainly cultural features is intended both to the neighbourhood and the entire city. ([www.archdaily.com](http://www.archdaily.com) -e)

If in the beginning, the multifunctional space generator by standalone buildings was experienced and appreciated in nonconformist artistic environments, currently the community centers use it with success for the general public this formula. The advantages are manifold: **flexibility, zero functional latency, financial sustainability.**

Bring up two small scale examples: **Youth Center in Amsterdam, Osdorp** (2011, Netherlands, Kempe Thill Architects) ([www.archdaily.com](http://www.archdaily.com) -f) and **La Candida Community Center** (2009, Argentina, Adamo-Faiden Architects) ([www.archdaily.com](http://www.archdaily.com) -g).

The center from Holland proposes a two levels simple volumetry: the ground floor completely glazed, a “public living room”, and a full mat floor, “a community hall”. Both levels are treated neutral and can be used in various ways.

With a similar expression, *La Candida Center* proposes this time a just one floor volumetry. The context is similar, an area with a strong green character, without restrictive conditionings. The simple volume, in a smoky color, with a uniform exterior, combines a glazed area that houses the multifunctional space and an opaque part that shelters lockers and toilets. Inside, White is sovereign, emphasized by the total glazing on the long side of the multipurpose space. The glazing can be open, activity could continue outdoor. The volumetry, neutral at the exterior during the day because of the dark chromatic and of windows that reflect the natural context, is enlivened during the night because of a skillful lighting, in a sincere extroversion of the interior activities that result from the lighting of the interior space.

	MERGING- CONCOMITANCE	HYBRID MULTIFUNCTIONALITY	POLYVALENCE- ADAPTABILITY
<b>OPPORTUNITIES STRENGTHS</b>	<ul style="list-style-type: none"> <li>-individualization, space customization;</li> <li>-recognition, architectural object identification with past generations;</li> <li>-stability, it confers identity to the community.</li> </ul>	<ul style="list-style-type: none"> <li>-individualization, personalization and flexibility;</li> <li>-maintains a community rhythm.</li> </ul>	<ul style="list-style-type: none"> <li>-flexibility, adaptability in time for spaces;</li> <li>-possibility of adapting in real time to changing requirements of the present communities.</li> </ul>
<b>THREATS WEAKNESSES</b>	<ul style="list-style-type: none"> <li>-spatial rigidity, low flexibility;</li> <li>-high initial cost of the investment;</li> <li>-large area needed to respond to all requirements.</li> </ul>	-	<ul style="list-style-type: none"> <li>-neutrality, lack of customization;</li> <li>-non-appropriation of the space by all age groups;</li> <li>- possible high cost for perpetual space customization.</li> </ul>

### 3 CONCLUSIONS

**Multifunctional architectural space understood as polyvalent, flexible, adaptable can be generator of independent buildings, in the case of community centers.** Although is used mainly in the case of buildings with cultural and artistic connotation (e.g. experimental theatres), this offers architectural resolutions possible for small-scale community centers. In this case, multifunctionality understood as polyvalence may appear in double hypostasis: as **deliberately architectural gesture**, always open to the social metamorphosis of the community or as **pragmatic answer** to the different financial constraints. The two hypostasis can coexist, providing a wide range of architectural formulas.

**MERGING-CONCOMITANCE principle** is the first used in chronological order and involves the existence of several spaces with different, precise functional destination that are simultaneously operating under the same roof. In the case of contemporary community centers is used mostly at the large buildings that allow a generous spatial development.

**HYBRID-MULTIFUNCTIONALITY principle** is the most often used in the case of contemporary community centers and involves **the intertwining in varying proportion of the two types of**

**multifunctionality, by merging-concomitance and polyvalence-adaptability.** From the functional scheme point of view, these centers respond maybe the best to the community as a whole, providing both specificity, stability and flexibility, adaptability. The hybrid scheme of multifunctionality is found mainly in large and medium size centers.

The last principle used in the functional scheme of contemporary community centers is **POLYVALENCE-ADAPTABILITY**. The refusal of predetermination and awareness of the fast changes occurring today society eliminates the complex functional schemes, proposing instead adaptable, flexible spaces, possible to be used in various ways. This principle is applied especially to small size community centers. (Zamfir, 2014)

*Note: The present article is based on a wider study conducted in the PhD Thesis, **Towards a community architecture. Interdisciplinary highlights for the contemporary society (2014).***

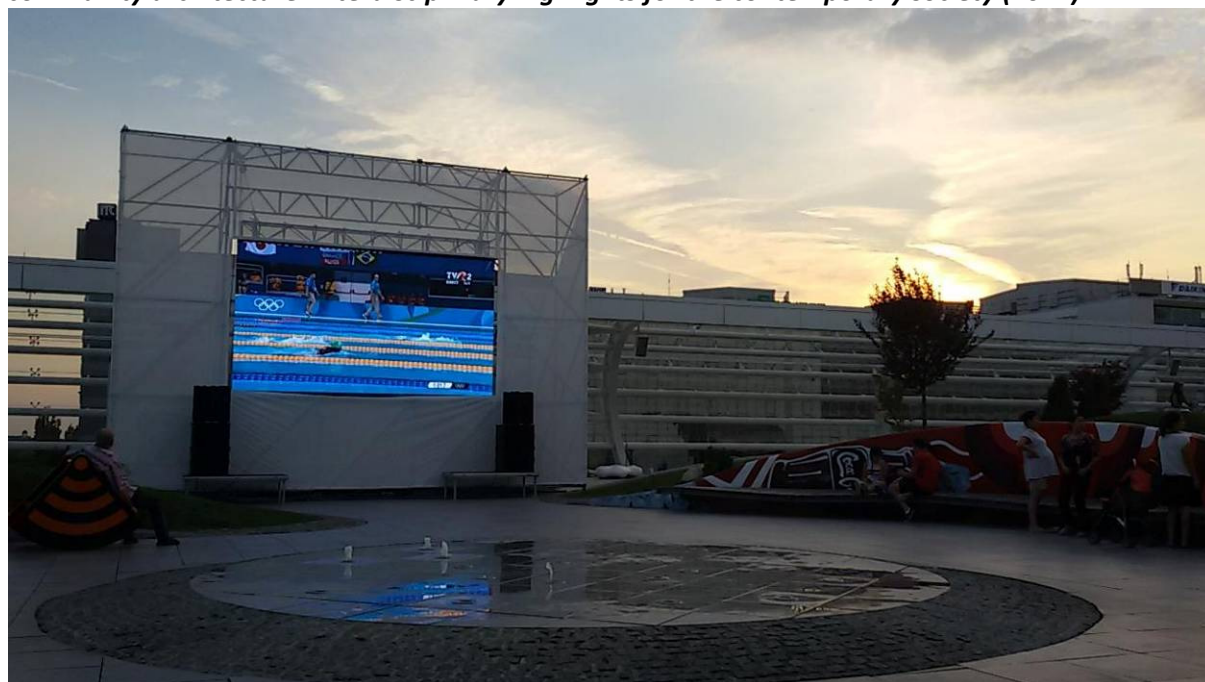


Figure 1. Multifunctional space on Promenada Mall roof, Bucharest, Romania- empty © Mihaela Zamfir (Grigorescu)



Figure 2. Multifunctional space on Promenada Mall roof, Bucharest, Romania- used © Mihaela Zamfir (Grigorescu)

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## PROJECT LOG: A HOUSE ON THE COUNTRYSIDE - A CONTEXTUAL APPROACH

Andra Panait

*"Ion Mincu" University of Architecture and Urbanism (ROMANIA)*  
*andra.panait@uauim.ro*

### Abstract

The rural world is characterized by extreme disparities, oscillating between tradition and underdevelopment, between valuable places/landscapes and extreme poverty, between urbanization and de-urbanization, between the small, human scale of traditional settlements and a change of scale and landscape brought on by the infiltration of urban habits.

This paper examines the first project in the second year of study at the Faculty of Architecture from UAUIM. The general theme - "A house on the countryside" - puts forward the study of a rural community and requires an adequate architectural response to the housing needs of a family, based on interpreting the local cultural identity and understanding the materiality and the relations between the architectural and material space.

The students were free to choose between two options. The first was Rădești - an isolated village that still keeps many traditional values, including all rural housing typologies, and has houses going back to the end of the 19th century. The second option was Comana, a village whose valuable natural landscape and proximity to Bucharest involves a specific set of intervention strategies in order to obtain a high degree of architectural permeability.

The paper also exemplifies a teaching process based on a structured methodology, based on questions meant to point out categories of issues and whose answers would result in types of intervention and particular solutions.

**Keywords:** Design Methodology, criteria-based assessment, criticism, design thinking, rural design

## 1 THE PROJECT

### 1.1 Argument

The framework-theme of the first project of Year 2 students has a starting point in the precarious state of Romanian villages in which old dwellings and households are slipping into an implacable decay, leading further to the disappearance of traditions in the usage of local materials, traditional crafts and loss of a specific understanding of the environment. They are being replaced by high-stories houses/villas, built too close to each other, with façades made of polystyrene boards, stainless steel guard-rails, cement balusters and PVC windows.

In the rural world, the role of the architect is virtually unknown (or ignored), instead people prefer to build the houses themselves but in doing so they have lost the traditional know-how refined over hundreds of years and do not understand why they should talk to an expert for building works relating to their property. Perhaps this is why the architects themselves prefer to focus on cities, leaving the rural world to an irreversible technological deterioration.

For this reason, the theme proposes to bring together students and rural communities with the aim of searching architectural solutions fit for the dwelling needs of families while also based on the understanding, affirmation, and interpretation of the local cultural identity.



In addition, the understanding of the materiality involved, of the intrinsic relation between the architectural space and the materials being used in building it, represents one of the main components of the framework theme. Starting from this the basic premise, each workshop could freely choose their theme, variation and own objectives, as well as their own research methods.

## 1.2 The theme

For the purpose of this study, two villages with contrasting characteristics have been selected. The first one, Rădești, is a museum-like village, still preserving features of traditional culture, and encompassing almost all the typologies of rural dwelling, including period houses dating from the end of the 19th century - the beginning of the 20th century. These houses, if restored, would become a valuable and attractive site, which could enter the touristic circuit.

The other choice was Comana, a village near Bucharest, with its distinct landscape as particular feature - the Neajlov river valley, which raises a new set of challenges, although it is more permissive for interventions.

Students were given as theme the exploration of the two villages with the aim of identifying landmarks, dwelling typologies, the cultural make-up of the area, materials used in local constructions, as well as local technologies employed. Also, they have gathered data from the interactions with local people, in order to map everyday needs and challenges.

In addition to the analysis of local cultural identity, the theme required mapping up an area and identifying sites suitable for interventions related to dwelling needs, with a total surface not bigger than 70 mp. Depending on each case, students could thus propose a new dwelling or the extension of one already in place, with supplementary annexes where necessary – a need identified through research and discussions with the local people or by functions adjacent to the dwelling itself or closely linked to it. The proposed architecture had to respect the structural and aesthetic logic of the typology that has been chosen and of the materials used in the respective cultural context. The study proposes the use of traditional technologies and low-tech local building materials, based on responsible resourcing and environmental awareness.

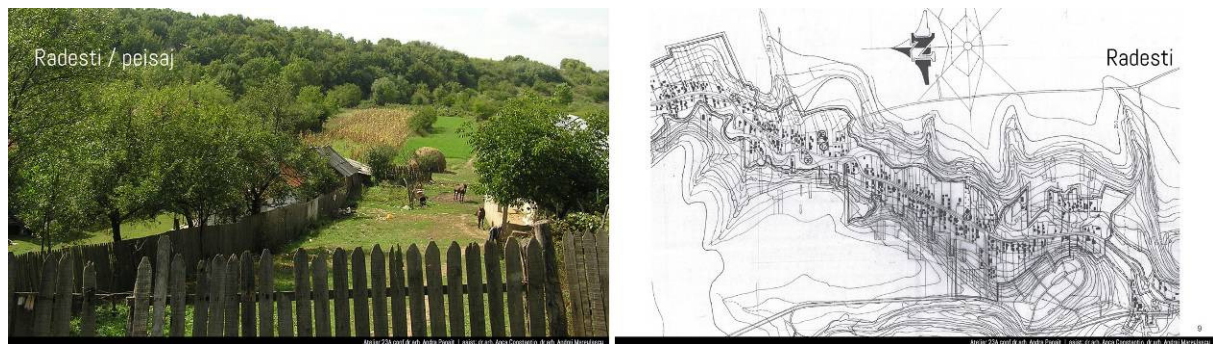


Figure 1. Rădești Village

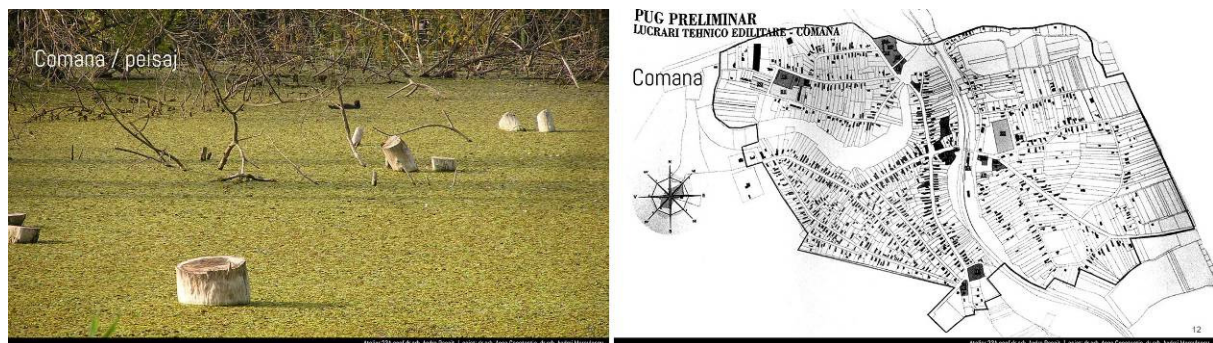


Figure 2. Comana Village



### 1.3 The objectives

The main objectives of the project were to develop an understanding of various historical contexts, of the site, of the local cultural identity, of materiality as integral part of the architectural space, of the natural means by which materials define space and form in a specific cultural/social/climatic context.

Another objective was to observe and point out how the context guides the architectural approach and how its presence is felt throughout the whole process from initial ideation to finished project.

## 2 METHODOLOGY

### 2.1 Research questions

This paper exemplifies a teaching process based on a structured methodology, based on questions meant to point out categories of issues and whose answers would result in types of intervention and particular solutions: "How do we define countryside?", "What do we like about it?", "Did any notable process take place in Romanian villages in the last 20-30 years?", "What used to differentiate a village from a city?", "What does differentiate them now?", "Are there specific habits that are borrowed between cities and villages?", "Is there a migration and in what direction?", "Who do we build for?", "How comfortable are the buildings, what materials are used, what techniques are used, what are the aesthetic criteria?", "How does the context influence the project?"

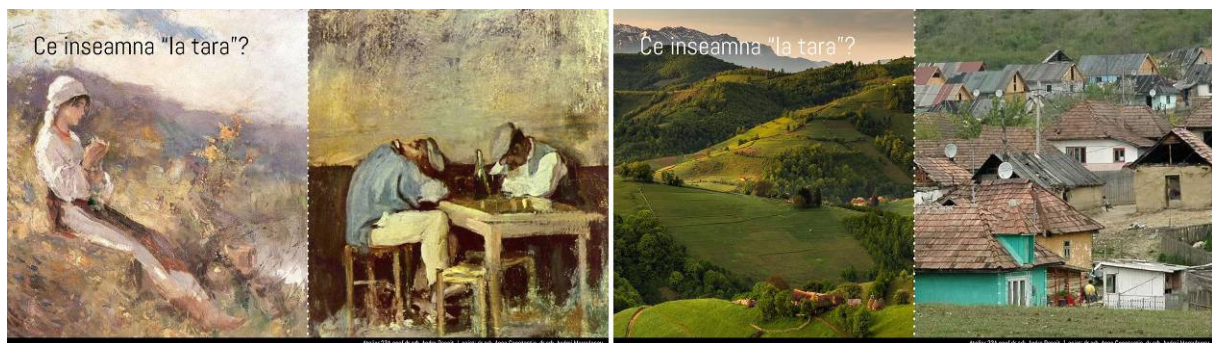


Figure 3. How do we define countryside?



Figure 4. Who do we build for?

### 2.2 Sub-themes and other criteria

Multiple sub-themes, facets and criteria were discussed:

Socio-economical: the mixing of architectural functions, with care given to the public-private transitions and adding a public program for the benefit of the community; the general improvement of the comfort degree and energy efficiency;

Architectural elements: re-interpreting the intermediary space of the traditional Romanian porch, of the eave and of other architectural elements specific to Romanian country houses;

The site: inner courtyards, fragmentation, vegetation, gardens;

Finishes: materiality, texture collage, permeability and transparency.

## Cateva date statistice

### Sociodemografie rurală

Ilie Bădescu, Gheorghe Șeștean, Adela Șerban, Ioana Petre, Viorica Dumitrescu

#### MIGRAȚIA INTERNĂ ȘI EXTERNĂ POPULAȚIEI RURALE

##### Migrația internă a populației rurale

• În anii postbelici, în special în deceniile 6 și 7 ale secolului XX, în România, procesele migratorii au cunoscut evoluții hipertrofiate, îndeosebi pe traseul rural-urban. Populația rurală a plectat masiv din sat, fie definitiv, fie schimbându-și doar locul de muncă, eliberând economia de tip agrar a satului și ocupând în orașe slujbe, mai bine remunerate îndeosebi în industrie, dar și în construcții, în învățământ, în cercetare etc.

• După decembrie – 89 procesele migratorii au slăbit mult în intensitate, cu deosebire cele de tip rural-urban. Acest declin al migrației populației rurale este mai evident la grupele de vârstă "adulti" și "vârstnici", dar nici la tineri ratele migratorii nu mai cunosc aceleași valori ridicate din deceniile anterioare.

• Dacă ne oprim doar la ultimii patru ani, direcțiile urban-rural,

Totuși implicarea satului în procesele migratorii rămâne în continuare dominantă, comparativ cu orașul. Astfel atât înainte de 1989 cât și după, ponderea participării satului, într-o manieră sau alta, la procesele de migrație a depășit înoddeauna 70% din totalul migrațiilor.

rural-rural și rural-urban au înrădit în 2000, 76,3%, în 2001, 72,5%, în 2002, 74,2% și în 2003, 72,7% din totalul migrațiilor fiecărui an de referință.

• Analiza diferențiată a fluxurilor migratorii pe fiecare dintre cele patru direcții, permite evidențierea următoarelor tendințe (Tabelul 8.1.)

- Menținerea, în mod constant, pe primul loc a direcției urban-rural (între 27,9% și 33,8%)

- Menținerea pe locul secund a direcției rural-urban și urban-rural (între 23% și 27% din totalul migrațiilor)

- O ușoară scădere a direcției de migrație rural-rural (de la 23% la 19%)

Direcții de migrație	Anii de referință							
	2000		2001		2002		2003	
	Nr.	%	Nr.	%	Nr.	%	Nr.	%
Urban-rural	82631	33,8	79327	27,9	26524	30,1	100282	30,3
Urban-urban	17921	7,1	18229	6,3	82871	25,8	90908	27,1
Rural-urban	45691	18,5	69837	24,4	71928	22,5	76597	23,1
Rural-rural	16262	6,6	16099	5,6	6974	2,1	68070	19,5

Sursa: Președintele Institutului de Sociologie după volumele "Schimbări de domiciliu", 2002, 2003, INS, p. 14.

Sursa: Proiecții ale Institutului de Sociologie după volumele "Schimbări de demografie", 2002, 2004, INS, p. 1 și p. 2.

• Direcția urban-rural cunoaște – în cifre absolute – o creștere, remarcabilă, doar că ponderea ei în totalul migrațiilor nu crește la fel de semnificativ. Astfel, dacă în anul 2000 se înregistrau 82.600 migrații din oraș în sat, în anul 2003, numărul acestora crește la aproape 100.300.

• Chiar dacă în ultimii patru ani se constată o ușoară revenire a ratelor migratorii, totuși, dacă din anii înapoi cu încă o decadă, apare evidentă tendința de scădere a acestor rate (pe total migrații). Astfel în anul 1990 se înregistrau 33,9 migrații la 1000 locuitori, în 1995, 12,8 în 2000 10,9, în 2001, 12,7 și în 2003, 15,3 migrații la 1000 locuitori. De remarcat că în anul în care se constată cel mai puternic regres a migrației interne totale a fost 2000.

• Din analiza situației actuale a soldurilor migratorii (diferența dintre numărul plecătorilor și numărul sositorilor) (tabel 2) rezultă că, în 2003, ca și în anul precedent, plecările definitive din urban (spre rural sau spre alt urban) sunt mai numeroase decât cele din rural (spre urban sau spre alt rural). Soldurile negative în urban rămân foarte mari, chiar dacă se constată o scădere ușoară a acestora (doar cu 4,9%).

Acest fenomen (sold negativ în urban și sold pozitiv în rural) s-a constatat, pentru prima dată în istoria demografică a României, în anul 1997, menționându-se, de atunci în fiecare an. Cu alte cuvinte în România, pentru prima oară, numărul persoanelor care pleacă din oraș este mai mare decât al celor care se stabilesc în oraș.

Corelarea gradului de dezvoltare a regiunii cu mărimea soldului migratoriu este evidentă, în sensul că din zonele cu starea socio-economică subdezvoltată se pleacă mai mult decât se sosește (mai ales din Moldova) iar din zonele dezvoltate (în primul rând Vestul și Bucureștii) intrările sunt mai numeroase decât ieșirile.

##### Elemente explicative pentru tendințele menționate

• Situația actuală a procesului migratoriu din România cu cele două caracteristici definitorii ale sale – creșterea directiei de migrație dinpre urban spre rural și scăderea migrației din rural spre urban sau spre alt rural își află explicația, în egală măsură în starea de criză a economiei marilor și micilor orașe, îndeosebi prin degradarea puternică a industriei (unii vorbesc chiar despre dezindustrializarea României) și, în măsură egală, în slăbirea potențialului economic agrar și negrar din majoritatea satelor românești. În plus, satul se confruntă și cu o degradare a potențialului socio-demografic (îmbătrânirea și creșterea morbidității și mortalității), dar și a celui cultural și spiritual.

• Faptul că în prezent numărul intrărilor în rural este mai mare decât numărul intrărilor în urban reprezintă o reacție la reducerea drastică a posibilităților de supravețuire în marile orașe și, cu atât mai mult, în orașele mici (cândva principalele furnizoare de locuri de muncă și de resurse financiare). Această reacție (migrația spre rural) este mai puternică la populația urbană cu rădăcini rurale, din rândurile ei întorcându-se tot mai mulți în satul din care au plecat.

• La această mișcare participă îndeosebi vârstnicii (pensionari) și adulții care au "eșuat", mai mult sau mai puțin, în oraș, în sensul că le este tot mai greu să-și găsească sau să-și mențină un loc de muncă în oraș.

• Retromigrația este, deocamdată, mai degrabă un fenomen negativ, deoarece contribuie la accentuarea îmbătrânirii comunităților rurale, opțiunilor deja de acest fenomen demografic din anii anteriori, având drept consecințe, printre altele, creșterea gradului de morbiditate a populației rurale, scăderea ponderii celor care sunt apți de muncă și creșterea simultană a inactivilor.

• În general însă, judecând după soldurile migratorii pe vârstă și medii (tabel 8.4), este evident că, în rural există solduri migratorii pozitive (mai multe intrări decât ieșiri) doar la adulți și vârstnici. Cu alte cuvinte, doar aceștia sosește în rural în număr mai mare decât cei care pleacă din rural.

Atelier 23A conf.dr.arh. Andra Panait | asist. dr.arh. Anca Constantin, dr.arh. Andrei Mărgulescu

Figure 5. Statistical data regarding migration. Did any notable process take place in Romanian villages in the last 20-30 years?

## Etapa 1: Studiul identitatii locale

- repere,
- tipologii de locuire,
- identitate culturală locală;
- materiale folosite la construcțiile existente,
- tehnologii locale de punere în operă a acestora.



Figure 6. First stage. Local cultural identity study.





Figure 7. The sketches – projects log.



Figure 8. Study sketches journals Archive.

### 3 RESULTS

As a result, the approaches were grouped in a few big categories:

- conversions that depart from the initial agricultural function and adapt the space to other types of living;
- remodelings of existing houses and annexes, mainly as a result of changes of owners or changes in the family structure;
- small extensions to existing houses (supplementary storage areas, bathrooms, summer kitchens) in order to increase the degree of comfort;
- small extensions to existing annexes in order to improve their function;

- extensions that complete the housing with a public program: dispensary, store, school.

The extensions covered multiple typologies in relation with the house: attached to the house and communicating by opening the common wall, joined with the house by a special passage, detached from the house but still having common elements like floor tilings or lightweight wood structures, vertically developed, by changing the existing roof.

#### TIPURI DE INTERVENȚII - RĂDEȘTI



#### TIPURI DE INTERVENȚII - COMANA

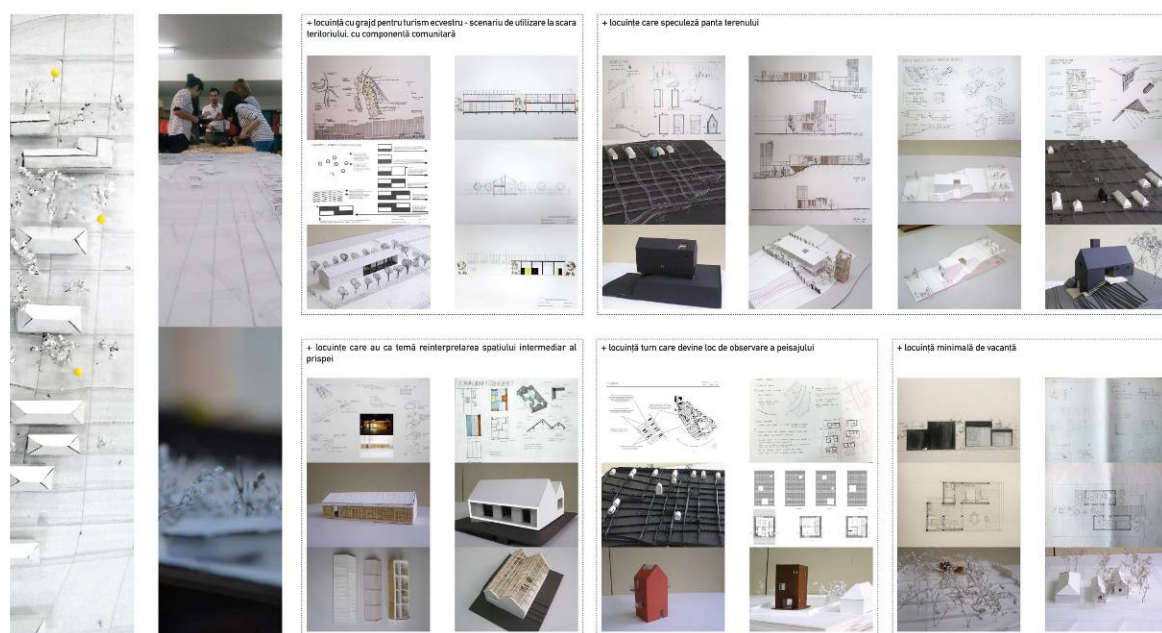


Figure 9. Interventions typologies Rădești (above) & Comana (below)

### 3.1.1 Study case: House with a small medical facility, Rădești, st. arch. Daria Vâlsan

The project is based on a thorough analysis of the Rădești village that takes place on several levels, from the linear structure of the settlement and its references, types of farms, organization of courtyards, types of houses to architectural details. The project identifies an issue of the village namely the absence of public facilities and proposes a scenario with a community component: a home with a small medical facility articulated through a greenhouse with medicinal plants.



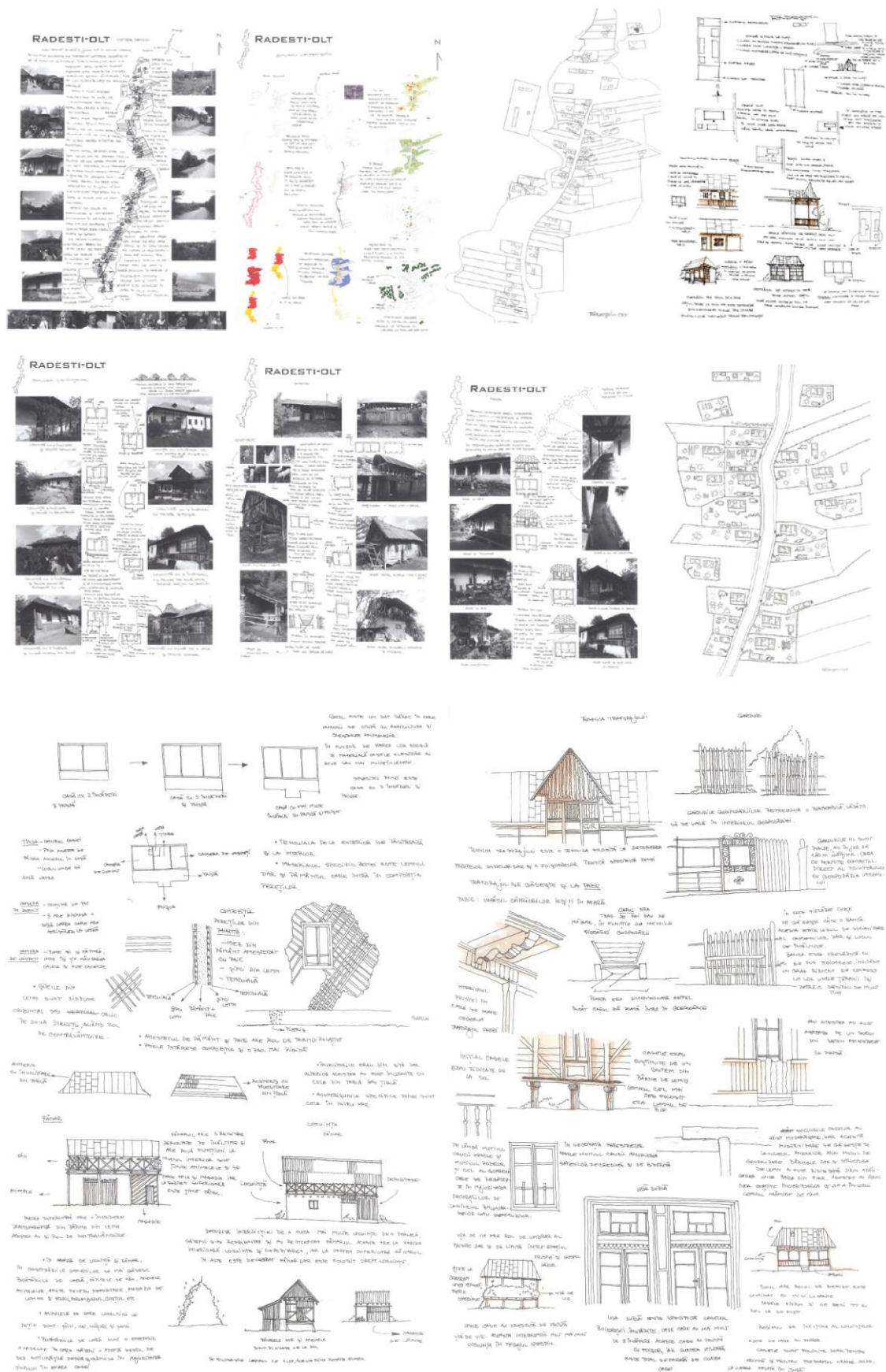


Figure 10. Rădești architectural elements: the intermediary space of the traditional Romanian porch, the eave and other architectural elements; courtyards, fragmentation, vegetation, gardens; Finishes: materiality, texture collage, permeability and transparency.

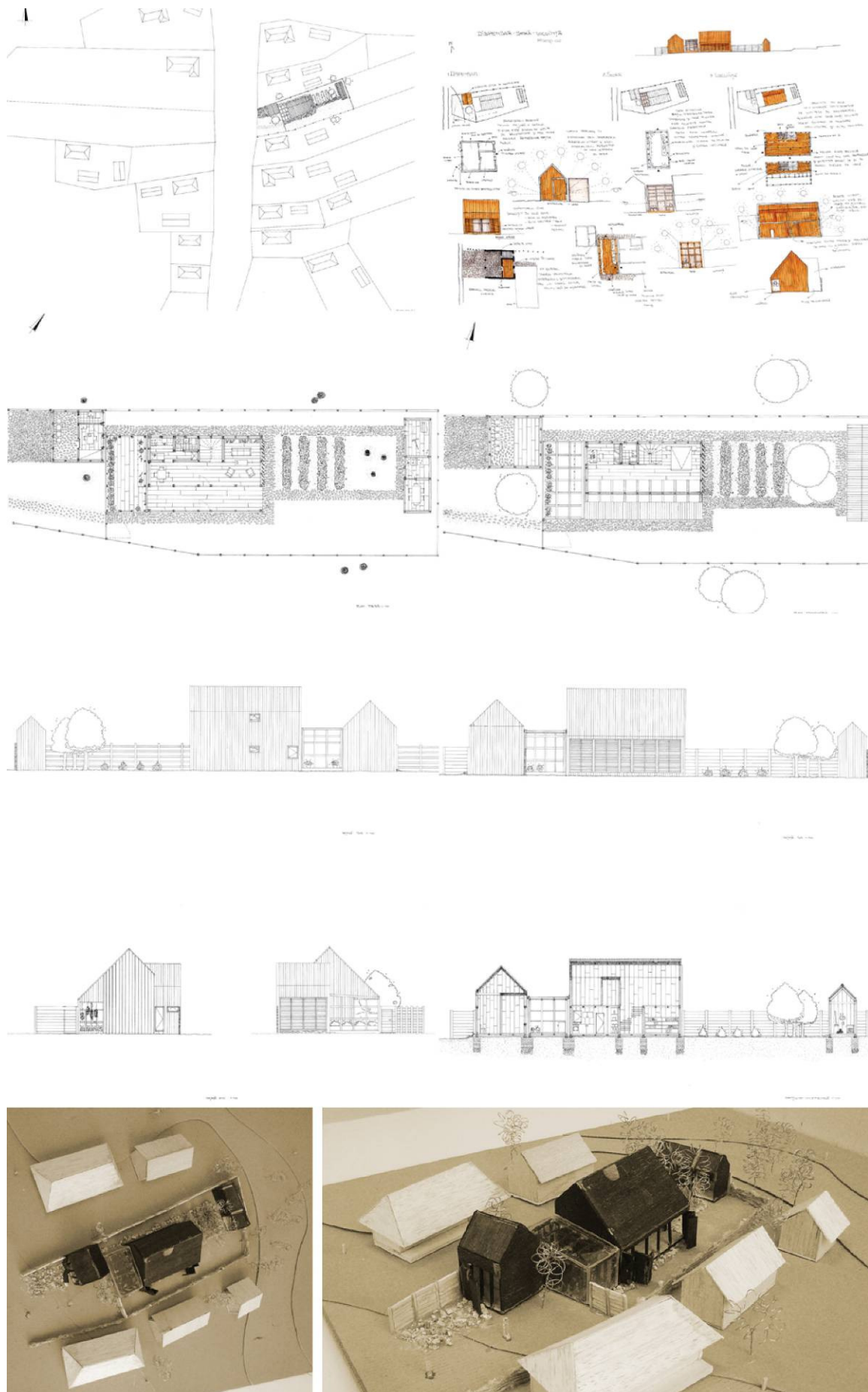


Figure 11. The proposal – a house with a dispensary and a medicinal plant greenhouse



## 4 CONCLUSIONS

The rural world is characterized by extreme disparities, oscillating between tradition and underdevelopment, between valuable places/landscapes and extreme poverty, between urbanization and de-urbanization, between the small, human scale of traditional settlements and a change of scale and landscape brought on by the infiltration of urban habits. The increased complexity and differentiation of rural development has implications for the ways in which policy decisions may be made. Local diversity implies that decisions must vary at the local level, but an appropriate multi-level governance system for the administration of rural development undermines the traditional understanding of effective sovereign governments delivering policies and assessing their impacts. All these trends have been captured in projects and have been put forward as a subject of reflection for students.

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## 2+2=7

### IF THE PROJECT IMPROVES ITS PARTS

Luciana Macaluso<sup>1</sup>, Flavia Zaffora<sup>2</sup>

<sup>1</sup>University of Palermo, Department of Architecture, viale delle Scienze, ed. 14, 90128 PA (Italy)

<sup>2</sup>University of Palermo, Department of Architecture, viale delle Scienze, ed. 14, 90128 PA (Italy)  
*luciana.macaluso@yahoo.it, flavia.zaffora@gmail.com*

#### Abstract

The International Open City Summer School of Piacenza 2015 involved the participants in the design of a spread museum of the agriculture between rural and urban areas, crossing the old town of Piacenza. The submitted project<sup>1</sup>, processed in that workshop, is an occasion to call in question the different scales of the design and some linked themes like the measure, the porosity and the permeability of the architecture and the town. Within the design of the museum, the experimentation of an “intermediate scale” reached us to the need of the architecture as connection of various parts, thus to the difference between mending and making something new. At the end, the challenge is that the sum of the portions merged will be not arithmetic; rather it will be a change that improves the territory, multiplying its accessibility and enjoyment (*therefore in architecture 2+2=7*).

The complexity of the core of Piacenza can be seen as a sequence of limits, beyond which the urban fabric totally changes: these are the Po river line, the XIX century walls, and the highway. Where these discontinuities create some “variations of identity”, the project builds a continuous path crossing south to north the city, deepening the main issue of the threshold; new architectural devices aim at revealing unusual views and paths, through a soil design with void as the main order element. By defining a path about six kilometres long, we can immediately recall the comparison with the bigness issue or the fundamental matter of a balanced relationship between public and private. By this balance, and in its overturning, we can read the changing of urban relationship from the ancient city to the contemporary one and the rural areas. It deals with the definition of a scale, this does not correspond to the whole path, but at the same time it loses its values if reduced to only one of its portions. Operating by fragments means defining an “intermediate scale” intervention allowing to find a balance, both in space and time.

The selected urban path is the museum route. Indeed, the spread museum of Piacenza has been imagine as an excavation into the town extending into the rural areas, which includes public spaces - external or internal - churches, courtyards, and fields. The plan is based on the porosity of the old town and gradually, moving away from the centre, on larger open spaces. Fragments, actually often closed, in the project penetrate each other. This strategy pours the private spaces in the public ones; therefore, it recovers, on the one hand the porosity of the old town and, on the other, the permeability of the modern city where a network of green spaces hierarchically orders. Open spaces, parks, and vegetation remaining over the time, often more than other urban elements, can structure Piacenza. If we consider them as figures that need shapes, and projects, we can interpret their heterogeneity in a functional, social and historic point of view. A project of ground can order these elements proposing a path with, sometimes, a habitable thickness. It is a continuous threshold whose thickness irrigates lifeblood in the urban and rural fabric increasing the self-potential of each fragment and triggering gradually autonomous processes.

**Keywords:** Piacenza, porosity, permeability, in between, rural-urban areas

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<sup>1</sup> This paper has drawn on the common experience of Luciana Macaluso, namely responsible for the chapters 1,4 5, and Flavia Zaffora, namely responsible for the chapters 2, 3, 6.

# 1 PREMISE

## 1.1 Architectural challenge: 2+2=7

The International Open City Summer School of Piacenza 2015, directed by Guya Bertelli and Carlos García Vázquez, involved the participants in the design of a spread museum of the agriculture between rural and urban areas, crossing the old town of Piacenza. The submitted project<sup>2</sup> has been processed in that workshop during three weeks, in the September 2015. It is an occasion to call in question the different scales of the design, from a territorial vision to the detail, and some linked themes like the measure, the porosity and the permeability of the architecture and the town.

Within the design of the museum, the experimentation of an “intermediate scale” reached us to the need of the architecture as connection of various parts, thus to the difference between mending and making something new. At the end, the challenge is that the sum of the portions merged will be not arithmetic; rather it will be a change that improves the territory, multiplying its accessibility and enjoyment. Therefore our assumption is that, in architecture, 2+2 never is 4; nevertheless the result is increased of new qualities, economies and perspectives: 2+2=7.

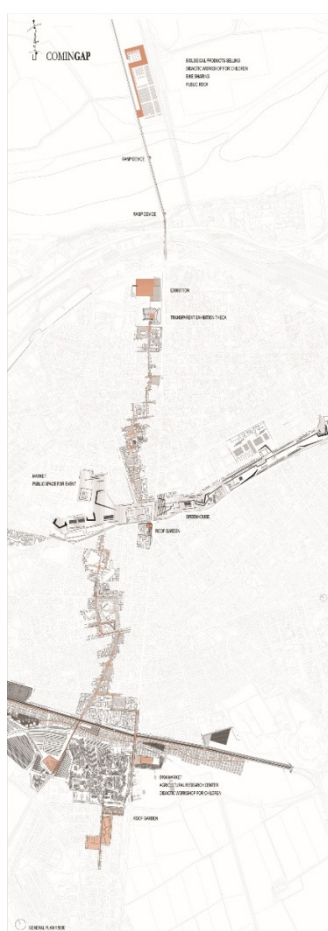


Figure 1. General plan of the project “CominGap”, representing the whole route crossing Piacenza encountering three main nodal areas in the south, in the centre, in the north.

<sup>2</sup> The project “CominGap” has been processed by M. Galluzzi, L. Macaluso, J. Lopez Cano, C. Penna, M. Samir, F. Zaffora, and the students: S. Cicero, D. Caccavale, G. Noto, E. Corna, L. Elnaggar, A. Ospanova, M. Peluso, B. Amadio, F. Marigliano, T. Pierrick, T. Croattini, A. Lunari, M. Abdelkarim, A. Rajabi, S. Jin, A. Baldo, M. F. Angelone, S. Franzetti, A. Bosone, A. Sazi, M. Sharat, M. Protciuk, V. Rezyapova, G. Carpi, C. Trug, W. Tianjiao, L. Yue, Y. Munir El Semary, S. Bildirici, D. Savarkar, Z. Elzein, S. Yim.

## 2 UNITY BY FRAGMENTS

### 2.1 Thresholds

The face of contemporary Piacenza clearly retains the signs and characteristics, which make it unique among the other cities of the region. It can be simplified into a sequence of limits, running north to south: these are the Po river line that is also the limit dividing Emilia Romagna to Lombardia, the XVI century Farnesian Walls, and the highway, parting the urban growth from countryside surrounding Piacenza. At every border, Piacenza fabric changes in shape and density.

The deal is changing these limits into thresholds, where continuous soil can develop from. Thus it can pull off and take back enclosed areas, still not accessible, but potentially open. It determines new shores<sup>3</sup>, where lines, without dimensions, get thickness: they become gates entering into the built fabric. Therefore, from south to north, the project designs a continuous soil sewing up margins previously far: the agricultural texture enters into the town in an osmotic process<sup>4</sup>, and like water, it weaves into the town, gaining a solid essence. It encounters the Farnesian Walls, now limit between new city expansions and the ancient core: the project changes them from a separating device into a fluid margin connecting all the residual spaces generated by the development of the town, using the path in stone and brick recalling typical Piacenza materials. Going through the core, like a snake insinuating down north, it gets density again at the great presence of Palazzo Farnese, in front of the bridge over the Po. Here the project defines a system of excavated squares and changes the incomplete side of the building into the exhibition centre of Piacenza. Moreover, the strip of the bridge is implemented with different speeds and paths, trying to get the huge natural park accessible and connecting the system of spread settlements beyond the Po.

### 2.2 Interstices: haiku structure

As well as a sequence of limits, Piacenza has a clear scheme into the crossing of ancient *cardus* and *decumanus*, nowadays via Roma and via Vittorio Emanuele, running from the bridge over the Po towards outside Piacenza, into the countryside. This spine, passing through all over the town, shows all the elements getting the road the main connecting element of the city, even in the contemporary age. Moreover, it is known that the position of Piacenza in Italian territory is strategic, due to via Emilia, ancient roman track connecting Rimini to Milan, intersecting via Postumia, towards Genoa, and via Emilia, that is a part of an ancient via francigena, a Christian pilgrimage path toward Rome. Nevertheless, the road still produces residual, not used and abandoned places, smaller into the built core and wider in the outside. It is a space in-between, escaping definitions, creating ambiguities and, maybe, even disorientation, but still interpreter of the contemporary way of city development, sprawled in space and time by fluxes and consumption networks. The hypothesis of the project is that another, capillary continuity is possible, parallel to the primary north-south infrastructure that is mainly a car path, considering voids as a structure-space. It tries to define enclosed disconnected areas and build up sequences, producing pauses into the tightened rhythm of the city. It is alike what happens in Japanese culture, well expressed by the haiku writing, where the economy of the brush and of the words does not fill the void, but on the contrary enhances the interstices between the objects. Like a silent speech, it is an architecture made by pauses: it recomposes fractures by the emptiness rather than the fullness.

### 2.3 Urban trigger points

«As space is increasingly treated as a resource to be exploited, processed, and manipulated, and as the forces of measurement become increasingly accelerated, non-geometric, and non-locale based, so must space be discarded, abandoned, expended. [...] The most visible and obvious manifestation

<sup>3</sup> The metaphor of the water or the fluid sap sprinkling into the city used to describe the repossession of public voids is linked to the contemporary view of the city of fluxes, where the infrastructures generate new interfaces.

<sup>4</sup> The point is to understand, if there are, the borders of the periphery. As place of exchange between city and territory, in Piacenza this "shore" between last urban settlements and agricultural patterns, even though it is underlined by the cut of the highway, could be enlightened by the mutual nourishment they both get one another: for example, that happens nearby the several farmhouses settled in the last offshoots of the city, and, on the small scale, with the familiar gardens spread all over the southern axis of Piacenza.

of this spatial residuum is the generation of an unfamiliar urban landscape that, when viewed under more traditional criteria, is dissolute, attenuated, entropic, amorphous-interrupted at times by moments of consumer saturation and activity» [1]. Using Rem Koolhaas' words, we could say these are the symptoms of the city growth and changing: they become real trigger points: borrowing the medicine term, they can be defined as special spots where urban tension holds up, revealing sudden state changes: that is different architectural facts, and dissimilar paths speeds and uses are mixed up provoking what can be compared with a muscle contraction. Therefore, the project focuses on these nodes of an grid though interrupted, in order to exalt the variation of the voids and their peculiar features: it tries to ease up this tension, by spreading the path away towards their extremities. So the soil design, zero-volume architecture, gets able to dilute the density and take the edge off, mutating diffused fragments into an interconnected network, alternatively focusing or shading, and unifying punctual architectural episodes.

## 2.4 Outside as an inside

If we would read Piacenza as a huge indoor, like the well-known sentence by Le Corbusier, then the project could be defined like an extension of the Roman way to think the inner space as fluid and multiplying, pushing against the walls of the buildings [2]. This action actually produced a dilatation of the central core, articulating into several surrounding rooms and vestibules getting smaller and smaller. By this way, interstices definitively mutate: from being "what remains" of the built fabric, they change into the real matter of the intervention. The space doubles and multiplies into thinner trickles and, then again, it meets other "open air rooms". The propulsive force is given by the agricultural landscape pushing against Piacenza suburbs, strong enough to enter into the town and there mutate its characters and shape. By cracking<sup>5</sup> into the city, rural paths and extensions become urban and solid, from green to stone, but still public. The void explodes into the built core. The "walls" of these now indoor rooms are flexible, open and movable, constantly transformed by the human action itself: like a new *agorà*, as Fernando Espuelas says, a place as a continuous and magmatic gathering of architectural facts [3].

## 3 MEASURE

### 3.1 The intermediate scale

At first glance, with its length of six kilometres, the whole development of the path project can be seen as a huge infrastructure crossing down south all Piacenza, immediately recalling the bigness issue theorized by Rem Koolhaas in its famous essay [4]. Beyond a certain scale, and the project looks like to have exceeded that, architecture becomes "big": it cannot be controlled, it gets an own life, even forgetting context at all. Actually, the project states something totally different. Working on the fundamental matter of a balanced relationship between public and private [5], and aware that the point is the "measure" of the intervention, it defines some fields, fragments indeed, representing a medium space and time scale and a strategy of gradual approach. It is an "intermediate scale" intervention, where every single examined gap has its own autonomy, although it is nourished by its margins. The hypothesis is that the path is not a linear undifferentiated route long six kilometres, but it is made by its spreading from each point, like a syncopated movement of breathing, slowing or fasting according to dimension of every fragment. Moreover, the challenge is that, by opening anyone of these enclosed areas, the public space is able to break out and widen throughout. Working with urban voids means dealing with the "medium scale", always gathering the architectural detail and a wider look. Therefore, simultaneously, these medium and controlled explosions across the city define a unitary design, increasing more and more.

### 3.2 Medium time-project *in fieri*

Imagining all those, which have been defined like "controlled explosions", the time plays a crucial role. The soil design and the total project is thought as a gradual approach. In the history of the town,

<sup>5</sup> The sign of the crack, recalling Alberto Burri's work or Arnaldo Pomodoro's projects often recurred during the conception of the project.



in fact, all the gaps and the fractures produced by the urban growth have changed into something else, hardly defining and often now no more in use. Because they have been excluded by the city dynamics, these parts became enclosed, and that made them abandoned, forgotten. Notably these are dismissed military areas, wider of little, diffused along the via francigena, and areas left from the ancient railway, still visible in some parts, crossing the city East-West. Then there are other private and fenced spaces that are cloisters, little home patios, family kitchen gardens. One can just peek through the iron gates of the building, which hide enchanted worlds.

The two kinds of areas have in common that they are currently suspended both in space and time, in a parallel dimension alien from the sometimes chaotic development passing all around, awaiting for a sparkling moment when all will change. Therefore, the projects acts like activating a new metabolism, and for that still aware that the transformation cannot happen at once. Thus, far from being a motionless picture of a unique time, the design is rather a series of frames, representing one of the several ways in which space can change and develop in a progressive way across 5, 10, 50 years. The necessity of a drawn “plan” represents a medium time, as a temporal trigger crucial moment of the transformation.

### 3.3 Chain reaction

The total united design matches with the furthest moment of the long-term prevision, considered as a process. Thus the designed path is, actually, a progress seen as a possible sustainable development model: by that, and by sensible nodes of a wider network, we can give some inputs of transformation generating a chain reaction, in order to gradually change private enclosed spaces into public and collective. The individuation of the three main areas of intervention can let the transformation started. There the necessity of project, being more evident, can easily activate more than one gap, hanged on the southern margin, on the inner walls and on the Po river infrastructure. The challenge is that their activation can provoke a chain reaction, in the near surrounding, and a butterfly effect, even far from the point. Like an acupuncture, carefully touching the sensitive node, it will switch on near and far places, with a sudden immediate reaction or an even delayed, unrestrained result.

## 4 POROSITY AND PERMEABILITY

### 4.1 Piacenza, porous town

Robert Venturi, Denise Scott Brown, and Steven Izenour, in *Learning from Las Vegas* wrote like «Nolli's Map of the mid-eighteenth century reveals the subtle and complex relationships between public and private space in Rome. The private buildings are indicated by a grey dotted; it appears as excavated in the public spaces, external or internal. These open or covered spaces are shown precisely through a darker *poché*. The interiors of the churches are highlighted like the squares and the courtyards of the buildings, even if these are articulated in a wide variety of scale and quality» [6]. Looking at the map you perceive continuity between the courts of the palaces, the naves of churches, the cloisters, the roads, the squares, and the gardens.

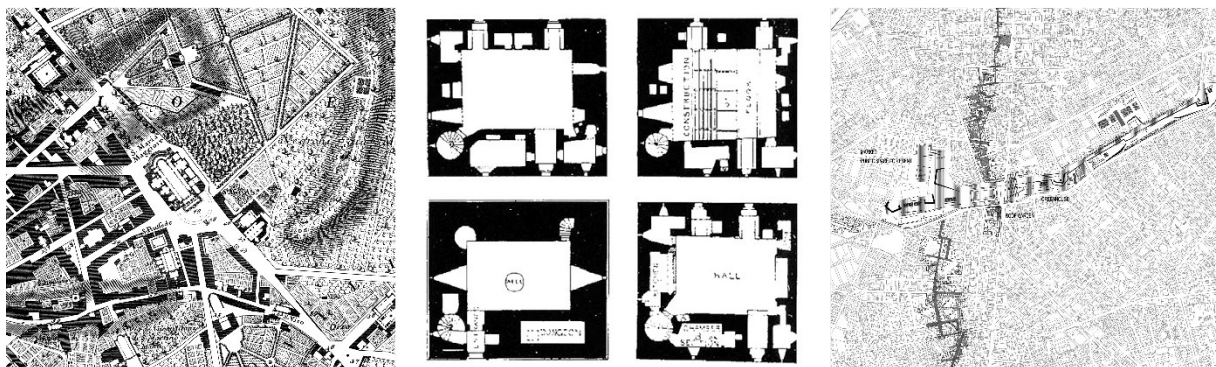


Figure 2. Giovanni Battista Nolli, Plan of Rome, 1748 (detail); Louis Kahn, British Castle Floor Plan (in David B. Brownlee, David G. De Long, *Louis I. Kahn: In the Realm of Architecture*, Los Angeles, Museum of Contemporary Art, Rizzoli, Milano 1991, 68), and a detail of the plan “Comingap” for Piacenza.

If the design of the spread museum in Piacenza were a route, about six kilometres long, represented following the reasoning of the American architects about Rome and Las Vegas, and the map of Nolli, it would observe how that plan started from the porosity of the old town. Selected historic gardens and interstitial areas have been linked each other in a continuous space that is like a conduct full of a revitalizing sap.

In order to explain the aim of the project submitted, another reference can be considered. Nolli's Map could be compared with Kahn's sketches of the British Caste Floor Plan where the thick walls includes within them, as they were excavated, various rooms. With the same logic in Piacenza, existing inhabited voids of different sizes have been combined to make the "rooms" of the museum.

#### 4.2 Piacenza, permeable town

Along the exhibition path you can move away from the centre reaching, on the South, large rural fields and farms. The project linked those with the Montecucco Park and the gardens of via Rosso and via Arrigoni, in the contemporary town. These fragments, actually often closed, will penetrate each other. The strategy poured the private spaces in the public ones, so it recovered, on the one hand Nolli's map and, on the other, the permeability of the modern city where a green network hierarchically orders the urban space. In Chandigarh, for example, Le Corbusier, following the Athens Charter of 1933, inverted the «relationship [...] between buildings and empty parts of the city. [...] The street grid is not dense enough to become an ordering element, therefore the uninterrupted succession of open spaces and visual telescopes toward the mountains ensured the continuity» [7]. The "Leisure Valley" is the Chandigarh's spine, it is a hierarchically predominant park, it connects a green system that enters as ground below the residential areas; it can also spread on the roof gardens.

In the plan of Piacenza various kind of roads (pedestrian, carriage able, only for residents...) have been proposed included in a green system. The sinuous and jagged perimeter that connected the parts of the spread museum arose into the geometry of the town developed from the ancient rural and urban Roman settlement. This issue was evident in the first phase of the project (2<sup>nd</sup> week) when four paths had been proposed to connect the river to the countryside, on the northern and southern part of the town. From them, only one has been selected as route of the museum. It included Palazzo Farnese and Besurica district as the extreme vertices on the two sides.

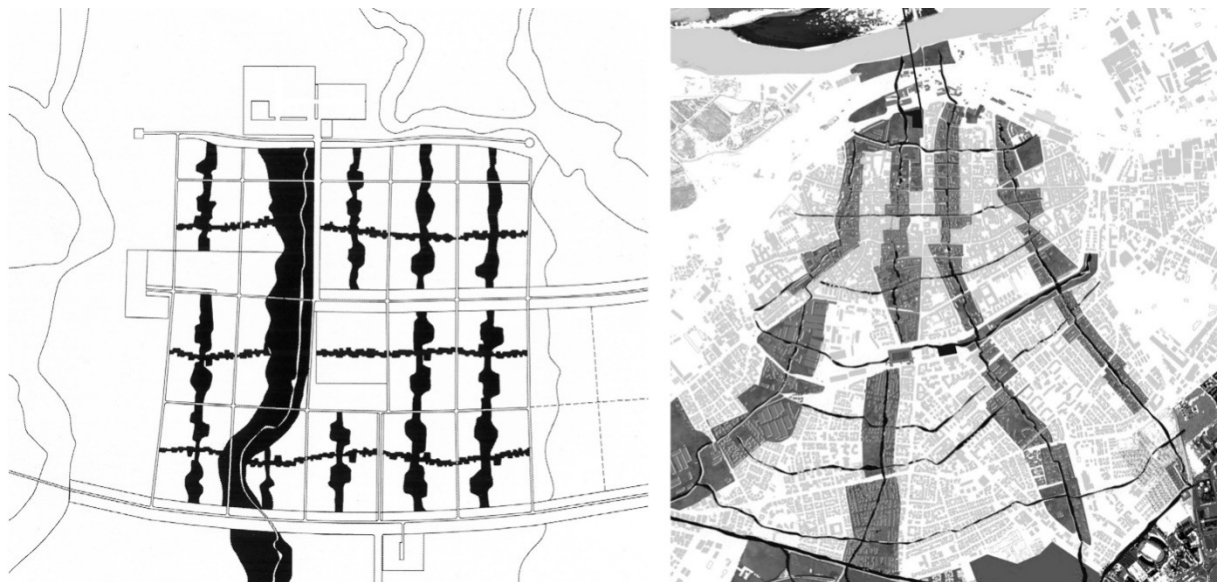


Figure 3. Open spaces and pedestrian routes in Chandigarh (in Gero Marzullo, Luca Montuori, *Chandigarh. Utopia moderna e realtà contemporanea*, Kappa, Roma 2004, p.75) and the first phase of the project for Piacenza (2<sup>nd</sup> week).

### 4.3 Palermo. "Piano Programma"

The project for Piacenza looked for a synthesis between porous and permeable characters of the town. In the early Eighties, in Italy, this combination has been already reached in the "Piano Programma" of Palermo, by Giuseppe Samonà, Giancarlo De Carlo, Umberto Di Cristina and Anna Maria Sciarra Borzi. The plan, never implemented, envisaged paths that crossed the ground floor of the buildings giving back to the public enjoyment the most representative spaces of the historic town. The alternative pedestrian network was different from the existent streets and squares. In the compact fabric of the old city some private courts allowed to link streets and consequentially to short the time and space of a route. Furthermore, the new passages with their grand staircases, loggias, statues, and fountains became important stages in the mind of the citizens. It meant that the inhabitants regained the town. It was looking at the historic town with a modern and democratic perspective that would have revealed gardens and other private courts in a continuous and accessible soil: «the pedestrian use of the ground floors connected to hallways, courtyards and passages between streets; these could involve other pedestrian relationships extending the social mobility» [8]. Therefore, what was private was not always fenced in, nor what was public was necessarily open. «The continuity of the ground was obtained "passing through" public and private spaces confirming and reinforcing the existing morphology but, at the same time, [...] some of the principles of *Ville Radieuse* became reality» [9].

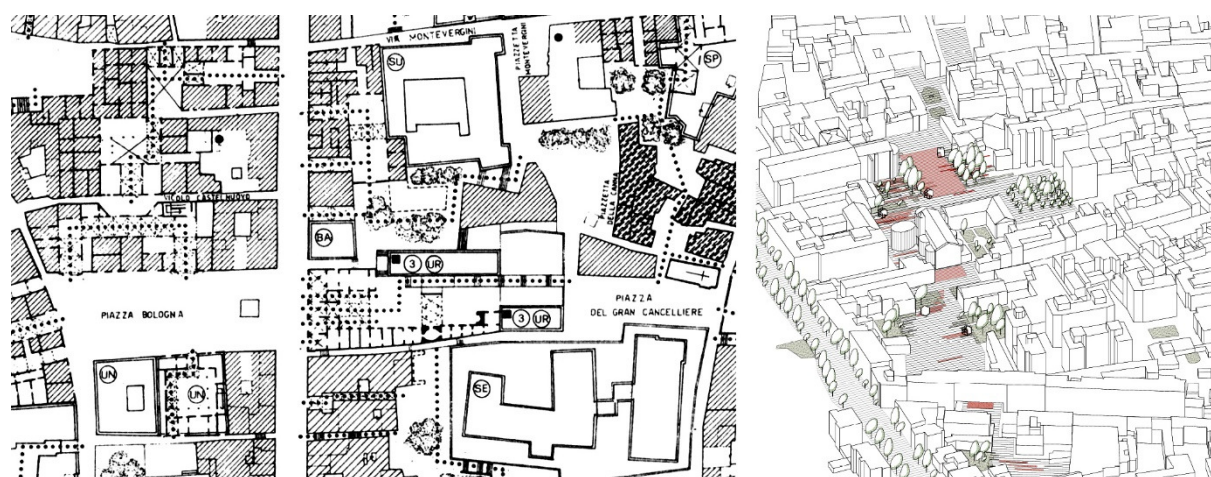


Figure 4. Giuseppe Samonà, Giancarlo De Carlo, Umberto Di Cristina and Anna Maria Sciarra Borzi, Detail of Piano Programma, Palermo (in Cesare Ajroldi (a cura di), *La ricerca sui centri storici. Giuseppe Samonà e il Piano Programma per Palermo*, Aracne, Rome 2014, pp. 61) and a detail of the project for Piacenza.

### 4.4 Increasing the extension of the ground

The spread museum of agriculture was first of all a soil-project. In addition, when it developed inside buildings, like in Palazzo Farnese or in the volumes proposed near the river, "Pubblico Passeggio" (city walls) and the Besurica district, it made new public grounds. The architectures introduced for the distribution and exhibition of the agricultural products have been designed as continuation of the existing soils, in according with its levels, in order to walk on the top of the buildings or to enter inside of them without interruptions between the interior and the outdoor parts. The coincidence, at least partial, between the museum and the city, led to a coexistence of what was inside the exposition and what was in the open air. The courtyard of the Palazzo Farnese, for example, in addition to various iconic meanings that it already owns, became a room of the museum, certainly one of the most important «carefully orderly and richly furnished. [...] It was [...] a lavish interior in the open air» [10]. A "theca-building" would close the incomplete north and west sides of the courtyard making the core of the museum exhibition and the archive of the seeds. Instead of the unusual amount of "treasures of art that often decorated a forum", about which Sitte wrote, in this case, there were tractors, old ploughs and other tools, like noble testimony of a cultural root to be passed down. The completion of the court would have emphasized the Palazzo Farnese volumetric greatness especially compared to the new excavated square and the great void near the river, where the geographical horizon arose.

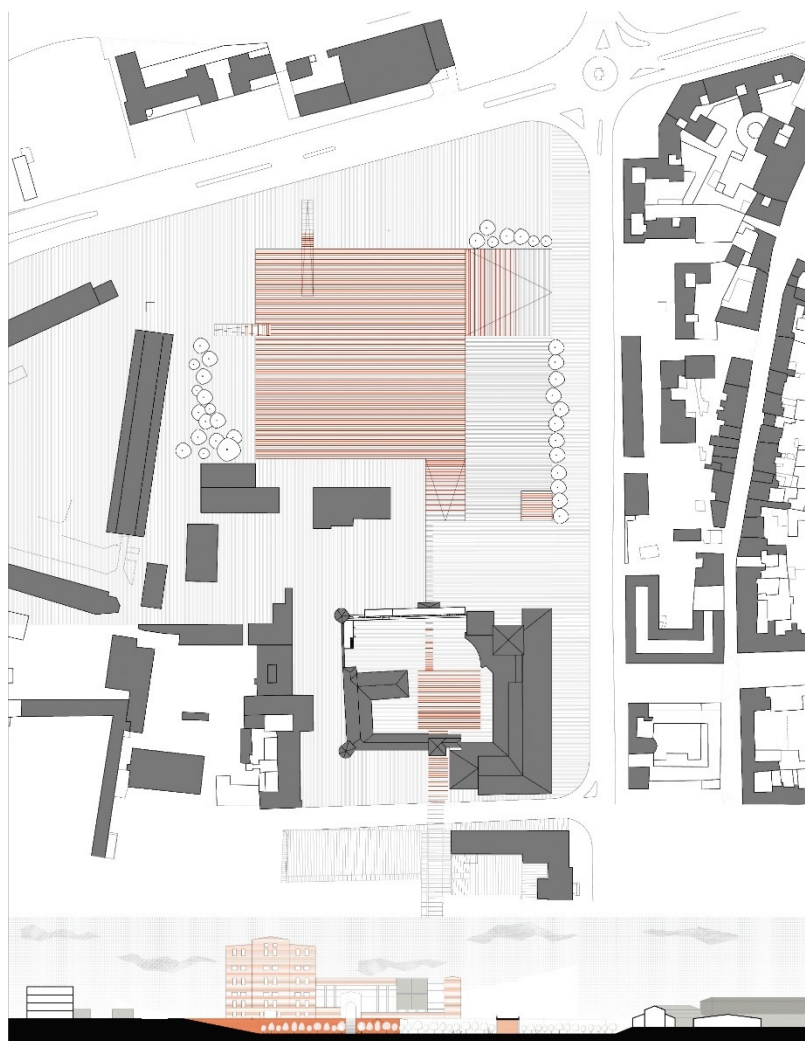


Fig. 5. The project “CominGap” for Piacenza (Palazzo Farnese).

The architecture can “multiply” the soil because it allows using available space that is abandoned, hidden and economically unproductive revealing rural fields and parts of the town to the perception of the citizens.

During the survey, some courts and gardens, and the agricultural and fringe areas were impenetrable. Towards the South, near the countryside and the Besurica district, sometimes infrastructures were a barrier for the pedestrians. The desired continuity of the paths, that was the first goal of the project, just where in the cartography seemed apparently easier to achieve, in the rural area, instead, had to be painstakingly built through a design of urban orchards and trails. Therefore, near via Maria Luigia d’Austria a spread threshold was proposed; it had urban and agricultural functions at the same time. This space was an access and a filter between the town and the historic countryside with its farms. The visitors of the museum and the citizens going to the fields would enhance the awareness of the agricultural society’s role in the aesthetic construction of the area helping to support their incomes.

## 5 PERSISTENT SPACES IN-BETWEEN

### 5.1 Place-making without volume

The project aimed to enforce the identity of the open spaces involved and, among them, the identity of the countryside that was the productive area of the system, but also a leisure park. In Piacenza the Roman land division (*centuriatio*) is a historical and geographical monument.

During the end of the Sixties, Ludovico Quaroni coined the term “*immergenza*” as what emerges in a negative way in terms of volumes (such as squares, large courtyards of mosques), but that is not, for

this reason, less important than big or high monumental buildings: «we will find the presence of salient facts: the monuments, the emergencies, the “focus”, those highly recognizable nodal points, which are both the seat of the institutions and therefore their representativeness, that is, for the “structures” in the political sense of the word: the church, the city palaces, the castles, the mosques, the “beffroi”, the tower, the residence; but also the agorà, the forum, the square, the baths, the theatre. These are the things that Aldo Rossi called “primary elements”, and perhaps also other things, some of them physically emerge, because of a volume hierarchically dominant, while other of them emerge in a negative way in terms of volumes [...] (we could call them “immergenze” [what does not emerge volumetrically])» [11]. Squares, parks and courts in Piacenza can take a very important role. Nevertheless, this assumption does not prelude to an anti-urban future. Rather, it shows the complete erosion of disciplinary boundaries of architecture and landscape, and the absolute necessity to cooperate in order to shape the territory. Only a cross-cultural and cooperative approach can build durable shapes able to persist as recognizable over the time. Therefore, a community could maintain those long lasting, like it happened for the Roman settlement of the countryside in Piacenza.

## 5.2 Persistence and love

As a starting point, the museum in Piacenza included three spaces with almost no buildings: in the north, near the river; along the walls (“Pubblico passeggio”); in the south, at the Besurica neighbourhood and in the countryside where the traces of Roman *centuratio* are evident. The three open areas lasted over time, denying that generally the vegetation is more ephemeral than a building.

João Nunes said that sometimes, «when we look at the town, we think that the vegetation can disappear in a moment through a box of matches or a bulldozer; instead it can remain over the time and often more than other urban elements. The parks are not an economic good and do not represent a power but the civic coexistence of people: a value that wars cannot attach, because it is abstract. This is the most important reason of the stability of the green areas. The public spaces express a quality of life; the inability to monetize them is the strength of their resilience [...] The open spaces often are loved places, where people bring their children, creating a cross-affectivity of entire communities. The parks, seemingly fragile, have a great power that has been developed through the love and the memory of the men» [12]. The quality that the parks give to its surroundings increases the value, also economical of the places, and in general of the life-style. In Piacenza both some urban and some rural spaces showed the ability to persist in the time. However, the rural part of the town was not really productive as in the past. The shape of the *centuratio* persists but its use is undersized. The project of the museum, assuming new rural-urban connections, tried to make a condition in which the inhabitants will daily renew this landscape maintaining its identity, guarding their shape, also if they could not be totally aware of their virtuous action. Some tracks already or potentially pedestrian had been identified in order to link rural important “voids” to the town. Indeed, from the beginning of this work, the main axis corso Risorgimento - corso Vittorio Emanuele II was excluded as museum route, because the intention was that the relationship between the “rooms” was repeated also at the scale of a single part. Thus, the itinerary finally selected was not a linear axis, rather itself a system of squares, courtyards and gaps (in the historical town) and parks and agricultural fields (beyond the walls).

## 5.3 Between the scales

The project of the spread museum involved very different scales, from the territorial to the smallest one of some temporary refuges. Tents wooden cubes could be assembled in the parks, for tourists, farmers, or agricultural stores. The transition from a dimension to another is not always linear; some questions came out. For example, in the design experimentation and during the visits of the places, the overcoming of wide distances seemed one of the “discontinuities” between the dimensional scales of this work: a pedestrian path five hundred meters long can be pleasant; a six kilometres long becomes probably tiring, or boring. Therefore, heterogeneous open spaces have been combined in the museum route in order to change the perception of the distances. However, the whole visit

would be pleasant, but the visitors/inhabitants could live also only some significant fragments of the museum. A soil project unified the parts making a continuous path characterized by the use of only two traditional materials, bricks and grey sandstones.

## 6 PERSISTENT SPACES IN-BETWEEN CONCLUSIONS

The hypothesis of the diffused museum of agriculture made for Piacenza, started from the idea that the countryside is the main productive identity system for Piacenza, and for this reason it could enforce and structure its new public design.

The project developed a route insinuating from the southern part of the city suburbs, through the wide system of the roman *centuratio*, into the built fabric, finding a way avoiding the main axis of Corso Rinascimento, ancient roman *carduus* and first track of Piacenza settlement. The route is nourished by a sequence of spaces, characterized by being private and enclosed, sometimes dismissed and abandoned, fragments indeed of an interrupted grid. Made by single autonomous fragments, the design is unified by a common soil: from “green” and rural, the path cracks into the city becoming grey and red, solid and urban, made of stones and brick typical of Piacenza. The challenge of a non-linear project process, starting by punctual trigger points, is accomplished by the design of a medium term prevision and by an intermediate scale intervention. Therefore, the multiplication of the public space throughout the city breaks out by the intervention on crucial nodal elements, able to switch on other abandon or forgotten areas with a sudden or delayed reaction, non-arithmetically increasing in new practices, enjoyment and uses.

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## IN(C)(V)ITE: THE IN-BETWEEN PROJECT

Fernando Ferreira<sup>1</sup>, Cidália Ferreira Silva<sup>2</sup>

<sup>1</sup>*School of Architecture, University of Minho (PORTUGAL)*

<sup>2</sup>*Lab2PT, School of Architecture, University of Minho (PORTUGAL)*

*fernandoferreira@arquitectura.uminho.pt, cidalia@arquitectura.uminho.pt*

### Abstract

The present paper presents an alternative urban design approach that explores the project as an in-between mechanism. By in-between, we assume that “the project is neither the beginning nor the ending it is just an in-between in places’ time, both past and indeterminate future.”[1] It is an in-between time process that crosses several scales, actors, and places. We found *the in-Between Project* by searching through the existing *cracks* [2] in the contemporary built environment – uncertain and abandoned places/buildings and wastelands – generated by four factors: (a) the increasing of a fragile global economy; (b) the recurrent urban transformation processes (such as the over construction of road infrastructures and the cyclic destruction/construction of the old/new housing planning); (c) the absence of activities/production; and (d) the consequent abandonment of buildings and urban plots. Therefore, it was acknowledged that these *cracking processes* are creating a catalytic effect in the built environment, causing uncertain cross-scaled consequences between time, space, and society such as: not knowing the future of these places, not expecting positive scenarios for these places, not conveying the relationships of these places, and not engaging socially with these places. When addressing this problematic, fundamental questions arise: *how can we articulate the (dis)connections created by the existing cracks in the urban environment? How can we transform the waste inherent to these cracks into a life potential? How can we create a viable metabolism with this waste? How can we generate new activities? How can we attract new inhabitants? How can we transform cracks into magnets?* In this research, we realised that these questions cannot be answered through the narrow design solutions formalized by neither the conventional object/programmatic approach, nor by the top-to-bottom/bottom-to-top urban strategies, detached from the indeterminate cross time-scale relationships of these cracked places. An alternative urban design approach was required. The *in-Between Project* is structured using three interconnected concepts: *Cite*, *Recite*, and *Incite*. *Cite* is to select the time traces found in the place to trigger and ground the design project. *Recite* is to transform the cited elements into a simple base structure that stimulates unforeseen appropriations and becomes adaptable to change. *Incite* is to critically imagine future possible scenarios for the created base structure.

These ideas are presented, tested, and developed in one specific design research in Azenha do Mar, a remote fishing village on the southwest coast of Portugal. It is acknowledged that the *in-Between Project* is a simple practice of *in(c)(v)itation*: it *incites* the hidden potentials of cracked places and *invites* human beings to appropriate them in an imaginative and unforeseeable way.

**Keywords:** Built Environment; Urban Processes; Cracked Places; in-Between Project; Scenarios; In(c)(v)ite.

## 1 INTRODUCTION

The present paper reveals the *in-Between Project*, an alternative urban design approach, explained here in one case study integrated in a more profound design as a research practice that was tested both theoretically and practically between 2010 and 2016 in Portugal [3]. This practice is seen as a path for *learning*, one that identifies and questions particular *cracked places*, located in distinct built environments, caused by specific *cracking processes* [4]. Within this context, we present the case study: Azenha do Mar [5], a fragile fishing village established in 1967 and located in Odemira (the southwest coast of Portugal), an area that has been facing a gradual process of abandonment and social instability caused by the economic crisis, unemployment, and an unstable infrastructure.

“In(c)(v)ite: the in-Between Project” is structured in three main parts: in part one – *(re)(in)cite* – we explain theoretically the three interconnected concepts that structure the *in-Between Project*; in part two we develop the case study by following the practical concretization of *cite*, *recite*, and *incite* toward its inherent specificities; and in part three, we reflect on several conclusions about the integration of this urban design approach with the case study here explored.

## 2 (RE)(IN)CITE

**Cite** is the first stage of the *in-Between Project*. To explain the meanings of *cite* we connect this action to writing. As when we write a text, we *cite* parts of other texts, creating a dialogue between our thought and others’ thoughts. Similarly, to *cite* a project becomes a dynamic *site* of multiple intersections, generating a dialogue between the “designed” place and the “real” place. *Cite* is selective and looks for time traces of everyday life, including the seemingly unimportant things. These time traces may be physical, for instance a wall, a permeable ground, or a specific way of living in the space. As we know, they are interrelated. *Cite* is rooted in the “as found” concept, developed during the 1950s by the British Independent Group, where aligned with the interconnection of the architects Alison and Peter Smithson, the artist Eduardo Paolozzi, and the photographer Nigel Henderson, the everyday life culture was valued and the beauty of the ordinary and discarded elements was seen and valued: “As Found is the tendency to engage with what is there, to recognize the existing, to follow its traces with interest.”[6]

**Recite** is the second stage of the *in-Between Project*. *Recite* has a double meaning, as when we recite a text, there is “repetition” but also “change.” Every recitation is unique, with a unique succession of active sounds that somehow could shift the meaning of the text, even when the words said are exactly the same. The prefix “re” gives an interesting clue: we go back to the place recurrently in search for tools to ground the design and “we cite once more,” a repetition that also (re)draws the previous *cited* elements into a *base structure*, thus transforming them. The base structure’s idea is rooted on Cedric Price’s “Free space and its operational matrix”[7] where he correlates the act of eating with the act of designing architecture in comparing the eating plate to the architecture and the supportive table to the site: “The plate as the architecture and its relationship to the supportive table as its siting enables the comparison of free-space to an operational matrix (...) the operational matrix becomes a tool for the users rather than for the designer.”[8] Price argues that if the eating plate is an open and flexible structure with distinct velocities, skilful and changed by its users’ needs, the architectural design should also be considered in the same way, working as a flexible and open matrix/base structure that accepts uncertain occupations. Furthermore, the base structure is understood as a *field*, as John Habraken defines it: “The term *field* encompasses all. Fields are only conceivable as coherent and enduring physical entities because they are inhabited, subject to and continuously reshaped by the unending actions and interventions of the people who live within the material fabric.”[9] Thus, fields have a particular and very important double feature: endurance, and adaptability to change. A field endures in its traces but is flexible and anticipatory, stimulating cultivation. Therefore, we also adopt Habraken’s claim: “To deal with the ordinary physical environment does not require production but for cultivation. (...) Architects who profess love for the ordinary should become gardeners. The gardener does not make, he cultivates.”[10] In sum, the base

structure is an ambivalent field that is both specific and indeterminate. It is specific because is designed through transforming the cited time traces into opportunities, hence reciting; and it is indeterminate because it is adaptable to change, in order to catalyse uncertain programs for an unknown future.

**Incite** is the third step of the *in-Between Project*. This concept invites the designer/architect to critically imagine future possible scenarios – *what if...* – over the base structure created. Furthermore, *incite* takes Bernardo Secchi's (2001) position regarding the relevance of creating scenarios: "that can contribute to the construction of visions within which different actions and projects can simultaneously find their own legitimacy." [11] Moreover, we argue that in the creation of these scenarios, it is possible to anticipate an architectural design that catalyses change and prepares the place-project in order to integrate it for social, economic and political unknown conditions, thus incrementing a flexible process that incites new opportunities. As Philip Christou (1999) argues: "The main task is one of designing catalysts for change, as pieces of landscape infrastructure." [12]

These three concepts presented are interconnected. In simple terms, the *cited* elements are transformed into a *recited* base-structure, a field of opportunities, both permanent and open to change, within which future scenarios "what if..." are *incited* to take place. Thus, **(re)(in)cite**.

### 3 AZENHA DO MAR: A REMOTE FISHING VILLAGE

Azenha do Mar is a small fishing village founded in 1967 and located in a remote area in Odemira, the southwest coast of Portugal. This village embodies the encounter between the land and the sea and its associated activities (fishing and agriculture) that generated this place, the prosaic habits and dynamics that structure the everyday life of its inhabitants, and also the feeling of distance to what is around or a state of dependence on basic structures not yet in existence. Based on a very complex system that shaped Azenha do Mar over time, there are diverse *cracking processes* that have impacted the village's systems such as its morphology, land use, population, and activities. Questions arise from this time transformation: *how can we integrate the cracks of Azenha do Mar as chances for change? How can we create a strategy that responds to the diverse scales problematic? How can we anticipate open scenarios for this uncertain and fragile place?*



Figure 1. Vacant Lots in Azenha do Mar, Odemira (Portugal).

#### 3.1 Cite: Time Resonances

Azenha do Mar was formed by several *cracking processes* that over time, created a significant impact in the place's systems. In our cause-effect historical study, it was acknowledged that these *cracking processes* caused a specific result or *Time Resonance*, as we prefer to call it. For a better understanding of this idea, we expose diachronically the *cracking process-time resonance* (cause-effect) structure present in the village's development. The first of seven *cracking processes* came in 1967 when fishing and algae harvest proved to be a profitable activity, attracting fisherman from different regions of the south of Portugal to settle in Azenha do Mar. Despite this great flux of people, the ways in which the inhabitants constructed their houses were illegal and in precarious conditions,

resonating until today as an unstable social environment. Concurrently, the fishing activity has become a compromised fragile activity because of its dependency on a precarious seaport. The second *cracking process* was caused by the Land-Use Regulation imposed by the Odemira Municipality in the 1980s, due to the illegal settlement of inhabitants. Despite the fact that this legal process brought better living conditions to some families over time, many were forced to leave the village, mainly because a great segment of the population didn't have legal fishing activity. Consequently, today the resonances are still visible: loss of population, dependence on the resources (social services and equipment) of the neighbour villages, and the appearance of vacant lots. The third *cracking process* came with the construction of Azenha do Mar's restaurant in the 1980s that until now was a positive feature: it put the place on the map, attracted tourists and created a dynamic village, and promoted the continuity of fishing production. The fourth *cracking process* occurred in 2012 when the village was integrated into the *Vicentina* Route, creating new pedestrian connections in the area. The fifth *cracking process* happened with the creation of the Local Social Associations in the 2000s that resonated with the development of new social activities in the village for the purpose of improving the fishermen's living conditions. The sixth *cracking process* occurred with the construction of sanitation/electricity infrastructures and some public space imposed by the Odemira Municipality in 2006. However, this planned act created an unfixed and fragile public space that still remains. Lastly, the seventh *cracking process* occurred with the Economic Crisis that began in 2008 and which continues today. This crisis incited a struggle for investors and for Azenha do Mar's inhabitants, resonating in a continuous feeling of uncertainty.

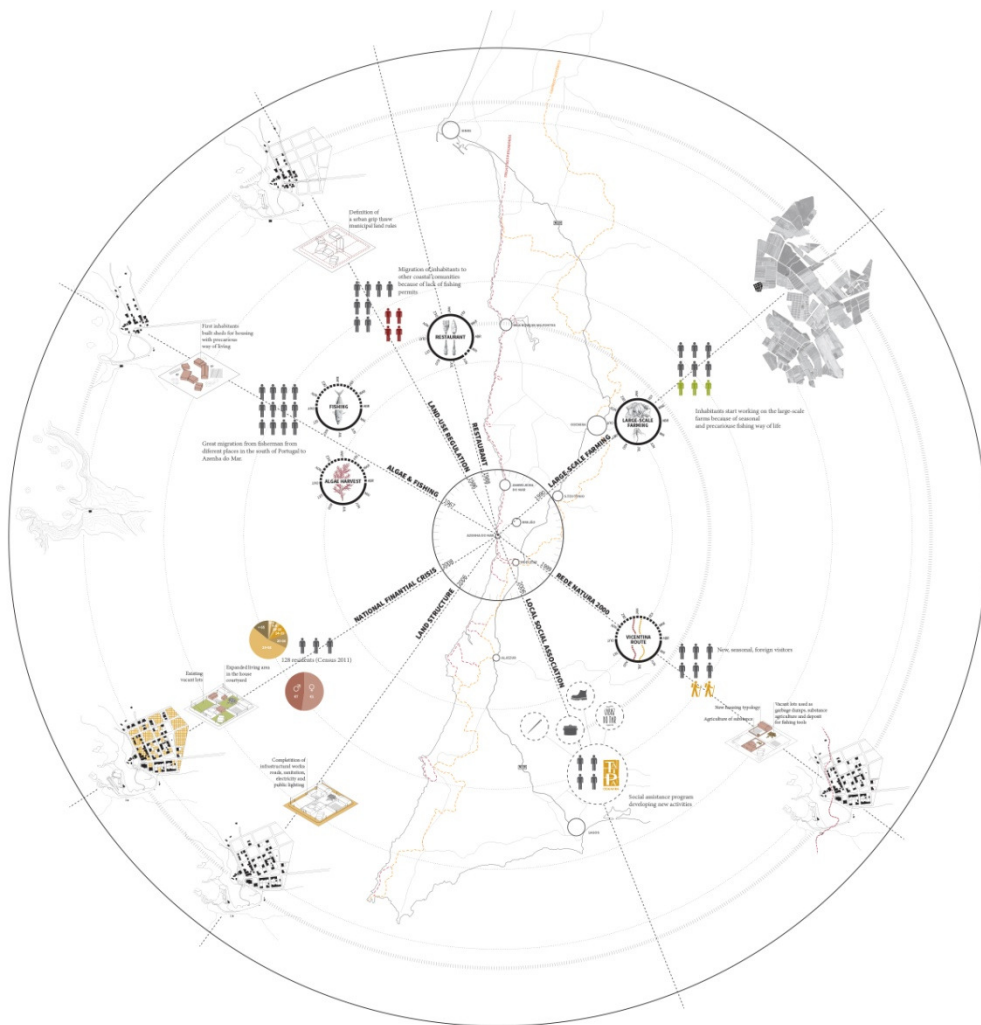


Figure 2. The *cracking process-time resonance* (cause-effect) structure present in the Azenha do Mar's systems

(morphology, land use, population, and activities).

To summarize, the *Time Resonances* found in Azenha do Mar are: the loss of inhabitants, the precarious sea port, the vacant lots, the *Vicentina Route*, the Azenha do Mar restaurant, the fragile public space, the local social associations, and the dependence on the neighbor villages' resources. Here, the *time resonances* concept is understood as a metaphor that simultaneously *cites* the specificities of Azenha do Mar and enhances the capacity of the resonances to catalyse better changes for its future. As Hertzberger contends, "Architecture in its relevance-to-people can only deal with the things that matter to ordinary day-to-day living, in particular the exaggeratedly small things; things which at first sight are far too unimportant to have any earth-shaking effect, but at any rate are practicable and — what matters most — assimilable by the people they are intended for." [13]



Figure 3. Cite\_Diagrams of the Found *Time Resonances*.

### 3.2. Recite: Structure of Resonances

The *citation* of specific *time resonances* found in Azenha do Mar trigger the act of *reciting* a *Structure of Resonances* for this fishing village. In creating this base structure, our aim is not to impose a deterministic program, disconnected from the real issues of Azenha do Mar. Instead, we seek to construct a base structure that not only *recites* what-is-already-there (*time resonances*), but also a base for *reciting* social engagement processes that will eventually catalyse new dynamics and activities for the unpredictable future. However, to achieve this, it was defined a four-step process to prepare the construction of the base structure: step 1 - cleaning the garbage and organizing the existing deposits of the place (this could happen through a simple action of awareness/engagement within the inhabitants); step 2 – demolition of the existing precarious and illegal structures; step 3 – regulation of Azenha do Mar's land in concordance with Odemira Municipality's planning, applying the definition of private/public land, permeable/non-permeable soil, and land uses (for the vacant lots); step 4 – reconstruction/relocation of the precarious structures that were demolished and creation of a new housing typology with a more suitable approach.

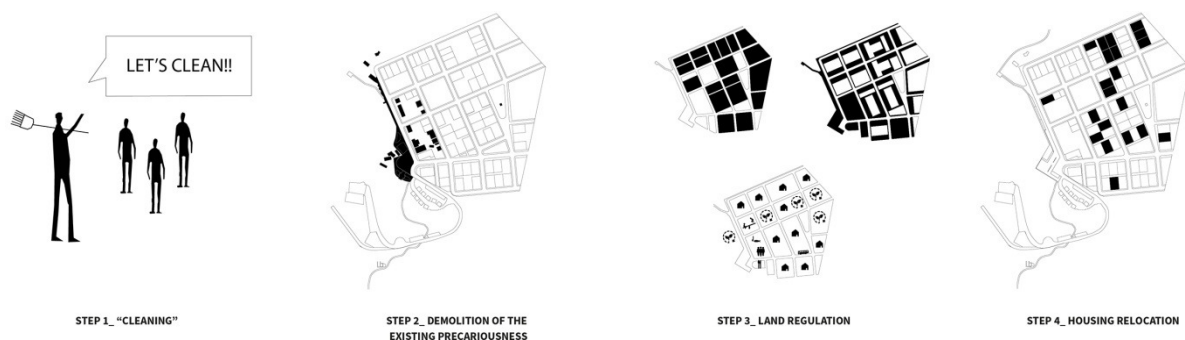


Figure 4. Recite\_Diagrams: Several steps to create a *Structure of Resonances*.



After the implementation of these four steps, the *Structure of Resonances* is created according to proposal's two levels: one that is more permanent and applied to situations we define as the most urgent to be addressed such as the refurbishment of the seafront public space and the old sea port, the incorporation of a new bus stop/route, the integration of recycle bins/gas station in the village, the insertion of a social structure, a Fishermen's House and Housing Typologies (although flexibility in its design and uses was always considered). And a second one where we just *recite* the soil's permeability towards its regulation/organization and maintenance structures for each vacant lot, such as parking, water deposits, and warehouses in order to generate activities in those fields.

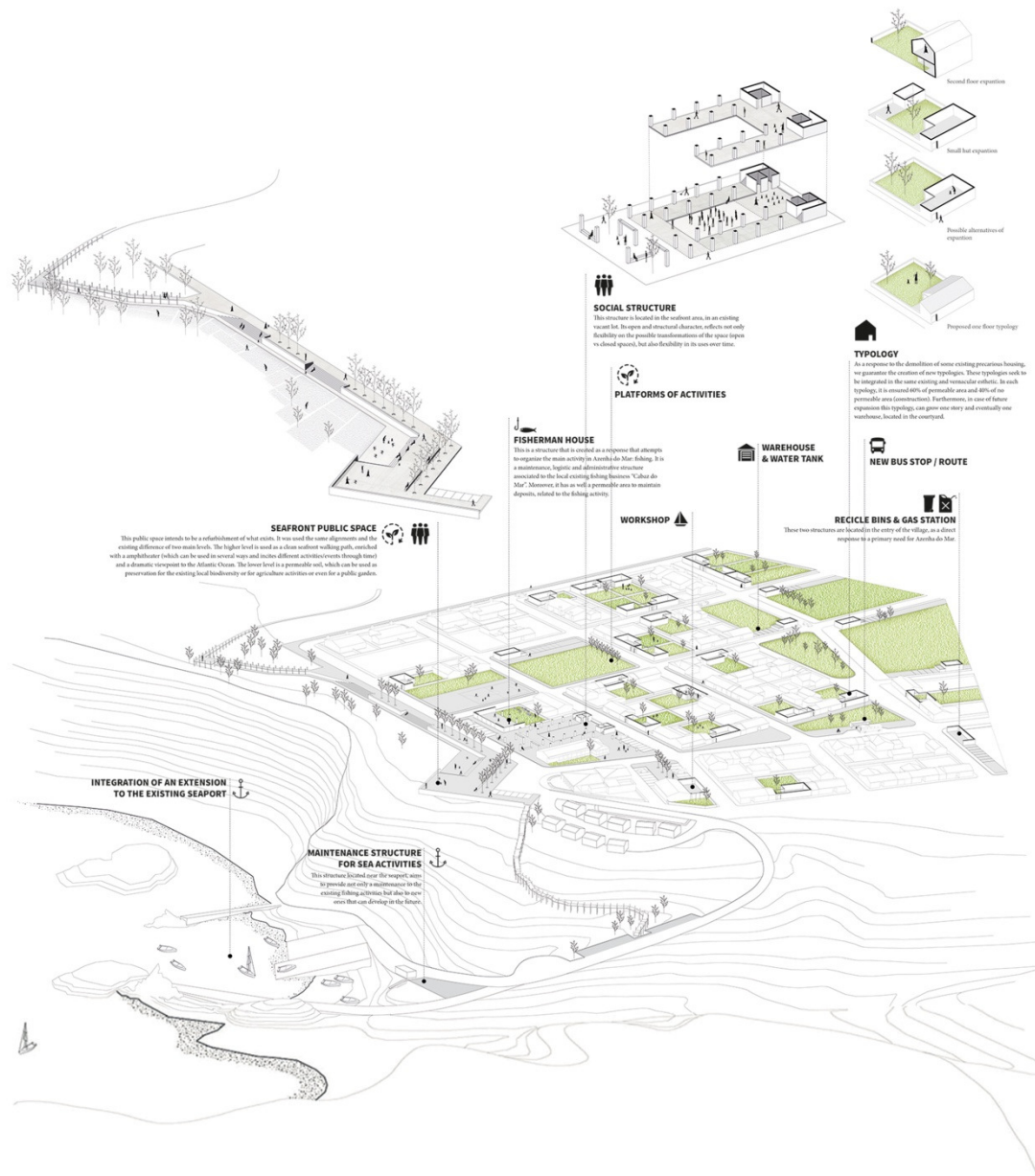


Figure 5. *Recite*\_General View of the *Structure of Resonances* for Azenha do Mar.

### 3.3. Incite: 'What if' scenarios

The creation of a *Structure of Resonances* for Azenha do Mar is just a device, a catalyst of a complex process that not only engages architects but also other interdisciplinary and important agents/actors such as the existing inhabitants, potential investors, the Odemira Municipality, the local social



associations, the surrounding villages, etc. Following this way of thinking, we present three possible future scenarios for Azenha do Mar that integrate two different types of actions for changing the structure of resonances: (1) a *Social Engagement action* (made by discussion/workshops/social happenings between Azenha do Mar inhabitants and local agents) and (2) an *Investment action* (made by public or private investors).

### 3.3.1. What if... Existing Activities boost and new ones are created?

This first scenario proposes the creation of a participatory project, which would raise the following question: *How can we catalyse sustainable activities over the vacant lots in the structure of resonances?* By this question, the village's population and local agents would conclude that it is sustainable to use these vacant lots for agriculture production, resulting in the creation of a local association that would support this idea. The first phase requires small investment by local public investors. However, if this activity is a success, in the second phase, this project could apply for national and European funds in order to construct a solid and profitable agriculture project for the entire Azenha do Mar community.

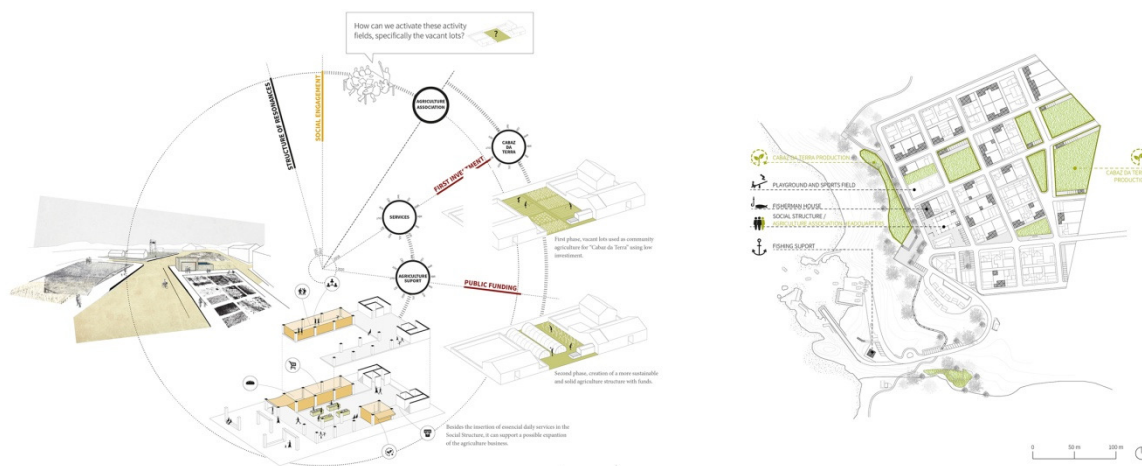


Figure 6. *Incite\_ What if... Existing Activities boost and new ones are created?*

### 3.3.2. What if... Tourism becomes the main activity?

In the second scenario, the creation of a participatory project is proposed, raising the following question: *How can we enhance Azenha do Mar through existing structures and resources such as its landscape or its biodiversity?* By this question, inhabitants and local agents would conclude that generating tourism as a primary activity could bring new profits through the use of local accommodations such as seasonal rentals. In the first phase, Azenha do Mar's inhabitants interested in renting rooms in their homes could make a small investment to upgrade a room in order to receive tourists (i. e., an *airbnb*). Then, if this business is a success, in the second phase people could construct an addition to their homes to accommodate even more tourists. Through the creation of these two actions, it would be possible to use the created *Social Structure* as a space for creative hubs and stores related to touristic activities (walks, diving, sea sports). Moreover, in the long term, if tourism becomes Azenha do Mar's main activity, it could possible to create a health care centre in order to attract tourists and to create profits throughout the year.

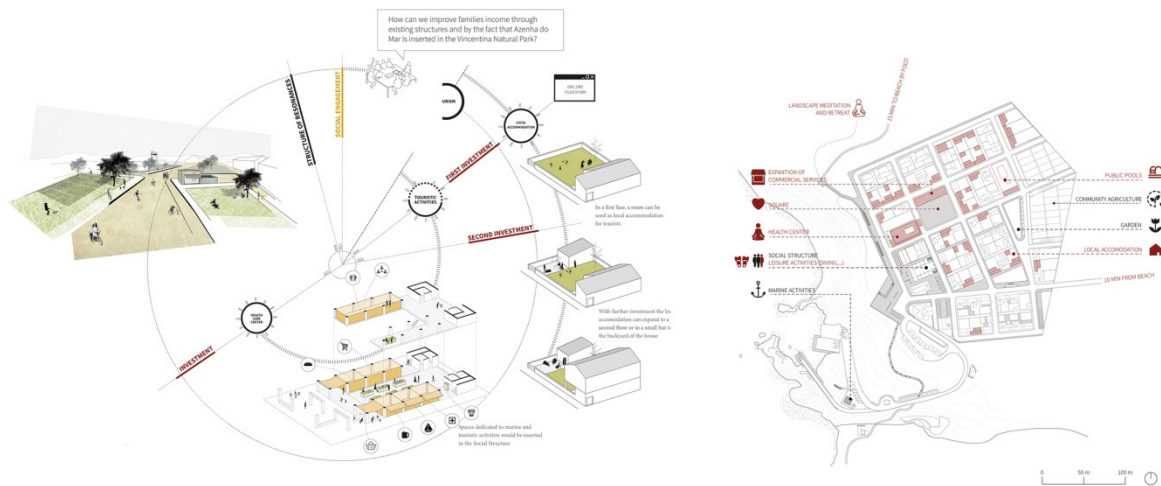


Figure 7. *Incite\_ What if... Tourism becomes the main activity?*

### 3.3.3. What if... There is no action over the structure of resonances and nothing changes?

This is a scenario that explores the possible consequences if there is no development in terms of social engagement and investment in the structure of resonances. In this scenario, the structure will certainly change/improve smaller problems but it won't change/improve the bigger problematic in Azenha do Mar. Addressing this, *what could possibly happen to this place?* Perhaps in the long term, this community's population would continue to decrease because profitable activities or even attractive opportunities wouldn't exist primarily, because the economy of the village is currently dependent on the fragile fishing activity and a local restaurant.

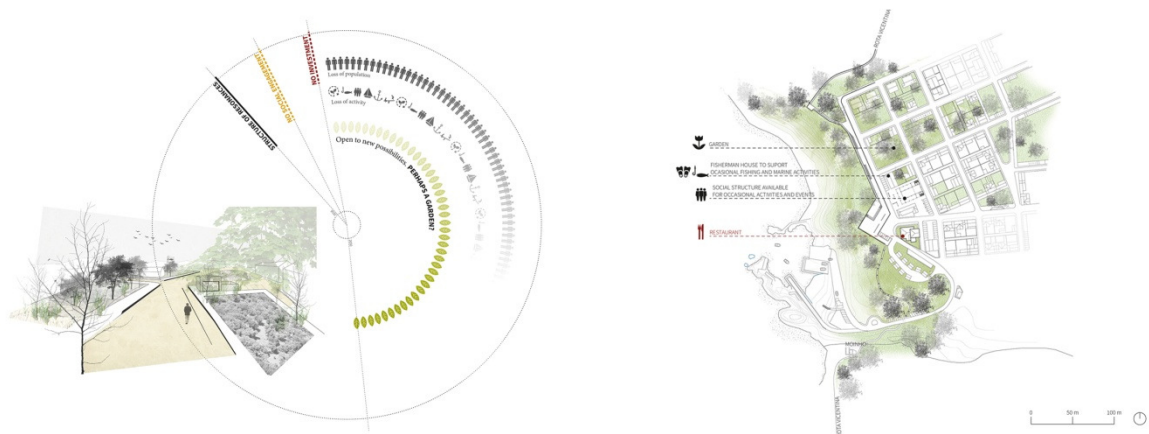


Figure 8. *Incite\_ What if... There is no action over the structure of resonances and nothing happens?*

## 4 CONCLUSIONS

We can now move forward to emphasize that the structure of the *in-Between Project* – *cite*, *recite* and *incite* – embraces a time paradox: they are at the same time conjointly successive and coexistent [14]. On one hand, they are successive because they sum up the design actions where *recite* follows *cite* and is followed by *incite*. On the other hand, they are coexistent in time; we cannot know where one stops and the other starts. For instance, we *recite* throughout all the duration of the design process. As stated, we repeatedly go back to the “real” place to find new tools to inform the

“designed” place. Therefore, there is a seesaw motion across the three. Throughout this experience we have learned seven aspects about the *in-Between Project*:

- 1) It is a simple practice of *in(c)(v)itation* [15]: one that *incites* the hidden potentials of cracked places and *invites* human beings to appropriate them in an imaginative and unforeseeable way.
- 2) It has the potential for seeding new possibilities for other places that are not only close to our everyday reality, but that are also ordinary situations found in other territories.
- 3) The (re)presentation is the in-Between device, connecting the “real” place with the “designed” place — to “present once more” by seeking a closer language, both written and drawn.
- 4) It is dependent [16] on the specificities of each place. Therefore, *cite*, *recite* and *incite* is not to be understood as a rigid method but rather as a simple basis for following an idiosyncratic path, where the risk factor and the feeling of jumping into the unknown is always a constant sensation; this is an approach that fundamentally acknowledges the changing nature of each place and situation, reclaiming the continuous reinvention of assertive methods to what is there to be found.
- 5) The coexistence of time: the potential for future scenarios is already embedded in the *found* time traces that are *cited*. As Friedrich Kümmel argues, “the future represents the possibility, and the past the basis, of a free life in the present. Both are always found intertwined with the present: in the *open circle* of future and past there exists no possibility which is not made concrete by real conditions, nor any realization which does not bring with it new possibilities.”[17]
- 6) It is an open and flexible mechanism over time regarding the distinct specificities of the places researched. Actually, over the years of this research practice we saw an incremental movement in the exploration of the design as an “open process” and visible in the case study here presented. Not only is the *recite* a succession of steps that prepare the ground for the base structure to become actual, but *incite* also is one of several possible scenarios that are again a set of time actions, which may or not happen and are dependent on the interrelationship among different agents, including foreign investors, inhabitants, and the Odemira Municipality. This takes us to the seventh conclusion.
- 7) The stretching of time throughout the imagining of scenarios, the future is integrated as an extended complexity of possible but unknown imaginary *time stories* that may happen successively, conjointly, separately, or not at all.

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## TEMPORARY TOOLS FOR CHILD HOUSING WELFARE

Alessandro Gaiani<sup>1</sup>, Norma Bellini<sup>2</sup>

<sup>1</sup>*School of Architecture Ferrara (ITALY)*

<sup>2</sup>*ASSP Capparò, Ferrara (ITALY)*

*alessandro.gaiani@unife.it, n.bellini@copparoassp.it*

### Abstract

In the last 10 years the cut of health and social services and the cut of public investment in housing policy have increase the unsatisfied social requirements of the population.

This occurred when the Great Recession, which was triggered by a financial meltdown that started in the United States and spread rapidly across the globe, and has inflicted from 2008 the economic crisis on children. The gap between rich and poor families has widened in an alarming number of industrialized countries.

The *Innocenti Report Card series* show, in the past five years, rising numbers of children and their families have experienced difficulty in satisfying their most basic material and educational needs.

In this scenario the families with children that live in critical and uncomfortable situation are increasing. Often the situations is so critical and alarming that much more is the numbers of children turned away from the family to ensure his well-being.

Starting from an analysis of the young people and his situation post crisis, the study translate the results of some recent local research about children needs and his unsatisfied social requirements, into a new model of younger housing that could prevent the long term stay in traditional structure for children removed from families and at the same time, meet the contemporary housing needs.

The welfare system is called to review his priority of children services and first of all to design new social tools, like residential and semi-residential community for removed children, to answer at a new educational project, made of integration and temporary solutions. It's necessary to rethinking the structures for children removed like "space of transition" in which the children stay like in a big family but to return in his own regenerated family as soon as possible.

An event so relevant have meaningful economic and social effect that necessarily involve also a changed and new thought "architectural-design" of the system properties usability and of the re-planning and temporary reuse of the houses and spaces.

The study focused on a real pilot-case based on public property in the Municipality of RO, Emilia Romagna.

The idea is to think up an integrated system economic-technical/design-social that allow a new welfare system to be able to transform the assistance children's needs into places and spaces economically sustainable, usable and that valorized the property public and private, creating virtuous net of solidarity, economic, fairness with temporary residences and proximity service.

The aim is to identify new common tools and languages between architectural children temporary housing projects and the social project for young people, integrated in a temporary and proximity model.

Temporary reuse of space becomes sustainable strategy because it introduces a significant new concept of use of the social assistance residence: not only space for integration and most secure residence, in which to put the children, but a new place of temporary living, in which children it is

educated and integrated into a community along with others, in a physical and spatial transition, confidential place regenerated for the common use.

Proximity, realized with a participatory-inductive method for the stakeholders and proximity in the architectural project, changing parting elements into architectural elements of inclusion: borders and margins are areas of proximity, hybrid, in which the meeting also social happens.

It therefore introduces a new regenerative potential, not only space today unused and disposal of public property, but a much more interesting and explosive social mix, capable of intercepting social need, planning services, community response and lower costs. Create of light intervention strategies, which, through a minimal impact, work on the spaces left vacant.

It now intends to work on the concept of proximity: social and architectural.

Social through a new concept of understanding the detention of minors in public structures that include social integration processes, architectural in which the common indoor and outdoor spaces (gardens, spaces for socializing as for the well-being of the body or recreation) becomes an interesting system in the definition of barrier, no longer understood as a border or boundary, but as margin buying thick and that is modulated to meet the different requirements of use.

Border and margin are concepts that refer to a variety of situations that are adjacent to something that is physically recognizable. Borders, and margins are areas of proximity, hybrid, in which happens the meeting, also social.

The study provides the basic elements required to plan for housing and social services children's oriented, through regeneration of a old vacant school building

**Keywords:** temporary housing, regeneration, border, margin, hybrid, proximity.

## 1 SOCIAL FRAMEWORK: FAMILY AND CHILD FRAGILITY

The global recession, which began with the financial crisis of 2008, has had a great impact on families, increasing the situations of financial hardship in households with children and often worsening the social decay and caretaking problems in family contexts that are already in difficulty.

The number of families in difficulty is on the increase, with hardship in childcare responsibilities, the precariousness of relationships, and solitude.

A family remains the ideal place for bringing up children, and for this reason, as expressly envisaged by the New York Convention, governments must offer it support in performing these duties. But if the family is not sufficiently protective or does not guarantee a child's harmonious growth, it is necessary to intervene.

No less important, the constant increase in the migration phenomenon, involving entire populations fleeing from hunger, poverty, and wars, brings to our shores increasingly higher numbers of unaccompanied foreign minors, who must be placed in special structures designed for children.

The phenomenon of children estranged from their families of origin or travelling alone, placed in reception facilities, is a complex situation which bears witness, on the one hand, to the fragility of families and the social, cultural, and economic crisis of a territory and, on the other, to government efforts to intervene for the benefit of children in situations of serious difficulty in their family environment.

In Italy, the last estimated figure dates from 2012: there were 28,449 children and youths aged 0-17 years outside of their families of origin who had been placed in foster homes and residential communities.

The complex transformations characterizing contemporary life make necessary a critical rethinking of the categories used to recognize and interpret the various current family configurations and expressions of parenthood.



The welfare system itself is called upon to revise its priorities in the services it provides for protecting children, not only with regard to the possible educational tools, but also and above all through a broader vision of an integrated planning at the social, urban planning/architectural, and economic levels.

### 1.1 The living place: contamination through diversity

Over the years, structures set up for children have undergone major changes (orphanages, juvenile communities, educational communities, boarding houses, etc.), almost always dictated by changes in regulations, rather than by an actual process of rethinking in relation to the social phenomenon.

The growing attention paid to the phenomenon of estranged children and/or unaccompanied foreign minors makes it necessary to also rethink how to design accommodation facilities.

The idea underlying this study is that of redesigning a place, a social form which, identifying itself by and within the space, determines and re-determines that space through the lives of the children who will be temporarily inhabiting it.

The planning is above all social, with the aim of creating a place that is “liquid”, capable of enveloping the often sad and blighted lives of these children with the sensation of a place familiar to them, one that is not “like” a family, but instead “is” a family, and parental in the educational sense of the word.

This must necessarily be a place of exchange: of life experiences, culture, contamination between the experiences they carry within themselves and the outside with which they act and react.

It is a contamination which we intend to promote in the educational plan, but also in the architectural spaces, without limits or barriers, because it's not boundaries or walls that make us feel protected, but a sense of community, nearness, and family.

## 2 METHODOLOGY: THE HYBRID, TEMPORARY PROJECT

Architecture today is more than ever one of relationships rather than of objects, of dynamic relational spaces rather than of static scenes.

In the early 1960s Melvin Webber theorized the possibility of interactions owing to more complex, variable spatial structures, not discrete and locatable, where urbanization was no longer supposed to design spaces, but build networks of relations and place communication flows and activity systems<sup>1</sup>.

This means it is necessary to plan in a way different from that of the past – when objective, consolidated operations were the norm, with their spatial and physical connections, between the ground and the building, interiors and exteriors, public and private uses, open and covered spaces, nature and artifice – and make these connections the primary meaning of the design itself.

Contemporary architecture is thus becoming increasingly frequently a *hybrid design*, an open design, which communicates directly with the physical and social characteristics of the place. It is more and more frequently an interstitial design, one of mediation and bonding amongst physical and social contexts, which must operate within a territory already heavily anthropized, and seek proximity relationships within abandoned, already-existing structures. Working on what has already been built, with recycling and repurposing rather than with endless growth, seems to be the most convincing route for architectural thought.

Therefore when we work on existing architectural structures, it is necessary not only and simply to safeguard, protect, and adapt them, but also to go beyond, through the “recycling” of the building and the places, first temporary and hybrid, and then final, always leaving room for a possible mutation, for the allocation of new functions, overwriting that which already exists.

The configuration of the place is thus the result of different configurations which have been modelled

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<sup>1</sup> Melvin Webber, *Order in Diversity: Community Without Propinquity*, in *Cities and Spaces. The Future Use of Urban Land*, Lowdon Wigo Editor, Johns Hopkins Press, 1963.

over time, one over the other, throughout a long course of events. And it is there, ready to support the ones newly born from systems which, in part, belong to the “remains”, others to their “reuse”, and still others to a theoretical thought that derives from different systems.

While the “Modern” had modelled objects that were defined through their masses, the organization of solids and voids, the construction system and functional organization, basing the pride of their permanence and challenging of time on this compositional grammar system, today’s architecture produces structures which resemble temporary set-ups, sensitive organisms that seem to be occupying the ground they stand on only temporarily.

Thus contemporary architecture abandons the dimension of the unchangeable to evolve into a dynamic substance: expressions such as temporariness, transitoriness, flexibility, changeability with time, and interchangeability of the parts have by now become part of the endowment of qualities required of many specialist buildings – those which, more than others, are called upon to incorporate the rapid changes in the ways they are used and the social systems.

The urban areas abandoned by the conventional market are giving rise to categories of alternative users, temporary users, who occupy a stage of transition between the former use and the future intended use, born with the awareness of having a limited lifetime, of being naturally in a temporary state during a period of uncertainty.

Temporary architecture, by its very nature, permits the experimentation of uses, spatial vocations, encouraging its appropriation by the citizenry. Small-scale urban operations are able to enliven the attention to abandoned spaces, giving way to longer-lasting processes of regeneration and resignification, arriving at increasing the value of the properties and improving their image, thereby attracting other users. Where traditional planning finds it difficult to regenerate empty spaces because of the numerous limiting factors characterizing it, temporary uses have the capacity to attract new uses, economies, and unexpected social capital.

*The new “light” forms of temporary living may provide an answer for the growing fragility of some social classes in difficulty today, through an architecture of spaces and services designed around the individual and no longer around an illness or hardship (meeting a need that is not only functional, but above all emotional).*

The condition of transition makes it possible to bring closer together heterogeneous social units which, precisely by virtue of their condition, can communicate and create an informal support network, contributing to solving living- and service-related needs at the same time.

## **2.1 The architecture project. The “RO Ferrarese” case study for an integrated model of a children’s accommodation community**

The design of new social instruments also entails the consideration of new residential and semi-residential community models for estranged children, designed and built to correspond to a new educational plan, made of integration and temporary solutions. It is necessary to rethink the structures for estranged minors as a “transition space”, where the children stay in a place that creates a routine and the habits of a “large family” for them, pending their return to their own as soon as possible.

These are situations that are not final, and to which we must respond with a temporary offering of living spaces.

The case study is that of a public-private project in the town of RO Ferrarese, Emilia Romagna.

The structures consist of a former elementary school with another external building which was formerly the kindergarten and the surrounding yard, in addition to two buildings across from the school which consist of four two-room sections each, for a total area of approximately 2,000 m<sup>2</sup>.

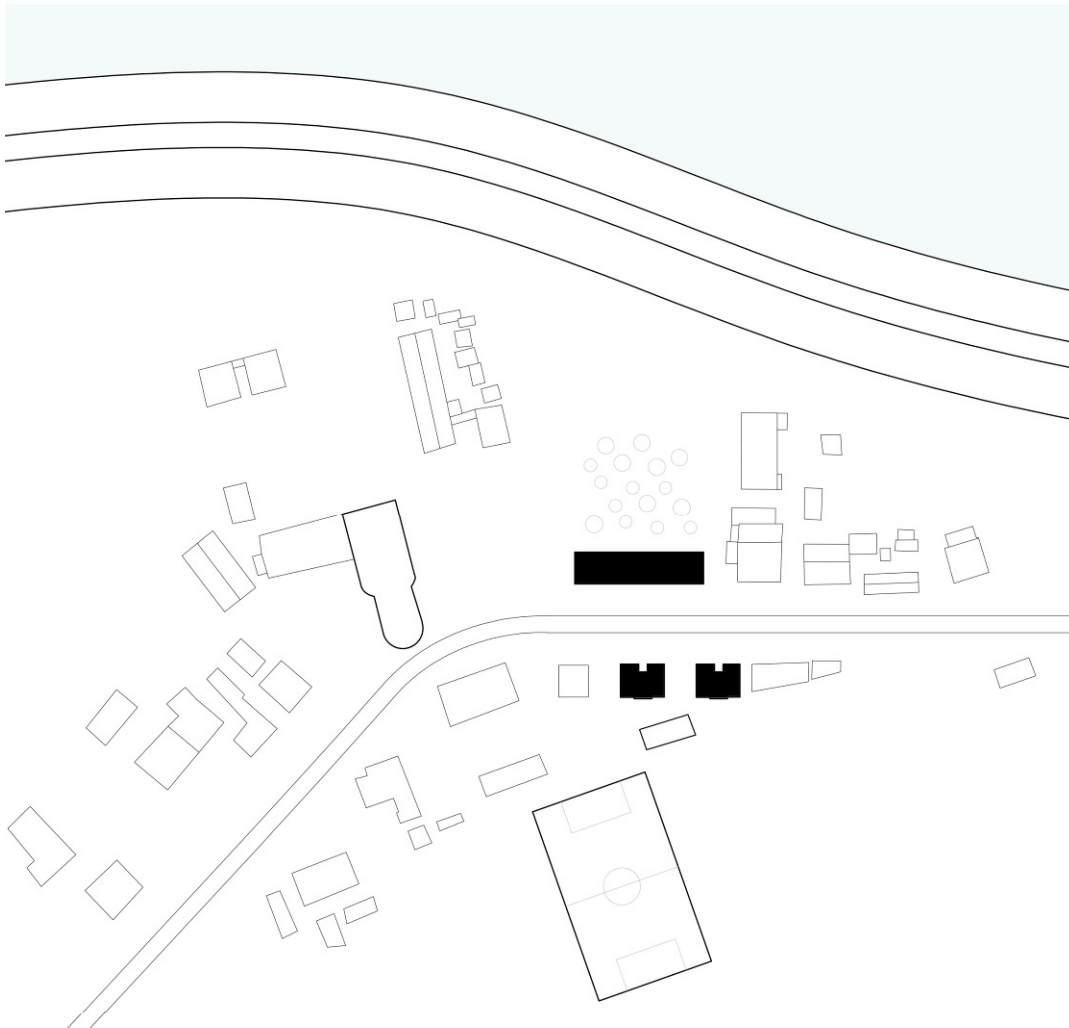


Figure 1. All elements object of regeneration. Black elements from a temporary transformation.

In order to be able to provide for a temporary reuse from the bottom up, following the principle of minimum intervention at different scales, the public and privately owned unused buildings appear to be the first interceptors of this phenomenon.

The method consists of creating a series of non-invasive intervention strategies which, with minimum impact, work on the vacated spaces pending their future transformations and uses. The idea is to work seeking to do little, almost nothing, but in a precise manner, in order to be able to understand if the intervention is metabolized by those living in the space, and thus continue only later with further work.

The temporary reuse of space becomes a sustainable strategy because it introduces a new significant concept of use of a social-educational residence: not only a safe space in which to house minors, but a new place of temporary living, in which the minor is educated and integrated into a community together with others, in a physical and spatial transition, based on the concept of proximity, both social and architectural.

“Social” means through a new way of thinking and intending the stay of children in public structures which include processes of social and architectural integration, in which the common internal and external spaces (gardens, socialization areas, areas for fitness or leisure time) become an interesting system in the definition of the term “barrier”, no longer meant as a border or boundary, but as a margin which acquires depth and is modulated to meet the various utilization needs.

The border and margin are elements that refer to a variety of situations which are adjacent to something that is physically recognizable: they are areas of proximity, hybrids, in which the social and intergenerational encounter takes place.

No longer boundaries, i.e. the line that marks a separation between different entities, nor a limit, which strengthens the concept of separation, but the porous space between things that is the “relationship” space, the system of proximity between persons and things that can generate and create an identifying space amongst the different entities that make up the scene.

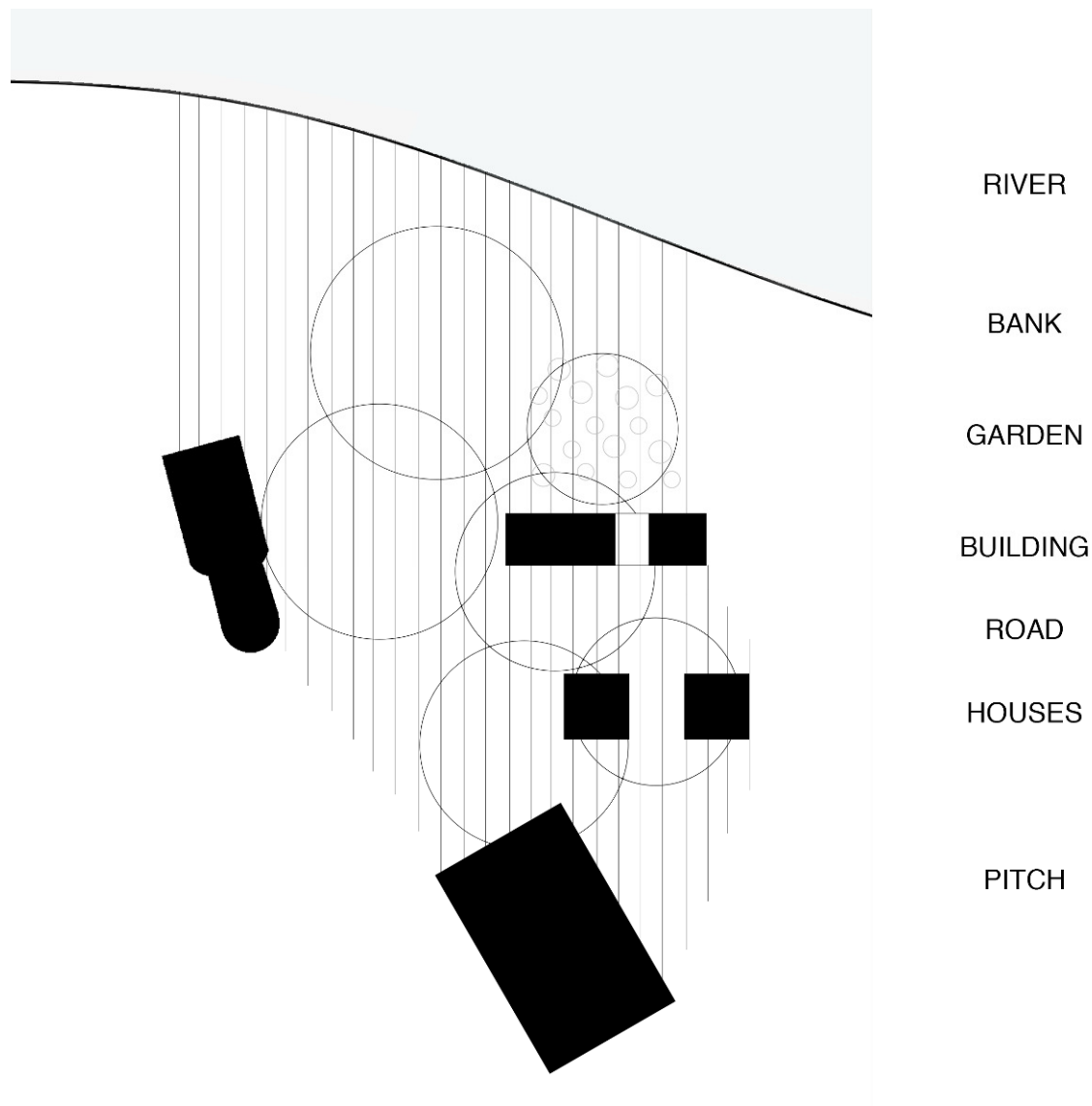


Figure 2. Connections

Working with this vision makes it possible to plan not objects anymore, but temporary, dynamic relational spaces which lead to a new conception of intervention strategies.

Architecture is thus called upon not to build more self-referential “objects”, but to work on the “leftover” space existing amongst things, amongst people, and amongst physical entities, rapidly changing its state and substance, and thus modifying its scope through constantly changing configurations.

This “research device” does not explore a structured space, but a space “pre-organized” by the interaction of attracting and repelling elements that slowly pull and shift from one dynamically stable state to another, recomposing themselves into new mutual aid configurations through the self-organizational system of voluntary cooperation.

We are speaking of spaces without set limits, which fluctuate between staticity and dynamicity, between the definite and indefinite, and between the tangible and intangible.

The work will be done according to a strategy of parasitic occupation of the space of the abandoned structures, temporary infiltrations with lightweight set-ups, and operations giving the spaces a superficial cosmetic “facelift”, in keeping with the principle of minimum intervention, of the “almost nothing”, and of the selective subtraction of elements to render the spaces functional for temporary use.

**Parasitic occupation** thus becomes an approach for endowing the buildings with those spaces, between the interior and exterior, that make it possible to introduce new elements of interaction such as greenhouses, loggias, and new spaces for the community.

Inside, a series of additions will permit a sort of **grafting process** that will make the lodgings usable by the various social categories: from lightweight temporary systems, such as things for leisure time with partitions, to services such as cooking and bathroom areas.

### 3 EXPECTED RESULTS

The experimental project, being defined with the evaluation unit of the Emilia Romagna Region Social Policies department, strives for:

- social results comprising the care for and reintegration of estranged minors;
- technical results of an architectural transformation of the buildings and regeneration of the outlying areas and unused public real estate assets;
- results of sustainability, development of a new entrepreneurial model, and sociality based on the hybridization of the single contributions;
- In particular, the project:
  - defines and promotes a series of integrated service activities (for self-sufficient children and senior citizens with slight disabilities and/or social hardship), living in the various properties involved in the regeneration;
  - is financially sustainable, and with a profitability margin of 7% for the investor;
  - can guarantee an average boarding cost per minor lower than that currently incurred by local welfare services;
  - generates forms of satellite profitability through the creation of services in addition to the main one for minors;
  - regenerates a portion of the territory and redefines the local community by activating it.

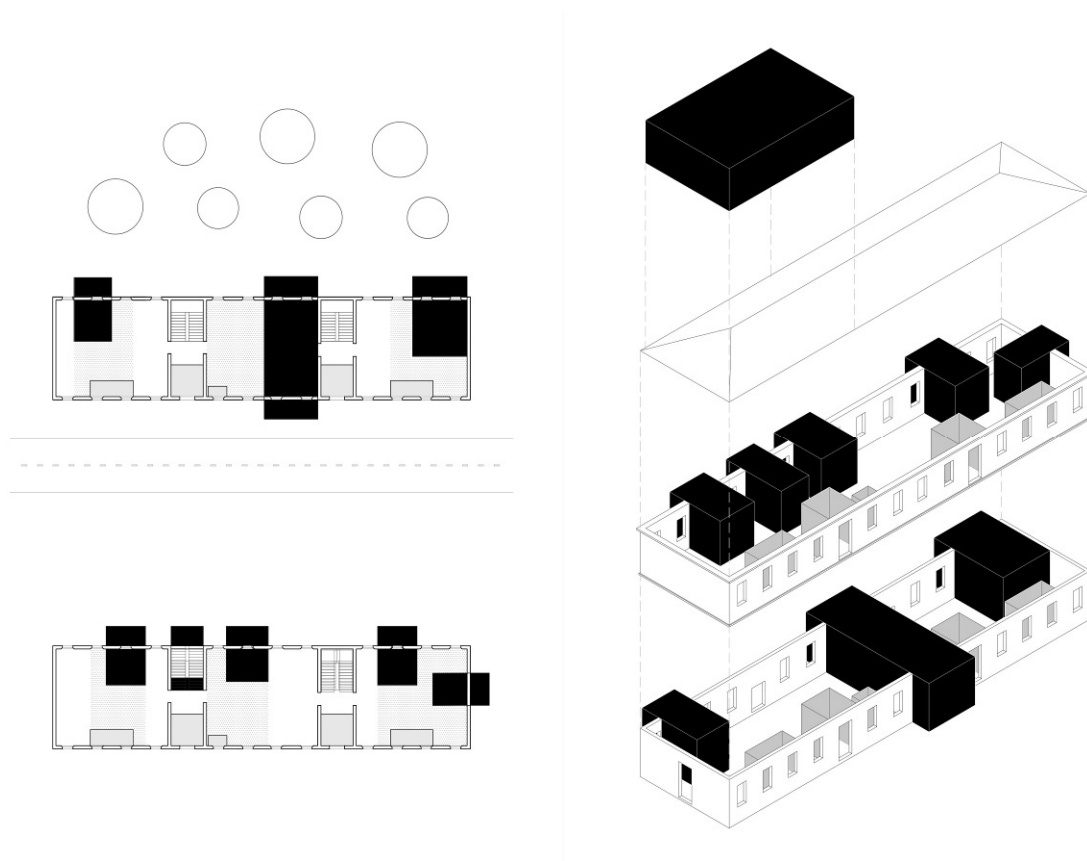


Figure 3. New plan of building ex school with the parasites and grafts

The transformation of the current school into a structure for housing children, which from the economic standpoint is expected to have an occupancy of 80%, uses the entire available area of the property. The restructuring of the residential buildings, with the creation of 4 lodgings per building to be used for temporary housing for the elderly, the demolition of the former kindergarten building with the recovery of the area within the plan of the former school, the connection of a pedestrian path to the existing infrastructure, and connection to the sports field complete the project.

#### 4 CONCLUSIONS

The social definition of the project through the experimental phase, the architectural definition based on a temporary operation, and its economic sustainability for a financial operator have made it possible to start up the process of regeneration of the entire area involved in the transformation which, lacking such a project, had been left in a state of disuse and neglect.

The cooperation amongst public bodies such as the Town and the university, and private organizations such as foundations and investment funds, has permitted the start-up of a process of regeneration of an area otherwise left to decay and, above all, is experimenting new forms of temporary social proximity.

The social, architectural, and economic project is the result of a contamination and interaction amongst different elderly-children categories, amongst neighbouring, nearby, temporary, bordering, and never bordering living places, and of a hybrid of social-speculative finance.





Figure 4. Possible scenario with grafts and parasites

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## MAKING SPACE. THREE PROJECTS IN BETWEEN

Luigi Siviero

University of Padova (ITALY)  
luigi.siviero@unipd.it

### Abstract

This paper aims to specify a particular acceptance of the *in-between* concept, moving this paradigm from the concept of “empty space between objects”, to the concept of “physical object” which, introduced in the context, create the occasion for a re-reading of the elements, with which in several ways it comes into contact. In particular, we are going to describe three projects – results of studies developed in the context of the *ReLOAD* (Research Laboratory of Architectural Design), at University of Padova – that produce conditions of *in-between* in different ways and contexts.

The term *in-between* could be connected at least with two phenomena, better with two interpretations of the phenomena that characterize the transformations of the western contemporary city.

According to the first, the term *in-between* evokes the image of two or more objects, the proximity of which generate an almost indefinite, marginal, rejected space. In this case, the *in-between* assumes the character of *terrain vague*, in which it is common to find phenomena, make studies or exercise actions that, in the last decades, the international research has experimented widely and in several ways. This view of the *in-between* is more peculiar of the urban transformations made by progressive additions of parts (as, for example, the case of some suburban landscapes characterized by a constant infrastructural growth, or along the perimeter of a large transformation project).

The second interpretation of the *in-between* concept – we want here introduce – is less intuitive, also because less investigated. We can completely understand it only considering the urban transformations as progressive increases (or decreases) of physical layers, everyone establishing reciprocally multiple relation-states. In this case, the *in-between* is not produced as consequence of an empty space potentially unstable, but of a physical object inside the texture of the city, stratified on it, producing, just for this, opportunity for alternative readings of the context.

The first project we present here is the result of a design workshop made in San Venanzo, a small village in the central Italy. The concept of *in-between* is here investigated introducing a number of small architectures in specific places of the context – we can imagine little fragments falling from the above. These *architectural fragments* make literally space in the context: they create places and intercept flows of people, with the aims to improve the knowledge of some specific character of the landscape, today hidden or covered by the exceptional romantic beauty of the place, and create in the time new occasions for the development of the territory.

The second project is the result of an academic class carried out at University of Padova by a small group of students of the Master Degree in Building Engineering and Architecture. The students have faced the concept of *in-between* experimenting the introduction of a destabilizing element on to the texture of a large and compact industrial zone. This architecture – a big reticular frame of steel, parallelepiped shaped, laid down on the fabric roofs – is able to suck up, absorb and keep inside a collection of urban equipment, taken from the context (sheds, tanks, road equipment, vegetation...). At the same time, it generates new flows of people introducing a congestion of functions, obtaining the result of breaking the solidity of the context and giving different use and meaning to the elements

of the industrial landscape.

The third project is a temporary garden realized at the Auditorium-Music Park in Rome, during a popular cultural event on the landscape themes ("Follie d'Autore" – Festival of the green and the garden, Rome). As in the previous cases, the *in-between* is here faced through the introduction of a small architecture, able to suggest more interpretations of the context, finding constantly interactions with the people around. In particular, on one hand, the garden aims to find relations with the hidden part of the context, putting in light selected elements only partially visible in the background; on the other, it aims to overlap different images taken from experiences of the everyday or from the individual memory.

The tree projects face the theme of the *in-between* as product of progressive changes of the context, producing always a kind of prolific breaking, able to change the rules of the relations of the urban elements, promoting the creation of new places, seeds of public spaces with new possibility of unexpected evolutions.

**Keywords:** space, object, fragment, texture.

## 1 TWO CONCEPT OF IN BETWEEN

The term *in-between* could be connected at least with two phenomena, better with two interpretations of the phenomena that characterize the transformations of the western contemporary city.

According to the first, the term *in-between* evoke the image of two or more objects, the proximity of which generate an almost indefinite, marginal, rejected space. In this case, the *in-between* assume the character of *terrain vague* (I. De Solà Morales, 1995), in which is common to find phenomena, make studies or exercise actions that, in the last decades, the international research has experimented widely and in several ways. This view of the *in-between* is more peculiar of the urban transformations made by progressive additions of parts (as, for example, the case of some suburban landscapes characterized by a constant infrastructural growth, or along the perimeter of a large transformation project).

The second interpretation of the *in-between* concept – we want here introduce – is less intuitive, also because less investigated. We can completely understand it only considering the urban transformations as progressive increases (or decreases) of physical layers, everyone establishing reciprocally multiple relation-states (L. Stendardo, 2013).

This condition is actually more typical of the sub-urban areas, characterized by a strongly undetermined urban structure that contrary is typical of the traditional or historical city.

In this case, the *in-between* is not produced as consequence of an empty space potentially unstable, but of a physical object inside the texture of the city, stratified on it, producing, just for this, opportunity for alternative readings of the context.

In order to better explore this concept, we are going to describe three projects – results of studies developed in the context of the *ReLOAD* (Research Laboratory of Architectural Design), at University of Padova. They are able to produce conditions of *in-between* in different ways and contexts, always moving the *in between* paradigm from the concept of "empty space between objects", to the concept of "physical object" which, introduced in the context, create the occasion for a re-reading of the elements, with which in several ways it comes into contact.

### 1.1 Hic sumus felices. In the between of the background

The first project we present here is a temporary garden realized at the Auditorium-Music Park in

Rome, during a popular cultural event on the landscape themes (“Follie d’Autore” – Festival of the green and the garden, Rome, May, 16-18th, 2014)<sup>1</sup>. The *in-between* is here faced through the introduction of a small architecture, able to suggest more interpretations of the context, finding constantly interactions with the people around. In particular, on one hand, the garden aims to find relations with the hidden part of the context, putting in light selected elements only partially visible in the background; on the other, it aims to overlap different images taken from experiences of the everyday or from the individual memory.

The project of the temporary garden start from a dialog between designers in different places of Italy: the particular nature of the communication means used (a long conversation through *Whatsapp*) produced a storage of heterogeneous themes and images, result of extemporary remarks. We can also consider the garden as a kind of *collage* of ideas, that are moved *in the between* of a place which, sometimes without program or control, contribute to the re-reading of its peculiar characters (Fig. 1).

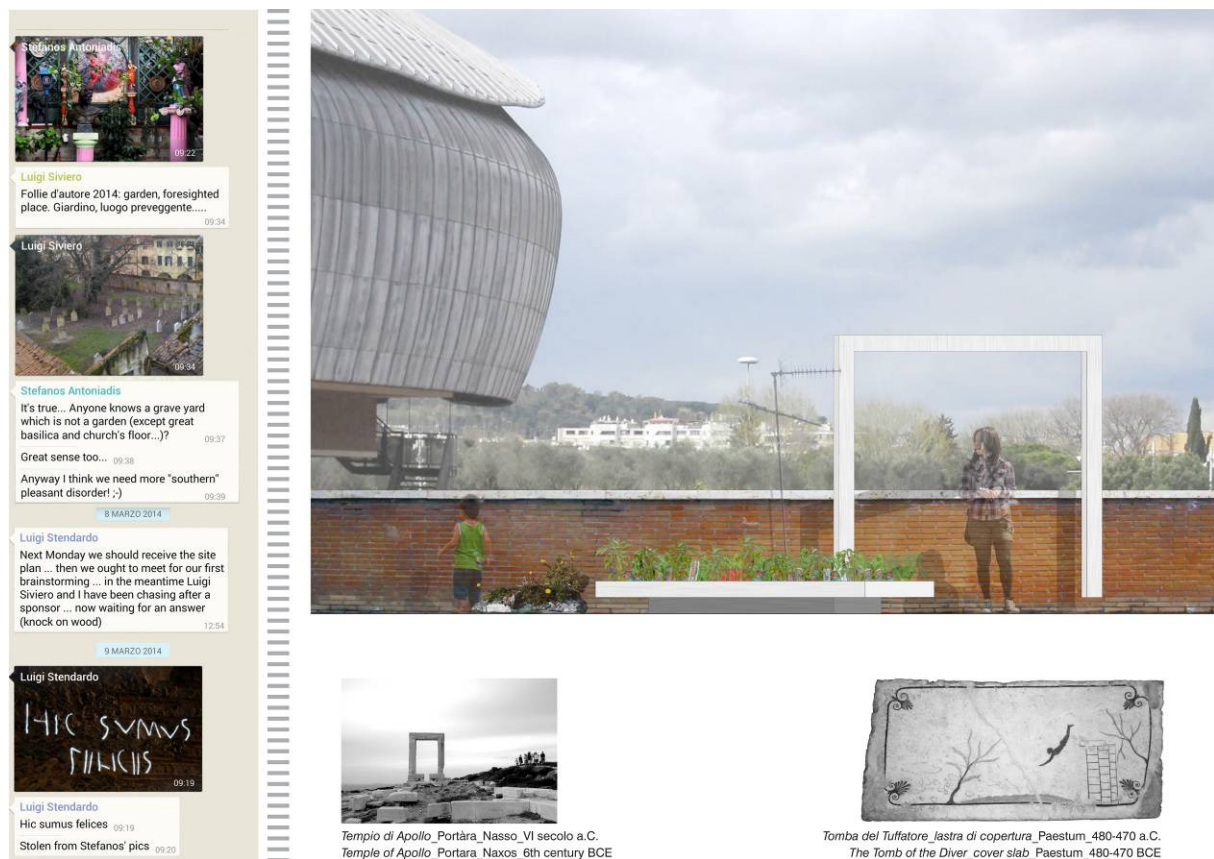


Figure 1. The genesis of the project is a storage of images, thoughts and small messages, collected through a conversation via Whatsapp.

The interpretation of the themes faced by the garden and the re-reading of the context where it was placed, is not univocal or consistent, but generate in everyone different remarks (and this peculiarity follow the genesis of the project, born from a storage of images). The project works mainly through two conceptual tools, both used with the aim to give alternative visions or stimulate unusual remarks: the physical context (the space of the suburbs of Rome – where the Auditorium take place – as the places where we can find a large number of characters common to the model of the western contemporary city); and the introspective context (the image of a “every day garden”: the terrace of our flat, the courtyard where we played in the childhood, the vegetable garden that everyone could

<sup>1</sup> Hic sumus felices, temporary garden. Design team: Luigi Stendardo, Luigi Siviero, Stefano Antoniadi, with Tommaso Gasparin, 蒋伊琳 [Yilin Jang], Raffaele Spera, Serena Vianello.



cultivate in a small plot of land...).

In the first case, the project represent a small fragment that aims to overlap, frame, add or select the elements of the background that from time to time appear, depending on the position of the subject-visitor. The elements of the background were specifically selected – with a study on the perspective from different points of view, during the design phase – and constitute objects hardly perceptible, but very common in peripheral contexts (television antennas, cornices, in general each overhead element of the “generic” city) (fig. 2).

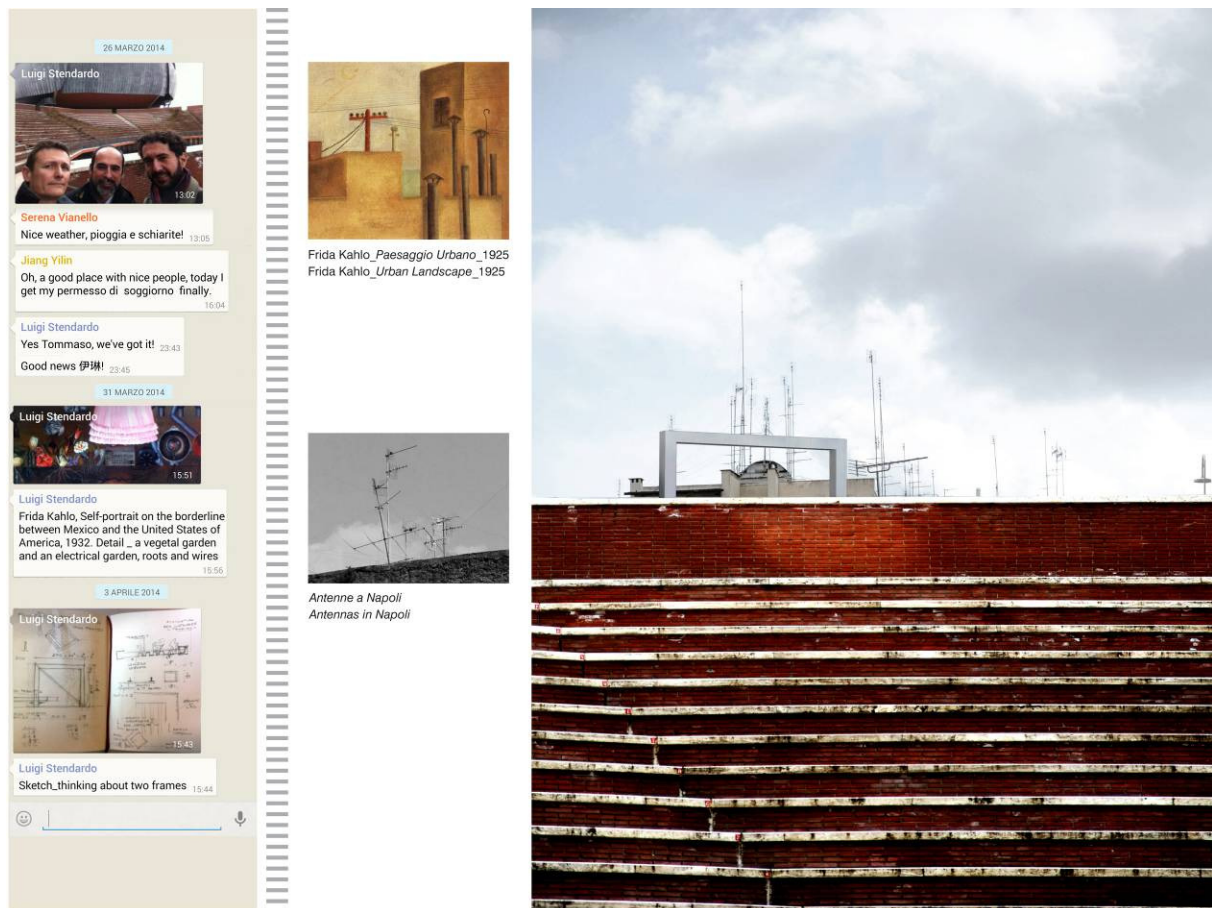


Figure 2. Interaction of the garden with the background of the city....

In the second case, the garden is filled with objects of everyday, partly taken properly from the garden experience (sprinklers, vegetable plants, pots, potting soil, gloves for gardening, rakes etc.), and partly from the landscape of everyday life (a television antenna, cans, empty bottles etc.).

We could consider this project as a small experiment on the *in between* made “by overlapping”, in which we tested the reactions (the event attracted a large number of people) and verify different degrees and types of curiosities, interpretations and relations that this “architectural device” was able to generate in a short period (Fig. 3).





Figure 3. ...and interaction with the people.

## 1.2 Urban voids. In the between of the industrial texture

The second project is the result of an academic class carried out at University of Padova by a small group of students of the Master Degree in Building Engineering and Architecture<sup>2</sup>. The students have faced the concept of *in-between* experimenting the introduction of a destabilizing element on to the texture of a large and compact industrial zone. This architecture – a big reticular frame of steel, parallelepiped shaped, laid down on the fabric roofs – is able to suck up, absorb and keep inside a collection of urban equipment, taken from the context (sheds, tanks, road equipment, vegetation...). At the same time, it generates new flows of people introducing a congestion of functions, breaking the solidity of the context and giving different meaning to the elements of the industrial landscape.

The project area is a large and compact industrial zone (ZIP) near the city of Padua (IT), which we discussed in the last edition of EURAU Conference, arguing the need for its openness towards the compact city, with infrastructure developed through a linear collection of public spaces (L. Siviero, 2014).

The regional authorities in the 50s formed the ZIP with the aims to bring together in one place a large number of productive activities, providing them with common infrastructures and services. Today, the economic crisis and the abandonment or conversion of many of the ZIP activities, requires a rethinking of the future of this area that have lost the past propulsive thrust and today is not able to find an innovative strategy of transformation.

Compactness, homogeneity, isolation, gigantism, abandonment, impermeability are just some of the words we can use to identify the character of this area that, once decrease the production and in general the activities, as in many other case studies of abandoned or partially abandoned industrial areas, become an isolated and close part of the city.

The project is a red modular lattice with a square base, 90 m wide and 30 high, dropped in a point – not the only one possible – of the homogeneous urban texture of the ZIP. The lattice is a kind of empty space, opposed to the density and compactness of the industrial area. This mass difference gives to the lattice the ability to attract – as a kind of Hoover – materials of the context, apparently without selection, in a kind of mixing of heterogeneous elements. Once caught in this big filter, contribute to form spaces with different characteristics (Fig 4, 5).

<sup>2</sup> Urban Void. Project developed during the academic class *Architectural and Urban Composition III*, prof. Luigi Stendardo and Luigi Siviero, Master Degree in *Building Engineering and Architecture*, University of Padova, a.y. 2014-2015. Design team: Delia Belluco, Federica Benetti, Matilde Breda, Salvatore Sapienza.

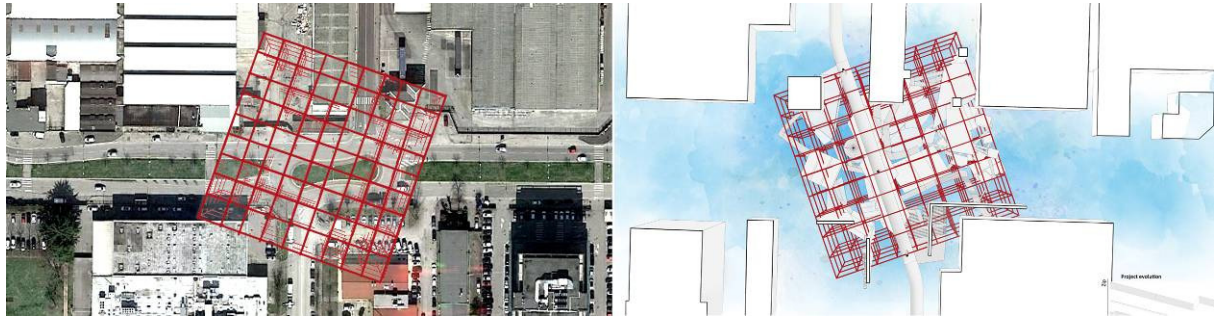


Figure 4. On the left: plan view of the lattice on the ZIP urban texture; on the right: perspective view of the lattice from the bottom

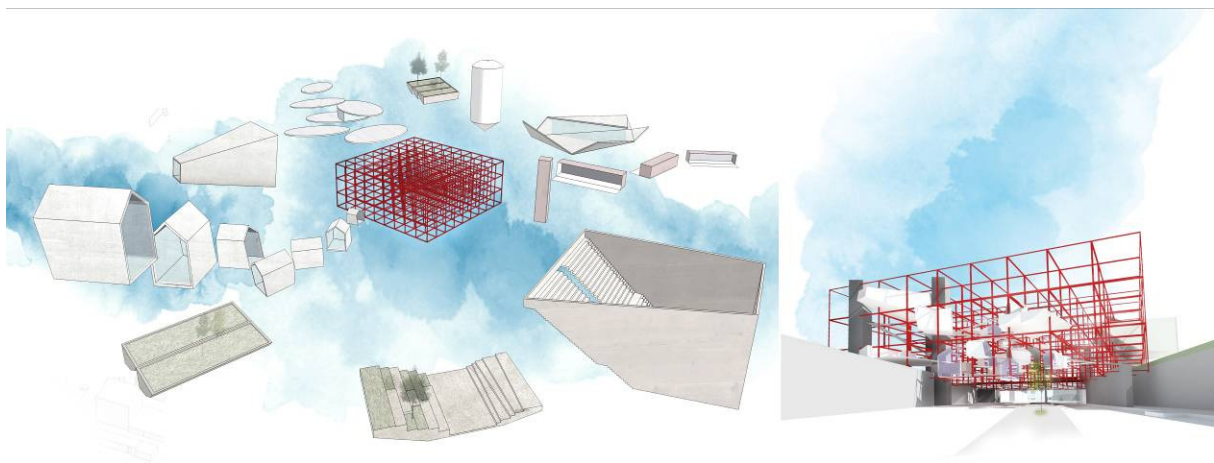


Figure 5. Urban elements from the industrial landscape drawn in the lattice.

Re-reading of the city and congestion are important theoretical foundations of the project, which find strong links with the models of re-organization of the traditional urban space, through macro-structures, produced in the 60s and 70s by Yona Friedman, Superstudio, Archizoom or Elias Zenghelis and Rem Koolhaas, but also with some more recent projects by Rem Koolhaas (such as the Zeebrugge Terminal See, 1988).

Also in this case, the project carry out a strategy of placement *in the between* of the context, trying to destabilize the homogeneity of the industrial texture, experimenting mainly two strategies: firstly, creating links dictated by analogies trough the form of the context and the form of the element inside the lattice; secondly, imposing a strong congestion of different functions.

To reach the first goal, many materials of the industrial environment - pieces of roofing, reservoirs, tanks and other fragments related to the production world - are absorbed into the lattice, taking from time to time various functions (closed places, walkable platforms, gardens, containers for events etc.).

To reach the second goal, taking advantage of the versatility of the space, it is possible to introduce a many functions – public spaces, gardens, places for events, temporary offices, shopping centers, infrastructure nodes, residences etc. – in order to ensure the use of the spaces in every hour of the day, approaching the problem of the abandonment of the ZIP during the evening and night hours.

In a subsequent step, the project has been experimented in different places, to test its ability to break different kinds of consolidated contexts – physical, as in the case of compact urban textures, or mental, as in the case of preconceived images of symbolic places - in different parts of the world, using the *in between* (Fig. 6,7)



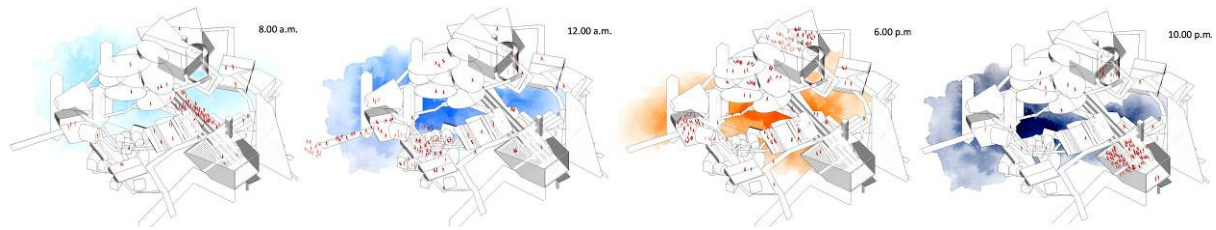


Figure 6. Study of the functions related to the use during de day.

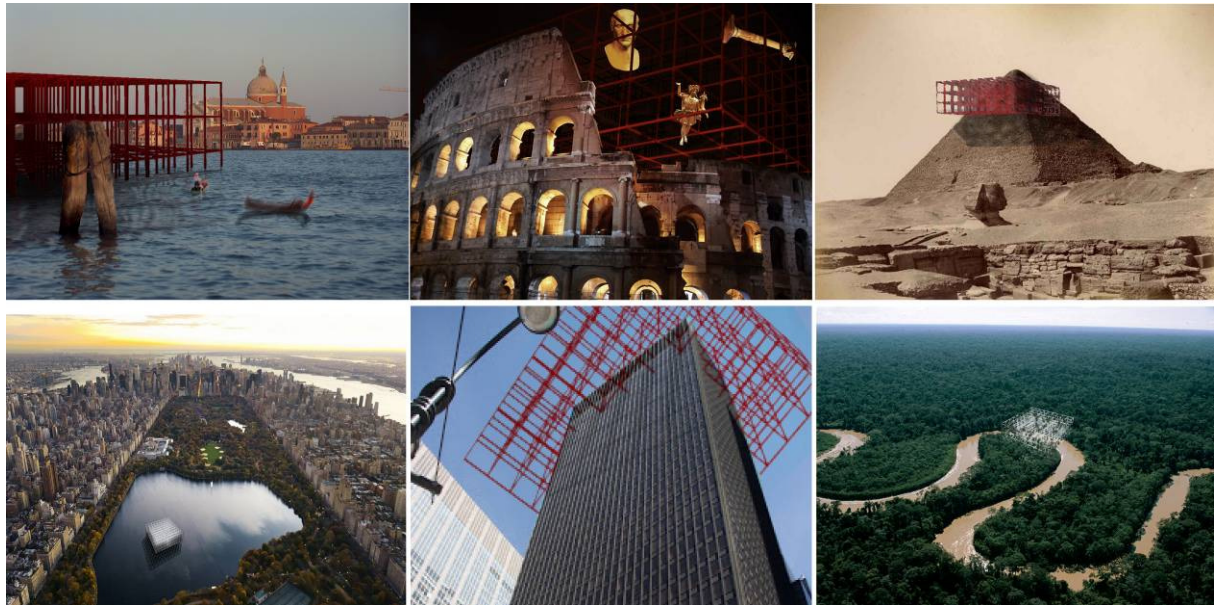


Figure 7. Hypothetical displacement of the project *in the between* of some symbolic places in the world.

### 1.3 Volcanological park in S. Venanzo (IT). Fragments in between

The third project is the result of a design workshop<sup>3</sup> made in San Venanzo, a small village in the central Italy. The concept of *in-between* we investigate here introducing a number of small architectures in specific places of the context – we can imagine little fragments falling from the above. These *architectural fragments* make literally space in the context: they create places and intercept flows of people, with the aims to improve the knowledge of some specific character of the landscape, today hidden or covered by the exceptional romantic beauty of the place, and create in the time new occasions for the development of the territory.

San Venanzo is a small village in a hilly region in central Italy, which apparently does not present any originality that distinguishes it from other countries in the same region. Yet, the morphology of the landscape of the hill of San Venanzo was born about 265,000 years ago, through the activity of three volcanic craters: this genesis, unique in the world in the geological aspects, has marked the recent history of the territory. However, this peculiarity is today completely unknown to the citizens and tourists crossing through the territory.

There is therefore a problem of recognition of the historical character of the landscape, we can divide schematically in two main themes:

- 1) The village is on the crest of a hill, formed following the accumulation of volcanic debris from one

<sup>3</sup> Workshop *Architettura e Natura*, premio Simonetta Bastelli 2014. Design team: Luigi Siviero (tutor), Cinzia Capalbo, Joyce Azzam, Nicola Riitano, Sara Silvi, Francesca Romanelli.

of the three craters. Both within and outside the country, the morphological action of the volcanoes is not perceptible, if not with the guide of experts who are familiar with the geology of the place.

2) A second crater produced a lava flow that, due to very particular temperature and pressure conditions, solidifying has generated a so rare stone that it taken the name of the village (*Venanzite*, from S. Venanzo). This platform of stone, located in a small area at the foot of the hill, at the beginning of the last century, has been mined and spilled to obtain *ballast* (stones for the construction of railway embankments), in support of Italian infrastructure development in the early 1900s. Today, there are traces of this activity in a volcanic park, which is based in the former quarry, but that, despite the efforts of individual operators who manage it, is isolated from tourist flows and unknown to the citizens and the people in general.

The problem of the knowledge of the geological and morphological actions and of the historical mining activities of the village is strongly felt by the local governments, that wants to bring out these features, transferring them to the local culture and using to multiply the tourist flows and accesses to the territory.

The term "Intra/Extra moenia" – slogan of the project – alludes to a possible reading of the San Venanzo landscape, focused on the perimeter of the volcanic park, which shows a character closed to the outside. Today, the *Venanzite* former quarry contains elements that represent the geological genesis and mining history of the territory, providing a comprehensive image of the history of S. Venanzo landscape. Closed within the perimeter of the volcanic park, those elements are invisible not only to those who cross the territory, but also to those who live it.

The project aims to carry outside the perimeter of the park elements that are representative of the history of the place, trying to catch the attention and transmit curiosity in everyone, generating the perception of belonging to a precious landscape of volcanic origin. The time is a tool of the project, which develops in successive steps.

In the first phase, the project is shaped as a series of small fragments scattered along the territory. In order to understand this step, we must call in the mind a metaphor: when the lava flow exit from the crater, it cools rapidly and breaks up into fragments. We can image the fragments threw up to the air form the crater, fall outside the perimeter of the park, bringing outside information of their origin, and creating a more extensive form of the park, along the whole volcanic territory of S. Venanzo (Fig. 8).

In falling to the ground, the fragments change shape, adapting to the places – streets, schools, squares etc. – assuming different functions from time to time: parking areas, observation points, refueling spots for electric cars... This is the second phase of the project: an extensive interaction with places people, carried out through actions of *in between*: the fragments, falling into inhabited places, help to perceive the territory of San Venanzo as a landscape of homogeneous character, generated by the same peculiar phenomenon.

The project face in two ways the relationship between the history of the landscape and places and people: morphologically and psychologically.

In the first case, each fragment is composed of two elements: a stem high and bright, with the function of reminding the height of the lava flow before the mining activities; and a surface of *Venanzite*, that is able to adapt to the morphology of the places, changing into a floor, a wall, a staircase, a walkway on the water... (Fig. 9)

In the second case, the project aims to stimulate curiosity – which we think here as the first step for achieving knowledge and generate the need to belong to a unique and precious place.

In addition, ambitiously the project image a third phase. The perimeter becomes more and more attended and this fact produce flows from *extra* to *intra* moenia, generated by the desire to learn



more about the landscape where the people are going through. Only then will be useful to organize the park and the former quarry as a small centrality, transforming it into, for example, a center of volcanological studies, open air market, theater for events, botanical garden, thereby attracting new flows into the territory.

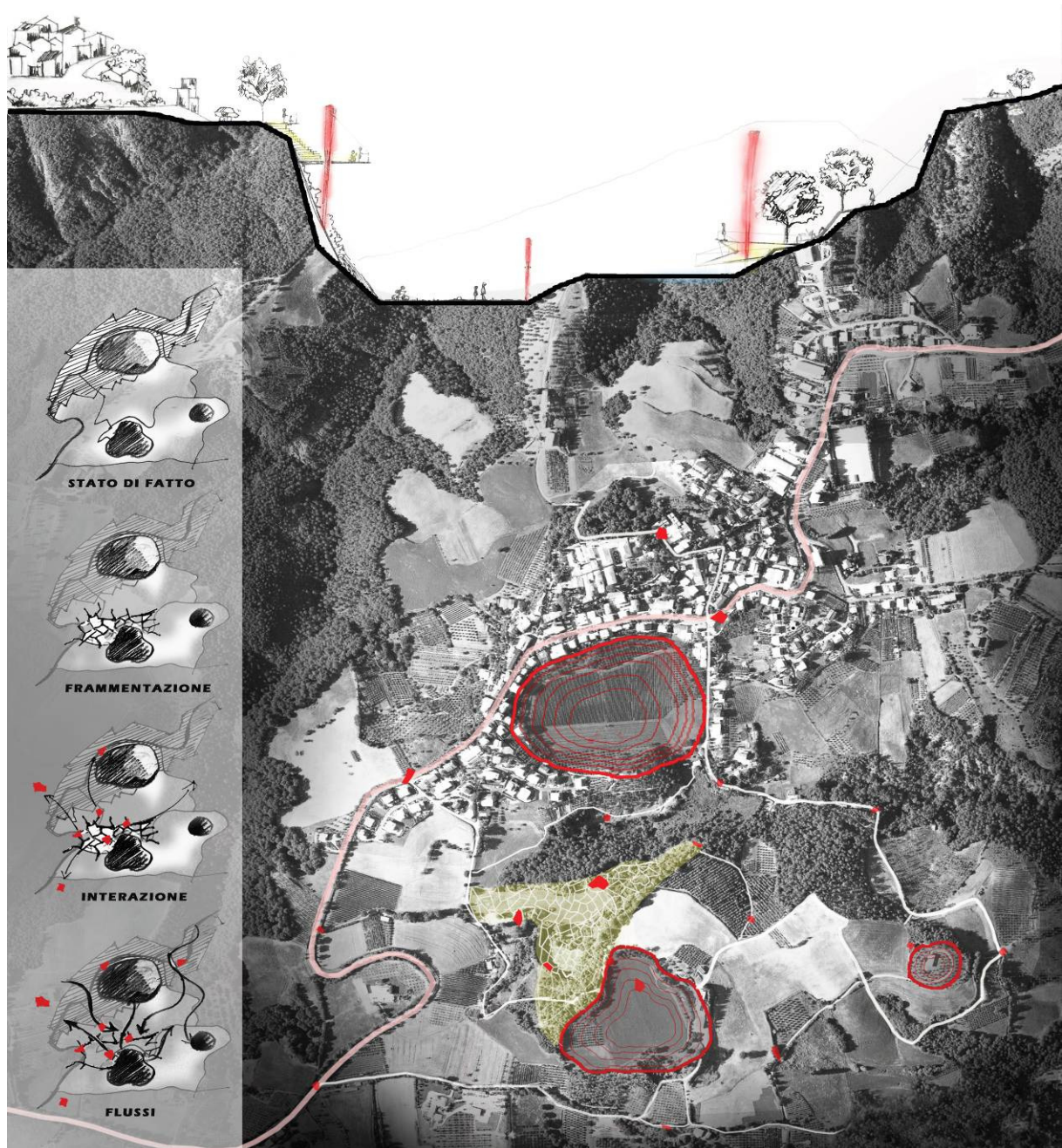


Figure 8. Project concept and plan view of the network of fragments. The circles in red represent the craters; the small red shapes represent the fragments; In yellow the lava flow, today volcanological park

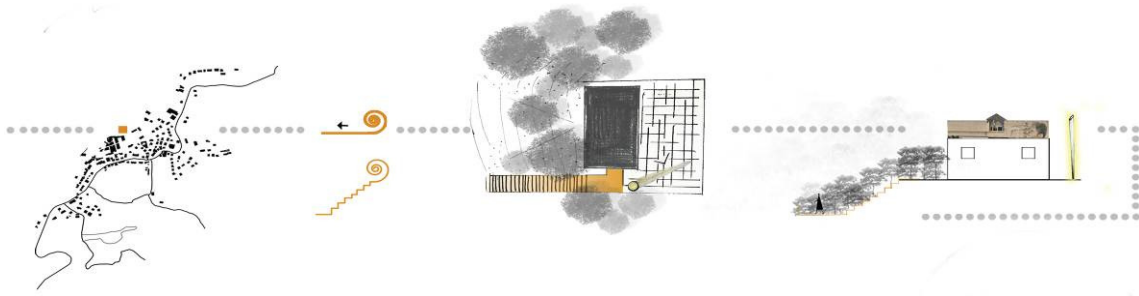


Figure 9. Example fragment near a school: the surface of venanzite become a stair to the garden and the playground and the high element a reference point for the entrance in the school.

## 2 CONCLUSIONS

The *in between* is here intended as a conceptual distance between a context (we can think it as a kind of articulated and complex background), and elements (in the case of S. Venanzo a network of elements) subsequently superimposed.

The three projects share a logical assumption: the predominance, within the theme of the *in between* between different levels, of the strategic theme of the relationship (cfr. O. Carpenzano, 2014) as a system that give a structure to a multitude of materials, indiscriminately accumulated without a recognizable logic, and that is able to fill this distance. The more intense are the relationships, obtained through the objects of which the city is made, the more it establishes a reference point, a guide to break the homogeneous urban texture, generic and indifferent to the hierarchy.

United by the small dimension (even in the case of the ZIP, the lattice grinder appears small if compared to the enormous area of the ZIP) and the concentration of elements, the three projects tend to provide a kind of measure to contexts (physical and cultural) with which they interact. The Roma garden produces different kind of overlapping, interacting with people and amplifying parts of the context that is not immediately visible or perceptible. The lattice girder of ZIP operates a kind of displacement of urban materials drawing them into itself, providing them with a new meaning, and opening them up to new alternative uses. The fragments of San Venanzo interact with different places, producing new flows by transmitting different perceptions of the landscape.

In any cases, the tree projects face the theme of the *in-between* as product of progressive changes of the context. They produce prolific breakings, able to change the rules of the relations between urban elements with the aim to create new places, seeds of public spaces, or occasions for the transformation of places stuck in immobility conditions, giving them new possibility of evolutions.

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## KNOTTING THE VOIDS: A METHODOLOGICAL TOOL TO INFILL THE HISTORICAL CITY

Pina Ciotoli<sup>1</sup>, Marco Falsetti<sup>2</sup>

<sup>1</sup>PhD student, Doctorate DRACo, Faculty of Architecture, University of Rome "Sapienza" (ITALY)

<sup>2</sup>PhD student, Doctorate DRACo, Faculty of Architecture, University of Rome "Sapienza" (ITALY)  
ciotoligiusi@gmail.com, levonraisen@libero.it

### Abstract

The aim of this paper is to illustrate the results of an academic research that investigates the relationship between contemporary architecture and the historical context of Rome, in which the scale of single intervention has been related to the fabric and, through an additional level of analysis, linked to the urban dimension. The "construction" of the new place determines complex social dynamics, considering also the role that the human perception of the new project may have on a so complex and layered architectural reality as the one of Rome's center. The buildings cannot be considered independently, but they contribute to the formation of a larger scale units that affect their characters. The concepts that we have expressed for building types are in some ways extensible to the urban fabric: for fabric is intended the sum of the characters, procesually determined, which characterize the formation of a building aggregate.

The method employed considers the historical urban environment as the readable sign of a process of territorial anthropization, and it starts by identifying those characters, within the fabric, that are essential to preserve the cultural heritage; then it analyzes a number of transformations compatible with the morphogenetic process of historical buildings. This first part is meant in order to hypothesize a reconstruction of tissues as they may have been if not interrupted by an external factor during their history (state of neglect, natural disaster, political choices, uncompleted plans). In other words, the notion of fabric is related to the aggregate in the same way as the notion of type is related to the building. A building fabric is thus characterized by a recognizable law, iterative and identifiable. From this point of view we can talk about building structures that are composed to form organisms having a higher scale. An objective difficulty that this work poses is due to the fact that the historical fabric is often the result of many different historical phases. The aim of the methodology shown in this research is not only to "knot" a very large area to the rest of the urban tissue but also to fill an urban void in order to change it into a place related to the city. This morphological approach is developed within a university course in which students, following this design methodology, can define an intervention integrally responsive to the urban and social needs of Rome. The two areas identified as cases studies are *Piazza Montecitorio*, next to the Italian Chamber of Deputies, and *Regina Coeli* prison, one of the first modern jails of Rome that stands on via della Lungara. These areas are better known as "*Buchi di Roma*" (Roman Voids) and they represent an unresolved urban episode in the contemporary architectural history of the Italian capital. The project proposals take note of the demolitions produced between World War I and World Wall II trying to define a new, organic relationship between parts of the city now separated. A certain number of students developed the theme, as their thesis degree, realizing a shared masterplan in order to define the general characters of the new intervention, like a process of change of the existing urban forms.

**Keywords:** urban space, urban voids, infill, knotting, morphology, organism.

## 1 THE ROMAN VOIDS (*BUCHI DI ROMA*)

In times like these, marked by the specter of an unprecedented economic and cultural crisis, and often characterized by unsophisticated vision of the architectural problem, it seems necessary to rethink the city, trying to contextualize all its parts into an organic process on a larger scale.

To understand the size of the crisis that is transforming and experiencing architectural-anthropic reality, it is necessary to compare all the social and economic alterations -and their outcomes- that more or less have consequences in the world of architecture.

The aim of this paper is to illustrate the results of an academic research that investigates the relationship between contemporary architecture and the historical context of Rome, in which the scale of single intervention has been related to the fabric and, through an additional level of analysis, linked to the urban dimension. The "construction" of the new place determines complex social dynamics, considering also the role that the human perception of the new project may have on a so complex and layered architectural reality as the one of Rome's center.

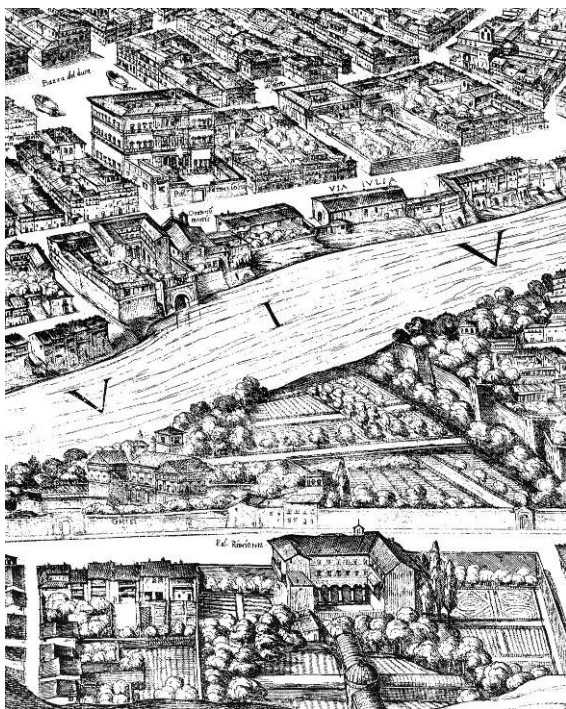


Figure 1. Antonio Tempesta, 1593 the area between *via Giulia* and *via della Lungara*.

The "operative method" employed considers the historical urban environment as the readable sign of a process of territorial enthronization, and it starts by identifying those characters, within the fabric, that are essential to preserve the cultural heritage; then it analyzes a number of transformations compatible with the morphogenetic process of historical buildings. This first part is meant in order to hypothesize a reconstruction of tissues as they may have been if not interrupted by an external factor during their history (state of neglect, natural disaster, political choices, and uncompleted plans). The analysis of the built and the foreshadowing of the project is able to define «the "oikos" as the basic entity of the anthropic areas; without it, we cannot understand all the transformations that have affected and that are still affecting the society» [1]. In fact many studies have shown that the common evolution of urban fabrics in the center of Rome originates from progressive variations of the Roman *domus* type (and other types of courtyard houses). Next to the study of the basic unit of the fabric, we have considered all the differentiations and articulations of

the architectural type, that have been recognized as responsible in identifying a unique and unrepeatable character of the town, strictly connected with the territory in question. For this reason the investigation starts by considering the building organism as a result of a sequence of construction acts that ends with the formation of an urban organism in the territory (a territorial organism) and passes through successive scalar degrees: the building grade, the urban grade and the territorial one. An urban analysis over Rome's fabric reveals a large number of urban voids and public spaces highly "inhabited", usually located in the center of the city, left incomplete but surrounded by the historical fabric. The most emblematic cases, the so-called "*Buchi di Roma*" (Roman Voids) are *Piazza della Rovere*, *via Giulia*, *Piazza* and *vicolo della Moretta*, *San Giovanni dei Fiorentini*, *Piazza Montecitorio* and *Regina Coeli* prison [2]; particularly through the case study of Montecitorio, characterized by the Baroque intervention of Gian Lorenzo Bernini and by the Nineteenth century addition of Ernesto Basile, and of *Regina Coeli* prison, on *Via della Lungara* "Fig. 1", is possible to experiment a strategy of "knotting" the urban voids in the historical urban environment.

At this point it is necessary to explain what we intend for "knotting"; the notion of knotting, was initially introduced by Giuseppe Strappa [3], that enhanced the studies made by Gianfranco Caniggia by analyzing the potentiality of knotting as a methodological and design tool. The term is metaphorically linked to the knot and can be considered as a process that produces, as an architectural outcome, a connection of the different elements of a structure and of the tissue, in order to create a spatial singularity within the architectural and the urban organism. In the past many specialized buildings (Italian *Palazzo*, *Plaza Mayor*, Universities, Cloister, etc) have been generated through a process of knotting, by connecting together different basic elements (once separated) into a new type, having an higher level of organic structure [4].

In fact «the relation between knotting and urban tissue is complex since it represents the cause and the effect of the structure of the latter. If we consider the knotting as a form of "specialization" of the different scales of architecture (the building scale, the urban scale and the territorial one), we can then apply to it the statement about the dialectic between special buildings» [5] and urban fabric made by Gianfranco Caniggia in *Lettura dell'edilizia di base*: «the location of the special buildings in the fabric is both cause and effect of the structuring of the same, and it changes in time and space, with the process of the fabric they belong to» [6].

### 1.1. Knotting Montecitorio and Regina Coeli

For what concerns the case study of Montecitorio, by examining some historical maps like Bufalini (1551), Cartaro (1576) and Nolli (1748), is possible to immediately understand the morphological process that has shaped the area. In fact the historical fabric, in which there is a relevant number of raw houses, until the first decade of the XX century, was crossed by two streets of great importance, *via della Missione* and *via di Campo Marzio*; later, after the addition designed by Ernesto Basile (1900-1918) the area changed considerably. Palazzo Ludovisi "Fig. 2" became the seat of the Italian Chamber of Deputies, permanently changing the social and economic fabric of the entire urban area.



Figure 2. Piazza Colonna view from Palazzo Ludovisi, fresco, Biblioteca Vaticana, 1587-1589.

If the renovation of the Palazzo Ludovisi made by Gian Lorenzo Bernini stood on *Piazza Colonna*, positioning the service spaces on either side of this path, the nineteenth-century project has tried to "knot" the internal court of the building, implementing in this way the excavation of the hill (Monte Citorio) and the consequent creation of a large urban void.

In 1967 the design competition held for a new expansion of the Chamber of Deputies tried to give an architectural solution to the urban void present in *Piazza di Montecitorio*, next to the Basile's building. Despite the famous architects who participated to the competition, the jury was not able to reward any project; as pointed out by Manfredo Tafuri [7] it was too clear the difficulty of all the participants to focus on the cultural modernity of that time, and to give an answer to the need of the citizens and the whole community. By updating 1967's competition announcement to the requirements of our times it is possible first to develop a design strategy in which the contemporary project can be considered as the final step -in order of time- of an organic process of transformation, and second to identify new urban solutions to solve urban voids within the historical fabric. On the other hand the area where the *Regina Coeli Prison* is located belongs to an urban tissue where those points of interest are not so frequent. Excepting *Piazza Trilussa* and *Piazza Santa Maria in Trastevere* which represents maybe the central point of interest of the area there are no other large public spaces. Linked to the other bank of river Tevere by *Ponte Mazzini*, the jail communicates, visually and aesthetically, with the urban void of *Piazza della Moretta*, near the Bramante's *via Giulia*.

The research aims, through a design experiment, to transform the fabric of the areas located along the route that, from *piazza della Chiesa Nuova*, crosses *piazza della Moretta*, *Ponte Mazzini*, *via della Lungara* and the prison of *Regina Coeli*, up to the Janiculum hill, following the idea to link the hill to the rest of the city, a will that goes across the whole history of Rome's modern urban planning. It is a project that has been discussed for years: how to solve the architectural void in *piazza della Moretta*,

together with the reconstruction of the two buildings, *palazzo Ruggia* and *palazzo Lais*, that were both demolished in 1939 “Fig. 3”.

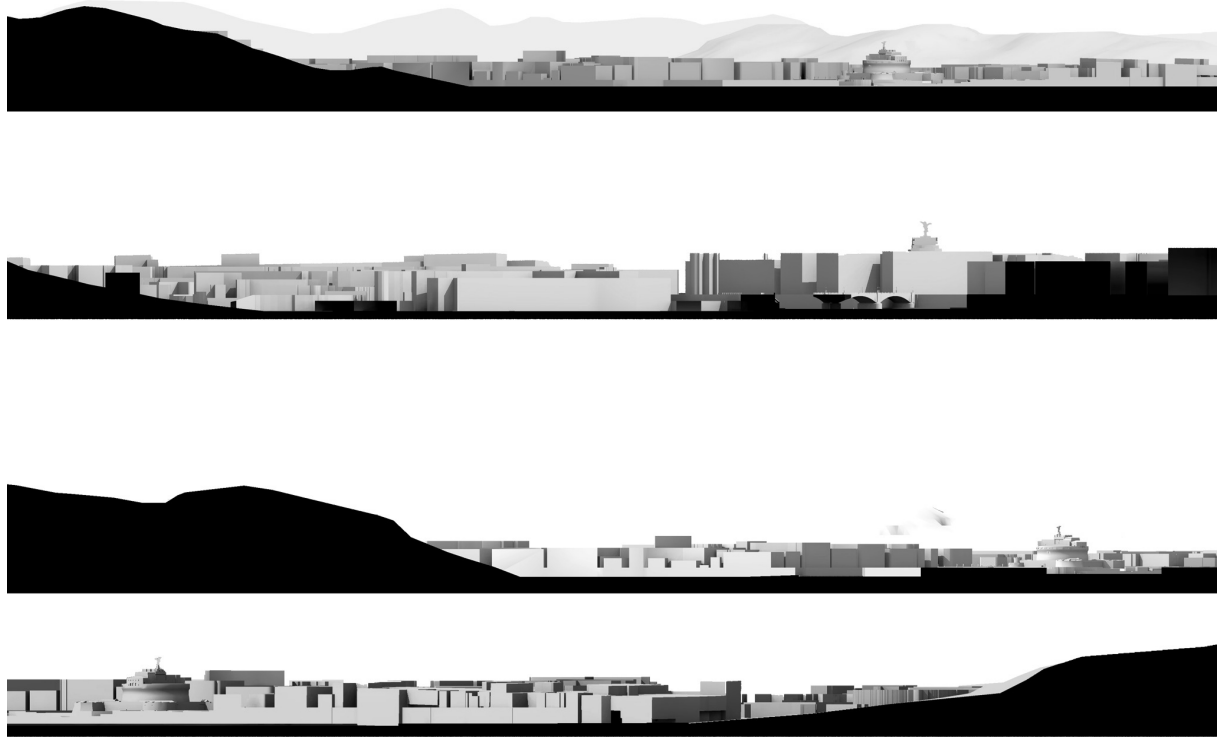


Figure 3. Studies on the section of the area, model by Marco Falsetti.

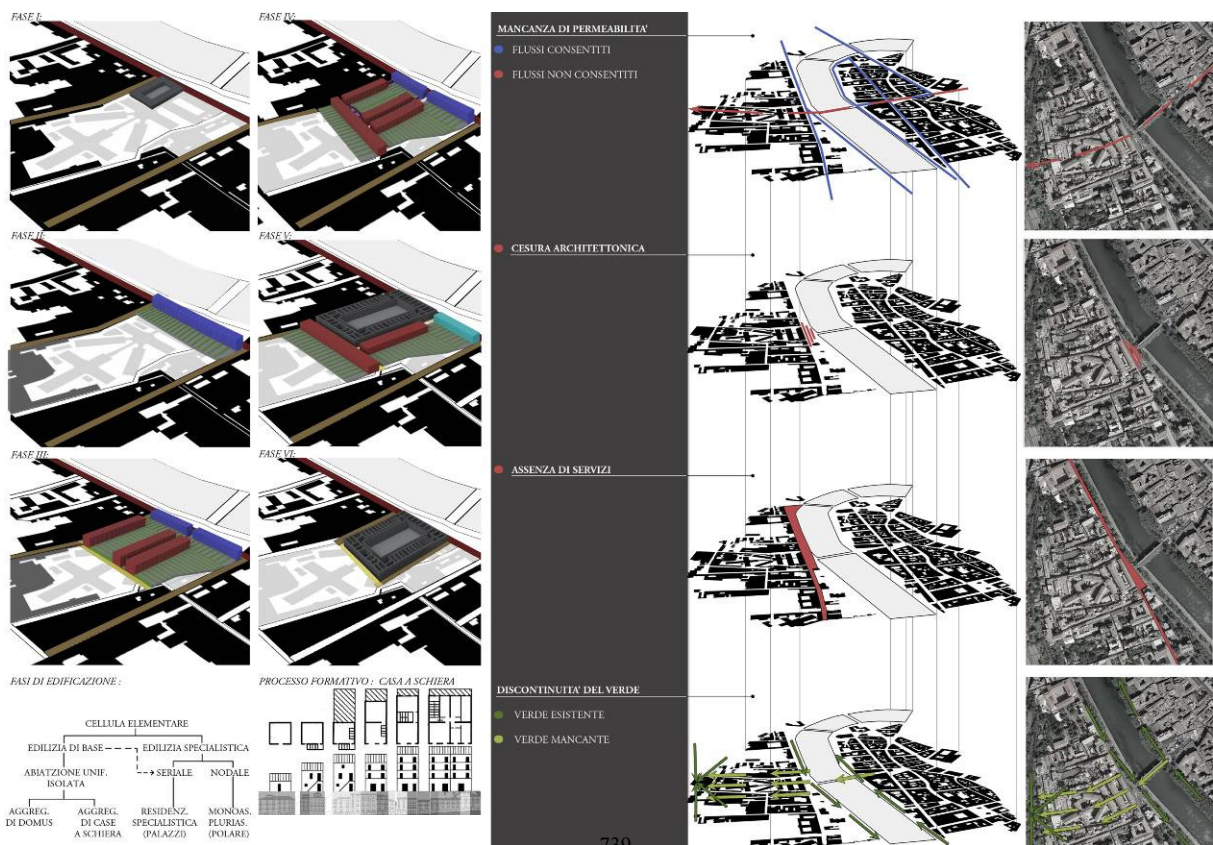


Figure 4. The reconstructed formative process on via della Lungara, master thesis of Giada Pauselli, Supervisor Prof. Arch. Giuseppe Strappa, Assistant supervisor Arch. Marco Falsetti.

Then, when they were destroyed, the purpose was to make a sort of counterpart to the promenade that, starting from *piazza Mazzini*, reaches the Janiculum. Following this logic, one of the proposals for the area was to create a new pole/center of interest where to concentrate a part of the visitors/inhabitants but the project was never completed. On this bank of the river Tevere there is another area included among the cases of study, *via della Lungara* (that includes the *Regina Coeli* Prison), particularly illustrative of the formative process of the historical Roman fabric. The former name of the street was *Sub Janiculensis* or *Sub Jano*, but was also known as *Via Sancta* because it was used by the pilgrims coming to Rome to visit St. Peter's Basilica. It was later known as *Via Giulia*, like the street of the same name on the opposite bank of the Tiber. Later it was called "*lungara*" to underline the length of the street, more or less 1000 m. that connects two ancient urban gates of Rome: *Porta Santo Spirito* and *Porta Settimiana* [8]. Historically this complex of buildings, during their development and construction, has always been related to the notions of "splitting" under ways of enclosure and public segregation. In the beginning the area of *Regina Coeli* was occupied by a convent that gradually grew importing buildings, then it hosted a lazaretto in order to accommodate Romans that had been affected by plague and that should be segregated from the rest of the population. The morphological isolation of the convents and the monasteries provided the additional quality of guarantying the constraint of the disease and the diminution of the dispersion. Thus in the sense of function, in the metaphorical sense but also architecturally, it has always been developed as an isolated island inside the quarter, creating irregularity in the urban fabric and a physical border from the near rapidly developing area. The case study of *Regina Coeli* prison shows how, for the definition of all the factors influencing the architecture of a place, it is necessary to be aware of the history of the town and to take in account territorial and landscaping tools to lower the new project into a multi-specific level. Through the analysis of those typical architectural and anthropic features "**Fig. 4**", thanks to which is possible to consider the opportunity of knotting within the city, the architectural project is able to create a new urban organism capable to innovate the surrounding public spaces and reactivate the social fabric of those areas. By observing carefully the existing reality it is possible to recognize all those contradictory and changeable elements between the form and the social dynamics, a feature typical of the traditional cities more than the contemporary ones, in which are evident strong discontinuities in the urban organism. The value of the new architectures here proposed, is linked to the ability of these built organisms to work together in order to define new types of spatial and public aggregation for the contemporary city, and so to give a new life to the town. These organisms respect and protect the identity (that is an architectural, cultural and also civil feature) against a contemporary trend that considers the autonomy of single places as a specific matter of technical and economic nature. In fact the intervention in such areas, so important from an historical point of view (as documented by the literature of urban planning and history of architecture), presumes both the knowledge of the strict relationship between architectonic form and territory, and the duty to understand the social context. In this way it is possible to realize the basic laws that contribute to create the urban structure. Through the "interpretation" of the built environment (that is able to understand data deduced from the current situation, so not present in a priori structure), it is possible to identify different levels and systems (territorial, urban, historical, civil, and social one) all of them organically linked one to each other, so as to anticipate the possible scenarios for the project development of the same areas.



## 2. CONCLUSIONS

The Roman examples here presented can be considered as a part of a wider debate, in which the historical fabric of the city is treated as a vital part of an ongoing organism, whose transformation, management and survival requires complex planning actions. The design tool -shown in those cases- is able to direct new interventions towards an ideal “continuity”, defining methods of analysis and of investigation that can assist the architect in order to realize an organic vision of the city.



Figure 5. The area of Montecitorio present day (at the left Basile's addition), photo by the authors.

This research pursues a specific approach toward the historical city, in which the morphological method tries to provide for the state of neglect of those central urban voids “Fig. 5” through the recovery of cultural and operative relationships that characterize the urban tissue; for this reason it will be determined a new cultural and theoretical perspective that is inclined to reuse, to recycle and to transform (including socio-economic changes) the urban fabric.

The project results here presented illustrate the necessity to define a long-term strategy to ensure a proper infill in the historical city that is able to maintain the balance within the urban, architectural environment and within the social context.

The preliminary analysis to those central areas of Rome is performed according to this “operative method” in which is possible to understand the basic entities of the anthropized areas in the light of a major scale, so as to comprehend all the transformations that have affected, and that are still affecting, the urban space.

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## THE “IN-BETWEEN” OF ARCHAEOLOGICAL SITES. THE CASE STUDY OF THE “VILLA OF AUGUSTUS” IN SOMMA VESUVIANA

**Raffaele Spera<sup>1</sup>**

<sup>1</sup> *PhD Candidate DRACO, University of Rome “Sapienza”(ITALY)  
raffaele.spera@uniroma1.it, raffaele.spera@dicea.unipd.it*

### Abstract

Archaeological sites represent spaces “in-between” united and fragmentary conditions, past and present, public and private spaces, visible and invisible. Archaeological findings come to light both in the rural areas and in the urban ones and represent cracks in the chronological layering of the territory, thus breaking the consolidated balances between the sections of the city. Their recurring buried condition involves the sacrifice of other overlapping and equally historicized layers, the uncertainty of the excavation plan and of its shape. The interest they raise in archaeological research requires protection and a denied access to the public, so that the archaeological site becomes an enclosure. On the contrary, being a cultural heritage, they need to be open and exhibited to the public. Their fragmentary nature makes their study and exhibition difficult, but their spread on the territory hints at the possibility of making some “in-between” scales links.

The archaeological site known as “Villa of Augustus” in Somma Vesuviana (Naples, Italy), here taken as case study, adds other issues to these ones which derive from the complexity of the territory where it lies. Its location, on the edge of the inhabited centre, on the North slope of the volcano Somma-Vesuvius, belongs to the metropolitan area of Naples, between the cities of Naples (on the West) and Nola (on the East). This archaeological site is an important finding of a wide multidisciplinary research program begun about fifteen years ago with the aim to comprehend the ancient settlements of the territory on the North of Vesuvius. In fact this territory is less known than the coastal area, where the archaeological sites of Pompeii and Herculaneum lie, but not less rich of historical evidences which had been disregarded by the previous archaeological researches. Furthermore its location on the slope of the volcano leads you to deal with the issue of the volcanic risk related to the urban density, but it is also a brand for the economical and cultural development of the area. The archaeological excavation of “Villa of Augustus” extends for about two-thousand square meters and it is about eight meters deep, but the majestic archaeological structures come to light are thought to be just a section of the entrance of a wider Roman villa. This situation make the final size and the duration of the excavation indeterminate, thus inducing the need to open the site to the public and, at the same time, to allow both the archaeological research and the protection of the findings.

The here presented project, made during a master’s degree thesis, considers all these issues from which the need of an architectural and urban design for the enhancement of this archaeological site arises. The aim of the project is to achieve a fragment “in-between” the urban scale and the architectural one. On territorial scale it has relationships with the landscape, where the Mt. Somma-Vesuvius, on the South side of the area, and the mountain-chain of *Preappennini*, on the North side, shape a sort of “territorial room”. On the local scale it has relationships with fine cultivations and several historical and artistic buildings. The project is arranged in three levels: the “up”; the “archaeological enclosure and the paths”; the “underground”.

They interact with some layers - more virtual than material - which characterize the territory: expansive elements (agricultural patterns), linear elements (paths) and punctual elements (historical

buildings and landmarks).

The first and the second levels of the project deal with geography and landscape. The first level, the “up”, consists in the design of a roofing for the excavation site that, while covering and safeguarding the archaeological evidences, restores the continuity of the agricultural soil, eroded by the excavation activities, by means of a garden-roof.

The designed paths, regarding the second level of the project, evoke the geography of the territory, which is characterized by radial or ring-shaped streets and river-bed with respect to the Mt. Somma-Vesuvius, and highlights the perceptual values of existing paths with respect to landmarks. The paths cross the excavation site and create views around the excavation boundary making the archaeological enclosure permeable. So both citizens and tourists can walk through the area.

Finally the third level of the project, the “underground”, shapes hypogeal rooms among volcanic layers, which thus become a chronological reference for the visitors. These three levels of the project are connected to each other by means of overlaps and mutual references.

Therefore the study case of “Villa of Augustus” is a reflection on the “in-between” of archaeological sites which proposes an architectural design as synchronous synthesis of human and natural accumulations occurred over the time, highlighting the never-closed set of multi-scalar relationships which can be found among them.

**Keywords:** archaeology, layers, enclosure, permeability, multi-scale.

## 1 THE ROMAN VILLA IN SOMMA VESUVIANA

This paper presents a project conducted for a master degree thesis in building engineering and architecture at University of Naples “Federico II” in 2013<sup>1</sup>. It deals with the enhancement of an archaeological site found in locality Starza della Regina in Somma Vesuviana known as *Villa of Augustus*. It focuses on three main themes concerning with the enhancement of archaeological sites: the permeability of the archaeological enclosure, the possibility of following the shape of the excavation and the design of a wide covering for the safeguard of the findings. Starting from a reinterpretation of the excavation site and a territorial analysis, the project, thought as a fragment “in-between” the urban and the architectural scales, seeks to involve the archaeological site in the urban dynamics.

With its about 35000 inhabitants, Somma Vesuviana lies on the North slope of the volcano Somma-Vesuvius, in the metropolitan area of Naples (Fig. 1). Its location in the Vesuvius hinterland between the cities of Naples, on the West, and Nola, on the East, is marked by Mt. Somma on the southern side and the Preappennini mountain chain on the northern side. Because of its proximity to the volcano, Somma Vesuviana belongs to the so called Red Zone, where urban plans and a lot of urban restrictions limit the construction of new buildings in order to reduce the population density and aim to upgrade the main road axes in order to use them as escape routes in case of an imminent eruption. At the same time, often through catastrophic events, these particular conditions have led to the formation of an agricultural soil, which makes it possible to obtain agri-food products of very high value and of a landscape of very important natural and cultural values. These landscape features are safeguarded by several urban instruments at provincial level (e.g. *Piano Territoriale di Coordinamento Provinciale* and *Piano Strategico Operativo*) at sector level (e.g. *Piano del Parco Nazionale del Vesuvio*) and at national level (e.g. *Codice dei Beni Culturali e del Paesaggio*). Furthermore the same volcanic events have often caused the burial of evidences of the past, which is a subject of interest for latest academic researches in the field of archaeology, conducted in order to comprehend the ancient settlements of the territory on the northern side of Mt. Vesuvius. In fact this territory is less known than the coastal area, where the archaeological sites of Pompeii and Herculaneum are located,

<sup>1</sup>In 2014 the project was awarded the “Pasquale De Meo” Prize at the Accademia Nazionale dei Lincei in Rome. Author: Raffaele Spera; Supervisor: prof. Luigi Stendardo; Assistant supervisors: prof. Antonio De Simone and prof. Elena Mele.

because it had been neglected by the previous archaeological researches, but it is not less rich of historical evidences, such as Roman villas, which prove the productivity and the vitality after the disastrous eruption of 79 A.D., when coastal settlements disappeared [1]. Therefore, on the one hand the presence of the volcano implies urban and building restrictions, but on the other hand it is a brand for the economical and cultural development of the area required by mandatory and optional planning instruments.

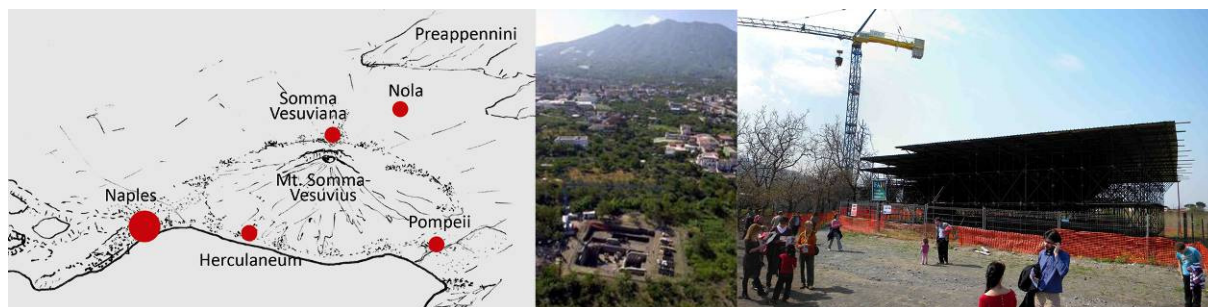


Figure 1. a) The surroundings of Vesuvius; b) The excavation site of Villa Of Augustus and Mt. Somma (photo from <http://villasomma.blogspot.it/>); c) The current covering of the excavation site and the enclosure of the archaeological yard (photo by Raffaele Spera, 2012).

The excavation of *Villa of Augustus* in Somma Vesuviana is the first long-term excavation project of a Roman site on the northern slope of Vesuvius [2]. It is located in a rural area on the edge of the urban center known as *Starza della Regina*, characterized by scattered buildings (Fig.1.b). The name *Villa of Augustus* comes from the wrong hypothesis, made in the early XX century, according to which it might have been the villa *apud Nola* - near Nola - where Augustus, the first emperor of Rome, died in 14 A.D. The excavation, conducted under Ministerial concession since 2002, involves the Tokyo University, the University of Naples “Suor Orsola Benincasa” and a lot of Italian and international students, who stay in Somma Vesuviana for all summer time every year. The plots of the area around the archaeological site are subject to the archaeological restriction and a lot of them are private. Currently about 20000 sqm of this area are of public property, whose 2500 sqm are affected by the excavation site with a depth varying between six and ten meters. The structures come to light are the entrance of a monumental Roman villa erected in the II century A.D. The architectural complex, buried by a powerful eruption in 472 A.D., was born as a residence among a wide cultivated country which was modified in the middle of the IV century for the installation of some structures and a lot of capacious amphoras, called *dolia*, for the production of wine. The rooms and the spaces of the villa lie on terraces following the slope of the ancient soil and the walls and the pillars are well kept for much of their original height up to a maximum of about 7,70 meters from the ground of the dig. Finally there are also statues dated at the I century A.D. [3], mosaics, bas reliefs and frescoes with characters related to Dionysiac cults [4].

The high fragmentation of private plots which compose the area subject to the archaeological restriction makes the long-term excavation planning difficult and its final shape uncertain. In fact, these latter depend on the availability of financial resources and of the plots acquired from time to time. The uncertainty of the finding size and of the long-lasting excavation activities require to open the site to the public and, at the same time, to allow the excavation work, thus comparing two different ways of understanding the archaeological site. On the one hand, the excavation as research requires the safety of the archaeological yard and the protection of the findings by means of a covering. On the other hand, the archaeological site as cultural heritage and matter of the public archaeology require the permeability of the site. The former meaning of the excavation leads to an archaeological enclosure which puts citizens “more in the state of excluded than in the belonging one” [5] to the place they inhabit. On the contrary, the second meaning of the excavation site leads to consider the relationships between the findings and the contemporary context.

As well as other archaeological sites, the Roman villa of Somma Vesuviana represents a pending space between united and fragmentary conditions, because of both the incompleteness of the findings and its belonging to a wider set of findings spread on the territory that can be considered as a single system or a lot of independent systems. It is also a space whose transformation depends on

the (dis) – agreement of economical interests of both public and private Parties. It is characterized by visible and potentially spaces, because of the extension of the archaeological site and its burial condition. Finally, it can be considered a “cultural asset”, intending it as a finished product of history no more related to urban dynamics to be exploited as economic resource, or a urban matter which can be involved in the urban planning once again. All these pending conditions and concepts of the space characterize the “in-between” of archaeological sites. They are often considered limits for the enhancement of the findings, but they can be considered opportunities for the architectural and urban design. The here presented project deals with these issues by pursuing two strategic goals. The first one is to make the enclosure permeable and able to ensure the safety of the workers and the visitors, exploiting the “spectacle effect” of the excavation as an attractive factor rather than a repulsive one, which thus turns the long-lasting excavation activities into an opportunity. The second goal is the design of a covering and other facilities for the excavation and the sightseeing, trying to maintain the ties with the context.

## 2 TERRITORIAL ANALYSIS. THE METHOD OF THE LAYERS

Archaeological findings come to light represent cracks in the chronological layering of the territory, thus breaking the consolidated balances between the sections of the city occurred over the time. Their recurring buried condition involves the sacrifice of other overlapping and equally historicized layers with the only aim of bringing to light the remains of the past and excluding the possibility of making the archaeological site a tool for the urban design of the contemporary city. Their fragmentary nature makes their study and exhibition difficult, but their spread on the territory hints at the possibility of making some links at different scales. On the basis of these considerations, the project seeks to be both the answer to functional needs and part of a cultural design of what have to be “presented to the public to ensure that the exhibited objects, from the simplest to the most famous one, become documents able to transmit a cultural framework” [6]. The project seeks to overcome the purely narrative-exhibition logic trying to provide the user with a cultural framework about the elements that compose the place and enabling the possibility of relating such elements in several ways never completely defined. The focus is shifted from the story of a single object to the presentation of a set of objects which together present a certain reality. The territory is conceived as overlapping virtual layers [7, 8], each one of which can collect some elements of such set according to homogeneity criteria (character, shape, uses, matter) and can be related with other layers.

On these premise a territorial analysis has been developed in which three main layers were identified: expansive elements (agricultural patterns), linear elements (paths) and punctual elements (historical buildings, landmarks, rural buildings and other elements considered as catalyst for urban changes). The entire territory has been described according to this model defining six annular bands in relation to Mt. Somma whose interruptions coincide with material tracks of the territory such as roads and railways, or virtual tracks such as level curves, where there are abrupt changes in the elevation of the ground. The results of the analysis are summarized into a sort of a chart which shows how the distribution and the typology of every element of the layers changes in each band [Fig. 2]. The morphological analysis shows that some relationships between different scales may be found among sets of different elements in order to create a network with the territorial resources. Furthermore, it has allowed to study the perceptual and compositional values of some objects belonging to the main above-mentioned layers. Thus it was observed that the roads and the riverbeds that are radial in relation to Mt. Somma and sloping from the South to the North are like a perspective axes which focus on the geographical landmarks represented by Mt. Somma on the South and the Preappennini mountain chain on the northern side. Instead, the ways that are annular (or ring shaped) in relation to the mountain have got the same value as an observation deck. Finally, the perceptual values of the agricultural plots depend on the height and the density of the botanical species which compose the orchard patterns. The analysis gives the view of a territory made of material and virtual layers located in a sort of “territorial room” whose limits are Mt. Somma on the southern side and the Preappennini



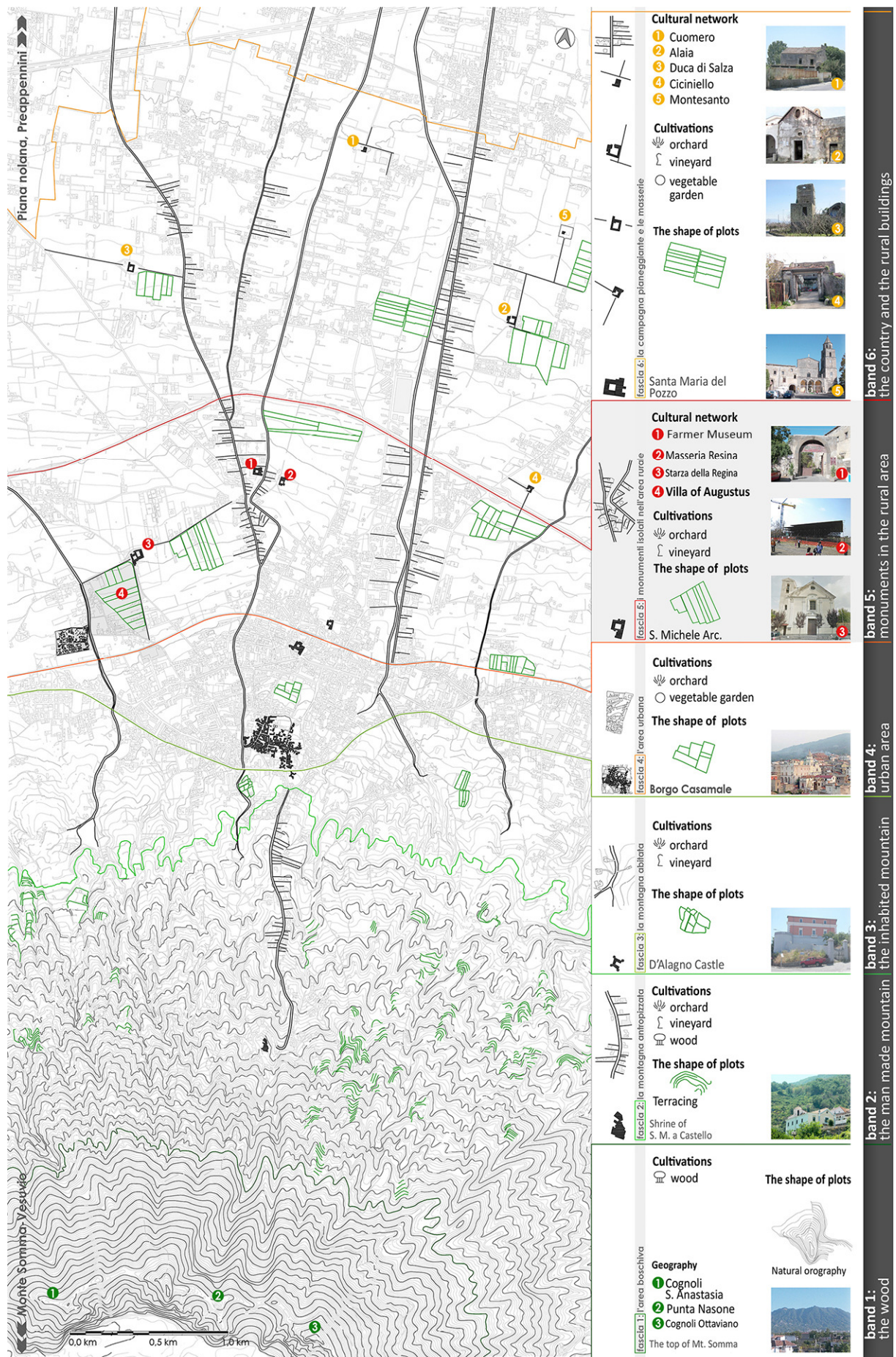


Figure 2. The chart with the morphological analysis.

on the northern and eastern sides, where the “above”, represented by the agricultural pattern and the geographical landmarks, has articulated valences, worthy of protection like the “below”, represented by the archaeological findings and the rich volcanic stratigraphy.

### 3 IN-BETWEEN LAYERS: THE URBAN AND ARCHITECTURAL PROJECT

The design theme deals with the relationship between the “above” and the “below” with the aim to create a fragment “in-between” the urban and the architectural scales, able to define the contemporary urban space. Thus, on the urban scale the project concerns with the redesign of the existing connecting routes and on the architectural scale it concerns with the design of a covering and facilities for visiting and for digging activities.

The elements of composition of the urban design are the radial and annular tracks (roads and riverbeds) and the agricultural patterns. The project area has nearly the form of a quadrilateral whose sides are represented by the local connecting routes, orientated in North-South direction, and by the territorial connections in East-West direction. Of particular interest in this area is the presence of the EAV (ex “Circumvesuviana”) railway station which represents a direct link to Naples and, potentially, to the coastal archaeological sites, including Pompeii, Herculaneum and Stabia, as well as to the surroundings of Vesuvius. The heart of the urban project is the axis linking the railway station to the *Starza della Regina*, a monumental complex currently used as a residence. The project suggests that such axis, currently suitable for vehicles, will become pedestrian. The crossing of the area on foot facilitates the views towards the landmarks thanks to the value of the radial ways as a perspective axis, and at the same time the distance from the vehicle noises makes the pedestrian axis a “filter zone” between the conventional world and the visiting area [9], thus making it suitable for the entrance to the archaeological site. The project provides a park near *Starza della Regina* for those who come from the SS268 (a highway linking Naples and the province of Salerno), while at the other extremity of the path it provides for a small square in front of the station. Some spots are arranged along the pedestrian path and the riverbed for the sale of typical local products. Finally, a path following the directions of agricultural plots is located in the middle of the pedestrian path, thus allowing the access to the archaeological site (Fig. 3).



Figure 3. Urban design: concept (a; b; c) and masterplan (d).

The architectural project organized around such path is divided into three levels: the “above”; the “archaeological enclosure and the paths”; the “below”. In this case the elements of the composition are represented by some soil-slabs and the mass of the ground which can be shaped. The first and the second levels of the project concern with the geography and the landscape. The first level, the “above”, consists in the design of a covering for the excavation site. Its design deals with recurring issues in the protection of archaeological sites: the need to distinguish the new structures of the covering from the archaeological ones, in order not to confuse the visitors; large areas to be covered require large spans between the supports of the covering; the estrangement of the findings from the context. The supports of the covering are placed where it is improbable that ancient structures can be



intercepted. Their position was decided studying the plan of the Roman villa, which is based on a square rule having a side of about 9,80 meters and its sub-multiple symmetrically arranged around a North-South axis. According to such scheme, the slightest chance of intercepting the ancient structures is outside the current excavation perimeter. This choice has presented a knotty problem about large spans, solved with the use of a space frame structure (Fig. 10), within thickness of which all technological systems can be arranged and which also constitutes a possibility of gradual adaptation to the ever-changing shape of the excavation, thanks to the use of modular elements that can be assembled. In order to promote the relationship between the findings and the context, the project assumes that the findings (statues and frescoes) are conserved *in situ* and the covering is lifted up to 2,5 meters from the current treading, allowing those who are on the bottom of the excavation the view of the orchards and vice versa. The covering is shaped like a soil-slab that, while covering and safeguarding the archaeological evidences, restores the continuity of the agricultural soil eroded by the excavation activities, thus highlighting its values, by means of a garden-roof. (Fig. 4-5-6).

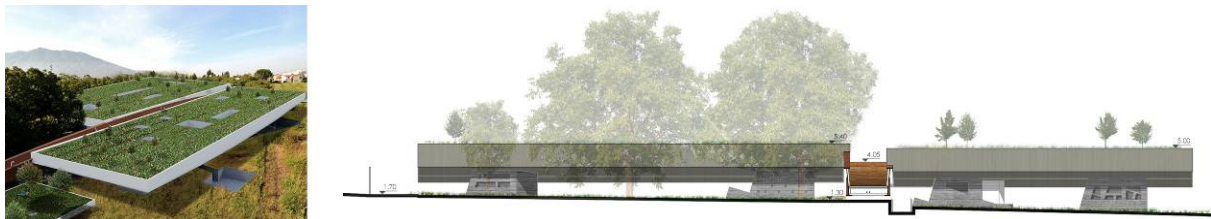


Figure 4. – Rendering with the view of Mt. Somma and East elevation.



Figure 5. Roof plan.



Figure 6. North elevation.

The design of the paths, regarding the second level of the project, evokes the geography of the territory, which is characterized by the roads and the river-bed that are radial or ring-shaped in relation to Mt. Somma-Vesuvius, and highlights the perceptual values of the existing paths in relation to the landmarks. The main path in the middle of the archaeological area crosses the excavation by means of a lowered pedestrian bridge which allows the views of the landmarks above the top of the covering, highlighting the relationships between the architectural scale and the urban one, between the project-fragment and the “territorial room” delimited by Mt. Somma and the Preappennini. Other paths create views around the excavation boundary making the archaeological enclosure permeable. Thus, both citizens and tourists can walk through the area (Fig. 7-8-9).



Figure 7. Ground floor plan.



Figure 8. Section A-A'.

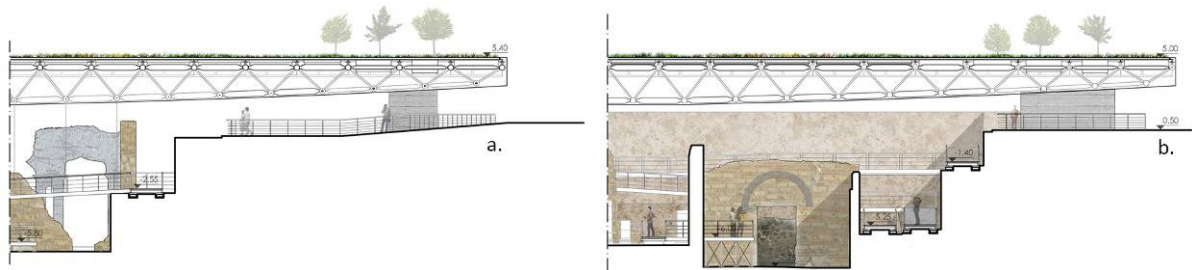


Figure 9. a) Section G-G'; b) Section F-F'.

Finally, the third level of the project, the “below”, shapes hypogeal rooms among volcanic layers, which thus become a chronological reference for the visitors. Different spaces are designed digging in the mass of the ground. The “well shaped digs” hosts some container, used as exhibition hypogeal rooms, bookshop, luggage-office, multimedia hall and as storage of digging facilities, which can be removed when the boundary of the excavation will move forward. Instead, the trenches and the terraces are used as tour paths. The supports of the covering are shaped in order to allow the views of the landscape from some particular point along the hypogeal paths (Fig. 10 - 11).

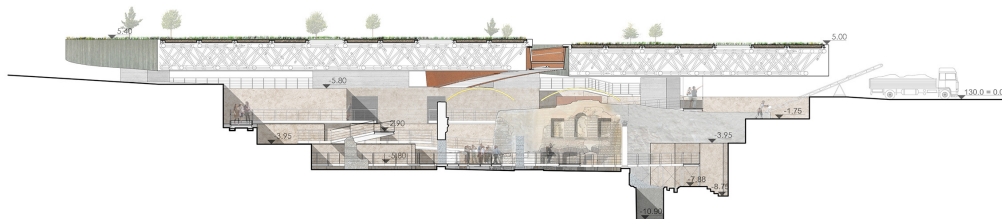


Figure 10. Section B-B'.

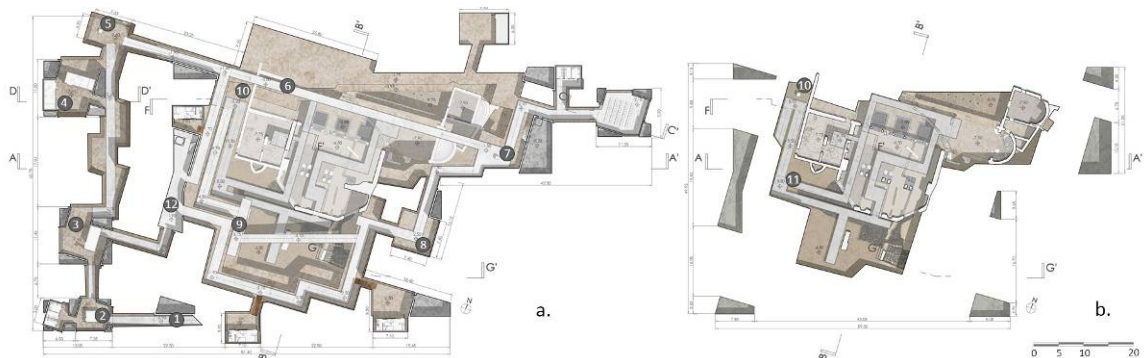


Figure 11. Underground floor plans: a) at -0,5 m; b) at -4,60 m. 1. Access ramp; 2. Bookshop; 3. Luggage office; 4. Multimedia hall; 5. Exhibition: Vesuvius 1631 – 1944; 6. The view of the excavation; 7. The apses; 8. Educational archaeology; 9. 472 A.D. eruption debris; 10. The beginning of the eruption of 472 A.D.; 11. The Roman villa; 12. Exit.

#### 4 CONCLUSIONS AND SOME OPEN ISSUES

The study case of the “Villa of Augustus” in Somma Vesuviana has given the possibility to investigate themes common to many other archaeological sites and has added new ones which arise from the complexity of the area where it lies. This reflection on the “in-between” of archaeological sites proposes an architectural design as synchronous synthesis of human and natural accumulations occurred over the time, highlighting the never-closed set of multi-scalar relationships which can be found among them.

The method of the project is based on a thorough analysis of the territory finalized to define the compositional values of its distinctive lines. The chart that summarizes these elements ensures the right level of abstraction for the designer who intends to relate the project to the context from which he borrows and remarks forms or whose he highlights characteristic elements through the movement of the user's point of view. Such design method is based on the vision of the area as a set of virtual layers that may be related in various ways and not only in chronological order. Moreover, each one of them can collect new elements in order to provide a “framework” and not a preferential vision of the object to be exhibited. This change of perspective seems similar to that in the field of archeology which has led to the stratigraphical excavation, where “deposits and interfaces, accumulations and removals are put on the same plane” [10], and to the project of widespread knowledge and protection which “require an attitude of curiosity which is diametrically opposed to the hierarchical practice of the study (and of the protection) of emerging or monumental elements, typical of the pre-stratigraphical archaeology [...]” [10]. In this way, the objects collected in the different layers have the same importance and the archaeological site is enhanced because it is a part of the contemporary urban transformations and it is not fixed up to the status of “cultural asset”, which makes it independent and immobile compared to what surrounds it.

Finally, some open issues of this work are to be pointed out, and yet maintaining the constants of the project: the layers and the relationship between the “above” and the “below”. The first one is that the interference between ancient and new structures may be solved in a different way, placing the supports of the covering within the boundary of the dig, simplifying the structural problem of the large spans. In this case particular attention should be paid to differentiate the new structures from the ancient ones, without revolutionizing the sense of the space, that is anyway a new space, altered by the excavation and the interference with the contemporary structures both in the case of the absence of the contact with the old structures and in the opposite case. Another observation deals with the progressive adaptation of the roofing to the shape of the dig. In this case, one could wonder whether to excavate continuously and extensively is right; and whether the excavation should always be an inherited shape to which the covering must adapt or within what limits it can be a previously designed shape.

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## **FILLING THE WALL: A PROJECT FOR THE MONASTERY OF SANTA CHIARA IN NAPLES**

**Davide Buccione<sup>1</sup>, Alberto Calderoni<sup>2</sup>, Giampiero Castiglione<sup>1</sup>, Vanna Cestarello<sup>3</sup>**

<sup>1</sup>*Phd Student at University of Naples Federico II, Department of Architecture (ITALY)*

<sup>2</sup>*Phd at University of Naples Federico II, Department of Architecture (ITALY)*

<sup>3</sup>*Phd student at University of Naples Federico II, Department of Architecture (ITALY)*

*davide.buccione87@gmail.com, calderoni.alb@gmail.com, castiglione giampiero@gmail.com, vanna.cestarello@gmail.com*

### **Abstract**

Looking at the dense urban fabric of the old centre of Naples, that is a complex built system where often we verify theories and architectonic procedures, we found in the Monastery of Santa Chiara (built close to the first part of the Decumanus Inferior, behind Piazza del Gesù Nuovo) a huge fragment of urban tissue useful to re-think with an architectural project, on a possible meaning of the word boundary. The cloistered fortress is delimited by a perimeter wall outside the monastery's walls that represents a boundary for the city more than for the monastery itself. Between the surrounding wall and the monastery a border area that today doesn't belong to the city even less to the monastery because it is lacking of character, usability and functionality. This area, bounded on the North-West by the ruin that one time hosted the Pontifical Institute and on the North-East by the current entrance to the majolica cloister, extends to the East, South and West sides of the monastery that are two corresponding wings to the cells of the Friars Minor, and the area of the Abbess, disused for static reasons.

The wall of the monastery is a frontier, not a border: as Richard Sennet says "In the natural ecologies frontiers are areas of a habitat where organisms become more interactive due to the convergence of different species or physical condition. The border is a limit, a territory over which a particular species does not venture. [...] the frontier line is on-going. On the contrary, the border is a static space in time, because there is less exchange". If the city is an organism he could also consider another border situation using a biological reflection: "The cell wall holds everything inside it and it is analogous to a limit. The membrane of the cell, however, is more open, permeable and similar to an edge. The natural differences between limit/wall and board/membranes are reflected in the built closed and open shape." The frontier has no substance, but its existence is necessary. It presumes an inside and an outside, an here and there; it divides but doesn't isolate because the in-between space of the frontier is the place of the exchange, of the negotiation, that gives sense to everything that inhabits on each side. It is the space of translation. Can this space that gives quality to everything that surrounds it and talks of protection and escape at the same time become architecture? It is possible to give an answer to this kind of reflection only through the tool of the project.

The examined area is not an unique continuous space, but it is fragmented by different buildings between the small cloister of San Francesco and the archaeological area rediscovered during the post-war reconstruction that kicks off different spatial conditions in which the same recurring elements of the architecture of the monastery will have different meanings. Historical research studies show that these places endured strong transformations as a result of post-war conflict reconstruction. Entrances are situated on via Santa Chiara and on vico Banchi Nuovi but there is not a direct relation of permeability between the outside and the inside even less between the interiors of the monastery and the studied area. The clear spatial structure of the monastery is opposed to the

apparent chaos situation, generated by a result of a spontaneous stratification in the time that has never produced a clear infrastructure of the Monastery's face more integrated into the heart of the city. At the end our goal is to find a good balance from the existing wall and existing spaces showing as a project can be able to discover a new permeable boundaries like a new clear spaces' sequence for the city and the monastery as well. The wall, the existing absolute boundary through the project of architecture will become the new spaces generator and the new inhabited object. We have looked for answers to these reflections with a project that was the result of an academic research: our aim is to show how filling the wall is a way to give new sense and life what belongs to each side.

**Keywords:** archaeology, contemporary architecture, boundary

## 1 INTRODUCTION

A reflection on the ancient city within the European culture generates a reflection about the essence of the European civilization as an expression of human thinking and acting and a necessary basis for the future of the built heritage but also of the collective identity. The historic centre of Naples, where often we prove theories and architectonic procedures still contains many unrevealed aspects that are remarkable for a new analysis and research. The monasteries for example which are hidden from glances represent a deep research field for an architect.

"[...] when I am surprised to dream, do you know what is the aspiration that I find down my soul or rather what is the image in which my soul rests? A seventeenth Neapolitan monastery with its white cells and its cloister that has a fence of orange and lemon trees in the middle of the building and outside there is the tumult of the festive life that knocks in vain at its high walls." [1] It is through the words of Benedetto Croce that we realize that Naples is a conventual city. Within the dense urban fabric of the old centre of Naples the cloistered fortresses are untouchable fortification that are sometimes unknown also perfect devices, cities inside the cities where it is possible to recognize many fundamental themes for the projects of architecture.

## 2 THE ANCIENT CENTRE OF NAPLES: UNEXPECTED SPACES

Naples is a dense city: as a dense wood seen from above, apparently impenetrable for the rigour that expresses the hippodameus scheme, it expands from head height and become porous as through the voids left by tree trunks. Naples has a porous structure – "Its architecture is porous as its stone. Structure and life continually interfere in courtyards, arches and staircases. Everywhere it is preserved the vital space able to host new, unexpected constellations. Definitive and the characterized things are neglected." [2] In the ancient centre civic places are continually redefined; the space of the monumental square is substituted by cloisters and courtyards. In Naples the public space that in the collective consciousness is surrounded by public buildings of the city is usurp; it is a space that expands in the domestic sphere and expresses itself in hallways, courtyards, light wells, cloisters and galleries.

The public life, dynamic and tumultuous, is in the space of the street and it appropriates of the basements; then it spreads and flowing fast in the turn hallways it discovers the space of the courtyards: a domestic and public sense together are mixed and every buildings with its open space become a theatre.

In the unexpected Naples authentic characters of the city are seized; its description is not animated by a folkloristic and sentimental feeling but from the conviction that "the tone of a city is given by the so-called architectural literature, the expression of an environmental continuity in the practical development of the urban life" [3]. The authenticity of the reading of the ancient centre of Naples can be seen in the rediscovery of those peculiar forms of the Neapolitan environment, the experiences and unexpected episodes that near the monumental works speak an interesting dialect . in this sense studying the conventual complexes shows a wide variety of themes of architecture that



Figure 1. The monastery of Santa Chiara in the historic centre of Naples

for their nature of stratified complexes in time. It is possible to discover urban conditions and characters of Naples that inside these fortresses. Their transformative and adaptive capability as well as to incorporate all layers of past times is a value that is in common with the whole built heritage of the city. Among twenty monasteries of the city, the one of Santa Chiara (the most important monastery in the collective memory) offers now moments of reflections and discoveries and it is the object of the project that is described below.

### 3 THE MONASTERIES OF SANTA CHIARA AND SAN GREGORIO ARMENO: A COMPARISON

Churches and monasteries in fact incorporate the ancient roman insulae and cardines. The monastery of San Gregorio Armeno incorporated a street while the main cathedral of Naples, the Duomo, incorporated two streets and some ancient temples in turn. Some monasteries with their churches cover a wide surface of ground so to be real fortresses. In the monastery of Santa Chiara and San Gregorio as well the first structure still remains but the monastery grew with new buildings also if it always hosts the same functions despite other conventual complexes were transformed in barracks, schools, hospitals or public offices. Along the monastery of San Gregorio Armeno a street that corresponds to an ancient cardine goes up. After the demolition of some artisanal street in the period of renovation at the end of nineteenth century, the street of San Gregorio is the only one that preserves its ancient appearance, not only for the boundary walls but also for the life practices that happen. In the dark workshops artisans make saints sculptures, paper flowers and pastors for the





Figure 2. The staircase of the monastery of San Gregorio Armeno

typical presepe. It is a continuity of life and uses that seems anachronistic but that holds in this way the internal parts of the monastery and its closest surroundings. Outside the monasteries of Santa Chiara and San Gregorio Armeno it is possible to observe as “the trite chiaroscuro of balconies and windows is interrupted by an high plastered wall, with no breaks, that divides and protects a silent cloister from the tumultuous narrowness of the adjacent street” [4]. The silent high wall divides the monumental area from the city of houses; chapels, storage areas, tanks and ovens that fill the monasteries bring to it and fill the space between the wall and the mail buildings.

It generates new conditions, small gardens and along the wall. They have an high potential role for the new project because are the in-between spaces, places of the project of contemporary architecture for the consolidate city.

In the same conditions in Pompei the peristiles of the patrician houses express the same effect: they manage to weaken echoes of voices and noises from the streets of workshops. In the monastery of San Gregorio sometimes the wall gets thicker; it hold a ramp

The wall of the monastery is a frontier and not a border: as Richard Sennet says “In the natural ecologies frontiers are areas of a habitat where organisms become more interactive due to the convergence of different species or physical condition. The border is a limit, a territory over which a particular species does not venture. [...] the frontier line is on-going. On the contrary, the border is a static space in time, because there is less exchange” [5]. If the city is an organism he could also consider another border situation using a biological reflection: “The cell wall holds everything inside it and it is analogous to a limit. The membrane of the cell, however, is more open, permeable and similar to an edge. The natural differences between limit/wall and board/membranes are reflected in the built closed and open shape.” [5] The frontier has no substance, but its existence is necessary. It



Figures 3, 4. In-between spaces of the Monastery of Santa Chiara

presumes an inside and an outside, an here and there; it divides but doesn't isolate because the in-between space of the frontier is the place of the exchange, of the negotiation, that gives sense to everything that inhabits on each side.

Il progetto del muro, tra la città e il monastero, diventa così il progetto di quel peristilio, di un corpo attivo che mette al riparo dalla città e che consente lo svolgimento all'interno dei riti della quotidianità.

The project of the wall, between the city and the monastery becomes the project of that peristyle, of an active space that puts under cover from the city and that permits the intimate development of life daily practices.

#### 4 SPATIAL ELEMENTS FOR FILLING THE WALL

The historic city is made by pieces. There are different types of blocks, among the most popular are two: blocks composed from buildings where the same buildings are edges of the blocks and blocks defined by a wall, with an inside hidden object. In both cases, the heart of the living space is always concealed by the buildings. Specifically in the historical centre of Naples the unveiling of the private realm spaces always happen through a series of space-threshold, necessary objects of the perception path into the real body of the city.

The Santa Chiara Monastery wall is an element of urban composition able to generate a clear spatial hierarchy both on the inside and in its narrowest context. It defines a specific kind of limit. This object, out of scale for its size, however, was unable until now to generate an inhabited spatial sequence in its interior. The wall was an element understood like a limit but never seen as an opportunity for the construction of a new kind of possible densification.

The architectural element 'wall' was for us the starting point for a reflection about how, densifying the space between the Monastery and the edges of the block, it was possible to build a new spatial quality.

Build spaces for living the wall from the inside, several rooms to fill the in-between space. Space that was actually an abandonment one, and now we try to transform, provocatively, into an useless space in which life can flow freely.

We chose to build a series of rooms adjacent to the old wall for drawing a path of spaces, not always with a clear functional program like reference. We thought these spaces as places where man is in-between from the intimate space of the Monastery and the public realm of the street. The man, in this kind of spaces, has the possibility to reconcile himself. We don't believe that making connections anyhow, typical trend of the contemporary way of think about urban design, is always the best way: in the historic city, mainly in Naples, the discovery and the unexpected are characteristic values and strong identifying elements. At the same time we avoided to be obsessed from The Tyranny of the

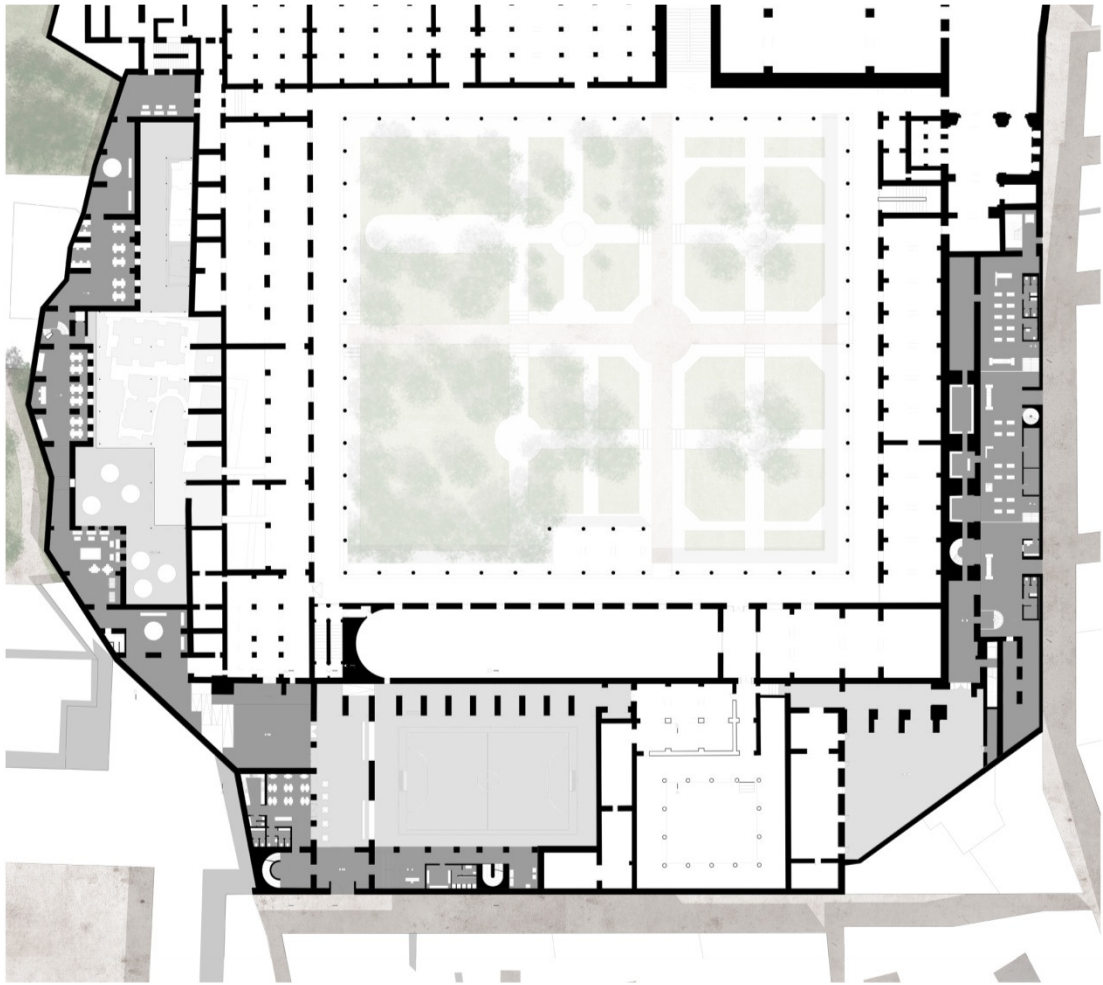


Figure 5. Proposed plan. The ground floor

New [Adam Caruso] and, through simple ways of building, we designed concise and cohesive space always looking at the context.

The room, minimum unit of architecture - the smallest unthinkable spatial composition - is the place in which man measures the vacuum. This composition of rooms, different in sizes, shapes and volume, starting from a careful reading of the context like we said.

This strategy is not born from a functionalist approach: we tried to be not obsessed by a program. We believe that, especially in the historic city, thinking about architecture through a reflection on the nature of space, even before the program and the building techniques, is one possible and correct way to explore in the contemporary world, the profit-obsessed age.

We chose to build additions to the existing wall. The wall, by its physical conformation, is a linear element which establishes through its geometry, the limit, in our case, clearly coincident with the morphology of the block. We chose to not cut the thick wall for making connections with the city but through a complex, non-linear path, make a new kind of internal geography of the Monastic complex: in-between from the specific functions of Church and Museum contemporary life and the wall. The choice has been to define a series of spaces more useful for all the spaces that are inside the Monastery but, at the same time, much more open to the city.

The form of these rooms has the opportunity to play different roles: a room open to the Monastery, another without roof, another closed in itself.

This exercise may seem like a not clear rational path: the contradictions, perhaps, plays a significant role in this scheme. But our goal was to build space for meeting, or rather spaces in which the semantics of the forms was the protagonist.



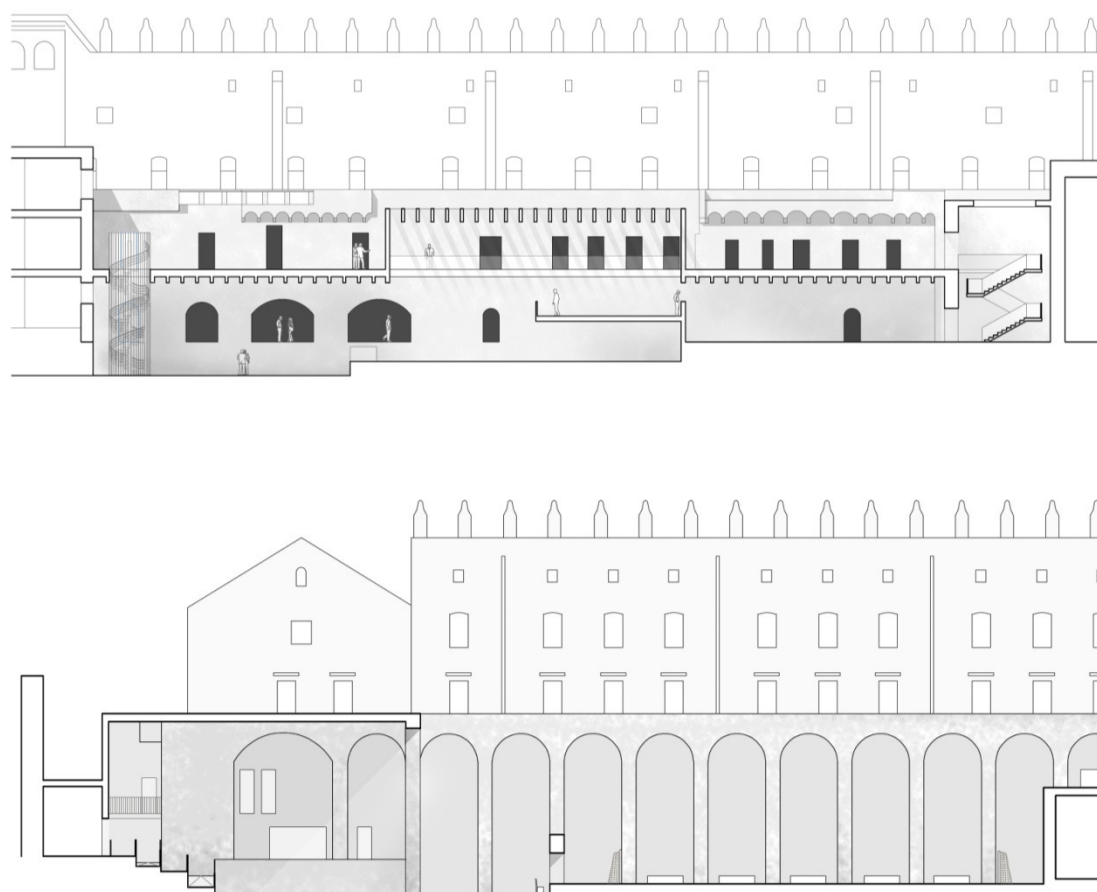


Figure 6. Proposed project. Longitudinal sections

## 5 THE DESCRIPTION OF THE PROJECT

The conceptual reference of the project is the Kahn's idea of "wrapping ruins around buildings". The in-between area is not a unique space but it is divided by some interruptions as the little cloister of San Francesco, the ex Istituto Pontificio and other volumes that actually hosts storage areas, tanks and furnaces. The goal of the project is to unify these areas with a new gesture able to connect them and generate new spatial conditions.

On the north site area moreover the research defines a functional program that provides the retraining of woodworking area by the insertion of some art-lab in order to establish a collaboration with artistic associations of the historic quarters including the Accademia of Belle Arti.

The interventions of the project preserve the three accesses in Via Santa Chiara and design two new entrances in the North and South of the complex. For the workshops area the space is conceived like an unique working area on three different quotes where each one has its own laboratory. Three roofs at different altitude are able to generate different spaces and guarantee different light conditions.

The main façade on the new art-lab area is restored and maintained in its original condition without any changes while inside of the volume and below the monks' cells are inserted new exposition spaces. These spaces that now are divided by buttresses designed for statics reasons are linked by some openings.

The ruins on the South of the area that actually are abandoned, are redefined inserting inside some depots and offices. The role of the wall in the area is to generates auxiliary spaces for the laboratory: a room hosts vertical connections and other services are all along the wall; above there will be the archives.

For the South area, near Vico Banchi Nuovi, a new entrance for the Santa Chiara Opera Museum and some public functions is opened. In this case the relation between the monastery and the wall is strongly and for this reason it is designed a new front for the wall by the creation of a volume that



Figures 7,8 . Proposed project. Filled spaces of the Monastery, the new Workshop space and the new Museum entrance

regularizes the open spaces and at the same time creates a new spatial condition. This volume is accessible from an existing entrance in Vico Banchi Nuovi that actually is in disuse.

The volume generates itself by some direction of monastery and accommodates the locker rooms of the soccer field and spaces for gym equipment. On the other side are situated auxiliary functions for the museum: near to the main entrance there is a little restaurant on two levels that overlooks on the sports area. In the bigger volume, conceived as a Neapolitan courtyard, a ramp will solve the gap with the museum level and the garden too. The facades are a clear recall to the arches on the monastery facades.

Near the archaeological area covered with a very slight structure supported by thin columns the project realize some students services like study rooms and libraries to support the student houses in the surroundings.

On the perspective of living the wall the project worked by the subtraction of material. The wall and the monastery have a strong attraction that in some point and the project makes them closer and in order to generate new atmospheric conditions. The entrance is situated in a volume near the student hostel that is accessible by the majolica cloister; from here there is a sequence of spaces that recall different way of digging material.

## 6 CONCLUSION

At the end our goal is to find a good balance from the existing wall and existing spaces showing as a project can be able to discover a new permeable boundaries like a new clear spaces' sequence for the city and the monastery as well. The wall, the existing absolute boundary through the project of architecture will become the new spaces generator and the new inhabited object.

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## **SUSTAINABLE ARCHITECTURE: ACTIVE DESIGN INFLUENCE THE FAÇADE'S AESTHETICS**

**PhD Lecturer Arch. Ștefan Mihăilescu**

*Ion Mincu University of Architecture and Urbanism (ROMANIA)  
stef\_mihailescu@yahoo.com*

### **Abstract**

In modern days, the language of the envelope is influenced by a conceptual evolution that has transformed the façade from a borderline (a separation limit) in a buffer area, inflated with a last minute high tech technology. Its role is to compensate for thermal difference between inside and outside and in the same time to actively influence the natural light diffusion through the building. In large buildings, sustainability focuses on optimizing the use of resources, and for this, the role of the façade has become increasingly important [1]. Incorporating a number of energy efficient equipments, and improving the control scheme design from the core to the shell (envelope), active design allows the decreasing influence of the outdoor climate (hot / cold) over the interior surface of the building.

**Keywords:** façade, sustainable design, integrated design, energy performance, architectural language.

### **1 FAÇADES - FACTORS OF INFLUENCE**

Today we consider the building façade role as interface between the city and the construction and between users and outside environment from two points of view, equally important: aesthetic and energy efficient. The level of energy performance that is taken under consideration for the entire building is a major factor of influence for the façade design, considering the vast array of elements used to protect the envelope. In order to have a better control, studies are done with the help of dedicated computer simulations or programs. The computer aid is used in order to conceive an optimum model correlated with the architectural vision, in order to create the perfect shape for the bordering surface of the building. 'Like many developments in the modern era, sustainability has been seen and promoted primarily as something new, progressive, and future oriented...the result is a discourse and practice dominated by technical solutions to mostly technically framed problems' [2]. Building envelope energy issues have turned the façade from a simple surface into a volume containing an important series of air handling activities and elements for [re]directing the natural light.

In order to maintain the design, the role of the architect is increased, because he has to take in consideration all external factors of influence. I think there is a visible transformation of the elements of architectural language under the influence of sustainable design. [Re] thinking of the façades elements started from a functional necessity. The sunshades appearance, wooden sun shading elements, textile protections, different kind of shutters, entered in the architectural vocabulary and were retouched and loaded with aesthetic value over time. The layout of the façade is shaped by mathematical calculations made by teams of specialists but the aesthetics appearance for all the elements used becomes extremely important, competing with functional importance.

While interpreting the parameters and data provided by building's evolution may give some indicators about its efficiency and pave the way for improving existing technologies or processes,

that's not affecting the context that is surrounding the building. The façades directly influence the imaginary of that people, is the base for the relation between city and its users and a particular building. The façade became direct message bearing (importance, grandeur, ecology, permeability, transparency, etc). Of these facts, this paper is researching the ways in which the directions for sustainability are reflected in the façade aesthetics. In this sense we can point out a number of buildings which refer directly to the values of sustainability thought their envelope Phillip Merrill Environmental Centre - USA, Wayne L. Morse US Courthouse in Eugene - USA, K2 Housing Project in Australia, Lewis Centre at Oberlin The College - USA, Solar Umbrella House - USA, Colorado Court Affordable Housing Project - US Federal Centre South Building - USA, DuPont Building - US.

There are cases where context comes to influence new construction including materials used, particularly in protected areas or areas with a very clearly defined character. In these cases, use of modern technologies is no longer recommended and can identify and use a methodology that is based on traditional practices with a number of improvements to current scientific developments.

The current complexity regarding the design of a building and the necessary ability of meeting a large number of conditions from environmental assessment methodologies conveys to the emergence of new professions in this field. Meeting all parties that analyze and propose solutions for building led to a new type of design, called integrated design. It concerns the entire assembly and immediate vicinities, as an open system. Integrated design is used in the composition of sustainable buildings in order to achieve of all objectives related to sustainable design while allowing the maintenance of the construction costs within the budget. An example of this intercommunities is related to building's heating, ventilation and cooling (HVAC), operations that are influenced by the construction orientation, the proposed amount of insulation, shading systems or glass surface, shape and the materiality of the roof.

## 2 PRINCIPLES OF SUSTAINABLE ARCHITECTURE BASED TRACKING ANALYSIS

I noticed that the descriptive analysis is not sufficiently objective. For that reason I chose to classify the commented examples of active design elements on several architectural subsets (influencing factors in architecture, implementation, design, energy conservation, pre-construction phase, construction phase, post-construction phase, urban design and reporting to the site, the design for human comfort )to enable an objective discussion on the aesthetics effect obtained and its effectiveness. It is important to research the way in which the architect decisions (backed up by engineer analysis) change the image of the buildings in order to fully create an active façade.

### 2.1 Shading elements – sunshades

In order to control the amount of light and solar heat penetrating the façade of a building, an extremely simple solution is to mount passive or active elements of shading or sunshades. The way in which these are assembled, positioned and the distance between them and the front is a great influence over the façade. Sunshade deployment started as a natural necessity for a sunscreen and came finally to be an important design element for the façade. Using the basic repeat and observe and the adaptation to local conditions, shading elements were given the specificity of each zone were used. In some cases they acquired a regional aesthetical character. Today empirical mode is replaced by a sophisticated computer-aided design using programs such as Maya, Revit, Grasshopper or Matlab to generate, control and optimizes shading solutions. This specialized approach, allowing detailed study for the effects of shading allowed a greater degree of freedom in terms of design, so sunshades became vertical and horizontal elements of the façade with decorative role. Metaphorical game from the surfaces of the sunshade, the shadow left by it and protected glass surface, acquires a growing depth, suggesting a 3D image of the façade.

#### 2.1.1 *Influencing factors in architecture*

The façade using sunshades experienced a steady growth in recent years and is related to developments in the field of thermal capacity and quality of the glass. Promoting large glass surfaces for building façades, created the need for various types of sunshades. We can observe the architects

attention for different models, design and assembly of sunshades on the façade. The placement of sunshades in front of the façades makes them very important from both aesthetic and functional point of view. Its evolution is extraordinary, from the basic unit with strictly functional form to a decorative element, or receiving the role of solar energy receiver by adding photovoltaic cells on its surface. The sunshades become an innovative element that determines the appearance of the buildings (see buildings Q1 in Essen, Germany and Al Bahr Towers in Abu Dhabi).

### 2.1.2 Implementation

Sunshades are installed on the exterior of the façade, keeping a distance from the surface that protects being assembled horizontally or vertically. In most cases, they are mounted at higher levels of glass to an extent that does not affect the glance of users [3].

### 2.1.3 Design

The size and position of these elements of architectural language is subject of architect and specialist engineer's consultations using computer analysis, depending on the climate, envelope design, functions and comfort level with focus on decreasing the use of resources [4].

### 2.1.4 Analysis

Energy Conservation: sunshade's purpose is to block excessive sunlight and eliminate glare. The sunshades decrease the amount of energy required for cooling buildings.

Pre-construction phase: allows large areas of glazing (glass surface) providing protection from solar radiation.

Construction Phase: reduce consumption.

Post-construction phase: allow recycling, sunshades are generally made of detachable elements.

Urban design and reporting to the site: allows widening protected public space outside the premises.

The design for human comfort: glazed areas protected by sunshades and improve the welfare and they have a positive health effect.

## 2.2 Double façade

Double façades are mainly used, largely because there are viable economically and can solve thermal separation between inside and outside, and they can incorporate a number of technological elements that cannot exist outside the building. Double ventilated façade has been and continues to be an indispensable element of large buildings, both horizontally and vertically developed. "Going over the technical, double façades have become an important place in the arsenal of architects, and became a design element around which the entire façade" [5].

The development of façade systems are directly influenced by technological changes that appear inside buildings. A new element, such as the gradual replacement of the mechanized air conditioning system (high energy), with heating / cooling by circulating water through the resistance structure to change its temperature by heat transfer making changes in the design of buildings. Massive air conditioning ducts are gradually replaced by a more dynamic and reduced networks of pipes with thermal liquid [6]. This transition from one system to another amends a number of building's elements: it diminishing the distance between the plates because there is no need for large tubes of air conditioning, water pipes are located near or embedded in reinforced concrete slab to use of thermal mass effect, and the entire building, divided into sub units rely on convection currents of air, which are ultimately directed through double façades. This integrated system justifies the financial costs of double façades, especially on the sides exposed to thermal radiation.

Containing fixed parts or mechanized movable elements (filters heating or radiating surface), the interior space contained in between the façade double is correlated and connected to the automated

building control (Building Automation System) in order to optimize thermal performance and sun protection.

### 2.2.1 *Influencing factors in architecture*

The curtain façade's transformations are reflected in the urban landscape and in the continuous use of office buildings in which are working a percentage of the ever growing population (service sector). Evolution of the façade is controlled by two factors: the need for good lighting (clear glass) and the possibility of control the intensity of light entering the building. Additionally, innovation in the field of thermodynamics and computer control integrated design launched on an upward trend and double façade has become the place where temperature's control elements are placed. Double glass façade has increased its degree of transparency, and there is a substantial increase of dynamic elements and a multitude of equipment between the two layers of glass.

### 2.2.2 *Implementation*

Without an integrated design, double façade is not justified as first choice from the point of view of sustainable buildings, because of its working costs as a single element. It is further justified by the transparent relationship between the user and the city.

### 2.2.3 *Design*

Designing a double façade is influenced by outer skin (solid or segmented), the distance between the two glass layers and by the horizontal or vertical elements inserted in the free space between the layers.

### 2.2.4 *Analysis*

Energy conservation: improved insulation of the envelope.

Pre-construction phase: allows large areas of glazing (glass surface).

Construction Phase: reduce consumption.

Post-construction phase: double façade is made up of different components with mechanical connections, which provide the possibility to separate them depending on the material used.

Urban design and site reporting: enables use of differentiated elements that generate dynamic shading of the façade. The space between the glass layers can be used by its users, and there are examples of added plants that change the look of the building, possibility of opening windows gives a feeling of active façade.

The design for human comfort: high brightness with accurate possibility of control and interaction between the user and means of shading.

## 2.3 **Atrium**

Using light indoor courts started from the need to illuminate building interiors, but gradually gained much more importance and has become a key element in controlling the temperature and air quality. The atrium brings light inside and using filters and technological equipment, it directs this light towards interior spaces without direct contact with the façade. Thus atrium is a thermal buffer and can remove excess heat to the outside through a complex system of ventilation that connects the interior spaces and the exterior environment.

As in the previous research about double curtain façades, the large volume of air atrium positively influence the complex ventilation system, being a filter through which outside air is preheated or pre-cooled, without high energy consumption. For this reason these areas are included in the operating scenario of the entire building, equipped with sunshades or other ways to control light, dynamic systems are studied by mechanical or natural movement of air currents, and atriums are covered with



vegetation, etc. (Brown & Dekay, 2001). The atrium has exceeded the yard light role and the social role (helping to interaction) and has become an integral part of the building's management, having an important role in reducing consumption. Usually located in the centre of the building, the atrium was extended outwards to communicate directly with the façade and allows warm air currents to exit when appropriate, and facilitates the admission of fresh air. This transformation of the atrium leads to greater transparency, and led to an expression of the new compositions for the façade's design [7].

### 2.3.1 *Influencing factors in architecture*

Atrium is a surface "stolen" from inside of the building, migrating towards the façade in order to respond to a large number of drivers of sustainability. Atrium allows good illumination and ventilation of the interior is a very good environment for interaction, enabling an increased pedestrian visual access to the inside of the building, very often "furnished" with plants, the atrium becomes a green lung for the inside environment with beneficial effect for cleaning the air and mind of users.

### 2.3.2 *Implementation*

At the beginning, atriums was a practical way to bring light into workspaces, more remote in time it has gained an increasing value of representation, becoming green gardens for the buildings, and using integrated design to control the large air buffer in order to allow a greater control over the fresh air introduced into the building.

### 2.3.3 *Design*

Atrium allows simple glass façades, a reason for large openings on the structural elements; it becomes artwork, a special force for the overall design. The atriums redeem the visual potency of interaction between adjacent functional spaces.

### 2.3.4 *Analysis*

Conservation of energy: the role of the heat buffer, where there is vegetation growing. Purifies, oxygenates and humidify the air if the design accommodates sufficient green space and vegetation.

Pre-construction phase: it is placed for maximum illumination of internal spaces.

Construction Phase: reduce consumption and reinforce the public character of the building.

Preservation of the environment: atriums are generally green spaces, recovering from the natural environment as possible.

Urban design and reporting to the site: powerful visual communication with the external environment (street/city).

The design for human comfort: it is a social space, which emphasizes the interaction between people.

## 2.4 **Photovoltaic panels**

Solar energy is captured in two different ways: by heat, the radiation is converted into heat and photovoltaic, where the radiation is converted into electricity. "Photovoltaic (PV) means the direct conversion of short-wave solar irradiance into electricity. Today's market is dominated by semiconductor solar cells on the basis of crystalline silicon, but new technologies based on plastics, organic materials or thin film cells with diverse semiconductor combinations are increasingly achieving marketability" [8]. Concentrated mainly rooftop photovoltaic cells gradually occupied various positions increasingly important until they became part of the façade [9].

A very interesting classification is performed by Tjerk H.Reijenga, FV in architecture [10] correlating the way in which PV modules are integrated and the relation with elements of architectural language:

- photovoltaic panels applied invisible
- photovoltaic panels added after the initial design
- photovoltaic panels added to architectural image

- photovoltaic panels that determine the architectural image
- photovoltaic panels that produce new architectural concepts

#### 2.4.1 *Influencing factors in architecture*

PV systems can be installed directly over elements of the façade or rooftop, ignoring the aesthetics of neighbouring elements or integrated into building (Building Integrated Photovoltaic - BIPV). This model involves integration of the film crystals or independent elements that can be integrated on existing façade elements or sloping roof. Innovation in this area has led to the flexible film panels that can be attached to opaque materials, creating a mirror like image. The photovoltaic panels in various colours represent an innovative aspect (red, yellow, green, blue) and the transparent film set between the sheets of glass that produce electricity and has a great transparency degree is another aspect that will contribute to a large usage of photovoltaic's. Current developments lead to the integration of photovoltaic cells into architectural elements by fusion and total integration (transparent film).

#### 2.4.2 *Implementation*

Photovoltaic systems have a high initial cost, and need additional financial help for viability. There is an additional aspect that can influence the system ergonomics and degree of existing pollution, especially dust deposition on the surface of the panels, which drastically reduces the amount of energy processed.

#### 2.4.3 *Design*

Surface covered with photovoltaic cells is generally given through design theme; the degree to which it affects the external appearance of the building is decreasing. As I stated earlier, technological advances allowed the removal of less aesthetic components, the dark blue colours of the panels and appearance of excessive technology industry, producing items that can be operated for a quality design, with elements that can actively contribute to the overall design.

#### 2.4.4 *Analysis*

Energy conservation: energy generation.

Pre-construction phase: based on the orientation of the cardinal directions, type of material used.

Construction phase: integrated application or PV modules application.

Post-construction phase: recycling.

Preservation of the environment: producing renewable energy.

Urban design and reporting to the site: façades using photovoltaic cells are much better integrated into the urban landscape.

The design for human comfort: technological advances produced photovoltaic systems tailored to architectural elements.

### 3 CONCLUSIONS

Active design allows the decreasing influences of the outdoor climate (hot / cold) over the indoor temperature by incorporating a number of energy efficient technologies, control schemes and improvement of the envelope design, carefully coordinated by the architect. All the spaces contained in the façade envelope are connected to the internal control system of the building and are "decorated" with last minute technological features. The sum of these factors influences the entire building façade design and goes to enrich the architectural language with new forms. Integrated design led to the emergence of new consulting firms able to coordinate and correlate information

relating the building physics and the architectural design (Transsolar, Atelier 10, ARUP Associates, Buro Happold and Werner Sobek Engineers).

A quality design knows and must correctly answer to the influence of the environment with a series of improvements made to the original concept or adding technology that contribute to a long-term performe and define the investment as sustainable building. This means consecutively to respond to an issue increasingly complex, and in terms of the façade, it must be protected and must protect against discomfort caused by sun exposure, and should not be influenced by the direction and force of the wind and must resolve in an ecological manner the issues of precipitation waters [11].

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## URBAN COLORSCAPE STUDIES: BUILDINGS OR BILLBOARDS?

**Veronica Maria Zybczynski**

*"Ion Mincu" University of Architecture and Urbanism (ROMANIA)*

*veronica.zybczynski@gmail.com*

### **Abstract**

Few things affect man as much as the color because the overwhelming majority of the information is obtained visually. Color cannot be regarded in itself, detached from the support layer, it is perceived with it, and at the urban level the support layer of color is represented by the buildings, the billboards, the traffic, the vegetation, the roads as well as by the people - users of the urban space. Several studies have shown that, through perception, the brain processes the chromatic information received through the visual pathway and transforms it into feelings and moods, resulting in a particular urban chromatic experience.

At the urban level, color is an important element that carries both historical and cultural informations, serving also as a very important sign of the quality of life.

In Bucharest the outdoor advertising has gained an excessive spreading, migrating from the billboards on the streets to the façades of ten-story-high blocks of flats: from the advertisement for shops, malls (periods of discounts, seasonal offers etc) to the electoral advertising, entire blocks of flats being wrapped in huge brightly colored banners. This type of advertising is characteristic for the central areas of the city and for the high traffic areas. In the areas that are predominantly residential, this type of advertising appears only on the main streets, being nearly non-existent within these areas.

In this context, the article aims to investigate the relationship between color - outdoor advertisement - buildings - urbanscape in order to determine the impact of outdoor advertising on the perception of the chromatic urbanscape and on the buildings. Furthermore this article investigates and questions the scale of the outdoor advertising: Is there an appropriate scale for advertising? Should outdoor advertising use the building scale or the billboard scale? Is now Bucharest's outdoor advertising in between scales? For the investigation, 113 people (33 specialists) were interviewed using a questionnaire (the interviews covered both areas where outdoor advertising on buildings (huge banners) is non-existent and central areas in which this type of advertising is prevailing). The results of the interviews showed that people's attitudes towards this type of advertising varies from rejection to indifference.

This study also showed that the relationship between color - outdoor advertisement - buildings - urbanscape through the perception of the urban space is dramatically altered by the huge size of the adds, in some cases people mentioning that they could no longer remember the architecture of the building. The vibrant colors used by the advertisement industry amplify the impact and distort the perception of the urbanscape, being known that bright colors look even more brighter when they are applied on an entire façade. In many cases, the huge banners end up being landmarks at the urban scale, seriously altering and almost completely capturing the perception of the urban space (in terms of the urban composition and also in terms of color). The buildings are sometimes seen as just a carrier, a holder of the outdoor advertisement, a supporting structure of it; outdoor advertising changed the scale of the urban environment by switching scales: from the billboard scale to the building scale.

The conclusions drawn from this study lead to the idea that, in order to correct these slippages, there is an imperative need for an inter-disciplinary study of perception in the city and also for a coherent color strategy for the city in which the outdoor advertising should have its place.

**Keywords:** advertisement, billboards, bright colors, perception, urban colorscape.

## 1 INTRODUCTION. MOTIVATION.

A walk along the boulevard that connects Piața Victoriei with Piața Unirii or along Calea Victoriei transposes the individual in an atmosphere of a gigantic hyper-mall: the huge colored commercials (on insurances, travel agencies, methods of payment, drinks, fast-food, phone companies, etc), accompany the pathway in a total chaos throughout the entire walk, hiding, veiling and distorting the architecture.

In Bucharest, the outdoor advertising has slowly grasped entire facades of ten-storey-high buildings, wrapping them in brightly colored meshes. From flyers and posters to meshes seems to be just one step.

Hence the essential question whose answer is investigated in this article: Is the city just a support for the advertisement or should it be something more? Furthermore: Is there an appropriate scale of outdoor advertising? Is now the outdoor advertising of Bucharest in between scales?

## 2 COLOR AND ADVERTISING

Color has always fascinated scholars and researchers since Goethe's Theory of Color (1810), theorizing on color, on the psychological implications and on the emotional response, being in the centre of the color researchers' pursuits (Gage, 1993). The last decades has seen an enhanced interest in the theory of color, especially in connection with the emotional responses of individuals to a color or to a certain combination of colors. However, many of the studies are based on empirical and non theoretical studies (Frank and Gilovich, 1988).

There are numerous researches regarding the influence of color in advertising, researches that emphasize the importance of color in the delivery and perception of the message (Geboy, 1996); they also focused that the impact of color in advertising is a subject of personal preference, cultural background, tradition (Whitfield and Wiltshire, 1990) etc.

Studies show that color is the first perceived feature and that 67% of the purchasing process is dominated by color (Chang & Lin, 2010) while other studies show that 90% of the snap judgments regarding a product are based on the color alone (Singh, 2006).

Color influences the way people perceive the personality of a brand (Labrecque and Milne, 2012) and also creates easily recognizable brands, being a very important element of brand identity (Gabay, 2015; Dooley, 2012).

Aaker (1997) identifies five dimensions of brand personality that can be connected with certain colors: blue if the message sent is sincerity, honesty, conservatism, attention; red for passion; green for eco-friendly; gold, purple or silver for luxury, sophistication; black for powerful, very good quality, elegance etc. Those five dimensions, by which a brand or a product is assessed, are: sincerity, excitement, competence, sophistication and ruggedness. Even though a brand can communicate several features it is mainly dominated by one.

Thus, as emphasized by researchers and by the conducted studies concerning color and marketing, brand and advertising, color plays a very important role, a key position in communicating the message, in inducing a message, in convincing an individual to buy a certain product.

Even though there is no universal recipe for the color that can be applied, color is the main means in transmitting a message, in creating an image of a product or of a brand in itself. Color can lower or increase a brand value.

## 3 COLOR AND URBAN LANDSCAPE FROM THE ADVERTISING PERSPECTIVE

Considering the influence of color in connection with the consumer's behavior, advertising took a step forward from the small leaflets and posters towards huge meshes and enormous illuminated billboards or, sometimes, entire building façades.

In terms of outdoor advertising, Donthu, Cherian & Bhargava (1993) found that the effectiveness of



outdoor advertising is influenced by the location of the ads and by the number of words as well as by the color, while Wilson and Casper (2015) and Wilson, Baack and Till (2015) add the size of the board, pointing out that a large board is much more attractive and easier to understand. In conclusion, speaking of outdoor advertising, the boards should be as large as possible, colorful and very well located in terms of traffic (both pedestrian and auto).

Of course, the purpose of advertising is to sell a product or a service. The advertising industry can look at a city just as a crowd of customers in a huge exhibition space of ads (buildings, billboards, etc.), a space where can be organized events whose purposes are to promote a good image for a brand and finally, to sell its products or services.

From the urban perspective, a broad definition of the concept of urban landscape could refer to all the elements of the urban framework, but the value and its qualities, precisely the subjective elements related to temperament, emotions, feelings, sensations, vary from individual to individual depending on his needs and expectations, on his feelings. The components of the urban environment are in direct relationship with the individual and with his cultural references and, implicitly, with the local identity, seen, cherished and conserved by Jean-Philippe Lenclos (2003) who was calling for the concepts of chromatic identity, of specificity of the regional colors and for the social and cultural content of them. Lynch (1990) as well as Lenclos (2003) stated that the user creates, at his mental level, his own image of the city and of the urban landscape, depending on the physical characteristics of the urban space, but also on the psychological, social, cultural factors.

The needs of commerce and advertising and the needs of cultural identity, of imageability (Lynch, 1990) of a city / urbanscape have to be reconciled through several researches, followed by regulations and a coherent urban policy (regarding the relationship between advertising - urbanscape – color) that should determine the permitted advertising zones, locations, the design and materials used in respect with these areas.

#### **4 INTERNATIONAL REGULATIONS REGARDING OUTDOOR ADVERTISING IN THE URBAN CONTEXT**

This research focuses on two distinct cases: international regulations regarding outdoor advertisement in the urbanscape of an European city (Dublin, Ireland) and of a South American city (São Paulo, Brasil).

The case of Dublin, Ireland (similar to London, UK or Paris, France) emphasizes the need of reducing the ads in the public areas and also of strictly controlling the ads in protected areas.

In Dublin (Dublin City, n. d.), as well as in most European cities, the advertisement industry started to grasp every inch of space. Therefore, the City Council decided to create an Outdoor Advertising Strategy defining control zones where certain types of advertising can or cannot be considered, rules for advertising on bus shelters, rules regarding the illuminated sign sand, of course, the implementation of the outdoor advertising strategy and for advertising development management standards.

The case of the city of São Paulo is a special one. In 2006, the City Mayor, suffocated by the excessive advertising, decided to completely remove the outdoor advertising: from posters and flyers, advertisements on buses and taxis up to huge billboards, all were removed. The city was stripped of its commercial clothing and the buildings that until then had been hidden by advertisement meshes revealed their true architecture: the good or the poor quality, properly or poorly maintained buildings restarted to participate in the urbanscape.

Kohlstedt (2016) noted that "as it turned out, advertisements were quite literally covering up problems with the city that needed to be addressed. [...] As facade-spanning ads were pulled down

from the sides of buildings, immigrants living inside of the same factories in which they worked (often in poor conditions) were discovered. Crumbling civic infrastructure was also cast into the spotlight, made more visible in the absence of distracting ads" and that "the Clean City law also forced building owners and businesses to confront unpainted and unattractive architecture, reconsidering their visual presence in shared civic spaces. For businesses forced to remove their prominent signs and logos, painting structures in distinctive colors became a way to help people identify and distinguish between them."

The Clean City Law (Lei Cida de Limpa) has generated many protests mostly related to the economic aspects of the law, with the appearance of the city as a ghost city, but the law was applied starting on the 1st of January 2007. In other words, from this time forward all ads were removed and the city revealed his buildings.



Figure 1. Images of São Paulo before and after the removing of the ads (credits: Kohlstedt, 2016)



Figure 2. Images of a street in São Paulo before and after the removing of the ads (credits: Kohlstedt, 2016)

Curtis (2012) analyzes the urbanscape after 5 years from the implementation of this law, observing an increase in the quality of the urban landscape, of the buildings and of their maintenance level: "no longer covered in homogenous and imposing signs, the unique character of São Paulo was able to resurface. Admittedly, not all of the revelations proved beautiful: shantytowns that pepper the city's streets, once hidden under massive signs, revealed gross inequalities. But bringing the situation to light incited residents to improve conditions and begin discussing solutions. No longer could actual problems be masked by artificial solutions".

## 5 CASE STUDY: BUCHAREST, ROMANIA

### 5.1 The existing situation of outdoor advertising

Bucharest oscillates between areas with excessive outdoor advertising (bd. Gh. Magheru, Calea Victoriei, Bd. Maniu) and areas where the outdoor advertising is almost non-existent (Bucureștii Noi, Domenii).

The buildings, especially the old and poorly maintained, become the supporting layer of the huge advertising meshes.

The placement of these meshes on entire stories of the blocks of flats, obscuring the windows of apartments, is accepted by the tenants associations due to economic reasons, completely ignoring the real needs of natural lighting and ventilation.



Figure 3. Bucharest. Gheorghe Magheru boulevard. Apartments with no natural light or ventilation (Zybaczynski, 2016)



Figure 4. Bucharest. Iuliu Maniu boulevard. Apartments with no natural light or ventilation (Zybaczynski, 2016)

Thus, the city is dressed as an oversized vehicle to promote products and services more or less necessary.

On the other hand these billboards forge the real image of the city both in terms of volumetry and of color. The speed with which the meshes change shows that this is one effective means of advertising but raises questions about the affective relationship between the individual and the chromatic urban landscape that is in a perpetual change.

Of course, the economic considerations should be taken into account (advertising bringing considerable income for both residents and city hall) but are they really the only reasons that dictate the image of a city? The architecture of the buildings and the chromatics of the façades aren't an important factor?

As stated above, the relationship between the chromatic urbanscape and outdoor advertising was regulated in most countries, be it stricter or more permissive.

## 5.2 Regulations

Regarding the Romanian legislative framework, there is a law that regulates advertising, namely Law 185/2013 concerning the location and approval of means of advertising. Article 15 paragraph 1 letter i of this law stipulates that positioning of means of advertising is prohibited on buildings in advanced state of deterioration in the situation where the placement of the means of advertising affects structural strength and/or stability and integrity of the constructive elements and of the decorative elements of the building envelope.

Paragraph 2 states that it is prohibited the coverage of the glass surfaces of buildings with any kind of means of advertising, while paragraph 5 specifies that if the building has more means of advertising on the same façade or the same blind wall of a building, they must be conducted in a uniform manner and symmetrically framed.

Regarding the meshes, the Law 185/2013 states, in Article 38, the following:

"(1) It is permitted to place meshes and digital meshes in the following situations:

a) on the constructions, including historical monuments located in areas of restricted advertising or in areas where advertising is prohibited, only where they are protecting the public during the works of building / restoration, but not more than one calendar year, and only if they reproduce the image building after building / restoration, any commercial advertising texts will occupy no more than 25% of its total;

b) on the blind walls of the constructions that are not classified historical monuments.

(2) Notwithstanding the provisions of art. 15 paragraph (2) it can be placed meshes and digital meshes on the façades of residential buildings, buildings with retail and office functions located in public areas, whether the local regulations on the placement of advertising means permit."

In other words, what is forbidden in an article of this law, is allowed through another article of the same law. The City Council, even if they have a strategy in terms of outdoor advertising in public areas, has not the appropriate means to apply it. And the lack of this strategy, in conjunction with the lack of an adequate legislation, makes outdoor advertising to monopolize gradually any part of the public space that has the traffic requirements and representation requested by the client.

## 5.3 Questionnaire

Regarding the scale of the advertisement boards (billboards or entire façades) for this research an interview - questionnaire study was conducted. There were interviewed 113 people, 33 of them being specialists (architects, urban planners, designers). This interview covered areas where the outdoor advertising is dominant as well as areas where the outdoor advertising is not present. The findings show that the vast majority of people (95%) is already accustomed to the advertising landscape of the central areas but they are also acknowledging that there are cases in which the sizes of meshes astonished them (21%).

Although 68% of them are not bothered by outdoor advertising, while only 12% feel assaulted by advertising both as pedestrians and as users of the public transportation (meshes on the buses), the vast majority of the interviewed persons believe that it has to be created a legislative framework in order to regulate outdoor advertising (size, layout, usage of colors, permitted areas).

The most worrying aspect is that quite many of those interviewed and living in Bucharest for over than 25 years (34%) admit that they do not remember how the original façades of meshed buildings look like, while 22% do not want to answer this question .

Regarding the areas where outdoor advertising is almost non-existent, 93% of the people interviewed said that it seems normal because there are not central areas with a lot of traffic, but only residential areas.



Another aspect, highlighted by specialists this time, is that outdoor advertising on buildings is changing the gauge of the buildings, especially in terms of its real height, billboards can tamper with 3-5m the actual height of the buildings.

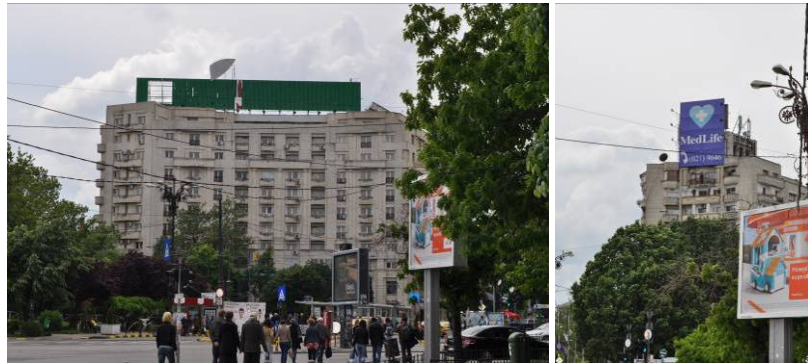


Figure 5. Bucharest. Buildings in Piața Unirii. The oversized billboards are tampering with the building's real height (Zybaczynski, 2016)



Figure 6. Bucharest. Buzești street. The law forbids the placement of meshes on buildings in an advanced state of deterioration. (Zybaczynski, 2016)



Figure 7. Bucharest. București universal shop. Now abandoned and in an advance state of degradation. The law forbids the placement of meshes on buildings in an advanced state of deterioration. (Zybaczynski, 2016)

In conclusion it's emphasized that the outdoor advertising needs a strategy and proper regulations. This strategy has to be a part of a coherent urban development plan.

## 6 CONCLUSIONS

Congested and overcrowded central areas of Bucharest, both pedestrian traffic and car traffic, are covered and invaded by billboards. From posters to textile or digital meshes, Bucharest is a means to trade. The massive advertising effects and, in some cases, aggressive on the image of the city have not been one of the concerns of the local authorities. What is not forbidden is allowed and that is

why outdoor advertising became so present in the image of the city, especially inside the central areas.

The conducted interviews showed that advertising is changing the image of the buildings, in some cases they are losing their role in the urban landscape (people can no longer remember the volume of the buildings, their façades or their colors) and also is changing the size of buildings (due to the oversized advertising billboards). All this inevitably generates a process of alienation, a loss of cultural identity and a loss of the emotional relationship of the individual with the city.

The legislative framework, sketched in principle, is insufficient to restrict the outdoor advertising. In addition, the lack of a coherent and sustainable development of the city leads to serious gaps in terms of the imageability of the city.

Ogden Nash cited by Moore (1964) wrote:

"I think that I shall never see  
A billboard lovely as a tree.  
Indeed, unless the billboards fall  
I'll never see a tree at all"

Even though the outdoor advertising is an element that takes part of the chromatic urbanscape it has to be regulated. A coherent strategy regarding the development of the city should include regulations concerning outdoor advertising as well as regulations regarding the chromatics of the urbanscape.

Therefore it is absolutely necessary to develop, based on reliable studies on the image of the city, a strategy in the field of outdoor advertising and impose certain restrictions regarding the placement, design, color and size of the billboards, so as to outdoor advertising should no longer be in between scales but at the natural scale of the city

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## BETWEEN CODE AND NEUROAESTHETICS

Mario Coppola

*Università degli Studi di Napoli Federico II, (Italy)*

*mariocoppola@hotmail.com*

### Abstract

Contemporary technologies of parametric modeling and coding, that make the work usually collected under the label of "parametricism" possible, represent perhaps the most significant technical development in the architectural design of the latest two decades.

Since Frei Otto's pioneering experiments on minimal path systems (with the minimal path Apparatus for computing systems in 1988) and those of Marek Kolodziejczyk (with the Wool-thread model to compute optimised detour path networks in 1991), the parametric design – the label widespread by Patrik Schumacher in 2008 but, as a matter of fact, coined in Italy by Moretti and de Finetti with the "parametric stadium" in 1960 - has experienced in recent years an exponential spread on a global scale, affecting the work of thousands of professionals, researchers and students.

Observing *a posteriori* the development of the "parametric" research, it becomes essential to distinguish two moments: the former displaying projects and experiments of the nineties, also followed by many contemporary researches, and the latter that started in the first decade of the new millennium. In the nineties, the architectural research that follows the so-called "deconstructivist" movement, experiences a design meant as an "open system", a creative, inclusive relational process. It involves the use of parametric techniques - borrowed primarily from movie software like Maya - as a necessary tool for the management of the increasing complexity the project, for the first time, embraces (hence the process definition as "bottom up" instead of "top down"): it is a dynamic, "rhizomatic" (Deleuze, Guattari, 1980) project into which the elements and contradictions of the historical stratifications, the energy flows of the city and the natural morphologies simultaneously converge, as already happened in Zaha Hadid's painting in 1998, in which the buildings of via Guido Reni and the curves of the Tiber were woven together, merging in the MAXXI (figure 1).

Later, with the spread of this kind of projects all over the world (Zaha Hadid Architects, Coop-Himmelb(l)au, Asymptote, MAD, Span are just some of the studies working along this trajectory), the parametric techniques, in an increasing number of cases, seem to live a profound mutation: from an instrument at the service of a regenerating design - a design able to naturalize and reconnect the ghettoized *mineral* fragments (Boeri 2012) of the contemporary metropolis - they seem to become the ultimate aim of a project that is more and more introverted and hostile towards the city, and in general towards the environment in which it settles.

With the exception of some studies (including BIG, UNStudio, Plasma Studio, DMAA and OBR), and some researches that continue the *line of complexity* (Coppola, Bocchi 2015) without encroaching on introversion, the project as "open system" of the nineties - in which past and present, human and "non human" elements were simultaneously and seamlessly mingled - gives way to a self-referential "closed system" in which the project loses the touch with reality and its *raison d'être* becomes the virtual sensuality of a *literal* biomimicry easily allowed by morphogenetic software.

This produces the rise of a real international "movement" with a growing popularity among young people and with a great media impact, the language of which is exclusively based on curvilinear geometries, continuous, non-linear differentiations, of biomimetic, double curvature, geometries. It produces almost anywhere an undifferentiated (similarly to what happened in the last century with

the steel and glass skyscrapers of the International Style) "parametric blanket" (Kwinter 2008) that often has no real connections with the urban context and thus, with the weaving of neural, psychosomatic, cultural and environmental conditions characterizing the *neuroaesthetic complex* through which human beings - and not only - perceive and interact with a spatial organization.

So, instead of remaining within the field of the real, which includes both anthropogenic and non-anthropogenic, past and present layers, ancient and new types, a good part of contemporary parametric researches produce buildings without readable transitions or physical connections with their places of belonging, excluding many elements of the cultural-sensory background of anyone who has had to deal with the spaces of the city, separating once again mind and body as if there could be a corporeality without memory.

This way the mainstream parametric research (for example those conducted by the master of the Architectural Association DRL, by SCI-Arc in Los Angeles, by the chinese office MAD and many others), proposes a new *tabula rasa* that, instead of developing and expanding the relational and ecological possibilities of the language and the architectural DNA as emerged from thousands of years (the types, from this perspective, are real genotypes to work on, hybridize, develop according to today's technical and value systems, as happens, for example, in BIG's *Courtscraper* or in UNStudio's *Mirai House*), produces a new closed a-relational *metaphysics*.

A rigid authoritarian system, in the end, that presents hyper-deterministic coercive features since chaos, the unexpectedness and stratification of events - which in nature are the essential components of the *epigenetic landscape* - are left out of the bio digital simulations which transform the human being, deprived of his memory, of his cultural "exoskeleton", into a *sentient bacterium*.

**Keywords:** parametricism, complexity, code, genotype, biomimicry, neuroaesthetics.

## 1 PARAMETRICISM AND THE GLOBAL MARKET SOCIETY

On May 6th 2010, Patrik Schumacher, Zaha Hadid's partner and founder of DRL master at the Architectural Association, publishes on the *Architects' Journal* a long text entitled "Let the style wars begin". The text contains the description of *Parametricism* that the German architect considers as the next hegemonic architectural style on a global scale. The article ends with a lot of details about the new language rules and a series of heuristic principles, divided into "dogmas" and "taboos".

More or less from the publication of this manifesto, many architectural practices belonging or tangent to the international movement (so far summarily defined as "digital" architecture) start to rally in the label coined by Schumacher.

However, after the appearance of *Folding Architecture* by Greg Lynn in 1993, all the subsequent attempts at defining Hadid's, Himmell(l)au's and other *post-deconstructivists'* architectures had already changed their expressive register while abandoning the concept of the "fold" as an inter-individual continuity-complexity, a nature-culture continuum. From these attempts several definitions of architecture came out: "blob", computational, algorithmic, generative, and procedural or, more simply, "digital". All of them lost sight of the profound reasons for a *naturalized*, multiple, open, continuous and dynamic composition: they focused only on technique, therefore encouraging the mass distribution of a mannerist-by-definition research. The result was a language accessible to anyone who, though in lack of knowledge, talent and sensitivity, can use morphogenetic software.

With the coming of Parametricism - that in a very short time acquires global importance, transforming *parametric architecture* in a label known by most architects - focus definitely shifts onto the tools, technology, in a perspective that sees architecture as a technical affair devoid of cultural variables, in which the search for new architectural "phenotypes" can be carried out automatically through scripting and genetic algorithms. In this perspective a *living architecture* is being theorized but it does not represent the real change of a cultural paradigm, first of all in an ecological and therefore, as Edgar Morin clarifies, anti-capitalist key.



Figure 1 MAXXI, Zaha Hadid Architects, 1998. The building emerges from the city tissues and the Tiber curves.

As a matter of fact the term "parametric" refers explicitly to the information technologies related to the *post-deconstructive* research (Coppola, Bocchi 2015) since setting those technologies as fundamental and characterizing reasons. So this global movement is based on a design that comes from the selection and manipulation of numerous parameters that define the final status of the project. It is an architecture that becomes, according to Schumacher, an instrument serving customers, as if the only function of architecture should be meeting the needs of the dominant economic/productive model in the industrialized western society. Schumacher says that parametric architecture is the most effective tool - he repeatedly underlines, in recent years, architecture is not art but a tool to organize space in the most "productive" way - to ensure better, faster operations of the contemporary production based on a network society.

So architecture is just an instrument of "progress", which suggests a spatiality made to support, optimize and maximize an economically intended "productivity", accepting that the architect's role is not to propose an innovative political vision or even criticize the socio-economic political existing model, but just improve the users' performances according to the needs of today's business production. From Schumacher's perspective, in other words, the aim of parametric architecture is to "reinforce" and improve the processes of a society that Zygmunt Bauman defines, with a very different connotation, *liquid*; i.e. it deals with those processes of post-industrial production in their hyper-capitalist evolution, which produce such phenomena of relocations as needed by a globalized exploitation of human and natural resources, governed by elusive, constantly moving super-managers. The target of Parametricism seems therefore that of giving a physical body to a society in which competition and abuse between individuals, multinational groups' power are encouraged and promoted at the expense of human relationships, happiness, survival of communities and ecological balances. It is interesting that the German architect, after having explicitly written about the attempt at approaching, through digital tools, the «compelling beauty of living beings» (Schumacher 2004),



decides to abandon this definition and names Parametricism the architectural style emerging from this research.



Figure 2 *Galaxy Soho*, Zaha Hadid Architects, 2008.

A choice that shifts the focus from an expressive nature referred to the living form - that evokes the need of *negentropy*, i.e. order and complexity as mentioned by Morin and recently demonstrated by contemporary neurosciences as far as the deep bond between human beings and terrestrial ecosystem is concerned - to the technical, instrumental form, omitting the starting choice, the tendency towards a "natural beauty" that, detached from a social and ecological thinking, would reduce everything to an ephemeral hedonism.

Similarly in the definition an aspect is minimized: the choice of "primitive" geometries (more or less smooth lines, curved surfaces, elements of which the spatial shell can be made) that determine the final appearance of a parametric project that, instead, can take on both the characteristics of Malevich's Architectonens and those of a cellular tissue during mitosis. Almost as if it were possible or desirable to bypass the designer's will, which instead remains central also for parametric design -



since, paraphrasing Gianluca Bocchi, technology without man is stupid –, so as to emphasize this way the exquisitely technical nature of the latter.

As for the difference between architecture and art, Schumacher seems to suggest that the designer cannot act of his/her own free will because he/she should "inform" the computational tools of the right parameters as regards the activities and the project constraints. So, while the German architect describes the question of productivity, in the manifesto there is no trace of the term "openness", the concept of "urban carpet" and in general the concept of a private-public, outside-inside, anthropogenic - non-anthropogenic interpenetration. There is a neutralization of all cultural and political contents of the project - the critical elements regarding the organization of the contemporary architectural order - and of the rules concerning the external characteristics of the fluid and "internally correlated" language, where all the generative systems are an organic multiplicity, systems of correlated systems, the only objective of which is to ensure the readability of the three-dimensional spatial continuity to make it easily navigable by its consumers.

The character, at least ambiguous, of this formulation is already clear: there is no intention of defining a "parametric" architecture in a literal sense (because through parametric software it is, of course, possible to create any style and then any project including the traditional Mediterranean house with gabled roof), on the contrary it refers to a bio-mimetic language that would be able to organize the growing complexity of contemporary social systems that are increasingly interconnected, dense and dynamic, and, we add, more and more competitive, egocentric and anti-ecological. For these reasons this deals with the proclamation of a "biomorphic" architecture that, in full contradiction, expresses post-Fordist capitalist economy, the engine of today's oedipal "liquid" and biodiversity-destroying society.

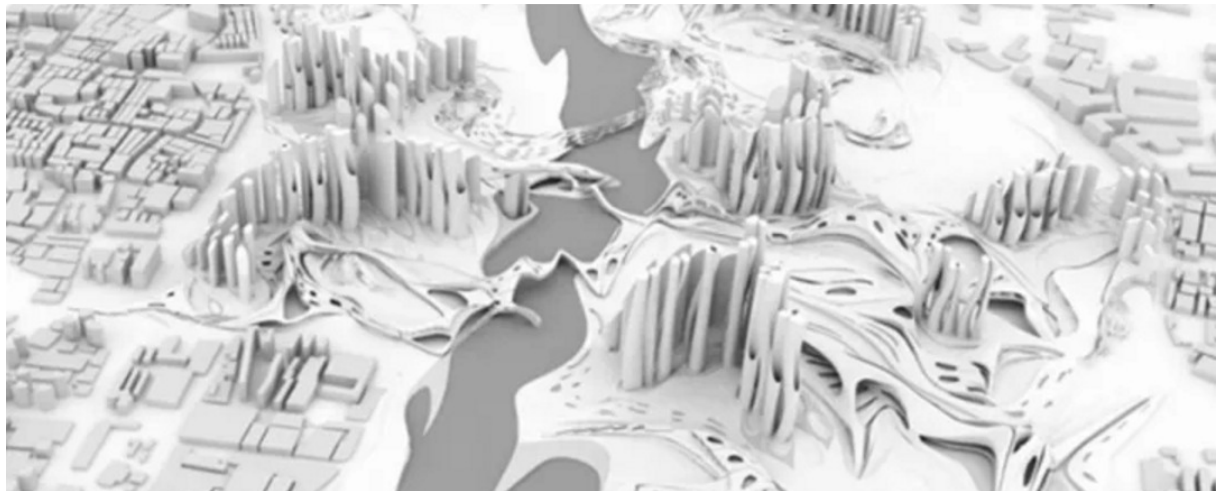


Figure 3 Parametric masterplan from DRL master students work ("Turbulence" team: Yu Du, Victoria Goldstein, Xingzhu Hu, Ludovico Lombardi. Tutor: Patrik Schumacher & Christos Passas), 2006-2008. Image source: <http://divisare.com/>

## 2 A TOTAL BIOMIMICRY: RENUNCIATION OF COMPLEXITY

Starting from the "post-factum" rules related to the work carried out in the past (such as "use elastic and non-rigid shapes" or "avoid repetition and standardization"), a checklist of "biological" geometries emerges from nearly thirty years of Hadid's design, when the naturalization of the architectural language was instrumental as to a project that aimed at revitalizing and reconnecting parts of the city, and therefore was freely inspired by the self-organized structures of living forms (to design them parametricism was not needed, as shown by Michelangelo's projects of the Florentine fortifications in '500 and Paolo Soleri's designs, or Musmeci's work and Moretti's "parametric" stadium in the '60s). Yet these geometries, deprived of any relational desire, bring back the matter to a mere grammar, which can be used to say everything and its opposite.

What therefore remains is the use of complex forms through a technological medium that would seem to guarantee the automatic success of the project, or, at least, the positioning of the project within the "parametric paradigm", as Schumacher himself defines it.

The contradiction that results is very similar to that which gave rise to the reproduction of the international architecture on a world scale starting from the famous *five points for architecture* by Le Corbusier (who was not "LeCorbusian" as, according to Morin, Descartes himself was "not constitutionally Cartesian"): this simplification extends the contradiction to the very meaning of architecture, which this way has nothing to do with the themes of weaving city and landscape or generating communities, and refers instead to a sequence of curves, "blobs" and other bio-digital images, as happens in the Chinese project *Galaxy Soho* (figure 2) dominating and crushing the humble context by means of some monumental convexities. These figures result in a machination which, by simulating the lines of the living world, in most computers of young designers inspired by this research, becomes a fetish, the illusion of a new computer-generated corporeity running away from the complexity and tragic irreversibility of the real world.

So, computational research chases inside the computer an intricate feminine sensual curvilinearity which seems to be an attempt at re-appropriating a missing corporeity/promiscuity, i.e. a missing contact with nature. Of the biological dimension they can catch a sterilized literalness, enclosed in a virtual dimension devoid of any human filter, unmindful of the figures and the language that are inevitably present in the sensorial-cultural background – a neuroaesthetic background - of every individual who had to deal with the existing city spaces.



Figure 4 *Kartal Pendik Masterplan*, Zaha Hadid Architects, 2006 (render, image courtesy of Zaha Hadid Architects).

This refers to the process described by Bauman about the use of social networks, where new generations are trying, often unsuccessfully, to find a contact with one another and with the body - as evidenced by the success of the online porn - which appears elusive in a real world that is increasingly atomised, alienated from the body dimension. So the results of this research represent a spatiality that, instead of regenerating a lost connection with the body-biological sphere, multiplies the distance between environment and building, megalopolis and biosphere. It seems a new extremism that to the "all culture" (as a drift of "humanization" the philosopher Roberto Esposito writes about) of historicism opposes an "all nature" which first appears as an excess of de-territorialisation - a departure from the traditional rules cracked by the deconstructivist "anarchy" - and then as a new hyper-codified, authoritarian territorialisation: a biomimicry that is just apparently the opposite of the immunization mentioned by Esposito.

As a matter of fact, it deals with the view of nature as a tool, a technique, once again "object" in the human being's hands replicating its shape in the laboratory, through the most "advanced

technology" (in line with the function of technology of a part of the anarcho-capitalist trans humanism), so as to put it at the service of his own individualistic utility.

This brings to a construction that carries out neither a translation nor a hybridization with memory, i.e. with the existing code of the architectural discipline, losing the initial regenerating spur and then even the uncertainty, unpredictability and chaos that, in nature, contribute to determine the epigenetic landscape from which life emerges with its organized but never "perfect" structures, that are always unique, asymmetrical, rough, hybrid. In this reality as a network of unpredictable possibilities, algorithmic architecture replaces a hyper-deterministic scenario, locked in the mathematical values chosen by the designer, without capturing exceptions, without expressing any freedom and often producing an imitation of the auto poetic structures of the living world, pretending to be a sort of "second nature" (Esposito 2010). So the morphogenetic dream pursues rooms like cells, spaces like organelles able to correlate, open up to be penetrated by light and air through the right exposure; corridors as arteries and capillaries, structures like self-optimized skeletons, integrated to space divisions so as not to "drill" spaces/organs; a mediation space, like a nervous system, keeps everything together, interconnected, without a way out, without providing a coexistence of different solutions as happens in the ecosystem.

So, from parametric masterplans (figure 3 and 4) a new totalitarianism seems to emerge. It generates a reproduction of closed "perfect" systems, where no indeterminacy differentiates each body (think for example, on the contrary, of the imperfect symmetry of the human body), and where new buildings are totally indifferent to the languages, morphologies, typologies, chiaroscuro and even to the scale of the spaces in which they are settled.



Figure 5 China Wood Sculpture Museum, MAD, 2002.

On the contrary, each wild landscape is surprising because it is full of different characteristics and different unpredictable logics, as well as each living form is always at least in part different from the others. Even a bacterium is only a phenotypic "attempt" because the organic molecules that make it up are not generated by simple digital algorithms but by a complexity of factors and contributory causes - also random and therefore undeterminable - that it is not possible to predict any outcome. Because there are no unique solutions, since life presents itself in a "rhizomatic" multiplicity of unpredictable phenomena in the same context: a form of life can proliferate in different habitats as well as the same habitat also belongs to an immense variety of different life forms as for structure, "seniority" and complexity. It is like an equation in which, even maintaining fixed parameters, there is not one only correct result - that is, "able to live" - but an immense wealth of *compossibilities* (Deleuze 1993) all having an equal organic dignity, all having equal rights to exist in a perspective in which biodiversity is not only a variable but a real value, as well as ethology itself becomes a system of values in which every living being is autonomous yet linked to the fate of all the others.

Finally, even if we could plan a system containing the variable of indeterminacy as a random fracture of some logic, that is, even once achieved an "artificial ecosystem" consisting of a perfectly optimized



organic form, it is not certain at all that the human being would feel at ease and choose to live there. The same could happen even in the presence of an exceptional natural environment, with beautiful landscapes, even intimate and comfortable natural sites like a sea cave or a clearing surrounded by trees. A temporary enjoyment does not imply the will or ability of living in a place without making any change, i.e. without "humanizing" the environment by a "cultural" trace. Because the human species (and many scientists start thinking the same even for other species, respecting due differences) possesses an "external genetic code", handed down through language but even through environment - architecture - which forms the main framework: an "exoskeletal" culture that can be certainly developed and transformed but cannot be ignored or bypassed. Even this - the set of external factors constituting the cultural code - is part of nature and in recent years, on the other hand, various scientific theories have shown that culture and in general experience, as an event external to the body occurring after birth, for example a trauma, changes the genetic code itself handing down the change to offspring. This is left entirely out of parametric/biomimetic system, which instead of triggering a transformation of the existing architectural language, provides for a replacement, ignoring that *tabula rasa* occurs in nature only on the occasion of tremendous disasters destroying entire ecosystems, bodies and their "cultural trail". Even in this case - think of the impact of the meteorite that, as it is assumed, almost completely destroyed the ecosystem about 66 million years ago - most of the next species probably would preserve a structure very similar to that previous, as if the earth scenario contained in itself rules and information that can shape the living structure. Recent researches have highlighted, through studies on different types of samples, that the bony tissue of mammals is nearly the same in the different species, as if there had been a

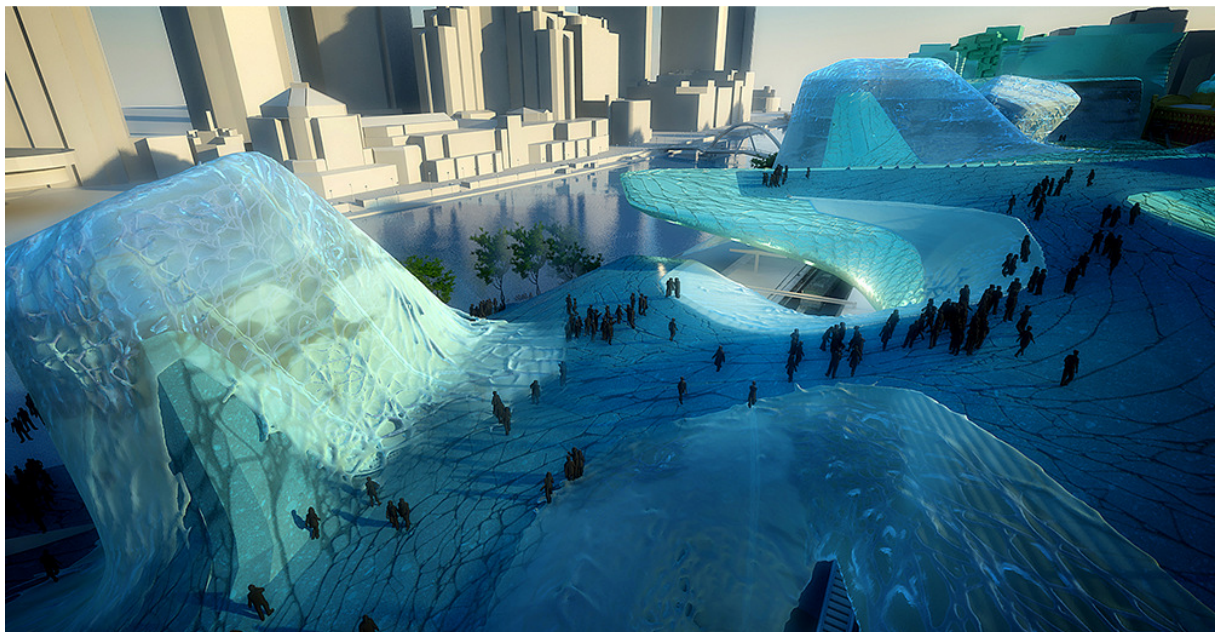


Figure 6 Flinders Street Station, Roland Snooks, 2012 (render).

topological deformation of one and only starting form that modified only the *extensive* properties while maintaining the geometric relationships between the different parts. That's why the linear transposition of morphogenetic research in architecture is not only literal to a fault - it frequently shifts the focus from the relational issue generating introversion - but falls into the temptation at starting "from scratch", excluding the existence of the starting point that is represented of course by the millennial architectural types, rooted and developed in their own epigenetic landscape.

In this it differs from the previous and current research of many other designers that link instead of hybridizing and regenerate the existing such as, for example, in the BIG's Courtscaper, a typo-

topological hybrid between a skyscraper and a court, in the MVRDV's "pixelated" Coral Tower, in DMAA's agora of the edgier EYE film museum or in UNStudio's living court of Mirai House.

The types, that is to say, would be nothing more than a mnemonic registry, the code (DNA) of *architectural species* that the Earth's epigenetic landscape - bio-anthropogenic - has shaped with time, in a transformational continuity that was first triggered by the biological matrix (which originally turned primates' physical structure into that of the human) and later continued through the historical process, passing from the mutations generated by "primary" needs to those connected to the more and more complex, up to the "cultural" needs, that weave together biological, social and political necessities. This is the concept behind the *chreod* Sanford Kwinter refers to. But to translate this concept is essential to broaden the speech to the multiplicity of factors in architecture that make up the landscape conforming the anthropic space, without locking it up in the everlasting values - and then in the codes and conventions developed over the centuries for psycho-social cultural needs of an earlier era – but even without reducing it to a purely biological process of the elementary forms of life, through a return to prehistoric origins that sets architecture in a "uterine" figuration, designed for a man-fetus with no memory. This shows the relationship between spatial type and geographical context, where geography is defined as a geo-political interlacement that contains both the factors related to the environment and landscape (and hence the natural peculiarities in terms of insolation, ventilation, humidity, etc.), and those related to the economy, politics, uses and customs of the historicised place. Once again the appeal to the biological shape is not enough to produce architecture, since the latter, even and above all in the complex vision, can only be a "naturalized" architecture, linked to the present cultural living system of mankind, as a remedy for the self-destructive motion of marginalization from the biosphere (Morin 2007). Because space influences and simultaneously stimulates the sensory-tactile sphere of the body and memory.

The "systemic" changes of Thompson's deformations - that in the case of post-deconstructivist architecture are easily reproduced through nonlinear deformers (see modelling programs like Maya) - refer once again to a type of mutation that maintains its continuity, readability and recognition of the original figure, i.e. its geometric relations and maximum proportions, without interrupting the membership to its own epigenetic landscape, as happens in the vast majority of animals and humans, where the characteristic features of the face (two eyes, two cheeks, two ears, forehead, nose, mouth and their disposal) are always the same, making an inter-species empathy possible. This would suggest, instead of trying to start from scratch, hybridization with the biological language that can graft onto the existing architectural code the characteristics of interactivity, openness, continuity, multiplicity, interconnection, flexibility and adaptability which are now socially, economically and ecologically necessary in a symbiotic vision. And this is the reason why Kwinter, in this regard, writes of targets that are simultaneously sensual, that is psycho-somatic, cultural and socio-political. On the contrary, the bio-mimetic way tries to appeal to a pure imitation of natural shapes and in most cases does not take into account the minimum energy-environmental issues (the renewable sources such as solar, wind, etc.), the bioclimatic essential mechanics (passive exploitation of natural resources to reduce consumptions), the necessary grafts of fauna and flora (in order to regenerate biodiversity) and does not look after the choice of ecofriendly materials and technologies (which would require the renunciation of double curvature) in favour of a research fixed on the language. So a new totalitarianism seems to appear, in excluding any transition and link with the human code, leading to introverted and hostile places, *opposed* to the city, where the human being is a sort of "bacterium", a body devoid of consciousness and memory.

Extremes meet and the *mens sive animus sine intellectus* as described by Husserl as regards Descartes returns, changed in sign but with a similar outcome: a "new objectivity" which, paradoxically, as Roberto Esposito writes about the second nature ("illusions of reason") in his hyper-codification is not epistemologically far from the outcomes of "realist", i.e. neo-historicist, architecture. As a matter of fact, while from the historicist point of view reality would be only what is historically "substantiated" by the tradition of Western culture - as if such "reality" had never known and will never know any developments and transformations -, from the "parametric", that is

biomimetic, point of view "reality" would only be what belongs to the digital simulation of the "biological world". And this operation enters – as the final destination of a motion of "excessive" deterritorialization -, in a full way, into the domain of a metaphysics (Peter Eisenman, in a recent conversation with Schumacher, speaks of "conceptual" project) that means a reality as the domain of the "natural-like" instead of the "historical-like" object. Because a project that replicates two hundred year old types, techniques, shapes and styles is nothing more than *fiction*.

Therefore parametric research seems to be in a sterile contradiction with architectural tradition: it is a conflict that does not imply any development as for today's crisis of the split between subject and object, man and man, mankind and the Earth.

### 3 CONCLUSIONS: TOWARDS A ZOOTECHTURE

At a time of profound change, characterized by economic, political, social and environmental crises - inextricably linked to one another - shaking contemporary societies, it is certainly necessary to rethink critically of the role of architecture and architectural research in terms of today's transformations. It seems evident that it is unthinkable to continue reproducing and representing exactly the same traditional spatial model of settlement as if nothing had happened and nothing were happening, reproposing a model and a language that remain deeply linked to the Cartesian separation - the movement of emancipation from the Mother-Land as mentioned by Edgar Morin - between culture and nature, mind and body.

On the other hand the mannerist drift of the researches imprisoned in the closed system of a biomimetic language is cutting out of its domain the existing city and then man, culture and human identity as developed so far. Such researches - it is equally clear - end up with the abandonment of the field of reality in which body and mind, nature and culture, act and react, and propose an ephemeral evasion, an *exoticism* far from influencing the dominant cultural paradigm, of which such researches are even presented as a "strengthening".

Therefore, in the perspective of a transformation rooted in reality, the problem can hardly be to "eliminate" computational technologies from the project. This is the side taken by the all-costs Conservatives of tradition, as if the latter, which has always expressed man's differentiation, imposition and superelevation on the biosphere, had not an immense responsibility in relation to the disasters that the new generations are facing today.

On the contrary, architecture capable of supporting and promoting the creation of a community of men and ecosystems - a *zoo-community* and then a *zoo-texture* - as well as any form of art aiming at understanding, inspiring and transforming today's world, can and must take advantage of the expansion of possibilities provided by computational technologies. Through which, for example, it is possible to organize spaces according to the natural resources, or make lighter structures, using less material and energy. The desire - it has to remain clear - is to open to otherness, so as to suggest that there is not an ego opposed to another, both "non-human" to human world and, in the biomimetic vision, the existing city to the new to be created. In other words the possibility to hybridize, transform a space that so far has spoken about man, strength and autonomy of civilization, into a *crossbred* post-human space able to cancel the sense of alienation towards the rest of the planet, so as to tell of weaving, interdependence and symbiosis.

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## **SCALES OF THE INHABITED TERRITORY – FROM COMPLEXITY TO THE ART OF RESOLUTION**

**Pedro Bragança<sup>1</sup>, Marta Oliveira<sup>2</sup>**

<sup>1</sup>*Centro de Estudos de Arquitetura e Urbanismo (Portugal)*

<sup>2</sup>*Centro de Estudos de Arquitetura e Urbanismo (Portugal)*

<sup>1</sup>*pbraganca@arq.up.pt*, <sup>2</sup>*moliveira@arq.up.pt*

### **Abstract**

This research process is about the urban condition in contemporary territories and about the methods to better know and operate on it. Using the Portuguese northwest region as a rehearsal, this paper, in particular, seeks to reflect on the importance of the concept of scale for the referred process.

A school and a factory, a farm field and an old church, a huge industrial centre, a forgotten caravan, a playground and a squeaking swing: this is the regime of conviviality and simultaneity that we seek to clarify. A promiscuous organization where different people, shapes, spaces, styles and times, from small fragments to huge objects cohabit in a very intense everyday life, with a very specific ethos of urbanity; and a scattered pattern of settlement that sometimes becomes apparently confusing. But behind this appearance, there possibly lay some complex relationships that go beyond visibility, and a careful recognition of the set mentioned above reorders our original perception. To reveal this complexity, we aim to propose a proper method of approach following some major movements: clarifying the social and morphological properties of the territory; documenting its components; structuring the organization of those components in time and space; and specifying the operating procedures between them. This can be the way of building a model of understanding of what we call, in a holistic sense, the inhabited territory.

The territories in which we are working become a challenge because they do not fit into the conventional models of the urban studies: they are not city or countryside, or both at the same time; they are not suburban or eccentric or peripheral; they are not the result of a recent process of city growth and neither do they have the characteristics of dependence on a centre. And, in addition to the morphological and social diversity, they are subject to an extreme multiplication of the conditions of belonging and referencing. Each place - in its very old and material sense – unfolds itself in many new places. That's why for a better knowledge and action this debate is flanked by a continuous methodological clarification and here is where the key issue of scales enters.

If, on the one hand, these are territories that work, as an assembled machine with thousands of constantly adapting pieces (they are extremely productive and have a young, active and especially merged society), on the other, they show many weaknesses, not only in the social sphere – as poverty, unemployment, de-industrialization, displacement – but also in morphological terms. We are talking about new sediments and micro-conflicts that sometimes, by being so small, become uncountable and neglected by the institutional frames: an isolated archipelago in the fabric, an inaccessible enclave, a side of the road that is impossible to walk on, an excessively noisy environment caused by a nearby highway... Surely, it will not be by reducing the planning to the greatest degree of distance or by levelling it to a scale of abstraction, unengaged with the concrete and material reality, it will be possible to advance in the mentioned challenges.

What we propose in this research is to find proper means to approach the inhabited dimension of the territory. Not as a "small is beautiful" manifesto, but to promote different variations and shifts of

scale that capture the movement, the everydayness and the transformation dynamics over time. With the permeability of that knowledge we seek to expand the limits of understanding to produce a denser explanation of the problems of the contemporary urban condition. The use of the creative process to face these problems could be called the Art of Resolution.

**Keywords:** territory, place, inhabited territory, approach

## 1 INTRODUCTION

It has proven to be increasingly necessary to understand the specific regimes of inhabiting and building in eccentric territories. That is the subject of the research that supports this presentation, common to many others that have been made recently. The presupposition is clear: if we assume that these kind of urban territories put a problem that has in itself its own value and that, in addition to being different from the problem of the city, is not defined by simple opposition to it, we must also accept that they require appropriate instruments of analysis, either formally, or in the social and cultural sphere.

In most cases, urban territories represent an enigma and a difficulty for disciplines such as Architecture, which proposes to reflect on them. Hence it is both important and frequent to discuss about the territorial condition and the ways of observing it, that is, about the instrumental condition of territorial analysis. Through the following points, and taking into account the theme of the present edition of EURAU, we propose to reflect precisely on this issue and, particularly, on the eventual contributions that a deepening in the idea of scale can offer to our research process and its objectives. The intention is to put as a hypothesis and test an approach movement to the inhabited reality of the territory, followed by a variation at several levels. It is our initial belief that this movement is more than less advantageous to advance in the knowledge of contemporary urban problem.

To this end, this presentation will come under the next alignment: firstly, the idea of apparent chaos or of territorial dystopia, equally resulting from insufficient knowledge or specification, of failed approaches or failed attempts, or the prevalence of the ideal of the city; secondly, territorial complexity as a posture to adopt before uncertainty, variety and heterogeneity; finally, the inhabited condition of the territory as a key concept to reverse the pejorative perception of *apparent chaos* and as a way of understanding and operating in reality.

## 2 A FRAME OF DIVERSITY

We seek to intercept these global notions with considerations about a specific territory. The Portuguese northwest coast serves, in this research as in this presentation, as an example or a rehearsal space.

In the Portuguese northwest coast as in many similar territories, while the cities centres – Porto, in this case – were facing a variety of problems – such as soil value speculation, gentrification, congestion, ... -, the outer areas emerged as socially inclusive and economically central spaces. Maintaining urban features, these eccentric territories were increasingly occupied and became the support of most of the population. This is, basically, the main reason that confirms the need to produce specific studies about it. It can be described in some fundamental aspects, partially or entirely common to other European regions, but that distinguish it as a separate entity in the Iberian peninsular context and particularly in the Portuguese context.

Firstly, it must be considered an extremely scattered and spaced pattern of occupation (only punctuated by some urban centres of medium size), which is mainly due to three factors: the highly favourable natural conditions (fertile soils, a moderate and wet climate, an extensive water network, hills and natural basins with good sun exposure, ...) that since protohistory have made possible the spread of thousands of small cells of inhabiting, embryony of others that have successively reproduced themselves; a historical process with important stages of property

compartmentalisation, as well as a transmission regulatory regimen that led to its infinitesimal parcelization and to discontinuous pulverization of constructions; and, lastly, a constructive tradition based on the individual, highly rooted and extended in time, distributed in a territory that was built on continuity and by several hands, without any radical event of interruption and with few or slightly intrusive centralized or planned interventions, by action of the State or another institution. Through successive layers that have been incorporated and accommodated to the existing reality over more than two millennia of full activity and full construction, the northwest Portuguese coast has become a dynamic body with a distributed, multi-located intelligence.



Figure 1. The frame of diversity and the scattered pattern of the territory (Vizela valley, Portugal)

This factor is also in the origin of a wide range of programs, corresponding to a similar simultaneity of uses and to a fluidity between functions at first sight irreconcilable: an elementary school from the beginning of the 20<sup>th</sup> century contiguous to a technological industry, an agricultural field of archaic production next to a parochial church, a large football stadium, an abandoned caravan... It is a way of life and a territorial matrix, which, being urban, retain traces of an ancient rural history, either in practices or in the materials. That is: several simultaneous temporalities and cultures that coexist in times, compacted in the same space, without special predominance of one over the other. One characteristic to which a very diverse society in its composition of classes and territorial miscegenation also corresponds, organized and framed by both the division of labour - mainly industrial, which came to be predominant, from the 19<sup>th</sup> century on - as well as local organisations (clubs, associations, cooperatives), or, finally, by religious bonds of Christian tradition.

The structure of scattered settlement is supported in an extensive and dense capillary network of infrastructures, which incorporate themselves in the territory, also over generations. They are divided into the oldest, originated from a Roman-medieval tradition, and the most recent, either created in the period of developmentalism and liberal rise, in the 19<sup>th</sup> century, or created over the last quarter of the 20<sup>th</sup> century, especially since 1986, when the European Union Budget started to back up its construction. This network, formed by vicinal accesses, municipal, district or national roads and highways, has acted continuously over all the places, which have been integrated into a

suprarregional body. But it is also in this network that now lie many formal conflicts, overlaps and cuts of scale that have remained unsolved in the voracity of the transformation. An isolated urban archipelago, an enclave in the middle of two highways, ... – it is also in these spaces that many people live, sent to oblivion or fading away. Associated with this phenomenon there has been, over the past decade, the decay of a highly productive industrial scenario that had become matricial to the organisation of social and economic territory. This tissue of industries, closely linked to manufacturing, was based on some specific sectors, such as textiles, and a long tradition, which has been present since the 19<sup>th</sup> century.

Embedded in an ancient agricultural structure, these industries represented a continuity of older production profiles, i.e., we are before a process of *industrializzazione senza fratture* [1] (continuous process of industrialization), which extended practices and pre-industrial workshops knowledge to industrial manufacturing and which, through the intelligent combination of a geography of raw materials, labour force, means of production, distribution and energy, achieved a high efficiency. This efficiency has recently been interrupted by the crisis and depression that crosses both the territory and the society and leaves them both in an expectant state. Old industrial complexes, memories of a highly productive everyday life, are now ruins exposed to abandonment, or owned by other sectors that contradict or disqualify its initial vocation. A state of emergency that may be, however, the most appropriate moment for integrated reflections of context, which can make a kind of balance and, at the same time, design new ways of acting for the future.

### 3 THE DYSTOPIA OF URBAN TERRITORY

Even though these territories are a potentially infinite work field, even observing the needs and scarcities that are still unsolved and for which architects can develop solutions, a certain prejudice about them remains in our discipline. We often speak of chaos and entropy; we often speak of “ghettoization”, marginalization, poverty and exclusion, and it is said that the territory is the domain of the ugly. For many, the “periphery” is an image that does not matter and from which they distance themselves in an almost militant way. In fact, the very definition of periphery already indicates a certain contempt that is applicable, in general, to the “suburbs” and other similar terms. When someone says “the periphery” or “suburb”, refusing to specify a little more the concepts, they seem to refer to a spatially, morphologically and socially homogeneous entity only inhabited by “the others”. This is the risk in which we may incur when viewing an object from the outside and without equipping ourselves with appropriate instruments to understand it. Laura Vaughan [2] speaks precisely of this risk and refers to both the condition of otherness and to the one-dimensional suburb as mythologizing processes of urban spaces.

It is also often discussed “what is acceptable to the peripheries” and “what is acceptable to the centres”. This level of variable admissibility, dependent on the geography or, more properly, on the urban system and its symbolic density is the greatest proof of the prevalence of the dystopia of the urban territory. But beyond that, this relativism has implicit the recognition that qualities like freedom or wide admission remain in the called “periphery”, resulting from relief from over-regulation and congestion that the centres are mostly subject to.

In the case of the Portuguese northwest coast, the conviviality and miscegenation regime, relieved of the city spotlights and protectionism, seems to result in a kind of harmony that contains some operating principles, even though insufficiently clarified. There is a kind of common happiness that can be proved, for example, with the fact that the eccentric municipalities are the ones with a younger population, higher productivity indexes and business activity indexes and less exposure to extreme poverty, which is attenuated on the one hand by self-production and on the other hand by the networks of solidarity and neighbourhood that reproduce and transmit themselves over successive generations.

We wonder, then, about the reasons that may be behind this so pejorative feeling that resists about the urban territory. It may be essentially due to two factors, inextricably linked between themselves: the first is related to the prevalence of an ideal of city, or rather, a Eurocentric idea of *the good city form*, which, to some extent, achieved the status of paradigm and is rooted in common sense. That



means to try to observe the whole urban territory through the same lenses with which we overlooked the city and to try to find the same categories there: compactness elements, geometry, blocks, square, etc.; the second arises from the difficulty in understanding a frame that is adverse, from approaching to a fact that is different, and from producing an "Anatomy of the sprawl" [3], as Brenda Case Scheer suggested [18], mapping its elements and describing the various systems that lie there - that is, the logics that lie behind the fragmentation and that give it a clear sense.

## 4 BEYOND THE APPARENT CHAOS

The word or concept of chaos is particularly significant if it is understood from a wider angle. Eduardo Lourenço, an essential philosopher of Portuguese contemporary thinking, states that "while it lasts, what we call chaos evokes the idea not only of confusion and disorder of the elements, but a kind of inability to understand and even less dominate a state of affairs, of the world, society, history, where it is not seen the shadow of an order." [4] In fact, the apparent chaos does not result from a property of things themselves, but from our perception of them, or the absence of it.

The pursuit for an order, that is, the search for a single rationality to reverse or counter the apparent chaos, or the attempt to order the chaos in the design process always reveals itself unfruitful.

### 4.1 The scale of *Extensive Urbanization* – a first attempt

Coinciding in the understanding that there is a lack of studies that systematize the knowledge and adequately describe the urban territories and in a precursor attempt to respond to this need, a group of authors from countries of southern Europe, such as Portugal, Spain and Italy, have produced important work over the last decades. They are mainly concerned with issues of analysis of urban form and territorial pattern and they advance with a new taxonomy and a wide variety of words hitherto little used in the thought of the territory. Their goal seems to be to defend a new scale for the contemporary territorial reality.

In the context of the Portuguese northwest coast, the expression "Território Difuso" (Diffuse territory), especially from the 90s and 2000s, gained a lot of importance in academic circles. Several authors, such as Nuno Portas [5], Álvaro Domingues or Manuel Fernandes de Sá, found a structure of similarities with the context of Veneto (Italy) and Catalonia (Spain) and with the literature of *Tre Italie* [6], and defended the need to find a "geographical pertinent scope to understand the multiple dimensions that structure the dynamics and the processes" [6] of contemporary territory transformation. This is the domain of extensive urbanization.

The "Extensive Urbanization" [7, 8] is the device of scale and operation that this line proposes in order to recognise the processes of territorial reconfiguration of great dimension, for example, the meta-transformations of infrastructures. The intention of maintaining a degree of very considerable distance in relation to the object-territory finds in other times and in other initiatives some parallelisms; however, here this group proposes the fixation of an observation post from very far away, from a distance that allows to understand all the great scale at once in a very wide geographical unit that is *extensive* and not *intensive*. On the basis of this proposal is the assumption that the contemporary transformation settles on territorial forces that act in a standardized way throughout space and assimilate the local specificities, making them less relevant compared to global phenomena. This is the same as saying, in other words, that, for this current, places are in a continuous process of erosion [8] and that the knowledge of their properties becomes irrelevant compared to the knowledge of the properties that extensive urbanization allows to observe.

But other perspectives, quite distinct from this one, have been pointed out regarding the issue of scales of understanding. They call into question the idea that distancing the point of view from the object-territory may somehow be more informative than the approach to concrete reality. One of the authors who stresses the need to promote both multi-disciplinary and multi-directional approaches to the urban territory is Laura Vaughan [2], already mentioned above. Ruth McManus [10] also emphasizes the need for new approaches to the suburban territory through its history.

Broadly speaking we can say that all these contemporary authors appear in the sequence of a long tradition of Place, a key concept that frames in a theoretical and practical structure the old question of approaching. "How can the place be a contribution to addressing the complexity" – is the question we must seek to answer, explaining, first, our understanding of complexity and, second, the concept of Place itself.

## 4.2 The places of territorial complexity

Regarding the idea of complexity, the words of Edgar Morin immediately arise, when he argued that instead of an order or a disorder it is in the concept of organisation – the result of the convergence between the two – which we should focus on. This principle is at the origin of complex thinking, a potentially useful cognitive tool to build an attitude towards the uncertainty and unpredictable conditions of the urban territory. The original sense of the word "complex" itself (from the Latin: "*complexus*") is extremely informative: "what is woven together." As Morin says, to think the complexity is "to respect the common fabric." [11]

Many [12, 13] conceptions of territorial complexity were created since Robert Venturi's Complexity and Contradiction in Architecture [14]. Overall, they coincide in the common understanding that there are no single processes for the construction of the territory, and thus there also is no single angle for its understanding.

As the disciplinary knowledge deepened and specialized into increasingly circumscribed theoretical niches, the tendency to pursue global explanations from specific phenomena advanced. We ourselves, architects, frequently fall into a contradiction with our own formation and carry out excessively focused studies in built forms, ignoring their meaning, their condition and their roots in natural, political and social circumstances. The truth is that the attempt to find a singular rationality always failed, and that is because the territory is a plural thing and the phenomena to be taken into account for its understanding are multiple and regularly go beyond what is reasonable or what is rational. Grataloup and Margolin speak about the "territorial puzzle" [15], "a network of places forming social and economic spatialities defined by a large variety of relationships with extent and duration." [16] This simple statement is what seems to be in a consensual basis of the idea of territorial complexity, which is, basically, an approach to the urban problem.

Addressing the territorial *complexus* implies to accept that it is made up of many different parts – components – mutually interacting between themselves. Being physically inseparable in reality, these components are organised by systems that we can infer from our observation post: systems of production, consumption, distribution, solidarity, religiosity, work, property, ... While defining the corpus of these systems and their *specialization* in the territory, we are facing the clew that used to be called the "apparent chaos" and we are proposing to dismantle it.

We are back in the territory of the Portuguese northwest coast. In the search for an organisation or, more properly, for different organisations one can reflect, for example, on the production system set around an industrial plan. It includes the collective of workers that shapes the work force, the feedstock, the customers, ... - but also the specific physical structures of each of them and the circuit formed between them all. As it can be seen, these systems aren't autonomous and there is no geographic unit that separates them. They necessarily interact with the social systems of the communities and, in many cases, even with the religious, political or cultural systems. But although the promiscuity among them is total (and this consideration needs to be constantly in mind), the identification of each can be advantageous as it allows us to create visibility schemes and to reveal the reality of everyday life.

Systems are variable entities, merged and overlapped, which relate to each other and globally reconcile themselves in the place. That is why we are able to say that the place is an access to complexity [17], that is, by comprehending in itself all systems, place becomes an especially revealing instance and provides a kind of information that probably no other entity can provide. But it is important, however, to underline the need to update the concept of place, whose mutation is as fast as time itself. Today, places can no longer be seen as closed units from a morpho-spatial point of

view – it is necessary to understand their connectivity and how they interact with other places and it is considering the new data on it that the place can become an approximation mechanism to the inhabited condition of the territory.

## 5 THE INHABITED TERRITORY AND THE ART OF RESOLUTION

The inhabited condition of the territory is a methodological statement and simultaneously an ethic of the design process. To be achieved it is needed a contemplative and lengthy work that can be synthetically explained in three points: first, we need to focus our discourse in what is related to life in the territory [18], as it is appropriated, circulated and named by the people who inhabit it – the urban territory is not the space of the others but the space of the most, including ourselves; then, its representation can never lose the *sense of the concrete*, that is the material recognisability of things that compose it. Even a more abstract analysis should rise from a reality principle and never abandon it, under penalty of becoming merely graphical and without tangible value to the represented reality; finally, it is necessary to understand the problem in space but also in time, accept that the forms are not static and, therefore, to admit to incorporate the transformation process.

It is important to clarify that the inhabited territory is not a matter of scale. Or rather: it is not a matter of *scale* in the singular, but rather *scales* in the plural. There isn't the scale of the inhabited territory – there are, as the title of these text states, *scales of the inhabited territory*, that hypothetically can be all. On this issue, it immediately occurs to us that briefing of Tom Emerson entitled "Making and the territory", where he said that "to make a building is to make the territory. From a single step adjusting ground to a humble windowsill – he goes on –, design crosses culture with climate to define how we dwell. And whether built or grown, our environment is designed and constructed in a combination of modest fragments and great ensembles." So, we would say, things do not happen at different scales – they just happen. No matter how simple or how big it can seem, each act of transformation will participate in a joint and indivisible dynamic of "modest fragments and great ensembles" [19]. To be perceived, this dynamics must be faced as a whole. The *making* as a constructive, cultural and procedural practice of everyone, of everywhere and of all times is the glue that connects that whole.

By putting the problem through this perspective one can realize why the place as an approach mechanism to the inhabited territory is not hostage of any particular scale, either small or local. There are not, as often it is said, a contradiction or opposition between the scope of places and the scale of urban meta-transformations, as if there was a clash of times. To reorder this perception it seems necessary, therefore, to go further with the concept of place and to understand it less as a socially closed and territorially delimited entity and more as a contemporary form of organisation of life in the territory, a porous body in the established relations with the near and distant context, socially open and without spatial or morphological borders.

What is important is to incorporate what we call the Conscience of Place in the numerous scales of observation and operation, whether they are more approximate or more distant, subjecting them all, through this way, to a strong bond with the inhabited condition of the territory. And so, instead of trying to think or represent the place, instead of traveling *from space to the place and back again* [20], we would say that this work is rather to travel in the territory through the place. The whole territory, regardless time and scale, can be understood through the place.

Such intention can be achieved in various ways. The most plausible, from our point of view, is a strategy of permeabilization applied to the numerous scales of representation. This consists in transferring information between the most distant approaches and the closest ones. As Tom Emerson remembered, a single step adjusting ground to a humble windowsill is itself an act of transformation of the territory. And all those "insignificant" acts, as a whole, form an extremely significant dynamics. In this sense, the omission of this dynamics in the most distant overviews can lead to an irretrievable loss of relevant information. In the same way, we recall the conflicts caused by different levels of infrastructures that we mentioned above, when we described the Portuguese northwest context. An old neighbourhood sliced by a new highway, for example, represents a break

or a mismatch between various scales and corresponds to the loss of the inhabited sense of the territory.

The solution may be, from our point of view, to reconcile the relationship between both architectural and urban operation. That is, if we put the same conviction, the same rigor and the same lengthiness in the representation of the common elements of our everyday territory [21] that we put, for example, in the representation of a work of Palladio, then we will certainly obtain an advanced degree of information and also new data that can be available to all scales.

To act in urban territory is to act in an existing reality – a notion that has been especially underlined, given the current circumstance of crisis and scarcity. The contemporary challenges point to reconciliation and conflict solving, here and there, rather than looking for a new unitary rationality that would solve all the existing problems at once. This is also why it seems clear that it is urgent to reinforce the inhabited sense, entering a new agenda for places as for the Architectural praxis: care, repair, rewire, reuse and transform the existing reality through the existing reality. That could be the Art of the Resolution.

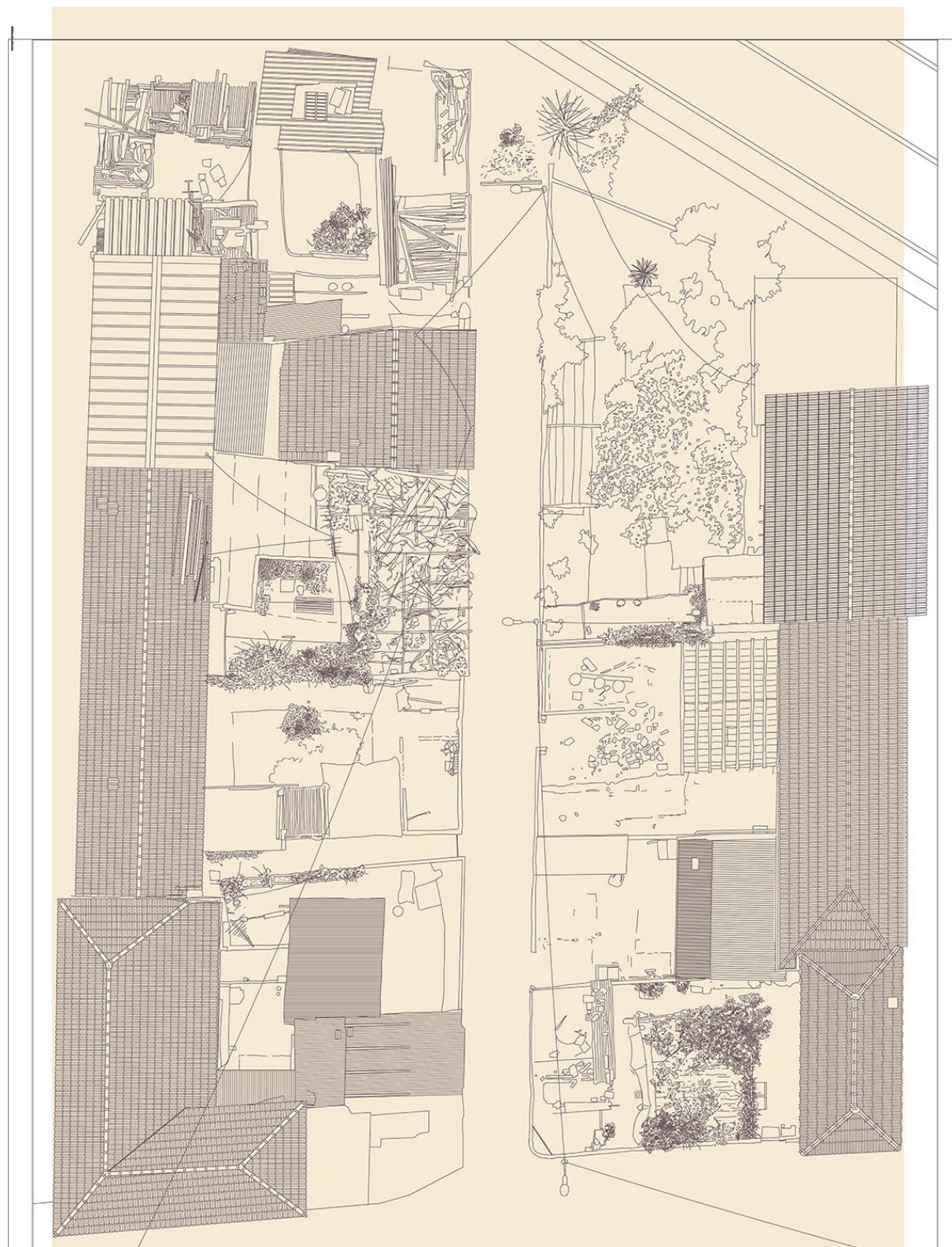


Figure 2. A drawing that attempts to approximate to the inhabited condition of the territory. A consciousness that can be transferred to any scale. (Alto dos Oliveira, Portugal)

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## DISPOSAL AS OPPORTUNITY FOR NEW PUBLIC SPACES:

### THE STUDY CASE OF RIBEIRA DAS NAUS IN LISBON

**Giovanni Zucchi**

*Università degli Studi della Basilicata (ITALY)  
giovannizucchi86@gmail.com*

#### **Abstract**

The frenetic movement of contemporary society, in which the positional values are extremely changeable, leads to the fundamental importance of disposal and reuse as characters which begin with the changes in uses. The issue of dismissed areas has now expanded its meaning across Europe to overlap with a new way of implementing urban and regional planning, acting as the central node of debate and research of the contemporary city.

Today the territory has become a precious resource and an opportunity for transformation is provided by filling the gaps produced by the explosion of the city and many of these gaps are represented by the abandoned areas requiring a careful reflection on the transformation of these domains.

The disposal generates resources, making areas available for new uses, often located in strategic places in the city. For their positional value, these areas have been since the early 80's, a fruitful ground for research and architectural experimentation, encouraging the public and private investments. It must be highlighted, however, how the disposal process was cyclically repeated in the city through the centuries, in the spirit of renewal and re-use, improving the city itself. The history of the city, in fact, is accompanied by the history of disposal, which is the element of urban regeneration and with it the city evolves finding new spaces and forms.

The disposal phenomenon in recent years has returned to the towns large areas creating real opportunities for urban revitalization.

The post-industrial disposal, in particular, focuses on the issue of industrial archeology, which wants to leave a trace and a memory of productive activity. So this created an important architectural theme of confrontation with the big "industrial machines" and their conversion into new public uses.

The paper proposes an emblematic example of modern disposal, the Ribeira das Naus in Lisbon as study case, a recent urban space design in the city center on the Tagus River by the Portuguese office PROAP.

The special feature of this new urban space for the Portuguese capital already appears in its historical condition, as a place designed for shipyard, as the name Ribeira das Naus suggests, where the Tagus River naturally entered and created a port area. This is why always existed a strong relationship with the water in this place and a state of complete absence of public space, in favour of private spaces for the shipbuilding work. In this sense it is interesting to understand the relationship with other areas conterminous of the city: the Praça do Comercio and Cais do Sodré.

The Praça do Comercio, located next to the Ribeira, is a space which relates directly to the water and is a crucial space for the city's urban life. On the other side, the Cais do Sodré area has a different shape because the presence of large buildings in direct contact with the water denies any form of relationship with the river. We can refer in this sense the Palácio Royal Court, which was in the area until it was destroyed in the '700 and in this area now there are the buildings of the European Ministries. The Palácio Royal Court was very famous in the history of the city and therefore represented in many Lisbon historic pictures, where is possible understand how this building was massive and how it dominated the riverfront, cutting out all the area of Cais do Sodré from any form

of public space on the river. This condition of contact with the Tagus only occurred in modern times. In this sense, the area of the Ribeira das Naus which is in the middle of these two different urban conditions, at the moment of the project, needed a very thoughtful intervention which respected the meaning that this space would assume in the sequence of public spaces along the river, not neglecting the historical identity and the specific character of the area which still keeps elements such as "Doca seca" or dry dock, which refer immediately to the historical function of the place. So PROAP structured a project, which, intended to donate to this area the public value and river relationship that never has been able to have in history.

The focus of the project was certainly the research of the meaning of this place in Lisbon history, widely documented by historical maps and drawings, which trying to interpret the place through its palimpsest, recovering the overlap of signs that history has left in order to read the city as it was and as it is today, thus defining a new space, public and strongly linked to water.

This relationship is directly established with the design of the bank through an abstract gesture that forms an Urban Beach with a sloping design of the ramp that goes up into the water and measures the fluctuations of the tide. Another gesture that directly relate the project with the water is the opening of the Doca da Caldeira in which the river enters the space, overcoming the gap produced by the road.

The two large green ramps are a reminder of the place's history because they symbolize the original ramps shipyard for the ascent and the descent of the ships in the water. These two great podiums represent the center of the space and one of the attractor for who attends the area. Their form and arrangement also puts the attention on what is the public space and its relationship with the river giving their backs on what is the Arsenal building, adding a new contemporary layer to what is the layering of the place.

Finally we can say that, as POAP intentions, this space is intended as an elementary space, almost empty, which acts as a support for the different functions which over time can be integrated and modified. A flexible void, opened to various future uses and so can define a contemporary way to look at public space.

**Keywords:** disposal, public space, void, open project

## 1 THE ISSUE OF DISPOSAL

The frenetic movement of contemporary society, in which the positional values are extremely changeable, leads to the fundamental importance of disposal and reuse as characters that keep pace with the changes in uses.

Bernardo Secchi looks at the contemporary city as a highly unstable system, constantly hovering between blending and disposal and where positional balances are easily variable:

*"Place of blending, the contemporary city is unstable by its nature; space of constant changes which give rise to the formation of critical situations and transitional solutions: houses become workshops, workshops become theatres, schools become homes, gardens become parking lots, quiet streets become routes of heavy traffic. The exit from modernity, as in the ancient city, is also disposal, transformation and reuse of many parts: disposal of factories, schools and barracks, the docks, gyms, airports and railway stations. Blending and disposal, chasing each other, destroy positional values and constantly propose new cultural problems: degree of tolerance, compatibility and incompatibility against the other, its practices, its uses and activities, noise, odor, overlapping and intersecting temporalities".<sup>1</sup>*

The issue of dismissed areas has now expanded its meaning across Europe to overlap with a new way of implementing urban and regional planning, acting as the central node of debate and research on the contemporary city.

Today the territory has become a precious resource, so an opportunity for transformation is provided by filling the gaps produced by the explosion of the city, many of these gaps are represented by the abandoned areas; it is therefore required a careful reflection on the transformation of these domains.

*"Brownfield sites are places where time has suddenly stopped for the rapid obsolescence of productive processes, suddenly put out of business and that devitalized precincts turning them into monofunctional black holes of the city, slightly permeable to unwanted and not expected processes of re-naturalization and partial reuse by disliked minorities."*<sup>2</sup>

The disposal phenomenon in recent years returned to the towns large areas generating resources, making available areas for new uses, often centrally located and strategically within the urban fabric creating real opportunities for urban revitalization. For their positional value these areas have formed since the early 80's a fruitful ground for research and architectural experimentation, encouraging the public and private investment. It must be highlighted, however, how the disposal process was cyclically repeated in the city through the centuries, in the spirit of renewal and re-use, improving the city itself.

### 1.1 The urban regeneration in the history of the city

*"The disposal belongs to the history of the city, both as continuous phenomenon of substitution and as abrupt abandonment that suddenly changes the urban geography."*<sup>3</sup>

The history of the city, in fact, is accompanied by the history of disposal, which is the element of urban regeneration, and with it the city evolves finding new spaces and forms.

Reuse as well as ideological character is also characterized by an economic value as a resource at no cost, so we can see as always in the history the dominant culture of the past tended to build its civilization on the ruins of the previous one.

*"When in the Napoleonic era many convents and religious buildings are decommissioned, barracks, schools, hospitals, prisons, libraries, public museums and offices occupy them building with the city and with the immediate around relationships other than the original. Enclosed spaces are open to the public and public spaces are closed."*

*Large part of medieval city is built on the sites, between the buildings and within abandoned spaces of classical antiquity, recovering the materials, contaminating them with new social practices. The disposal does not only imply the modification of the distribution of activities within the urban space."*<sup>4</sup>

The trend to reuse the pagan temples in the construction of new Christian churches characterizes much architectural activity of the Middle Ages, is famous the case of Naples with the San Paolo Maggiore church, which between the end of eighth and early ninth century, stands on the temple of Castor and Pollux in the center of the old market square.

The church then following the earthquake in 1591, which was partially destroyed, was completely restored and brought the actual baroque form and with the placement of two columns of the ancient temple to the sides of the facade.

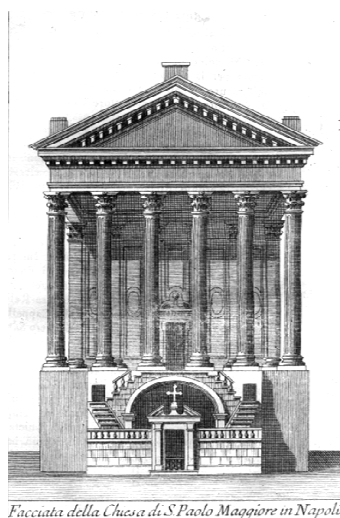


Figure 1. San Paolo Maggiore church in Naples

A similar fate touches in the Middle Ages to the Parthenon, which underwent a series of lootings and was used as a quarry for materials, then becoming Christian church under Justinian, and mosque in the Ottoman period.

This trend that accompanied the history of the cities since their establishment is added, during the nineteenth century, to an extension of the historical heritage concept, changing the concept monument- document, defining the "heritage", which is not limited only to those goods with shared value to hand down (the monuments), but to all goods of the past, both cultural and natural.

*"The birth and evolution of the idea of urban heritage goes back to the cultural shift that transforms the material cities in the object of historical knowledge: this conversion took place in the late nineteenth century, following the transformation of the industrial city, and to the inevitable effects on urban space due to the upheaval of the traditional environment and to the use of various and particle scales."*<sup>5</sup>

In this regard it is important to underline the contribution of the the culture of restoration in the nineteenth century, with figures as Ruskin, Morris, Sitte, Riegl and Giovannoni, who questioned on the issue of the restoration of the urban scale and whose theories led to the new vision the city-heritage, recognizing environmental values.

*"To conserve, means in the first instance to identify the values implicit in cultural heritage and in the relations between the heritage and the city; but it means also identify strategies for their support and their continuity, in relation to the meanings that the traces of the past take over new requirements, new needs and new forms of community life."*<sup>6</sup>

The tendency for disposal was repeated cyclically in the city through the centuries, in the spirit of renewal and re-use.

## 1.2 The post-industrial disposal

The post-industrial disposal in particular focuses on the issue of industrial archeology, which wants to leave a trace and a memory of productive activity.

So it is created an important architectural theme of confrontation with the big "industrial machines" and conversion of these into new public uses.

The issue of the disposal in the last half century has taken a primary role in the evolution of the structure of the cities, for two important reasons: first, industrialization has occupied areas that today are located in the urban tissue; second, the disposal is an important ground resource for the city.

*"Since the seventies of the twentieth century it was disposing the major part of the urban heritage built mainly between the late eighteenth and the first half of the twentieth century, the disposal of a significant number of large factories located in major urban areas and the new disposal of old buildings that had housed some important equipment of the modern city that are now looking for more expansive spaces to better organize their production cycle"*<sup>7</sup>

In recent years the disposal returned to cities large areas creating real urban revitalization opportunities.

The post-industrial disposal, in particular, focuses on the issue of industrial archeology, which wants to leave a trace and a memory of productive activity.

This creates an important architectural theme of confrontation with the big "industrial machines" and conversion of these into new public uses.

The case of Bagnoli in Naples is striking for the large presence of industrial archeology, but there are also fine examples of conversion in Europe such as the Tate Modern Museum in London, born from the conversion of the old power plant by Herzog & de Meuron.



Figure 2. Urban park of Bagnoli (ex Italsider), Naples, Francesco Cellini

*"The traces of the industrial city, in a definition of conservation as the project of the existing, fall within the concept of heritage with a different character than what is traditionally indicated artistic-cultural heritage: the disposed city belongs to the near past and aesthetic values in which it is not easy to find elements of a shared artistry. However the look on disposal of industrial complexes, industrial districts, mixed fabrics, the city-factory, claiming a specific and invariant character evaluation and selection critical work, because the heritage of sediments and testimonials can be an element of continuity and permanence in the urban image transformation processes"*<sup>8</sup>

The disposal involved also large infrastructure inside the cities, such as railway lines, or docks. In this regard it should be noted the project for the New York High Line where it is made a linear park along the disposed elevated rail line.

Another example may be the project of "Central Spine" during of the Winter Olympics of 2006 in Turin, which set off from the disposal of part of the railway line to achieve an avenue that connects the city from north to south.

The disposal of long stretches of docks inside the city, shows a current topic such as Waterfront. Many port cities have often been separated from the sea with large port calls than with their enclosures have created a real gap between the city and the sea.

The disposal some of these port calls allows cities to reclaim part of the sea that never had, the theme so often affects the mending of the city with the coast through punctual interventions. Today there are so many examples of the waterfront redevelopment in European cities such as Barcelona for the 1992 Olympics or Parque das Nações for Lisbon Expo 1998.

Historically the city has indeed tried to show its best parts on the river by building monumental architecture along the banks, as well as representative urban spaces, parks and gardens.

This privileged status, however, has often clashed with the utilitarian purposes of the river, which led to the construction of ports and industrial establishments along large tracts of the waterfront, forming a break between the city and the river landscape. The disposal of many productive implants leaves large empty areas close to the rivers, granting an important opportunity in urban renewal and landscape improvement. In this way the river is a great resource for the city for the dynamic transformation of its image and its spaces, through a renewed approach to the landscape.





Figure 3. Parque das Nações, Lisbon

The paper proposes an emblematic example of modern disposal, the Ribeira das Naus in Lisbon as study case, a recent urban space design in the city center on the Tagus River by the Portuguese office PROAP.

## 2 THE STUDY CASE OF RIBEIRA DAS NAUS IN LISBON

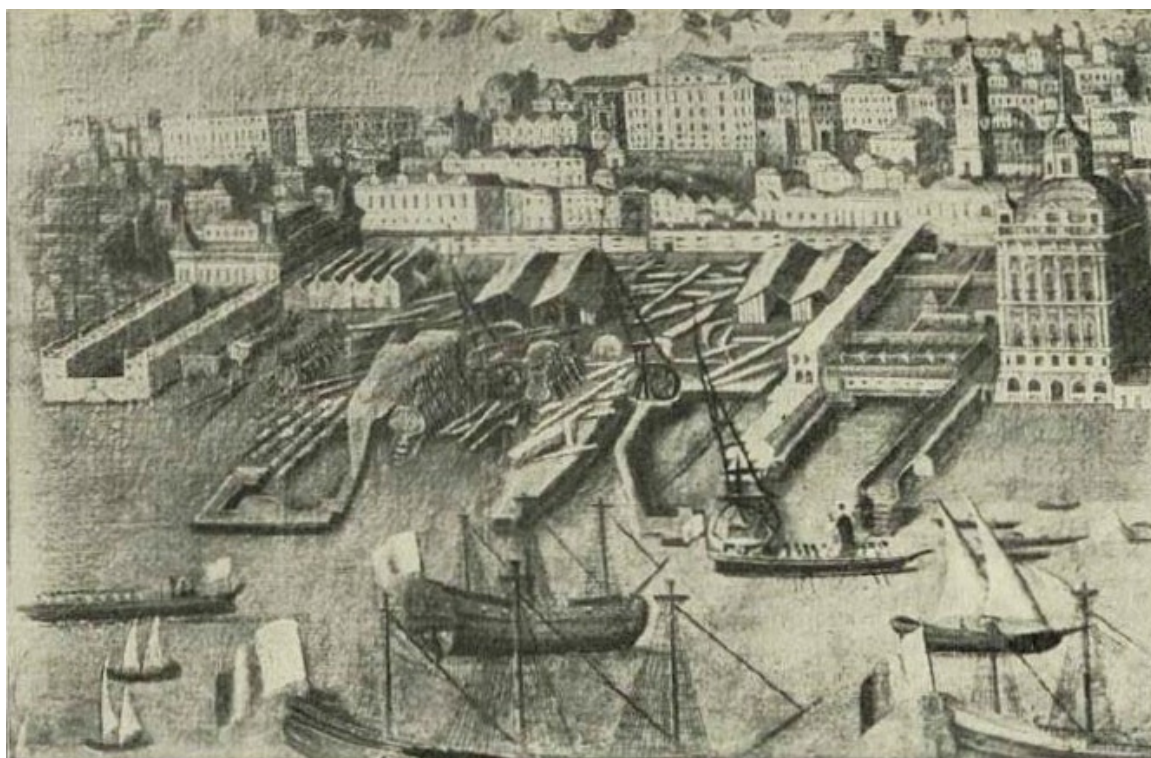


Figure 4. Ribeira das naus in Lisbon, sec. XVII



The special feature of this new urban space for the Portuguese capital already appears in its historical condition, as a place designed for shipyard, as the name Ribeira das Naus suggests, where the Tagus River naturally entered and created a port area.

This is why always existed a strong relationship with the water in this place and a state of complete absence of public space, in favor of private spaces for the shipbuilding work. In this sense it is interesting to understand the relationship with other areas conterminous of the city: the Praça do Comercio and Cais do Sodré.

The Praça do Comercio, located next to the Ribeira, is a space which relates directly to the water and is a crucial space for the city's urban life. On the other side, the Cais do Sodré area has a different shape because the presence of large buildings in direct contact with the water denies any form of relationship with the river.

We can refer in this sense the Palácio Royal Court, which was in the area until it was destroyed in the '700 and in this area now there are the buildings of the European Ministries.

The Palácio Royal Court was very famous in the history of the city and therefore represented in many Lisbon historic pictures, where is possible understand how this building was massive and how it dominated the riverfront, cutting out all the area of Cais do Sodré from any form of public space on the river. This condition of contact with the Tagus only occurred in modern times.

In this sense, the area of the Ribeira das Naus which is in the middle of these two different urban conditions, at the moment of the project, needed a very thoughtful intervention which respected the meaning that this space would assume in the sequence of public spaces along the river, not neglecting the historical identity and the specific character of the area which still keeps elements such as "Doca seca" or dry dock, which refer immediately to the historical function of the place.

So PROAP in 2009 structured a project, which, intended to donate to this area the public value and river relationship that never has been able to have in history.



Figure 5. Ribeira das naus in Lisbon, Urban Beach

This important redevelopment for the city of Lisbon, represents an urban operation implemented through a diversified use of the ground as architectural device, which as we shall see later develops in different forms.

The focus of the project was certainly the research of the meaning of this place in Lisbon history, widely documented by historical maps and drawings, which trying to interpret the place through its palimpsest, recovering the overlap of signs that history has left in order to read the city as it was and as it is today, thus defining a new space, public and strongly linked to water.

This relationship is directly established with the design of the bank through an abstract gesture that forms an Urban Beach with a sloping design of the ramp that goes up into the water and measures the fluctuations of the tide. Another gesture that directly relates the project with the water is the opening of the Doca da Caldeira in which the river enters the space, overcoming the gap produced by the road.

The two large green ramps are a reminder of the place's history because they symbolize the original ramps shipyard for the ascent and the descent of the ships in the water. These two great podiums represent the center of the space and one of the attractor for who attends the area. Their form and arrangement also puts the attention on what is the public space and its relationship with the river giving their backs on what is the Arsenal building, adding a new contemporary layer to what is the layering of the place.

Finally we can say that, as POAP intentions, this space is intended as an elementary space, almost empty, which acts as a support for the different functions which over time can be integrated and modified. A flexible void, opened to various future uses and so can define a contemporary way to look at public space.



Figure 6. Ribeira das naus in Lisbon, the two large green ramps

### 3 CONCLUSIONS

In conclusion it can be observed that the growing trend towards disposal in the contemporary city can represent an important opportunity not only in economic and constructive terms but also as real occasions of revival of the public space in the city, there where for many years this was denied.

In this way new developments for the project of the urban space can be open, which confronting with the complexity of the topic of brownfield sites can find new input and formal paradigms that can give life to unprecedented urban images.

The operation of the Ribera das Naus in Lisbon is thus a shining example, it represent an unique opportunity to give the city a public space in a direct relationship with water, and that in a very short time has become one of the busiest places in the city .

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## HOMOLOGY AND ANALOGY. TWO TECHNIQUES FOR THE LANDSCAPE PROJECT

Guglielmo Avallone<sup>1</sup>

<sup>1</sup>Università degli Studi di Napoli "Federico II" (ITALY)

*gug.avallone@hotmail.it*

Some of the major causes of Italian landscape's erosion phenomena can be found in the alteration in the water system and in a disorderly land use. Despite the presence of tools and actions for a wide and precise urban - territorial planning, the Belpaese continues to convey "lack of landscape", and this regularly can be recognized by the news: landslides, floods, defacements, abuses that disfigure parts of this territory periodically.

On one hand, this reflects the incapability to set the conditions for suitable levels of: soil safeguard, hydro geological instability prevention, a proper land use, a balanced resource consumption; on the other hand, what is even more upsetting, it allows the general trend of the contemporary architectural and urban practice to be half-seen: a memoryless and uprooted one. As early as the sixties of the last century, in his *Storia del paesaggio agrario italiano*, Emilio Sereni affirmed that landscaping can be put right instead, "intending it as a coordinated complex of complementary works that are of help in perfecting the water regime of the soil".

In the light of the foregoing statement, nowadays it would be appropriate to operate on a territory with awareness, of its complex structure, and intervening on its landscape with coherence, in respect of its stratified form. Starting from these two dialectic terms, Structure and Form, another couple of concepts ought to be introduced in order to intertwine the Territory with the Landscape: Shape and Image. The meaning of connecting Territory to the role of Shape consists in attributing constitutive value to it for the physical situation; connecting Landscape to the role of Image consists in valuing it as representative dimension of the same observed reality instead.

It is necessary to give scientific effectiveness to this kind of logic - operative process and the effort is pursued passing from the field of ideas to the one of *tool-ideas*. Like much evolutionary theory, specific outcomes could be demonstrated employing the concept of "biological similarity" between parts, limbs or traits of two living beings: some traits shared by them were inherited from their ancestor, and some similarities evolved in other ways. These are called homologies and analogies. Homology refers to traits inherited by two different organisms from a common ancestor. Analogy refers to similarity due to convergent evolution without common ancestry instead. If considered in geometry, these conceptual tools are closely related to the principles of Structure and Form due to their capability to constantly operate on objects with diverse origins or functionalities. Furthermore, assuming a change of scale, it is possible to transform this geometrical conception into architectural.

For this purpose homology and analogy become two well-defined architectural practices, two possible ways to intervene in a territory - landscape tackling the same set of problems in a specific historical-geographical situation. On one side, Homology is concerned with the idea of Figure, by working on its internal rules, in order to forge a *modified form* for a situation; on the other, Analogy faces the idea of Image, by comparing similar cases, with the aim to recompose a *synthetic structure* for a situation. However, both are techniques of architectural re-design.

What is more, even if only one technique is alternatively adopted in a re-design case, it is clear each tool-idea influences one another due to the fact they have an effect on the same territory-landscape.

Even though they start from different requisites and parameters they are capable to bring the architectural projects to the same result, in terms of a proper and compatible set of signs. To be imprinted on the soil according with "the millenary combined action of natural and or human factors".

Analysing two different cases of project at the scale of landscape, the present study proposes the architectural re-design of two critical urban areas within particular river landscape contexts and specific territorial hydric systems.

Applying two diverse techniques characterised by internal rules, the present study shows two possible ways to treat the same set of elements at the scale of territory-landscape.

**Keywords:** territory, landscape, shape, image, tool-ideas, re-design.

## 1 THE IMPORTANCE OF THE LANDSCAPE PROJECT

The landscape project has an importance and it can be found in the fact that the landscape is setting itself as a requisite. It is necessary to combine this thought into reality. We have examples of relevant cases which tangibly arise the "lack of landscape" that the Bel Paese continues to convey. We have regular news of events such as landslides, floods, defacements, abuses; problems linked to the incapability to set the conditions for suitable levels of: soil safeguard, hydro geological instability prevention, a proper land use, a balanced resource consumption.

However, there is still a deficiency, to conserve and maintain the significant and characteristic features of a landscape - on one hand - and a strong forward-looking action to enhance, restore or create landscapes - on the other hand (ELC art.1) [1]. Landscaping can be put right, intending it as a coordinated complex of complementary works that are of help in perfecting the water regime of the soil [2].

With the aim to clearly draw the outlines of one possible way to a landscape intervention, the present study focuses on two re-design cases of critical urban areas within particular river landscape contexts and specific territorial hydric systems.

## 2 HOW TO OPERATE ON LANDSCAPE

In the light of the foregoing statement, nowadays it would be appropriate to look at an architectural project, with a binocular sight: each eye would receive a different level of vision from one another, even if only slightly, which combination restores a new and synoptic visual result. The metaphor of "seeing with an eye the Territory, and with the other one the Landscape" would clarify the concept. Both eyes point their attention on the physical reality, which surrounds the observer, but each one decodes it according to an interpretation, different angulations differ from the other one.

If vision is the tool that allows this sort of relationship, it seems that there is no other solution, but the identification of the term Territory with the idea of Shape and the second term, Landscape, with the one of Image. In this context, the shape acquires the meaning of an external form of something, as it is generally seen in geometry, an area bounded by outlines [3]. The image is intended as appearance of something instead, perceived through the sense of sight that, in geometrical optics, is a representation of an object in conformity with the optical laws or, in an extended sense as a mental representation [4].

The meaning of connecting Territory to the role of Shape consists in attributing constitutive value to it, for the physical situation; connecting Landscape to the role of Image consists in valuing it as representative dimension of the same observed reality instead. Constitution and representation, or rather structure and form, do not imply any hierarchical nexus between the two terms. However, logic - operative order; therefore, characterising any intervention on reality as its modification [5].



It is possible to start from an image, in order to deduce a shape that will lead, to a renewed synthetic image [6]; or, otherwise, starting from a shape to induce an image that will lead back to a modified harmonious shape [7].

At this point, it could be possible to see a way for landscape architecture, interpolated as balanced effect of binocular view. Once accomplished the delimitation of a field [8], geography and history, homology and analogy are the simple tools, and the tool-ideas [9] which in architecture you can rely on to re-discover the traces of pre-existent paths. To be followed where a subtle complex system of signs [10], imprinted on the soil by the millenary combined action of natural and or human factors (ELC art.1), act as a guide in which balanced re-design consists in a coherent soil project [11].

### 3 WHAT THE LANDSCAPE PROJECT BECOMES

Like much evolutionary theory, specific outcomes could be demonstrated employing the concept of “biological similarity” between parts, limbs or traits of two or more living beings: some traits shared by them were inherited from their common ancestor, and some similarities evolved in other ways.

Homology refers to traits inherited by two different organisms from a common ancestor that also had those characters, even though not all characters are homologies. An example of homologous characters is the four limbs of tetrapods. Birds, bats, cats, and lizards all have four limbs; the ancestor of tetrapods evolved four limbs and its descendants have inherited that feature —therefore the presence of four limbs is a homology.

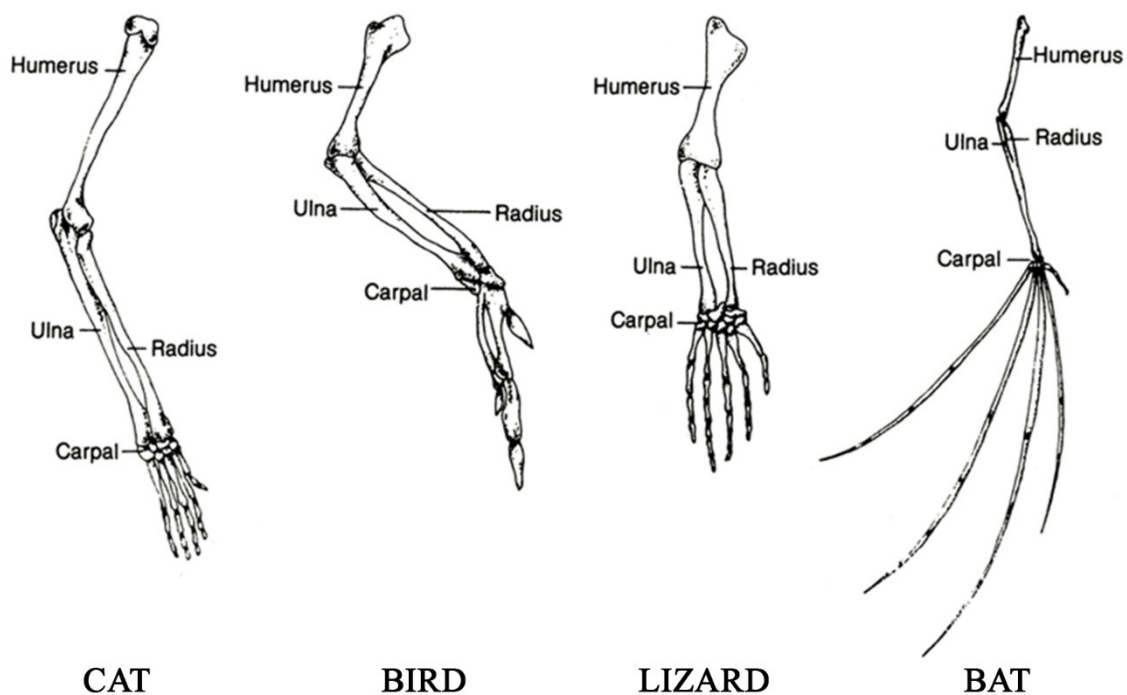


Figure 1. Homologies: structural correspondences between limbs. [22]

Analogy refers to similarity due to convergent evolution without common ancestry instead; two characters are analogous if the two lineages evolved them independently. For instance, bat wings consist of flaps of skin stretched between the bones of the fingers and arm; bird wings consist of feathers extending all along the arm. These structural dissimilarities suggest that bird wings and bat wings were not inherited from a common ancestor with wings, but they are superficially similar because they have both experienced natural selection that shaped them to play a key role in flight. Therefore bird and bat wings reveal analogy [12].

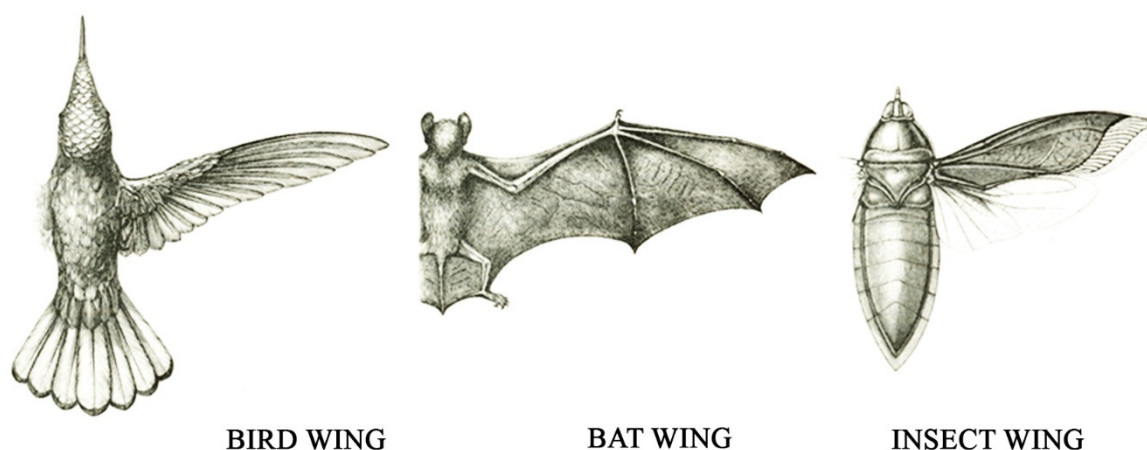


Figure 2. Analogies: formal similarities between wings. [23]

Briefly, it can be said that homology is a kind of similarity based on the concept of *structure* and its archetypal reasons, whereas analogy is a sort of similarity based on the concept of *form* and its functional roles.

Furthermore, other important contributions to the topic are offered from the field of geography. In particular, referring to the binomial Territory-Landscape, the relationship between the terms *Chorème-Iconema* is helpful in order to explain the constitutive value and the representative one attributed to the terms of the first couple, respectively.

In the '80s of the twentieth century, the *chorématique* theory developed by the French geographer Roger Brunet focuses on the concept of *chorème* (chorem), a geographical neologism derived by the greek term *choré* that means 'space', followed by the suffix *-eme* which refers to its structural value. In the geographical analysis the chorem is introduced in order to define an elementary territorial unit characterised by precise orographic, hydric, climatic and vegetal conditions, and to consider only the most significant features of a geographical reality useful for its description [13]. Therefore, this sort of geographical conception gives the possibility to represent a portion of territory in a specific spatial situation through a schematic model by means of geometric shapes: a chorem framework is based on a simple shape and on a minimal set of composition rules, indeed. According to Brunet, seven shapes would be sufficient to describe the models representing the chorems and, combining them with seven geospatial dynamics, other chorems could be defined to specify every case study.

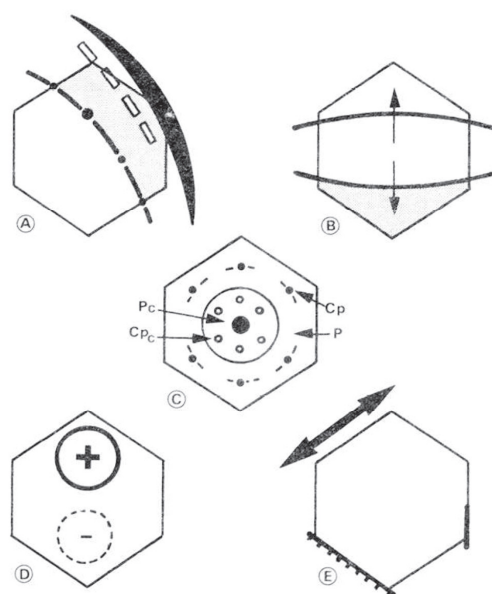


FIG. 1. — La décomposition en modèles élémentaires du modèle spécifique de l'organisation de l'espace français.

A. Effet d'axe rhénan et ses dérivés.

B. Gradients (de nature différente) des champs socio-culturels « Nord » et « Sud ».

C. Modèle centre-périphérie et orbites de gravitation par rapport à la capitale dans un Etat fortement centralisé ( $P_c$  : périphérie du centre;  $C_p$  : centres de la périphérie du centre = orbite des « villes de la couronne »;  $P$  : périphérie;  $C_p$  : centres de la périphérie = orbite des métropoles provinciales, dites « d'équilibre »).

D. Dissymétrie du couple des aires naturelles d'attraction-croissance (Bassin parisien) et de répulsion (hautes terres de la partie centre-sud).

E. Effets de fermeture (surtout côté espagnol) et ouverture (courants maritimes actifs).

(Cf. art. cité note (1), 1973).

Figure 3. A schematic decomposition in elementary models of the French space by Roger Brunet. [13]

In addition, in the '90s, the geographical debate was enriched with the introduction of the concept *Iconema* (iconeme) by the Italian geographer Eugenio Turri. Due to the intense importance acquired by the landscape and its analysis, this concept refers to a set of elementary units of perception, recognisable sign in an organic set of signs, made of emerging, functional and symbolic features, in particular when an analysis of artificial or urban landscape is required [14]. Working in analogy with the concept of phoneme, an iconeme is considered as elementary part of a 'perceptive speech' where not always functional and symbolic roles occur at the same time, except for its formal relevance. According to Turri, in every case of geographical analysis, it could be always possible to describe the organization of a physical situation through the combination of a geography of chorems, representing the territory in its structural features, with one of iconemes, regarding the landscape and its formal peculiarities. Definitely, it could be stated that as chorem is equal to territory (and territory to Shape), so iconeme is equal to landscape (and landscape to Image).

In order to give more scientific effectiveness to this kind of logic it is easy to think that, if considered in geometry, these concept-tools ( Homology / Structure / Archetype / Chorem and Analogy / Form / Function / Iconeme ) give numerous opportunities to analyse and work on geographical-historical situations, due to their capability to constantly operate on objects with diverse origins or functionalities. To this extent, assuming another change of scale, it is possible to transform this geometrical conception into an architectural one by means of a specific analytical approach. As mentioned above, Homology deals with the idea of Figure, by working on its internal rules (structural analysis), in order to forge a modified form for a situation: the landscape project will operate on a situation finding measurable and rooted correspondences between emerging or significant shapes, the pre-existing and the new ones. Analogy faces the idea of Image instead, by comparing similar cases (formal analysis), with the aim to recompose a synthetic structure for a situation: the landscape project will operate on a situation finding comparable and proportioned similarities between emerging or significant images, the pre-existing and the new ones. However, both are techniques of architectural re-design.

Finally, it is necessary to focus on how the re-design is conceived within this context. If design, in its architectural meaning, is still considered a drawing or set of drawings showing how a building or product is to be made and how it will work and look [15], then it is still strictly linked to the *urban design* theory developed since the '50s of the last century, which found one of its leading figures in Louis Khan and in Europe, for instance, in the position of Architectural Review [16] . It considers the whole city as an ensemble of well-settled parts wherein architecture modify the spaces in between; but when its strategies are extended at the scale of landscape, this sort of architectural practice ought to involve all those relevant pre-existing set of traces, signs and conditions. To be recognised as proper of a specific geographical and historical situation: pathways, waterways, slopes, borders, earthworks, rural settlements, urban grids, monuments or geological reliefs are some of concrete reference points. The architectural project at the scale of landscape is required to be a clear re-organisation or, better perhaps, a modification of those above-mentioned contexts, whose problems are rooted at the scale of geography and in historical causes. Hence, the techniques of homology and analogy are well-defined tools of this re-drawing practice applied in two case studies as follows.

### 3.1 Re-design by homology

The new railway station combined with a civic centre in the city of Fermignano (Marche, Italy), along the Fano - Urbino railway line, lies on an inclined plane close to the hills in the Metauro river valley. The architectural complex raises in an abandoned industrial area, not far from the Roman historic city, along the road founded on a still legible featured hydric pathway, which directly flows into the river: right where the 19th century urban scheme stops and the 20th century industrial and building expansion begins. The public space between the two architectures, structured on terracing, connects the two urban patterns preserving and strengthening one of the waterways.

Therefore, the project *Porta Nova* aims to re-compose the most peripheral and, at the same time, the newest residential fabric of the city providing it with structural, functional and symbolic role also.

Moreover, during the latest expansion, subtle geographical elements have been altered in structure ignoring their significant role in the water regime of the soil.

To this extent, as represented in the Fig.3, the urban re-design of the area it has been conceived as an homological drawing at the scale of landscape. First of all, the Roman historic settlement with its internal rules sets as the emergent *shape-structure* which the homologous new one is referred to through its schematic model. Secondly, the geometrical projection has been constructed adopting three significant elements: the railway line (red line) considered as the homological axis; the hydric pathway (blue line) which represents the auxiliary line of the projection; the main orographic fold (green line) ideally schemed with its East-West orientation that works as the fundamental line of the homology. Finally, a minimal number of operation have been applied to determine the whole re-drawing process.

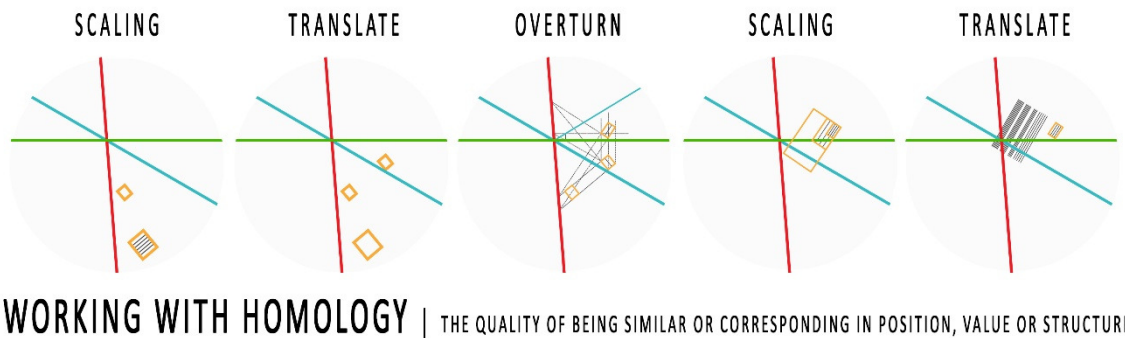


Figure 3. The technique of Homology: structural correspondences in a specific territory. [24]

### 3.2 Re-design by analogy

The allotments connected with a market area in the city of St. Egidio del Monte Albino (Campania, Italy), northern part of the Lattari Mountains, are anchored at the base of an articulated slope facing the Sarno river plain. To recover the urban void, caused by the demolition of a school once built in high flood hazard zone, in a little medieval village within a mountain creek tributary system. Through means of a zero-volume architecture, the area is again dedicated to the typical agriculture consisting of "Mediterranean gardens". The communal spaces, conceived as a base of green terraces, opening towards the valley finding direction in a water-distributing belvedere.

Therefore, the project *Agrhydromos* aims to re-define an external border of the urban settlement providing it with structural, functional and symbolic role also. What is more, the choice about the physical position of the previous building has been valued as deeply incoherent with the physical situation which is made of steep waterways crossing the urban settlement.

To this extent, as represented in the Fig.4, the architectural re-design of the area has been conceived as an analogical drawing at the scale of landscape. In this geographic area, a crucial importance is assumed by a few elementary signs which recur in a lot of agricultural settlements, in the same primary form, all along the mountain slopes. This is the reason why some examples of the same agricultural model have been compared as the significant *image-form* which the analogous new one is based on. In particular, this recurring scheme is made of: one main pathway aligned with the top of the mountain; two or more series of agricultural terracing horizontally arranged; two or more pathways and or waterways border or articulate the ensemble. Then, due to its variability, the scheme has been adapted to the specific conditions of re-drawing.



Figure 4. The technique of Analogy: formal similarities in the same landscape. [24]

## 4 CONCLUSIONS

As it has been shown, even if only one technique is alternatively adopted in a re-design case, it is clear that each tool-idea influences one another due to the fact they have an effect on the same territory-landscape. Even though they start from different requisites and parameters they are capable to face the same sort of problems bringing the architectural projects to the same result, in terms of a proper and compatible set of signs. To be imprinted on the soil according with "the millenary combined action of natural and or human factors"(ELC art.1) [1]. Therefore, the two cases studied are not to be considered as unique solutions to persistent problems of the examined situations, but as a chance to find, in a hermeneutic manner [17], a way to intervene [18] on a territory-landscape, coherent with its complex materials and its emerging elements.

Regarding complex materials, this implies to the contemporary landscape as a complex and contradictory reality. For this purpose, the general aim of an architectural project is to individuate a vibrant balance between conservation and innovation through suitable hybridization processes [19]. Such example is the design of the new open public and collective spaces which propose an adequate integration of functions and activities.

What is more, when discussing about emerging elements we need to specify what the role of the architect is in our increasingly participatory society. He could be considered as an inventor, according to the etymology of the Latin term *in-venire*, which means 'find', and he has the task of operating on reality like the archaeologist on the palimpsest: a complex system of traces to be re-discovered, to evaluate and to be conveyed to the future. This is the way the two hydric systems have been considered in the two case studies.

According to Sereni, the reason why they assume a particular relevance, in the landscape re-design cases described, it can be found in the fact that an accurate analysis of their features, their structural/constitutive and formal/representative definition through a sensible soil project are responsible actions towards the whole ecosystem which architecture intervenes in.

Therefore, it is claimed that, if architecture is the fixed scene of men's happenings [20], and if landscape as theatre [21] it is however a representation of reality, nowadays landscape could also be defined as the dynamic scene of happenings of the living beings.

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## **TIMELINES: LOOKING SIMULTANEOUSLY THROUGH THE FRONT SCREEN AND THE REAR VIEW MIRROR**

**Markella Menikou<sup>1</sup>, Adonis Cleanthous<sup>2</sup>**

<sup>1</sup>*Assistant Professor, University of Nicosia, Architecture Department (CYPRUS)*

<sup>2</sup>*Associate Professor, University of Nicosia, Architecture Department (CYPRUS)*  
*menikou.m@unic.ac.cy, kleanthous.adonis@unic.ac.cy*

### **Abstract**

The aim of the paper is to discuss the development of “timelines” as a process and research tool for exploring possibilities of in depth study of past patterns in order to inform and trigger visions of the future.

The idea of the timeline will be presented and assessed as a pedagogical tool utilized under the agenda of an architectural research group (Unit) thematic that poses “technology” as a lens to inspect the future of architecture. Within the framework of the Unit, a series of specific methodologies and processes have been explored with the aim of both broadening as well as focusing the academic design research.

The research unit is titled: “Unit-4; Divining the Future” and revolves around Cedric Price’s statement: “Technology is the answer, but what was the question?”. The unit aims to foresee and dream of the future; a utopian or a dystopian future. The authors search for a technologically inspired, instrumental architecture against the tyrannies of form and obsessive value in image and novelty. Instrumental architecture aims towards a ‘superlative of capability’ which contradicts the reductive nature of functionalism.

The aim is to resurrect the Vitruvian paradigm of ‘firmitas, utilitas and venustas’ in a contemporary political, socio-economic, cultural and environmental context; and into the future. Today our facility with making form is unprecedented, yet the most sophisticated methods are irrelevant if our intentions are misdirected. We need to critically engage with the conditions of today through exploration of the past and speculation about the coming of tomorrow.

The unit also reviews architectural writing to promote conceptual understanding of technology, function, programme and performance, in order to enhance appreciation of the interdependence of all parameters of architectural creation.

The identity of architectural creation is being systematically reconsidered at this point in history within a framework of sociological, technological and scientific discourse that is generating new expectations about our relationships with each other, our socio-political and economic systems and the environment at a variety of scales.

Through the timeline process the authors aim to frame the future in sequential stages through depth of time, ranging from 50-1000 years ahead. It is therefore invaluable to understand the evolutionary momentum developed over the past to assist in the understanding of a trajectory for the next millennium. So we have a 1000 years in the rear view mirror and 1000 years through the front screen simultaneously visible.

In generating the timelines, the following time periods were considered:

-Renaissance

- Industrialization
- Turn of the century (arts & crafts, art nouveau)
- Modernism
- Today
- 50 years ahead
- 100 years ahead
- 500 years ahead
- 1000 years ahead

Timelines were developed in diagrams, ideograms, strategies, moments, catalogues, quantitative and qualitative analyses.

Diversity of approaches and areas of concentration were encouraged, so investigations varied in scope and scales; from the history of the bed, to lifestyles, scientific understanding, transportation, construction methods, to the evolution of port structures and military camps.

The timeline of a thousand years forward becomes the speculative proposition, the conceptual axis for incrementally projecting architecture into the future. The focus is mainly on strategizing towards new urban typologies, innovative strategies, synergetic urbanism and planning, future growth of cities, the evolution of living environments etc., rather than presenting finite or singular propositions.

Within the speculation of possible future scenarios, the built environment is understood as a “development”; a system of objects and processes over time. The architecture of today is confronted as a condition of “in-betweenness”; as a phase between the past and the future.

The paper will afford a new perspective into utilising “timelines” as a valuable tool towards innovative architectural creation and research.

**Keywords:** Timelines, Innovative design methodologies, Future scenarios, Processes over time, Pedagogy

## 1 INTRODUCTION

The study of Incremental Historical moments has traditionally throughout time been a significant tool in predicting the future. Depending on the timespan under study these historical moments might collectively comprise a “timeline” (Fig.1).

Timelines therefore consist of abbreviated and selective points in time compiled and studied as a unified sequence.

The study of timelines has been accumulating since the advent of the written word. In recent times, the advent of the internet, further escalated the flow of information creating a vast databank. On one hand this is welcome, on the other the need for selectively organizing this information is increasing. Viewed this way timelines may provide a vital platform for both deciphering the existing historical patterns, as well as for “sketching-up” the near and distant future. [1]

The aim of the paper is to discuss the utilisation of “timelines” as a process and research tool for exploring possibilities stemming from in depth study of past patterns. Timelines as a tool is expected to inform and trigger visions of the architectural future.

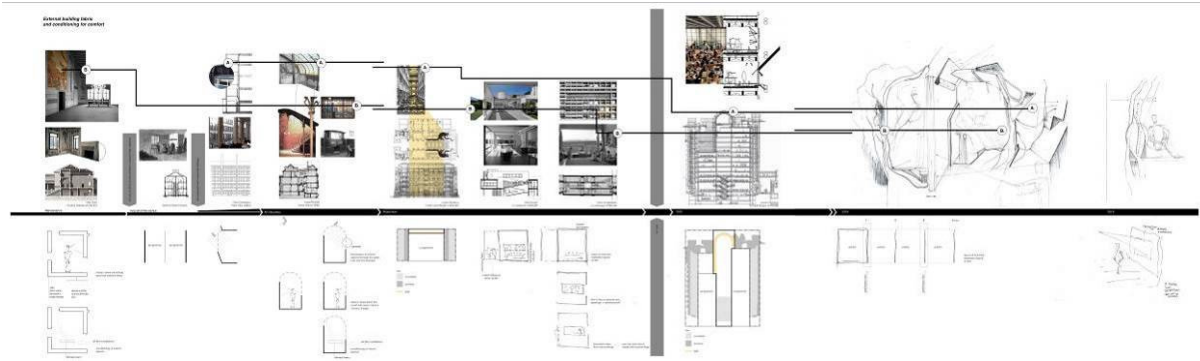


Figure 1. Timeline of external building fabric and conditioning for comfort

## 2 TESTING TIMELINES WITHIN AN ARCHITECTURE RESEARCH GROUP

The idea of the timeline will be presented and assessed as a pedagogical tool utilized under the agenda of an architectural research group (Unit) thematic that poses “technology” as a lens to inspect the future of architecture. Within the framework of the Unit, a series of specific methodologies and processes have been explored with the aim of both broadening as well as focusing the academic design research.

The research unit is titled: “Unit-4; Divining the Future” and revolves around Cedric Price’s statement: “Technology is the answer, but what was the question?” [2] The unit aims to foresee and dream of the future; a utopian or a dystopian future. The authors search for a technologically inspired, instrumental architecture against the tyrannies of form and obsessive value in image and novelty. Instrumental architecture aims towards a ‘superlative of capability’ [3] to which the study of timelines comes to compliment.

The aim is to resurrect the Vitruvian paradigm of ‘firmitas, utilitas and venustas’ [4] in a contemporary political, socio-economic, cultural and environmental context; and into the future. Today our facility with making form is unprecedented, yet the most sophisticated methods are irrelevant if our intentions are misdirected. We need to critically engage with the conditions of today through exploration of the past and speculation about the coming of tomorrow.

The unit also reviews architectural writing to promote conceptual understanding of technology, function, programme and performance, in order to enhance appreciation of the interdependence of all parameters of architectural creation. The selected theoretical writings are chosen so as to represent seminal theories from different eras and further promote an understanding of time-specificity and progression of time as they relates to timelines.

When the focus of study is speculating about the future, it is customary to dismiss the importance of history [5]. Contrary to this stance, appreciating the past may enhance the positioning of the proposition for the future within a broader spectrum of research. It also correlates with the Unit’s agenda promoting thinking in depth of time and continuity.

## 3 THEORETICAL PREMISE

The identity of architectural creation is being systematically reconsidered at this point in history within a framework of sociological, technological and scientific discourse that is generating new expectations about our relationships with each other, our socio-political and economic systems and the environment at a variety of scales.

The introduction of timelines within the architectural pedagogic environment is based on:

-the premise that the ‘development’ of the environment that generates human habitat is undergoing a process of revision at a physical and a conceptual level. Architectural academia has in recent decades developed a much more critical understanding of the effects of the evolution of the built environment through time on the planet. This generates an increasing need to test our operations within our ecosystem in order to ensure that we will continue to do so sustainably into the future.

-the premise that a building is a 'development' - a system of objects, artefacts and related processes whose constituents and meanings change over time. The implication is that as designers we need to understand the 'life of our buildings in time' as the fundamental basis of an ecology of manufacture, use, operation, adaptation, reuse and renewal.

-the premise that any ecological audit would need to integrate the resource demands and behaviour of those who use or occupy buildings – so cultures that relate to food, waste, work, leisure, education and transport need to be engaged to generate a credible conceptual understanding. Therefore these broad parameters might need to be synergetically accessed. [6]

As the Unit concentrates on aspects of technology the thematics being observed via timelines are generally framed by directed concerns. It may be for example that climate zones, construction techniques, resource models, nomadism or climate change are key drivers that can differentiate the exploration in each research project. Construction methodology from the appropriation of landscape, hand crafting, tools, specialised roles, machines and industrialisation, mass customisation and printing buildings might also form a spine to be discussed and explored. For example in "Fig.2" the advent of toilets, electricity or other energy sources, piped water supplies, waste infrastructure, telephones, the internet etc. into the home may be as significant as anything else in understanding the instrumentality and culture of the home. It is also desirable that each project develops a conceptual model that might cover the same list of criteria but with a different attitude.

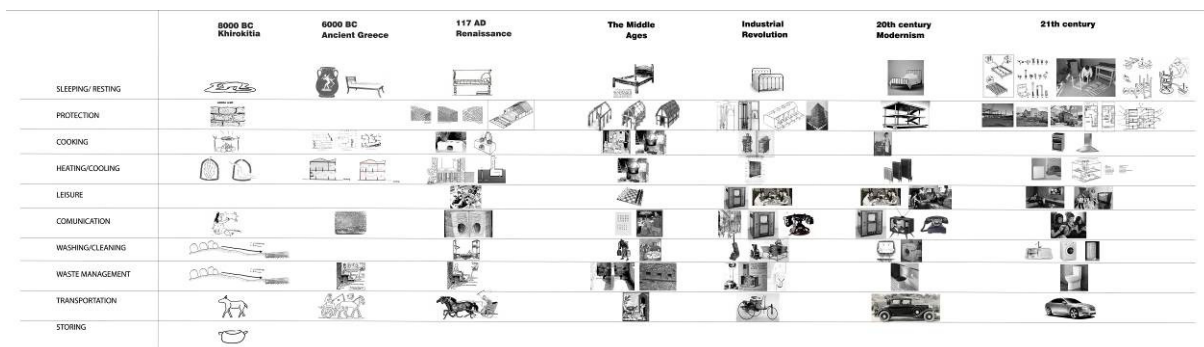


Figure 2. A timeline of equipment and tools in the living environment

#### 4 DIRECTIVES, GUIDELINES AND TASKS FOR ACTIVATING TIMELINES AS AN ARCHITECTURAL TOOL

Through the timeline process Unit 4 aims to frame the future in sequential stages through depth of time, ranging from 50-1000 years ahead. It is therefore invaluable to understand the evolutionary momentum developed over the past to assist in the understanding of a trajectory for the next millennium. So we have a 1000 years in the rear view mirror and 1000 years through the front screen simultaneously visible.

A series of directives was handed to students in order to develop their individual respective timelines:

- identifying how to generate a review of the last thousand years that may contribute to research questions posed in preceding stages of project development.

This could have taken the form of a timeline that is assembled including different themes (lifestyles, construction methods, key historical events relating to technologies, societies, scientific understanding, critical models from history etc.). Students were encouraged to look at architectural history sources to help visualise how to illustrate societal development alongside that of buildings. Comparative case studies from different key time periods could have indicated historical development, for example the Roman 'Hadrian's Villa' versus the Japanese 'Sukiya House'. (Fig. 3)

In generating the timelines, the following time periods were considered: Renaissance, Industrialization, Turn of the century, Modernism, Today, 50 years ahead, 100 years ahead, 500 years ahead, 1000 years ahead.

Diversity of approaches and areas of concentration were encouraged, so investigations varied in scope and scales; from the history of the bed, to lifestyles, scientific understanding, transportation, construction methods, to the evolution of port structures and military camps.

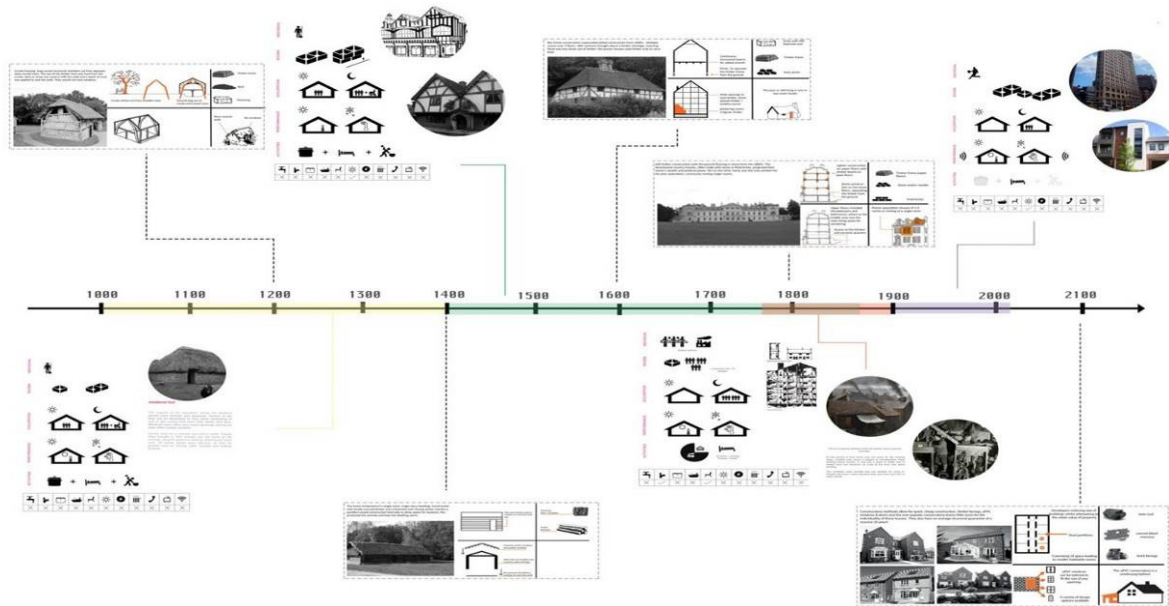


Figure 3. A timeline of provisions in the living environment through the study of key historical case studies

The timeline of a thousand years forward becomes the speculative proposition, the conceptual axis for incrementally projecting architecture into the future. The focus is mainly on strategizing towards new urban typologies, innovative strategies, synergetic urbanism and planning, future growth of cities, the evolution of living environments and other concentrations, rather than presenting finite or singular propositions.

Timelines were developed in diagrams, ideograms, strategies, moments, catalogues, quantitative and qualitative analyses. The variety of media utilised allowed students to specifically tackle the individually selected thematic and flavour it with a personal stance. Developing the representation techniques of the timelines was critical in assisting students to extract architectural observations that would then inform the future speculations. (Fig. 4)



Figure 4. Timeline of materials reuse and upcycling

## 5 CASE STUDIES, TIMELINE OUTPUT, DESCRIPTIONS AND CRITIQUE

Following is a series of selected student output, comprising of both actual timelines as well as propositional project output at various stages of development, which evidences how the study of past patterns has informed and triggered visions of the future.

The discussion of each indicative project includes a general description of the conceptual axis of each project and in parallel a critique about the impact of the timeline process towards the proposition.



## 5.1 Project: “Hospitium”

The project proposes the merging of medical facilities with housing facilities in 100 years.

A thorough timeline of the evolution of appliances through the history of home fittings allows an initial separation of “building” and “appliances”. The timelines developed showcase both the increase in sheer numbers as well as in refinements of home furnishings and appliances. The specific timelines are developed in a way that for each point in time, the building might be absent, but the respective fittings in a surprising way quite accurately outline it. This strategy is thereafter reversed through the development of a building proposition (as future stages in the timeline) whereby the accumulation of appropriate devices comprises the building in its totality. (Fig. 5)

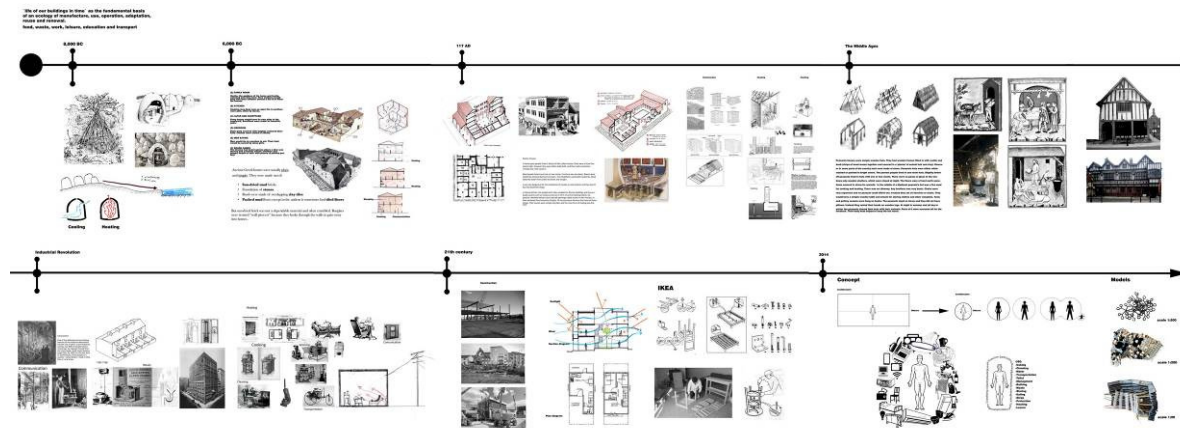


Figure 5. A timeline of the evolution of appliances through the history of home fittings

The historical development of medical practice and medical facilities have so far not related or affected the evolution of housing. At best they related in the advent of the “house doctor” (late 19<sup>th</sup> century) and the idea of “hospitalisation” of patients in institutional medical facilities. This may suggest an initial programmatic fusion of “medical facility” and “house”. Through the timeline of medical instruments, a new way of conceiving architectural space arises, one utilising a precise assemblage of instruments. Each of these instruments responds simultaneously to both medical as well as housing needs. The instruments are at the same time the new “building-block” of architectural space-making. (Fig.6)

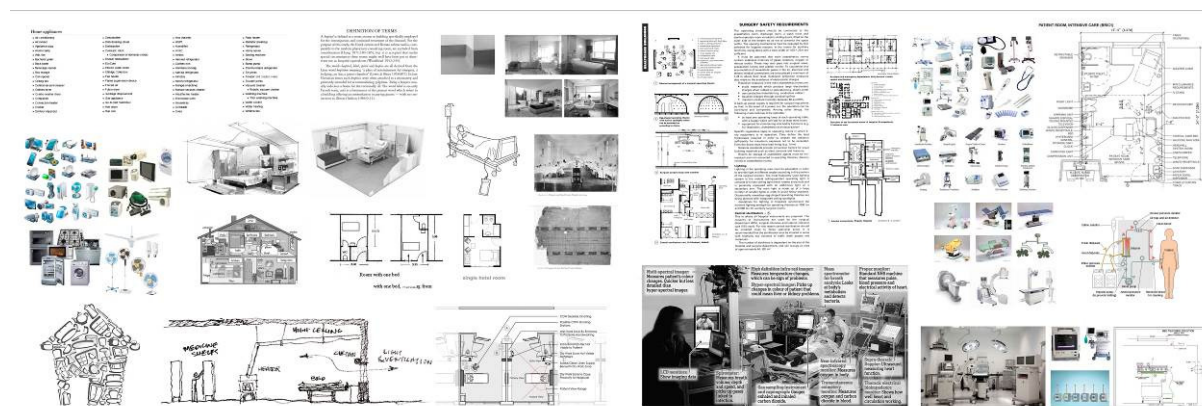


Figure 6. Timeline of medical instruments

As a result of the historical study of instruments in parallel to studies in natural systems, the idea of input/output became a driver in the development of the building proposition. Systems were conceived as cyclical and supported the fused home/hospital programme. For example the dining room would double up as a “medical lab” providing the user with both an intake of nutrition as well as live feedback on health status and consequent treatment. The input and output could alternate between material provision and data. The immediate exterior environment and by extend nature are



modified accordingly as integral parts of this input/output cyclical processes.(Fig.7) As Wes Jones notes [3] these competences could be understood as “instrumentality”, where architecture is viewed as the accumulation of performances intrinsically intertwined therefore turning into a “tool” itself.

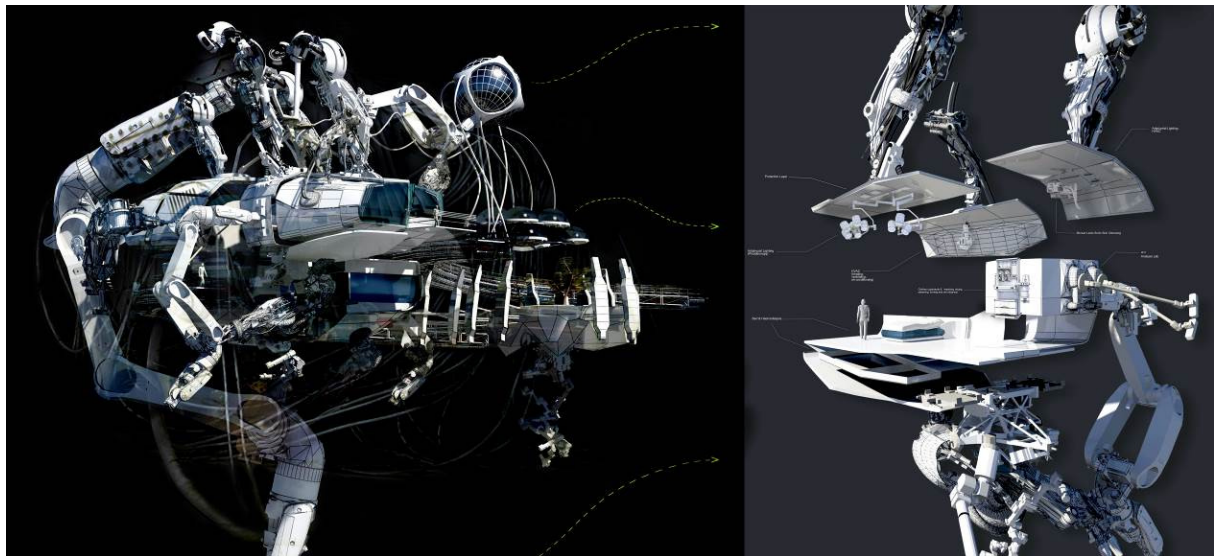


Figure 7. Moments of the project “Hospitium”

As Reyner Banham [7] points out the anatomy of the dwelling is analogous to the anatomy of the human body; in this way building fittings - such as piping, wires, inlets, outlets, sinks, antennae conduits, heaters, freezers – are analogous to the organs of the human body which comprise its entirety. Likewise, as Banham also notes, the amount of building services needed might on their own comprise the house in its entirety.

## 5.2 Project: "Architecture in New [Syn]Thesis"

The project envisions the house of the future as a biosynthetic possibility.

The timeline follows the evolution of basic human needs within a living environment as they have consistently multiplied/ increased in parallel with a cumulative enriched perception of “comfort”. The hypothesis here is that continuous developments in technology will be able to accommodate an ever-growing increase in comfort provision. As Cedric Price postulates [8] these needs will eventually become desires and aspirations. In parallel to increasing needs, the increase in humans’ free time will further exacerbate the demand of comfort provision and the time spent within the living environment. (Fig.8)



Figure 8. Timeline of “comfort” in the living environment

An additional hypothesis is inserted here. The technological developments used to satisfy the ever-growing need for comfort have a limitation: they have been relying on inert and inanimate matter, and this will in the future be inadequate to keep up with comfort demands. The new generation of comfort is here projected to be bio-synthetic: part alive/part dead, part anima / part inanimate.

The proposition is concerned with the practical application of the technology of biosynthesis; a technology capable to modify the existing architectural model by converting it from an inert model

into a living model based on biological principles and processes. [9] This new architecture is a living part of the specific ecosystem, to which it's being applied; it grows, it feels and it reacts like any other living organism. Like all architecture though, it cannot have its own free will. The architect is still needed to seed it, plan and direct its development through time. The practical implementation of Biology in Architecture, by using Biosynthesis, is expected to generate innovative architectural solutions that will be able to help minimize the consequences of the construction industry on the environment and the quality of life in general. (Fig.9)



Figure 9. Zoom-in section and interior moments of the proposed "living" house

The historical evolution of technologies responding to demands for comfort are here now reconsidered with bio-synthetic possibilities. Basic comforts such as kitchen appliances, sleeping furniture, plumbing, ventilation systems, structural systems, and community groupings are revisited through future timelines and within depth of time though cataloguing.

Synthesized as Living Architecture, the proposal is conceived and developed as a living organism by the application of Biosynthesis. It consists of a responsive breathable meat tissue, a plant based branching system for an endoskeletal and an exoskeletal structural system, and a digestive system corresponding to a conventional sewage system.

The project passed through various developmental stages of investigation and composition. The unconventional nature of the concept could not have been framed through a conventional design process. Therefore the timelines acted as catalysts in inspiring the project development as a time phasing process. (Fig.10)

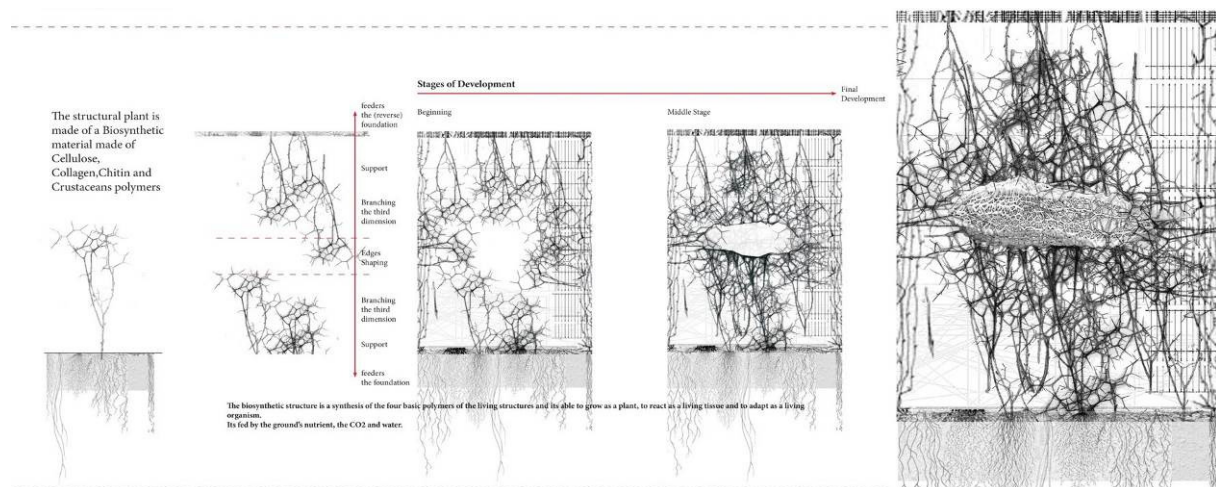


Figure 10. Development of the project in time phasing



### 5.3 Project: " Eroto-Mechanics "

The project proposes a cross-programmed future work environment.

A series of timelines are produced to investigate the evolution of working environments of varied product and servicing outputs such as banking, prostitution, artist studios and generic serviced offices. (Fig.11) It is observed that the classification and division of working spaces delivering different services might in fact be an artificial one. The hypothesis is that there is inherent common ground to be revealed through the timelines that could enable a symbiotic existence of seemingly opposing programmes.

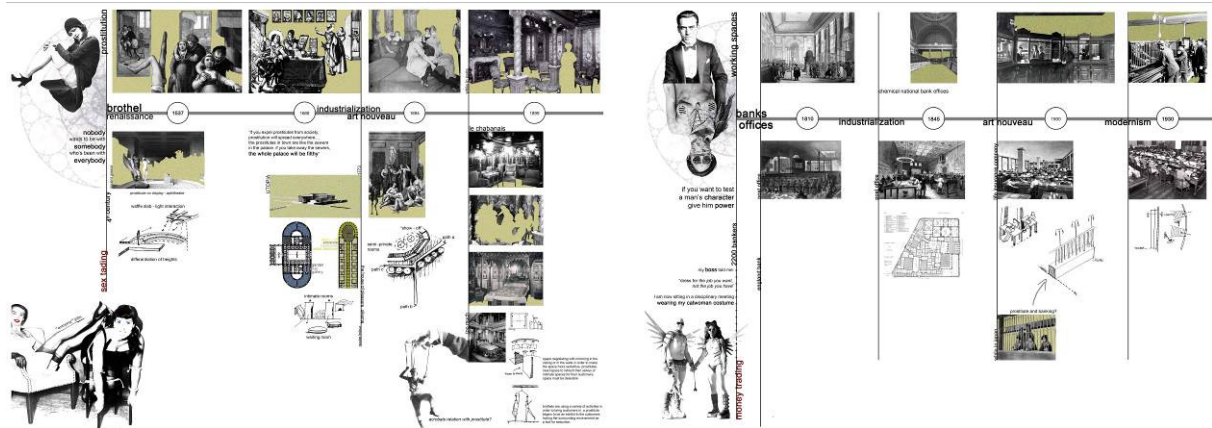


Figure 11. Timelines of seemingly opposing working environments

The project is driven by questioning the historical and current homogeneity, inflexibility and oppressiveness of working environments [10]. It aims at redefining the working environment by attempting to combine the programmes of “serviced office” and “prostitution”, through manipulating aspects such as technology, voyeurism, staged arrangements, hybrid typologies, theatricality, and commerce. This unlike cross-programming produces systems that are in constant flux therefore rarely stagnant. Both programmes (serviced office and prostitution) can function distinctively as well as collaboratively and responding to various stimuli from different sources such as external, environmental, social and financial. The hybridity of the programme encourages the unexpected and an increased excitement of anticipation. (Fig.12)



Figure 12. Cross-programming of prostitution and serviced office

As a speculative future increment of the timeline, the project could be perceived as a paradigmatic model for other cases of unlike fused programmes ranging from building scale to urban strategies.

## 5.4 Project: "Living Device"

The project proposes a system of housing provisions where negotiation of space and user engagement are constantly in flux, prioritising an extreme spatial economy, financial effectiveness and user customisation.

The timeline explores the evolution of user engagement through temporary living arrangements; ranging from historic military camps, to American pioneer settlements, make-shift housing during the 1930's great depression and more recent appropriations of "as found" conditions and objects. (Fig.13)

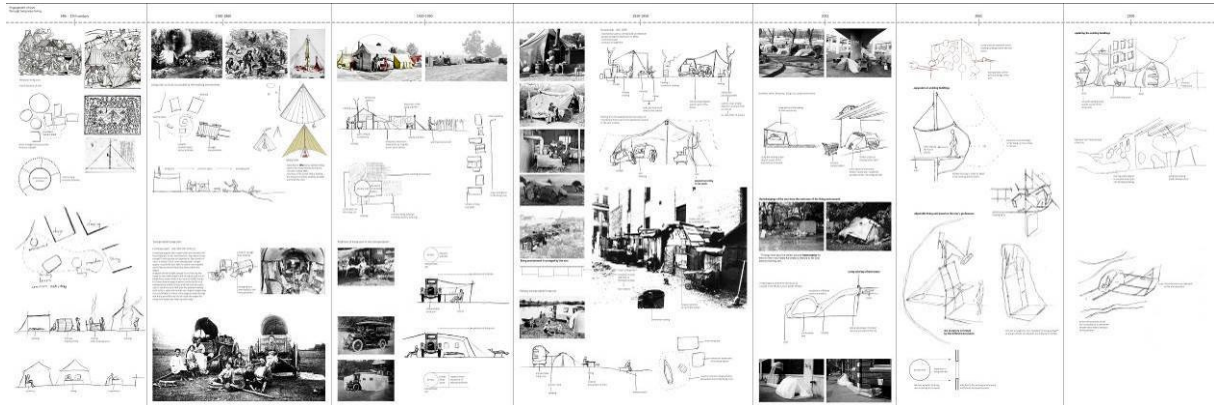


Figure 13. Timeline of user engagement and appropriation of space and objects

By observing the ingenious appropriation of spaces and objects by non-architects in the timeline, it became apparent that this informality could be treated as a formal strategy by organising, coding and administering. The timeline therefore becomes in the hands of the architect a new tool in negotiating space. This new organising parameter is to be in the future influenced primarily by concerns of economy, both financial as well as spatial.

The main argument of the subsequent proposition is the continuous adaptation of temporary living units to the user's needs. The user can use a portable personal device as a type of ID to activate and temporarily rent a living unit according to personal preferences, for example to shop for components, to add or omit provisions. The new living unit is continuously transforming itself by providing a variety of amenities, to keep responding to the changing needs of its user. When the ID card is removed, the living unit is deactivated until the next user activates it. All the personal belongings (clothes, books etc.) are transferred in one of the storage units and may be retrieved at a later stage. (Fig.14)

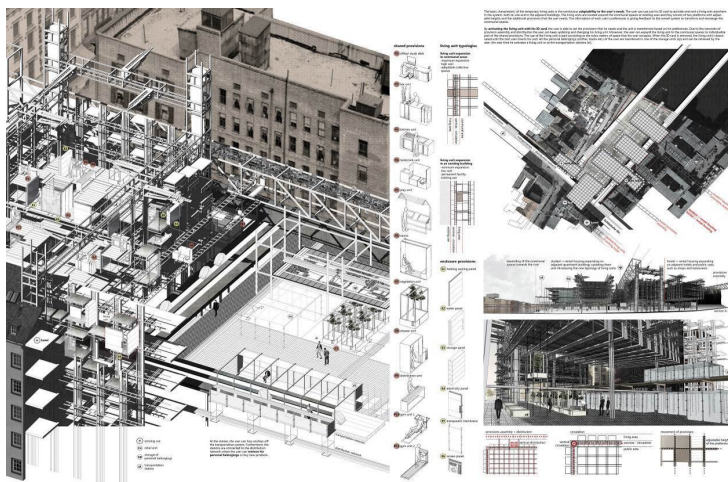


Figure 14. Indicative moments of the "Living Device" proposition

A network of physical distribution of provisions and building components enables this continuous transformation. The size of a rented space is calculated both in cubic metres as well as in provisions

requested and these may change hourly, daily, weekly etc. The data input of user preferences, profiling individual living units, continuously feed back information to the overall logistical system in order to accordingly transform and rearrange communal spaces.

The aspect of time phasing has been embedded through all the stages of the project development therefore the proposition unfolds over incremental time periods into the future. For example by 2080 it is envisioned that the proposed system would have expanded beyond the boundaries of a single building plot to engage aging parts of a pre-existing urban fabric. The future city will operate as a macro scale of the individual unit, where the provision kits will perpetually update according to new available technologies and user preferences.

## 6 CONCLUSIONS

The paper has afforded a new perspective into utilising “timelines” as a valuable tool towards innovative architectural creation and research.

The utilisation of timelines within the specific architecture research group has yielded an expansive broadening of techniques and strategies for envisioning the future. Understanding the evolutionary momentum developed over the past must be embraced towards the understanding of a trajectory for the future.

It is worth noting that envisioning the future is not an end in itself, but it is the process of contemplating it through a timeline that may inform better present day propositions.

The timeline may not only be used in one direction (towards the future) but it may also be traced backwards (towards the present). This might in fact be one of the most valuable application of timelines within an academic environment and beyond.

Within the speculation of possible future scenarios, the built environment is understood as a “development”; a system of objects and processes over time. The architecture of today is confronted as a condition of “in-betweenness”; as a phase between the past and the future.

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## ȚIȚICA GEOMETRIES EMBEDDED IN THE ARCHITECTURAL DISCOURSE

**Mircea Alexandru Mogan**

*Ion Mincu University of Architecture and Urbanism (Romania)  
mogan.mircea@gmail.com*

### **Abstract**

The present paper will tackle the research and latest achievements in the field of advanced geometries applied as architectural morphologies. In the panoply of form variation revealed in the last decades there are several explorations and uses of specific geometries within the design which allowed for innovation in relation with spatial programme, space experience, tectonics, etc. (e.g. moebius, klein bottle).

The goal of this study is to emphasize the importance of mathematical applications and specifically geometrical domain in the architectural discourse, which among other criteria stands at the core of the domain.

The departure points are the surfaces and curves revealed by the Romanian Mathematician Gheorghe Țițica at the beginning of 20th century (1906). Several studies and papers were published by the mathematician in the field of differential geometry, where his main research was focusing on surface deformation. In close connection with the further development of the Erlangen Program from 1872, Țițica founded the Romanian Differential Geometry School and also was among the first to initiate a new topic in the domain, the affine differential geometry. These time frames where analytical geometry and mathematical analysis were jointly developed together as differential geometry had an immense contribution in getting a better understanding and control of geometries which brought developments in industrial fields as well in the architectural realm.

Further, just with an intuitive reading of these specific geometries, there is a great potential in deploying those elements in an articulated manner, in order to create the premises of an architectural expression. In that sense, there are several archetypal categories where Țițica surfaces and curves can be included, such as cupolas, arches and vaults. Focusing for a moment on the tectonic capability of the Țițica surfaces, certain features can be extracted such as, innovative articulation of column or wall with slabs or continuous vault transformation into slabs.

On one hand, the elements can represent spatial entities with their own identity, or can be a source for a vocabulary which creates the opportunity afterword for various articulations on all coordinates. The graphs, as an outcome of the numerical domain variation, contain an increased variability, and therefore the geometries can be approached as a fluid state, depending on the input values.

The mathematical expression discovered and proofed by Țițica, is a condition where the fraction of the total curvature of a surface on the distance from a fixed point to the tangent plan of the surface at 4th degree is constant. There are several functions which fulfil this condition and lead to graphs with high potential of applicability within architectural space. In

the mathematical process of translating different input numbers in a certain relation to the spatial coordinates which onwards create tectonic instances, there is a certain beauty of understanding the invisible layer.

By capturing the whole discussion, the relevance and innovation of new geometries embedded in the architectural discourse breaks the one singled minded perspective and extrapolates to an holistic approach where many levels of understanding and knowledge such as program, use, technology, performance, material, structure, semiotics etc. are co working to create the specific tailored model.

The flexibility of Țițeica geometries is captured in the multiple scale relation between the geometry and the architectural program. In that sense, the scale range implementation of Țițeica geometries goes from infrastructural nodes of all sorts and scales (train, bus stations, parking canopies) as arches/vaults to facade components as panels. Articulating these geometries brings a series of benefits which cover many aspects, from optimal and innovative structural features to facade porosity qualities where a light permeability play evolves. In other cases, larger geometrical components create multi level constructs where due to the specific surface curvature; vistas occur and allow for an open intuitive orientation while moving through a space. In this case Țițeica geometries could be deployed in a cultural program with open spaces.

In conclusion, Țițeica geometries are a flexible construct and geometrical expression which allow for the creation of unique spaces and open up the possibility and consistency of structural flow of efforts, according to the specific articulation, views and perceptions.

**Keywords:** nonlinear, geometry, non-standard, hybridisation, curvature, transformative.

## 1 INTRODUCTION

The present research proposes an in-depth look into a specific chapter of the mathematics field in order to develop new possibilities of geometrical exploration in the architectural realm. Situated in the field of architectural geometries and at cross disciplinary area of design, computation, natural sciences, the project is looking into geometrical malleability, articulation schemes, innovative aspects and a set of criteria to evaluate the intrinsic capacities and performance variable scenarios.

Within the last two decades there are several geometrical themes extracted and applied in the design discourse: topology, for the transformation principles of geometric evolution, differential geometry for a better definition of geometrical formations, complex systems (fractals, attractors, cellular automata complex analysis) for the ruled based patterns encoded in the environment and their extrapolation into our built environment.

## 2 MATHEMATICAL FOUNDATION / ȚIȚEICA SURFACES AND CURVES

The study and implementation of differential geometry constitutes an innovation theme for the 20th century and to our contemporary timeframe while being the central pillar to the accelerated technological evolution of the previous century. In specific design fields such as industrial, automotive, product design, the analytical definition and the geometry control represented a decisive factor in the innovation process.

The differential geometry is a mathematical branch, which combines analytical geometry with mathematical analysis. The main study is about the definition of curves and surfaces through analysis patterns, especially with integral and differential calculus, with the end goal

to determine the total or partial curvature length and other parameters such as the sub tangent and the subnormal. The departure point for differential geometry is when the curve and surface equations are known. From this perspective it could be seen as a continuation of analytical geometry.

## 2.1 Gheorghe Țițeica

The initial point of the present study and experiment is represented by the discoveries and theory accomplished by the Romanian mathematician Gheorghe Țițeica in the first decades of the 20th century. The founder of the Romanian School of Differential Geometry and one of the initiators of the sub domain of Affine Differential Geometries, has published more than 200 publications. The main research body is referring to the topic of surface deformations and comes on the thinking narrative and progression of the Erlangen Program developed by Felix Klein in 1872. The main publications are “The Differential Geometry of projective networks” (1920) and “Introduction to the projective differential geometry of curves” (1931).

## 2.2 Țițeica surfaces and curves

### 2.2.1 Țițeica Surfaces

The Țițeica Surfaces, also called S surfaces, were discovered in 1906 and later on were named affine spheres, because they have the property that the affine normals of the surfaces cross through a fixed point which is the centre of the surface.

The mathematical expression discovered and demonstrated by Țițeica, is a condition where the fraction between the total curvature (K) of a surface (M) and the distance(d) from a fixed point to the tangent plan of the surface at 4th degree, is constant (I) [see Figure 1]. There are several functions which fulfil this condition and lead to graphs with high potential of applicability within architectural space.

$a \text{ surface } M, \text{ where } M \in \mathbb{R}^3, \text{ constant } I \in \mathbb{R}$	$I = \frac{K}{d_{tan}^4}$
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Figure 1. Țițeica Surface condition

### 2.2.2 Țițeica Curves

The Țițeica Curve was introduced later on 1911 and for a surface which fulfils the Țițeica condition with a negative Gaussian curvature, the asymptotic curves are defined as Țițeica curves.

The definition of the curves is as follows: A Țițeica Curve is a curve( $\alpha$ ) which fulfils the condition that the fraction between the torsion radius( $\tau$ ) of the curve ( $\alpha$ ) in a point of that respective curve and the distance to the origin of the osculating plane in that point (d ), is constant (a) [see Figure 2].

$a \text{ curve } \alpha, \text{ where } \alpha \in \mathbb{R}^3, \text{ constant } a \in \mathbb{R}$	$a = \frac{\tau}{d_{osc}^2}$
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Figure 2. Țițeica Curve condition

## 3 METHODOLOGY / MORPHOGENETICAL PROCESS

The experimental method proposed consists in identifying the functions which fulfil the Țițeica condition and then testing a range of variable inputs and adding more variables in

order to see the behavioural and transformative evolution of the geometrical representations.

### 3.1 Analytical - Numerical Translation

It is important to specify and make the distinction between the two procedures of applications and analysis of the equations which fulfil the Țițeica condition. The equations are defined through analytical means and afterwards translated to a spatial representation.

”Characteristics for the geometric approach of Gheorghe Țițeica is the fact that even though his rational procedures are analytical (equation systems with partial derivations), the representation is geometric. Therefore Țițeica is a great geometrical specialist with an analytical spirit”.[]

With the digital softwares the analytical expressions are computed and represented with a numerical methodology, and further tests, simulations, optimisation are continued with the same procedure. The numerical method differs from the analytical model through the fact that it generates approximately results in solving of functions and equations, while being faster and with a higher degree of flexibility. Several equations are difficult to solve while using the analytical model, and therefore it requires the numerical method. The tool and database which allows for a fast translation is Mathematica Wolfram.

### 3.2 Function Categories and Investigations

Stating from the hierarchic organisation proposed by Kirvoshapko in the Analytical Surface Encyclopaedic, where Țițeica geometries are split between two categories as it follows: second order surfaces and tertiary order one, while everyone of these holds different centro-affine invariants.

There are known 4 categories functions which correspond with the requirements of Țițeica Surfaces and those are the base for experiment. [see Figure 3 ]

	$I = \text{centro affine invariant}$	order	$z(x,y) = \text{base function}$
category A	$I = -a^2$	2nd	$Z = \sqrt{1+axy}$
category B	$I = 1/27$	3rd	$Z = 1/xy$
category C	$I = a^2$	2nd	$Z = \sqrt{1-axy}$
category D	$I = -4/27$	3rd	$Z = 1/x^2+y^2$

Figure 3. Țițeica Surfaces - function categories

Stating from the hierarchic organisation proposed by Kirvoshapko in the Analytical Surface Encyclopaedic, where Țițeica geometries are split between two categories as it follows: second order surfaces and tertiary order one, while everyone of these holds different centro-affine invariants [see Figure 4 & 5 ].

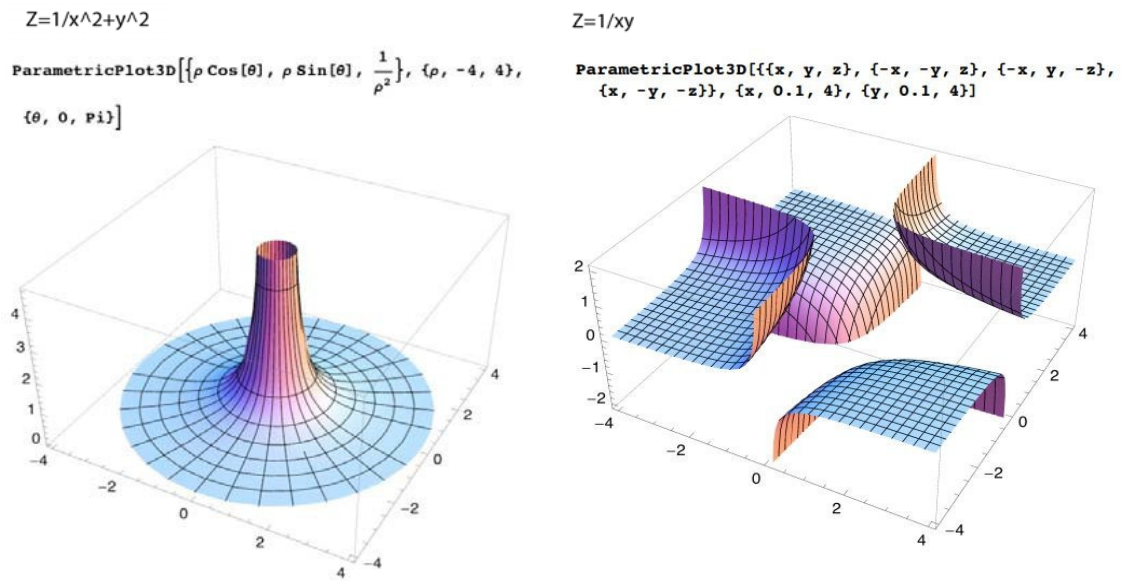


Figure 4. Left-Țițeica Curves, Right-Țițeica Surfaces [1]

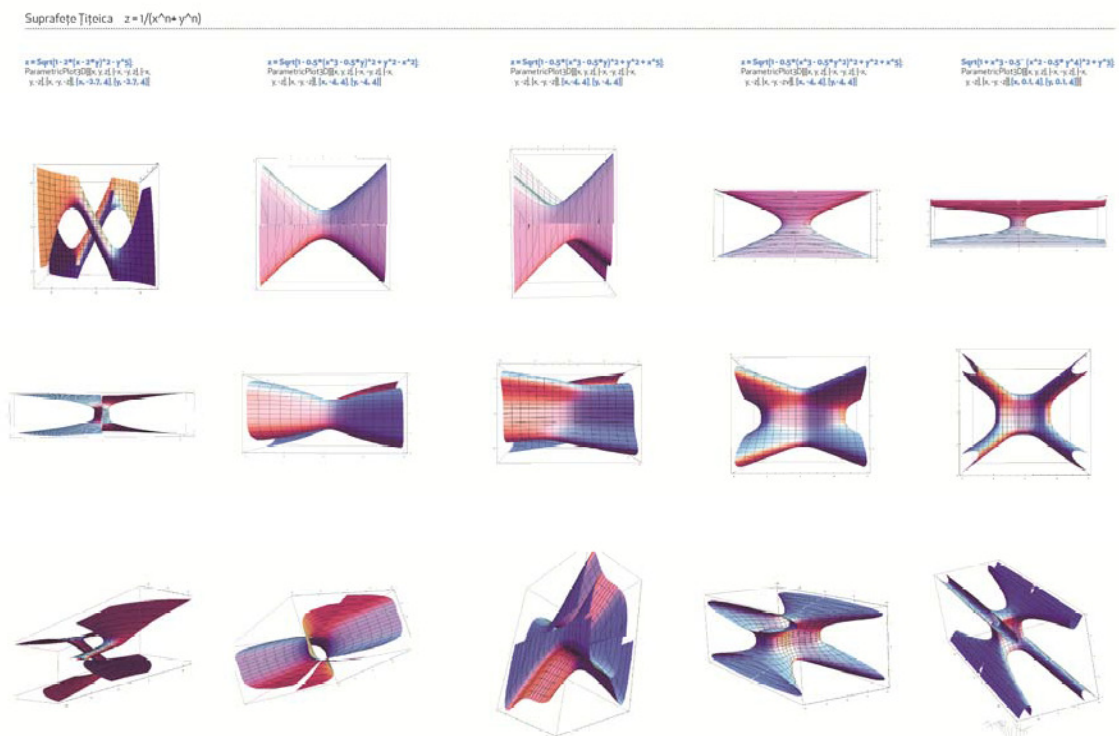


Figure 5. Left-Țițeica Curves, Right-Țițeica Surfaces [1]

## 4 APPLIED ȚIȚICA GEOEMTRIES / RESULTS AND EVALUATION FILTERS

### 4.1 Architectural qualities

The mathematical explorations of surfaces , curves , volumes either primitive or amorphological represents a multidirectional process as an extrapolation from the architectural and design field , and its scope and goal is to expand the knowledge and to integrate them in the spatial entities vocabulary. The very first step deals with an abstract mathematical language envisioned in functions and equations which further on evolve into a spatial condition defined by a set of basic elements points lines location in Cartesian space.

Within the new paradigm that positions the architectural discourse on a complex and active network of relations in determining an ecological understanding of design, with a specific metabolism, which reacts and interacts with the medium.

At the level of the architectural assembly, aspects such as utility, functionality, architecture program mould the geometries taking in account all the inputs and context features. The result is a seamless flow between all the components.

In many recent research and explorative projects, there is a keen interest in approaching the design and implicit the geometry from specific directions of materiality, tectonics, climatic, physical or chemical properties of the components, social, anthropological and nevertheless the main ones as functionality, aesthetic and structure.

From a morphogenetic perspective, through the digital medium, the architectural design becomes a dynamic map of interconnectivities between different properties of the material or the anthropological knowledge, where all the factors are in a mobile state and they influence each other, and with an end result where hierarchies are concluded.

While the first approach is generated from the exploration and discovery of geometric instances, the second one establishes the representation methodology, such as the use of projective geometry in order to construct the facades, sections, and plans<sup>1</sup>. Further, the 3Dmodel takes an important roles a representational and perception tool through the isometric axonometries or perspective view. Also at the representational process are included the measuring, labelling of geometric components and sending all the parameters further ahead in the fabrication step. The process is described as a co working of both systems, without any anticipated direction.

In the coagulation process of a respective function which projects the input values into the points in space, another step would be to simulate various conditions with the clear scope of finding the range of optimal results. In the contemporary perspective, the architectural design construct is seen from a performative stand, where the interior elements are working together to form an ecosystem.

### 4.2 Architectural qualities

One of the first advantages of the applying the ȚiȚica geometries in the design process are the achievement of flexible and large spaces, where the vertical elements are also proportionally articulated with the extended canopies. The organisational scheme of all the vertical elements resembles in either a Cartesian regular grid or an irregular one, where distances and the location are variable. According to this layout, it could generate a series of variable size spaces which allow for diverse architectural programs. For example, this variability on a 3dmineasional level could be applied very well to public spaces, open or

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<sup>1</sup> Reiser, Umemoto 2006: 80



enclosed such as pergolas, canopies and to even more complex multi story structures which can nest socio-cultural activities.

Between the most accessible implementations are the covering systems, allowing for variable environmental purposes, reacting to sun/ heat/exposure, rain protection, shelter, light filter. For example the geometry could react and integrate solutions such as electrical charging, PV panels, and offer an integrated solution for a parking canopy.

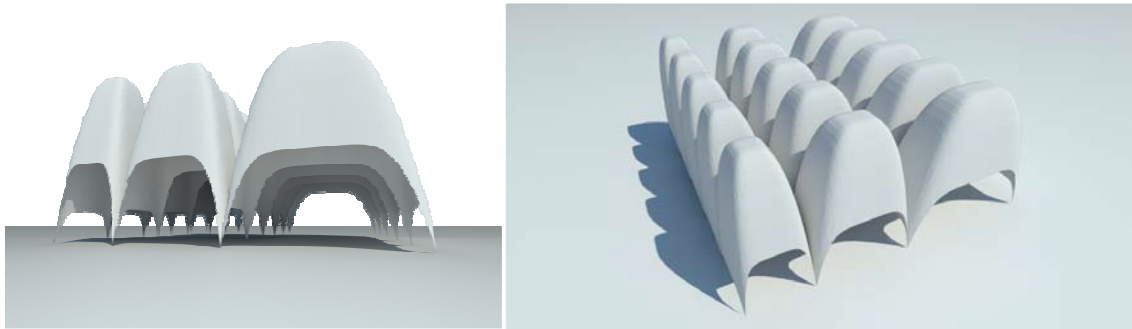


Figure 6. Left-Tîțeica Curves, Right-Tîțeica Surfaces [1]

On a more complex spatial scenario, Tîțeica surfaces and curves could formulate a construct layered on multi levels, by articulating and connecting various base components. There are multiple possibilities of articulating both convex and concave surfaces which together allow for various vistas between levels, on many directions. The compound scheme created folds similarly to a minimal surface function, generating continuous and fluid transitions between the slabs and the walls.

Recent application of a minimal surface principle into public project is the example Taichung Opera in Taiwan, designed by Toyo Ito, where this specific geometry submits the structural role and allows for a celebration of the public space, emphasizing spatial relations, the quality of opening up the space and being seen. A continuity quality results out of the folding and unfolding the space. The application of Tîțeica geometrical entities for a public space and program which could be an opera, library, cultural space, media center, creates a medium of visual permeability, which enhances the representational presence of the culture and users, intensifies the mobility from both interior and exterior perspective and also negotiates the transition between those two.

Depending on the degree of the equation, results a wide range malleability of the points which define the surface or the curves, and generates variable curvatures, from very uniform line to an almost kinked curve. Looking from the archetype perspective, these geometries are covering all the main categories: the vaults, cupolas and arches, and as a consequence can be deployed in a wide range of architectural programs. The specific curved and continuous articulation of the vertical elements with the horizontal surfaces allows for innovative modular applications, due to the variable curvature segments which link both parts, resulting in one hybrid element with a variable continuity.

Another programmatic approach suitable for developing these geometries are the infrastructural projects, offering cover solutions for train stations, terminals, inter modal hubs, bus stations. Besides the flexibility parameterizing these functions, which assume the tectonic role, there is a wide potential for different materialities, constructive principles, day light filtration and artificial light integration. Based on a function which covers variable input parameters, a modular setup is being created and this leads to

flexibility also in accommodating spaces with variable sizes and purposes. The articulating scenarios vary as well from a gradual transition neighborhood condition to juxtaposition collage solution.

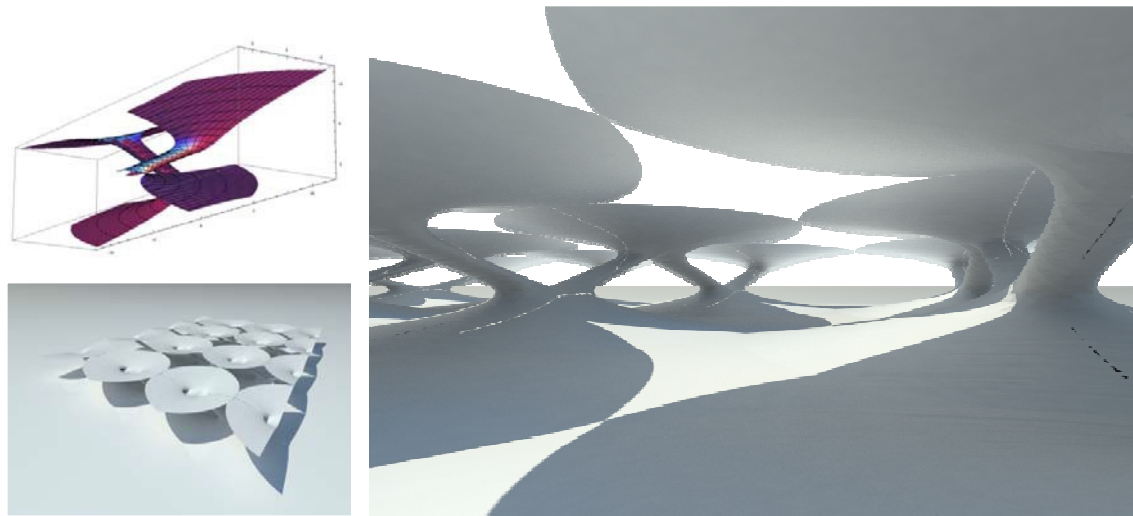


Figure 7. Left-Țițeica Curves, Right-Țițeica Surfaces [1]

The specific intrinsic qualities which constitute the vault and arched typologies projects them to the area of sacred spaces. AS a result there is a straight correlation between the semiotics of the sacred architecture and the geometries under study, taking in mind the proportions, morphology, structurality capabilities. In the context of the evolution of sacred architecture, the ongoing study and representation of the vaults and arches could be directed within a contemporary path by allowing an experimental morphological and syntactical exercise to articulate a sacred space. Tzitzeica surfaces analysed apart from the context and strictly form a mathematical perspective, due to the curvature definition, gradual light qualities exposed on the surface are variably changing thought eh daytime. The light reflected allows for variable luminous intensities and enhance the sacred space. This type of architectural program requires a tailored reaction of light and sound and stimulated further the sensorial experience.

#### 4.3 The aesthetic vision

Reopening the discussion on the aesthetic of the architecture object seems at a first impact to touch a sensitive and important topic as well, which continues extended and profound process, going further than mere appearances, outer shell representation and superficial makeup. Quantifying this feature of an architectural identity appears to be quite difficult since there is a not an apparent set of rules or principle which determines a certain status in vast and complex field of different programs, materialities etc. In order to have an improved reading of our designed context, it is necessary to detach from the image, as an aesthetic product and then have an analysis form an holistic point to a subcomponent levels and further on understanding the interconnected relations and combinations which create an aesthetic construct, through different perceptive view, means. In pursuing a framework for the beauty aspect, one could integrate the interrelationality between geometry, proportions, densities, materiality, textures, permeability, and precision in a non linear and diverse mixture of all the ingredients. It is not about an absolute optimum, it is more about right balance and cohesion between the intrinsic features, and therefore a simple minimal approach could be equally beautiful as a chaotic and more complex construct.

The evolution of the aesthetic categories, and especially the beauty chapter evolved through different historical and cultural ideologies. In the antiquity time, it was representing an ideal model, attainable only through knowledge, and defined by dimensions and proportions in opposition with the amorphous, the ugly and the chaotically. While in the Middle Ages, from a strong Christian perspective, the beauty is directly related to Divinity, and it is an expression of the perfection of the Creator, and is strictly objective, with Renaissance, the influence is shifting towards the genius of the artist which builds up the perfection within the artefact, characterized by integrity, balanced proportions, clarity and splendor. A major turn happened in the Illumination age when the concept of beauty was related to the imitation of nature and to the exploration and discoveries of the environmental phenomenon, structures, and layers. On this repositioning with nature, the German philosopher Baumgarten describes the principal characteristics as being the perfection, the order, proportion, harmony, the congruence of parts, but the perception of it goes through a subjective filter. And therefore the perception of beauty translates as an interpretation of the one which acts and is influenced by the personal culture, and liberates the evaluation process of any predefined, prejudged condition. The perception of beauty is envisioned in the capacity of oscillating between the imagination and the intellectual resources. The ongoing development of the concepts to the Modernist period progresses the previous concept to further extent and emphasizes on the idea of sensorial experience, where the perception of the world is relative and unstable, and is dependent on the sensation and readings of the reality. In this key note, the digital medium released a revolution and exponential opening to the understanding of multiple and parallel scanning of new realities, connecting large streams of information and data. The geometric studies form a tectonic and material perspective, and the multiple possibilities of articulation, variability and calculus, fabrication with advanced technologies offers a new perception of beauty<sup>2</sup>.

Ingeborg Røcker reflects on the present paradigm of the beauty as 'a subtle need for orientation, the possibility of allowing for a subjective thinking, based on cognitive processes and on sensorial experiences.'

A slight variation from the category of beauty is elaborated by Ali Rahim with the use and attribution of the term elegance, which in his vision it refers to the refinement, precision, formal opulence and includes the necessity and aesthetic desire, which liberates the visual intelligence, for all design domains and all scales. "Those parameters are the formulating the morphological process as well the final state, captured from details to the whole composition itself. The first two terms specify the immense capacity of the calculus as part of the computational model, while the formal opulence reflects the complexity of the model. Without doubt, the model charged with lots of layers of meaning goes beyond the apparent or more visible geometric or material presence, and should be the result of a multitude of other decisive factors which altogether communicate in the context of the project and determine the legitimacy of the design. In the case of an excessive use of only one certain aspect, there could deviate very easily to a formalist superficial approach.

#### 4.4 Semiotics perspective

From the semiotics perspective it is essential to underline the perception and role of spaces generated with a repertoire from Țițeica group of geometries in the socio cultural context. going ahead from this idea, Patrick Schumacher points out the importance of the binome between the technical necessities such as stability, physical integrity, performance,

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<sup>2</sup> Røcker, 2011

construction technique which results from the architects-and engineer communication and the social function of architecture.

According to a specific orientation or deployment, the Țițeica surfaces fulfil or assume symbolic roles. In the case where these geometries are displaced with the extend surface on the ground, and the vertical element upside, a vertical connection appears which allows for a tectonic movement resembling the tower-cupola type for a sacred space.

On the other hand, shifting the geometrical elements with the horizontal side up and in cantilever, another archetypal instance is achieved, as canopy, shelter, shadowing element.

The tectonic performance assumes also the role of spatial identity, and could be very easily projected in a scheme of a public plaza.

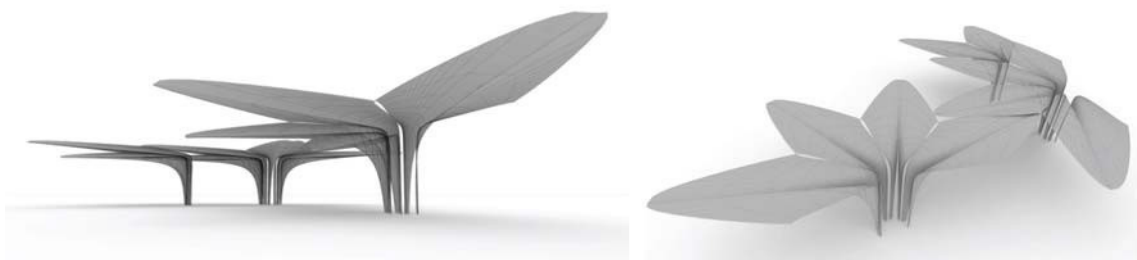


Figure 8. Left-Țițeica Curves, Right-Țițeica Surfaces [1]

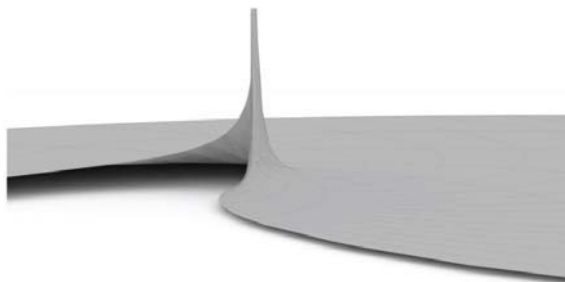


Figure 9. Left-Țițeica Curves, Right-Țițeica Surfaces [1]

#### 4.5 Structural and materiality

The tectonic capabilities and potential seems to be an internal feature of the Țițeica geometries, nevertheless there is required and in depth analysis to see the behavioral response on several factors from internal effort distribution to exterior influences (loads from diverse mediums). An open territory of research emerges when a symbiosis innovative materiality and structurality create new constructive patterns. From this point, the nature of the materials, the densities, consistency, combinations of varied components produce new schemes of material organization logic. The process of testing new internal materialities extrapolates to a holistic level, where the geometric capacities of same importance. It is linked interdeterminantary condition, where both factors are correlated and inform each other. Previous experiments conducted by Antonio Gaudi, Otto Frei, Pier Luigi Nervi, Mesmuci were dealing with physical model to test variable properties of soap films, cable catenaries stretch which where afterwards transformed into constructed models in real scale. This methodology is driven by the way gravitational

forces and other chemical relations transform and reconfigure the material. An experimental approach would deploy first the physical manipulation and afterwards will be verified, proved, simulated by mathematical, physical descriptions and calculations.

#### 4.6 Environmental criteria

The evaluation of the Țițeica geometries includes the integration and reaction to exterior factors which will be simulated. Responding to climatic factors such as wind forces, rain, sun and heat exposure is an important matter in a performance driven design. Besides the interior factors of materiality exposed before, there are straight implications between the geometry orientation, placement, curvature and the interaction with exterior mediums. For example the slight curvature of the canopy towards the column in the umbrella like structure allows for the collection of rain water, while in other cases could collect the sunrays energy and in the same protect the covered space from harsh sun exposure, being useful in hot climates.

### 5 CONCLUSIONS

There is an immense body of knowledge within in the mathematical field which accumulated through time and evolved to an even a more abstract and complex state of thinking. For the architectural and design disciplines constitutes an extended research domain to further inspire and improve the way we create our balanced and future environment. Obviously, there is a long run and transition from a pure mathematical expression to an architectural construct in the virtual environment and as well on the built up moment. Within this journey, the mathematical functions which evolve into models with spatial qualities need to fulfil an entire set of criteria in order to achieve their legitimacy and innovation. It is important to filter and understand the specificity and capacity of each set/range of geometries.

The capacities of modularity, fluidity, evolution, transformation - deformation pin point the methodology and internal properties of the geometries which sustain flexibility, variability diversity, innovation. Țițeica geometries are a wide range of spatial entities which integrate the above mentioned features and allow for multiple implementations in the architectural design whether are various programs, scales, materials.

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## ARCHITECTURAL GEOMETRIES IN DIGITAL DESIGN PROCESSES

**Mircea Alexandru Mogan**

*Ion Mincu University of Architecture and Urbanism (Romania)*

*mogan.mircea@gmail.com*

### Abstract

The following text addresses the domain of architectural geometries and proposes a close up analysis and critical approach to the recent geometrical advances in design. This research trajectory comes from an interest towards the understanding of how geometries are discovered and used, and what differentiates them from one another in design. That process could be seen as a seamless transition from mathematical formulas, through a digital or analogue medium, to an architectural construct.

There is no doubt on the potential and high speed which the digital softwares are progressing and the impact it has on the architectural and design discourse. With these great achievements made in understanding, calculating, building up, optimizing and simulating models, which should lead to a comprehensive and carefully tailored process and output. Nevertheless, the digital approach is a medium which enhances the creative process, but doesn't replace the knowledge and narrative itself.

Within this context, the applied geometrical field has grown and especially the nonlinear models released new possibilities and capacities to enrich the architectural space and experience. Seen from far, the whole movement appears to be a form liberation, due to vast and specific embedding of mathematical knowledge in the design field (Bezier curve, double curved for example), taking here in consideration the geometries, the calculus power and the variable parameters available. As a side effect, approaching the design only through formal means and enforcing specific geometries in an architectural scenario, without allowing for a negotiation within the whole spectrum of input data, will be lacking consistency. For example, instead of pulling the control points of a curve in a random way, an improved option will be to construct a logic based on distances, ratios or other rules, which will create meaningful connections between the respective points.

We stand in time at the moment when, more than ever, the spans between scales are blurred, proximities and depths fluctuate between each other, knowledge is everywhere in the virtual environment while the information flows in a nonlinear way. Product design, urban design, industrial design, architecture, share a cross inter-dependency and influence each other from a geometrical perspective, so very easily a peculiar pattern, for example, could be a common ground for all the topics above, no matter the scale, as long as it is meaningful for each context. Obviously geometry represents an abstract construct which assumes an inter-scalar role, by creating inter-relations while sorting different values. Whether geometrical elements can represent the whole architecture, or can be a small component in a subpart of a project such as a facade, it becomes relevant for their application and fabrication how material, technology and size will make that entity to be consistent and specific to its nature and composition.

In this wide area of nonlinear geometries, it is important to position each geometry, class of geometry or geometrical formation in a performative and cohesive construct together with all its other sets of information as structural, material and programmatic. In doing so, having an in depth understanding of the geometrical universe, by organizing a matrix and by tracking the evolution and hierarchy, a complete picture will be created. In parallel with synthesizing the current advances, there is

a necessity of higher explorations in the field of mathematics in straight relation with spatial design, in order to discover new possibilities which will lead to development of creative, unique and efficient architectural geometries.

An innovative aspect in the morphogenetic explorations is looking at geometrical formations, evaluating the processes and functions, whether there are single elements or multiple interactive scenarios, where there is chain of influence between various functions. In that manner, the process is experimental and implies different control levels, from very simple functions to iterative and complex ones, where the results are unpredictable.

The outcome of this endeavour goes further than just expanding the tectonic vocabulary and firstly reveals the specificity and identity of each geometrical scenario, and afterwards looks for further explorations. This is the moment where geometry doesn't overpower the architecture, but is empowered by its own capabilities in regards to their use and interaction with the architectural space, environment, activity, semiotics, culture and context.

**Keywords:** non-standard, geometry, scale less, emergence, formation, resolution

## 1 INTRODUCTION

Recent accelerated development of architectural geometries has reached a moment of high definition with just a short glimpse at the plethora of geometrical explorations conducted across professional environment as well in academia world.

In order to understand what are the actual goals to achieve or borders to cross in the advances of architectural geometry it is important to understand what are the pillars of the contemporary paradigm. In other words, what are the influences and the mediums, concepts which allowed for this exponential progression in geometrical application in design. There could be identified four main development trajectories: form follows environment (as inspiration and direct influence), form emergence (new paradigm) , digital realm (the new tool box) and performance (evaluation criteria)

## 2 ARCHITECTURAL GEOMETRY BRIEF EVOLUTION

Architectural geometries represent an essential domain of study in architectural design and cover a vast range of geometries incorporated from the large field of mathematical knowledge. On a general view, the explorations of architectural geometries went through several evolutionary stages situated on a canvas of influence fields such as structure, materiality, functionality, technology, ecology, philosophy, semiotics. From the complexity point of view one could extract various geometric categories: metric, analytical, descriptive to recent ones as: topology, differential geometry, complex systems, topological algebra.

There are several group of researchers in academic worlds as well in professional world which are pushing further the exploration, discovery, understanding, optimisation of geometrical non linear models and here there are to be mentioned the Non-Standard Exhibition, Smart Geometry Conferences.

In the present architectural geometry development there are two main topics on the agenda: geometry optimisation and geometrical morphological investigations. The first one refers the finding intelligent solution in bridging the transition from the digital geometrical model to the translation in a physical, material level of fabrication. Here is important to emphasize on the big gap between an abstract geometrical conceptual model, almost a scale-less entity and the optimised model ready to be translated to a real scale object. One of the very well documented subjects in this category is the optimisation of double curved surfaces and offering intelligent solution for subdivision and panelling with variable geometrical types, sizes and curvatures. It deals also with production, fabrication and assembly logics.

The second domain of interest is the extended research in the geometrical universe in order to inform the architectural design field. While the optimisation is innovative at a micro level in making the transition from digital to physical, the morphological research looks at a macro scale and abstract area. This field is characterised by a constant exploration for geometries with spatial qualities, with strong identities or capabilities and how they are generated. This territory set the premises for further explorations of the vocabulary and the articulation methodologies.

### **3 MORPHOLOGICAL PROCESS**

#### **3.1 Critical Points**

The present context of architectural discourse creates the impression of a large and exponentially extended universe through the large creative range of geometric models, observed through the overuse of term free-form until it lost its qualities. This so called liberation could be explained with a bigger picture in mind, looking at the previous stages of architectural ages where the vocabulary was more constrained and standardized. In relation to this, the present state reached a high degree of innovation and multiplication in the approach of architectural geometry, and tends to peak in an excessive moment, especially with their use without a clear purpose or relevance for what these geometries each should or could perform.

One of the further steps to proceed in order to get more clarity in the exuberance created is to identify within groups of geometries the potential, specific features capabilities, performance levels in order to give legitimacy and relevance to their implementation.

#### **3.2 Development trajectories**

##### *3.2.1 Form follows environment*

The exteriority factors which influence the design process are becoming more and more relevant and reposition the dialogue between natural environment and the anthropological medium. Through history, the natural context has been a continuous source of inspiration for human kind and this happened either through mimetically strategies, which cover different procedures of analysis and synthesis, resembling into ornaments, layouts, proportionalities, or on a more recent note through a performative scale, where certain descriptive elements are extrapolated as principles or systems which are integrated in the design.

In this case the relation with the natural environment could be split in two correlated spectrums, one where there is the direct influence of the exterior adjacent factors such as light orientation and exposure, wind orientation, rain fall interaction, heat gaining etc and one with intrinsic properties and organisational logics. It is interesting to examine the evolution of local habitats in relation to the geographical context, where multiple intuitive and innovative solutions were created and built to respond to these direct conditions such as: wind towers, wind mills, shade structures etc. The question which raises is how can you create several other responses and extend this natural interaction to these impact factors from a geometrical, technological, material point of view.

Besides this close-up interdependency with the surrounding cultural medium there are other in depth territories where science fields become innovative resources for design implementation of intelligent system or organisations. Few case studies reflect those sources of inspiration such as: mathematical domain (Moebius Strip, Klein bottle, minimal surfaces), natural sciences (molecular structures, Voronoi pattern, swarms, electromagnetic field, vector field, self organising systems, genetic algorithm) anthropological and social field (crowd analysis) semiotics, ecology. [see figure1]

The new thesis of architecture is sensitively captured under the concept of adaptive ecologies exposed and coordinated by Theodore Spyropoulos within a wider group of professionals and students in a very experimental territory and with high level of precision and in depth research. In this scenario the architecture is an constituent of the ecosystem while blending and performing in the environment as an active system implying a complex network of behavioural patterns, bodies, energies, relations, operations which work at a basic level with simple rules. [1]

The ultimate state of architectural discourse is envisioned by David Ruy, as a collapse of the architectural object into a field of relations that then dissolves into a general ecological field of relations that constitute the world.[2]

One aspect which is important is the way is to see how principles discovered within an experiment could be extrapolated and applied further on a trans-scalar procedure, where other parameters of material, structure interfere. For example how a cell organisation will translate into a tectonic model for any kind of program. To what extent the micro features of the tissue will proportionally be transferred to a human scale design component. Whether it transfers one or more qualities , relevant in this case is the principle itself, the fact which makes it valuable in other scalar conditions.

Going further in discovering the invisible layers, there is more to find out and envision design ideas and schemes which deal with energy transformation, air masses and heat transfers. Sean Lally proposes creating an environment which is more sensitive and intelligent in the sense that formulates architectonical constructs which encourage energy transformation within interior exterior spaces. Here can be mentioned the differentiation between mediation and amplification of energy fluxes. The thinking beyond the mediation refers to the reduced, blocked and limited boundaries of climatic interaction, while the amplification allows for curating the microclimatic fluxes through the help of surface articulation and materiality in gradual processes by enhancing , amplifying the energies while keeping in mind the human scale and interaction with those mediums. For example, how could a prototype intermediate medium would allow for natural ventilation and climatisation in a self embedded system.[3]

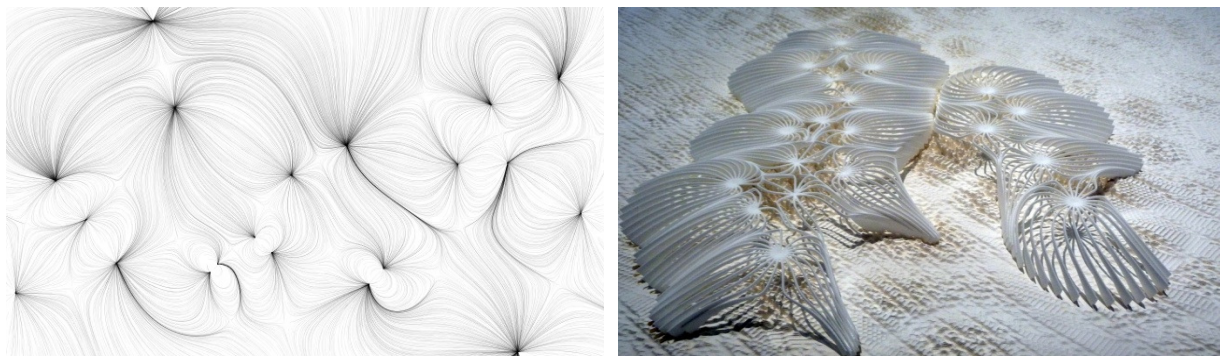


Figure 1. Electro-Magnetic Fields, Alisa Andrasek ; Left- Conceptual plan; Right-Perspective

### 3.2.2 Form emergence

In the new latest subjects of architectural design, there can be seen a keen interest in the evolutionary processes and therefore in the geometrical transformations carried in the same time with the design narrative. This thinking process relates directly with the fields of genetics and brings in discussion the generative methodology, where by formulating some principle rules within an algorithm, a code is created and will result into various outcomes. This represents a major shift from a system where one can manipulate the input factors and geometry of a model only at each procedure to one where the whole attention goes in the beginning of the process where a prescription and well defined steps are being made. While running the script all the steps are being followed and results are generated allowing for a predictable or unpredictable model, depending on the constraints or variables . The procedure has to be very specific in order to describe rigorously the intention. From an experimental approach there is immense power of computation in order to set a task which will determine emergent iterations, and later on lead to unexpected results.

On the other hand another great achievement is that the whole story construct is mapped within the script , and therefore there is an easier and faster access to change, update several parts , or truncate it and use it with other definitions

Antoine Picon highlights the fact that the desire to understand form in terms of formation is one of the reasons for the attention that digital architects pay to recent scientific developments.[4] Process stands at the forefront of the morpho-genetical act in favour of a predefined and superimposed geometrical response.

Similar as a generative code that develops geometric sequences, the mathematical branch of topology studies the intrinsic qualitative properties of geometric forms that are not normally affected by changes in size and shapes. To this evolutionary process what is effectively relevant is the set of transformations and the fluidity of actions. Therefore, there is a set of rules and features which underline the process and substitute the unidirectional reading of the form. And secondly is the action of evolving through correlation which determines a range of instances.

In the architectural design, dealing with a fluid model which evolves while focusing on the structure of relations and the intrinsic features whether is internal or external of the architectural context, allows for a high degree of variability.[5]

The geometrical malleability gained within topological transformation it is highly intriguing and fascinating to explore and discover new geometrical states or articulation possibilities. This studies refer to a strong scalar geometrical movements, deformations, transition and envisions new geometrical instances, as hybrid moments which develop in the process. [see Figure2]

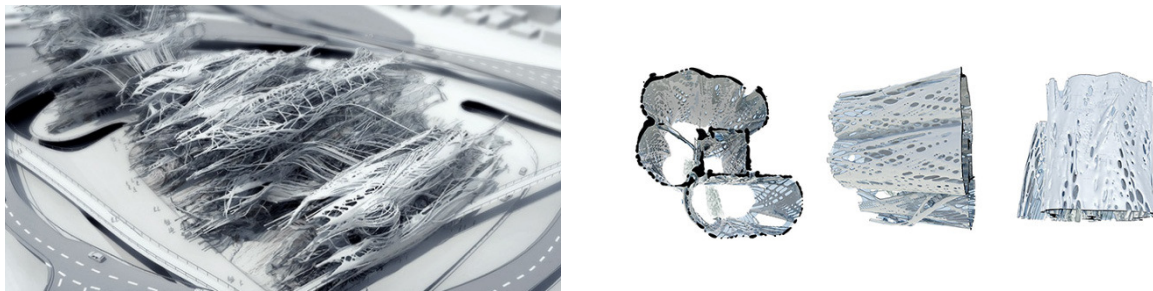


Figure 2. Non-linear Tectonics, Penn Design, Kokkugia 2010

### 3.2.3 Digital Medium

It is more than obvious the principal role in the use, implementation and the calculus of geometric entities of the digital medium, which evolved rapidly through the progression of 3d modelling and animation software. These platforms allowed the architects and designer to do more than develop their ideas into a drawing, they embedded mathematical functions and complex tools to configure, visualise, simulate and to experiment these capacities. Between the initial digital medium point are the Bezier Curves and NURBS curve which were first time in the beginning of 60s as a translation from the mathematical field to graphics used in the automotive industry [see Figure 3]. Later on in the 90s the graphical knowledge evolved into the modelling software with 3 modelling types - NURBS modelling subdivision modelling and polygonal modelling and led to an unprecedented fast growing and experimental phase in the architectural realm.

While before mathematical function were implemented by computer programmers in the software and creating a tool kit for the designer to act, in latest development as a result of the collaboration between architects, designers and software developers, the interfaces and functionality of the design software allows for more freedom extended control and exploration capacity. From software which allow for coding/scripting constructs to BIM modelling ones there is immense range of specific tools to work with.

The catalysis of the geometric formation in architecture and design is the digital medium. In other words: "The calculus machine has an instrumental role in the directionality taken by the digital architecture"[6]. In this development line, one of the ultimate frontier which has been surpassed is the access of the architect to the code itself. This fact leads to an intensified degree of freedom while interacting directly with mathematical functions and deploying new scenarios in the 3d digital

environment. This moment leads to the exploration of new territories, and requires higher precision and extended mathematical knowledge on one hand and coding skills on the other.

Reducing the design process in the digital medium to the very bottom level, there are the connections between bits and atoms as Nicholas Negroponte envisioned, where atoms are the representation of the physical space, while bits –the information is the artefact of the virtual space. While the design process is running more and more digitally, the bridges between the two worlds are getting closer.[7] The imagined space, geometry, entity in the digital realm can be built quickly and precise through digital fabrication techniques. This allowed for the realisation and accurate build up of complex geometries. Stepping back to see have an overview, there are impressive developments in relation with materiality and technology (3D printing) which will continue and make the communication between real and virtual better and faster.

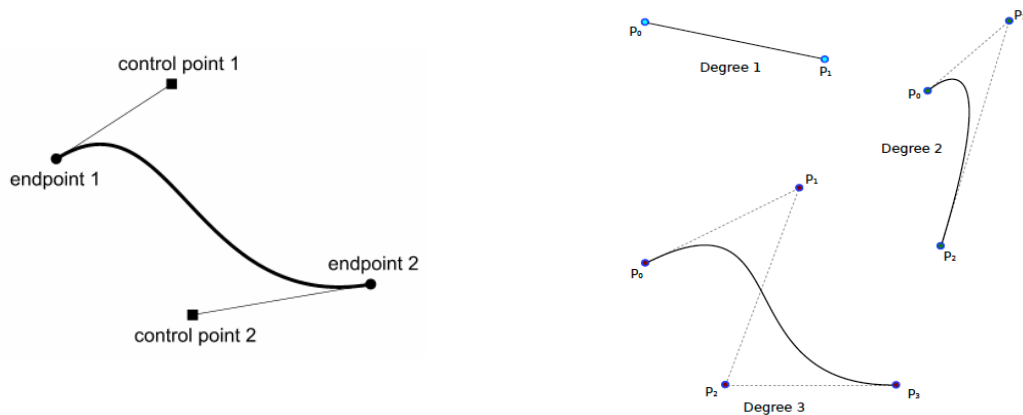


Figure 3. Bezier Curves

### 3.2.4 Performance

Bridging the idea of the emergence within an ecological understanding of the built space through a digital medium requires a different analysis.

As a starting point, Antoine Picon observes that "the architectural use of the computer in an experimental perspective have generally privileged form: the investigation of shapes in complete contrast with the limited vocabulary of modern architecture. The result has been a proliferation of alternative geometries that are calling for new criteria of evaluation "[8] Following this line of thinking, there is a high interest in going further than a formal plasticity exuberance and looking into performance factors which formulate the specificity and usability of architectural geometries.

Through the architectural evolution there was all the time an importance given to the proportionality of elements in composition, visible in the architectural parti, facades or urban spaces. Nevertheless this connections of ratios is a consistent intrinsic property of design process, and determines a foundation for extra layers of information. In many cases the argumentation behind a specific setup had an absolute approach towards a fixed and rigid scheme elaborated mostly from a proportional direction. While informing a scheme with data and conditions which deploy a quantified set of relations, allows for a powerful construct pointing towards a high performance status. In this sense, the design works towards an evolving, adapting, responsive system. The challenge stands in the ability and intuition of formulating solutions which incorporate a set of interdependent criteria which enforce one another and not just tackle the response from only one perspective. To exemplify, in case a facade can very easily be reduced to a composition where only the technical equipment fulfils the climatic necessity or where the same structure would have a geometry which reacts to different actors as technical, views, air ventilation, radiation etc.

The notion of performance appeared first in an architectural context in the late 60s within the National Aeronautics and Space Administration (NASA) in the Apollo human space flight programme and the main goal was to design an eco-system with high levels of complexity from an engineering



perspective. The research approach was based on topics such as system analysis, systems engineering and operations research. One can point out the high technical level and performance in various extreme mediums , with a high efficiency habitat.

Michael Hensel explores the potential of the non-discrete objects, which " unfold their performance capacity by being embedded in nested orders of complexity and auxiliary to numerous conditions and processes." [9] Those architecture premises call for a new set of the built form - environment innovation , where the boundaries are more complex and mediated membranes. In this sense, the architectures are continuous transitional moments and microclimates which are actively connected.

As a direct consequence of an extended environmental approach to architectural design results in considering the way which the architecture layers mediate the transition of interior- exterior spaces, or as structured organisation of energies, usage, flows of circulation, activities etc. This implies the actions which occur from integrated systems coming from an architectural construct which includes not only technological attributes but, also a renewed, sensorial and innovative combination of other criteria such as spatial organisation, geometry articulation, orientation, materiality composition.

A key factor in the space articulation materiality and performance is played by geometry which can evolve towards tailored solutions, in straight interdependencies with other attributes such as materiality, fabrication etc. For example, the exterior skin can interact as climatic active buffer while orienting the geometry in order to avoid high exposed light radiation in the interior, and in the same time to capture it and harvest the energy. In this context the scale on all levels from the hole to the subparts has an important role in mediating the exterior-interior flow of air, energy, water. In the competition for the Astana National Library, the architects from BIG propose an organisational system which is displayed in a circular way and creates a hierarchy path and distribution of the main spaces. [see Figure 4]

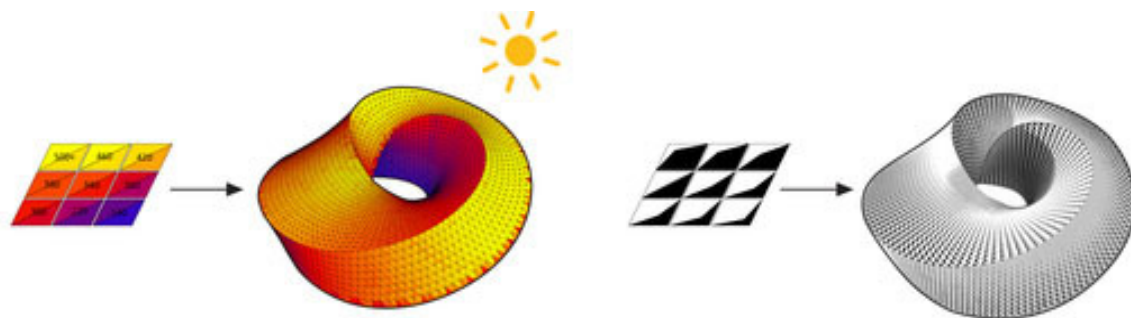


Figure 4. Moebius Surface - sun exposure, BIG, Library, Astana

A continuous animation of the sections through the spaces describe various conditions of common spaces from vertical to horizontal layout. Besides the program organisation, the outer shell is represented by a *moebius* surface which allows for a variable surface exposure to the outer factors and as well a higher resolution panelling in which the variable geometries react to sunlight exposure. Further from this case, the potential of transitional spaces which co-work with air flows and distribute, channel and circulate the streams in straight relation with the geometry orientation, torsion, curvature result in creating microclimates and therefore gradual conditions. The main challenge is to explore such territories with a high purpose to achieve a state where energies are transferred in extended spatial way avoiding extra mechanical source. Another important factor represents the sun orientation and how the architecture reacts to this medium, whether is a articulation of surfaces and volumes , a stratified zone of surfaces, or a geometrical formation permitting for optimal daylight levels. Therefore, the thermodynamic zones are actively working through the permeability of a specific boundary. Further investigations directed into topics such as porosity, fragmentation, 3d texturing, adaptability will enhance potential spatial solutions for architecture climatic boundaries.

In parallel at urbanity level, the assemblies of urban units in relation to sunlight, air masses, views, infrastructure flows constitute a relevant and complex topic. In this case the discussion goes further than applying certain basic standards which are regulatory guidelines for any specific area, and challenges the potential of creating schemes where the built habitats allow for an informed and efficient configuration for all floors, cultural program activation, orientation, energy supply and transformation, landscape integration.

The exploration of geometries towards a direction which encounters the potentials of the intrinsic capabilities in relation to the exterior factors, leads to reconsideration of geometry as a pure cover or shelter purpose. The variable plasticity embedded in the mathematical formulas allows for certain parameters for multiple performative scenarios which react to the environment, enforce energy dynamics, collect energy, allow for adaptation and in the same time are specific to each context of urban , local, material, climatic nature, neighbourhood conditions, etc

Definitely the relation between architectural components grows in complexity where the subparts are coordinated to perform in multiple ways. Therefore each component, no matter the scale of it has its own role, and the discoveries which lead towards a performative based design, start from a micro scale where materials aggregate in a more efficient and innovative mode or when built elements include a high sensitivity towards surrounding mediums, or when knowledge is embedded in the architectural space to help users experience.

In conclusion there is a multi scalar process and multi layered adaptive condition which architecture can evolve in order to integrate itself to the natural environment as an active part.

#### 4 CONCLUSIONS

Within our present agenda there are several points which can frame, evaluate and create a knowledge map with the applicability of architectural geometries and the nuances which determine their use. Between the main criteria to be explored are: perception of geometrical objects, the spatial qualities, structural benefits, program adaptability, materiality compositional aspects, interaction with environmental medium, semiotics. After an in depth analysis within these categories, one can identify the identities and performance capabilities of each geometric category.

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## **ARCHITECTURE UNDER WAY. AN ANTHROPO-ARCHITECTURAL APPROACH**

**Anda-Ioana Sfinteş**

*Researcher, Ph.D. arch, "Ion Mincu" University of Architecture and Urbanism Bucharest (ROMANIA)  
anda.sfintes@gmail.com*

### **Abstract**

As the scale of architectural interventions grow simultaneously with the concern for a better use of the built space, we cannot help noticing the innovative approaches that combine the two apparently opposed trends. Sociological and anthropological inquiries are being closely regarded, understood, interpreted and – the resulting conclusions – implemented into architectural designs. This makes way for an anthropological and architectural approach – an anthropo-architecture – that brings to its users much more than it would seem.

The aim of this article is to investigate the values (newly acquired or emphasized) of the contemporary architecture that takes into account, in various forms, the urban flow. From an anthropo-architectural perspective, this also means identifying a set of multidisciplinary relevant characteristics, underlining the positive outcomes and the various possibilities such an approach create.

Anthropo-architectural designs are highly creative and performative without being explicit. They are under-designed, thus allowing various uses and appropriations. Such designs speak of blurring boundaries, underlining overlapping understandings of reality whilst (re)constructing it.

Already built examples (like the *Ordos Art & City Museum*, in Mongolia by MAD Architects) as well as buildings in the construction phase and competition entries (like *Bryghusprojektet* in Copenhagen, Denmark by OMA or *MÉCA – Maison de l'Économie Créative et de la Culture en Aquitaine* in Bordeaux, France by BIG) are great examples of buildings that activate new or existing urban links. They give new functions and new meanings to new or existing urban paths. More than that, the buildings themselves are part of the path, generating a close connection between public and private spaces, between nodes and itineraries, between the city and its places. Anthropo-architectural approaches highlight the idea of a city as an organism. In this case, architecture facilitates various social processes and interactions, the accumulation of knowledge, the meaning assignment and negotiation. These approaches come with multiple dissolutions or cancelations of boundaries and limits. They work best with a complete free access, which in the case of institutions like libraries or museums can carry highly important roles. This makes the information (or demands it to be) accessible, current, challenging, innovative and last but not least inclusive. For example, the social work of museums (as highlighted by Lois H. Silverman, 2009) is being asserted through such blurring of the boundaries that helps educate as well as mobilize and motivate the public, that facilitates beneficial experiences and social interactions, promoting social activism.

Anthropo-architectural approaches are by default multifunctional, partially not programmed and they are flowing with secondary services with great social value. They have extensive intermediary spaces, highly occupied – leisure spaces, stages (more or less framed), cafés, restaurants, various shops that vivify the architectural object through constant activity and move. The numerous extensions operated upon existing buildings that add such in between spaces emphasize this approach as more than a trend – as an actual need.

An architecture under way is an architecture that creates and/or embeds urban paths, enriching the experience of passing-by by transforming it into passing through.

Framing the idea of an architecture under way requires, first of all, a multidisciplinary theoretical approach that would bring together various theories, from the social construction of reality of Berger & Luckmann and the social space of Lefebvre to Soja's *Thirdspace* and newer visions of liminality. The flexibility and extension of the concepts all these authors propose will help us highlight the dynamics of the contemporary built space and the alienation from an architecture that highly programmes its uses. As this idea follows the newest trends in architecture, we will use case studies as second methods of inquiry, highlighting the important role played by the context and thus the close connection between architecture and anthropology before and after design.

**Keywords:** anthropo-architecture, appropriation, urban links, urban paths, passing through

## 1 INTRODUCTION

An architecture under way, as we see it, is a dynamic architecture that enters into a dialogue not only with its functional users, but also with its passers-by. An architecture under way accompanies the latter, highlighting the anthropological role architecture plays rather as an active "background" presence. Such a background is more that it would seem because it contributes to framing a context, it directs and maybe less obviously influences the behaviour of all its users – from direct beneficiaries to passers-by, perceivers, spectators etc. Also, this kind of background allows direct interactions with the built form, if wished for. It creates all the necessary conditions for interaction, without making it obvious or mandatory. We will illustrate all these assertions with contemporary case studies, but a deep understanding of the trend of designing an architecture under way must start with an understanding of space from both an architectural and anthropological perspective.

Framing the idea of an architecture under way requires, first of all, a multidisciplinary theoretical approach that would bring together various theories, from the social construction of reality of Berger & Luckmann and the social space of Lefebvre to Soja's *Thirdspace* and newer visions of liminality. The flexibility and extension of the concepts all these authors propose will help us highlight the dynamics of the contemporary built space and the alienation from an architecture that highly programmes its uses.

The starting point of our approach is the conceptualisation of a close interaction between various components of reality that form the social space. Berger & Luckmann [1] and Lefebvre [2] are key authors in this regard, from a sociological point of view. Berger & Luckmann assert that reality is socially constructed and phase the sociology of knowledge as a way of analysing this construction. They link human thought and social context, giving an important role to subjectivity and subjective meaning. After establishing, as well, that "*(Social) space is a (social) product*" [2, p. 26], Lefebvre brings into such an equation the physical space and points to three components: a) the spatial practice (perception), b) the representations of space (conceptualisations) and c) representational spaces (interpretations, performance, use). Such theories had a vital role in the more recent approaches of urbanism and urban planning (after experimenting with drafted realities), in the conceptualisation of the urban space/form as "a multi-dimensional way, composed of material structures and physical spaces, but also and perhaps more fundamentally by social, economic, legal and political modes of organization and interaction" [3, p. 2].

On the other hand, in philosophy, Foucault was speaking of other spaces – *heterotopias* [4], highlighting the various, sometimes opposed, realities that coexist, thus raising questions about the physical boundaries and their functions. Coming closer to architectural approaches, we see that the parallel between heterotopias and the anthropological spaces of liminality (see Turner [5]) is continued through the representation of a *Thirdspace* – a space where meanings and significance are prime, but as a "translation of knowledge into action in a conscious – and consciously spatial – effort to improve the world in some significant way" [6, p. 22].

All these approaches and theories might seem rather disparate, but they all led somehow to the conceptualisation of an architecture under way – an architecture that first of all recognises the importance of social aspects, the connection and interdependency between built form and behaviour; then, it questions the architectural boundaries, leading to their functional dissolution (admitting an organic continuation between various realities, heterotopic or not) and so to a holistic approach of the city as an organism, where urban flow is as important as static use, thus demanding the architectural designs to be strongly integrated into broader urban and social contexts.

In the following pages we shall investigate the potential of an architecture designed from the beginning as an anthropo-architecture, responding to contemporary needs of flexibility and mobility. We shall point to certain characteristics that link architecture and social outcomes, envisioning integrative approaches of the built space.

## 2 THE SCALE OF CONTEMPORARY ARCHITECTURE

As the scale of architectural interventions grow simultaneously with the concern for a better use of the built space, we cannot help noticing the innovative approaches that combine the two apparently opposed trends. Sociological and anthropological inquiries are being closely regarded, understood, interpreted and – the resulting conclusions – implemented into architectural designs. This makes way for an anthropological and architectural approach – an anthropo-architecture – that brings to its users much more than it would seem.

The most appreciated contemporary constructions (as highlighted also through the importance given to them by making their design the subject of architectural contests) seem to be big-scale interventions that bring together various functions, answering to different needs. Thus, they take into account:

- cultural values (becoming cultural landmarks, setting or emphasizing local/global/glocal place identities);
- social values and needs (they become public places by facilitating: communication, socialization and the building-up of communities, participation, relaxation etc.);
- educational trends (by facilitating the access to information, the dynamic accumulation of knowledge inclusively in non-formal or informal settings);
- artistic values and trends (by acknowledging and fostering creativity, performance etc.);
- economic and political values (establishing and/or underlining the powers in play).

All these values, needs, trends speak of the complexity of contemporary realities and especially of the now undisputable relation between built form and anthropological aspects which form the “*lived landscape*” [7, p. 17]. Anthropo-architectural approaches are by default multifunctional, partially not programmed and they are flowing with secondary services with great social value. They have extensive intermediary spaces, highly occupied – leisure spaces, stages (more or less framed), cafés, restaurants, various shops that vivify the architectural object through constant activity and move.

Recent researches as well as new design concepts and principles support the idea of an anthropo-architecture. The main feature of an anthropo-architecture is the (not necessarily physical, but at least conceptual – perceivable in the organic continuance/overlapping of spaces) blurring of the boundaries. What interests us most is the social dissolution of boundaries that derive from and/or determine also the physical dissolution. It is hard to point to a clear unidirectional causality between built space and social aspects. They rather work and raise together, augment and influence each other. However, such an approach brings into question the urban flow as one of the most important concepts in the design of public spaces. The new design principles stated by Stabilini et al. highlight this claim; the authors speak of: design based on use of the space, routes, schedules of inhabitants, of concepts like “temporarily inhabiting a place”, ease of use and access, diversity of uses given by the diversity of inhabitants [8, p. 120]. The flow as “performances of movement”, as Miciukiewicz and

Vigar call them, become “emancipatory practices through which individuals gain power to renegotiate meanings of self and the city” [9, p. 176].

### 3 THE VALUES OF THE NEW ARCHITECTURAL APPROACHES

The aim of this article is to investigate the (newly acquired or emphasized) values of the contemporary architecture that takes into account, in various forms, the urban flow. From an anthropo-architectural perspective, this also means identifying a set of multidisciplinary relevant characteristics, underlining the positive outcomes and the various possibilities such an approach create.

#### 3.1 Urban Flow

An architecture under way is an architecture that creates and/or embeds urban paths, enriching the experience of passing-by by transforming it into passing-through, as we shall see in a couple of recent case studies. The path to passing-through examples has been set by smaller but highly public-oriented interventions which proved their meaningful social role.

Already an old promoter of flows (urban flows, flows of populations, flows of culture, flows of meanings etc.), anthropologist Ulf Hannerz emphasized in his works the role constant motion plays in (re)creating, negotiating, establishing meanings [10], [11]. More recent researches follow a deeper understanding and analysis of urban flows, linking urban forms and behaviour. The concept of “urban rhythm” [7] – as part of a space-time design approach of the city [12] – already indicates an understanding of the flow mechanisms, of the way different uses coexist, overlap, mix.

#### 3.2 Characteristics

We stated that anthropo-architectural interventions build upon the constant movement of their users. This leads to certain characteristics that support or at least take advantage of the urban flow. We are speaking of:

- physical characteristics:

- from the blurring of the boundaries to their dissolution (transparent facades that make visible the activities taking place inside/outside [13], opening dialogues between inside and outside; facades that open up completely thus unifying the inside and the outside);
- the design of various intermediate spaces as public – semi-public/semi-private filters;
- the integration of free urban passages through buildings (the building as a shortcut);

- functional characteristics:

- multi-purpose and multifunctional spaces (that accommodate various needs and uses);
- the forefront presence of food services and commercial spaces;
- the exploitation of intermediate spaces (as non-formal/informal creative and performative spaces [14]);
- the under-design of public places that allow their contextual customisation;
- creating the possibility of choice;
- exploiting perception;

- cultural, educational and artistic features:

- using the built/unbuilt space as pretext for various events/uses (entertainment, cultural services, leisure);
- encouraging casual and spontaneous performances;
- allowing processes of appropriation;



- comprising features that allow the shaping, expression and negotiation of identities;
- the embracement of temporality [8].

Anthropo-architectural designs are highly creative and performative without being explicit. They are under-designed, thus allowing various uses and appropriations. Such designs speak of blurring boundaries, underlining overlapping understandings of reality whilst (re)constructing it.

### 3.3 Case Studies

As this idea of an anthropo-architecture follows the newest trends in architecture, we will use case studies as method of inquiry, highlighting the important role played by the context and thus the close connection between architecture and anthropology before and after design.

#### 3.3.1 Ordos Art & City Museum

Ordos Art & City Museum designed by MAD Architects in Ordos, Mongolia, has been opened in 2011. It has been designed with the idea of becoming a local landmark, expressing the local identity previously ignored when the new city has been systematically planned. The museum integrates into its surroundings (through the organic façade which speaks of the dessert), as well as into its urban context by allowing the passage through the building. The architecture contributes to an interpretation of local traditions, thus connecting past and present realities. The interior and exterior photos of the museum taken by Iwan Baan [15] – animated by locals dressed in traditional costumes and local animals – show an intriguing but creative dialogue between tradition and present-day reality, as opposed to the previous negation. It is a dynamic building that allows appropriation and stimulates the urban life of the city.

#### 3.3.2 Bryghusprojektet

Bryghusprojektet designed by OMA in Copenhagen (to be completed in 2017) is a great example of big-scale intervention that integrates various urban layers, activating dynamic relations between them. Bryghusprojektet is a multi-purpose development, situated on the waterfront of the city, which embeds the Christians Brygge road thus also highlighting a conceptual liminal approach. By this we refer first of all to the blurring of functional boundaries and to the expected social and performative outcomes. The latter assumes encouraging the cohesion of a local community; attracting not only residents, but also visitors; facilitating a dialogue between the various actors that use the new spaces, while the blurring of functional boundaries refers to the blurring of boundaries between the different functions of the building: housing, offices, retail, food services, park; but also between the building and the urban context by linking and activating the water's edge and the access to the city centre. The architecture of the building itself becomes integrated into an urban context which seems to have anticipated it – The Black Diamond building of Copenhagen (1999), situated at a distance of approximately 200m from Bryghusprojektet, is also passed through by the Christians Brygge road, but above the street there are only passageways between the two wings. Thus, Bryghusprojektet wishes to be an example of complex and flexible design, leading to flexible and various uses.

#### 3.3.3 MÉCA – Maison de l'Économie Créative et de la Culture en Aquitaine

Bjarke Ingels' aptitude for innovative thinking about architecture is well known and appreciated. He frames an architecture that enables architects to "turn surreal dreams into inhabitable space, to turn fiction into fact" [16]. His buildings are simple but complex, sincere, each being well focused on a strong idea, thus proving or helping to achieve a deep understanding of the context, of the actors, of behaviours and outcomes, of social, economic, cultural, political realities. In 2012 BIG won the competition for designing La Maison de l'Économie Créative et de la Culture en Aquitaine in Bordeaux (MÉCA). The proposal highlighted a couple of uses in terms of spatial, visual and movement relations between the building and the urban context. It integrated a promenade as a folded line, thus marking, in the centre of the building, an expanded public space – an urban room which was supposed to be in the same time an open public space and an in-between space that marked the entrance into the building. From the beginning it was thought as a less formal performative space, despite the formality of the institution it pertained to. The building allowed the passing-through of

people, but also its exploration inside and outside. A panoramic rooftop terrace linked the institution and the broader urban setting. The whole building was in fact “an inhabitable landscape” [17].

#### 4 CONCLUSION

Therefore, we saw that already built examples (like the Ordos Art & City Museum, in Mongolia by MAD Architects) as well as buildings in the construction phase and competition entries (like Bryghusprojektet in Copenhagen, Denmark by OMA or MÉCA – Maison de l’Économie Créative et de la Culture en Aquitaine in Bordeaux, France by BIG) are great examples of buildings that activate new or existing urban links. They give new functions and new meanings to new or existing urban paths. More than that, the buildings themselves are part of the path, generating a close connection between public and private spaces, between nodes and itineraries, between the city and its places. Anthro-architectural approaches highlight the idea of a city as an organism. In this case, architecture facilitates various social processes and interactions, the accumulation of knowledge, the meaning assignment and negotiation. These approaches come with multiple dissolutions or cancelations of boundaries and limits. They work best with a complete free access, which in the case of institutions like libraries or museums can carry highly important roles. This makes the information (or demands it to be) accessible, current, challenging, innovative and last but not least inclusive. For example, the social work of museums (as highlighted by Lois H. Silverman [18]) is being asserted through such blurring of the boundaries that helps educate as well as mobilize and motivate the public, that facilitates beneficial experiences and social interactions, promoting social activism.

An architecture under way exploits the social outcomes of design, appreciating “the *social life of urban form*” as the way in which “cities are structured as spatial environments around and through social relations, practices and divisions” [3, p. 16]. This assumes embedding not only various social needs, expectations, values, but also the social qualities of travel into urban planning and design [9].

An architecture that takes into consideration the urban flow, however, does not only allow the passage or various uses on the move. It also encourages the active or passive participation of the public, fostering creativity, subjective reading and interpretations of reality, entertaining perceptions, facilitating the experiential accumulation of knowledge.

In the same time, an anthro-architecture allows not only various uses, but also the natural transformation of urban contexts and certain adaptations of the built space. This is not an easy task – to design buildings “that have a level of ‘indeterminacy’ in their design, without being excessively changeable — environmentally adaptable but not neutral” [19, p. i]. However, as the case studies have shown, it doesn’t seem impossible, but the most positive outcomes are yet to be attained and proved.

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## **IN-BETWEEN SPACES. THE FORMER PSYCHIATRIC HOSPITALS, NEW URBAN GHOSTS**

**Angela D'Agostino**

*Università degli Studi di Napoli 'Federico II' - Dipartimento di Architettura (ITALIA)  
angdagos@unina.it*

### **Abstract**

The following reflections are developed in the frame of a larger on-going research project about the possible future of former psychiatric hospitals. They were closed and often forgotten following to the Law n. 180 in 1978 that ordered the closure of one of the Foucault's total institutions, which was the most heavily marked by the interweaving of urban, architectural, medical and human histories.

Built beyond the city boundaries, according to the law, these institutions are nowadays inside the contemporary city, and are surrounded by new urban fabrics, infrastructural networks, large facilities.

With respect to this changed contextual condition and in spite of their remarkable size, these former hospitals appear as suspended spaces, large temporal and spatial intervals, urban ghosts. These *enclaves* are clearly detached by the surrounding urban shapes and yet fully plunged into the body of the contemporary city, and are therefore emblematic of a sort of in-between spaces. Not only have they not been assimilated through the urban transformative processes, but their enclosures have so far been considered as off-limit boundaries.

The psychiatric medical buildings have been the object of a *damnatio memoriae*, a voluntary oblivion. A strong emphasis was put on the closure of psychiatric hospitals and their abandonment was meant to be displayed, thus a long time has passed since their closure before any recovery project of abandoned buildings could even be conceived. This long time has yet widened until the era of the ruins has finally come.

In this, not only physical, frame, the in-between space is everything that is inside the enclosure, including the fence itself. A complex whole to be re-thought no longer, or not only, according to the inner set of relationships, but with respect to the need to construct other relationships that overcome the fence and face the different scales and the different systems of the contemporary city.

*Machines à soigner*, the psychiatric hospitals were built, from the end of XIX and the beginning of XX century, according to peculiar musts of psychiatry and with respect to a clear matching between use and form. Similarly their dismantlement was due to a sudden and radical change of medical scientific theories in the field of the mental disease treatment.

The present study has already marked some meaningful steps (beyond the elaboration of concepts and projects at school, it has been the object of a video presented at Expo2015). It is now a main topic within research academic projects as well as well-founded hypothesis about the re-cycle and re-use of those former hospitals in future urban transformations.

Forty years after the law and twenty years after the actual delayed closure of those hospitals, these in-between spaces are a complex heritage and the necessity to re-cycle their remains arises.

From former hospitals, archives are left, along with libraries, a large amount of buildings, and a huge mass of green. All these materials are ruins enclosed in citadels, whose architectural layout and typologies are easily recognizable.

The need to re-cycle is due to the need to put an end to the waste that had been made so far. These in-between spaces are now often new potential urban centralities.

Away from the hypothesis to museificate these spaces, nor on the contrary to upset their meaningful heritage, does the methodological approach to this issue gather complex procedures, where cooperation between public and private partners is needed. Different uses must be taken into account, which are consistent with the intrinsic features of heritage as well as with the complex new sets of external relationships through different scales and contexts. Starting from the description, splitting and re-composition of elements and spaces, the design processes will structure hypothesis that will cope with differently intense transformations at different scales.

These in-between spaces that are today blocked, must become dynamical spaces, where the sense of heritage is clearly visible and where new interpretations of contemporary time and space are possible.

As an example of in-between spaces within the frame of heritage and re-cycle, a synthesis of meaningful cases is here presented as well as a case study on the psychiatric hospital 'Leonardo Bianchi' in Naples. Here the resistance to the modification becomes a positive element for a project of re-existence.

**Keywords:** psychiatric hospitals, enclaves, urban design, contemporary city, heritage, re-cycle.

## 1 THE FORMER PSYCHIATRIC HOSPITALS: A LARGE SCALE ISSUE

The following reflections are developed in the frame of a larger on-going research project about the possible future of former psychiatric hospitals. They were closed and often forgotten following to the Law n. 180 in 1978 that ordered the closure of one of the Foucault's total institutions, which was the most heavily marked by the interweaving of urban, architectural, medical and human histories [Fig. 1].

*Machines à soigner*, the psychiatric hospitals were built according to peculiar musts of psychiatry and with respect to a clear matching between use and form. Similarly their dismantlement was due to a sudden and radical change of medical scientific theories in the field of the mental disease treatment.

According to the prescriptions given by treatises of psychiatry [1], the new hospitals were built in healthy places [2], mostly on heights, and their urban layout, as well as the buildings and the open spaces, had to fit established typologies, which were designed with respect to the principles of mental disease treatment. These former psychiatric hospitals, located beyond the end of XIX century and the beginning of XX century city boundaries, are today inside the contemporary city. They are surrounded by new neighbourhoods, infrastructural lines and large facilities.

With respect to this changed contextual condition and in spite of their remarkable size, these former hospitals appear as suspended spaces, large temporal and spatial intervals, urban ghosts. These *enclaves* are clearly detached by the surrounding urban shapes and yet fully plunged into the body of the contemporary city, and are therefore emblematic of a sort of in-between spaces. Not only have they not been assimilated through the urban transformative processes, but their enclosures have so far been considered as off-limit boundaries.

The psychiatric medical buildings have been the object of a *damnatio memoriae*, a voluntary oblivion. A strong emphasis was put on the closure of psychiatric hospitals and their abandonment was meant to be displayed, thus a long time has passed since their closure before any recovery project of abandoned buildings could even be conceived. This long time has yet widened until the era of the ruins has finally come.

In this, not only physical, frame, the in-between space is everything that is inside the enclosure, including the fence itself. A complex whole to be re-thought no longer, or not only, according to the





Figure 1. Location and areas of psychiatric hospitals [2]. The former hospitals in Trieste and in Rome, now mentioned as parks and the new functions hosted in their buildings



Figure 2. Littlemore Asylum, Oxford and Trans Allegheny Lunatic Asylum, Virginia

inner set of relationships, but with respect to the need to construct other relationships that overcome the fence and face the different scales and the different systems of the contemporary city.

The present study has already marked some meaningful steps (beyond the elaboration of concepts and projects at school, it has been the object of a video presented at Expo2015). It is now a main topic within research academic projects as well as well-founded hypothesis about the re-cycle and re-use of those former hospitals in future urban transformations.

Forty years after the law and twenty years after the actual delayed closure of those hospitals, these in-between spaces are a complex heritage and the necessity to re-cycle their remains arises.

From former hospitals, archives are left (where hundreds and sometimes thousands of medial records and charts are kept), along with libraries (which often keep rare volumes, and not only medical treatises), a large amount of buildings (not really architecturally valuable, but typologically interesting), a huge heritage of green (gardens, orchards, vegetable gardens). All these materials are ruins enclosed in citadels, whose architectural layout and typologies are easily recognizable.

All complexes can be considered as variations on a theme [3, 4, 5]. A common feature is a clear, symmetrical layout where the figure, referring to a deployment of patients according to the severity of their illness, can be recognized. Inside the precinct the deployment of pavilions can follow either a regular grid, which can be thicker or thinner, or a sprawled-in-the-green layout and yet some rules can be recognized, especially the presence of a central axis, along which serving buildings and common spaces are aligned. Paths are the elements that most describe the organization of the clinical complex. Pedestrian or vehicle accessible paths, sheltered or uncovered, ramps or staircases, the ways describe the urban structure of the former hospitals. The buildings are serial constructions, very formally simplified and severe. Only outstanding buildings, such as management offices, churches, kitchens and so on are characterized by some monumentality.

The need to re-cycle is due to the need to put an end to the waste that had been made so far. The decay due to the abandonment is often worse than the effects of a catastrophe such as an earthquake or a fire. These in-between spaces are now often new potential urban centralities.

These in-between spaces that are today blocked, must become dynamical spaces, where the sense of heritage is clearly visible and where new interpretations of contemporary time and space are possible.

## 2 THE STATE OF THE ART

As an example of in-between spaces within the frame of heritage and re-cycle, a synthesis of meaningful cases is here presented as well as a case study on the psychiatric hospital 'Leonardo Bianchi' in Naples. Here the resistance to the modification becomes a positive element for a project of re-existence.

It is useful saying that the problem of the former psychiatric hospitals is not limited to Italy, but is worldwide. Everywhere the history of their building and of their abandon has followed the same plot. There are many cases of abandoned hospitals all over the world, which are analogous to the Italian ones. And if in Europe there have been some outstanding cases where former hospitals were restored by private entrepreneurs, e.g. the case of the Littlemore Asylum in Oxford [5] that was reconverted into luxury dwellings, in the United States some giant ghost buildings have been transformed into thrilling mystery touristic resorts [Fig. 2].

In Italy the above-described situations of abandonment are referred to some former hospitals. In other ones, such as at the San Giovanni in Trieste or at Santa Maria della Pietà in Rome [Fig. 1], just some buildings are closed, abandoned and decayed, while most of them have been recovered and are used, without any alteration of the former structures, and the open air spaces have been unlocked.

The hospital in Trieste was the first to be closed. Its director was Franco Basaglia, the promoter of the law for the closure of psychiatric hospitals. Thus in Trieste a new way to face the treatment of mental disease was experimented and there a number of activities arose and developed, which were considered useful and necessary for therapies: involving non-severely ill patients into working activities and founding social cooperatives; establishing theatre and art studios and so on. The closure of the psychiatric hospital in Trieste has been the opening of the complex to the city. A kind of continuity across modification has occurred. In the wide green park looked after by the cooperative members, there are new districts for mental health, but also cultural and university facilities, as well as special lodgings. All this is managed by the Municipality, the Province, the University, as well as the Local Health Authority and the name of the place has been changed from 'hospital' to 'park'.

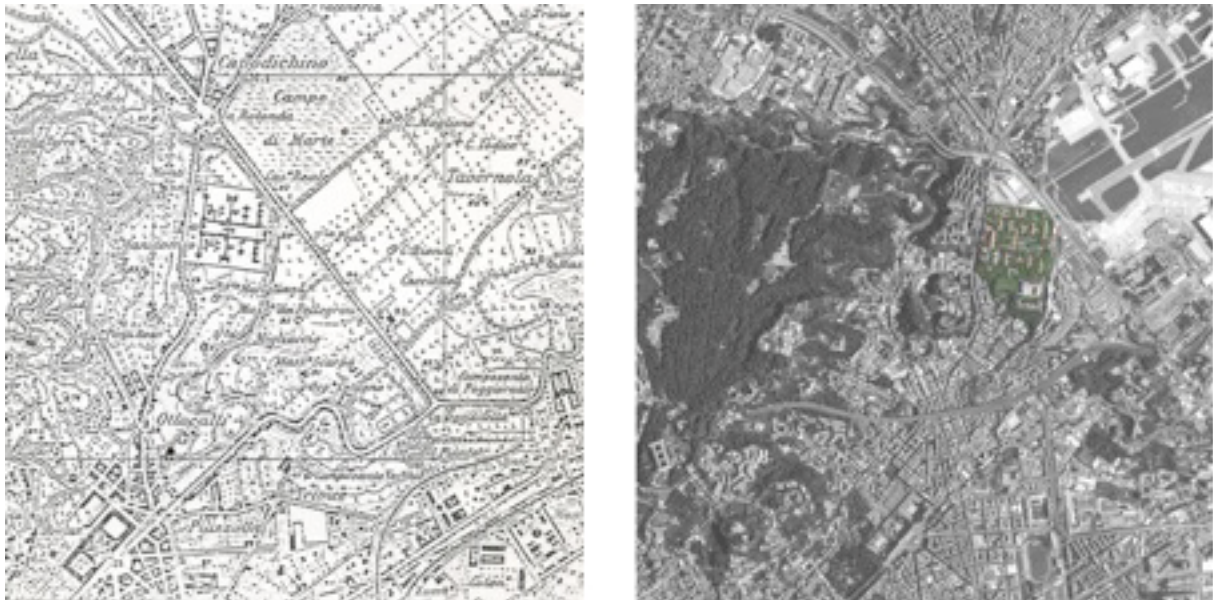


Figure 3. The context of the former Leonardo Bianchi hospital at the time of its foundation and today



Figure 4. The former Bianchi hospital. Its location, the layout, the present condition, the purposes of an open project

The former psychiatric hospital in Roma had a similar story. Also here the main layout is design as a park with sprawled buildings that is now open to the public, where the mixité of services is a main feature. Also in Rome, to the health districts some municipal services have been added, together with special lodgings, art and crafts activities and cooperatives. The restoring of a building that was

transformed into a lab museum of the mind was especially significant. «Opened in 2000, the museum presents the history of the Hospital [...] An immersive and narrative path through memories in the hospital [...] The importance of the Lab Museum of the Mind inside the frame of the Regional Museum Organization in Lazio is a reason to carry on, along a continuous dialogue within the society, the work of enhancement of its artistic and documentary heritage [...] through the completing of the exhibiting design that was begun in 2008 by Studio Azzurro» [6].

Some more Italian hospitals have started a process of transforming, according to which only a few spaces are still used as health districts, archives and libraries that witness the history of the complex, while most building host a brand new function. This is the case of the former hospital in Nocera Inferiore, Salerno, which has been transformed into a courthouse.

Yet this paper deals especially with those hospitals that were condemned with a *damnatio memoriae*, the forgotten ones, such as the former hospital Leonardo Bianchi in Naples.

### 3 THE CASE STUDY

The psychiatric hospital Leonardo Bianchi was opened in 1909 [2, 3, 5, 7]. The complex lies north-east of city of Naples and stands as a precinct on the heights above Calata Capodichino street – the access road – and extends up to the south-west border of Naples airport [Fig. 3]. The original complex would count 25 two-storey buildings. To the former buildings new ones were added through time. All the buildings are mutually connected by means of long covered internal corridors that are a distinctive feature of the whole complex. The entrance building is the only three-storey construction, while some of the added buildings are one-storeyed. The open spaces were divided into common spaces and green areas – vegetables gardens, gardens, agricultural plots – and are nowadays overrun with wild plant that had pervaded the original gardens and makes the access almost impossible [8].

The overrunning green and the water leakage have been the worst cause of decay of buildings, which are although still fit to be rehabilitated, safe for the roofing that are nearly destroyed. The hospital was closed in 2002, safe for the main building that has been used up to some months ago, as a medical archive, one of the most important in Italy, and as a precious XIX century library. The former hospital covers an area of about 200000 square meters, 150000 of them are contained in the original precinct, while the rest belong to later extensions that are now almost completely dismissed.

The layout is symmetrical with respect to a central axis running from the entrance building up to the church, the furthest building still inside the precinct. Beyond the church, through a service opening in the precinct wall, there is the entrance to the morgue. In the middle of the complex serving buildings are aligned: the kitchen, the bakery, and the church. Along the central alley there are all those buildings that were built to host different kind of working activities that patients would practise: the tailor's workshop, a typographical workshop, a tile factory. The building hosting the bedrooms for patients are symmetrically deployed on the left and on the right of the central service belt and are built on terraces climbing the slope.

The great hospital precinct, now completely abandoned, has been reached by the growing city through time. On the other side of Calata Capodichino, which is shaped as a canyon between the retaining wall that supports the height where the hospital is built and the hill leading to the Park of Capodimonte, two XX century neighbourhoods face the Leonardo Bianchi. On the north side the precinct is adjacent to a group of small factories, while on the south side the complex extension beyond the precinct stands on a steep drop that keeps the hospital detached from the urban fabric below. Yet the system that has caused a deeper transformation of the original context is the infrastructural network. The airport is very close to the hospital and an expressway, as well as a dismissed railway flank the north-west / south-east border of the complex; along the same side two underground stations will be located.



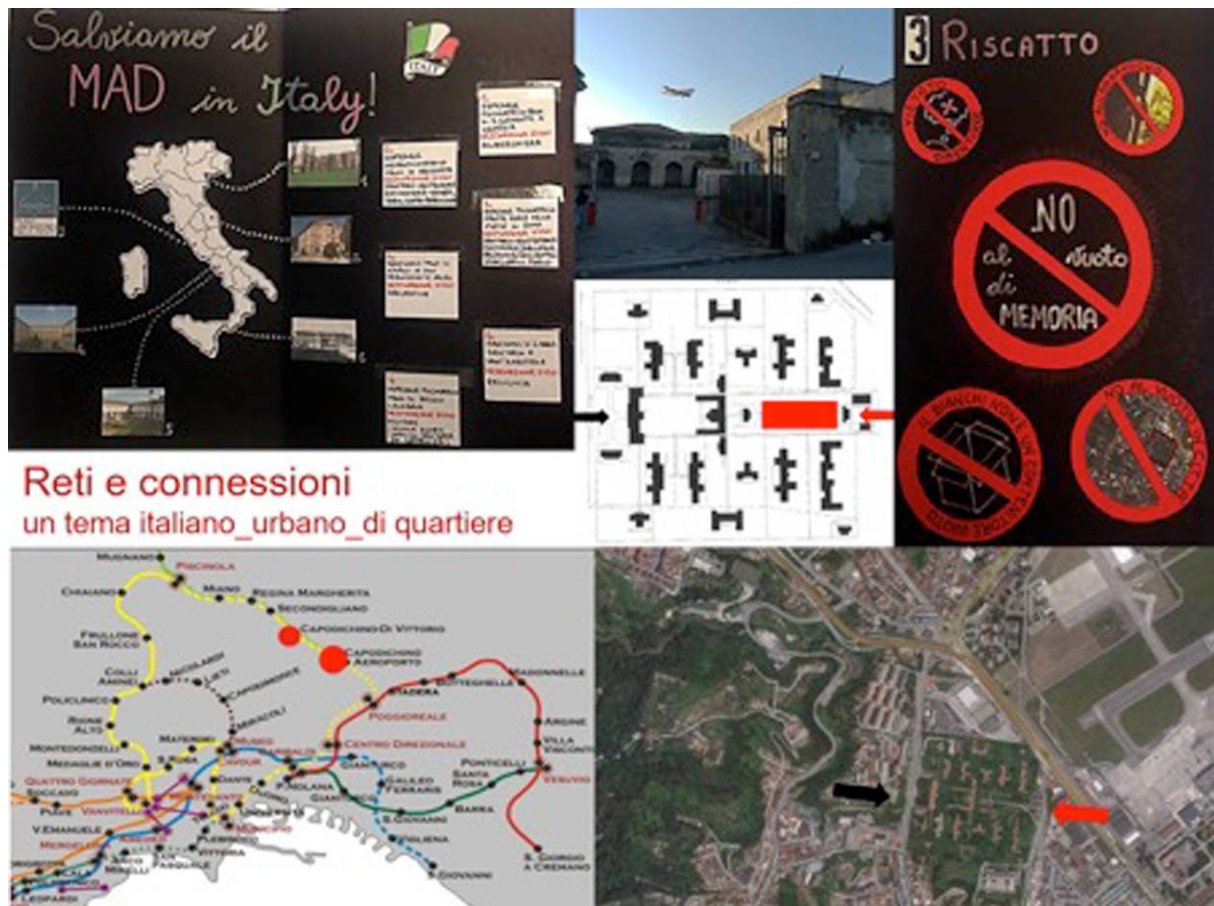


Figure 5. Let's save the mad in Italy and Redemption (M. Di Tuoro), 2014. An open project for the Bianchi hospital

For the Leonardo Bianchi, alike many urban ghosts spread across Italy, this delayed situation can turn into an advantage. In fact, the complex has been frozen because of the long lasting abandonment and no change has occurred through time, now a brand new project, not bearing the burden of a past history of changes, can more freely put forward ground-breaking transformations. By the way it must be recalled that the Law 388/2000 states that this kind of heritage must be a source of profit and thus even the hypothesis of selling away the complex could be taken into consideration.

The Local Health Authority is the owner of the former hospital, but the Authority is under control of the Regional Government of Campania. Besides the Leonardo Bianchi is located in the territory of the Municipality of Naples. The renewed interest of the different Authorities towards this brownfield can be a good starting point for the renaissance of the complex. It is now necessary a wide participation of the people living in the adjacent neighbourhoods, who are starting to consider that that place, is no longer the city of the mad, but a useful resource. A participation of cultural and no-profit associations is as well desirable. Today's key-word are smart cities, green economy, common good, environmental preservation and maybe «a project for an ecological modernization [...] is to be found in a fit critical mass gathering the approval among social, economical and institutional stakeholders» [9].

In this frame, the architectural design aims at a double purpose: the former is preserving the original elements of the hospital, i.e. the layout, the buildings, the paths, and the original spaces; the latter is to modify the relationships among these elements and between the spaces inside and outside the precinct [Fig. 4]. The in-between is the space of relationships. We can argue that, while modifying the relationships, the blocked precinct space can be turned out into an in-between space, spongy, crossable, liveable in many a way. An open project is to be thought, a project that can be realized through different phases, aiming at: multiplying the entrances, opening, using and recycling the buildings, the open spaces and the paths, according to a design that does not alter the material

heritage, but is capable to interpreting it through a new composition of relationships.

One of the chances to re-open the Leonardo Bianchi, offered by the city of Naples, is the accomplishment of the Line 1 of the underground and the opening of two stations in Capodichino. The issue of accessibility is the first step to be done to strengthen the relationship in a large scale network. This is the reason why the number of entrances must be increased towards the urban connection nodes. With respect to this, the backyard of the church is the most important point to connect the hospital to the disused railway line that will work as a pedestrian path towards the underground stations, as well as a direct link to the near neighbourhoods, facing the Leonardo Bianchi. These new path and entrance will alter the relationships inside the precinct and will help to break the rigidity of the original layout [Fig. 5].



Figure 6. Bio Market and vegetable gardens inside the former Bianchi hospital (from the Master Degree Thesis by E. Cavaliere), 2015

With respect to the buildings devoted to host the patients, as well as the paths, the project may include the hypothesis of light or heavy modifications according to the purpose of making those building liveable or to use them as roofing for different activities. In this latter case the multiplication of the links through open spaces would be a plus. The mutual position of elements in not to be altered, changes are foreseen only for their mutual permeability [Fig. 6].

This way, the central sequence of preserved historical architectures aligned along the main axis could keep on telling the story of the hospital, thus playing the role of a document/monument; all the rest is in-between space [Fig. 7].

#### 4 CONCLUSIONS

The multiyear abandonment and oblivion of the new urban ghosts can be seen as a resource that allows acting in a frame, where the temporal distance from a story and the state of decay itself allow scheduling radical interventions about the multiplicity of uses, relationships, dismantling and recomposing of parts.

The material and immaterial heritage must be preserved, but this does not imply a conservative attitude tout court. The hypotheses about a change in the way of intervening on buildings or in the way to keep memories are a fundamental step for the construction of the in-between space.

The here presented reflections are fostered by a shift from the idea of a just ecologically sustainable project towards an idea of an economical, political, social sustainability, i.e. to the idea of a sustained project. The forms are interpreted and the relationships modified out of the stiff layout of the Leonardo Bianchi hospital and out of the composition of its pieces, parts and spaces.





Figure 7. Themes, connections, networks, references (G. Vannelli, P. Zizzania), 2014.

Multiplicity of uses, interventions, stakeholders (A. Pallavicino, S. Russo), 2014.

Away from the hypothesis to museificate these spaces, nor on the contrary to upset their meaningful heritage, does the methodological approach to this issue gather complex procedures, where a cooperation between public and private partners is needed. Different uses must be taken into account, which are consistent with the intrinsic features of heritage as well as with the complex new sets of external relationships through different scales and contexts. Starting from the description, splitting and re-composition of elements and spaces, the design processes will structure hypothesis that will cope with differently intense transformations at different scales.

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## FROM "IN-BETWEEN" TO "THROUGH" SPACE. SCENARIOS FOR TODAY'S PADOVA

Luigi Stendardo

University of Padova - Department of Civil, Environmental and Architectural Engineering (ITALY)  
luigi.stendardo@unipd.it

### Abstract

The problem of *in-between space* has been the main topic over a long period of reflection on contemporary architecture and cities, and has produced a significant accumulation of thoughts on the form of contemporary space. The basic premise to the problem of in-between space is the possibility of identifying homogeneous and finite parts, on which the concept of a city of parts may be founded.

The concept of in-between space is based on the idea that there is an essentially void and formally non-structured space between solid objects, i.e., an “otherness” between empty space and formed matter. “In-between” is thus defined by negation. The only possible measure of it is, strictly speaking, the distance between its non-edges: this dimension, while reacting with the dimensions and shapes of the boundaries, generates a number of formal features of in-between space.

In-between space has been a necessary complement to the finiteness of the parts, which lie on it as shapes on the background; at the same time, it has been the unresolved portion of urban composition, where aporias arise within the urban space of a compact city. It might be described as a non-structured field, fluid and elusive, on the borders of which non-interacting solids rise.

At some point, from once being a residual background, in-between space has become resourceful, overwhelming in its potential, differences and diversity: it has been chosen as a favourite culture medium for research on urban public spaces which were presumed to be freed, unforeseen, capable of hosting various and unexpected relationships; it has been acknowledged as both urban space and collective territory. It is unaccomplished, open, malleable space, available for manipulation and transformation.

If the formal crystallisation of finite and composed parts fits the principle of Alberti’s *concinnitas*, and is extremely unlikely to add or subtract anything without undermining the Vitruvian symmetry between the whole and its parts, the incorporeity of in-between space allows it to host any object and to be activated, transformed, “tidied up”. Although all this is in fact consistent in the hypothesis of the clear-cut otherness between shaped matter and amorphous immateriality, the solidity of such a Manichean separation begins to break down.

The hypothesis of a less clear duality between space and matter – which finds some uncertain similarities in the theory of relativity and in quantum physics – together with the hypothesis of the increasing liquidity of contemporariness presents us with new models of architectural and urban space, in which the fundamental requisites of the idea of in-between space are invalidated. The loss of finiteness of architectural objects and their shapes and the chaotic sprawl of built matter, all mean that it is increasingly difficult to fit the parts within the whole; the solid parts appear less as lithospheric plates surrounded by stagnant waters, and more as rafts floating on fluid, slowly drifting masses. The idea of the city of parts is replaced by that of the city of layers, and the dual paradigm of figure and background is replaced by a model composed of borderless, extensive layers, which overlap, intersect, fuse and react with each other. Tidy built matter appears as a temporary

concretion, a state of excitation of an extensive space-time continuum which is revealed when it is [de-]formed by differences of density and energy. The idea of the otherness between space and matter, as well as that of an interaction in the distance between massive bodies through in-between space, is replaced by a vision moulded according to the physical concept of the field which permeates anything and can be bent, folded, thickened or thinned; be elastically or plastically weak, revealing its softness; it may harden into stiff segments, solidify or liquefy, and yet keep its consistency. The urban space between objects becomes a blurred mixture across things and implies a shift from a paratactic composition, in which discrete distances between finite parts may be measured, towards a composition of layers, which works on the space of sprawling, overlapping and intersecting entities, accommodating many unexpected relationships. Besides eroding and breaking the boundaries of in-between space in order to extend it greatly, such a model amplifies the system of possible formal and functional relationships and multiplies the number of scalar ratios within the field; it defines a complex structure, which is, *par excellence*, able to generate collective space for contemporary society.

As a *forma urbis* parallel text to this vision, we briefly describe here a project ongoing at the Research Laboratory on Architectural Design, Department of Civil, Architectural and Environmental Engineering, University of Padova, designing scenarios for transforming an area of Padova which is emblematic of the condition of in-between space today.

The area of our case study covers about 300 hectares north-east of the city centre of Padova. Its northern boundary is flanked by the Padova-Venice railway line, and the whole area already contains several expressways, complex junctions and roundabouts, as well as industrial districts, shopping malls and residential urban fabric. According to our hypothesis, planned transformations include: a new city hospital for Padova and a university campus for medical studies and research, implementation of infrastructures to improve accessibility with new facilities such as parking lots, intermodal hubs, a local railway stations, densification of residential fabrics, recycling of former industrial districts, and an urban park with sports, leisure and healthcare facilities.

This large-scale project will work on urban and landscape areas, overlapping and intersecting at several layers on differing scales, such as green areas, water networks, infrastructural paths with urban forms and irregular fragments and textures, which [de-]form open ground to create scenarios of public space for today's city.

**Keywords:** in-between space, through space, city of parts, city of layers, Padova.

## 1 VISION: FROM “IN-BETWEEN” TO “THROUGH” SPACE

The problem of *in-between space* has been the main topic over a long period of reflection on contemporary architecture and cities, and has produced a significant accumulation of thoughts on the form of contemporary space. The basic premise to the problem of in-between space is the possibility of identifying homogeneous and finite parts, on which the concept of a city of parts may be founded [1].

The concept of in-between space is based on the idea that there is an essentially void and formally non-structured space between solid objects, i.e., an “otherness” between empty space and formed matter. “In-between” is thus defined by negation. The only possible measure of it is, strictly speaking, the distance between its non-edges: this dimension, while reacting with the dimensions and shapes of the boundaries, generates a number of formal features of in-between space.

In-between space has been a necessary complement to the finiteness of the parts, which lie on it as shapes on the background; at the same time, it has been the unresolved portion of urban composition, where aporias arise within the urban space of a compact city. It may be described as a non-structured field, fluid and elusive, on the borders of which non-interacting solids rise.

At some point, from once being a residual background, in-between space has become resourceful, overwhelming in its potential, differences and diversity: it has been chosen as a favourite culture

medium for research on urban public spaces which were presumed to be freed, unforeseen, capable of hosting various and unexpected relationships; it has been acknowledged as both urban space and collective territory. It is unaccomplished, open, malleable space, available for manipulation and transformation.

If the formal crystallisation of finite and composed parts fits the principle of Alberti's *concinnitas* [2], and is extremely unlikely to add or subtract anything without undermining the Vitruvian symmetry between the whole and its parts, the incorporeity of in-between space allows it to host any object and to be activated, transformed, "tidied up". Although all this is in fact consistent in the hypothesis of the clear-cut otherness between shaped matter and amorphous immateriality, the solidity of such a Manichean separation begins to break down.

The hypothesis of a less clear duality between space and matter – which finds some uncertain similarities in the theory of relativity and in quantum physics [3, 4] – together with the hypothesis of the increasing liquidity of contemporariness, presents us with new models of architectural and urban space, in which the fundamental requisites of the idea of in-between space are invalidated. The loss of finiteness of architectural objects and their shapes and the chaotic sprawl of built matter, all mean that it is increasingly difficult to fit the parts within the whole; the solid parts appear less as lithospheric plates surrounded by stagnant waters, and more as rafts floating on fluid, slowly drifting masses. The idea of the city of parts is replaced by that of the city of layers [5], and the dual paradigm of figure and background is replaced by a model composed of borderless, extensive layers, which overlap, intersect, fuse and react with each other. Tidy built matter appears as a temporary concretion, a state of excitation of an extensive space-time continuum which is revealed when it is [de-]formed by differences of density and energy. The idea of the otherness between space and matter, as well as that of an interaction in the distance between massive bodies through in-between space, is replaced by a vision moulded according to the physical concept of the field [3] which permeates anything and can be bent, folded, thickened or thinned; be elastically or plastically weak, revealing its softness; it may harden into stiff segments, solidify or liquefy, and yet keep its consistency. The urban space between objects becomes a blurred mixture across things and implies a shift from a paratactic composition, in which discrete distances between finite parts may be measured, towards a composition of layers, which works on the space of sprawling, overlapping and intersecting entities, accommodating many unexpected relationships. Besides eroding and breaking the boundaries of in-between space in order to extend it greatly, such a model amplifies the system of possible formal and functional relationships and multiplies the number of scalar ratios within the field; it defines a complex structure, which is, *par excellence*, able to generate collective space for contemporary society.

## 2 CASE STUDY: THE AREA OF SAN LAZZARO IN PADOVA

As a *forma urbis* parallel text to this vision, we briefly describe here a project ongoing at the Research Laboratory on Architectural Design, Department of Civil, Architectural and Environmental Engineering, University of Padova, designing scenarios for transforming an area of Padova which is emblematic of the condition of in-between space today.

Our research through design on the topic of in-between space, meant as through space, is being developed on a study area that covers about 300 hectares north-east of the city centre of Padova.

This area [Fig. 1] is set amid differing parts of the city, the historical centre in the south-west, the post-war neighbourhoods of Arcella and Mortise that have been spreading since the 1950s and the 1960s in the north, the neighbourhood of San Lazzaro, the shopping malls and the industrial districts in the south. Its northern boundary is flanked by the Padova-Venice railway line, and the whole area already contains several expressways, complex junctions and roundabouts [Fig. 2].

It may appear fringe located if seen from the historical centre of the city of Padova, and yet it is rather central if related to the present extension of the city; the place looks abandoned since there are no significant fluxes or functions inside the area, and the infrastructural lines that surround this wide void do actually stand as barriers, preventing any smooth accessibility, and emphasize the





Figure 1. The case study area of San Lazzaro (yellow), North-East of the city centre of Padova (white)



Figure 2. The case study area. The in-between space South of the railway line

waste look of those spaces. Yet, actually owing to the presence of a rich infrastructural network, this area is potentially well accessible, through different means of transport. It is a fringe area, cut away from the main urban fluxes, a cul-de-sac, which although is likely to become an important north-east gate of the whole city of Padova, owing to the closeness of the motorway junction of Padova Est that is one of the main way into the city, as well as to the possibility to create a hub at the crossing point of national and regional railways, a system of expressways that is being built and the network of the public urban transports.

At a first glance this area lies as a huge, mostly non-built void, around which different urban elements rise, but none of them establishes any relationship of complementarity with it. The void is a waste and does not seem to mirror any formal feature from the surrounding built environment. This state of abandonment, or maybe indifference, is emphasized by the development of a *tiers paysage* [6], which is also fostered by the presence of mostly uncontrolled waters. In conclusion, it is a typical extensive in-between space, which has long remained neglected by the interests of citizens, but now



different stakeholders are watching it with a certain appetite, in a context where a coherent and wide perspective on the complexity of today's city is actually lacking. Many stakeholders are putting forward proposals of occupation of this land [7, 8, 9], which are based on settlement layouts referring to a decayed paradigm of the city of parts, or properly speaking, to the reasons of the functionalist and/or economical zoning. These masterplans aim to parcel out the land, to increase the number of subdivisions, to share burdens and profits, to multiply weak, rambling and unproductive in-between spaces, while building closed systems that are autistic towards any possible relationship with any other alien system, and finally restricting the possibility to develop public space inside precincts that look like fish tanks. There is actually a trend to break and minimize the in-between space, since it is considered as waste, rather than rearrange and enhance it as a resource.

The shift of the focus from objects towards relationships, and from closed towards open system, which has been a main topic in architectural, urban and landscape research programmes in the latest decades, doesn't seem to have affected the processes of urban transforming in those contexts where alternative and challenging visions cannot succeed to arise and stimulate a demand of high quality public space that is supposed to be consistent with today's culture and thought.

### 3 METHODOLOGY: MODELS, MATERIALS, TECHNIQUES, TOOLS

The research through design carried out onto the case study of San Lazzaro in Padova, is founded on the idea that in this in-between space that is apparently empty, amorphous and separated from the urban objects rising on it, some fields of form and matter can be individuated. These fields are supposed to be indefinitely extensive in all directions and therefore they do not meet any outline when touching any solid object on their way. Alien objects are rather crossed and collected by the fields that support them and, at the same time, are modified by them. According to this paradigm, the in-between space stops being a void among differing objects and becomes a space that flows across objects, a field where objects float and that gets deformed by those objects. Consistently with this vision some milestones of the classical art of architectural and urban composition become heavily altered: positional relationships, especially those referring to such antinomies as outside/inside and centre/boundary, because those former 'surrounding' objects are no more surrounding since they are now immersed in the fields and not around them; relationships of material consistency, i.e. those referring to the antinomy fullness/emptiness, since the former void is supposed to be made out of structured matter; hierarchies, first of all the juxtaposition of figure and background, since the void is no longer a screen where shapes stand out, on the contrary it is capable to act as a figure itself; proportions, significantly the relationship between the parts and the whole, since even if the parts are finite and discrete, though often fragmented, a boundary of the whole cannot be found; scalar ratios, which are based on the concept of measurability, since in the through space any object is actually immeasurable while referring to an indefinite whole [10, 11]. All these fundamentals of the art of composing must seriously be called into question, when dealing with such a paradigmatic mutation.

The fields that compose the through space interact with and modify each other. They can be considered as extensive layers that interweave with those layers collecting architectural and urban elements, which can be figured out as families or sets of discrete elements that may be tidied up according to formal structures of their own. These latter layers collect those elements that traditionally belong to the realm of urban studies: buildings, blocks, urban figures, urban fabric, landmarks and so on. These elements can be gathered, classified and compared, according to differing parameters, referring to their typology, shape, position, or to the formal order on which they are displayed, and can shift from one layer to the next or even belong to the intersection of two or more layers. With respect to these latter layers that are populated by discrete elements, the formers, which correspond to the through space fields, are characterized by a stronger continuity. On one side these fields are made out of matter that can be ordered and hierarchized through sequences, polarizations, while achieving a more solid either fluid consistency, clotting or fusing, thickening or thinning, and thus configuring spaces that differ in consistency, density, direction and orientation. On the other side they are supporting structures where fragments and finite elements, which are differently [in-]complete, solid, fragile, elastic, plastic, may anchor or run aground, while

deforming their landing place. The fields are made out of laid-out, extensive matter that can acquire differing configurations: masses, surfaces, lines, point clouds, with differing degrees of continuity and density and variable orientations. Matter can be shaped into fibres, clots, networks, meshes. Their features can vary [non-]homogeneously, depending on states, variables or parameters intrinsic to the nature of the field itself, but more often owing to the interaction among different layers that constantly modify each other and induce ever changing formal configurations. This variability, sometimes as slow as geological processes, sometimes fast and sudden, is very highlighted in the form of the through space, which constantly and fluidly modifies. This is the space of relationships, the public space, but also the space of the physical and cultural [im-]measurability in a frame of complex multi-scalar ratios.

These layers are physically made out of matter, endowed with a formal power of its own, malleable, available for mutation, capable to become a figure, fit to contain one or more figures. Yet it doesn't need to be contained, outlined by any drawing that would separate it, in order to become form. Samples of this matter are: waters, running or stagnant, shaped as masses, surfaces, thin layers, networks, canals, creeks, streams, rivulets, gutters, ponds, pools, gushes; ground, more or less cohesive, shaped as plains, heights, slopes, drops, dunes, furrows; greenery, cultivated or overrunning, shaped as green surfaces, lawns, fields, bushes, hedges, trunks, foliage, rows; air, meant as a blurred mixture of gas, vapours, particles in suspension, which is the main means of sound propagation as well as a medium that is constantly frescoed by the light, which takes on differing colours and nuances while crossing it. Besides, also the layers hosting urban fabrics and infrastructural networks can be led to this kind of fields. All these materials can be dismantled and re-composed in new formal layers made out of differing elements and matter, borrowed from different original layers. Each one of these materials requires its own know-how in order to control their form and qualities: with respect to water, you deal with slopes and thus with velocity, with supply and drainage plants, banks, canals, reservoirs; with respect to ground, you work at excavations, heaps, moulding, retaining; with respect to air, you control breezes, humidity, odours, temperatures, lights and shadows.

A significant point to keep in mind is that you can never achieve a total control of the form and of the features of such layers, neither with respect to their spatial nor to their temporal extension. It is rather a partial control, achieved through finite and limited segments, through fragmented portions that allow to temporarily tidying up even what escapes from the drawing, since they light up selective glances. It is like some kind of shift from the concept of a *hortus conclusus*, a garden, or even a traditional park, to the idea of landscape, which is available for a continuous re-composition through the ever-changing glance of human beings.

#### 4 RESEARCH THROUGH DESIGN: SCENARIOS FOR TODAY'S PADOVA

The research through design<sup>1</sup> carried out on the case study of San Lazzaro in Padova has been developed according to a programme for urban transformations that include a new city hospital for Padova and a university campus for medical studies and research, implementation of infrastructures to improve accessibility with new facilities such as parking lots, intermodal hubs, a local railway stations, densification of residential fabrics, recycling of former industrial districts, and an urban park with sports, leisure and healthcare facilities, as well as tertiary sector and retail.

The main purpose of this design experimentation was the production of scenarios for urban transforming, based on the possibility enhance the in-between space as a resource, while considering it as an extensive and pervading through space. Thus the main objective was to develop a number of different configurations of fields of form and matter, capable to positively interact with different layers of urban elements and figures, both already existing and forthcoming according to the programme.

<sup>1</sup>The here presented research through design experimentation has been carried out in the frame of the Workshop of Architectural and Urban Design of the Master Degree in Building Engineering / Architecture at the Department of Civil, Environmental and Architectural Engineering, University of Padova, held by professors Luigi Stendardo, Paolo Ceccon and Luigi Siviero. The here presented scenarios were designed by the Students of the Workshop, tutored by the teaching staff, in the academic year 2015-2016.

The supporting layout of each scenario has been displayed as a through space, interwoven with different infrastructural layers in order to assure the required mobility through and accessibility to the area. Several sets of urban elements are spread through and immersed in this plot of fields, and are modified according to a number of variations: a slab, on which some linear bars rise, is conceived to be a hospital; an urban dock working as a mall for retail and hosting facilities for medical studies and research; along the dock, eight towers rise to host university departments and research labs; a compact urban figure, capable to gather and regenerate shreds of existing urban fabric, while providing a densification to enhance housing and facilities; an industrial district hosting steelworks that will be recycled in the future.

In each scenario – four have been finally drawn – the through space is represented in the form of a conceptual diagram [12]. It provides information about the intrinsic formal structure of the matter it is composed of and shows the deformations due to the presence of the urban solids. Each scenario shows as a temporary balance of architecture, urban space and landscape, and lets you foresee possible future accommodations of new elements and/or spatial transformations.

In the first scenario [Fig. 3] the through space is diagrammed by means of stripes and dunes. Some stripes are arrayed to become the formal structure of the hospital; one of them is stretched to make the urban dock supporting the towers along the railway, and finally grabs the steelworks on the west side; a second stripe bends to frame the existing urban fabric and a third one is the main axis of the central park. The dunes penetrate the rake-shaped hospital and clot into an urban cliff along the dock.

In the second scenario [Fig. 4] the through space is diagrammed as a set of fibres that gather into a thick rope while turning round the steelworks and spread into thin threads as they permeate the space north- and eastbound. The urban dock, split into a stiff fibre and a soft one, the hospital hills, and the grid that frames the existing urban fabric, are variations of the form, density and stiffness of the fibres.

In the third scenario [Fig. 5] the through space is diagrammed by means of earth clumps, water ponds and folded horizontal surfaces, interacting with each other. The hospital buildings rise on four basements made of clumps; the urban fabric is covered with a sheltering folded and cut surface; the clumps harden towards the railway line, to become solid modules measuring the length to the urban dock and supporting the towers.

In the fourth scenario [Fig. 6] the through space is diagrammed by means of discontinuous lines displayed along differing directions. These lines can bend and thicken to arrange different objects and spaces. An array of segments, bent along their vertical section, shapes the hospital; a series of L-shaped lines provides the square plazas across the urban dock; a thick broken line embeds the existing urban fabric.

## 5 CONCLUSIONS

The scenarios designed in the frame of the research through design experimentation, based on the vision of the through space potential and of a strong interaction among built environment and public space, have been compared with the masterplans put forward by several stakeholders in the latest months, which are mostly conceived according to the principles of parcelling plans, subdivision of land, sharing of burden and profit, and above all on the basis of an intensive occupation of land parcels, while keeping a clear cut separation between autonomous built block and non-designed urban voids. Even a first quick comparison shows that, while the amount of covered surfaces and built volumes is about the same, the richness in terms of public space and complexity of positive relationships in the through space hypothesis is extremely significant and makes a considerably high added value both to economy and to civil and democratic social life in our cities. This research is still ongoing and will be enhanced in the next months, in order to widen the experimentations in different contexts and compare its vision, methodology and results with similar research projects.

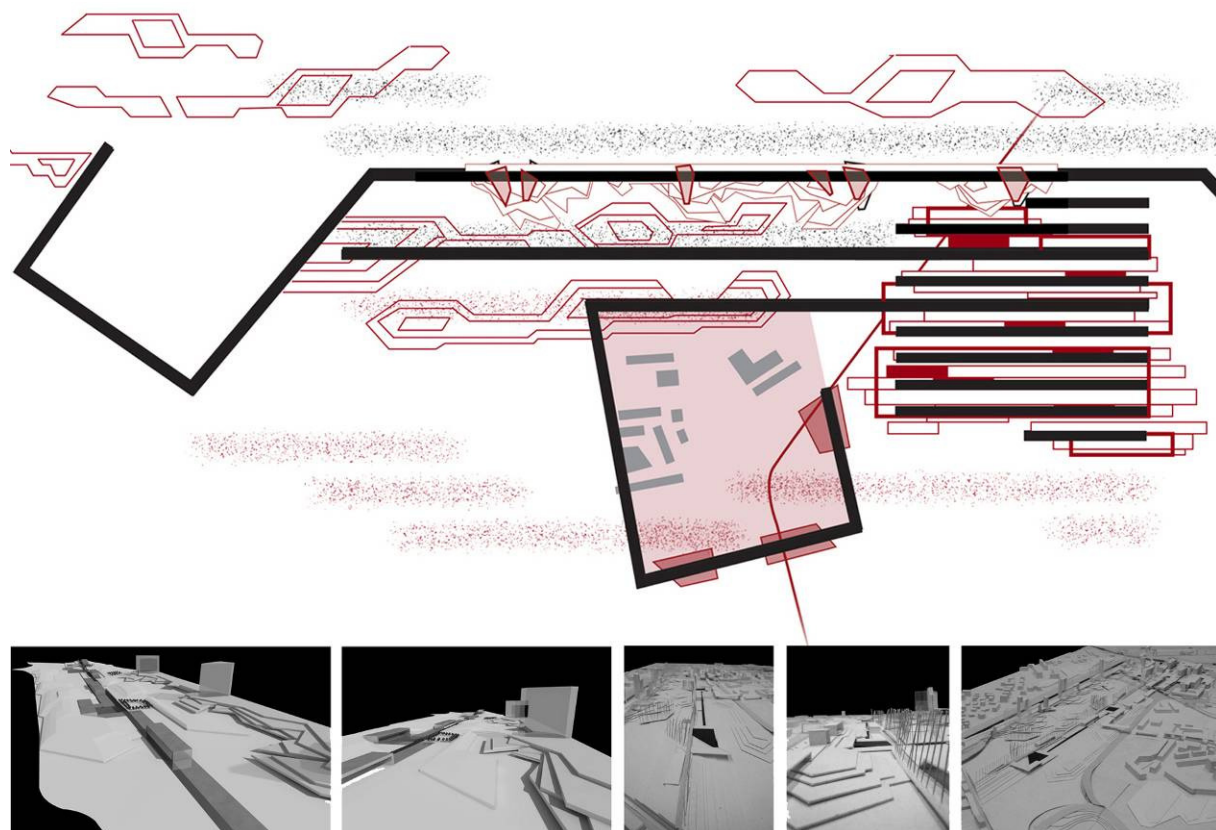


Figure 3. Scenario #1\_The through space is diagrammed by means of stripes and dunes

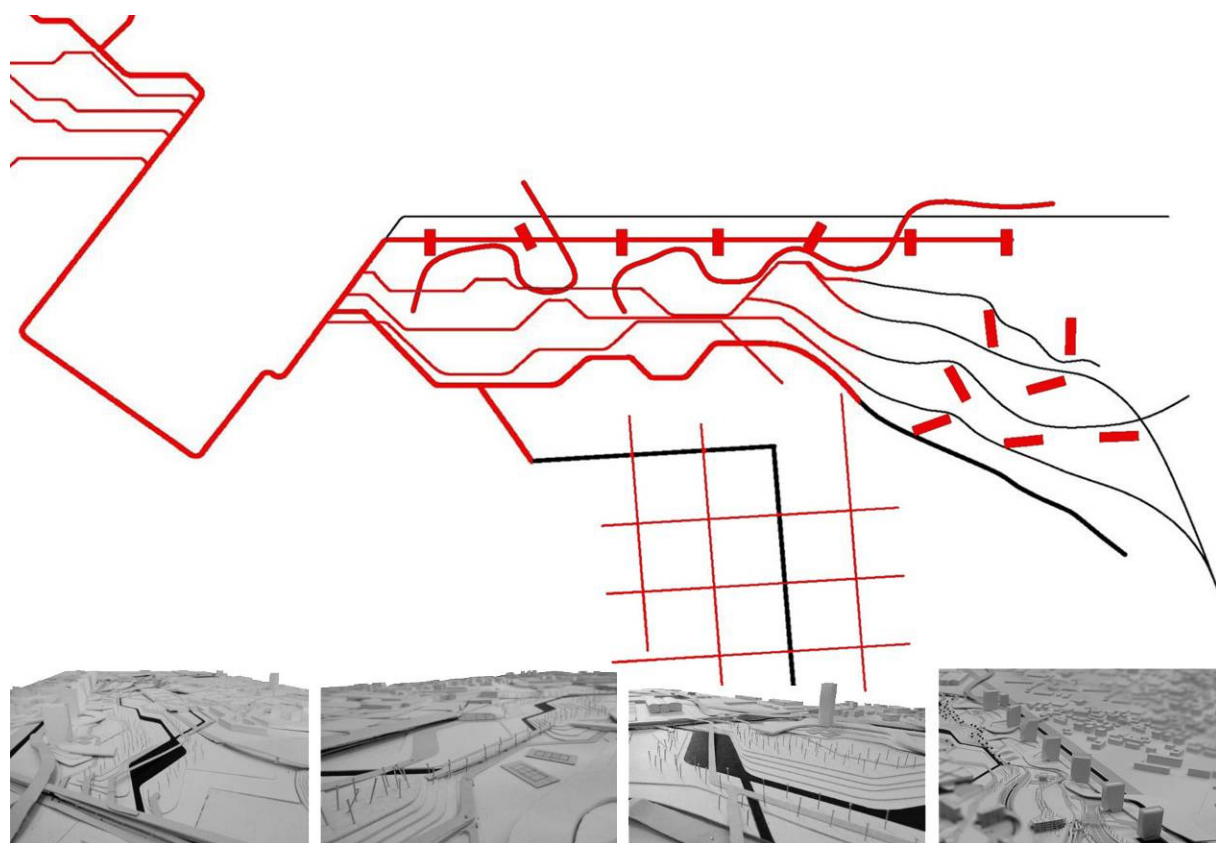


Figure 4. Scenario #2\_The through space is diagrammed as a set of fibres

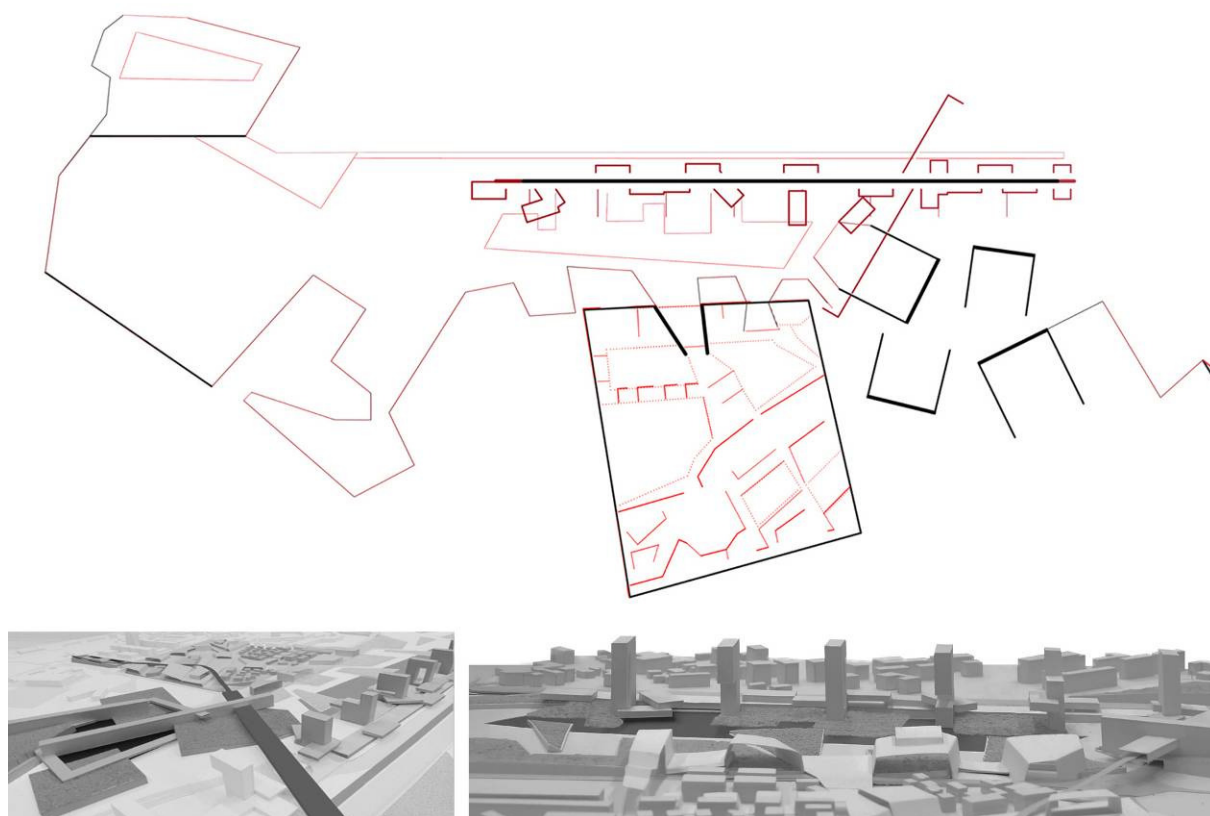


Figure 5. Scenario #3\_The through space is diagrammed by means of earth clumps, water ponds and folded surfaces

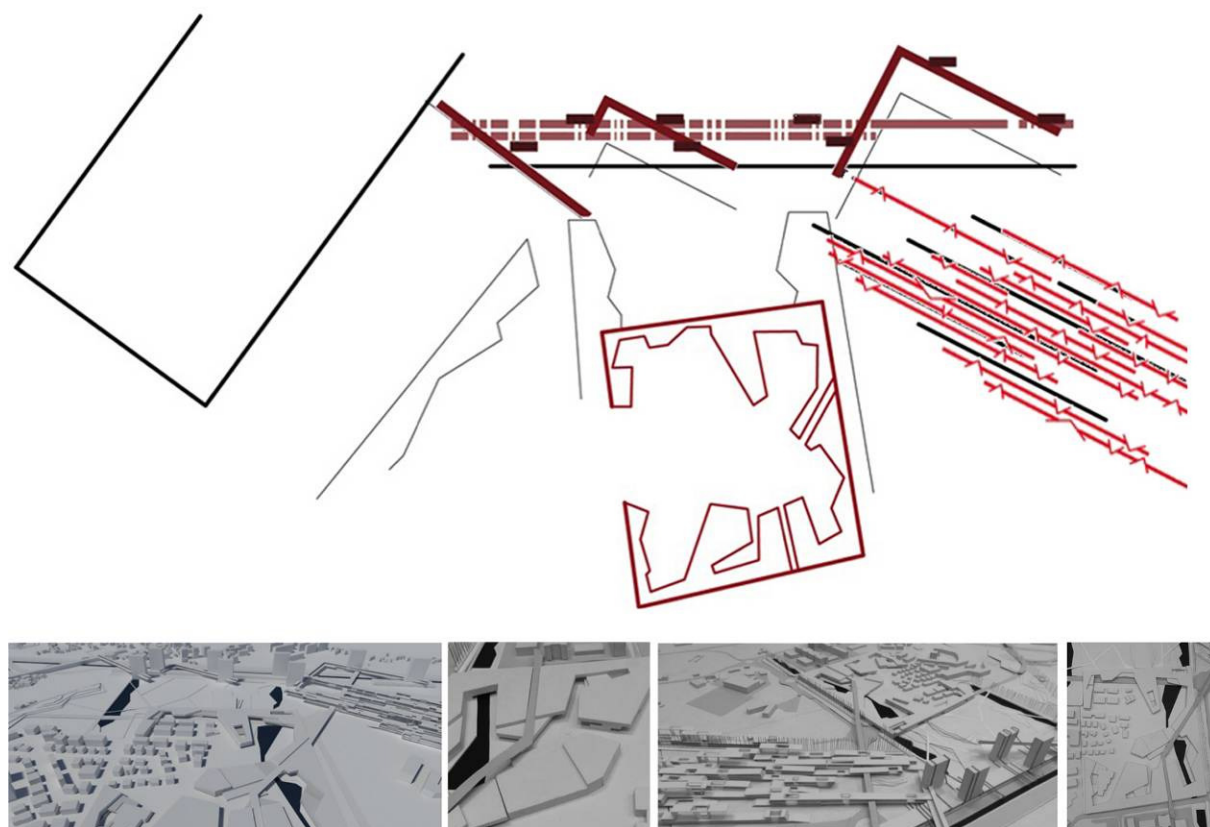


Figure 6. Scenario #4\_The through space is diagrammed by means of discontinuous lines displayed along differing directions

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## ARCHITECTURE-TERRITORY FOR THE URBAN DESIGN, 1970-2016

Giovanni Battista Cocco<sup>1</sup>, Silvia Alberti<sup>2</sup>

<sup>1</sup>*Università degli Studi di Cagliari (Italy)*

<sup>2</sup>*Università degli Studi di Cagliari (Italy)*  
gbcocco@unica.it, salberti@unica.it

### Abstract

The debate developed during the 70s of the twentieth century around the planning of the University of Cagliari in the territory of the wide area, matures in a cultural and national climate particularly rich in experiences, some of which are proposed by great Italian protagonists of architecture in the Italian peninsula. Significant in this context is the competition project won by Vittorio Gregotti - coordinator of the project team, made up of Emilio Battisti, Hiromichi Matsui, Pierluigi Nicolini, Franco Purini, Carlo Rusconi Clerici and Bruno Viganò - for the University of Calabria (1974), achieved starting from 1977.

In these same years the University of Cagliari is launching a design competition for the construction of a university and hospital center in the territory of the first urban belt of the capital of Sardinia (composed by some little cities: Elmas, Monserrato, Quartucciu, Selargius, Sestu, Pirri), where compact city, with some timid and limited residential projects in the first suburbs, gave way to the campaign, and to an economy even based on agriculture and wine production. The competition was won by Luisa Anversa Ferretti, architect learner of the "Roman school" who coordinated the group consisting of Pierluigi Malesani, Giuseppina Marcialis, Giuseppe and Marcello Rebecchini, Giangiacomo d'Ardia, Dario Passi and Livio Quaroni. The proposal is very ambitious; it doesn't only tried to make sure that the university took hold in the territory, responding fully to the objectives of the call, but proposed a diffusion process of the functions and of the structure of the territory to the large scale: an utopia capable of looking at the future to design its own present.

Outcomes of the project prove less mature than original proposal. The project was realized only in part, losing the positivist vision of territorial control through architecture (architecture-territory).

The morpho-typological studies, advanced during the competition and later deepened in the preparation of the Master Plan of the University of Cagliari – drawn up by the same design team -not find any concrete results; so, in the in the 80s of '900, a process of abandonment of the campaign advanced, and it will favor, since the same years, the urban sprawl with settlements characterized by fragmented tissues. An archipelago of small settlements starting from the urban density of the cities of the first crown of Cagliari.

The urban-rural dichotomy weakens and the territory becomes an uncontrolled urban.

The study on the large scale of this territory is often taken up by some planning tools drafted by involved municipalities; however, these tools do not reach an effective implementation. The same advanced strategies from the study for the *Ecomuseum of The Rural Landscape*, "The covenant by which a community is committed to take care of a territory, preserving and working to increase its value" (Maggi, 2002), which concerns a large part of this territory (Selargius, Monserrato, Quartucciu, Settimo San Pietro), will only have the merit of bringing the attention of the community towards the needs of project on big and small scale, open and aimed in perspective, as it was proposed in the past, linked to the productivity of the agricultural production sector, placing the landscape as the first item of value.

But it is with the reorganization of the metropolitan areas, implemented by law n°. 56 of April 7, 2014, that there was a political convergence of intent towards a shared project of territory by the local governments interested in this issue. From this moment some interests, studies and projects

ripen in order to exploring the possibilities for enhancement of this vast territory with a return to a careful look at local conditions.

The paper proposes a reading of this urban temporality (1970-2016) starting from the needs of the present, by verifying the actuality of past experience; at the same time it proposes some design studies, developed between different scales, in the biennium of university research 2013-2015.

The goal is to understand if the urban project may be the most effective tool in the management of times and scales of transformation of the contexts; an open project that shows attention to the needs of development of a large part of the territory, to the aspirations of the communities and to the values of the places expressed in terms of memory and identity.

The contribution is concluded with some experiences of project characterized by different scales which faced morpho-typological aspects on the large scale.

**Keywords:** urban project, urban design, architecture-territory, modern architecture, metropolitan area, urban-sprawl.

## 1 THE CONTRUCTION OF LANDSCAPE TROUGHT GREAT SIGNS.

The debate that, in the seventies of the twentieth century, is born around the development planning of the University of Cagliari in vast territory rises in a national cultural climate particularly rich in experiences, some of which are proposed by great Italian protagonists. In this regard, the competition project that Vittorio Gregotti - coordinator of the team compound by Emilio Battisti, Hiromichi Matsui, Pierluigi Nicolini, Franco Purini, Carlo Rusconi Clerici and Bruno Viganò - won for the University of Calabrie in 1974, and made since 1977, is very significant. The geographical approach to large-scale project in the work of this author knows a number of significant cases: in addition to this project, the proposal for the University of Florence in 1971 and that one for "Twenty projects for the future of the Lingotto" of Turin in 1983, are particularly interesting.

The force of the sign in the territory is an expression of the "value that the university settlement must take, the strategic effects on the city and the territory that it can have, but it is also ideal community metaphor founded on merit and open discussion"[1].

In the project for the University of Calabrie, the action of founding a linear system of 3200 m length on which numerous different buildings may be developed, - then later reused by the same Gregotti in the plan of proposals for a new city of 150000 inhabitants in Ukraine in 1993 - is the element that strongly characterizes the specific desire to affect the geography of the area: "But it is perhaps here, in the reflection on the city, one of the corners of the question, because even if in the *postmetropoli*, like landscape, the organization of the sequences of diversity, and then of the strategies of projects, does not allow any reduction strategies to a global unity of urban form, it requires that the attempt of the constitution of an image of the sense that it restores the track and the figure of the specific urban landscape in all its depth and in all its possibilities and in all its ability to found the difference as specificity "[2]. This action of foundation can stand the comparison with topography and finds its reason in the expressed will of creating a settlement, potentially infinite, capable of measuring the land, but also to build, with its architectural form, the landscape.

The linear element develops between two strategic polarities; on the one hand, the intersection of two highways, in the other across the railway station of the city of Paola.

The geographical aspects, both in terms of landscape and architecture, are some of the basic elements of the project of University of Calabrie. If, in fact, the overhead view gives us the ambitious nature of the 'principle of settlement', on closer inspection it does not escape the geographical dimension and importance, in the composition of the spaces, of the building connections than changing orography.

In the same seventies, the University of Cagliari announced a design competition for the construction

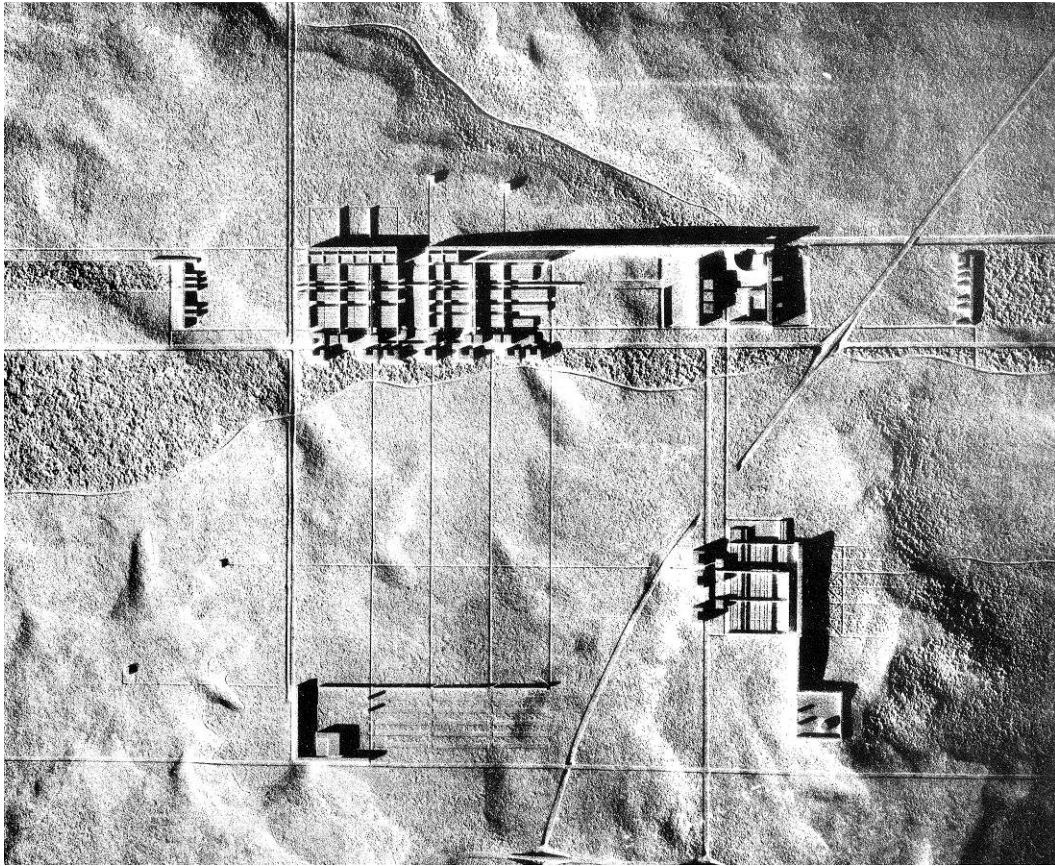


Figure 1. Project of the University of Cagliari: the plastic model (Luisa Anversa Ferretti's private archive).

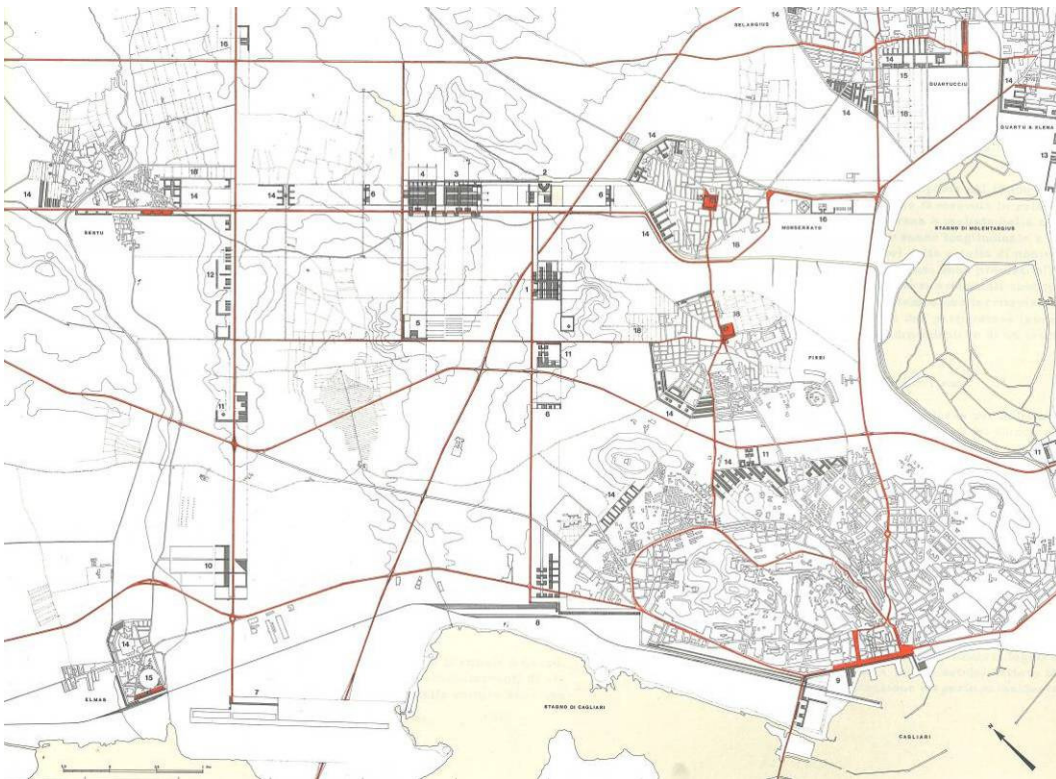


Figure 2. Project of the University of Cagliari: drawing called "University and new urban intervention" (Luisa Anversa Ferretti's private archive).



of a university and hospital centre in the territory of the first urban belt in the capital of Sardinia (composed by the cities of Elmas, Sestu, Pirri, Monserrato, Selargius, Quartucciu, Quartu Sant'Elena), where the compact city, with timid and residential projects contained in the first suburbs, gave way to the campaign, and to an even economy based on agriculture and wine production. The competition was won by Luisa Anversa Ferretti, architect trained at the Roman School, who coordinates the group consisting of Pierluigi Malesani, Giuseppina Marcialis, Giuseppe and Marcello Rebecchini, Giangiacomo d'Ardia, Dario Passi and Livio Quaroni. The proposal is very ambitious. It not only casts the university in the territory, responding fully to the objectives of the call, but proposes a process of diffusion of the functions and structure of large-scale: a project that, like utopias, looks to the future to design the current era.

In this project, as in that of Gregotti for the University of Calabrie, linear axes, developed in length, redesign the agricultural land and demonstrate action of founding a settlement [3]. The new north-west /south-east line belongs to the urban consolidated system and developed in parallel with the main streets of the nearby town of Monserrato, to reconnect, on the opposite side, to Sestu city (which is located 2000 m far away). This big sign on the landscape, animated by ambition to found the elements of a new settlement between two municipalities, extends to the entire territory, overlaying the existing, a new settlement structure that, by contrast, gives strength to the previous one.

The materials of project, relating to the analytical steps, comprise: representations of the wide area of Cagliari; statistical studies about user numbers and university students also in relation to the specificities of scientific and medical faculties; predictions related to agricultural development and environmental remediation (land-use pattern of Campidano and Cixerri valley); diagrams of the temporal scale of the project (short, medium and long term); planks roadway structure; hypothesis of local zoning through a landscape scanning in different vocations (agricultural, sports and urban parks). These studies reveal a careful action thoughtful to landscape specificity, and express all the ambitions to put in place, in/over time, its settlement strategies for places, attentive in various kinds of items.

The outcomes of the project prove less mature than the initial proposal. The project, in fact, will be realized only minimally, losing the vision of positivist territorial control through architecture (architecture-territory). The morpho-typological studies, advanced by Ferretti in the competition and subsequently deepened to prepare the Master Plan of the University of Cagliari, will not find any concrete results; so in the Eighties it was a process of abandonment of the campaign, which will favour, since the same years, urban sprawl, an archipelago of private settlements of their own tissue. The urban-rural dichotomy weakens and the territory becomes an uncontrolled urban.

The cultural importance in wide area level is also demonstrated by the recent project of *Ecomuseum<sup>1</sup> Of The Rural Landscape*, a collaboration of the municipalities of Selargius, Monserrato, Quartucciu and Settimo San Pietro as an opportunity for re-appropriation of the citizen towards their own places, in particular those related to the size of the agricultural landscape and its productivity.

The study to the large scale of this territory is often taken up by some planning tools, drawn up by the municipalities concerned, but they can't achieve an effective implementation. The same advanced strategies from the study for the Eco-museum of the rural landscape - "The pact with which a community is committed to take care of a territory, saving and working to increase its value" (Maggi, 2002) - will have only the merit of bring the attention of the community towards the need for a project of stairs, open and prospective, as proposed in the past, linked to the productivity of the primary sector, placing the scenery as the first item of value.

But it is with the reorganization of the metropolitan areas, implemented by Law n. 56 of 7 April 2014 that there was a political convergence of intent towards a territorial project shared by the local governments concerned. From this moment they will earn interest in studies and projects that explore the possibilities for enhancement of these sites, with a focus on local specificities.

Thus, the paradigm architecture/city, which ripen at the end of the sixties, in several projects related to Aldo Rossi studies (*Architettura della città*, 1966) and Vittorio Gregotti (*Il territorio dell'architettura*, 1966), is replaced by the paradigm architecture/landscape, which loads the great

sign of the values on the trail of identity, looking at the territory as a palimpsest. In this sense, the European Landscape Convention represents an important point of maturation and shared convergence, as assigned to the places and the space a set of values and a culture that led to have influenced the landmarks and architecture comparison. The countryside is the reference architecture, whose raison of existing is not aimed at the construction, nor can find an exclusive confrontation with the city.

(G.B.C.)

## 2 THE DIDACTIC PROJECT. TRIALS OF URBAN DESIGN.

In the academic year 2013-2014 the Laboratory of Architectural Design <sup>12</sup>, proposed to the students of the Master of Science in Architecture, a very topical issue and complexity: the completion of part of the north territory of the city of Monserrato, where the design of the new university settlement, proposed in the seventies, was reading the territory to the large scale.

The interest around the area of Monserrato matures, starting from the municipal administration requests of scientific advice<sup>3</sup> to the University, for a better understanding of the city and the countryside, and to outline design strategies and suggestions that can interpret the vocation of places.

The competition project for the University of Cagliari, advanced more than forty years ago, has laid a solid foundation for reasoning about an urban-territorial system that is shown more able today to incorporate a combination of factors, workable in synergy from multiple actors and conditions.

"An architecture is valid if, through the process of technical means to implement it, will become a tangible representation of all intentional factors of a society and if, that is, in concluding a contingent episode, will open the issue for further developments"[5]. That proposal, concrete utopia, significantly marks the way to the completion of the settlement of this complex, heard as a necessary condition for the university, the inhabitants and the authorities.

The scope of interest, while considering a supramunicipal territory, maintains and seeks to strengthen close connections with the compact urban tissue and the values of the agricultural landscape. The interest in the large-scale mature not only by the presence of a regional central role as that of the Hospital and the University campus, but also from the existence of some elements of scientific and cultural interest: the archaeological area Pill'e Matta in Quartucciu, the former military munitions building, now converted to the Institute of Astrophysics, some secondary school in the territory of Quartu Sant'Elena. These 'urban facts' in the dispersed tissue, making the strategically important area, along with the dorsal road, linking the urban centers to agricultural and productive territories, can be thought of as a potentially integrated and unified, apart from belonging to different municipalities: the aim is to give value to the productive tissue, through the upgrading of the industrial landscape, the inclusion of paths, green areas and services.

These systems of relations, diversified although neighboring and linked together, are an opportunity to think in terms of restructuring of the mesh of routes and urban regeneration through the sustainable design of the peripheral areas (urban margins, reconversion of brownfield, assimilation of territorial emergencies onto the city and the agricultural system).

The characteristics of this territory, together with the critical situation, represented by constructions largely abusive, present patchy in the territories subject of studies (affected by "recovery plans"<sup>4</sup> never brought to completion), give rise to a potentially territory capable of generating city, but requires thoughts and reflections. The metro line, which currently connects the center of Cagliari on the citadel-hospital system, which in the near future will come to be connected in a few minutes the hospital with the airport of Cagliari, is a great strength and development element, and constitutes an invariant element able to positively influence the project, guiding the development strategies of the proposed interventions.



Figure 3. Project of hypodense compart. Students: D. Corda, S. Marras, A. Pinna.



Figure 4. Project of hyperdense compart. Studens: M. Callai, A. Murgia, G.Piras.



The presence of agricultural lands, still strongly felt as an essential part of the identity of many inhabitants of Monserrato, as demonstrated by the recent initiative of the Rural Landscape Ecomuseum together with some initiatives aimed at the re-appropriation of productivity territories (the town of Sestu proposed the social initiative "Landscapes and walking"<sup>5</sup>, as the basic community instrument in the agricultural landscape), is an element that represents a strong vocation of the place. The agricultural landscape with the university hospital center and the subway line and the tension towards the north of the margin, are the elements that characterize the quality and defines the modulation of the urban dimension of the place.

The program of project was based on some structuring elements: the "green armors" on links with the city center and as a connecting element, to the north, with the agricultural landscape, to be developed along the lines of foundation of university-hospital center; the completion of the services in support of the university structures and the rising of some neighborhoods; the agricultural activity linked to applied aspects of biological and pharmaceutical sciences, but that retain a link with the primary sector; service facilities to the university-hospital center; public spaces, parks and gardens, in addition to the residences, university and hospital services; two residential neighborhoods including housing and services, one at the completion of the dense margin, the other to mend the texture of disjointed urban sprawl on east of the university. The residential part has covered two areas affected by urban renewal, one placed south of the main street, called "Barracca Manna," and the other "Su Tremini" to the northeast.

The new expected inhabitants were 2000: the 70% was placed in "Barracca Manna" within the neighborhood called "hyperdense". The constraints for this fabric were the building type (in-line, block and terraced house), and dimensional rules of settlement tissues: the maximum height for buildings is 4 levels above ground. Here is the fundamental relationship with the urban parks and in general with public place consists of gardens, squares and connecting paths with green armor and linear parks.

The 30% of new residents has been established to the northwest in "Su Tremini" in the "hypodense" tissue: this principle, wanted the program of the objectives of the course, is determined by the low density and strong connection with the resource of agricultural land. Dimensional/typological constraints of settlement fabrics are: maximum one level above ground and patio-house as envisaged kind of construction. In the hypodense tissue the connection of the residence with the countryside and the consolidated city is crucial, via the connecting infrastructure and green armor.

The teaching method consists of four phases. The first covered the period of lectures in which was proposed to the students a selection of case studies related to urban design and landscape, considered significant in reason of their international importance. The second was the decision of a few rules about the density in residential neighborhoods and regulatory and planners references in force. The third and the fourth consisted in comparison with the technical in charge of the government of the territories involved and the collective revisions assisted by visiting professors.

The invariant elements of the territory have led in the choice of three axes structuring the project, who want to reconnect the city center with the agricultural land. These axes are the "green armors", sometimes linear parks, treated as connective and structuring elements, closely related to the new housing and general services tissues. Finally, the aspects related to hydrogeological risk have strongly driven the design choices: in places not yet built, and in the presence of high risk has been avoided to predict new buildings and it was decided to place the linear parks which included the collection water systems integrated with the design elements of green spaces. Programmatic decisions that have kicked off the course took into account the urban destination of the intervention areas: the choice of adhering to specific contingencies of the territory, also in legislative terms, it has been pursued to bring the students to think on the basis of the actual conditions of the place in all its complexity, to confront the real situation of the city.

One of the students' projects (Figure 3) represents a faithful interpretation of particle of cadastral plot: the urban layout was designed following existing paths. This design choice has wanted to reconstruct the existing discontinuous tissue, trying, whenever possible, to supplement the built

scattered among new buildings, inserting the horticultural activities, and developing, in the area to the ground floor, a sales site that overlooks the pedestrian paths connected transversely to the hospital and the university in the west and to the linear park in the east.

The southwest area that represents the twin project (Figure 4) has interpreted the linear system of the citadel-hospital center to develop a residential district (designed according to different periods of realization) consists of open blocks.

The combination of a "hyperdense" group and a "hypodense" group gives rise to a maxi-group which had the task of dealing with the issue of designated areas to accommodate the general services and the theme of the linear park, with the aim of creating a common project and a common scale model.

One of the basic requirements of each project was to think the temporality, articulating the phases of the project.

The final stage of the educational path was the exhibition, designed by the students, and subsequent exposure of the work, held at the end of the course at the 'Casa della Cultura' in Monserrato (Figure 5).

(S.A.)

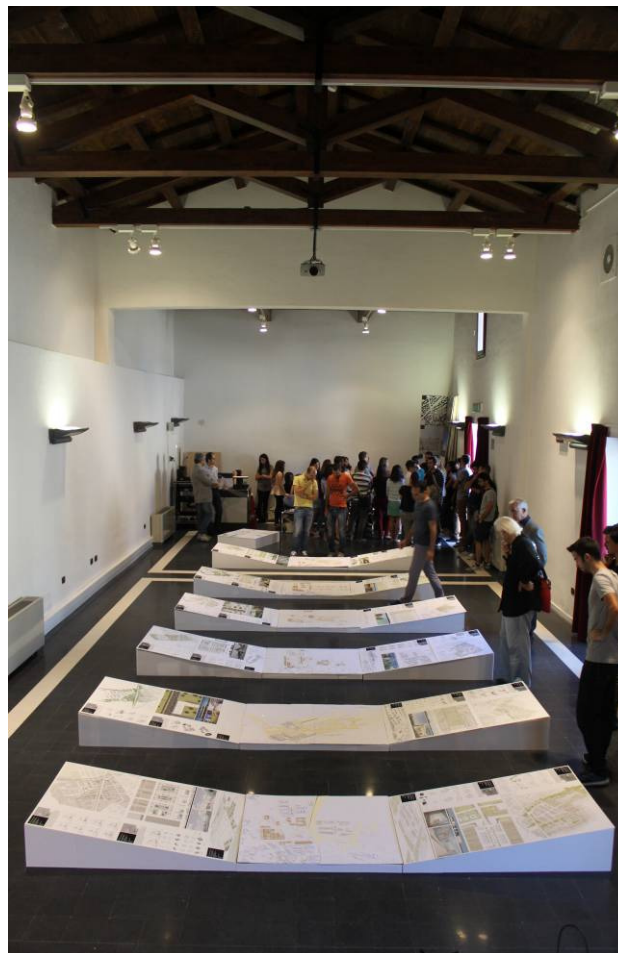


Figure 5. An image of the final exhibition of students' projects.

### 3 CONCLUSIONS

Reflection about urban project, on large-scale, investigated here from the experience of competition that, in the seventies of the twentieth century, proposes the creation of a new university-hospital center on the edge of the territory of the city of Cagliari, and the most recent events which involved the transformation/appropriation of these same places, opens a number of questions.

The first is the essential reference to the values of the landscape, to its recognition as an element of identity in flux, as a mosaic of imaginative tensions of its inhabitants, as a place where they manifested their belonging.

The second is the need for a vision of the world, charging a healthy utopia, who can govern processes in the foreshadowing of the possible transformations.

The third is the imaginative capacity of the educational project, namely the free exploratory practices that open our eyes to the possible city through the foreshadowing of the territories and the rebuilding of our devastated landscapes.

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- [2] Gregotti, V. (2011). *Architettura e postmetropoli*. Torino, Einaudi, pp. 142-143. Original Italian text of the citation: "Ma è forse qui, nella riflessione sulla città, uno degli angoli della questione, perché anche se nella postmetropoli come nel paesaggio l'organizzazione delle sequenze delle diversità e quindi delle strategie dei progetti non consente alcuna riduzione a una unità globale della forma urbana, essa esige comunque quella del tentativo della costituzione di un'immagine di senso che ne ricostituisca il tracciato e la figura del paesaggio urbano specifico in tutta la sua profondità e nell'insieme delle sue possibilità e in tutta la sua capacità di fondarne la differenza come specificità".
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*Piano Regolatore dell'Università degli Studi di Cagliari.*

<sup>1</sup> The ecomuseum is a contemporary concept concerning the museum, actually applied to the landscape and to the territory in relation to the values recognized in it by the people. The first definition of ecomuseum was coined by Hugues de Varine, in 1971. The definition to which we refer is the one proposed by Maurizio Maggi, in M. Maggi, *Ecomuseums: European guide*, Allemandi, Torino, 2002. The ecomuseum is "the covenant with which a community is committed to take care of a territory, saving and working to increase the value." Feasibility study of the Ecomuseum of the rural landscape: <https://docs.google.com/file/d/0B6RHSwfQEXrJYjU5Q09SbVRYYWs/edit?pli=1>.

<sup>2</sup> The course, entitled "URBANITY. Abitare, lavorare, divertirsi, circolare" (URBANITY. Living, working, enjoining, walking), was given by Professor Giovanni Battista Cocco (tutores: Silvia Alberti, Giorgio Corona, Simone Langiu, Daniele Nurra), at the University of Cagliari, Department of Civil and Environmental Engineering and Architecture (DICAAR).

<sup>3</sup> The town of Monserrato has started a relationship of collaboration and scientific advice with the Universities of Cagliari and Alghero, with the aim to stimulate critical reflection on the margin landscape revolving around the emergency of the hospital and the university campus.

<sup>4</sup> The regional law "23 ottobre 1985, n. 23" (Regione Sardegna) "Norme regionali di controllo dell'attività urbanistico-edilizia" imposes, in certain contexts, the "urban renewal plans" as instruments of government designed to give shape to the phenomena of illegal building, to provide common standards and rules for the purpose of giving shape to the settlements. These administrative tools have encountered significant implementation difficulties, due to the complexity of the regulatory instruments. So the situation persists uncontrolled illegal building in several cases, after more than thirty years, even today.

<sup>5</sup> Information taken from a report published by the website of the municipality of Sestu, January, 14th 2016. (<http://comune.sestu.ca.it/notizie/eventi/paesaggi-passeggiate>).



## HOUSING AND URBAN SPACE

**Matilde Plastina<sup>1</sup>**

*<sup>1</sup>Dipartimento di Ingegneria Civile Edile e Industriale - Sapienza Università di Roma (ITALY)  
mat\_plast@libero.it*

### **Abstract**

The relationship between a building and the urban environment involves different layers of architectural design. Housing projects deal with the spaces of the city through a mutual relationship. Due to an increase in economic speculations, year after year our communities have been growing apart from the urban dimension of living. Small, city-like neighborhood units where the private houses are connected to spaces of common interaction are no longer involved in our urban planning. If by 'public' we define something that is property of the city and of the society, and by 'private' we refer to everything that pertains to our intimate sphere, we must establish a strong connection between these two dimensions of living. Common spaces are intended for social interactions and activities and are a very important part of any housing project, helping the creation of this connection. They work as a filter, a passage between house and city, which benefits the community both on a social and on an economical level.

Within the most innovative projects, the urban space becomes informal and is combined with the private dwellings, breaking free from old patterns and preconceptions. Sometimes there is an alternation between the public areas of the neighborhood and other spaces suitable for daily activities: open courtyards give access to the city through gardens and squares, while the structures contain common out-of-scale elements, open rooms and terraces that serve as public viewpoints, or intimate areas of social interaction. By alternating private, semi-private and common areas, this deconstruction of the traditional housing models gives way to a unique and original reinterpretation of the dual-layered social dynamics typical of the cities from the past. Small, semi-private areas with direct access to the housings are suitable for social activities among close neighbors, while wider, open spaces, distinguished by green areas and trees on the street level, provide a connection to the city. Streets and walkways become a part of the inhabitants' daily life; hollow spaces obtained inside the structures are to the housing complex what squares and openings are to the frame of a city: open areas suitable for social activities, sports and relax. The search for a true relationship with the green areas, much too often denied within the city, is the premise to the creation of courtyards or roof gardens, a concept that goes beyond hard rationalist laws and can be re-elaborated through new and dynamic rules.

This study has the purpose of showing the main role of public spaces within the housing plans in resolving the issues of the city life, restoring ethical and social values that have been disappearing over the last years.

The research analyzes some of the architectural experiences of the last few years, sometimes finding their roots in plans and ideas of the past century, establishing paradigms and guidelines for the strategies and choices of logical design that create a renewed vision of the urban spaces. Old strategies and models gain new meanings and values according to the needs and experiences of the

new communities, in order to obtain high-quality residential units capable of engaging a relationship with the public spaces, where our complex, multiethnic society can identify itself.

**Keywords:** housing, urban spaces, public spaces, semi-private spaces.

The development of the relationship between a building and its surrounding environment involves different layers of architectural design. Housing projects deal with the spaces of the city through a mutually beneficial relationship, sometimes giving way to further changes, such as the appropriation of such spaces by the community itself.

Homogenization and repetitiveness cause a city to lose its own identity and to become alienated, especially in its suburban areas; this is why the most advanced housing projects try to fight against these phenomena in dealing with the relationship between high-density dwellings and the urban space. For far too long urban plans and housing designs have dismissed the value of common areas, giving priority to the individual space, which have been, nonetheless, kept to a bare minimum.

The enhancement of living standards requires finding a balance between public spaces, belonging to the city and serving the society as a whole, and private environments, related to our most intimate sphere of living. Within a housing project, the common areas stand as a link between these two dimensions; they work as a filter, a passage between house and city, which benefits the community both on a social and on an economical level.

The most innovative projects rediscover the urban character in the life of the community, typical of the vernacular tradition: house and city engage in a close relationship, creating new and original neighborhoods. The public space is no longer an anonymous element with no identity of its own: it becomes informal and is combined with the private dwellings, breaking free from old patterns and preconceptions. It creates a dynamic neighborhood, where daily life and public services are bound together. The city becomes home, and the home becomes city. This concept marks the redemption of the Mediterranean city, which is the urban model of choice to be retrieved and perfected to suit the diverse needs of modern societies. Public spaces become ground for daily domestic activities, standing as a sort of common living room where the inhabitants can share experiences.

One of the most effective strategies to produce this kind of complementary relationship between dwellings and public areas is the introduction of out-of-scale elements in the project: large, empty spaces that are directly accessible from the street. Breaking the monotonous lines and patterns of the dwellings, these areas can become viewpoints and squares, or discreet spots such as small terraces, suitable for social activities.

In his 1946 *Unité d'habitation* in Marseille, Le Corbusier took advantage of this strategy, inserting out-of-place elements: common, public spaces, easily recognizable from the outside, disrupting the dull, serial look of the complex. These elements give life to a proper fragment of city, complete with shops and services, which is located in the middle section of the complex, interrupting the dense, obsessive pattern of duplex housings.

The members of the Dutch practice MVRDV, known to the public as one of the most advanced and avant-garde architecture firms of our times, deal with the same topic with three different approaches, each exemplifying a different kind of relationship between urban and private areas.

The Mirador, for instance, remembers a megastructure, built in 2005 in Sanchinarro, one of the suburban neighborhoods surrounding Madrid: its main peculiarity is a huge, out-of-scale hollow open space located between the 12<sup>th</sup> and the 17<sup>th</sup> floor. According to the original project, this space should have been a free-access panoramic viewpoint reachable from the ground floor through an escalator, although this access way was never implemented and the space ended up being a recreational area, exclusive to the inhabitants of the housing complex "Fig.1 - 2".





Figure 1-2. Mirador. Sanchinarro, Madrid 2005. MVRDV. Images of the housing complex and of its public terrace.  
Photo credits: © Rob 't Hart.

The Market Hall complex in Rotterdam, on the other hand, is even more extreme and advanced: just like an ancient town center, the dwellings surround the market place as curtains to a metaphoric theatre. This mixed-use structure, somehow iconic in its features, is basically a gigantic barrel vault, containing housings, services and shops; this thick, wide tunnel shields an extensive empty space that is usually ground for a market place, but can be used as a well-lit and well-protected public area. This design enables the inhabitants of the complex to experience the movements of the city, without giving up their privacy and intimacy in the process “Fig. 3-4”.



Figure 3. Market Hall. Rotterdam 2014. MVRDV. Exterior view of the mix-use building in the urban context.  
Photo credits: © Ossip van Duivenbode.



Figure 4. Market Hall. Rotterdam 2014. MVRDV. Interior view of the mix-use building.  
Photo credits: © Scagliola/Brakkee.

MVRDV gave birth to yet another noteworthy project, the *Celosia* Building; built in 2009 in cooperation with the Blanca Lleó Asociados group, the structure is part of a wide array of housing projects that the Madrid municipality has been funding in recent years to foster the development of the city's suburban areas. The architects have dealt with the need of identity of the living spaces by implementing a gradual passage between public and private space. *Celosia* means "lattice-work". By alternating full and empty shapes in a tridimensional crisscross pattern, this design reinvents and subverts the traditional concept of courtyard apartment building, achieving innovative results. These superimposed empty spaces are to the housing complex what squares and openings are to the frame of a city: open areas suitable for social activities, sports and relax. Even though it is deeply inspired to the experimental approach that Le Corbusier used in his *Immeuble Villas* and in the *Quartiers Modernes Frugès* in Bordeaux, this model applies those ideas with on a completely different scale of density. Thirty apartment buildings of two stories constructed of grey reinforced concrete, each containing between four and six housings, are embedded in a frame of white floor slabs and arranged irregularly on different vertical levels. The hollow shapes obtained thanks to this setting provide space for stairs, suspended passages and walkways that give access to the apartments. Social relations are carried out on two levels: the double-height patios that have direct access to the dwellings are ideal for activities among neighbors, while the spacious courtyard in the center of the structure creates a connection with the rest of the city through six wide passages. By alternating private, semi-private and common areas, this deconstruction of the traditional housing models gives way to a unique and original reinterpretation of the dual-layered social dynamics typical of the cities from the past. Small, semi-private areas with direct access to the housings are suitable for social activities among close neighbors, while wider, open spaces, embellished by green areas and trees on the street level, provide a connection to the city "Fig.5-6".





Figure 5-6. Celosia. Sanchinarro, Madrid 2009. MVRDV & Blanca Lleó Asociados. Images of housing complex courtyard and of one of its common terrace. Photo credits: © Rob 't Hart.

Similar strategies, which include the alternation or the addition of empty environments to foster social activities, have been a determining factor when dealing with requalification plans of slums, or *favelas*, sadly a common issue in the suburban areas of metropolises all over the world, especially in India and Latin America. That is the case, for instance, of Frédéric Druot's plans for the transformation of the Favela Rocinha, in Rio de Janeiro.

The main objective of his project is to desaturate the whole area by modifying or rearranging existing elements. Specifically, vast portions of hillside land, previously unreachable due to their steep nature, have been terraced and made suitable for construction, effectively increasing the available space for residential use. Moreover, the architect was careful not to disrupt the social and urban dynamics already in place: that is why his plan involves an alternating pattern between dwellings and empty, public spaces that, as it usually happens with the informal architecture of these neighborhoods, are strictly interconnected with the private areas of the houses. The space for social interactions is no longer just a mere empty place exclusive to those who live around it: it becomes a public asset, available to everyone. This is the framework upon which the entire project is structured, and it has been conceived to establish a mutual, almost "osmotic" relationship with the dwellings.

Common open spaces and housings are implemented through the construction of light structures, laid down upon various terraces and walkways that follow the geographical lines and bumps of the hillside. The great value of this project lies in its carrying out an effective rehabilitation of the settlement that accounts for the needs, habits and customs of the local community. The key to accomplish this feat is not only to guarantee more space, light, comfort, viewpoints or sturdier houses, but most of all to enhance the organization of services and shops. Again, the regular, repeating pattern of the housings is interrupted by empty spaces, sometimes surrounded by glass walls, which can be used for public services such as religious structures, screening rooms or cafeterias. In addition, other open spaces are intended for social gatherings; small squares where neighbors can have dinner together, or organize parties. The public areas have been divided in two categories, as it would happen for a small city. The first is related to the paths accessing the housings: rather than being ordinary, semi-private walkways, these have been arranged to work as small, pedestrian roads, useful for an array of different services and functions, and enjoyable by every inhabitant who wants to take a stroll, go jogging or even play sports, where larger fields are available. The second category includes all those empty spaces situated between the new dwellings and the pre-existing structures, suitable for activities that require a bigger environment.

The houses themselves, conceived as detached dwellings with private access, are laid upon the terraces and disposed in a chessboard, alternating empty and occupied spaces. The private terraces situated on the front side of each residential unit are excellent panoramic vantage points; the back side, on the other hand, includes a small access area, suitable both for social and commercial interaction, since every inhabitant has the chance of organizing a small stand or shop along the walkways. The project includes a tramline, to facilitate relationships and connections to the rest of the city, steering away from the risk of isolation and ghettoization.

All the cases included in this study show an original and renewed vision of the urban space, interconnecting public and private areas with different layers of interaction. Old strategies and models gain new meanings and values according to the needs and experiences of the new communities, in order to obtain high-quality residential units capable of engaging a relationship with the public spaces, where our complex, multiethnic society can identify itself.

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## **WELL-BEING OF PATIENTS IN THE PEDIATRIC ONCOLOGY DEPARTMENT OF THE ONCOLOGY INSTITUTE OF BUCHAREST. SPACE, COLOR, SPUND**

**Mihaela Şchiopu**

*Associate Professor, PhD, "Ion Mincu" Architecture University, Bucharest (ROMANIA)*

*mihaela.schiopu.mail@gmail.com*

### **Abstract**

We all experience the space as it surrounds us. But what about a hospital? I have been working for 3 years in the department of Pediatric Oncology of the Oncological Institute of Bucharest and I talked with both to parents and hospitalized children about their living space. Being a Snoezelen trainer and practicing this therapy [1], I have seen the effect of what we call "sensorial room" on small patients and their parents. On the other hand, we are aware of the remarkable results of light and sound effects in the treatment of oncologic diagnosed patients. My research aims to analyze the department ambience interior space and possible changes, taking into account its influence on the psyche of those in treatment, but also on their so called "caregivers" who accompany and care for the sick.

As an art therapist I work with children and their parents every day. Their drawings and paintings can talk about what they feel, being a clear evidence of their experiencing the hospital space. "Santa Claus has left this room!" said a child who walked for the first time in the relaxation room.

On one hand, children dream of "brown" wood beds and, on the other, they are delighted to bathe in the light colors provided by the Snoezelen equipment [2], and its space where the furniture is required to be white.

It is well known that children prefer interactive games. Each patient has, if not a tablet, at least a mobile phone. These gadgets are indispensable, no matter how we appreciate them. For the children who can't leave their bed, these devices play a major role, capturing their attention and reducing their discomfort due to lack of movement.

My research is mostly focused on cases where the pain is greatest, those treated on wards where children are in the last phase of the disease.

How can TV plasmas, some of Snoezelen equipment and local color can be used so that a child does not feel as if being accommodated in a computer, but enjoy moments of play participation with a minimal effort?

What would a child feel if lying in bed he could change the look of the wall in front of him, its color and even the rhythm everything changes? What kind of music would a lying in bed child choose if he could act on the wall by activating a remote control device? What would a child experience if he could play various games using the same device? In present, only the playing rooms can have gravitational walls. I am interested in a mobile sensory wall that could be moved by a lying in bed kid.

Also, through screenings, and by a system of pulleys, the ceiling the lying in bed children look at most of the time could become a playground pall for small patients.

Finally, I would like to share my research findings on the extension of Pediatric Oncology department by adding some outdoor spaces needed by children. These will be meet their need for playing, learning, relaxation, etc.

**Keywords:** hospital, oncology, space, light, color, Snoezelen concept.

## **1 SPACE, COLOR, SOUND**

### **1.1 The location of the hospital.**

Founded in February 1949, Bucharest Oncology Institute is located "at the end of the world" in an area bordering the city. By its very location the patients feel marginalized and isolated. To get to the hospital, you need time, patience and strong nerves. As we get closer to the place in question, billboards greet you with messages about the much better chances you have if you choose a different hospital than the one you are about to enter. So start your doubts and questions, things that you cannot allow to disturb you, but who kept persisting

### **1.2 The access.**

The perimeter of the Department of Paediatric Oncology architectural work has now been dedicated to children, however this idea was not taken into account when the whole institution was created.

The section reopened on the ground floor after a long period in which it worked on the 5th floor of the Oncology Institute. If you think in terms of space identity, entry is where you start to lose yourself, little by little. A dark hallway and a door that opens only by card, panic you from the start. Children and parents arrive, loaded with luggage in front of Paediatric Oncology department and wait for a sign.

The moment you walk in, you can wait on a few chairs and then you are redirected to the lounge where you can stay for a day or for months.

### **1.3 Hospital kids furniture. Magnetic furniture.**

Some parts of the furniture could be magnetic. Many children are unable to move, so they want to play in bed sometimes or on a flat surface. Together with a few friends I won a national project contest that will provide us with pieces of sensory furniture, sensory toys and sensory clothes. My main interest is in achieving a hospital easel and a playing and painting table for lying in bed patients and a table designed for positioning food (which can be slightly inclined).

### **1.4 The light.**

Colour light sensory room requires a space where natural light is filtered or eliminated. The colour light has a hypnotic effect "Fig. 1", and creates a very pleasant feeling of relaxation "Fig. 2, Fig. 3" that can lead even to sleep. [3] It is obvious that it is pointless to use such a light in the morning when the little patients need to feel fresh, invigorated and energized. The question arises: in what way can morning light be used or modified so that to create a good feeling able to balance the evening relaxation...





Fig. 1. Snoezelen optical fibers used in the therapy of terminally ill children.



Fig. 2. A mother and her baby relaxing in the Snoezelen waterbed.

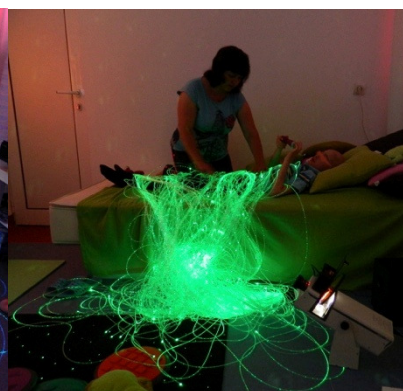


Fig. 3. A mother helping her child to relax using Snoezelen massage devices.

### 1.5 Sensory walls. Magnetic walls. The ceiling of the Universe.

"Snoezelen therapy involves use of an environment, typically a room that has been equipped with items that invite participants to engage their senses at their own pace. The goal is to both stimulate the senses by invoking memories and interest while also have a relaxing, calming effect on the individuals that allows them to feel safe and comfortable. According to the International Snoezelen Association, the approach "induces wellbeing" and provides a "calm atmosphere" where "fear will be taken away." [1]

Through screenings, and by a system of pulleys, the ceiling from the lying in bed children's room the time could become a playground pall for small patients.

"A hospital room that feels like a bedroom. Children want to bring personal items from home to soften the edges of the hospital rooms, so it's important to make room for unobtrusive shelving that can hold photos and favourite toys. Flat-screen monitors for television, Internet, and healthcare information are costly, but also desirable, and will remind kids of home. The ability to plug in immediately reduces the stress of isolation by connecting the child to his or her friends, and parents to their work, to their child's medical information, and to caregivers. Wi-Fi makes immobility tolerable. Another pointer: It may seem like a small issue, but if you give patients the ability to control the lighting in their rooms, they'll feel empowered to take control of other aspects of their illnesses.

...Design some patient rooms with movable walls so a single room can be expanded into a double room to accommodate medical supplies and equipment, family, and loneliness. Although the trend in paediatric design is toward private rooms, a child who is going to be in the hospital for a while, and whose parents can't stay with him or her, may want to be in a room with another child." [4]

Analysing the hospital, we somehow cheered thinking that each of them there are only 2 beds. In happy situations, these two beds are allocated hospitalized child and mother. However, when the number of patients is high, every child sleeps in the same bed with his mother, the neighbour with two other people.

There is research that says that there is no doubt: the ideal situation for accommodation in a hospital is the saloons with a single person in which each patient has his salon in which the patient is seated with a "belonged" or in our case – the parent.

There are many drawbacks: the space is small, no balcony or terrace, and the bathroom is infinitesimal. Although the department is equipped with sophisticated beds (which are able to raise the patient upright, etc. ), most wards have single beds.

Small space does not allow placement of a chair, but only a maximum of two folding chairs. The walls are white. Each room (although it is clean and looks much better than those of other state hospitals) is a useful, but foreign and distant place. Once they arrive there, the child and the parent have no

storage space. The world from home is packed in the suitcase, and then accommodated in a box in which each family has its concentrated wardrobe. Undressed from his own clothes and often dressed in pajamas, the child feels locked away in a foreign space that does not belong or represent him.

Each ward's furniture is entirely white. Asking the children, I learned that they would like "brown beds, ie wood, and be everything at home, ie, to have and armchair". Due to reduced space and the medical requirements, the introduction of a bouncing chair and bed can not be yet done in other color than white.

Up to a possible extension of the department, we could still benefit from the effect of Snoezelen namely equipment's and projector light beam "Fig. 4, Fig. 5, Fig. 6". Snoezelen equipment must be placed in a room with white furniture and therefore even the existing furniture would be ideal in this regard is attempted. The projector offers the possibility of watching movies when the patient or therapist wants them, and also a relaxing image through specially designed lenses in sets. There is such a set of lenses that moves between a combination of different colored liquids. [5] Projected image that gives this set is soothing and has a unique, almost hypnotic effect. For a child sitting in bed, moving colors evoke evernew forms and other worlds, and can compose a story beginning.



Fig. 4. Projection with Snoezelen projection lenses.

Fig. 5. Snoezelen luminescent carpet. The light of the carpet complements the light of the projection.

Fig. 6. Snoezelen optical fibers programmed to change rhythmic their color. The light produced by the optical fibers is the one of the key elements of the atmosphere in the Snoezelen room.

Light beams can also be placed in front of the bed and can eventually be moved near the small patient. Light beam causes a state of special reverie, helping the child to play, to hide in a cocoon of light and imagine fascinating stories. Beam light changes colour rhythmically, and this attracts the child's attention, enjoying it and tempting him in so many ways. The little patient can dress and wrap in light, can imagine hats and colourful antennas, can form images with a booster in the real world. The child may have a shining kingdom at his disposal.

Also the ideal solution would be a big plasma screen or a cloth on the wall in front of the bed. The benefits of current technology are mentioned in all the articles that talk about hospitals for children. We can talk about the benefits of socialization video in different virtual networks. For a patient there is little opportunity to see another child to play or sing along with, it shrinks away from others, which is what most children do. I recently had the case of an orphan girl who until almost the last moment, her only desire was to reach "children", meaning the playroom. Solitude is very unbearable not only for children, but also for parents. For cancer patients for whom there is a period of at least three days in which it is mandatory to stay in the lounge connected to the infusion pressure, is a huge factor. Thus, through plasma, or screen fabric, or simply by placing the projector near the bed, connected to a computer, children could discuss among themselves or could track over a large area and not only on

the small TV screen. An example is what happens to Herman and Walter Samuelson Children's Hospital at Sinai. The National Aquarium at the Herman & Walter Samuelson Children's Hospital at Sinai, "kids receiving care may enjoy the life under the sea! LifeBridge Health has partnered with the National Aquarium in Baltimore to broadcast a live feed in every patient room. This is possible through the internal cable system in patient rooms." ( [6]

The possibilities of movement of the child are almost completely inexistent. Yet, the children want to move, to run and are very curious to see new things, as they all "outside". These possible links with an aquarium, not necessarily in Romania, with a museum like Antipa or any other museum in the world could give children the satisfaction, joy and feeling that they can travel the world who incites them so much. Also connection via Skype could give a child the feeling that he belongs to a class of students who craves and can attend courses. Considering the fact that in our ward hospital unfolds school hours, the child could see the teacher in natural size and would converse with him with the feeling that he is with him/her.

For the small patients who cannot move any part of the body and are "staring at the ceiling", image projection can be used just using this architectural element, symbol of misery and boredom otherwise, so insufferable. If at first glance a painting or some hanging items might give a friendly touch to the ward, image projections have the advantage of always being selected depending on the preferences of the child hospitalized. When the child begins to nap, relaxing music can accompany him on his dreamy journey, helping him forget the pain and bitterness caused by infirmities due to both personal weakness and unfamiliar space.

This "soul architecture" can be completed with the luminous Snoezelen tube filled with water, in some wards where young children are usually hospitalized. Air bubbles moving in a coloured water will captivate them, helping them to relax and fall asleep easily. Speaking of furniture dedicated to children, the ideal would be a table able to change position at will, which could become chessboard, easel painting, table rummy and playing cards, and a stable support for your laptop, and plate and cup or glass. The table will have magnetic parts, and so the baby's movements will be somewhat directed and facilitated, also it can spark some interest.

Folding chairs can be placed directly on the wall (using a magnetic system), forming a kind of interesting bas-relief when not used as residence space.

Another object that must change its allure is the perfusor. "Troubling" everybody, the perfusor needs a specific arm that can be connected to the hospital furniture: to the trolley bedside the table in the playroom, to the nightstand. The latter in turn requires rethinking, depending on perfusions which unfortunately is always present in the lives of children hospitalized. The perfusor needs to be playfull, providing the fact it is something scary and very uncomfortable.

The white wall in front of the bed could receive some embossed panels, all white, small, which children who became blind, might touch. Their presence would become a source of pleasure, but also a hint of space, helping them to focus and not be completely dependent on those accompanying them.

For wards where children spend the last period of life, the walls may be provided with magnetic tracks. A system activated by remote control could ease the difficulty of every move very tired child does. With minimal effort, every child can move a train for example, ( possibly with the help of the parent) thus having the satisfaction of being somewhat active. Also, sometimes these rooms can be introduced so-called gravity walls that can work on the same principle, that of magnets and action by remote control. For young children, a ball that falls on a certain route is an event, and the vertical movement of a puppet can become something amazing.

## 1.6 The Playroom designed as a multitude of islands.

An essential element of the study analyses the space where everybody meets everybody else and spends most of their time: the playroom, the place where meals are served as well. How can this space become an interactive and creative space, by what means can it change its visual identity, given the need to meet several different requirements?



Finally, I would like to share my research findings on the extension of Paediatric Oncology department by adding some outdoor spaces needed by children. These will meet their need for playing, learning, relaxation, etc. "Fig. 7, Fig. 8, Fig. 9 "



Fig. 7. The Playroom of the Paediatric Oncology.



Fig. 8. Parents and children attending art therapy workshops.



Fig. 9. Children and volunteers of different ages painting.

We all experience the space as they are proposed, when talking about a hospital. 3 years working in the department of Paediatric Oncology Institute of Bucharest, I had the opportunity to wear long discussions with parents and children about the space they live in by putting together days, months, or even years.

### 1.7 The halls. Customized baby strollers. The halls specially designed for "cliff" walks or "races". Sensory halls (singing halls, speaking hall)

Trying to "sweeten" the misery caused by mobilizing children in wheelchairs, I asked teenagers to personalize their cannula and the trolleys (which we called "taxi "). Changing wheelchair driving into a pleasure, I have noticed the effect of movement on children in the last period of their lives.

Also children love hallways, especially when they have the lucky occasion when a tricycle becomes available.

Even though they are coloured and better looking compared to other state run hospitals, the hallways from the oncology paediatrician section are empty and sad. On the floor lays a colourful heavy traffic linoleum.

I would suggest for study another two points from the 11 points marked by Anthony Kelly: "Sound absorption. Carpet the corridors. Patient room doors are usually open, and the footsteps from visitors and staff can be noisy. Carpet in the corridors not only quiets the traffic, but it's also easier on nurses' feet. Acoustic walls are also very important in terms of keeping patients from being exposed to noises and distress coming from adjacent rooms. Design that appeals to teenagers and pre-schoolers. Design and arrange waiting rooms to be appealing to pre-schoolers and teenagers since both are patients in children's hospitals. Put toys on one side of the area, and place televisions and other items of interest on another side so teens can choose where to sit. Throughout the hospital, vary colour, texture, and interest items to create a soothing environment from the moment a child sets foot inside. Interior themes, like the sea, astronomy, and sports, can be used to identify corridors for easier recognition by the patient and family members." [4]

Our hallways echo. And the saddest part is hearing the children's cries coming from the treatment room. A lot of children sleep throughout the day and the rest just lay inert in their beds. So, having the floors covered with carpets would be highly useful in this case. As not tire the audience with this subject anymore, we can come to the conclusion that the hallways could easily become some discrete and entertaining maps on which the "taxi" races would bring a lot of satisfaction.

We were wondering how could the hallways become interesting, educational and also captivating, but yet different every time. The quick solution for this would be the introduction of touch screens. With a simple gesture the children could determine a bright moving colour, a sound, a light or a drawing. And due to the fact that the hallways are very long, more children could gather around and create a virtual drawing which will bring more light into their hearts. Just like the tables put together create a space where everybody comes together, so can the hallways become a space of self expression and learning, at a reduced cost. It is worth mentioning that the children's creations could be printed at any time if needed. There are 4 hallways surrounding the interior courtyard. Taking into account that in this section there are housed babies, infants and teenagers, we could dedicate one hallway per age category, leaving the 4<sup>th</sup> one for the critical stage patients. The critical state patients section needs a lot of caring and warmth, but also a very good sound proofing and more seats available (a solution for this would be folding chairs).

We all sometimes need words. Some sentences remain for long in our heart. And there, in the hospital sky, namely in the ceilings of the halls, adults could read things that are addressed to them. Words of encouragement, support signals, stories that give hope, maybe visible on some plasmas. No need for many such areas, but reading content must change rhythmically to keep some expectation and to not go unnoticed due to habit.

There is a category of couples desperately traversing the hallways, for hours. We refer to the parents who, at the request of the seriously ill child, walk him/her for endless hours in a circle. For these parents, who know that the child's end is nearing a futile completion, these rides are full of pain. They have a huge need for support.

The same lobbies present a certain aspect at night when they are less travelled and especially in emergencies. One walks these halls with a worried thought and a frightened heart. Certainly, as people need to accompany people in need, on the same plasmas we could have bright images dedicated to those heartbroken.

Not least, the trolleys and taxis can be adjusted by using children's help and imagination. Due to halls becoming the home of this transportation, the sight of painted carts, dressed with cushions inspired by children's art, could bring much joy. The lobby, in places where are "accommodated" the taxis, can have magnetic zones on the walls where "equipment" such as trolleys can be positioned in an art gallery.

### **1.8 Dining room - playroom-hall-place social class. The Playroom designed as a multitude of islands.**

A final space is the space that we can include most people, having also multiple roles, sometimes interconnected. We are talking about where parents and children eat, and this keeps them together and bring them closer to certain hours set. In the same space children play and learn together. It is also a space for relaxation, art therapy and parties. In the evening, parents and children paint and model, converse and connect with friends. The same space functions as an exhibition wall, where small patients are happy to show off their paintings. From this last reason, the play room is the most vivid and expressive polling place. The paintings are changing all the time and children are having some very strong cheer and enliven the atmosphere. Parents in return are happy to forget at least some hours, if not minutes, and paint them. This gallery works could echo throughout the hospital. Here's an example:

"Phoenix Children's Hospital offers a child-friendly atmosphere. All the Hospital's artwork came through a Community Art Project, resulting in 800 pieces of art. 90% of the Hospital's artwork was created by or in cooperation with children under the guidance of professional artists. Our brightly colored array of décor that has practical as well as aesthetic value. Whimsical art is designed to make the Hospital less intimidating, while interactive pieces will keep active children occupied in waiting areas. Textured art is used as a therapeutic sensory tool for children who are sight-impaired, while "story-telling" art in procedural areas provide a distraction for kids coping with pain." [6]

Being a multifunctional space, furnishings should be modular in order to assemble in multiple ways, concentrated in island areas.

The tables must allow easy access for as many carts below them. Given the large age differences, it is necessary that the seats be height adjustable. Also we need restful armchairs where mothers can keep their babies close to their chests. All furniture should be friendly, playful and colourful, attractive.

Another important thing is storage that consists of shelves for books and toys, but also in closed cabinets, for depositing colours and other instruments. The toys belong to all, it must be easily accessible and simple to clean. It is necessary to preserve order without a huge effort, so shelves and other storage places should be of different sizes and cleverly thought out.

In the same area there is the plasma and computer zone, where small patients and their parents gather to watch different TV programs. Computers are used in general by boys, mostly teenagers. This is yet another reason for thinking so as the furniture must be able to face an hour of painting in which 15 people are present, while at least three other work on the computer.

The room is naturally lit through the lobby windows that confine the hallway, being generally quite dark. Also here Snoezelen equipment could warm up the atmosphere, illuminating. Bright beams and bright carpets could be very helpful for playground areas and also for mothers rocking their babies. They also would stimulate art therapy sessions and story-telling activities, also the simple conversations of the parents in the late hours. Teenagers often remain last in the hall. A pleasant and light colour might help you relax and find new bridges of communication.

During the weekend, the playroom is the favourite place for all. Tired to sit alone in the small space of wards, they chillout together. It is a space that creates the feeling of community, where shyness is gone, where they try to comfort and to encourage one another. Also there occur afternoons dance, holidays and birthdays celebrations, so the space must be able to empty quickly. Also it requires a good sound system so that music can be heard in a pleasant way, without them disturbing those wards.

## 1.9 The garden and green spaces

The section is wrapped up around an unused square courtyard. The sight of the courtyard is sad and dull, while we know that it could give a healing perspective.

“It’s important to have sunshine and the outdoors available to paediatric patients. Many hospitals have supervised terraces on each patient floor; others have park benches and grassy areas on hospital grounds. One well-known institution even had a fishing pond and reels available. Most importantly, ensure that the sun can shine in to all patient rooms directly, or, at the very least, through light wells. In addition to the research documenting the biological importance of adequate levels of vitamin D, sunshine makes people feel good, which is a factor in healing that can’t be overemphasized.” [4]

Our courtyard could represent a oasis of tranquility and joy, although at the moment is not accessible. It could become a therapy garden. It could be designed in many ways: as a Zen garden, with sand and gravels, as a tree garden, or as an artistic garden, with moving sculpture and a pond. The remodeling of the garden has to be made in correlation with the interior facades. These facades are old and untidy, and the sight induces depression.

Trying a more significant intervention, the garden could be populated with bridges or could host a geodesic dome for a theater or a circus. We present below the example of the Boston Children’s Hospital, which provides services and resources to the hospitalized children.

“The Clown Care Unit is a group of clowns trained by the Big Apple Circus. Costumed as doctors and nurses, the clowns visit children in their rooms or unit activity room, and entertain them with humour and play specifically suited to hospitalized children. The clowns visit selected patient care units and the intensive care units during the week; ask your child’s nurse or Child Life specialist if your child’s unit is on their route.” [7].



Children crave home gardens. Most come from rural areas. All the wards have the windows overlooking the exterior courtyard. In a story we made together, a girl said she can not forget the window because she sees only ugly things. As such she "constructed" an imaginary tunnel under the hospital that led to her village. In the hospital, one need to settle down and enjoy the view is huge. Considering that immunity is low among patients, most often children are not allowed to go out neither in the interior or the exterior courtyard. This is the more a reason to do something about the view. Small patients are extremely sensitive to everything around them and are very eager to travel visually, without even realizing this. A fitting for this is to provide them with a space that lead to the delight, play, freedom and hope, thus becoming an end in itself. In this regard, another possible intervention targets the outer courtyard. Very sparsely populated, antiquated appearance, depressing, outer courtyard can receive an extension of the hospital all through one or more geodesic domes related to the hospital by a covered corridor. In this inside garden one could organize relaxing and learning activities, and also could provide space for parents moments of relaxation (by arranging small teahouse and a small hairdresser).

## 2 CONCLUSIONS

Because we analysed a concrete space, a space that I know well and where I work, the solutions proposed by me have more to do with the light design and discrete interventions in the interior architecture of the section (except the geodesic domes yard). I believe in the state of peace, relaxation and delight that are induced by a Snoezelen equipment as a result of observations that I have made in sensory room that we have here, in the hospital. Some children have especially wanted to spend their last days there and some parents said that if the wards would look like the relaxation room (the Snoezelen Room), they would not want to go home. Given that there is little funding for impressive expansions, improvements that can be made in real life are at sensory level. This is not a minor thing, and is related to sensitivity and finesse. I am absolutely convinced that by just adding the presence of a light beam in each ward, the state of mind of the hospitalized children would improve at least a little. In an oncological hospital this "little" means enormous.

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## FOOD VS. ARCHITECTURE. FROM THE ARCHITECTURAL FORM EXPRESSIVITY TO THE SPATIAL INTERPRETATION OF A CONCEPT: 2015 MILAN UNIVERSAL EXPOSITION

Daniel Comșa<sup>1</sup>, Marina Mihăilă<sup>2</sup>

<sup>1</sup> "Ion Mincu" University of Architecture and Urbanism Bucharest (ROMANIA)

<sup>2</sup> "Ion Mincu" University of Architecture and Urbanism Bucharest (ROMANIA)  
dancomsa@yahoo.com , marina.mihaila@arhitectonik.ro

### Abstract

Present article aims to present how the last International Expo from Milan 2015 succeed to show a food thematic via pavilions and how architectural form finds a way to express or to interpret in a conceptual way a variation of sub-themes proposed by each participant – country and statement/ manner architects involved. Authors are proposing an architecture analysis discourse: expression – interpretation and post interpretation, as result of communicating ideas, architecture but also statements on life sciences within: 2015 Milan Universal Exposition. The methodology is based on the hierarchy and matrix of statements, architecture icons and details as defined lines-features design and research by design; a post analysis as results and conclusion are to be enounced as new possible technologies – functional but also future concepts of living, new inputs and inquiries' on architecture field. "Food vs. Architecture" is the proposal for the change of paradigm in life sciences: from conceptual statements – design, space and units – to the new meaning of architecture and shelter in an emergent landscape and climate change.

Site scale view. Last Expo from Milan took place in the very heart of Europe during 6 months from May to October in 2015. Even if the expected number of visitor were 29 millions the real participation at the end of this period reached only 20 million visitors. The investment was over 2,6 billion Euro, 144 countries participate and 58 pavilions were build on a ground master planned by four great names in architecture: Stefano Boeri, Richard Burdett, Mark Rylander and Jacques Herzog. "According to official figures, it received 1.3 billion Euros in public investment, 0.3 billion Euros from sponsors and private investors, and 1 billion Euros from official participants The economic return for Italy is expected to be in the region of 10 billion Euros, 5 billion of which is expected to be generated from Italy's tourist industry." The maximum number of visitors per day was 146000 and the link with the city was made by a railway station, a terminus stop of the metropolitan transportation system Metro and two accesses by auto form the highway. Even if from the visitors point of view it looks like everybody goes in the same direction and we will have to wait for hours to leave the expo in the late night everything went well by the time we enter in the Metro. However access was a problem first time in the morning and waiting time goes to two hours and to one hour later the day, because of the security control. The policy to open the expo during evening 18.00 to 24.00 at cheaper price bring another wave of visitors to participate at night show and increase the numbers in the statistics.

Architecture scale view. "We have transformed Milan into a gateway to Italy", said Piero Galli, Expo General Director. "Feeding the planet, energy for life" was the main thematic of the expo and the interpretation of this could be categorized in the following typologies: Formal, Conceptual, and Indifferent. The paper will show also how the pavilions succeed to illustrate a shape into a concept or a concept into an architectural pathway. For example Italian Pavilion have a spaghetti facade that creates different level of transparency, the France Pavilion was a piece of cheese illustrated by wooden structure. The UK pavilion succeeds to lead to a sculptural object via a conceptual landscape

that shows another type of design approach. Analyzing other pavilions will give this study a bigger perspective on the research focus area.

Designer details scale view. As Italian design is one of the most nuanced forms of expressing the state of the art in life sciences, 2015 Milan Universal Exposition has demonstrated that architecture should always be innovated through detailed script concepts as well as less conceptual and more practical issues and forces in architecture. From the fragility to the groundless of design inputs, the architectural statements and expression started to increase our perception and inclination for a gardening shaping instead of a media technological architecture, refunding the start from scratch basis of writing new possible environments friendly for living.

Besides a scaled overview of the exhibition, the article is proposing few concluding results on comparison with the experience of global world exhibitions, which is one of the topics of the main author. Also conclusions are making a proposal of regarding the recent world exhibition in Milan as new paradigm change in evaluating the in-between scales of landscape, as interpretation manners of expression in architectural space (inner space and core solutions for shelter atmosphere, exterior envelopes enclosing responsive tools to the environments, and the statement message), reflecting a wide solutions for contemporary architecture as reflections of technological but both traditional initiatives of the architects on their regional environment-scapes. The syntax “food vs. architecture” – is – as presented by the paper – a mixture of natural and built landscape revealed in the cultural mood of specific regions and natural feeding landscapes that is residing new contemporary architecture, generating a new specific innovation reflection subject and manner.

**Keywords:** world exhibition, architecture, scales, architectural discourse, spatial interpretation, concept, design, landscape, Milano.

## 1 INTRODUCTION AND METHODOLOGY

Present article aims to present how the last International Expo from Milan 2015 [1] succeed to show a food thematic via pavilions and how architectural form finds a way to express or to interpret in a conceptual way a variation of sub-themes proposed by each participant – country and statement/manner architects involved. The article is developing a scaled approach – from a site scale view to architecture and design detailed view -, in parallel with an architectural interpretation of manners and gestures for choosing new plastics, aesthetics and references to the main theme of the exhibition EXPO MILAN 2015 – “Feeding the Planet/ Energy for Life”.

Authors are proposing an architecture analysis discourse: expression – interpretation and post interpretation, as result of communicating ideas, architecture but also statements on life sciences within: 2015 Milan Universal Exposition. The methodology is based on the hierarchy and matrix of statements, architecture icons and details as defined lines-features design and research by design; a post analysis as results and conclusion are to be enounced as new possible technologies – functional but also future concepts of living, new inputs and inquiries’ on architecture field. “Food vs. Architecture” is the proposal for the change of paradigm in life sciences: from conceptual statements – design, space and units – to the new meaning of architecture and shelter in an emergent landscape and climate change. Also methodology is based on applying and developing previous research of the main author regarding contemporary architecture envelopes and the focus on world exhibition as best reflection of statements and manifestoes as change in design interpretation. Experiments play here an important role in technological and expression innovation. [2] A strategic point of view on regarding architecture as urban setup as traditional to innovative space in the form of interpreting culture is add by the second author. The authors are including here their photography documentation from the study trips to EXPO MILAN 2015, in attempt to inquire manners of rethinking the space envelope as a new conceptual structure connected with the redesign of the landscape that becomes a new source for architectural sustainability. (Fig. 1-2)



Figure 1-2. EXPO MILAN 2015 – panoramic views. Photo ©Authors, 2015. Fig. 1. Local view with water feature and esplanade near the pavilions – left Intesa San Paolo Pavilion. Fig. 2. View on Germany Pavilion (ahead), Kuwait Pavilion (right), Ecuador Pavilion (left).

## 2 SITE SCALE VIEW.

Last Expo from Milan took place in the very heart of Europe during 6 months from May to October in 2015. Even if the expected number of visitor were 29 millions, the real participation at the end of this period reached only 20 million visitors. [3] The investment was over 2,6 billion Euro, 144 countries participate and 58 pavilions were build on a ground master planned by four great names in architecture: Stefano Boeri, Richard Burdett, Mark Rylander and Jacques Herzog. "According to official figures, it received 1.3 billion Euros in public investment, 0.3 billion Euros from sponsors and private investors, and 1 billion Euros from official participants The economic return for Italy is expected to be in the region of 10 billion Euros, 5 billion of which is expected to be generated from Italy's tourist industry." The maximum number of visitors per day was 146000 and the link with the city was made by a railway station, a terminus stop of the metropolitan transportation system Metro and two accesses by auto form the highway.

Even if from the visitors point of view it looks like everybody goes in the same direction and we will have to wait for hours to leave the expo in the late night everything went well by the time we enter in the Metro. However access was a problem first time in the morning and waiting time goes to two hours and to one hour later the day, because of the security control. The policy to open the expo during evening 18.00 to 24.00 at cheaper price bring another wave of visitors to participate at night show and increase the numbers in the statistics.

In terms of economics and city management, developing almost from the scratch a new areal for Milan is quite a target and also an established way of developing new surfaces for city at its periphery. Enveloping a new city areal as world exhibition proved to be a solution in the past for emergent-economic Milan for activating the sites that were developed in urban living shapes after the exhibition end. Also the increasing number of visitors was connected with the theme but also with the affordability of the subject dedicating a main topic to the Italian tasteful culinary landscape.

A wide variety of landscape and environmental new approach were connected by a common goal on showing results and traditions understood both in architectural conceptualized shapes and envelopes, but also by a contemporary and future regard of what private life, nutrition and architecture could summaries together. At the site scale view – we've noted the urban new areal activations through



architectural envelop-layering of the space and also by the topic contents, in the attempt to redesign city limits, in a possible emergent periphery.

In a virtual space [4] understanding, probably EXPO MILAN 2015 was the most digital supported on online feedback, receipts, events, but also having dedicated applications describing architecture concepts and their relation with tradition and choices for food and dedicated spaces and enchanting provenance local atmospheres. National Pavilions provided applications with complete descriptions of architectural projects, events and receipts for life habits and culinary approaches. From these applications, we mention besides the EXPO MILAN 2015 application and charming World Recipes application, application of thematic pavilions: Czech Republic – Land of Stories, New Holland Technology at Expo – Together we feed the world, and Breathe Austria.

A space of ideas, the Milan EXPO 2015 debated also the concepts of clusters: “rice – abundance and security”, “cocoa and chocolate – the food of gods”, “coffee – the engine of ideas”, “bio-mediterraneum – health, beauty and harmony”. [1]



Figure 3-5. EXPO MILAN 2015 – panoramic views. Photo ©Authors, 2015. Fig. 3. Panorama with the dialog between Russia and Estonia Pavilions, bordered in front left by Slovakian Pavilion. Fig. 4. View with Italian Pavilion (front right) and the spaghetti texture, and on the left, back: the symbol of the Milan EXPO 2015: the Tree of Life Pavilion. Fig. 5. Space of the world exhibition, center-left the World Expo Museum, center-right Vanke Pavilion, right New Holland Technology Pavilion, front-left the Italian food area pavilion.

### 3 ARCHITECTURE SCALE VIEW.

“We have transformed Milan into a gateway to Italy”, said Piero Galli, Expo General Director. “Feeding the planet, energy for life” was the main thematic of the expo and the interpretation of this could be categorized in the following typologies: Formal, Conceptual, and Indifferent. The paper will show also how the pavilions succeed to illustrate a shape into a concept or a concept into an architectural pathway.



In a cultural landscape understanding, architectures presented through pavilions sustained their topographical provenience and referred to the smartness of tradition – as design but also nutrition. In an overview on the exhibition, architecture is discussing [5] its future motivation and reinterpreting the tradition presenting and comparing innovations the functional layout together with meaning and new resourceful envelopes. Reference are made to the emergency of energy supplies, food habits (from spaghetti to green oasis, and from specific land cultures that flourish specific in different areas of the words – from coffee to rise, from grapes to olives, from insects habits and harvesting methods, etc.).

### 3.1 Pavilions highlights \_ food vs. architecture, an interpretation on the concept design theme.

For example Italian Pavilion have a spaghetti facade that creates different level of transparency, the France Pavilion was a piece of cheese illustrated by wooden structure. The UK pavilion succeeds to lead to a sculptural object via a conceptual landscape that shows another type of design approach. Analyzing other pavilions will give this study a bigger perspective on the research focus area.



Figure 6-8. EXPO MILAN 2015. Photo ©Authors, 2015. Fig. 6. Italian Pavilion. Fig. 7. Great Britain Pavilion. Fig. 8. French Pavilion.

Italian Pavilion (Fig.6), one of the most emergent designs within EXPO MILAN 2015, interprets directly at the façade level a national symbol in an architectural plastics that generates a decorative sunshade with a gradual transparency that envelopes a block mono-volume, quite monotonous, prismatic; the few openings and fissures are designed for loosing the massiveness. From typological point of view a break of the box-volume in the façade layer or a stretch movement aims to demonstrate gestures that precede breaking tensions similar to the tensegrity of cheese that lengthens before splitting. Nemesi & Partners in association with Proger and BMS Progetti have designed the Italian pavilion, won after an architectural competition developed with 68 participants. They made a statement on contemporary architecture, creating a double skin envelope, structurally decorated with materials based on low energy consumption, and a block-volume shape that surrounds an inner courtyard: *Palazzo Italia (built area 14,400m<sup>2</sup> with 6 levels)* [6]. The pavilion is proposed to be kept as playground practice for architecture school, and sustainability experiments.

At the opposite end it is the Great Britain Pavilion (Fig.7), designed by Wolfgang Buttress [7], that resides in a structure that articulates itself through a multitude of small objects similar to a cloud, without materializing in a defined shape. The beauty of this structure starts from the hexagonal module concept that is not perceived directly but in space movement; the module is multiplied and developed on height, and cut by the silhouette of a cube that loose its corners thanks to the low density of the structure. The modular concept of the pavilion aluminium structure is easy to install and to disassemble. The beehive concept that is the starting point of this project is not visible and comprehensive at formal level, in visual appearance, but it is faithful to a conceptual demarche line from gesture to the smallest detail. A succession of spaces are leading the visitor towards the symbol-object that is to be understood by following a path that a bee has through a garden before returning to the hive. The garden is landscape designed with alleys having a labyrinth route with places to sit, ungrouping the visitors but leading them to the target point, the beehive that is not yet insight if material of sculptural. Thereby the visitors are led alike bees towards a meeting point, a final point of a path, towards home, a central sculptural major architectural object of the ensemble. The interactive installations are extremely simple and have a sound emission technology through vibrations, similar

to the way in which bees are communicating with each-other. The vibrations are transmitted through a single-use wood small stick that has to be stabilized in an aperture of an installation, than to put between the teeth. This propagates a vibration that transforms into sound, facilitating hearing of a short message about the bees' community similar to the one that generates the project design. The cube created from these elements is sustained by four pillars composed from very thin elements that generate a spherical space circumscribed to the cube in which access is made on a glass bridge. *Grown in Britain: Shared Globally* is the theme that is based on the path route of a bee, and equally on its role on pollination in the entire chain of providing and sustaining food domain. The Hive - UK Pavilion has reached 20 awards [7] in 2015 and also in 2016.

France pavilion (Fig.8) has a strong structure of laminated wood (entire made of wood, in fact) with wide openings in a prismatic shape, from which are hollowed the interior spaces and the corners that becomes entrances or light holes for the inner place. The appearance of a sectioned cheese is given by the shape of openings. The architectural pattern starting point is the traditional indoor market and the "reversed landscape". A complex project design team made of architects: XTU Architects [8]. Anouk Legendre, Nicola Desmaziere with sM.Lukacs, N.Senemaud, ALN Atelien Architecture, Nicola Martinolo, Luca Varesi with A.Afferni, but also scenography: Studio Adeline Rispl and landscape design: BASE, focused on layering the message to: "statement on local, reversed landscape, geology and territory, landscape and topography, terroirs and genetic". [5] pp. 94-97. *Terroirs* refers to a complete vision on natural environment in which wine is produced. The pavilion introduces a recycle concept on architecture, besides the 2400 metric cube of wood, proposing a assembly-disassembly-reassembly circle of adapting the life of pavilion's architecture, and the complete recycling for the elements that can not be reused. The perspective of new consumption of food is completed by inserting grapes culture between the wood stripe of the façade remembering one of the most important connection with the French landscape – oenology.

### 3.2 Pavilions statements – a voyage through architectural spatial form expressivity and envelopes meanings.

Vanke Pavilion (Fig.9), by architect Daniel Libeskind [9], proposed an architectural shape as dragon pavilion, envelope with red metallic scales patterns as expressionist envelope together with the sinuous form: "The concept for the Vanke Pavilion incorporates three ideas drawn from Chinese culture related to food: the *shi-tang*, a traditional Chinese dining hall; the landscape, the fundamental element to life; and the dragon, which is metaphorically related to farming and sustenance. All three of these concepts are incorporated in the Vanke Pavilion's exhibition, architecture and program." [9] Trying to express a cultural landscape and story-teller architecture, the Vanke Pavilion could be a land of dreams for the searchers in new motivations in architecture, both professionals and policy makers for promoting regional branding. Still for the most architectural critics, the provenience of the shape could be too obvious or too daring as proposed exercise. As a personal note, giving birth to architecture as contemporary character is still venture for most cultures, and the description of tradition setups need a star-architect to fill-up the envelop when developed in architecture shape.

Germany Pavilion (Fig.10), designed by SCHMDHUBER expressed in an own vision the topographical-geographic national landscape with farmlands "is a wellspring of stylised plants that break through as *idea seedlings* from the exhibit level to the surface, opening up into a huge roof of leaves made out of fabric." [5] pp. 98-101. In an architectural contemporary view, the roof is opening free to the Brownian movement of visitors in space, accommodating as open source the garden of a vision of energy seeds – energy trees with photo voltaic cells. This meaning of tree – energy – seed is in our vision an interesting and smart approach of understanding sustainability – the resources and the future meaning of architecture living products, besides understanding, exploring and developing intelligent design envelopes and features to improve after skinning and greening the facades, emergent energy gardens both for protection, activity and public open spaces, but also for replicating a new man-made possible conceptual landscape.

Brazil Pavilion (Fig.11), which architecture is conceived as a playful topographic transparent "ground" for visitors, has exhibit the specific richness plants cultures of the country, and was focused on the

main export productions: rice, cocoa, coffee and fruits. The pavilion is in our opinion one of the most innovative designs through interactions with the users: modification of the relief on walking and variables of altimetry. The upper “net” routes for visitors let the perspective opens due to the transparency of the naked structural envelopes (smoothly closed with thin metallic web as sun-screens) but also offers an interesting vision on the below expositions on food cultures. Still a transparent pavilion and completely open to the viewers, the concept is still interiorised focusing on a museographic of planting clusters. Variation and richness of geographical relief but also of planting cultures and people genesis is an interesting focus topic to be express in the adaptation on visiting the pavilion walking on the “net” surfaces and inclined plans – it makes the visitors communicate with architecture, messages contented, but also on collaborating and supporting each other when necessary. Maybe, regarded in this way, it is one the most illustrative pavilions on expressing a local culture. The Brazil Pavilion was designed for Apex Brazil (Brasillian Trade and Investment Agency promotion) by Studio Arthur Casas as architectural design, and by Atelier Marko Brajovic as scenography and multimedia design. [10] “Thanks to the great idea of a net, which can attract even the youngest visitors, the Brazilian Pavilion is one of the most highly visited attractions at Expo Milan 2015, with 15,000 people each day.” [1]

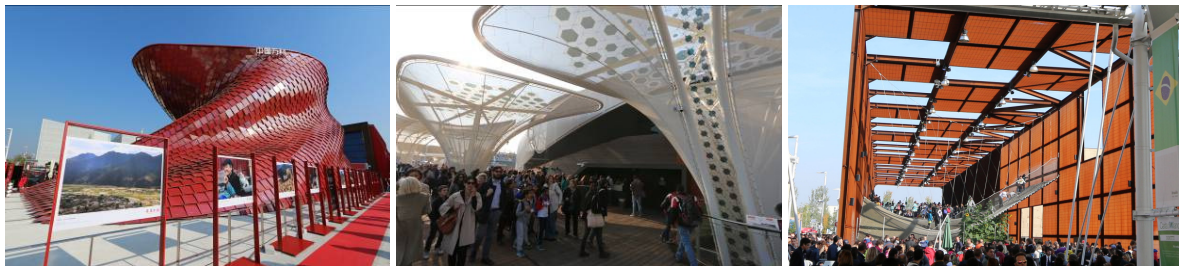


Figure 9-10. EXPO MILAN 2015. Photo ©Authors, 2015. Fig. 9. Vanke Pavilion, Daniel Libeskind, dragon pavilion, envelope with scales. Fig. 10. Germany Pavilion, sustainability as technological trees – the garden roof. Fig. 11. Brasil Pavilion, the “net”, photo ©Authors.

#### 4 DESIGNER DETAILS SCALE VIEW.

As Italian design is one of the most nuanced forms of expressing the state of the art in life sciences, 2015 Milan Universal Exposition has demonstrated that architecture should always be innovated through detailed script concepts as well as less conceptual and more practical issues and forces in architecture. From the fragility to the groundless of design inputs, the architectural statements and expression started to increase our perception and inclination for a gardening shaping instead of a media technological architecture, refunding the start from scratch basis of writing new possible environments friendly for living.

Communicating architecture in Milan EXPO 2015 is present also in the formation of closures – from walling to all kinds of developed surfaces –. Innovative patterns of different provenience are making statements of diversity and uniqueness of certain cultures: architects are defining in these ways a spatial place of atmosphere in a specific local innovative design.

Japan Pavilion is proposing a walling based on patterns of reinvented tradition, using wood as emotional local material of the most comprehensive communicative texture, but also a derived three-dimensional design weaving of modular pieces inspired by the motifs of flying birds. (Fig.13) The architectural design of this walling have also the structural purpose and the construction system is both tradition as contented principles but also technological innovative through the new generative multi-purpose walling architectural details. The concept design belongs to Atsushi Kitagawara Architects and it was supported by the timber façade adviser M.Imperadori, and by the timber façade structural design suppliers: Ove Arup & Partners Japan Ltd, M. Kanada, H. Yonamine, K. Goto. In terms of specific Japanese concepts the patter is based on “utsuwa” the term of traditional ceramic expressed in a multi-approach of Japan’s culture, reflecting here the aesthetic perfection: “pavilion symbolizes the wealth and the multiplicity of Japan’s culture”. [11]

Chile Pavilion (Fig.14) was architecturally designed as a complex structure of composed triangles forming rhombuses in a formation of compositional derived from static-dynamic three-dimensionality. In our vision Chile Pavilion is the expression of an architectural pattern of complexity, smart geometrically derived and well balanced by the upside down pattern present both in facades and in horizontal layers of volume's structure, presenting something that we would call: intelligence of formation design. The chosen material is also wood as in Japan Pavilion example, but here we could discuss the presence of a macro-architectural-design expressing both architecture and structure, texture and a transparent envelope, and in the vision of the authors a "formal expression and synthesis" [1] pp. 78-81. Architectural project team has involved Undurraga Deves Arquitectos [12] and Cristian Undurraga, and F&M Ingenegneria Spa, but also the wood timber structure from Albertani Corporates Spa. The wood light structure is "suspended" above a ground floor where the ceiling is similar designed having a beams joints design formed by triangles. This ground floor had the purpose of a fluid opened lounge for chilling out and wine tasting and drinking, exploring the fabulous Chilean oenological cultural landscape. The details of the structure consist in metallic joints and ground columns, with classic finishes and nodes.

China Pavilion (Fig.15), both based on traditional patterns and landscapes sites images is a wonderful surprise of what architecture could express in terms of architecture paradigms and also juxtapositions: from the fields' culture to a "fields of spaces" as the concept announces. [13] Architectural roofing is expressing also a double hypostasis: a traditional based shape but also the diversity of the Chinese skyline, based on a technological structure of laminated wood. Still the focus of the architectural design is present at the interior of the pavilion through the presence of the light field, as a focus pattern of installation – "resembling a cultivated field rippled by the wind" and "made of thousand polycarbonate stems, each connected to a multicolor LED, which transform it in a huge video screen." [13] Architects – Tsinghua University, Studio Link-Arc, LLC, Academy of Arts + Design, Tsinghua University - also conceived the pavilion to the disassembly and reassembly as a public space in Qingdao, China. [14]



Figure 13-15. EXPO MILAN 2015. Photo ©Authors, 2015. Fig. 13. Japan Pavilion', walling's texture' formation. Fig. 14. Chile Pavilion, detail on façade three-dimensional architectural formation. Fig. 15. China Pavilion, interior view.

## 5 RESULTS AND CONCLUSIONS.

Looking to the equation "food vs. architecture" the result of Milan EXPO 2015 could be fabulous in approaching diversity on manners of versatility and interpretation of volumes-forms-shapes, chosen textures and expressivity understood in different skins or extra coverings. If expressing on architecture style, the exercises on built pavilion express more a cultural understanding or a cultural status for present and future, where tradition is present as valuable result in place formation but also in community space – food is a part of local habits and the richness of specific region. Where the cultural landscape is dedicated to a formation of territories and the specific of the country, expressions of envelopes are reflecting this from the pavilion concept-idea and demarche to walling details, generating a somehow interpreted new regionalism. [15] ...or perhaps we could talk of a mixture of current vision on traditional cultural interpretation in the context of a certain regionalism, a drop of underlined technology in the architect vision on greening the future architecture, and the designer's possible statement relevance in the relation with proposed architectural future achievements. [16]

The theme of the Milan EXPO 2015 is somehow approachable and attractive also for developing architectural concepts, but it is for certain very comfortable for the public in communicate with the space of the exhibition, in understanding the pavilions' design from different scale perspectives and topics developed. Thinking all these ideas presented as exhibition exercises in unfolding cultural spaces and landscapes [17] in a possible more approachable new kind of museum space – the world exhibition surfaces and a new interpretation of architecture as a second landscape proposed as the cultural landscape envisioned as architectural envelope.

Architectural spaces envelopes [2] are proposing in Milan EXPO 2015 new exercises and meanings for the future design manners and semantic contents, and for certain reasons the function of the ornament [18] is becoming more tactile, or natural as understanding in the sense of landscape or as essence of tradition. Our proposal is to regard the recent world exhibition in Milan as a new paradigm change in evaluating the in-between scales of landscape, as interpretation manners of expression in architectural space (inner space and core solutions for shelter atmosphere, exterior envelopes enclosing responsive tools to the environments, and the statement message), reflecting a wide solutions for contemporary architecture as reflections of technological but both traditional initiatives of the architects on their regional environment-scapes. The syntax “food vs. architecture” – is – as presented by the paper – a mixture of natural and built landscape revealed in the cultural mood of specific regions and natural feeding landscapes that is residing new contemporary architecture, generating a new specific innovation reflection subject and manner.

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# **IN BETWEEN SCALES**

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# future challenges

Every profession is open to various challenges. In order to better respond to those, one should be able to predict at least some of them. The fact is even more important when speaking about the education in the specific field, as through education we are preparing the future actors in architecture. They are the ones that will have to react to the challenges of the future. The future of the environment - built and un-built -, the future of the profession itself, the future of the educational process – they are all related.

As everything is a process. To design is a process; it makes no difference if the design is an object – no matter its scale - or the future of a person, designing is a process of creation. Creativity depends as much on inspiration as on research. Perhaps even more on the latter. But the ratio between the two is not listening to some rules; it is not predefined and the same goes for the result of the process. Of course, one has to have a goal, a broad idea of what is to be realized. This has to respect rules and regulations, and usually some given constraints that are trying to make the design process even harder. It has to study all the conditions given, all the factors implied in using the object/design, even has to predict possible future problems, in order to already include solutions into design. Taking all these ingredients and duly applying them might seem as the perfect recipe for a good design. But it would only be good and, maybe, the best possible by X. But not the best response. As Pico de la Mirandola said, the best design should include “all [of the above] and something more”. The “more” that we cannot define, we cannot touch, but it is there, and it can be reached and it can mean the next step, the threshold between the good and the best. And the best maybe not the cheapest, or the fastest to realize, nor the one that respond best to the pragmatic point of view but the one that is coming with something new, and has a vision, and is living for the future and into the future. The one that is searching and [re]searching the best way to solve the problem by adding something “more”.









## TOPOGRAPHICAL ARCHITECTURE. FROM LOCAL TO TERRITORIAL

**Ioana Moraru**

*Assistant Professor, PhD, Architect, "Ion Mincu" University of Architecture and Urbanism (ROMANIA)  
ioana.moraru@yahoo.com*

### **Abstract**

One of the greatest challenges of contemporary architecture is being able to cope with the perpetual transformation that marks our times. Using diverse, sometimes unusual, yet almost always gentle methods, the topographical approach of architecture strives to face these challenges.

Topographical architecture is the kind of architecture where the building can be perceived as topography, landform, part or continuation of the land. As variations of the landforms determine the spatial properties and the character of the landscape, topographical architecture is the result of a collaborative process and a close relationship between architecture and landscape. We are talking about a different attitude towards the natural site of the construction as opposed to that of the traditional tectonics.

Although topographical architecture is no longer an innovation, it has been acknowledged as an obvious trend since the second half of the last century, when the duality figure-ground opens up new perspectives: the ground begins to be seen not only as the supporting base of a building, but also as a shape, as a proper building in itself. The emancipation of the ground from the status of a supporting base to a built object is first highlighted by Peter Eisenman in the *Cities of artificial excavation*, in 1978. He builds the architectural object starting from the ground, which is no longer just a neutral surface, but one of the layers that are part of several historical traces system.

Topographical architecture is a redefinition of something that already exists. It works with materiality, using different processing or adjustment methods to the ground, in order to achieve a certain form. The architectural object is an outcome of space manipulation and not the result following its adaptation to a particular program. Topographic buildings take various forms that depend on the type of intervention applied upon the surface of the ground and how that intervention is perceived in relation to the context. Depending on the way the materiality is recasted and the nature of the intervention, we can distinguish an architectural conception of nature or a natural conception of architecture.

The types of intervention are of different sizes, and could reach from local throughout urban and even territorial levels as well as domestic to public levels. Minor interventions pertaining to this approach are found in the landscape architecture, and artistic manifestations like land art, city scale sculpture, environmental sculpture, earthwork, and in the area of housing, mostly for ecological considerations. But topographical architecture is suitable for large-scale interventions, as the artificial ground which this approach creates helps mediate the scale of vast objects. This could result in buildings representing stylized landforms, constructions coated with earth simulating the micro landform, sloping roofings designed as a continuation of public space and roof terrace resembling artificial hills. Considering the way of adapting to the context, this approach could become a mediator in issues generated by territorial discontinuity at different scales.

Topographical architecture produces varying forms depending on the uniqueness of the specific features of each separate site and it is unfolding both as an ascending trend and, at the same time, as a new state of the art of architecture that cannot be considered as a simple gesture or an isolated

expression pattern in architecture. Whether it concerns local interventions, or territorial planning, this approach could be both the solution to many of the issues that designing is facing at the moment, as well as a great challenge, since there are no pre-established rules, and many of the methods frequently used in today's architecture are of no avail. Thus, depending on the purpose, topographical architecture might use methods, tools and even models belonging to other areas, such as landscape architecture, ecology, topology, 3D modeling, which facilitate the visualization and even the accomplishing of such forms.

Topographical architecture bursts from desire to be permanently adaptable and able to keep up with changing times and trends, and as, theoretically, landscape is never out of date, the chances of success of this architectural approach are quite high, and so are the challenges.

**Keywords:** landscape, figure-ground, materiality, particularity, mediation.

## 1 DEFINITION [1]

Topographical architecture is not an innovation of the contemporary world, it has been acknowledged as a conspicuous trend since the second half of the last century. This approach may be the solution that meets one of the greatest challenges of modern architecture, namely being able to cope with the perpetual transformation that marks our times. Using diverse, sometimes unusual, yet almost always gentle and never peremptory methods, the topographical approach of architecture strives to face these challenges.

Topographical architecture is the kind of architecture where the building can be perceived as topography, landform, part or continuation of the land. As variations of the landforms determine the spatial properties and the character of the landscape, topographical architecture is the result of a collaborative process and a close relationship between architecture and landscape. Topographical architecture is determined by the basic features of the land, the structure and scale of the relief and it is subordinate to it. At different scales, this approach tries to mediate the relation between architecture and landscape. We are talking about a different attitude towards the natural site of the construction as opposed to that of the traditional tectonics. This is a particular kind of architecture, in which the facade is insignificant and most buildings are often embedded into the earth.

## 2 THE NEW VALUE OF THE ANTHROPOGEOGRAPHIC ENVIRONMENT

The twentieth century is the time when the entire materiality of the anthropogeographic environment is acknowledged as an essential value, particularly focusing on the environmental side, on topography, history and local culture. "The problem of the formal structuring of the anthropogeographic environment compels a revision of the concept of nature as a value as it has been constituted in the tradition of modern architecture." [2]

Vittorio Gregotti pays great attention to the landscape during the design process. In his book *Il territorio dell'architettura*, from 1966, he does not take into consideration the construction alone, but the entire environment, from the territory scale up to the object scale. Gregotti argues that "it is only from the experience of the place that the characteristic features emerge which pave the way for architecture and determine its form." [3] To him, the relationship between architecture, site and landscape is the essence of architecture. This idea was embraced by various architects and transformed over the last century, so now we can distinguish several different approaches of landscape, architecture and the bond between those two.

Architecture must somehow bind to the geomorphological aspect of the relief, and relate to its context in various ways. Topographical architecture is a redefinition of something that already exists.

It works with materiality, using different processing or adjustment methods to the ground, in order to achieve a certain form. The architectural object is an outcome of space manipulation and not the result following its adaptation to a particular program. Topographic buildings take various forms that depend on the type of intervention applied upon the surface of the ground and how that intervention is perceived in relation to the context. Depending on the way the materiality is recasted and the nature of the intervention, we can distinguish an architectural conception of nature or a natural conception of architecture.

## 2.1 The architectural conception of nature

The architectural conception of nature does not necessarily reports to the actual building, but more to planning. This involves modelling the earth, the simplest of actions used in topographical architecture, because it is about preserving materiality and reshaping the landscape or topography, and most often it is associated with landscaping, land art, city scale sculpture, environmental sculpture, earthwork. Modelling is an anthropic action that starts depicting the relationship between architecture and landscape, highlighting the plastic qualities of the earth as basic working material. This approach is very suitable for the designing of parks, playgrounds, gardens, botanical gardens and zoos, fairly small ground portions to be remodeled, requiring only a change of image, a change or adaptation of the land, resulting into a stylized topography that facilitates the usage of the area and at the same time giving it a particular character.

*The Botanical garden of Barcelona*, designed by Carlos Ferrater, is a good example. He designed the garden as an intelligent infrastructure inspired by fractal geometry. The architect shaped the topography using a triangular pitch without moving large amounts of earth. The triangular module established a new, flexible and creative way of work, highlighting both planted areas and circulations.

Yet, similar trends were noticed much earlier, in the late 60's, in Isamu Noguchi's works, the forerunner of playgrounds as sculptural landscapes. To link these trends to architecture, Noguchi claimed that earth sculpturing can be perceived as a fusion between architecture and relief modelling.

## 2.2 The natural conception of architecture

The natural conception of architecture implies a more pronounced intervention in the context because it does not only work with the earth, but with the constructed object, which must resonate with the environment. The particularities of each place, such as orientation, climate and topography determine the specific conditions for an individual solution which emphasizes the connection between the built object and the landscape.

Herein, we can not talk about the traditional figure-ground relationship, nor the classical building with definite facades, since notions like roof, facade, floor as we know them, from the traditional architecture, simply disappear. The duality figure-ground opens up new perspectives: the ground begins to be seen not only as the supporting base of a building, but also as a shape, as a proper building in itself. The emancipation of the ground from the status of a supporting base to a built object is first highlighted by Peter Eisenman in the *Cities of artificial excavation*, in 1978. He builds the architectural object starting from the ground, which is no longer just a neutral surface, but one of the layers that are part of several historical traces system. One of the most significant examples is *The City of Culture of Galicia* from Santiago de Compostela, Fig. 1. The building develops on the concept of palimpsest by juxtaposing three layers, resulting in a folded surface that recalls the process of mountain formation. To Eisenman, this approach represents a method to solve the opposition between figure and ground, connecting the roof with the earth surface. Thus, massiveness of the building fades away and is no longer construed as an extraneous element within the context.



Figure 1. Peter Eisenman - The City of Culture of Galicia, Santiago de Compostela, Spain

Image source: [https://upload.wikimedia.org/wikipedia/commons/b/bc/2013.\\_Cidade\\_da\\_Cultura.\\_Santiago\\_de\\_Compostela\\_-\\_Galiza.jpg](https://upload.wikimedia.org/wikipedia/commons/b/bc/2013._Cidade_da_Cultura._Santiago_de_Compostela_-_Galiza.jpg)  
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A building that can compete with the *City of Culture* is *Ewha Womans University* of Seoul, designed by Dominique Perrault, Fig. 2. He proposes a large urban insertion that connects the network of the campus with the city through a multifunctional esplanade, forming a unitary landscape. Wishing to strengthen the garden character of the site, Perrault proposed the invisible building which, although not underground, it cannot be observed from far away. The roof is used as a park, a landscape with trees, flowers, grass and pedestrian alleys. Thus, concealed by the surrounding landscape, the building loses its monumentality. The central axis, like a crevasse, separates the building into two parts and plays a major role in the life of the city, hosting a multitude of events. The building extends along the axis, revealing the interior of the university and creating a new topography with minimal impact on the surroundings. The building is trying to give back to the city what it initially took from it. The solution emphasizes the context, seamlessly integrating it into the urban fabric, by blurring the physical limits of the building. Perrault thinks that this flexibility of the concept allows for the university blend with the city as building, landscape and sculpture at the same time.



Figure 2. Dominique Perrault - Ewha Womans University of Seoul, South Korea

Image source: <https://www.flickr.com/photos/namho/3907192656>  
License type CC BY 2.0, see: <https://creativecommons.org/licenses/by/2.0/>

Although much smaller, yet equally emblematic to our topic lays the *Central Library of Delft*, designed by Mecanoo, Fig. 3. The site is dominated by the impressive Brutalism building of the Aula, built in the 60's by two architects of Team X, Jo Van den Broek and Jaap Bakema. The Library responds to the context that, due to the strong presence of Aula, it becomes difficult to treat. Thus, the library firstly reveals a sloping grass covered landscape that slightly rises behind the Aula, and forms the roof. The opposite end and the sides are enclosed with glass walls. The glass side facades create a floating sensation of the roof, designed as a pedestrian area. The landscape connects the two buildings, and also provides a distinctive note and so the library gains a second guise: viewed from the auditorium, it looks not like a building at all, but a green landscape, while from the opposite side, facing the

street, it is perceived as a dynamic activities center edifice, with a glazing facade. In terms of architecture, the roof is extremely important to the landscape, having an urban purpose withal: transforming this area into an actual campus is accomplished by the creation of an amazing landscape as a multipurpose public space, which is indispensable to a university establishment. The roof is the favourite place for meetings, leisure or study and it can even turns into a track during winter.



Figure 3. Mecanoo - Central Library, Delft, Netherlands

Image source: own image

A different approach is used for the *Yokohama International Passenger Terminal*, designed by Foreign Office Architects, built on water, not as an isolated object, with a traditional structure, but as an extension of the urban space. FOA started from the idea that the site is a public space and so proposed that the roof of the new building should be an urban place, continuing Yamashita and Akaranega parks. Thus, the building generates an artificial pitch, a peninsula. The site and the building orientation towards the water have been instrumental, enhancing the city's public spaces with this continuous structure which expands over waters.

### 3 CONCLUSIONS

The size of the interventions varies, the scale of topographical architecture could reach from local throughout urban and even territorial levels as well as domestic to public levels. Minor interventions pertaining to this approach are found in the landscape architecture, and artistic manifestations like land art, city scale sculpture, environmental sculpture, earthwork, and in the area of housing, mostly for ecological considerations. But topographical architecture is suitable for large-scale interventions, as the artificial ground which this approach creates helps mediate the scale of vast objects. This could result in buildings representing stylized landforms, constructions coated with earth simulating the micro landform, sloping roofings designed as a continuation of public space and roof terrace resembling artificial hills. The topographical architecture of the last decades was generally focused on the social feature of the concept, often generating new public spaces. Thus, this morphology particularly emphasizes the connection between the built object and the urban landscape. Considering the way of adapting to the context, this approach could become a mediator in issues generated by territorial discontinuity at different scales.

Even though topographical architecture disembarasses of rules, conventions and standardization, producing varying forms depending on the uniqueness of the specific features of each separate site,

it is unfolding both as an ascending trend and, at the same time, as a typology and as a new state of the art of architecture that cannot be considered as a simple gesture or an isolated expression pattern in architecture. Whether it concerns local interventions, or territorial planning, this approach could be both the solution to many of the issues that designing is facing at the moment, as well as a great challenge, since there are no pre-established rules, and many of the methods frequently used in today's architecture are of no avail. Thus, depending on the purpose, topographical architecture might use methods, tools and even models belonging to other areas, such as landscape architecture, ecology, topology, 3D modeling, which facilitate the visualization and even the accomplishing of such forms.

The world we live in passes through a process of continuous transformation both in terms of natural and urban, but also in terms of social, cultural, economical and political. The aim of topographical architecture is to not abandon ourselves to the sheer nature, but to seek for productive analogies that could inspire us into creating new artificial spaces and landforms, suitable for the complexity of the contemporary life. To create these alternative territories, new strategies are required, both in architecture and urbanism, in order to manage the ever changing environment. Undertaking an increasingly, more pronounced definition of architecture as landscape is a great challenge, but as landscape is never out of date, the chances of success of this architectural approach are quite high.

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## FROM PRIVATE TO COLLECTIVE

**Giorgia Di Cintio**

*School of advanced studies "G. d'Annunzio" Chieti-Pescara, Department of Architecture AU section  
(Architecture and Urbanism) (ITALY)  
giodicint@hotmail.it*

### Abstract

Contemporary society is faced with a situation of economic and environmental crisis and with changing social needs. This leads us to consider the recovery of existing buildings through activities such as technological upgrading, densification and conversion, providing a test bed for sustainable enhancement, with innovative strategies. At the moment in which the borders of the city are dilated and mutable, we should compare this with the "empty" that are the discards of the processes of transformation of the diffused city. The fields of application are therefore the brownfields, the abandoned areas because these are no longer congruent with new necessities and distant from the logical settlements that had produced them. Connecting these fabrics to the context, it not only means giving them back an identity, but also returning continuity to the urban dimension that results in fragmentation because of these abandoned areas.

The better strategy for the process of regeneration is that of preserving the urban resource and "building on the built one", according to an "echo-logic" of recycling as opposed to "production-consumption-discard". These are also the themes faced by the PRIN (RPRNI) (Research Program of Relevant National Interest) "RE-CYCLE ITALY" within the scope "Recycle fragile territories" developed by University "G. d'Annunzio" of Chieti-Pescara. In this way a new paradigm for the project is emerging: to activate new cycles of life, giving impulse to the cities' functional equilibrium as alternative to non-urbanized new territories occupation. So the meaning of sustainable enhancement is made up of all those actions and strategies addressed to the protection and promotion of the landscape and economic patrimony, and to the incentive of the social relationships, improving the quality of life and the urban environment. These durable works are able to prefigure future scenarios opposing the functional obsolescence that characterizes the contemporary city.

Considering architecture as a means of generating public interest, fit to improve the conditions of people's lives, the design of the regenerated city should recover human scale spaces; in this way it returns a correct dimension to the public city, from the scale of lodging and its parts, to that of the building with its aggregation in the spaces of the city. Every strategy of regeneration cannot transcend from the narrow bond that is established between the urban space and the social relationships, imagining new forms of living, sensitive toward people and individual and collective needs that are expressed. The aim is to create a balanced city with accessible urban spaces of good quality, and correct in the context. A project of regeneration should contribute to improving the form and efficiency of the city through integration among residences, services, job and leisure time. The aim is to build urban areas which are lived in all day long, to improve the territorial connections of the neighborhood and of the city.

By analyzing some case studies of Italian outskirts such as that of Pescara, we want to underline their "monotony", in lacking services and limited to the purely residential. Through a series of Italian and European projects we will highlight the right tools for re-activating these marginalized urban areas, giving answers to the spontaneous uses and revealing the demand for the reappropriation of places for collectivity.

Another fundamental aspect of this collective dimension of living also resides in the value of the bottom-up planning. Introducing some projects of the group G124 as required by senator Renzo Piano, we will demonstrate the effectiveness of the "neighborhood laboratories"; that enables us to listen, to build networks and to individualize the runs to implement the process of urban regeneration.

The aim is to show that cities should be re-connected with public and collective places whose role is strategic, since they are called to act as "enzymes" that stimulate the urban metabolism and thus the self-regeneration of the city. "Connecting, cutting and tying up again" become good practices to return identity and "biodiversity" to the city; they provide several functions and meanings that re-connect "archipelago" neighborhoods in an urban echo-system.

**Keywords:** Regeneration, Sustainable enhancement, Brownfields, Balanced city, Collective dimension, Urban echo-system.

## 1 INTRODUCTION

Contemporary society is faced with a situation of economic and environmental crisis and with changing social needs. This leads us to consider the recovery of existing buildings through activities such as technological upgrading, densification and conversion, providing a test bed for sustainable enhancement, with innovative strategies. Sustainable enhancement is made up of all those actions and strategies addressed to the protection and promotion of the landscape and economic patrimony, and to the incentive of the social relationships, improving the quality of life and the urban environment. These durable works are able to prefigure future scenarios opposing the functional obsolescence that characterizes the contemporary city.

### 1.1 Subject of the research

At the moment in which the borders of the city are dilated and mutable, we must compare this with the "empty" that are the discards of the processes of transformation of the diffused city. The fields of application are therefore the brownfields, the abandoned areas which are no longer congruent with new necessities, distant from the logical settlements that had produced them. Connecting these fabrics to the context not only means giving them back an identity, but also returning continuity to the urban dimension that results in fragmentation because of these abandoned areas.

### 1.2 Re-cycle

The better strategy for the process of regeneration is that of preserving the urban resource and "building on the built one", according to an "echo-logic" of recycling as opposed to "production-consumption-discard". These are also the themes faced by the PRIN (RPRNI) (Research Program of Relevant National Interest) "RE-CYCLE ITALY" within the scope "Recycle fragile territories" developed by the University "G. d'Annunzio" of Chieti-Pescara. In this way a new paradigm for the project is emerging: to activate new cycles of life giving impulse to the cities' functional equilibrium as an alternative to non-urbanized new territories occupation.

## 2 NEW WAYS OF LIVING

Considering architecture as a means of generating public interest, fit to improve the conditions of people's lives, the design of the regenerated city must recover human scale spaces; then it returns a correct dimension to the public city, from the scale of the lodging and its parts, to that of the building with its aggregation in the spaces of the city. Every strategy of regeneration cannot transcend from the narrow bond that is established between the urban space and the social relationships; imagining new forms of living, sensitive toward people and individual and collective needs that are expressed.

## 2.1 Balanced city

The aim is to create a balanced city with accessible urban spaces of good quality, and correct in the context. A project of regeneration should contribute to improving form and efficiency of the city through integration among residences, services, jobs and leisure time. The aim is to build urban areas lived in all day long and to improve territorial connections of the neighbourhood and of the city.

## 3 CASE STUDIES

The importance of working on the vitality and liveability of the city, to guide the recycling operation, is demonstrated by the case studies chosen. In them, the creation of dynamic places is the subject of experiment, in order to respond to the community needs.

### 3.1 District of San Donato, Pescara, Italy

Firstly, the ATER (Regional Company for the Public Housing) district of San Donato, on Pescara's outskirts, was taken as a case study. This neighbourhood has been the subject of research by the Department of Architecture at the University of Pescara. We have tried to develop a set of strategies to bring the relationship between the neighbourhood and the city to its original balance, that was provided by the initial project. Designed by Eugenio Montuori, in fact, San Donato has characteristics of strong design quality. However, over the years many changes have been made by the people, raising a number of critical issues. The lack of services, of green areas and of relationship spaces, is evidenced by the spontaneous uses that have been made of the blank areas of the district, which have been turned into kitchen gardens, greens and common areas, as shown in Fig. 1. This unexpected result, which is not organised, expresses a collective environmental and social discomfort for the community, as well as the perception of urban marginalization.



Figure 1. Porches and ground floors of residential buildings used as common areas

#### 3.1.1 Regeneration strategies

Since the critical issues which have emerged concern both relationship with the context and issues related to the internal life of the neighbourhood, even the regeneration measures can be divided between urban and local roots strategies. The urban roots strategies aim to establish new connections with the city. They consist of improving accessibility and in creating attractive new centres, in order to offer new use opportunities and new public spaces and in order to trigger micro-economies. In this way the identity of the neighbourhood is renewed, improving service and viability. It has simultaneously strengthened relations with the neighbouring urban fabric, using the upgrading effects brought about by new centrality. The local roots strategies on the other hand, consist of strengthening architectural recognisability, improving relations between neighbourhood facilities and

connecting public spaces with each other. The architectural strategies that follow, therefore concern three aspects: re-establishing connections with the city, reconfiguring public space and redesigning housing.

### 3.1.2 *Neighbourhood and city*

About the relationship between neighbourhood and city, there are two types of actions proposed. Primarily by ensuring the infrastructural connections through a suitable service of public transport and through new cycle and pedestrian paths, we would ensure permeability and ease of access. Then the increasing reuse of abandoned buildings and services is proposed: today the only equipment available in San Donato is a school and a church. Recovering buildings no longer in use and activating their new life cycles allows us to promote functional mixité through interesting buildings for the community. Among the proposed activities there are media libraries, auditoriums, places for sports, FabLab and neighbourhood workshops, which are suitable in the context because they are landmarks and aggregation places.

### 3.1.3 *Public space*

Concerning the public space reconfiguration theme, we must deal with the San Donato square, shown in Fig. 2, which is abandoned. Fully paved, with few non-tended green areas, it is not fulfilling its role. Already involved by the Urban project, it needs its recovery to respond to community needs. The actions proposed are: creation of cycle, pedestrian and recreational paths; increase of collective life places by recovering unused spaces such as porches and ground floors of residential buildings improperly used as parking lots; installation of flexible and temporary structures suitable to the new uses of public space; increase of green areas and inclusion of kitchen gardens to improve lifestyle and social relations in the neighbourhood.



Figure 2. San Donato square

### 3.1.4 *Housing*

Housing design is based on the other hand, on two approaches: demolition and reconstruction or addition of parasitic elements and recycling of existing buildings. In both cases the aim is to mediate the architectural scale, and regarding the internal arrangement, to make a typological variation of housing, making it suitable for different users: families, seniors, couples, students and singles. Particularly interesting is the reuse of existing structures. It acts on the building recognisability with the restyling of blind fronts; it approaches urban greening through the installation of green roofs, climbing plants, rain water collectors and wetland plants; it varies housing performing micro demolitions, differentiating and characterizing the individual units by making use of prefabricated and flexible elements, adding spaces of public life and services for residents inside the buildings themselves.

## 3.2 **European case studies**

The same need to design socialization places, capable of mediating the relationship between city pieces, emerges from other European examples. They are re-conversion projects of "exhausted" city areas into urban gardens and culture places.

### 3.2.1 Allmende Kontor, Berlin, Germany

"Tempelhof", one of the oldest German airports, has found new life after having closed in 2008. The urban garden Allmende Kontor is an agricultural project created on the initiative of Berlin citizens. They have made 300 plots of arable land on what were previously airport runways, Fig. 3. Spaces are co-managed spontaneously, so that the participants organize themselves in terms of planting, watering, timing and cultural activities. The concept that refers to the urban garden name is "common good". It fully represents the essence of this place that is attracting a growing number of citizens who want to engage in horticulture or who simply wish to spend some time reading or relaxing.



Figure 3. The urban garden Allmende Kontor

### 3.2.2 Réinventer Paris, Paris, France

"Réinventer Paris" is the competition organized in Paris to renovate 23 major sites and regenerate the city. Among them Gare Massena, an old disused station located in a strategic position on the Left Bank, is one of the key development areas of the city. "Re-Alimenter Massena", shown in Fig. 4, is the urban regeneration project with which the Dorell Ghotmeh Tane Architects office has won the competition and proposes a functional mix of housing, art, culture and urban agriculture. The existing building is recovered and connected to a new tower in which public and private spaces alternate with green covered terraces. The Gare is transformed into a place for advanced research on "urban farming", including educational workshops, shared gardens, a local market at zero km, cooking workshops and accommodation for artists, cooks and researchers. The project, still in the concept stage, will be inaugurated in 2019.



Figure 4. Prefiguration of the project "Réalimenter Massena", Paris



#### 4 BOTTOM-UP DESIGN STRATEGIES

Another fundamental aspect of this collective dimension of living also resides in the value of the bottom-up planning. Introducing some projects of the group G124 as required by senator Renzo Piano, we will demonstrate the effectiveness of the "neighbourhood laboratories"; which enable us to listen, to build networks and to individualize the runs to concretize the process of urban regeneration.

##### 4.1.1 Borgata Vittoria, Turin, Italy

The case of Turin involves "Borgata Vittoria" neighbourhood. As an intervention point, a residual space that has lost its urban and social significance has been chosen. A small park with no name is the point on which the energies of the place converge, with the aim of restoring identity and dignity to the space. The area has been revitalized with recycled objects, creating a path and hangouts. Fig.5 shows the vegetable garden managed by the inhabitants of Borgata Vittoria.



Figure 5. The vegetable garden managed by the inhabitants of Borgata Vittoria, Turin

##### 4.1.2 Presidenti Viaduct, Rome, Italy

In Rome, the redevelopment of the Presidenti Viaduct, in the part which was used for a tram route, allows us to connect people and different ways of living, forgotten on the edge of the city, and to give life to the "proximity" necessary to start regeneration: socializing to build cities of the future. The track was recovered to create a pedestrian and cycle path, with small squares, bicycle repair garages or neighbourhood workshops where ideas are cultivated. Made up of recycled materials, as shown in Fig. 6, it is an invitation to cross the park. With a zero strategy land use, it has given function to a public work which had remained incomplete. So a problem is turned into a resource that enhances the potential of existing urban parks, connecting them to each other.



Figure 6. Before and after the redevelopment of Presidenti Viaduct, Rome



#### 4.1.3 Librino, Catania, Italy

Librino neighbourhood in Catania represents an attempt to build a New Town, which failed because of a lack of essential services and segregating dynamics. From a needs analysis, the necessity of reclaiming the urban context and the "right to the city" emerged. Given the large number of young people, a sustainable educational path, both socially and environmentally, shown in Fig. 7, that connects education spaces with residences, has been realized.



Figure 7. The sustainable educational path for Librino, Catania

## 5 FUTURE PERSPECTIVES

What emerges from these examples is therefore the need to create meeting places for socializing and for various types of user. We should design easily accessible spaces, which can act as well for the improvement of environmental conditions, as for meeting and cultural places. So public and collective places have a strategic role, since they are called to act as "enzymes" that stimulate the urban metabolism, and thus the self-regeneration of the city. These are the principles for a creative regeneration, capable of imagining new functions for an inclusive and attractive city. In this way "archipelago" neighbourhoods are re-connected in an urban echo-system with its own identity and "biodiversity".

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## INTERIOR URBANITY; IN-BETWEEN SCALES' SCENARIOS FOR CONTEMPORARY URBAN DESIGN, LEARNING FROM AHMEDABAD, INDIA

Arian Heidari Afshari<sup>1</sup>, Mehrnaz Rajabi<sup>2</sup>

<sup>1</sup>DASTU, Polimi (ITALY)

<sup>2</sup>DASTU, Polimi (ITALY)

*arian.heidari@polimi.it, mehrnaz.rajabi@mail.polimi.it*

### Abstract

This article is intended to critically reflect upon the very notion of urban and interior scales' inter-relationship and their dialectic interplay in the city. The case study of Ahmedabad has been selected for the research as in contrast to all of its historical monuments and modern architectures like Mill Owners' Association Building, Villa Sarabhai, Villa Shodhan, Sanskar Kendra Museum of Le Corbusier and Indian Institute of Management by Luis Kahn, architecture of that city there is in the very background, while urban and interior realms are melted into each other and formed one of the most complex vital productive city life in all India.

Ahmedabad city is the sixth largest city and seventh largest metropolitan area of India. It is one of the largest producer of cotton in India and the second oldest in stock exchange. For any urban designer in that context, it is very normal to acknowledge slums and informal life but also he or she must respect the continues scale jump and fusion in a daily base routines in the city. And what if the most well dominant scale; Architecture, would not have that much of a role in the design process! Ahmedabad is the case in which the interior scale is naturally dematerialized in urban context and the urbanity is well routed in the scale of interior rather than planning schemes.

Employing Architecture as a medium of dialect was so dramatically effective for the political economic actors of the city especially in the late modern era which convinced eventually even Master Architects to get considerably numb toward the society and the context for which they were designing. As each medium is a human extension toward his territory, foreigner architects and their Indian students, mostly saluted the mediumistic Architecture for their own mentality extension in order to re-establish the hierarchy of their desires among the other mostly coupled to local culture scales. However, they were never keen enough to welcome the other side extension. Observing the masterpieces of Modern era in Ahmedabad is a sound indication of that numbness and misuse of the medium, for those architects engagement with the other scales, mainly maintained their aggressively external approach, rather than considering the other scales mediums and their cultural aspects pushing the architectural scale frontiers inward.

And without doing it so, based on the complex social multi-cultural environment, in most of Indian cities and especially in Ahmedabad either their built form never got accepted by population or occupied, violated and brutally distorted to something else, unsurprisingly more useful and accommodative to people's individual and collective need and desires. The Architecture itself became a rotten background, mostly abandoned or altered to backstage of the city life, it lost its mediumistic role for the other scales and therefore it is the nearest to what one could name "infrastructure".

And if neither the masterpieces nor generic fabrics of Ahmedabad city exist not even merely as dynamic backgrounds or functional infrastructures, then naturally the other scales have to present more valid debate for any interactive design in that context city. This article will therefore review the existing condition of Architecture, urban and interior scales in City of Ahmedabad and their back stories, with the main focus on tracing down the moments of scale jumps and fusion in the both old

and generic city contexts. The ultimate goal of the research base article is to reflect upon the inter-relationship between urban and interior scales and provide wider platform for urban designer engaging with more complex situations and design scenarios learning from dialogic relationship between complexity and contradiction of Ahmedabad city.

**Keywords:** In-between scales, Interior Urbanity, urban design, Ahmedabad, Generic and specific city

## **1 THE CITY OF AHMEDABAD; TYPICAL INDIAN OR SPECIFIC CASE;**

### **1.1 The old city;**

The so called walled City or the old city of Ahmedabad; in the first glance that historical core city fabrics of Ahmedabad are to be considered as the most dense area of the city, in fact, typologically the historical city is very dense yet the 2011 annual report clearly indicates that during the recent decades its population shrank and nowadays, despite of its lively or rather by the touristic point of view chaotic social foreground, its backbones are getting weaker each day. Although the walled city is rich in regard to its historical monuments and it could be imaged as a unique cultural heritage by itself, the sense of preservation of those heritages, is quite new for Ahmedabad and its citizens as a young metropolis. This does not mean that there were no conservation or preservation projects done on the heritages of the city, rather it contents that the general public consensus about the means of history and its conservation is quite western to the Indian cities, especially fast growing metropolitan areas like Ahmedabad. The walled city, technically is the fortified city with an amusing architectural fusion of Hindu, Islamic and Jain micro-cultures located just along Sabarmati River; the main north-south oriented river of the city. Although, the city origin has a very long history, its fabric had faced very strong transformation from the 1818, the time in which the British East India Company took the administration power in the city.

### **1.2 Mill Industry and Agriculture;**

Those transformations were mainly due to the arrival of the railway system which opened up the door of opportunity toward the industrialization of the mills system and therefore the historical city extension beyond the city walls. As the city was limited on the west side by the river, the most extension happened on the east and north part of the old city. In the peak of 19th century, Ahmedabad city was called the Manchester of India, thanked to the Sabarmati River vital role in dyeing thread of the cotton textile industry. The image of the two side of the river, the east and west from that time onward, became quite distinctive as the historical city on the east side of the river continued to be cluster base system, full of variety of religious structures, accommodating the most important historical moments and nowadays, the most important touristic destinations, reminders of both the historical and British eras. By the time, the other side was still considered as hinterland, it was mainly based on the network of villages located besides water lakes or tanks and the agricultural lands oriented along the geographic and hydraulic systems of the western part of the river.

### **1.3 On the other side of the River**

However, due to the fast growth of the textile industry, the western side, which was the main centre for the city agriculture had faced devastating development period. Today, that side of the city is normally characterized by institutional modern compounds, Bungalow type designed residential developments and planned centres which gave birth to the more recognizable suburban idea of the modern neighbourhood. And therefore, as most of the industries where based either on the river banks or on the eastern and northern sides of the historical city, while the new living environment was designed to the west side, the role of traditional bridges on the river became more and more vital for the life of the city and thus all the existing bridges transformed to the more vehicular

infrastructures and also the new bridges were built for easing the commuting. The cases of the Ellis Bridge, Nehru Bridge is the good example of that transformation; the bridges which once where the connector of the historical city gates to the hinterlands on the other side of the Sabarmati River, had to change the role to become the linkage between western side of the city to its eastern part. And finally, in the twentieth century with the aid of concrete base system of construction, the new image of the city beyond the provisioned edges of the both sides, has depicted. It was neither based on the walled city image nor it was the reminder of well-planned western half of the city, rather it was mainly Brutalism of the post-independence.

## 2 CONTEMPORARY CONDITION; EXPLORING THE TWO SIDES OF SABARMATI RIVER

### 2.1 Learning from Pols and Chowks;

The 20th-century walled city grieves from mostly congestion and gentrification processes, the area that once was the most qualified in the city, degraded drastically; its existence as the most diverse feasible organ of the Ahmedabad distinctiveness became subordinate in the shadow of industrial progress and the fresher city extensions. That condition later strongly manifested itself when in 1940 the political decision was made to demolish the fortified walls of the city. Although the city fabrics mostly remained untouched, only few trances of the city walls are observable today. The inner city fabrics, thanks to their specific morphological pattern; a combination of Pol and chowk systems, were dense enough to resist. They were characterized by very narrow system of dead end alleys and strategical openings; some external collective rooms in which the historic city carried on living in, as profitable inhabited religious centre of Ahmedabad city.

The pole simply is the synonym to the contemporary neighbourhood unit, it was a place for house-group system in which people lived and worked collectively. Although pols' construction in Ahmedabad has the history from 356 to 1872, their main typo-morphological aspects remained almost constant; every pol may have its own organic shape or formation yet followed general social and cultural principles, which were mainly based on the collectivity of survival, the security and sense of belonging. Every pol has at most two entries from the main street, most of them were built with only one main well-gated entrance, which had the most important character of being distinctive and exclusive. Every pol has the water resource; traditionally a well, a temple and a common ground as a place of collective act and meetings. The manifestation of the place in which those functions and activities folded together was mainly the chowk.

#### 2.1.1 *In-between realm;*

Every entrance alley reached out to the pol central chowk and from there, the variety of dead-end narrow alleys were built to provide access to more private residential part the fabrics of the pol, where the only interaction among the private area and the alley was a very human size plinth called Otlā. As Madhavi Desai contested in her study on the house form of the Islamic community of Bohras in Gujarat; "A transitional space, open or semi-enclosed, is an essential component of the dwelling in the Indian context. It should be viewed in its plurality. At one level, it is an architectural solution to the problem of connecting the dwelling to the street. At another level, it is full of social meanings symbolizing welcome, auspiciousness and status. This necessary in-between realm is also an indirect form of passive control that shapes people's behaviour on a day to day basis", Otlas were the most significant manifestation of in-between realm in the pol system. Their function either as a place of sitting, washing clothes or chatting with the neighbour, parallel to the chowk system, is the expression of human and even animals' encounters happens, in a very articulated yet fluid manner, it is very informal yet collective. It is individual yet common, and it is everything except public yet everyone could freely have an access to.

#### 2.1.2 *The manifestation of the Ritual;*

Interesting enough, the history of every of those pols are full of progressive transformations and modifications. The narrow alley type pol system for example, gave birth to the unique interstitial developments of its two sides as both vertical and horizontal extensions were limited, the first based

on the material and construction limits- mostly the material was wood, and the second one for the main city walls' limitations. As the result, all of the pols had experienced the process of inward densification mostly all of their vacant or residual spaces were filled gradually with living and working spaces and therefore the relationship between the private and public happened only in a very transgressional condition inside the poles and mainly in chowks. The built-up space seems to be fully displayed and finished, yet every year it was and still is under transformation, something modified, added or subtracted from it, even the pol itself may face the demographic variations and may change its nature from residential or commercial to each other or a mixture of both may dematerialize there, yet the main character of the void and most importantly the in-between realm remained the same or in a better word, the pol system has the functionality with which it could absorb changes and their side effects, could be morphed to accept variety of superimposition and folding of activities and function in a very intense scale and proportion of land. It has the capacity to transform those places, to the shrines in which the normative activities of people convert to the rituals.

### 2.1.3 *Manek Chowk;*

Even the most important Chowk of the city; Manek Chowk which is situated in the most important geopolitical location inside the walled city where traditionally all the main streets from all the city gates arrived to, has the majority of people commutation to, by two wheelers rather than four wheelers. Despite of Its location which is just between the King and Queen's tombs and perpendicular to the east-west axe of Friday mosque; the three most important monuments of the historical city, it works as a platform for temporary activates, under the daily changes, it is fluid enough to accept diversity of functions during different time of a day, it transforms from a jewellery market, vegetation vending site and the stock exchange centre to the night alteration to the most sustainable crowded food place, all occupied by food stalls. In all of those epic moments of the chowk, while the role of human interaction is on the peak, the active role of automobile is very limited. And interesting enough, to the standard of western cities, most of those activities are to be considered informal, maybe illegal and very temporary; in the simplest way, what an external observer would see, is the sea of venders and stalls, coming in and going out of the chowk stage, playing their roles to the fullest and leave it to others to share their faiths with.

### 2.1.4 *The reverse interplay;*

Let's say that, the obvious lesson to be learnt is that the system of pols and chowks of the walled city, very similar to the medieval fabrics of European core cities, are fully in motion when they are in minimum interaction with the mere transportation infrastructures. One could argue that none of them were built for four wheelers, yet Ahmedabad historical fabric has one interesting advantage; it is in fact to say that the hybridity of human interactions and their informal way of commerce, take over all the formal setting of the theatrical imagery of the historical city, the actors are too much and too vary that no one would feel the stage itself and its background, no one would recognize the setting, as both materials, actors and stories are under constant revolution. In European cities, yet always the architecture of the city is in foreground, it is too much strong and dialectic, people live and work in historical fabrics of those cities, yet in the tourists' eyes, the most dominant actor is the architecture itself, while in Ahmedabad, walled city as a representative of Indian culture, Architecture with all its monumentality, is totally left to the background, it could not dialect anything, as the people's action or rather city life is too strong. The slave transforms to the master, or better, the slave is free and therefore their interplay is reversed, and so does the scale of the play!

## 2.2 **Learning from Modern streets;**

Nevertheless, the situation of the other side of the river is supposed to have well-designed neighbourhoods, bright universities and hospitals, all new institutions of a metropolis should have been built there, and of course it should have been much more accessible and therefore more infrastructures should have been built. It should have been clean and wide, if the old city was not. It should have been designed for four wheelers and individual wealth if the old city did not work anymore for the same purpose. That was the main scenario of the other half of the city extension.



Yet, today in the beginning of 21st century, the traffic is that much out of control which they had to construct a new 46km ring road, opened in 2004 with the almost 10km distance from the Sabarmati River and the walled city.

That Ring was built technically after the failure of the previous ring road with around 4km distance to the city centre, in order to both move the regional transportation traffic out of the city and to give an access to the new established zone of affordable housing, just between the two rings. As the result, within the last decade or so almost more than half of that zone is occupied in one hand, either with concrete based apartment buildings and complexes, or by industrial estates, warehouse and their grey platforms; so generic which is not that much distinguishable from other generic suburban areas around any city in the world, and on the other hand, the same area in contradiction, hosts considerable amount of single family detached villas inside gated communities, something so similar to the American sprawl, yet very wealthy!

### 2.2.1 *Commercial strips;*

There are two types of shopping streets; one which is established inside the 20th-century extension of western side of the river like Chimanlal Girdharlal Road- CG Road, and the other are the strips which are recently built in-between the two rings such as Sarkhej-Gandhinagar highway- SG hwy. The first type is designed with the rational modernist planning mentality, it normally consists of traffic and service lanes, wide walkways and then three to four story shopping centres and classic restaurants. The more important shops are located on the first and second floors with the main access to the walkway via the extended staircases, directly connecting the floor's external corridor to the ground level and of course occupying and demarking part of the penetration lane. The service lane is normally used by two wheelers and it has some facilities like parking plots. All the lanes are separated with each other with a filter which is mostly a plinth of 20cm height and not more than one meter wide which is shaded by trees on the sidewalks. The overall cross section is therefore very typical of modern standardized Commercial Streets - or better the western urban streets, where the main armature works with the transportation system, then there are service lanes and the set back of shops provides good access and view for them and their advertisements.

The second type on the other hand, is based on the highway system with the typical juxtaposed crossings and flyovers, where in strategic peak points, generic shopping malls are located aligned to the high speed infrastructure with the very limited direct costumers' access, except from the four wheelers and their controlled access to parking lots, normally private and under surveillance or at least 24h/7days under control. It is the place in which the modern shopping malls and office complexes appear, their typologies and their strategical design are very typical of western suburban mostly American system of consumer, petrol oriented society, where the theory of junkspace of Rem Koolhaas manifest to the fullest. The malls are technically big boxes with vast area of parking lots, private and exclusive, providing the costumers a wonder world inside, with all European and American brands, with almost no relation to their context except from the brands advertisements, something that reminds us, the Las Vegas strip. Other plots along the highway are also occupied with high density of standard apartment buildings; mostly too much indifference to the true typology of Indian and in specific Ahmedabad life style and needs of citizens and immigrants.

### 2.2.2 *The Blind streets;*

On the other side of the story, there exist the normal secondary streets of the western part of the city which are mostly based of the grid of plots and societies or gated communities; the most evident character of those streets, is their ordinarily blind walls on their two edges as in most cases either their side allotments are constructed with bungalow type housing or it is an institutional compound which occupies one side of the street. The facades of the street are therefore fenced, mostly by blind walls, or semi-transparent barriers are introduced for the separation of the privatized areas from the normative streets. The pavilion type housing and building system of the modern Ahmedabad, either in the institutional complexes or residential forms, has made that part of the city, too much individualized and therefore, very gated. Moreover, most of those streets are suffering from the lack of pedestrian walkable lanes, normally the lane is too narrow and disrupted with lots of obstacles, the

parking plots are not clearly demarked and they work both as service lane and parking. In any case the relationship between the edges of the street and the fabric with the street itself is very limited even visually, as most of fabrics are individual and detached and looking inward and there is no facilities provided for, along the streets except from very few shops which are normally the introverted modified version of the blind wall.

### 2.2.3 *4sqm at most;*

In both commercial and blind streets, there is a phenomenon clearly in existence which would remind us the walled city life. That is to say, that most of the thresholds of the streets, either the service lanes or the dividing plinths, or in-between spaces of the shopping malls and the highway, or the walkway and parking lane of blind streets, are occupied by the variety of venders and temporary stalls. The plinths and walkways are used as the platforms for selling and positioning the shops while, the space in front is used as temporary stands for mostly two wheelers to have junk foods which by the way may not have low quality, for example, the tea shops are normally located just beside the corners of the crosses or leaned on the blind walls. This phenomena has at least two main aspects to think of, one is about the impact of those activities on the their two sides; they are in-between the two systems; the street as infrastructure and its facades as the edge of the fabrics, and the other aspect is about their very existence as temporary, mobile and to some extend illegal, yet interesting enough, most of them exist in the same location for at least a decade if not more. For them, the street is very individual place, maybe 2meters by 2 meters at most, the shadier and the stall with which a family lives on.

### 2.3 *In-between scale;*

They may be called parasite by modern urban designers, the architecture of individualism my fence itself from them, yet the people prefer them to be there, they spend their time with them, eating foods, on top of their own scooters, just on the street thresholds in front of those stalls and venders, even on the peak times, blocking the transportation system, not just because they need it or they sympathize with the venders, but because it is the congestion of the informal culture which manifests there, no matter if on the background is the Mill owners' association building by Le Corbusier or Indian Institute of Management campus by Louis Kahn or very expensive cars are passing by, the speed of traffic or the nature of street would not have that much of effect on that behaviour. Technically, they are the manifestation of the reverse coding of modernism, they have chosen to use the functional space as if it has functionality in which they desire to accommodate with. The role of those venders and stall shops is to violate the very notion of our understanding of the scale and the costumers' relations with it, its timing and durability, its flexibility and porosity. One thing is crystal clear; the nature of our design with or without them, is for sure different even if we, as architects and urban designers desire it or not!

## 3 CONCLUSIONS: LEARNING FROM SABARMATI NEW RIVERFRONT;

### 3.1 **The lesson from the tea shop;**

From the walled city fabrics, the pol system and chowks to the blind streets and commercial strips, one could observe the continuum of informal activities, the ritual of occupying the space with non-permanent object and construction elements. That is simple because of the flow and the power of people and their traditions which overcome any formal rigid manifestation of dialectic. If the designers do not understand this simple fact, based on the complex social multi-cultural environment, in most of Indian cities and especially in Ahmedabad either their built form never got accepted by population or occupied, violated and brutally distorted to something else, unsurprisingly more useful and accommodative to people's individual and collective need and desires. The Architecture itself became a rotten background, mostly abandoned or altered to backstage of the city life, it lost its mediumistic role for the other scales and therefore it is the nearest to what one could name "infrastructure", as the blind wall is for tea shop stall. At the end, the people decides the use of any deign, especially in urban scale as human interaction is at its peak, yet we normally forget the

real customers and their needs, and of course the service providers; in this case, vendors and temporary shops.

### **3.2 Every square meter of the city;**

When during the day time a place is occupied by the food stalls and at night those stalls transform to sleeping beds, then our perception of the scale of the street design is to be revisited. That is what an architect and urban designer should learn from the context of the city like Ahmedabad; the place that if it was on the hand of the people, every square meter would have been used and accommodated for some purposes; something similar to the process of interstitial densification of the walled city pols. That is what the Indian nature would do, the case of Ahmedabad clearly demonstrates that the two extreme scales; the city and human are very interlocked and even more than that they simply could morph to each other not only based on the functionality and the choice of the people but also from the day to the night, this transformation happens casually.

### **3.3 The not learnt lesson;**

The lesson which seems to not be learnt, is observable in the recent project of Sabarmati new riverfront, proposed in the 1960s, and under construction till 2005, while the first phase mostly has been opened to the public since 2012, it is still waiting for the developers to build on its two banks; the new linear city of Ahmedabad along the river front. The final image is a collage of the European river front something like Thames River project with the typology and morphology of built-ups like Dubai. It may happen in future, yet today, the project of the river front, is a break from the two sides of the city, it does not have any continuity and based on its nature, it seems it will never have, as all its historical relations with the city is almost erased. The relation with the walled city, and the nature of slums, their relation with the water, temples and their vital access to the river are all almost gone, the slums are all dislocated, the water is also no longer has an important role for the textile industry and there would not be any seasonal devastating change in the water level and therefore the river image and shape, as it is no longer could be called a river, it is more of a huge preserve water tank which provides the spectacles with the solitary constant image, no matter of the time or the place of observation. Its role for agriculture could be quite important but if only the city stop growing and consuming all agricultural lands of its hinterlands.

### **3.4 The real Bigness;**

The new river front is maybe the biggest project of bigness in the city and the most ignorant toward the other scales; human and city interaction with each other and with the river as a founder of the city. What is missing here is the sensitivity toward the very notion of people's culture and tradition by means of accommodation of the place and utilization of space, the notion of temporality and informality is totally in absence and hence the project is a huge monologue of reinforced concrete canal, walls and staircases, surrounded by car oriented roads, with very fresh minimalist vegetation, which will take at least ten years of continuous maintenance to become the trees which provide us pleasant shade. In every under passage or under bridges, there should be always one or two persons sitting to control the dark corners from the fear of crime while the main plate of the water front is to gleaming and plane to accommodate almost anything during the day-time. At nights few spots of the waterfront would get occupied, yet while in the midnight, the walled city is still alive, the river front is totally dead. It needs lots of light to warm it up, or at least melt its ice!

### **3.5 What is forgotten?**

Of course the answer is clear, the interplay and dislocation in the dialogue between the designers and the city, better, the dialogical relationship among the scales which Ahmedabad city informal life has it all. What the meaning of the 11.5 km long lower promenades on both banks is, when there is no one to use it, or simpler, when it is neither designed for vendors nor for cars, when it is only designed for future developers reinforced by political and economic interests!

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## NEW PUBLIC SPACE IN BETWEEN CLIMATE CHANGE

**Paola Scala**

*DiARC – Department of Architecture, University Federico II, Naples  
paola.scala@unina.it*

### Abstract

This paper will discuss the design of new forms of public space which, according to Gausa, should be less representative and unitary and more relational, flexible, interactive and bivalent (Gausa 2013). Very often this space is located in interstices or fringe areas and its construction is not intended to build new centralities, but create the hubs of a new, widespread relational network throughout the territory. The expression “in between” was introduced in architectural terminology a few years ago. It refers to many contemporary architectural issues, such as the question of fringe spaces and the “recycling” of residual spaces created by the urban transformations that followed on from one another over the centuries, transformations that are sometimes “incomplete” and do not include certain fringe areas. The term recalls one of the formal categories of Peter Eisenman’s architecture: “In between”. It also refers to “Berlin. Green Archipelago”, the architectural manifesto by Oswald Mathias Ungers and Rem Koolhaas but, above all, it is reminiscent of Aldo van Eyck’s playgrounds: the root of a new idea of public space.

Faced with our current global challenges the expression “in between” assumes new meaning in Architecture, for example the ability of the discipline to find new possibilities to work and research “in between” the fields of other disciplines using resources allocated to overcome challenges that do not ostensibly concern architecture, for example building a sustainable future.

When can a project be considered truly sustainable? What resource does it have to preserve or produce? Vincenza Farini (Farini 2006) believes that a possible answer to these questions lies in the projects that work on an evolution of the “in between” paradigm. These projects try to create a space that not only simplifies the relationships between architectural objects, but also the relationships between actors and processes; these projects produce “evolving space”. It is in this context that the Water Squares experience is of great interest. This project, created by a group of architects and urban planners in Rotterdam, was influenced by the Dutch tradition of transforming fringe areas into public spaces in order to simplify social and cultural relations between users (e.g., the playgrounds by Aldo Van Eyck); however water squares are also a tool to help mitigate the dangerous effects of climate change. Water Squares also work “in between scales”, from urban planning to design. The relationship between Water Plan, Water Plaza and Water Square is fairly unusual because it changes the traditional order between Plan and Project. The water squares experience was the key reference for an architectural research that began as an Academic Research Project and then developed into a Master Degree assignment and still later was part of the Design Laboratory I taught as part of the Master of Science in Design for the Built Environment of Naples. Based on this experience the paper will explore the possibilities and potential of a study focusing on the concept of “in-between Architecture” as a field in which it is possible to work not only on physical objects, but above all on the creation of a new relational system capable of giving new meaning to existing buildings and spaces. It will also involve different actors, primarily the users who will not only play an active role in this process by acquiring new unexpected viewpoints, but also fill this space with new uses, new memories and new emotions.

**Keywords:** public space, climate change, water square.

## 1 PREMISE : THE “IN BETWEEN” IN ARCHITECTURE

In recent decades the expression “in-between” has become part of our architectural vocabulary: it indicates all those situations and working conditions in which architecture finds itself physically and theoretically involved with “intermediate territories”. We talk of “in-between” architecture when we work on interstitial spaces – fringe or border areas – but also when we tackle reuse and recycling, i.e., all our actions involving “residuals”, waste, the empty spaces left by time, and the incomplete transformations of our territory and landscape. This essay will use several “paradigmatic” experiences in which, for the first time, “in-between” specifically embodies a precise design approach of the architect/author and paves the way for new design and research paths.

In this essay the term paradigmatic is used as per the meaning coined by Renato De Fusco in the nineties when he used the word paradigmatic to define *architectural works, first and foremost those of the masters, which due to their innovative and original nature create a solution of the pre-existing continuum* (De Fusco 2010). These works were followed by emblematic works, *in other words the factories of architecture that constitute the continuum prior to the birth of paradigmatic works or which, by somehow picking up on them, replicate that model and generate the continuum created by said paradigm* (De Fusco, ibidem).

Analysing these works is not just a historiographical exercise; it is inspired by the desire to comprehensively study the designs which clearly raised some of the most important aspects of the “in-between” issue and paved the way for research on the potential and possibilities it offers contemporary architecture. There are two reasons why architecture as a discipline is changing radically; firstly, because it is in the throws of a “computer revolution” that for many years concerned only representation, but now involves the entire design process thanks to the widespread use of parametric software. Secondly, and above all, because the current environmental and economic crisis has assigned architecture a new “social responsibility”. If it’s true, as stated by Mosè Ricci, that in architecture a new paradigm is *a completely different approach to dwelling spaces and their transformation* (Ricci 2012), then these works should be interpreted not only as regards their formal aspects, but also because they tackle issues and topics which, for the first time, illustrate much more extensive cultural, social and economic changes.

## 2 PARADIGMATIC” IN-BETWEEN SPACES

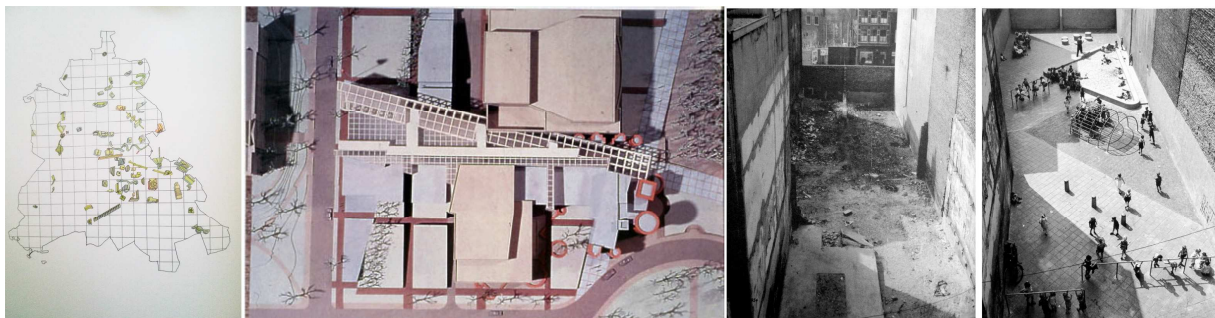


Figure 1. O.M.Ungers and Rem Koolhaas, Berlin. Green Archipelago. Peter Eisenman, Ohio State University Centre for the visual arts. Aldo Van Eyck Playground.

### 2.1 In-between reality. Oswald Mathias Ungers and Rem Koolhaas

During the second Summer School (The Urban Villa) organised by Ungers in June/July 1977, Rem Koolhaas penned the six type-written pages of the “manifesto” of a new urban theory for Berlin which he called “Berlin. Green Archipelago”. The manifesto was later edited both by Koolhaas (but without radically changed the contents of the new version) and Ungers who instead made more incisive amendments and changed the title to: “the city in the city”. The manifesto was inspired by the concept that Berlin, like many other European cities, was shrinking and that to avoid damaging its urban image any “future” plan had to include strategies for a controlled degrowth of its density. The



manifesto is based on the premise that degrowth is not negative per se, i.e., something that has to be hidden behind fake vitality, but instead is a way to exhibit the complex nature of the city; in fact, the manifesto proposed a strategy that avoided the “ideal” reconstruction of the urban image and instead represented *a clear and unique opportunity to identify and “weed out” those parts of the city that are now sub standard, for architectural or other reasons, and to intensify and even complete the fragments that would be preserved. The remaining enclaves that are “thus” saved and disengaged would lie like islands on the otherwise liberated plain of the city, and form an archipelago of architectures in a green lagoon nature.* (Koolhaas 1977).

The manifesto written by Ungers and Koolhaas introduced another logic into the debate on the form of the city, one which was completely different to the “more consolatory” logic that during that period was based on Aldo Rossi’s hypotheses of the analogous city or Colin Rowe’s “collage city”. Although the term in-between never appears in the manifesto, the topic is discussed from various viewpoints. First and foremost, the image itself of the city of Berlin was not considered as unitary, but as a “palimpsest” that had evolved thanks to the superimposition of many narrations and visions of cities, often never completely implemented or abruptly abandoned due to some dramatic event. Secondly, one of the premises behind Koolhaas’ theoretical research is explicitly tackled in the manifesto: architecture as a discipline that does not escape reality by drafting “ideal”, abstract and consolatory designs, but instead is based on the analysis and critical comprehension of contemporary reality. It involves developing strategies that take into account the complexities and fragmentation of a city and territory in which several narrations and different ideas of a city coexist without necessarily attempting to merge. Not, as some would say, a logic of non passive acceptance, but on the contrary intensely active, one which Koolhaas in particular was to exploit, for example in his design for the Iba competition for the Berlin Wall. This design perhaps heralds his ideas on Junkspace and Cronocaos; it involves working “with” and “between” remains and waste that the many ideas of the city and the many incomplete narrations leave on the ground.

## 2.2 In between pre-texts. Peter Eisenman

The term in-between is one of Peter Eisenman’s formal categories used in the design of the Ohio State University Centre for the visual arts. The complex, inaugurated in 1989, represents a work “in opposition” to traditional American culture that considered buildings as isolated, independent and self-sufficient objects. The University Campus is located just outside the city; its layout is based on a grid rotated by roughly 12° compared to that of the city of Columbus. Eisenman’s design is wedged in an interstice, the only space left empty “between the campus buildings”; it uses the context as a “pre-text” to explain its final configuration; it is not the result, but the outcome of the interpretation of the complex urban form of which it is part.

Architecture is no longer an independent and self-sufficient object to be observed, but a text which, when interpreted, reveals the process and rationale behind its construction. It’s no accident that the “roots” of the architectural research of this architect/theorist were his studies on Terragni’s architecture during which Eisenman did not search for principles and absolute rules (such as the proportional ratios of composition), but instead studied the changes in the design process that led to the final design of the Casa del Fascio and Casa Rustici, beginning with the initial drawings. In a similar manner, his design of the Ohio State University Centre for the visual arts turns the traces of the urban transformations of the territory into forms.

The design was published in the double issue n. 498/499 of Casabella (1984); it was an important issue because it “ratified” the final shift from the paradigm of independent architecture (the outcome of a completely internal architectural process) to that of architecture at modification. Design became the “tool” to explore the possibilities of an architecture that is not judged on the outcome, but on its coherence with, and understanding of, the process that created it. In Eisenman’s words (1984) *Modification is a procedure with its own objectives based on means: judgement is expressed through the question, how motivated was the sequence of the actions vis-à-vis the initial conditions.* The concept of modification, theorised by Vittorio Gregotti in that famous issue of the magazine he himself directed, places knowledge of the site at the centre of the design process; knowledge not

considered as a repertoire of rules and universal models taken from the history of architecture, but as an interpretation based on a system of material and immaterial relationships in which each design project is involved. Another just-as-famous article by Bernardo Secchi (Secchi 1984), published in the same magazine, focused on people's interest in the tools and techniques that provide a more direct and tangible understanding of reality. A season of studies, heralded by the work of architects such as De Carlo that prompted certain individuals to abandon design and become sociologists, photoreporters and anthropologists based on an interdisciplinary logic that often completely suffocated architecture.

### 2.3 In between scales. Aldo Van Eyck

The playgrounds designed by Aldo Van Eyck between 1947 and 1978 are small public projects. These small public spaces, built in fringe areas and sites within the urban fabric, were made-to-measure for children. Giovanna Menna writes that they are positioned in a transcalar and transdisciplinary dimension of design (Menna 2015). The playgrounds implement a material and immaterial urban "restituting" strategy. In fact, if on the one hand they recover shapeless and qualityless parts of the city, inserting them into the grid of public space as "open" places without fences and barriers, on the other they are intended to create places that are somewhat "unexpected", places in which to play and let the imagination run free, thereby allowing children to personally interpret the many ways in which they can use the equipment and games to create their own *imago urbis*.

So, just when the functionalist city was in full swing, Van Eyck proposed a model of public space that intercepted and merged different kinds of users, mobility and functions by creating a clear-cut separation of areas "destined to". The playgrounds sparked *a concept of architecture that goes beyond the purely formal definition of objects and space and instead considers itself as a way to search for relationships, based on the in-between principle which during that period was being put forward, albeit in a different way, by the Smithsonian. Obviously, Van Eyck was more concerned by people than forms. The real purpose behind the work of a contemporary architect is to make space truly "hospitable" for human beings; however this is possible only by linking all the various phenomena and creating as reciprocal a relationship as possible. And the most interesting aspect of essays on playgrounds is that in-between comes into its own when it is placed in an urban dimension* (Menna 2015).

Van Eyck's playgrounds herald our contemporary debate on the nature of public space ostensibly behind many recent designs, such as the *plazas dura* in Barcelona. These designs are based on an in-between concept that goes beyond the issue of interstitial space and instead involves an architectural concept which in so many fields – town planning, architecture, design – acts as a communication tool capable of capturing users' interest and attention.

## 3 NEW RESEARCH PROSPECTS

The considerations outlined above represent the main theoretical focus of the work performed as part of the *Faro* university study. The study was the basis for a graduate thesis and the Architectural Design Module taught as part of the Master's degree Course in "Design for the built environment of the Department of Architecture in Naples". The objective of the *Faro* study, entitled "Stormwater-resilient urban open spaces under changing climate conditions", was to develop urban strategies and architectural solutions for a resilient city capable of adapting and tackling the risks associated with climate change. In physics the concept of resilience is the ability of materials to withstand shocks; in psychology it is the ability of human beings to overcome a crisis. In urban planning and architecture, resilience is associated with "a special concept of intelligence capable of adapting vis-à-vis the complex events that are destroying our cities" (Infante 2013).

The study area chosen for this experiment was the East Area of Naples. Like Ungers and Koolhaas' Berlin, this area was never organically developed; it is a mosaic of plots assembled without a unitary design. Each of these plots represents the "interrupted" leftovers of an urban concept or different urban plan. The hydrographic grid of the old swamps that brought water to the old mills and early textile industries was "buried" under the early twentieth-century industrial plans that were proposed

one after another without ever really being implemented; each plan had its own grid of industrial districts, and each faced in a different direction according to the different lie of the land. These fragments are still considered as the pieces of a mosaic: from the variation to the 1994 Master Town Plan and ensuing PUA (implementation of development plans), they prefigure a series of urban regeneration projects within the completely separate industrial districts full of abandoned factories.

On the contrary, the strategy proposed as part of the *Faro* study worked on the space “between” the fragments, entrusting it with the task of “narrating”, like a book, the many stories about a territory continually forced to reorganise in order to tackle the numerous urban, economic and social changes it has had to face over the centuries; from a place of pleasure and spas to an agricultural and industrial zone and then a place of abandonment and dismantling. We decided to work on the interstitial areas which in this case are not small widenings between one factory and another, but the roads running between the walls of each district. Our objective was to “reconnect” the various fragments. Using roads, widenings, roundabouts, fringe areas and urban voids we tried to create a system of public spaces capable of structuring a thin web of material and immaterial relationships rather than rebuilding the unitary image of a place, an image that never represented this area. These relationships function physically, but above all focus on the “re-significance” (re-information) of several spaces capable of restoring the identity and character of a place by creating a “relational space”.

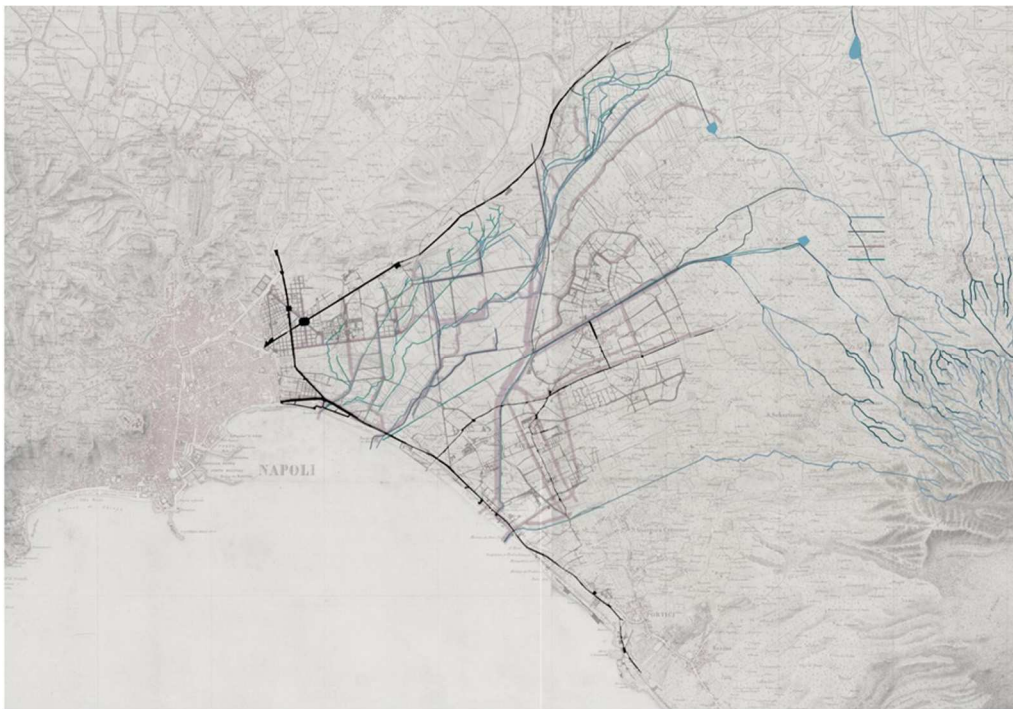


Figure 2. The Eastern Area of Naples.

As part of Lidia Salviati’s thesis<sup>1</sup> this strategy was “tested” in an urban design of one of the main roads running through this area. As mentioned earlier, the East Area of Naples was once a swamp, a geographically “depressed” area where water from the rivers in the nearby hills gathered and stagnated. Unlike the past, climate change has turned rains into heavy downpours, subjecting this area to serious flooding. Based on this premise, Lidia Salviati’s thesis focused on the creation of a system of public spaces that could help prevent and manage the flooding caused by climate change by adopting technical solutions such as rain-gardens, but above all water squares which, at least in the way they are interpreted by the Dutch group De Urbaneisten, seem to directly recall the playground experience.

“Water squares” are multifunctional, flexible spaces designed for different user groups. For most of the year the squares are dry areas used as equipped areas for sports activities and free time. After heavy rains the water collected by the neighbouring, waterproof surfaces are channelled into this “basin” where it is kept until the sewage system is able to absorb it. Laura’s thesis was the spark that

set in motion the work in the architectural design module of Workshop One of the degree course in Design of the Built Environment. During the course we worked to develop an urban project from an architectural and design point of view; we also tried to communicate these projects in the best way possible by drawing a cartoon to capture the attention and interest not only of experts, but above all of the individuals for whom the space was designed.



Figure 3. Water Square Benthemplein - DE URBANISTEN

## 4 CONCLUSIONS.

This study and design experience was part of a broader theoretical horizon involving the in-between concepts that began to emerge in the second half of the twentieth century. These concepts revealed the gradual shift, either noticeable or abruptly pre-empted by paradigmatic designs, from the “modern” idea of public space (very visible in spatial composition and functional specialisation) to a “postmodern” idea of public space considered conceptually and theoretically, rather than stylistically, as a flexible space ready to be used in unexpected and unforeseen ways. Manuel Gausa (Gausa 2013) has recently emphasised how the concept of public space changed during the twentieth century, shifting from the idea of monumental space to relational space, i.e., capable of creating community and therefore of being interpreted and used in many different ways.

As a result, the conclusions of this paper have to be “open-ended”, programmatic hypotheses embracing the “legacies” of the past, re-interpreting them and projecting them into the complex panorama of contemporary architectural research.

### 4.1 New prospects for the in-between; reality, disciplines and scales.

The project for the East Area of Naples was firmly based on the knowledge that in today’s world architecture must necessarily deal with contemporary “reality” without trying to find consolatory illusions/solutions within the discipline. In fact, the reference to the Rotterdam Water-Square and Water-Plan was a key element in this project since we believe it contains several of the crucial premises behind our rationale. These urban forms became international when the city of Rotterdam was inserted in the network of the 100 most resilient cities drafted by the Rockefeller Foundation (100RC); the forms were created to tackle the “reality” of cities forced to “adapt” to contemporary physical, social and economic changes. Like other architectural projects (rain gardens, floating buildings, green streets, etc.) these squares provide interesting food for thought about the “opportunities” that reality offers architecture; they insinuate themselves “in-between” the folds of a way of thinking that ostensibly seems to involve only the technological aspects of architecture.

On the contrary, using the research opportunities that have opened up due to the emergency associated with climate change, water squares are not just items in a repertoire of technical solutions. First and foremost, they represent “new urban forms” capable of becoming meeting places. Different, composite squares and widenings which, by creating a network across the entire territory, generate new centralities in the suburbs and conjure up a concept of “smart” public space, not considered as a memory-bearing monumental form or novel interpretation of ancient archetypes, but as an ever-changing, flexible relational network ready to embrace new uses, new cultures and new requests. Within the framework of a discipline that very often fails to find its place in ERC sectors and Horizon programmes, this theoretical and design approach “uses” the challenges of our contemporary world as a new pretext to design new public spaces capable of turning fringe areas and urban voids into



places.

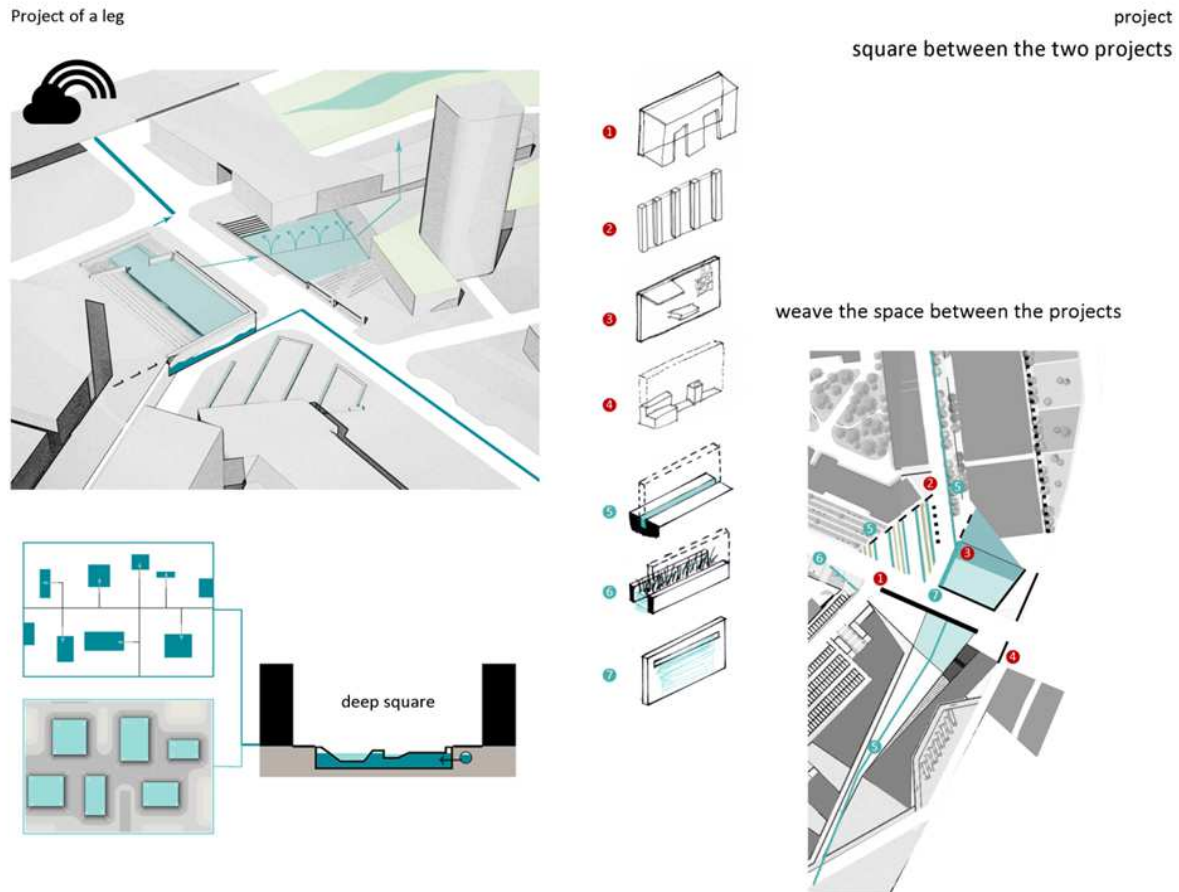


Figure 4. Water Square in Naples, Lidia Salviati's thesis

However, these considerations force us to reflect on the role and meaning of architecture as part of a new approach to interdisciplinary research. In the words of Aleandro Aravena, *a crossroads emerged in the sixties, perhaps the seventies. On the one hand the group of individuals which, from the advent of the Modern Movement, demanded artistic freedom and asked that society let them be geniuses and grant them that privilege. Irrelevance was the price they paid. Instead an alternative path was trodden by those who wished to tackle complex, difficult issues. But to do this they stopped being architects and abandoned the core element of the discipline: design* (Aravena 2007).

So, if on the one hand we have spent years witnessing more and more self-referential architecture refusing to engage other disciplines, on the other we have observed how architectural research has avoided dialogue with other disciplines and instead has increasingly abdicated its role and then replaced them. On the contrary, today's new environmental, economic and social challenges force architecture to rethink the discipline, called as it is to interpret its "mandate" and social responsibility in a completely innovative and original manner. This doesn't mean simply replacing top/down design with bottom/up design, to use a fashionable phrase, or side with participative practices that regrettably sometimes work as bait for communities who are mislead into taking part in decision-making processes. Perhaps it means reinventing our profession, measuring the need, impact and role of our actions and searching for "territories" that can and still wish to be "architectural" by elaborating *the simplest possible answers to complex issues rather than complicated answers to simplified issues* (Aravena 2007). With this in mind, public space cannot be a rigid, formally defined geometric construction, but a social space in which to live; a meeting place for continuous, heterogeneous flows of people and material and immaterial networks.

If this is to happen we need to break out of the box, abandon classic design patterns and structures. We need to move beyond the traditional difference between the preliminary, final and executive design of ideas and instead adopt a truly transcalar (and transdisciplinary) dimension. This is why the

legacy of the Dutch playgrounds appears to be so important; a legacy balanced between the urban, architectural and design dimension.

The East area experiment was part of an interdisciplinary university study “based” on a thesis in architectural and urban design and the work of the students attending the Course on Design of the Built Environment. During the course the students designed the street furniture of the squares, i.e., the technical solutions required to collect, store and dispose of rainwater. The course was also an opportunity to try and establish the different traits of these spaces that try to intercept and focus the attention of users on the “rationale” (the pre-text) behind the design by focusing on the communicative value of each element, the whole space and the network in which it is located. We made a conscious decision to use an unusual medium – a cartoon – to communicate to experts and non-experts alike the meaning and prospects of an experiment that tried to combine different legacies in a study focusing on the challenges of the future.

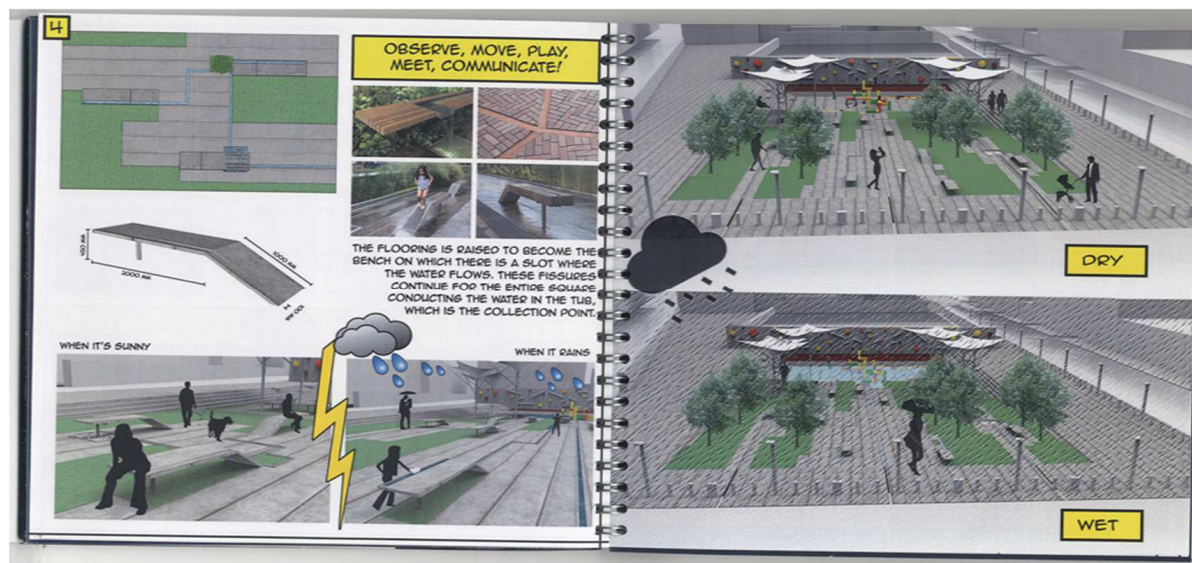


Figure 5. Water Square in Naples, works of DBE students.

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## RESEARCHING THE IMAGE OF THE STREET

**Marianna Ascolese<sup>1</sup>, Alberto Calderoni<sup>2</sup>**

<sup>1</sup>*Phd Student at University of Naples Federico II, Department of Architecture (ITALY)*

<sup>2</sup>*Phd at University of Naples Federico II, Department of Architecture (ITALY)*

*E-mails marianna.ascolese@gmail.com, calderoni.alb@gmail.com*

### Abstract

The street is the space between the things, the void between the buildings, the line that draws the void of the map, the white space, the unbuilt.

This vision, partial and selective, excludes some aspects and possible perceptions but it is necessary to understand the physical space: the street is as well the city's space where the life and the actions show themselves.

The street is like a tale of city and people. It represents the complex social order promised by the dense mix of different urban uses (J. Jacobs) that scans the rhythms of everyday life.

We would investigate the different point of views of the street, from the map to the urban life, that produces different and variable images of the city itself: both tangible and intangible ones, physical and mental realities. A possible comparison between these extreme cartographic and observational visions permits to understand their limits and it invites to research new tools and ways to communicate a complex and consciously exclusive image.

In the Middle Age the maps were able to reproduce the way of life and rituals. Instead in the later maps it is possible to read a selective process that clearly excludes some urban elements: like the streets near the streams. Only in the XVII century the way to represent the city changes: the streets grow to be independent, they became straight and a recognizable element of the city. The relationship between the image and the city tips over. The studies made by Gehl, Jacobs, Alexander and others produced a new way to see and represent the city focused on the public space. Lynch in the Image of the city showed perceptive maps that described a lived and personal city by the inhabitants.

In the contemporary time new tools draw the new forms of the city, sometimes these maps appear too selective in spite of the city and street life. New software products are able to know exactly what happens in the city through diagrams, networks, coloured lines: a new kind of set of data. So, the street becomes a system, a large infrastructure that stores up flows where the man disappears. The street, a place for networks, traffic and flows vehicle, full of new uses, is the messenger of a new virtual image, often in contrast with its architectural and public role. Little by little, it is strongly connected to the technology and its spatial function lost its own reason. It is not anymore able to give back its image.

The observation of a city plan is always a partial reading, far from a real vision of making, lacking some aspects, without sensations and human life that characterize and make a city as a living organism. We should link another image to this plan vision: it should be the result of the observation. The man lives the city and produces mental images that become the memory of the observation, re-invoke the perception of the space and the sensations of his paths. These images describe other characters of the city, not abstract lines and signs, but a summary of feelings. The photography is a tool able to produce these images: the eye gives itself to the mind, it observes and captures. The

streets, active spaces of the city, are made up of new elements: men, feelings, rituals and uses of the city.

The two readings catch different aspects of the urban space, a very dynamic place where the life shows itself. When they are compared, the lines of the plan explode in the life, confuse each other and lose their edges: the street goes through the buildings, the public space gets mixed up in the private one. It becomes a hybrid and indifferent space and for this reason potentially active. The architecture of the street generates its natural three-dimensional space that defines its interior. The density of the historic city, its buildings, its spaces, its construction in one word its still reading image, confirms the described conditions: the layers of images are the set of the complexity of urban space. The new architectures appear like weak images unable to support the fullness of the contemporary city.

The contrast between the physical reality, where the life takes place and the virtual untouchable one is in a critic condition. The architecture shows new images that depict a set of the city information, from the physical structure to the economy and sociology. The streets – as flows and lines – represent the uses, consumptions and traditions. The society is so full of these kind of images that it is unable to recognize their meaning.

This is clear in the architecture and in the urban space. The architecture should communicate the sense of its being. It should be an image and not a subject without meaning.

At this point, we are asking how we can explore the image of the mind and transform it in a communicable image that is able to describe the sense of the urban space. What is the image able to tell the sensation of the city, its feelings, the untouchable level that defines the atmosphere and the character of the city?

We would investigate these questions trying to understand the city street, the space of the people. We would propose a reading of the street through a visual representation far from the only graphic one made in the '60 that today is not effective. Our aim is to investigate how to build the image of the street today as a way to read and communicate the city. We would start from the work of some photographs (Struth, Basilico, Ghirri and others) that educate the architect to observe and read the space of the city and so try to re-invoke this resonance in the architecture.

**Keywords:** street, image of the street, observation, city, feeling of the city, perception.

## 1 INTRODUCTION

The street, like an element of the urban fabric, can assume different meaning and definitions: the street is at the same time track, boundary, and the space in between.

Nowadays, the street is the opportunity to think about the city. It is as an ambiguous object that develops different functions at the same time. His characteristics can be understood because it is a container of flows, a place of transportations and connections, but it is also a place of social interaction, the main expression of the public realm. It is identified as a container of people, objects, actions, passages, movements. In the last century, not only the architect or the planner has researched these topics. Several branches of knowledge have completed and analysed the way of looking, living and designing the space of the street: sociologists, anthropologists, geographers and philosophies have opened about new contents and questions.

The following consideration, part of a larger underway research, starts from the idea that the street is both the physical space of the city clearly visible, and the immaterial substance that densifies the space defined in his form. Therefore, we would propose to investigate some of these aspects of the street through their image.

During the time, maps and photographs have been tools able to produce images that hold together

this double component: we will try, through a little collection, to understand and read the urban element of the street focusing on some essential characteristics. The space between the map and the photography is able to communicate the differences and capture the quality of these two way of representation that integrates and excludes at the same time.

### 1.1 The physical space of the street

The street, as void, open space of the city, is different from the squares, common places par excellence: it is not only a place for staying in but also a place where the life exhibits itself.

Nowadays, the street is a continuous system of traffic, a physical place where the man and his uses disappear and the relationship with the buildings is always less clear and significant. The street defines by the vertical plane (the facades) and the horizontal one (the pavement), drawings the three-dimensional space that defines its shape: the urban room where some values take place.

If we analyze the etymology of the word street, we understand his permanent link with construction: “The word *street* is derived from the Latin *sternere*, to pave, and so relates to all Latin derived words with the *str* root which are connected with building, with the construction” [1]. Thomas Schumaker said: “The capacity to perceive immediately the street as a form causes not only a closing and orientation sense but also it gets a territorial edge of the public domain that is inclusive of the vertical surfaces that connect the facades of the buildings. When an aware effort is done to put in relation the facades of the buildings to the delimited public space, the perception of that space as an outdoor room is overtly made more evident” [2].

The street in its three-dimensional space has evolved in the time and has defined urban variable and different scenes: from the street-courtyard of the Uffizi plaza in Florence, to the relation of the external and interior space in the Baroque period, from the Georgian curtains to the galleries in the XIX century, to the idea of the street-building by Louis Kahn.

The elements of the street - colonnades, doors, and courtyard - define, through their shape and space, the transition between inside and outside, the public and the private space. In this way they define some special spatial conditions that build the character and the identities of the various city that make them unique.

Christopher Alexander [3] explains how each part of the street is made up by several little parts, modified by the uses and the actions of the man. Every part defines the character of the elements of the urban room. Therefore, it represents the collective space for the man and he becomes a necessary component for the formal and spatial dimension of the street. Abstractly, the physical form cannot separate from its use that forges, transforms, and appropriates the space.

### 1.2 The immaterial space of the street

In general, the public space is the specific physical representation of a society, its affirmations, and its aspirations.

In particular, through a lecture of the street space, is possible understand how the structure of the cities transformed during the time and how this has immediate effect on the mutation of the way of living the spaces, and consequently how the people have relationship and live them. Jan Gehl [4] locates two fundamental planning transformations; the first is in the Renaissance and the second one in 1930 with the Functionalism.

The streets change from a contact space in the mediaeval cities into a space of representation in the renaissance cities, they become the “the public realms where the dramas of the life had to be recited” [5].

The street, as the space of the public scene, has reclaimed in the half of the XX century, as Lefebvre said: “In the street, a form of spontaneous theatre becomes show and viewers. The street is where the movement takes place; the interaction without the urban life will not exist” [6].

The street is also a conflict scene between the public and the private realm, the resident and the

travelers: "The streets have always been scenes of conflict. They have been and are always public property, but power over them is ambiguous, for the street has an open and easily changeable nature" [7]. In the street, the public and the private space mix each other and a division among uses is not so clear: the street is at the same time physical and psychological, material and immaterial space.

Therefore, the street is also the space of the people, a social place of the actions. Czarnowski affirms: "The urban street, from the origins of the first social agglomerations, was the main place for public contact and passage, a place for the exchange of ideas, goods and services, a place for play and struggle, for carnivals and funerals, protest and celebration" [8].

In according to Gehl streets base on the linear pattern of human movement and represent the very essence of the phenomenon 'city' [9]. We should re-think the street as a place of the public life where the people could show collective actions.

## 2 THE IMAGE OF THE STREET: BETWEEN THE PHYSICAL AND THE IMMATERIAL SPACE

The street is made up by different parts that together define its shape. In 1916, during the conference of the "Permanent International Association of Road Congress"<sup>i</sup> a clear position emerges. This reconsiders the role of the street: from a technological and functional element to an urban one able to tell its image. Therefore, the street represents that physical fact able not only to re-define the tracks of the city evolution but also to describe its character and its image<sup>ii</sup>.

It is necessary, for this research, to understand what meaning has the word image. Juhani Pallasmaa affirms that the concept of image is essentially use with different meanings and in the most different contexts but only two kind of images exist that oppose each other: the images that impose, manipulate and influence, and the others that emancipate, reinforce and inspire [10].

Therefore, the image has not only the perceptive and mnemonic role but it is specially a tool of the mind and in according to Georges Didi-Huberman, "the image has value to the extent that it has the capacity to modify our thought, which is to renovate our language and our knowledge of the world" [11].

The image is an observing and knowledge tool: the visual act can describe the physical and visible part of the street, not as simple list but as an evocative tool able to describe the character of the space. We should reflect on the different forms of the images that could be the new tools for the comprehension of the places of the life and the architecture.

## 3 FROM THE MAP TO THE PHOTOGRAPHY

The streets could be described and represented by different forms of images. In this research, we would try to compare two different tools that help to read and tale the city: the map and the photography. Two necessary tools to experiment the project, and able to return different but several opposed images.

The image of the street substantially changes from the plan vision to the spatial perception of the lived space inside the city: from an abstract element of the geometrical drawing to a deep and real element, from an absence to an active presence.

A possible comparison of these two different visions, the map and the photography, permits to understand their limits and invite to research other way to communicate a complex and conscious exclusive image.

### 3.1 The maps

The mediaeval city was a work place. The ground reflected the irregularity and imperfections of the man. Nobody would found a divine perfection; the city was not the simulation of the heavenly order. The city was a stratification of experiences where the urban space hold the community and had a supporting role in the human actions. Jan Gehl describes the mediaeval city not as "a closed entity

but as a tool forged at the use" [12]. The mediaeval maps were able to reproduce the mood of the life and the city rituals.

After, the selective processes of the representation of the plan excludes some urban elements: the streets near the streams are deleted in the geographical maps. Only in the XVIII century the streets conquer own autonomy, they become straight and a recognizable element of the city the way of the representation changes and so the way to observe. We have an overturning of the relationship between the image and the city.

The later studies, in particular we would remember the research of Jane Jacobs, Gordon Cullen, Bernard Rudofsky, Kevin Lynch, Jan Gehl, elaborated from the 60's of the XX century, focuses their attention on the public space, the way of living the places, the actions that manifest in them and have produced new reflections and way of representing the city. The public space has not drawn only in its dimensional, geometrical, and physical data, but through the perception of the men. This component is part of the urban practice and becomes necessary for the urban and architectural project.

Nowadays, the digital innovation permits the developing of the new tools and software that are able to draw new urban forms. One example is the English group Space Syntax that, through a space-based modelling approach designs new part of the cities. Their approach combines the extensive global experience with robust and continuously developing technologies to forecast the effects of planning and design decisions on the movement and interaction of people in buildings and urban areas. This method transforms the street pattern of an area into a network "graph" composed by segments and points that are in interaction each other.

The result of these experimentations, although riches of data and information, appear too abstract. It represents only a partial reading where the physical and the immaterial component of the street disappear, its spatial function loses every reason and it is not able to return its real image. These plans result deficient in some aspects, without any sensations of the human life that make a city as a lived organism. They are lacking the intangible fact that characterizes the city, its atmosphere.

### 3.2 Describing through the images

Observing means understand the sense of the thing, reading the real fact of the society in a critical and aware way. We would use the words of John Berger to explain what the photography is: «A photograph is not only an image (as a painting is an image), an interpretation of the real; it also a trace, something directly stencilled off the real, like a footprint or a death mask». [13]

The impossibility to reduce, the necessity to include are the new and necessary actions of our time, in that Heidegger defines 'the age of the image of the world'. These actions create an apparent sense of stability in our chaotic way of living.

The description and the reading of the street does not happen through a picturesque and commercial image, but through a continuous image, that creates a relationship without time with the observer: this is a practical possibility to reinterpret the city. The image is a sign, a track, a testimony, a memory that remains in the mind of the observer and the user.

The photography is something different from the reproduction of a physical phenomenon; it is a set composed by sensations and perceptions that derive from the observer. The eye observes, perceives, but at the same time builds the observed image. It is the synthesis of the mood, the culture, the sensibility to read the reality. In the time, the relationship between the architecture and the photography has become more articulate, but it is always able to tell the time and the character of the city.

Thinking images means thinking their power and the risk of an immediately fade or imposition.

In 1955, Gance wrote that the language of the image is not wise because man is not able to see it [14]. Maybe the man is not aware of the power of this tool, but sure, in this time the power of the images emerges. They are able to go beyond the ordinary but also to touch the limit that reduces the communication of the reality of the city. Therefore, the images are the language of new forms of

identities that overwhelm the man. He is in the state described by Duhamel: the image substitute for the mind of the men, the images substitute for the thought [15].

### 3.3 Three cities tales between the map and the photography

The tale of the street is a set of complex things able to hold together the history, the life, the sense, the atmosphere of the place. These conditions can reinstitute the authentic and identical sense of the space to the man-observer.

We would propose a tale of images, a continuous return between the observations of the plan and the photography. From these observations, we would catch the necessary differences, understand the space of the street, and get how the reading of the space is necessary for the architectural project.

These tales try to describe three cities. These cities are different for their shape and geography but have a deep complexity and historic stratification in common. Naples, Beirut and Lisbon are the result of the time, historic cities that resisted or given up to the violence and destruction in different ways. Cities that are scared and lived.

#### 3.3.1 Thomas Struth / Naples. The street as rule of the urban structure.

Naples appears as a city made up by several stratifications and layers, a dense city where continuous modifications, often uncontrolled, achieve necessary meanings to understand some urban facts. The urban structure of Naples is clearly reading in the plan; we can extract the dimensional information and the morphological structure. These data appear insufficient: the relationship between the horizontal plane and the vertical one, the material substance, the uses of the space are not reading in the plan. This confirms its partial role. The plan is the manifestation of the urban structure that is close connects to the natural orography, but the plan is insufficient to understand and catch the character, the transition between the entrance and courtyard, the light sequence of the deep alleys.

Thomas Struth defines the street as a stream of consciousness that contains the history and everything that people lived, man meets architecture in it, observes it, and creates an image of it. The Neapolitan streets represented by Struth become the images of the city able to tale its complexity. In these visions, the central prospective disappears. The photographer often uses this kind of representation to photograph other cities, but in front of the density of Naples, several points of views become part of the observed object. The result is a complex image that describes the stratifications of the history and the time and the deep meaning of the public space for the human life.



Figure 1. Giovanni Carafa, duca di Noja, Topographic maps of Naples, 1775 and T. Struth's photography, Corso Vittorio Emanuele, Naples, 1989

#### 3.3.2 Gabriele Basilico / Beirut. The street as a cut between two cities.

Fifteen years of Civil War devastated the main part of the ancient Beirut, but above all, separated the two main cultures that from the ancient period characterized the city. Beirut appears anguished and devastated of its identity.



The urban project proposed for the destroyed area appears as a brutal intervention that both deletes an agonizing past and eliminates a piece of the history. The map tells the new reconfiguration of the waterfront and the intervention focused only in some areas: the result is an isolated action that makes the street as an enclosed and marginalized element. Therefore, the street is a fast flow road, a barricade that separates two parts of the city and pushes away its culture and inhabitants. The reconstruction in this area belongs to the homologation process not for the citizen but for the tourist. The plan alone is not able to tale this cut, the devastation and at the same time the social and physical reconstruction of the city.

Just after the war, six photographers described the city condition. They discover the permanent roots of the city though a reportage of images, dense of sensations. In particular, Gabriele Basilico evokes the transition and transformation phases, the modification of the city before and after the reconstruction. In his images, the space appears as a waiting place full of facts, things, and documents as the result of an ancient anthropological and social necessity of the humane race: the proximity. The photographer comes back in these places to tell the city in different moments of his life, at the same way the architect retraces the lived or imagined path with the pencil in the project. The double vision of Beirut, before and after the reconstruction, are the testimony of the transformation of the time. The description of these images, through the public spaces, tell a repaired and reconstructed city-ruin that tries to reactivate its heart.

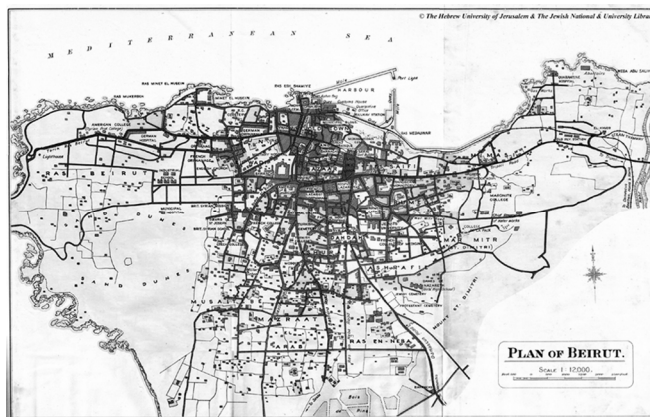


Figure 2. F. Palmer, Maps of Beirut Lebanon, 1923 and G. Basilico's photography, Beirut, 1991

### 3.3.3 Giovanni Chiaramonte/ Lisbon. The street as track of the history.

After the burning of 1988 the revitalization plan for the area between the Baixa Pombalina and the Bairro Alto in Lisbon, considers the conservation of the alignment of the historical facades and the main intervention is in the morphological structure, the project would to create new public spaces and new connection systems with the underground station.

In this case, the relationship between the map and the image of the area is more fine and sophisticated. The street, in its physical and immaterial definition, becomes the propulsive element of the project, common base for the transformation. The action clearly visible in the plan is insufficient to explain how the street, especially for the immaterial component, is part of the project. The images of Giovanni Chiaramonte do not explain the light modification of the windows, or the project of the sidewalk or the new portal; they communicate the history of the neighborhood. These images are able to revoke the time without duration that belongs to Lisbon. The density of the images, the colours, and the material substance of the elements vibrate and talk about a union - a belonging condition to the city.



Figure 3. J. Meyer, Lissabon, 1844 and G. Chiaramonte's photography, Chiado, Lisbon, 1996

#### 4 CONCLUSIONS: OBSERVING THE STREET BETWEEN THE BODY AND THE SOUL

The tale of these cities explicates how nowadays the physical and scientific knowledge based on tangible and dimensional data of the city is a partial element in the architectural project but a larger reading that absorbs immaterial, intangible, sensitive and sensorial data should be assimilate in it.

Reading the city becomes a necessary tool to understand and modify the city and in particular, in the public space. In his influential text of the 1980s, William H. Whyte also proposed the street and the square as the main public spaces, analysing their uses and their various components, from water to wind, from trees to light, from shad to sun, arriving at the idea of a "sensorial street." [16]

This complete reading of the street happens using different tools that are able to catch many information. The drawing and the images are the main tools of the architect, but it is important to understand what is the meaning and the values that the architect gives to the tools for the reading of the visible fact. Through this research, we would focus on the space between the drawing and the observation, the line and the real life that define the space of the street. In this space in-between, it is possible to catch the intangible fact that is inside the physical part of the thing, not describing trough scientific methodologies.

The "[...] perception is not just a matter of biology, psychology, or personal history, but of cultural formation" [17]. The perception and the observation are the base to make and produce culture: today the architect does not create objects but stabilizes new ways of using the space and generates possible relationship among the existent parts of the city.

The architect knows the limits of the dimensional fact and he points to the body and the soul of the things. This sensorial revolution is part of a new way to read the city and its elements to start a possible transformation that integrates the visual fact with the sensorial experience of the place. Norberg-Schulz described place as a "total" qualitative phenomenon, making use of expressions like "environmental character" and "atmosphere" [18].

We would propose an alternative vision, a possible tale that is far from the generic and global visions of the contemporary architecture. Catching the impalpable, the character and the atmosphere of the places is the base for a larger and more inclusive reading of the visible fact. It is necessary, in according to Bernardo Secchi, giving back the structural and semantic value to the street [19]. It is necessary looking the visible, the surface of the things, how they are done, how they appear and what gave to the observer, the impalpable impression and sensibility the are able to instill to the air and the city.

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<sup>i</sup> The association was born in 1908 in Paris. It represents a place where architects, engineers meet to discuss about the street and the viability.

<sup>ii</sup> The word image in the city context is connected to the Kevin Lynch masterpiece "The image of the city".



## THE INDUSTRIAL AREA FILARET-RAHOVA, A NUCLEUS FOR THE FUTURE SUSTAINABLE DEVELOPEMENT OF BUCHAREST

Elena-Codina Dușoiu

*"Ion Mincu" University of Architecture and Urbanism (ROMANIA)*  
*codina99@yahoo.com, www.ecd-arhitectura.ro*

### Abstract

The general topic of industrial heritage regeneration aims to bring an ecological thinking component in the field of buildings restoration. Re-use of buildings is an ecological act in itself, supposing an existing material recycling at a large scale. The theoretical discourse of the paper focuses on the concept of regenerative potential, which is defined by the capacity of transforming an existing building into a sustainable object, in accordance with the requirements of contemporary thinking. A regenerative restoration is proposed, considering existing buildings and their components as living organisms, whose life must be continued. Our duty as architects is to seek the best solutions in order to ensure the continuity of life. Re-use and transformation of existing industrial buildings should be in itself an act dedicated to reduce pollution and preserve materials as well as construction techniques, and undoubtedly to preserve cultural values. History of human civilization can also be read as the story of technology evolution, of techniques created and used by mankind at different times.

In history periods of continuity are followed by moments of discontinuity: we are used to terms as 'the industrial revolution' or 'the information revolution'. In Romania rupture has been extremely aggressive due to nationalization of industrial means in 1948 and to the uncontrolled years that followed the 1989 Revolution. At the beginning of a new millennium, we live again such time of massive and abrupt change in technology, maybe we can even talk about a new 'revolution'. It is essential to go through a process of analysis (and synthesis) of past experiences, to make a list and evaluation of the resulting patrimony, to prospect the future by building theoretical models and then to build a development strategy with short, medium and long term objectives. In our country, the accelerated loss of industrial heritage buildings and artifacts, chaotic development of large areas etc. provoked discontinuity in urban landscape and life.

The paper analyzes the area of Filaret-Rahova, a part of Bucharest with a strong industrial tradition since the XIX-th century. High density of industrial buildings and infrastructures, organized around the Filaret station, the first railway station of our city, has helped them to survive the continuous demolition operations in the areas close to the centre since the last years of the communist period. This fact makes out of Filaret-Rahova a complex but homogenous urban entity, benefiting of the green nucleus of the Carol Park in the middle. As an effect of the continuous development of industry in the area, in 1894 the Boulevard of Independence (Bulevardul Independenței) was opened, with the aim to link the Filaret hill to the Dâmbovița River. A special urban growth of the area was due to the 40s anniversary of the reign of Carol, the first king of modern Romania (1906). A great international exhibition was organized in the park that kept till today the name of the sovereign. The tradition of sheltering urban exhibitions in the park continued till the late '20s.

After the nationalization of production means imposed by the communist government in 1948 the industrial development of the area continued, the production of existing enterprises being diversified and amplified. However, new buildings did not match the urban line imposed by the solid and elegant brick constructions from the end of the XIX-th century. The new ones were just simple concrete boxes assigned to their specific activities. After the anti-communist revolution in 1989, the majority of the

industrial buildings became private property but the new owners didn't become aware of their value. So important constructions have been demolished (the Vulcan platform, the Muntenia Oil Factory etc.). The lack of a coherent strategy of preservation of valuable industrial buildings is still felt at the moment (the dynamics of legislation in the field was quite chaotic since the '90s).

The idea of transforming the Filaret-Rahova quarter into a park dedicated to Romanian science and technology, organized around the Museum of Technique Dimitrie Leonida, situated in the Carol Park, is not new and has been promoted for several years by the General Association of Engineers from Romania and other entities but has not been supported by local authorities since now.

This paper proposes an itinerary through the main industrial objectives of the area, by means of an urban, architectural and social analysis and presents some regenerated buildings aiming to adapt to the present situation of the site, taking into account the "good practice" examples already functioning. We still have the chance to act on a coherent area, with common features and an outstanding regeneration potential, even if a lot of the patrimony in the area has already been lost. With small but determined steps, investors, NGOs and local communities begin to realize that the potential of the area consists in its historical identity and in its harmonious development in the future.

**Keywords:** industrial heritage, history of technology, regenerative potential

### **Motto:**

*Economy in architecture means adopting specific sustainability solutions, intelligence of resource exploitation and maintaining the balance between means and ends.*

Willy Müller&Co - *Metapolis Dictionary of Advanced Architecture: City, Technology and Society in the Information Age*

## **1 THE DISTRICT OF RAHOVA – A BRIEF HISTORICAL OVERVIEW**

History of human civilization can also be read as the story of technology evolution, of techniques created and used by mankind at different times. At such thresholds it is essential to go through a process of analysis/synthesis of past experiences, to make a list/evaluation of the resulting patrimony, to prospect the future by building theoretical models and then to build a development strategy with short, medium and long term objectives. In our country discontinuity was dramatic, industrial patrimony has been massively destroyed while making the change to a different political and economic system; the lack of interest for the topic still generates dezastruous effects: the accelerated loss of industrial heritage buildings and artefacts, chaotic development of large areas from the urban structure etc.

In order to investigate a possible re-connection with a sustainable future, we chose an area which was extremely representative for the industrial development of Bucharest in the XIXth century and beginning of the XXth century –the area of Filaret-Rahova. Before the XIXth century, the hill of Filaret was mainly known for its vineyards, the name coming from the metropolitan bishop of Wallachia, Filaret.

As for the name Rahova, *Calea Rahovei* was one of the main axis of Bucharest, still existing as such in the XXth century. Its itinerary continued the main road *Calea Victoriei* after crossing the Dâmbovița River on a bridge that doesn't exist any more. The name Rahova was given to the area only after the Independance war (1877), formerly *Calea Rahovei* being called *Podul Calicilor* – the Bridge of the Poor. Obviously this was not a name to be very proud of, so it turned for a short time into *Podul Caliței*, Calița being a lady that owned a part of the land in the area. The fact that the district was not so popular among the inhabitants of Bucharest allowed industry developers to buy large plots of land in the area. These properties, together with the establishment of the Filaret Railway in 1869, unifying



the itinerary Bucharest-Giurgiu with the North Railway station, transformed the area into the perfect industrial pole for the capital of Romania.

## 2 THE IMPORTANCE OF THE MODERN PERIOD IN THE INDUSTRIAL DEVELOPMENT OF THE AREA FILARET-RAHOVA. THE CAROL PARK AS A POLARIZING POINT OF THE AREA

As an effect of the continuous development of industry in the area, in 1894 the *Boulevard of Independence* (Bulevardul Independenței) was opened, with the aim to link the Filaret hill and the Dâmbovița River. A special urban growth of the area was due to the 40s anniversary of the reign of Carol, the first king of modern Romania (1906). A great international exhibition was organized in the park that kept till today the name of the sovereign. The tradition of sheltering urban exhibitions in the park continued till the late '20s.

In the inter-war period which marked the most outstanding development of the economy of modern Romania, the Filaret-Rahova area was sheltering an amazing diversity of production lines: food industry (oil, breweries), metallurgy and weapon industry (Vulcan, Wolff plants), railways and related infrastructures, electric plants (the first railway station, called Filaret and the first electricity plant from the kingdom of Romania, from 1906 still exist here) and so on.

After the nationalization of production means imposed by the communist government in 1948 the industrial development of the area continued, the production of existing enterprises being diversified and amplified. However, new buildings did not match the urban line imposed by the solid and elegant brick constructions from the end of the XIX-th century, the new ones being simple concrete boxes assigned to their specific activities. After the anti-communist revolution in 1989, the majority of the industrial buildings became private property but the new owners haven't been aware of their value and important constructions have been demolished (the Vulcan platform, the Muntenia Oil Factory etc.). The lack of a coherent strategy of preservation of valuable industrial buildings is felt at the moment. However we still have the chance to act on a coherent area [1], with common features and an outstanding regeneration potential, even if a lot of the patrimony in the area has already been lost.

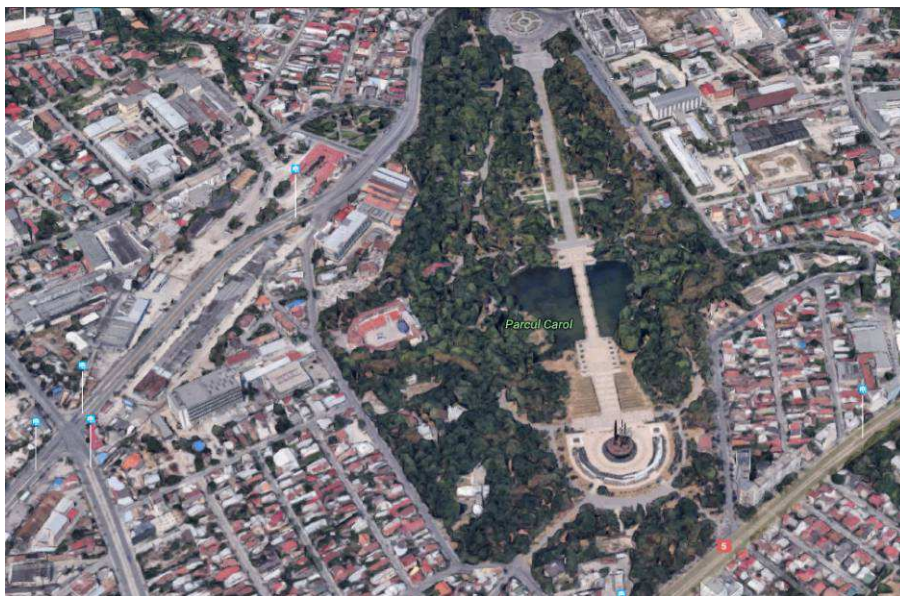


Figure 1. A general view of the studied area, around the Carol park (source: google maps (accessed July 4, 2016))

## 3 METHODOLOGY OF THE STUDY. AN ITINERARY THROUGH THE INDUSTRIAL OBJECTIVES OF THE AREA TODAY

### 3.1 Commodity Market (*Bursa de Mărfuri*)

The itinerary presented below was repeated for several years together with the students from the Faculty of Interior Design of the "Ion Mincu" University of Architecture and Urbanism. The students

were asked to realize documentations (reports), consisting in sketches, pictures and texts, in order to express their own observations in the area. Traditionally the guided tour started with the area of the George Coșbuc Flower Market, with the visit of three outstanding monuments of the industrial revolution: the Commodity Market, the Bragadiru (Rahova) Brewery and the Bragadiru Palace.

An industrial building of exceptional importance, the Commodity Market was built in 1899 by the famous architect of Italian origin Giulio Magni together with the no less famous engineer Anghel Saligny [11]. The initial purpose of the construction was to shelter wholesale merchandises before their distribution to various destinations. The ensemble also functioned as production workshops after the Second World War. A destructive fire put in 1990 forced the building to remain closed until 2006. The main buildings have been rehabilitated and are now known as “The Ark” club.



Figure 2. The Commodity Market (2015), photo by the author

### 3.2 The Bragadiru Brewery [8]

The brewery was founded in 1909 by Dumitru Marinescu Bragadiru, a skilful and intelligent merchant. In the first half of the XX-th century, the Bragadiru Breweries had the main production of beer in Romania and the third one in Europe. The building was designed by the architect Anton Schuckerl, in 1894. Near the headquarters of the factory, Bragadiru also built dwellings for his employees and a palace designed to be a centre for cultural events.



Figure 3. The Bragadiru (Rahova) Brewery (2015), photo by the author

### 3.3 The Bragadiru Palace

The palace built in the neighborhood of the factory aimed to be a place for cultural events and leisure activities for the workers of the factory themselves [8]. Having been a humble worker himself when

young, Marinescu Bragadiru, the owner of the factory, proved to generously understand the needs of his employees. The same German architect Anton Schuckerl built the palace around 1905, in an Eclectic style, aiming to impress with the monumental composition and rich decoration of its façades and interiors.



Figure 4. The Bragadiru Palace (2015), photo by the author

### 3.4 The Filaret Bus Station

The former Filaret Railway station [18] has an outstanding historical importance for being the first railway station in Bucharest, opened in 1869, establishing the strategic link with Giurgiu, port on the Danube river. Although the main building survived, the railway infrastructure of the area wasn't kept, due to the transformation in bus station in 1960. This function continued till now, ignoring an old proposal of rehabilitating the building as a museum.



Figure 5. The Filaret Station (2015), photo by the author

### 3.5 The Stamps Factory

Founded in 1872[11], the Stamps Factory is still functioning nowadays, at the services of the Romanian Mail. The factory functioned in the headquarters of The State's Mint (*Monetăria Statului*) since 1885 until 1911, when it was moved to one of the buildings belonging to the Matches Factory. Only in 1924 a new building was built. The building was extended in 1930. The Stamps Factory still produces stamps today, being one of the production spaces with most continuity in Bucharest.

### 3.6 The Matches Factory

In the end of the XIX-th century, a small matches factory was built upon the hill of Filaret by a French



promoter [11]. The factory was bought by a Romanian society in 1879 and became property of the State in 1887. In the '20s the factory was extended and modernized and afterwards it was offered to a new Swedish company. The communist regime nationalized the factory in 1948 but there was certain difficulty due to the ending term of the concession for the Swedish company which was 1959. Today the factory is private property but kept in a poor condition.

### 3.7 The Wolff Plants

A former school of arts and crafts from 1882 sheltered later the Workshop Arbenz&Wolff (since 1887). The present building dates up to 1905, when the two engineers Wolff and Arbenz opened a factory of fire weapons for the War Ministry [11]. Production had a decay in the '20s but grew again in the '30s. After the communist nationalization in 1948, the factory received the name *Steaua Roșie* (Red Star) and after the 1989 Revolution it was named S.C.Hesper S.A. Private organizations of industrial patrimony defenders organized provisional events in the space of the hall in the last years (concerts etc.)

### 3.8 The Filaret Power-Plant

The Filaret Power Plant is listed as a historical monument. The impressive brick building with a Basilica section stays in long of Gral. Candiano Popescu street, at the lower extremity of the Carol Park. A society in charge of the gas lightening of Bucharest was attested since 1868. In 1880 this society was taken by a French company who named it *Compagne de Gaz de Bucarest*. This company constantly rejected the introduction of electric illumination that was imposed by the City Hall after 1888. In 1906 the gas company was transformed into The General Society of Gas and Electricity. In this context the Electric Power Plant was built and inaugurated in 1908. The new plant occupied the plot of the former Gas Society. The Power Plant became property of the City Hall in 1924 and functioned till 1970 when closed [18], [19]. The Technical Museum Dimitrie Leonida, situated nearby, claimed the building and its equipments to become part of its collection of valuable pieces. However the director of the plant from that time threw away on the scrap heap the existing diesel engines.

The project of a National Park of Science and Technique, including The Technical Museum Dimitrie Leonida, the Astronomic Observatory of the Romanian Academy, the Filaret Station and Power Plant and several industrial buildings from the surroundings was constantly proposed and sustained by entities such as the General Association of Engineers from Romania but was not supported by local authorities till now.



Figure 6. The Filaret Power Plant (2015), photo by the author

#### 4 BUILDING CONVERSION AS A SOLUTION FOR SAVING VALUABLE INDUSTRIAL BUILDINGS

With their outstanding size and special architectural qualities, their extremely flexible structure designed to withstand high mechanical stresses, industrial buildings offer a wide range of movement to the architect willing to approach conversion of buildings. Industrial heritage impresses by its quantity, size and, not infrequently, architectural value in many countries. Generally industrial constructions of nineteenth and twentieth century are vast spaces, with large bays separated by pillars and beams, surpassing the common possibilities of materials (brick or stone walls, cast iron pillars, wooden floors). In addition, industrial buildings house the testimony of a complex technological process and its evolution, becoming witnesses of development of science and technology. The link of this industry to artisanal tradition is an area of great interest also, in the context of the increasing difficulty to keep crafts and technical knowledge for future generations. From this perspective, the loss of unique components of industrial heritage is immeasurable. A general difficulty of intervention on industrial buildings lies in their large size, heavily transformable to common contemporary functions. Even the architects training in the field of rehabilitation of industrial buildings is recent. As Șerban Cantacuzino stated [3], about 30 years ago only a few architects between the famous names were prepared in the field of rehabilitation in general and industrial conversion in particular. Since about 25 years passed since Cantacuzino launched the term 're-architecture' and established a connection of this term and the crisis of combustibles of the '70s, we can only talk about 55 years of 'industrial conversion'. Other terms, such as 'adaptive re-use' are much more recent, being born only a few years ago. The area of industrial heritage rehabilitation is linked to well-known names as Rogers, Stirling, Martorell, Bohigas, Mackay, and in the last years Bofil, Herzog&de Meuron, Coop Himmelblau, Mansilla&Tuñón etc. In many (happy) cases these conversions are subsidized by the authorities as part of integrated programs of urban planning. In most European countries, private investment is directed by local governments so that the image of the buildings does not have to suffer and can be compatible with the proposed function of the building - in addition the technological process components are preserved and their integration in the new architectural proposal is realized, appropriation of architectural space by a new community is also a goal etc. Often cultural functions are preferred, former factories became true centers of communication and knowledge, sometimes linked to information networks. The tendency to transform the industry into culture has taken a remarkable momentum in recent years, especially in Western countries: former factories have now become especially cultural and sports centers, becoming animated by a new energy. In 2001 I used the following list as a symbolic logo for the project of ideas submitted to the contest organized for the transformation of the factory from Palamós, Costa Brava, in Spain in cultural and sports center: industry - production - repetitive process - technique – industrial space - people meeting - ideas - values - culture.



Figure 7 – *The Ark* – interior of the basement (2014), photo by the author

##### 4.1 The Ark – A New Multifunctional Centre

In spite of continuous decay and lack of interest, the first industrial object that was rehabilitated in the Filaret-Rahova area was the Commodity Market (two main buildings of the ensemble). A part of a

complex project realized for the whole central area of Bucharest by some young architecture studios (Transcentral Urban Bucharest), the initial proposal had the chance to be realized by a team named Re-Act Now! directed by the architects Mario Kuibuş and Teodor Frolu. With its new name The Ark, the Commodity Market is today a multifunctional centre, sheltering concerts, fairs and various social and cultural events. Even if the main building wasn't completely saved – the interior is missing partially because of the fire in 1990 but also because of a consolidation using concrete walls doubling the brick skin- it had the chance to keep its facades and its presence in the city.

#### 4.2 Youth and Sports Club “La Fabrică”



Figure 8 – The Club *La Fabrică* on 11 Iunie street, source: [www.raluxa.com](http://www.raluxa.com), accessed July 4, 2016

An interesting small former industrial hall located on the 11 Iunie Street, between Carol Park and Unirii Square can also be cited as an example of industrial conversion. Called “La Fabrică” – “At the Factory”, the club is popular among young people and especially the ones practicing sports (climbing, cyclism etc.), the place being specialized in this kind of sports. From the architectural point of view, the intervention can be cited for respecting the principle of minimal intervention, the functional change being realized with a low budget but with a strong effect.

### 5 CONCLUSIONS. PREMISES FOR A SUSTAINABLE DEVELOPMENT OF THE FILARET-RAHOVA AREA

The involvement of local communities is a general principle widely used in rehabilitation nowadays. In the case of the Filaret-Rahova area, the intention of harmonizing the points of view of urban actors with extremely different interests may prove difficult and challenging at the time. Sociological inquiry is a known instrument for such a case. However it difficultly paints the color of the place, inhabited by particularly heterogeneous communities: extremely poor families and underprivileged groups, whose life is basically determined by little commercial activities, such as the ones developed at the Flower Market “George Coşbuc”, recycling of waste products etc. living in the neighborhood of wealthy families and companies having as a reference point the Carol Park. Together with inquiring the existing communities, the promotion of a policy aiming to attract investors interested in the proposed development strategies of the area is necessary. The correct documentation on the values of the industrial heritage present in the place and their dissemination among all categories of people is also necessary. In this sense, it is near at hand to organize visiting tours of the heritage objectives of the area for tourists, pupils, students etc. And, not least, the interest of main actors such as local administration (of the City and the district), NGOs, educational institutions (schools and faculties), cultural entities (museums etc.) and, of course, possible investors, has to be raised and focused on the development potential of the area.

Information included in professionally realized inventory reports allows taking some important decisions concerning the replacement, rehabilitation, sales of industrial objects, etc., thus providing solutions in managing national heritage; a complex strategy for a sustainable future. Revitalization of industrial heritage sites becomes increasingly important in contemporary times; economy interacts



with social organizations and political responsibility to preserve local cultural references. The proposed topic can be focused from several points of view:

- at scientific level: listing and evaluation of the industrial and technological patrimony; this should not remain only as a documentary, with museum value, but should be regarded as a valuable resource for future: sustainable development, inter-disciplinary team work, in order to generate integrated solutions

- technological level: preserving of proofs of technological evolution, search of ways to continue/up-grade, re-integrate of ,old' technologies into new processes and applications

- socio-economic level: it would be extremely important to re-vitalise former industrial areas as Filaret-Rahova by bringing in new industrial activities or allocating different new functions, needed by the local population; thus the people, local communities would become part of the process, in all its stages: listing, evaluating, preserving elements of industrial patrimony and then participate in defining sustainable development strategies and finally applying them in new regeneration processes and integrated solutions.

- cultural level: understanding and valuing such elements of patrimony, integrating them into the contemporary cultural life and cultural strategies for future urban and architectural developments

It is worth to mention that students in architecture from various schools from Romania and abroad have presented an impressive collection of valuable projects for the area, taking in to account urban strategies, architectural interventions, social debates etc. These projects could become a valuable data base for a future rehabilitation strategy of the Filaret-Rahova area; such proposals should become a basis of intervention for local administrations.

A common platform to enable specialists to correctly and completely define the problems is missing by now. Present organizations of industrial patrimony (Association for Industrial Archaeology, TICCIH Romania) act within the limits of a public of specialists, not able to take social decisions for the moment. Specialists from all fields have to collaborate and be able to make constructive pressure upon the decisional forums. Maybe in this way the idea of realizing a National Park of Science and Technique near the Carol Park will find its realization some day.

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## RENEWAL PROCESSES ON EXISTING BUILDINGS AND OPEN SPACES: ACTIONS, PRACTICES AND DESIGN STRATEGIES FOR REGENERATION IN MILAN

Barbara Coppetti<sup>1</sup>, Elena Fontanella<sup>2</sup>

<sup>1</sup> Assistant Professor in Architectural and Urban Design, Department of Architecture and Urban Studies (DASTU), Politecnico di Milano (ITALY)

<sup>2</sup> Adjunct professor, PhD Architect, Department of Architecture and Urban Studies (DASTU), Politecnico di Milano (ITALY)

barbara.coppetti@polimi.it, elena.fontanella@polimi.it

### Abstract

The research that we are going to present involves abandoned areas and buildings. The abandonment places are the soils and the buildings discarded and underused. Many of those areas have been registered in Milan, in cooperation with the Department of Urban Planning of the Municipality of Milan.

The research - within the frame of the didactical project named *"Re-forming Milan, design experiments for neglected and decayed spaces and buildings"*, ongoing in its third edition this year - aims to the *urgent care* of the soil and of these anonymous buildings as a considerable *heritage*. They inspire a reflection that stimulates regeneration processes of the physical spaces. At the same time they help us to think about *new rules* to facilitate reorganization, reuse and renewal processes. The potentialities of abandoned spaces are investigated through interdisciplinary design explorations at the different scales.

The goal of Re-forming Milan is perfectly matching with the intention of encouraging a multi-scale and interdisciplinary approach to the architectural design. Firstly we have developed a list of abandoned areas divided into dimensional typologies. All the selected areas and buildings express a critical situation within the urban fabric, according to the physical degradation, social disadvantage, architectural obsolescence and technological decay. They are all places that have to be faced with considering the environmental, economical and social complexity that a design on the existing areas involves. For this reason we have defined some key words in order to flank the dimensional typologies with some topics related to the city topics.

The research is based on idea to *build on the existing*, helping in decreasing or at least bounding the soil consumption, assuming the existing building and areas as *resources* to be improved. At the same time the research wants to raise real problems, that are more and more going to define a future challenge of our work as architects to the attention of citizens and teachers working in different courses/workshops of the School. The value of this challenging initiative is underlined by the passage from the evidence of the critical aspects of the existing to the renewal of a design culture meant as shared social product. The project, as a social product, has to gain the ability to face the future and to explore new mental and imaginative paradigms. It is a research that aims to rediscover those areas of collective discussion, that can feed a comparison of merit and content and to power on the discussion toward a multidisciplinary approach.

**Keywords:** reuse, heritage, build on the built up

## 1 THESIS ARGUMENTS

The topic of the abandonment isn't new for our field of studies. The phenomenon about the neglected areas between 1980 and 1990 involves the whole Europe, although with great diversity of cases. The abandoned spaces define today a different problem: the research developed by Philip Oswalt about the *Shrinking cities* highlighted the transition from growth and expansion processes that characterized the modern age, to shrinkage phenomena. Today's tangible decrease is related to those studies that redefine a world map of the shrinking cities, trying to measure the most recent transformation that correspond to variations of principles, actions, practices and design strategies. The demographical, economical and building decreasing, in addition to the significant contraction of the investment on social services offered by the public sector to citizenship, reflects a census of abandoned areas in the municipality of Milan that shows the changing of the geography of the areas, the relationship between the abandoned sites and the historical memory, the physical state of the involved artefacts. The map of abandoned areas and building realized by Milan municipality has contributed in defining the specific *geography of the abandonment* within its own specific urban fabric. Re-forming Milan took as its starting this map, this geography, opening to the possibility of the definition, through urban and architectural design, of many different possible transformation scenarios.

## 2 RESEARCH STRUCTURE

Areas and buildings affected by degradation and abandonment phenomena within Milan have been selected according to their being emblematic and to their current condition. The choice of the sites to be submitted to the work of teachers and students made sure to involve different disciplines, though within the common thematic background. The inter-disciplinary approach of the project helped in focusing the attention at the same time on big scale areas as on numerous pieces of minor consistency and punctual areas scattered in the tissue with their heterogeneous problems. The initial subdivision has planned five categories according to scale and typologies of the areas and of the buildings:

1 *Urban reorganization areas*, made up by large marginal areas, both residential and artisanal, mixed with open spaces and built parcels, to be completed or replaced;

2 *Urban transformation areas*, as former barracks, railway yard and major disused public facilities within the city fabrics;

3 *Landscape redevelopment areas*: landscape upgrading areas, made up by fibres of unused open spaces, waterways paths; interrupted patterns of potentially continuous ecological systems and landscapes;

4 *Built up and open parcels*: punctual elements within the urban fabric, characterized by a different compactness (from the porous fabric to the social housing neighbourhoods), with residual spaces and uncultivated green areas, as well as single buildings in disuse;

5 *Farmhouse to be redeveloped*: rural typologies, with the constraint of maintaining the original features of the building.

Different thematic areas have been developed during the research and they become the *themes of the city*: keywords for the presentation of the results during exhibitions, workshops, public meetings<sup>1</sup>. Those themes were defined starting from the understanding of the main characters of the current status of the places, and they are not conceived as closed categories, but on the contrary they are interacting. The relationship between the *thematic rooms* has defined the theoretical and critical apparatus. Twelve thematic rooms have been defined:

1- *"Large equipment in ruin"*: abandoned areas that used to belong to relevant representative functions, institutional and public, whose presence has left a mark during times in entire urban sectors. Some emblematic cases: the *former slaughterhouse*, that used to be a small citadel devoted

to supply activities, while around its boundaries the densification of residential fabric was increasing, until its progressive dismantlement started in the first years of 90ies; *San Cristoforo railway yard*, a paradoxical infrastructure that started to be a ruin before being completely built; *De Montel stable*, a group of building and open areas that, starting from the 20ies, belonged to an urban area devoted to Milan horseracing;

II- "Interdicted fences" of the disused or underused barracks: they occupy entire blocks that are inaccessible to citizens, subtracted and excluded from urban stratification, reuse and heritage enhancement dynamics. Among those areas: *Rubattino barrack*, *former Piazza d'Armi*, *Montello barrack*;

III- "Rarefied margins": peripheral and fragmented areas in between residential fabric and systems of open fields that could potentially be object of environmental and natural recovery. Among those areas we can point out *Porto di Mare* site, in the southern agricultural park, near the historical neighbourhood named Corvetto-Mazzini, characterized by the presence of both several farmhouses and informal settlements in a sensitive landscape dominated by the monumental presence of the Chiaravalle abbey;

IV- "Decay and mutation" involves areas where the industrial-craft dismantlement, and sometimes also the abandonment of buildings dedicated to the service industry, have induced punctual cases of functional reconversion or the definition of squatter settlements, with the appropriation of autonomous and socially critical nucleus. The studied cases are situated in the areas defined by via Mecenate, via dei Pestagalli, via Medici del Vascello.

V- "Peripheral areas in transition between industry and urban renewal" involves sites flanked by large scale infrastructural systems and sequences of residential and industrial settlements, as the result of disorganized additions and replacements. Common elements are the lack of service equipment and in particular of green areas, even of small scale, as well as the grate inhomogeneity between the buildings of different times, functions and property. This inhomogeneity makes more difficult a coordinated intervention that aim to the reorganization and integration of the physical and the existing socio-economic fabric, which is necessary for starting a gradual functional upgrading process and allocation of small-scale equipment;

VI- "Environmental under-standards": those areas are related to some social housing neighbourhoods that are marked by problems like the obsolescence of architectural and technical structures as well as the obsolescence that concerns both collective spaces and open public spaces. This is the case of the IACP Case Bianche neighbourhood and the Corvetto-Mazzini neighbourhood.

VII- "Punctual degradation": set of unused areas and buildings of different consistence, whose nuclear localisation isn't related to any settlement logic. Those areas are numerous and spread into the urban residential fabric: they are defined by construction sites blocked, small free areas, areas with former trade or commercial activities, office or residential buildings, former cinema, garages, local markets; those cases define specific spatial discontinuities related to the fabric, to their use and to the block's perimeter continuous facade;

VIII- "Obsolescence of the urban scene" focuses on areas where the stratified memory emerges through the architecture and reveals itself through the permanence of the major film collective halls or through traces and interstices within the block. The former Borletti factory, the Maestoso Cinema, Adriano cinema, that are situated in dense and consolidated city areas, are some examples.

IX- "Author's abandonment" identify the cases where the quality of the building is sustained by the disciplinary literature and distinguish itself according to the expressivity of the architecture. All the examined cases - Torre Galfa by Melchiorre Bega (1956-59), Agip service station by Mario Bacciocchi (1951-53), Qt8 neighbourhood market by Piero Bottoni - demonstrate how there still is a precise identity and a specific spatial idea lying in the different sites.

X- "New role for the lost rural identity" deals with that difficult heritage made by the numerous open or built up Milan's farmhouses. During the time those farmhouses have frequently been encircled, gradually occupied or besieged, evacuated and cordoned. The farmhouses selected as case study

have been deprived of their agricultural area, that was part of a indivisible physical and productive unit. These are elements of public interest, they give testimony of a lost rural identity and define both a resource and an opportunity for the neighbourhoods according to the possibility of introducing new social and supporting activities.

*XI- "Systems of open spaces":* it propose again, but in new terms, the topic of the "vital street" that inspired the building of experimental neighbourhoods (QT8 and Gallarate) around the idea of the nature as connective and widespread element. The central spine could strengthen its presence linking areas that nowadays are not connected and rethinking a system of public relationships, redefining measures and landscape sequences.

*XII- "Difficult dwelling"* deals in the same time with social marginality, critical housing situation, environmental and building decay, variety in ethics and social composition of the population, within an emblematic area. In a marginal and compromise environment, illegal and criminal activities find fertile ground, as well as overcrowding, housing deterioration and disposal of industrial buildings that become zones without any control.

### 3 PRACTICES AND DESIGN STRATEGIES IN TWO CASE STUDIES: FORMER SLAUGHTERHOUSE AREA AND FORMER BORLETTI FACTORY

#### 3.1 Architecture and landscape in the former slaughterhouse area

Within the thematic section "large equipment in ruin", the former slaughterhouse area defines itself as a proper enclosure mainly dismantled in the frame of the urban morphological layout. It has been conceived as a grate infrastructure for the city and it occupies a deep block in Milan eastern sector, south of the railway Porta Vittoria link. The settlement principle of this area belongs to a strategy that was continuing during the first decades of the XXth century a phenomenon that started in the post-unity period: the settlement, along the that time new avenues of the city, of a series of public buildings. Not only schools or hospitals were built, but also larger enclosures, that were representative of relevant public and institutional functions.

The former slaughterhouse and the 'Borsa delle Carni' building were realized between 1912 and 1924, looking to the contemporaneous structure built in the same period in Europe. Areas dedicated to each phase of the slaughter were built, and those were integrated with spaces for the workers and dining halls. The area, dedicated to those kind of activities, has strongly characterized among the time also the surrounding areas, and has inspired the setting of the bordering fish market, and of the activities concerning the breeding of poultry and rabbits as well as of the vegetable market. Those dynamic and lively presences have characterized a large area of the city for almost a century. The progressive process of dismantlement of the slaughterhouses started in 90ies, reaching the complete dismantlement in 2005.

The current scenario is defined by a urban façade open on viale Molise witch hosts, in the three liberty buildings, offices, public health clinics and some spaces related to the *Temporioso* association for promoting temporary reuse projects in abandoned spaces as well as the artistic collective named *Macao*, which organizes activities in the spaces of the former 'Borsa delle Carni'. Inside the area and in the spaces once dedicated to the slaughter, to the stables, to the cold storage you can see nowadays dilapidated buildings, sheds skeletons, old rusty tools, hooks, chain and distressing fences.

The future of this big urban enclosure compared itself with the economical and financial contemporary dynamics: we cannot limit the transformation to a mere residential and tertiary retraining oriented to consumption and to maximizing achievable volumes, because nowadays this kind of approach is no more producing benefits. At the same time we cannot neither imagine and area entirely consecrated to a public service and to a grate collective function: the services concentration in the contemporary city is a reality that we cannot ignore and that the project cannot forget.

How to give an orientation, than, to the design strategies? The answer to this questions goes through the interpretation of that critic awareness that aims to draw today a city as more welcoming,



aggregative, full of spaces for sharing, for urban farming, full of social relations of groups and people that are going through it and that live there. An opening of the enclosure to the most innovative social and cultural dynamics is foreseen, but at the same time also an opening sensitive to the specific realities of the neighbourhood and to the minute commercial network and retail, unavoidable in any reality of urban regeneration.

In parallel with the opening of the enclosure it is foreseen the maintenance of a specific unitary theme, presumably linked to 'vocations' which over time have been consolidated. The future of the former slaughterhouse has to take its steps from its previous identity, and it has to consider the reuse and recovery of the most beautiful buildings, but in the same time it has to deal with the courage to demolish and tear down buildings that aren't expression of that identity. The special morphological and typological conditions of the former slaughterhouse, together with the new uses of spaces and buildings, will have to aim, in an integrated way, to the definition of new configurations and to its regeneration.



Figure 1. Topkapi Palace in Istanbul, where is held "The Abduction from the Seraglio" (original title "Die Entführung aus dem Serail"), the breach of the fence, narrated in opera and drama of Wolfgang Amadeus Mozart



Figure 2. Diocletian's Palace in Split, great fortified enclosure subject to modifications, substitutions and stratifications in the time that has maintained its urban vision and its typology

### 3.2 Former Borletti factory building between memory and transformation

Originally founded in the last years of XIXth century, the Borletti was born as factory related to the clocks production. Later it was converted into a military factory during the First World War. After the war, it specialized in the production of precision mechanic instruments: in particular mechanical components, car's tachometers, sewing machines and measuring tools.

The liberty building facing piazza Carlo Innerio, which is nowadays abandoned, was part of a more extended industrial complex that was made up by a series of building situated in the southern area of piazzale Firenze, in the district between via Washington, viale Sardegna and the ring road. The industrial settlement helped, in the first half of the previous century, to give shape to this part of the city, today mainly residential. However, if for long time the via Washington factories were one of the Milan production sites, starting from 70ies a decline phase has started and it led in short time to the closure of the factory.

This building could be read, nowadays, as an element able to measure the time that has passed from that moment, thanks to its condition of suspension, of abandonment and at the same time of waiting, associated with evident degradation, frequently reported by the local community.

If today the former Borletti building appears as a fragment, as an unused element within the residential fabric of this part of the city, we don't have to forget that it was part of a wider plan. The building that were defining the via Washington industrial settlement have indeed being transformed during last decades, and those transformation have integrated in different ways the buildings into the urban fabric: a hotel, a supermarket and offices modified or took the place of the buildings that used to be part of the Borletti factory.

Today, the last fragment of the Borletti Factory is bordered on one side by piazza Carlo Innerio and on the other sides by via Costanza, via Gessi and via Cecchi. The factory is composed of several parts and shows the stratification of time: a Liberty style building with towers -probably from the early Twenties-, a building with a shed roof and a third building from the Thirties. The open space in between these buildings is saturated by a series of roofing, partially visible from via Cecchi.

Unlike the other buildings that were part of the Borletti factory, this nucleus has never been affected by the urban scene transformation processes. It appears today at the same time as *expression of obsolescence* linked to the abandonment, to the degradation, to the lack of taking care of existing buildings, but also as *resource*: as punctual occasion for a potential reactivation able to extend the results not only to the scale of the building but also to the surrounding urban fabric.

Defining an intervention of the former Borletti building doesn't mean just giving back life to a waiting artefact but it means at the same time having the possibility to transform this fragment of the industrial memory into an opportunity for the city, that will involves not only the building itself but also the surrounding public spaces and the relationships between those areas. This building doesn't have to be assumed as an isolated fragment, but as part of a wider set. Moreover, making an intervention on this building implies making a selection: choosing which parts have to be kept, which have to be demolished, and which transformed, according to different possible intensities. It means making interventions through actions of addition, of subtraction, of integration, of emptying, of covering, assuming the existing as proper *material* of the urban and architectural design. It also means, as far as the modification design of the existing asks for, to know deeply the object of the intervention, aiming to consciously operate these choices in respect of the starting conditions.

Within the projects developed for the reactivation of the former Borletti factory there is a common orientation toward the transformation of this building into a multifunctional equipment<sup>ii</sup> devoted to the cultural and artistic production, or to new forms of handcraft. In parallel it comes out how the new design has to deal with the relationship of the new intervention to the whole block and to the immediate context around. The liberty building is often detached, in the foreseen scenarios, from the block that it belong to nowadays, through the demolition of the shed building and of the Thirties one opened on via Cecchi. Their place was replaced by a proper public pedestrian space sometimes flanked by a car connection, opened between piazza Innerio and via Costanza. A new building defines,

in most of the cases, the end of the block toward east, solving the two blind facades that came as result of the demolitions. The relationship between the former Borletti building and the public ground is very important for this project and it has to deal with shifted levels. In this direction, the section is an indispensable tool for the design that explores the transformation of the internal space of this building, that has been too long waiting to be returned to the city life.



Figure 4. Former Borletti factory building (February 2014, photo taken by Cem Etik during MIAW Workshop, prof. Carlos Arroyo, tutors: E. Fontanella, G. Semprebon, A. Tognon).

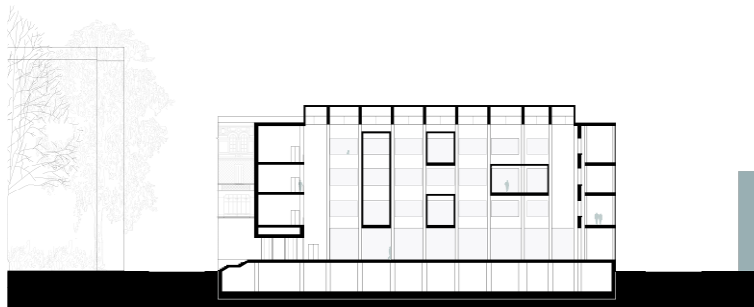


Figure 5. Section by Angelica Schina and Daniele Riva project "Inside-outside" (Architectural Design Studio 2, prof. Nikos Ktenàs, tutors: D. Ferrari, E. Fontanella, S. Marmori)

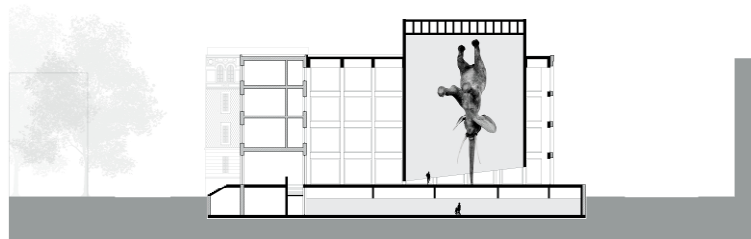


Figure 6. Section by Francesca Pasta and Sara Puleio project "Void Sublimation" (Architectural Design Studio 2, prof. Nikos Ktenàs, tutors: D. Ferrari, E. Fontanella, S. Marmori)

## 4 CONCLUSIONS

The current research is based on idea *to build on existing*, at different scales, helping in decreasing or at least bounding the soil consumption, assuming the existing building and areas as *resources* to be improved. At the same time the research wants to raise real problems, that are more and more going to define a future challenge of our work as architects to the attention of citizens and teachers working in different courses/workshops of Politecnico. The value of this challenging initiative is underlined by the passage from the evidence of the critical aspects of the existing, towards finding collective values, to the renewal of a design culture meant as shared social product. The project, as a social product, has to come back to gain the ability to face the future and to explore new mental and imaginative paradigms. It is a research that aims to rediscover those areas of collective discussion that can feed a comparison of merit and content and to power on the discussion toward a multidisciplinary approach.

On this common background, a group of professors, young researchers and their students has undertaken to deal with the questions expressed by the society and by the municipality. The results that the projects wants to reach are proposals for the urban spaces of the sociality, of the hospitality, for the contemporary dwelling, within new scenarios for different uses: temporary housing, social housing, spaces for the shared life but also spaces for cultural activities, open spaces for the urban agriculture and gardens. Those are just some of the functions that the design proposal gives shape to, confronting with the urban policies necessary for their implementation.

As both didactical and research experience, Re-forming Milan trains the students in the built up space enhancement, and in the soil consumption restraint, looking to the next decades trends of decreasing and shrinking phenomena. At the same time, starting from the Milan map of the abandoned areas and buildings, the work has reached a selection of significant places. Those critical places - that are nowadays acting as fractures in the urban fabric - become themselves opportunity and the matter of a possible transformation: they become real resource for the future of the city.

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<sup>i</sup> The three main moments for the dissemination of the work have been: the exhibition in *Triennale di Milano* (July-August 2014) edited by Barbara Coppetti with Pierluigi Salvadeo and the collaboration of Andrea Oldani, Giulia Setti, Martina Sogni. The events organized in Milan *Urban Centre* (July 2015) edited by Barbara Coppetti and Elena Fontanella; the exhibition organised in the Spazio Mostre Guido Nardi, (Scuola di Architettura e Società, Politecnico di Milano January 2016) edited by Barbara Coppetti, with Francesca Berni, Elena Fontanella, Matteo Puglisi, Giulia Setti, Francesca Zanotto.

<sup>ii</sup> This common orientation comes out from the projects defined in the following studios and master thesis that worked on the former Borletti area (they are published on the website [www.riformaremilano.polimi.it](http://www.riformaremilano.polimi.it)): Architectural Design Studio 1, professors: Angelo Lorenzi, Francesca Bonfante, Cecilia Tedeschi; Architectural Design Studio 2, professors: Nikos Ktenàs, Cristiana Achille; Architectural Design Studio 2, professors: Cassandra Cozza, Matteo Ballarin; Architectural Design Studio 3, professors: Paolo Mestriner, Emanuela Morelli, Anna Pasini, Master thesis by Andrea Chiaf, Marco Medeghini, Michele Zamboni, supervisor: Andrea Oldani. The former Borletti building has been also the design site for the students of the Miaw workshop working with professor Carlos Arroyo.





## MICRO-URBAN ARCHITECTURES: ASAKUSA AS URBAN AND RESEARCH LABORATORY

Chiara Toscani<sup>1</sup>, Giorgia Cedro<sup>2</sup>

<sup>1</sup>*Polimi, Dastu (ITALY)*

<sup>2</sup>*Polimi (ITALY)*

*chiara.toscani@polimi.it, giorgia.cedro@gmail.com*

### Abstract

The economical decline of these last years, overlapping the difficulties of generational change in some contexts with low native birth, which is only partially rebalanced by the new migrational flows, has accelerated the phenomena of abandon and slow re-generation of places, even in recently built areas.

More than other historical periods, in fact, the last century has devised to us a serious variety of building constructions, mainly of ordinary type, deposited through a very short amount of time, and purely because of functional rules lacking a composite research to support a building fabric with forward-looking urban logics.

Nevertheless, these very changes have revealed interesting capacity of reaction, often encouraged by self-managed interventions by individuals or communities, which have released new energies and opportunities of renewing the codes.

This scenery has led to entirely re-thinking new tools and devices to control the urban space. The role of the urban projects tends to abandon the spatial and temporal finite shape of the architectural design, in favor of planning strategies that are moving towards obtaining the renewal through light interventions. Punctual, diffused and of small scale, their interrelation can re-activate the in-between space of the urban fabric in its large scale. This also means to go beyond the logic of acupuncture, conceiving instead a complex vision of the city - or a part of the city - to work with a general background idea through meaningful crucial points, according to a dual tension of scale. The main theoretical references of such approach are to find in the historical definition by Bruno Zevi of "Renovatio Urbis" about the Erculeia addition in Ferrara, as well as in the contemporary urban plans for Antwerp by Secchi and Viganò, up to the plan suggested by David Brown for Chicago, the "Available City". They advise to go beyond the inter-scale relationship among elements, addressing also to an idea of porous and transparent city, in a different relationship between interior/exterior, aiming to re-activate micro-urban spaces, both public and private, so that even those ones can become collective places of the city, embracing Manuel de Sola Morales's lesson: "And thus it is possible for these splendid opportunities to enrich the city with avenues, parks, ring roads, stadium, museums and architectural scenery, all of undeniable value, to lead to a raising of tone of the city in general that results in hypertrophy of public space. The importance of latter does not lie, of course, in its size, quantity or symbolic role, but in the way that it links together private spaces, making them in turn part of the collective resources. Bestowing an urban, public character on buildings and places that would otherwise remain solely private. Urbanizing the private, that is the concept: in other words, absorbing it into the public sphere." (M. De Sola Morales, Public space- collective space, Lotus quaderns, pag. 43.)

The global cities, the great "westernized" metropolis, are clearly showing this rapid economical and social change, therefore they can become interesting research laboratories. Especially Tokyo can be considered a paradigmatic case: its urban fabric has experienced substantial modification connected

to this process, since the 1960s. Saskia Sassen designates it, with London and New York, a key position in the highly specialized services and in the production of innovation which have determined a privileged financial-economical geography, with gradual resonance on the other global centers. This international character of the urbanization however has not replaced the local habits and the traditional values of the city, that are surviving and handed down from one generation to another between the gaps of its residential fabrics, the only ones of which the scale has not been modified yet. This has led to the diffusion of a wide urban fabric constituted by small elements, defined by short buildings and small urban voids, sometimes even located next to buildings and fabrics that are part of a larger scale and more similar to many other western metropolis. Thus, such urban specificities of the context appear perfect to investigate how and through which strategies a small scale architectural project can re-activate the social and urban fabric of a district displaying a strong tendency to be abandoned, like the one of Asakusa, where the aging social fabric represents one of the major issues.

**Keywords:** Micro-urban architecture, dual scales, in between spaces.

## 1 INTRODUCTION

Saskia Sassen, in her *The Global City: New York, London, Tokyo* [1] defines the three cities as the first global cities, metropolitan centers sharing a network of privileged relationships with each other rather than with the rest of the world. According to the authoress, these three cities historically represent an evolutionary model for the other metropolitan cities of similar or smaller size. New York, London and Tokyo, since the '60s, have prefigured several issues that have gradually occurred also in the other metropolitan cities and cities of the world. Indeed, they have shown with absolute evidence that some specific conditions, such as the employment level, the presence of excellence, the high population density, the circulation of information and the competition potential, the strong exchange between global and local networks, not to mention the contamination of values and habits, had an effect on urban processes and how these processes have spread out in different forms, through a network of other metropolises, only later. According to the theory, then, through the observation of those phenomena taking place inside their urban fabrics, both in terms of morphology and socio-economically, it is possible to prefigure the future dynamics of other cities as well, and somehow address the urban policies.

Furthermore, Saskia Sassen points out how the great changes that have taken place in these cities - along with significantly altering the urban fabric by introducing a higher urban density, made of tall buildings and major companies headquarters, and despite producing the collective image of globalization with the skyline of a Business District, usually located at the urban center and well-connected to the main infrastructures - have always been enriched by a fruitful exchange with the local element, source of creativity and renewal. The importance of such local scale is obvious. A community's bond with its environment is crucial for its resilience: many studies have proven that a strong sense of place is essential for the physical and economical health of a city, and especially that such sense of place strengthen itself when participating to the evolution of its habits and its meanings. It is a matter of continuous involvement of space in the mental evolution of a community, which can be defined an exchange: the identity of a certain community at a certain historical-cultural time bounces onto the space reflecting it and viceversa, so that space is an inseparable part of it. Those areas rejected by the urban planning show the real desires of the city right because people urbanize them, it is there that, especially for highly densified metropolises, the innovation of living bodies plays its role.

Thus the spatial nature of micro-urban is inseparable from the mental one, as the physical world allows the sense of place to exist and at the same time the sense of place defines its physical identity. Today one of the most interesting phenomena related to New York, London and Tokyo, despite the structural difference characterizing them, is the persistence of intermediate areas, close to the the

central ones and not purely suburban, which show a state of latency with fragile social and economical conditions. If the continuous renovation of the infrastructure in New York, London and Tokyo has certainly guaranteed a permanent development of the city and its suburban areas, it has not removed the tendency to incentivize few districts with a strong attractive, while others, often neighbouring, report some ambiguity and latency in their structure.

This state of latency is also clear in the structure of the urban fabric, where local elements, connected to tradition, coexist with globalizing elements which are shyly found in the fabrics, maintaining a type of ambiguity which isn't a source of growth, but of weakness in the ordinary life. This specific intermediate condition, completely different also from the suburban one, highlights a sort of urban stress, where the tension towards a globalized order tends to destroy the local dynamics, both from a socio-economical point of view and from an urban one, through the increase of the abandonment of the intermediate fabrics in favor of the suburbs. Remaining and inhabiting these fabrics, is often an elderly population, with a structural low impact on the urban dynamics in locating the services, not to mention the absolute lack of a dedicated urban vision. But these hybrid fabrics represent the chance for a non invasive approach with contained costs, operating as input for their regeneration.

Through urban corrections, minute interventions at the inhabitant scale, it is possible to coordinate global and specific characters in a coherent image: this is the micro catalyzing progress, like a demiurge giving life to the very idea of globalization, who, while shaping it, adjusts it to his specificity, correcting it and letting it correct himself. Micro is the new chance for urban systems's resilience, which, according to Ryue Nishizawa, enables to create a new environment, without adapting myself to the existing one - an environment created for a contemporary architecture will become something contemporary. I believe we can create an attractive landscape reflecting our contemporary values. Values which can be synthesized in a new openness, to encourage the relationships among neighbours and the city, as well as to guarantee a high degree of intimacy.

Through the lens of small scale, then, it is possible to study some life peculiarities and ways of socializing, but also the needs of a city, especially thanks to the repetitiveness with which the smaller spaces among different urban fabrics become the location of a necessarily local network. The most informal push within these fabrics reveal the intrinsic need to combine the various phenomena, not through interventions of different scales, but according to diffused strategies re-activating local dynamics even in a global context. These strategies should work at the minute fabric scale, although imposing a different public character and supporting the inhabitants. A few studies, such as the contemporary urban plans for Antwerp by Secchi and Viganò or the plan suggested by David Brown for Chicago, Available City, prove it as well. Indeed they suggest to go beyond the inter-scale relationships among elements, referring to the idea of porous and transparent city, in a different relation between inside and outside, which attempts to activate public micro-urban spaces, as well as private, so that they also become collective [2] places of the city, as Manuel de Sola Morales affirms.

## 2 ASAKUSA AS URBAN AND RESEARCH LABORATORY

Post-modern Tokyo, global, with a pulsating rhythm and with a hallucinated appearance, innervated by the metropolitan ring of the Yamamote Line, with its nodal stations across which more than 3.5 million people pass daily, coexists with another city, which breathes slowly, in harmony with nature and with the change of seasons. Tokyo is a city with two faces beyond any stereotype, its essence can only be found in the screeching of its different speeds. At the foot of the highest skyscraper in Asia, Skytree, the vapor emitted by the traditional public baths continues to dissolve the profiles of the creaking dark-wooden houses, as well as next to international restaurant chains survive some local sweets shops. If it's true there is an army of businessmen wearing white shirts and blue ties, it is also true that many of them take their shoes away at the office entrance, as a habit.

The duality of the Japanese capital is revealed in the contraposition between international profile and poor knowledge of English, between high technology and artisanal tradition, in the efficiency of public transport and the backwardness of the bank system, in the flexibility at work against the social dynamism among the lowest in the world, in the attitude to precision shown to the world against the

recurring disorder inside private dwellings or the informality of residential areas. It is persisting in Tokyo a deep split between its contemporary globalized character and the aspects of local culture, around which the clash between elder and young generations is based, up to the point that a political hypothesis of 2015 in answer to the need of housing for employed people consisted in moving to the country side all the elderly inhabiting the 23 special wards of Tokyo prefecture. The intrinsic nature of these contradictions makes Tokyo the case-study par excellence among the global cities, especially because of its areas where changes report counter-tendencies in comparison with the general ones. The district of Asakusa, in Taito ward, while Tokyo has registered an exponential increase of population and of employment between 1960 and 2010, reports completely opposed datas. If in 1960 there were 318.899 inhabitants, in 2010 they decreased to 175.928; in 2010 the number of employed people was 398.527, in 2010 it became 294.756. If all the other districts, after the years of adjustment due to the global turn of Tokyo, have been subjected to a population growth - either related to the day population or to the night one, according to their residential or business vocation - Taito is a declining ward. Such given datas are even more surprising when observing both its position, next to the CBDs and before the suburbs, and its wide infrastructural connections (Taito is actually part of the Yamamote Line ring). This dissonance from the general tendencies finds reasons in the incapability of resilience that the district has revealed. With Bunkyo ward, Taito is the area with the highest presence of elderlies and the slowest generational change, but, unlike Bunkyo, which has taken advantage from the lacking renewals in its building fabric to stress its role of tradition cornerstone, thanks to several examples of conservation sponsored by private citizens, Taito has not taken the opportunity and is facing a situation of dubious identity. Indeed, despite some attractions in Asakusa represent a favourite destination for international tourism and the massive presence of shrines and temples for religious tourism, Tokyo has not provided the district with any integrative public service to balance at least the high cost of residential land that the history of the place implies.

In particular relation to it, the collective image associates it as linked to tradition and takes position against a substantial change of the buildings scale (in Japan they are rebuilt every 15-20 years), not as significative matter in relation to other areas of the urban fabric. The result is a hybrid fabric, generally made of low impoverished buildings, divided into typical Japanese single residential units, which is alternated to taller buildings (up to 42 stories) of ordinary character, in part offices, in part anonymous condos. This ambiguity risks to destroy the place identity without even integrating it with those attractions that are common in those districts connected to globalization or balanced by the lower cost of the suburbs. Asakusa then presents its most depressed part as the ideal site where to investigate the possibility to re-establish a social cohesion and re-vitalize a city through a strategic system of micro-scale devices.

The observation of the urban fabric highlights two interesting morphological elements: the presence of a serie of public buildings, services that usually in the global city operates at a larger urban scale, called Koban (Fig. 1). Kobans represent a dense public infrastructure, similar in its size to the minute residential fabric, which comes from the passage from traditional to modern Tokyo. They were originally born as public police's buildings, that substituted Samurai, who were part of historical families form the city and used to have a role of protections for the inhabitants. During the Meji Restoration, the period of modernization of Japan, Tokyo Metropolitan Police Department was established (1874) to maintain the public order in the capital thanks to the supervision of some Kobanshō in some designated places where policemen engaged in standing watch duties in shifts. In 1881 it was decided to build a box for each designated place, at the time called *hashutsujo* and the entire Japan counted 330 of them.



Figure 1. Tokyo Koban Diagram

These tiny buildings widespread in a period of half century, turning also their first function in giving directions inside each district (the address system in Japan works differently from the Western one. Street are not defined by name, but the addresses are given according to a complex estate registry system, based on subdivisions and historical processes. Their attribution doesn't often display a clear sequence, so that it is necessary to look for an address through maps and some help by Kobanshō). Globalization, that on one side introduced out-scale buildings into the original Tokyo context, on the other side has started a process of smaller and smaller fragmentation of the residential land, producing an address system of unprecedented complexity, in answer to which the localized system of police was reinforced to help citizens's orientation through the urban fabric.

Since 1994, when koban became their official name, Tokyo boxes began to display the written in roman letters in front of their entrance, so to be recognized also by foreigners. New boxes were built to support those hosting effective police tasks, but their function consisted mainly in offering help to people in search of an address, to the point that it became mandatory for the person working inside them to live in the same area, to guarantee a strict contact with the community around it and an updated knowledge of the building fabric (one of Kobanshōes tasks was door to door visit to the inhabitants for the only purpose to get to know them). Each of the over 1200 kobans in Tokyo controls today an area of 200-400 meters diameter, but policemen can be substituted by community' volunteers, who are in charge for giving directions.

Nowadays technology development makes these building useless and some of them, like other parts of the residential fabric, are subjected to an abandonment process. In a dichotomous panorama of local and global, public and private, with the necessity of testing un urban strategy based on minute and diffused processes rather than on larger urban interventions, the recover of kobans, distributed along a ray of 200 meters, seems particularly interesting. Especially in Tokyo, where the public is identifiable with the great urban containers, parks, museums, shopping malls - with the global scale in terms of architecture language as well - the inversion of such perspective through a strategy which works with completely public minute buildings appears opportune for the recover of an urban activity. Specifically the project proposes to reuse the existing volumes through new urban functions, strictly connected to the surrounding fabric: a space for music, spaces for fun and leisure, small galleries or gardens where the elderlies can redefine their collective values. All the new kobans reflect the same design principle: they adopt a minimum dimensional size, a sort of primary unit, which designates one characterizing function, and they vary in their volumetric extension according to the original volume of the demolished building, in order to identify a specific contextualization from koban to koban.

If the koban system works with spread points, the second interesting morphological element is the structure of the urban grid, which, always identical to itself, makes vain any morphological specificity, typical of the European city.

The Japanese urban fabric, subjected to modifications and reconstructions, is actually characterized by areas where land is fragmentarily used, occupied by short buildings (of maximum 3 stories), where even the road infrastructure is lacking. The fragmentation of land in smaller and smaller lots, especially for the residential ones, and the recurrent leftovers that are informally used as micro-public spaces, derives from the anti-seismic regulations and from the land ownership system. The new anti-seismic regulations indeed impose over any construction to respect a 40 cm minimum distance from the adjacent property, so that an interstice of 80 cm takes shape between two buildings and it is used in various different ways. In some cases they are closed to locate the buildings's machineries, in other cases they represent an informal extension of the house where to place the washing machine and hang the laundry, or they resemble a vertical garden, or a public living room where a few neighbours chitchat, or they even become the place for a break from work, provided with vending machines and smoking areas. Considering the extremely small space destined to private life for each inhabitant, Atelier Bow Wow observe the urban implications of Japanese interstices and define them micro-public spaces, spaces which make life bearable in a big city and that are based on individual's participation to the space of the city.

The lively dynamics engaged in these spaces is explained more clearly by observing how the dwelling space has been gradually reduced during the last 50 years. If once each house used to occupy x square meters and to contain at least a little garden, since the '60 the cost of land in Tokyo has exponentially increased, turning the city in one of the most expensive in the world. Because of this, when demolishing a house, many landlords have tried to sell out half of their property to a new landlord, who will sell half of it himself, so that the most recent buildings present smaller and smaller sizes, up to the minimum residential unit of only 6 square meters.

Along with the modernization of the country and the growth of people, the large housing demand brought to the construction of taller buildings, constituting Tokyo's actual hybrid fabric, where it is common to find a tall building right next to a two-story one. Despite a first sight chaotic appearance, it is possible to recognize some urban hierarchies along squared stitches that present taller edges and define groups of blocks along quite a regular grid. In order to avoid the propagation of fires, indeed, the Urban Renewal Act provides landowners with fireproof rules for buildings above 11 stories along the block edges, while inside them the traditional shorter houses can continue to be built and rebuilt. Besides, the edges of the blocks, usually along larger streets, are provided with sidewalks, while inside them they tend to disappear and it is mandatory to maintain a slower vehicle traffic, so to ensure pedestrians's safety. The resulting urban asset presents porous edges, rich in services and public functions where the pedestrian flows are concentrated, with internal areas which are still public, but visibly more intimate and characterized by informal human presence.

In the end, with the rising of mediocre tall buildings, especially in the adjacent districts to the new global nodes of Tokyo, the increasing disappointment of people has led to the introduction of some rules moving towards a more urban city, with a better social cohesion. The policy for the development and redevelopment of urban areas of 2013 refers to the aim to design integrated and comprehensive buildings in order to promote multiple functions for contemporary districts. The Urban Redevelopment Project under the Urban Renewal Act carries out redevelopment in accordance with certain rules of law by setting forth the development of public facilities (e.g. roads) and communalization of buildings as a uniform project while restricting individual building reconstructions.

By developing public facilities (e.g. roads) and sharing land use, the Urban Redevelopment Project is implemented utilizing the schemes for relaxation of the floor area ratio that allows improvements to the urban environment, (e.g. designation of high-level use districts) for funding for costs required for communalization of lands and buildings (e.g. support), and for preferential tax treatment.



By creating floors that exceed those possessed by the original right holders by means of high-level land use, the costs of urban development projects are to be covered by subsidies as well as funds obtained by selling those floors (including a piece of land corresponding to the floor).

As for co-ownership cases, then, the use of one level above the second for a collective or public function is encouraged.

By using this specific urban and normative structure, these fabrics become the opportunity to activate a parallel strategy, which we may define compensatory, through the detailed study of one block of the urban grid around the barycenter of Asakusa district, but far from services and the new koban system. In this area it is possible to identify a tendency to abandon buildings, which is much more relevant than in other areas. If kobans fulfill up to 100% the public need, here the dense residential fabric corresponding to one block as minimum unit, is re-densified through the infill of minute public functions operating across the interstices or in the upper parts of building, only thanks to a systematic use of the existing building rules.

### 3 CONCLUSIONS

Thanks to the proposed approach, the renewal of Asakusa happens through the scale of micro, which enables the district to maintain its traditional character without replacing its specific scale, but at the same time it activates a contemporary fabric with strong attention for the inhabitants and their needs. The implied enrichment of the fabric, by improving the inhabitants's daily life, represents a new chance for a fruitful exchange between local and global networks.

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<sup>1</sup> M. De Sola Morales, Public space- collective space, Lotus Quaderns.



## ARCHITECTURAL COMPETITION AND INNOVATION, SUSTAINABILITY ISSUES

**Ștefan Mihăilescu**

*Assist. Dr. Arch., "Ion Mincu" University of Architecture and Urbanism (ROMANIA)*

*stef\_mihailescu@yahoo.com*

### Abstract

The purpose of this article is to study the role of innovation in sustainable architecture and architectural competitions that are correlated to sustainability principles. This paper will investigate the relationship between three terms: innovation, sustainability and architectural competition. Before the final conclusions are presented, a series of international competitions that offer sustainable prospects for the future development of mankind are taken under consideration. This paper will discuss the following competitions using sustainability and innovation as key factors of interest: Evolo, Solar Decathlon and Radical Innovation.

**Keywords:** competition, innovation, sustainability, architecture, research.

## 1 INNOVATION

The research methods used in this paper refers to the analysis of the various forms of innovations, the directions in innovations, architecture and design for sustainability purposes, projects from different competitions, and the relation between architecture and the current problems of society. Discussion about elements that relate to these types of approaches can create a picture about how can be viewed architecture, as promoter of change in society. Architecture has the advantage to promote new concepts and constructive systems, and with constructive industry help can move forward in a new technological and innovative realm of design. The combination of design and research can discover the unused potential of innovation from construction industry [1]. Another aspect investigated in this work is the critical analysis of the way competitions can constitute an extremely open model of innovation and a manifest in today architecture.

Innovation has become a crucial element in the international market (defined by dynamism and competitiveness) but also in the architectural one. A dictionary definition for innovation is: „making changes to something established by introducing something new” [2]. From this point it should be discussed how the new elements come to determine and to replace those that had become “classics”.

## 2 INNOVATION DEFINITIONS RELATED TO BUSINESS ENVIRONMENT

Innovation definition as seen by the business environment is all about new processes and strategies, connected with types of or procedures specific to of each organizational institution in order to obtain maximum efficiency. Innovation is “the development and implementation of new ideas by people who over time engage in transactions with others within an institutional order” [3].

In order to find a more efficient way for the diffusion of innovation, I applied the sustainable business point of view for different types of management for innovation to the construction market and the sustainable development of the built environment. First, the innovation diffusion must be viewed as an active process. Its most important assets are information and knowledge with changed the way we

consider to design a building from function to energy efficiency, from branding image to new elements of the facade and interior design. In order to maintain the efficiency of the design, it is important to manage all the information, to access specific management programs, and to integrate all the specialties under one interface with uncomplicated open access. I will consider in this paper the construction industry as a common concept reuniting architecture, engineering and construction. The advance are made possible by implementing sustainable concepts with the use of new programs as building information modeling (BIM) and teamwork programs for virtual collaboration. This enables the following: operational management, data management, construction simulation, change management, 3d visualization of buildings. Nowadays the BIM related programs are used by more than 50% of the construction industry [4].

For the dynamic construction market, the capital of innovation can be improved through business planning connected strategies. In recent years, the rate of development of products and processes of high technology in construction has increased significant. It is very important for the design companies to invest time and training for employees in order to know and learn novelties on the market. The last 30 / 40 years can be described as very fast in technological progress and the development of new and innovative technologies, and the construction market was no exception. With less knowledge for applying particular procedures, the design can't implement innovations with maximum efficiency. Between designers and architectural firms specializing in advanced engineering, there must be a continuous feedback cycle, an interconnection which can enable to distribution of innovation in projects. Demand for innovative projects, must be supported by links with construction companies able to support and implement the latest technologies in construction field.

## 2.1 Radical, architectural, modular and incremental innovation

Judging by different rates of novelty involved, there is a possible categorization of innovation: radical, architectural, modular and incremental. This paper tries to correlate the innovation definitions from business point of view towards an architectural / engineer / construction market viewpoint.

## 2.2 Incremental innovation

The main components are improved, there is no change in the main system and the development for existing products is progressive. Incremental innovations are the commonest. Step-by-step advancement in knowledge and materials development drives the upgrade in time for most services and products. A classic example is the cost reduction in solar photovoltaic (PV) modules in the last ten years, as a result of continued innovation and scale-up in the manufacture of PV modules. Driven by the demanding market, the manufactures improved their product performance and transparency. They created less dark glass, in a vast array of shapes in order to gain more access on larger surfaces of facades. The architect and engineers used the improved year by year modules in order to recreate the facade system for PV surfaces energy and to create a new image accepted by the large public (EPFL's future SwissTech Convention Center, Asia's largest building integrated organic photovoltaic - BIOPV, Korea Yeungjin Junior College). The entire technological brake trough conducted to the appearance of Building Integrated Photovoltaic (BIPV).

## 2.3 Modular innovation

The main components are new and there is no change in the main system so there is a major re-design of existing products (but limited the level of improvement that is technically feasible). Using sun control and shading devices in order to protect glass surface from sun exposure is nothing new. Technology evolves and new ideas are put into practice. Nowadays complex systems with computer controlled movement or rotation with engines connected to louvers (brise-soleil) holdings, redesigned the shading device system. (Al Bahar Towers, King Fahad National Library, Melbourne's Council House 2 building - CH2)

## 2.4 Architectural innovation

The main components are improved, and there are new configurations for the system. The improvement in glass production and the provision of sufficient daylight in order to reduce artificial lighting enabled the construction of large interior atriums and double layered facades. Improvement in manufacturing the metal or aluminum frame systems is another aspect that influenced the construction market. Each element by itself is nothing new, but after years of studies, the firms specialized in thermal flue and stack effect, proposed and created buildings with correlated relation between atrium and double layered facades. The two elements work in a symbiotic way and allow less usage of the classic air conditioning and create spaces that are naturally ventilated almost 70 % of the time [5].

## 2.5 Radical innovation

The main components are new, and there are new configurations for the system. It is called design for a sustainable society. A radical innovation means obtaining buildings capable to be the source for their own power or achieve net-zero energy. In order to achieve this point there are a couple of actions that are need to be taken: design for zero net, use energy modeling for the most cost-effective zero energy home, use the sun for passive solar gain, electricity and hot water, seal and isolate the building envelope, use highly insulated windows and doors in order to minimize thermal bridging, use an energy efficient heating and cooling system, fresh air supply. The synergic effect of all these innovative approaches is creating a building capable of harvesting energy and exchanges it with the grid. This is an example of architecture that seemed impossible 10 years ago. Today is common practice in many places to produce your own renewable energy, and the only innovative aspect is to use all this knowledge at larger scale in order to provide the energy efficient concept to as many countries as possible. Accessing this kind of innovative technologies (products, services and processes) would enable society at large to consume and produce in a sustainable way, bringing the discussion toward a wider social and ethical dimension.

In order to find out the next phase of sustainable development a studied a striving industry, the IT and information systems, and I identified three new directions, called eco-goals: eco-efficiency, eco-effectiveness and eco-equity [6]. The concepts are applying directly to the information systems but reducing the consumption of energy and resources are a common purpose for all industry brunches.

## 3 IT INDUSTRY: ECO-EFFICIENCY, ECO-EFFECTIVENESS, ECO-EQUITY

### 3.1 Eco-efficiency

Eco-efficiency is about taking advantage of the existing infrastructures in better ways than the in present times [7]. Starting from the IT necessities and energy demands there is the same direction of thinking in architecture and engineering. There is a need of better road infrastructure, energy grid, built environment, and the basic mean to achieve improvement is by implementing innovations in the existing infrastructure.

### 3.2 Eco-effectiveness

Eco-effectiveness is the next big step after eco-efficiency, inspiring a adjustment for human behavior in regard to energy consumption. The continuous expansion of energy independent neighborhoods in countries like Germany or Netherlands is an inspiring model for this change.

### 3.3 Eco-equity

Eco-equity, is described as “fairness in current consumption of energy in regard to future generations possibility to use the earth’s scarce energy resources” [8].

#### 4 ECO-INNOVATION AND SUSTAINABLE INNOVATION

A sustainable development is a general direction towards a desirable future state for human civilization. It's a new way in which there is a balance between usage of resources and our own living standards without disrupting the natural systems. There are some concerns about increasing globalization and the increase of consumerism in our society, and it looks like it is easier to consider innovation a big part of the solution instead of rethinking about lowering our expectation about every day needs.

As sustainability is defined by three terms (environment, economic and social), innovation has different names given depending on its relation with them.

Eco-innovation is related only with the environment and economic factors," through reducing impacts on the environment or achieving a more efficient and responsible use of natural resources, including energy" [9]. This eco-direction is not happening by chance, it is supported by a clear demand from the present society and its development is related to the new entrepreneur and the institutional support structures. Exemplars in this direction in the field of architecture and design are: Carbon Positive Home by Archiblox, Vanke Center by Steven Holl, Sino-Italian Ecological and Energy-Efficient Building by Mario Cucinella, Bio Resin Furniture by Manufract.

Sustainable innovation finds more relevance in social and ethical issues, it has a larger field of appliance (a neighborhood, a city, a social organization or a corporation) and it concern larger masses of populations: renewable energy storage for homes/ solar cells, passively heated houses, organic food, hybrid cars, energy positive prefabricated house, improving access to knowledge – school access. Sustainable innovations are happening with "soft innovations" in social practices, economics and business networks.

#### 5 SUSTAINABILITY AND INNOVATION

Sustainability and innovation are two concepts that complement each other. Sustainability is the reason why there are modified standards of quality and efficiency in order to evaluate architecture in general, standards such as LEED (Leadership in Energy and Environmental Design) or BREEM (Building research Establishment Environmental Assessment Method) ; these changes put pressure on the main actors to invest in innovation. The investment in time and resources seems difficult, but correct implementation of innovations lead to limitation of used resources in order to obtain superior products. In order to be consider an environment-friendly company, there must be a reeducation of used inputs, and in that manner its end up with lowers costs (money, resources, energy) "adding maximum value with minimum resource use and minimum pollution" [10]. This requires a set of processes and services, which have as their end point getting access to technologies such as high tech or low tech. This yields substantial first-mover advantages in terms of fostering innovation. In order to achieve sustainability for the global built environment is necessary to act local, to create interdependent clusters of knowledge and to implement innovation from bottom-up. The meaning of innovation is not only correlated to technology advance. It definition varies from creation to the implementation of an invention, and it concerns a large field of activities: process, product, service, organization, etc.

In order to start from the right premises in sustainable development, the construction must be designed from environmental or ecological, appearance and economic terms. Above that, we must add the social aspects and the fact that society has new views over the built environment, a long-term view and life-cycle perspective. A clear example for this new approach is the number of tools used in order to help the designer to accommodate key environmental directions: Life-cycle Design Strategy (LiDS) and the Eco-compass (tool for environmental management systems and for international standards on environmental management). The numerous innovations in our field of expertise provide us with specialized programs to assess the big picture in the economics of a building: investment in purchase the land and construction, maintaining and operating costs, demolition and recycling. For many theoreticians, this large scale programs are controlled more by engineers then architects, which are losing their leading role in the design team because of the larger



technological and economical key elements that are to be taken under consideration [11]. The social sustainability is more related to governmental or administrative policies and it means: connection to basic services, offering assistance for poor neighborhoods, feasible construction market, and respect for cultural values, all in order to sustain healthy and livable communities at a larger scale. The public policies must be a result of continuous feed-back between the users (public) and the suppliers (public organization) in order to achieve a long standing progress through innovation [12].

## 6 ARCHITECTURAL COMPETITIONS

Architecture is located at the intersection of art and science. It aims both social needs and technology evolution. In order to analyze the work of architecture through the filter of innovation we have observed a better understanding of the process through architectural competitions analysis. The architectural competitions „have been employed to choose an architect or one design among many, to distinguish excellence in appearance and in function, to award commissions, and to educate young architects. (...) Competitions are battlegrounds of opposing and antagonistic solutions, giant architecture class-rooms with invisible boundaries and, often, open enrolments” [13].

Architectural competitions are defined as a result of both practical and theoretical research, proposing new ideas for the jury to deliberate, a complex set of images and texts that define a concept or a structure built in the future. Viewed as a whole, the competition is at the intersection of architectural practice and research, and is applicable both in the final proposal and in the future work of the author. Architectural competitions can become an important theoretical study, due to the large amount of information and case study contained. They are "source of critical and reflexive practices in architecture" [14]. It is possible, potential, or proposed architecture.

Sustainability is an extremely complex because it involves a large number of parameters that influence design, and quite often beyond the scope of architecture. It is therefore increasingly brought into question the design of integrated type, because it facilitates contact between different design aspects and allows achieving innovative, functional products from as many points of view. The purpose of sustainable eco-innovation sphere is linked to creating products and processes that reduce considerably the impact of future development on the natural environment.

Starting from the Bilbao moment (1997), both cities and major corporations seeking a new identity and the media promotion, have partnered with en vogue architects, and laid the foundation for star architecture term. To qualify in this category, the proposed items, must have unique qualities, structural and aesthetical, in order to individualize the investment from the rest of the built environment. In my opinion, this iconic architecture type, it is more related to radical innovation. Fortunately there are architects believing that architectural design is an ongoing experiment, and seeks to promote architecture to match the real needs of society, rather than design or novelty items. This type of architecture has stronger connections with incremental innovation.

### 6.1 Evolo 2015 - 2016 Competition

Evolo is one of the most interesting competitions for students and represent a visible platform for expressing new ideas about the future development of the humankind. It is an annual ideas contest run by eVolo Magazine. An interesting aspect for all the participants is the identification of social dysfunctions and problems, and the real conceptual effort to create a real improvement. A common point for the competitors is the use of different kind of innovations in order to achieve the desiderate.

#### 6.1.1 *Essence Skyscraper* (Ewa Odyjas, Agnieszka Morga, Konrad Basan, Jakub Pudo)

Poland is reinterpreting architecture and creates a minimalistic and simple gesture. The proposed skyscraper is bringing nature in the middle of the city, providing eleven stores, each one with a different man made natural landscape: ocean, jungle, swamp, steppe, desert, cave, waterfall, river, grassland, maintains and glacier. This project is an architectural innovation, because is using known elements but is changing the reference system, proposing a completely new ecosystem. The authors present their creation as a “non architectural gesture” in order to blend in as neutral as possible with the built environment.

### 6.1.2 *Invisible Perception: Shanty-Scraper (Suraksha Bhatla, Sharan Sundar)*

The next example, *Invisible Perception: Shanty-Scraper* (Suraksha Bhatla, Sharan Sundar) is taken under consideration the social issues from the Chennai city's Nochikuppam slum. People's living problems are resolved by creating a tall building using mostly recycled materials, with many public spaces in order to reconnect the collective spirit of the inhabitants. The accent is not on the image of the building but on finding the right connection with the city and providing the necessary space for all the extra activities. This project is a combination between architectural and incremental innovation, because uses recycled materials and existing construction technologies. In the same time is creating a new style of life, at high rise levels.

### 6.1.3 *New York Horizon (Yitan Sun, Jianshi Wu)*

*New York Horizon* (Yitan Sun, Jianshi Wu) is one of the few competitors who operate modification in a well known location, in the Manhattan's Central Park. Their proposal took the first prize for its radical transformation of the site and the innovative idea to enclosure the park with a neutral building design for apartments in order to separate the nature from the growing city. It's a radical innovation because all the internal surface of the enclosure is made from reflexive materials that create the mirror effect that enlarge the natural environment. The flat surface of the Central park is reshaped in order to create dynamic scenery with small mountains, hills and water surfaces all mirroring itself in the surrounding environment.

### 6.1.4 *The Hive: Drone Skyscraper (Hadeel Ayed Mohammad, Yifeng Zhao, Chengda Zhu)*

*The Hive: Drone Skyscraper* (Hadeel Ayed Mohammad, Yifeng Zhao, Chengda Zhu) is more about eco-efficiency, about today technology and about tomorrow commerce. Creating a "nest" for air-drones, used by more and more companies for fast-delivery, is another radical innovation that could change the city's skyline, adding more future like objects. More than the technological image, it is even interesting the dynamic of the Hive, the flow of drones and the movement of the folding horizontal platforms for docking.

## 6.2 **Solar Decathlon competition**

LISI – Living Inspired by Sustainable Innovation" created by Solar Decathlon Team Austria, is the winner of SOLAR DECATHLON 2013. LISI is a very stylish creation, a minimalist design with a concept based on different climate controlled zones within the inhabited area and large patio in front. The building integrates in its core a number of last minute technologies for generating renewable energy. Both sides with maximum sun exposure were protected with textiles applied away from the building facade. Renewable materials as laminated wood were used for the structure of the house, for the isolated panels, floors and furniture. In terms of sources of energy for utilities, the building rely on electricity generated by photovoltaic panels placed on the roof, and the two heat pumps operating in air-water system integrated under the floor plate. Additionally ERV is mounted and a drive for rapid heating of the internal atmosphere.

The innovative aspect are modular and architectural, the construction is intelligently divided both functionally and in areas of climate control, all the equipment for generating energy and ventilation system are the latest acquisitions, and the textile sun shading devices are quite effective being fitted at small distance from the surface that is protected. The building is presented as a universal solution and this is why it loses some sustainable conceptual features like cardinal and wind orientation. "Every location on Earth receives sunlight, at least part of the year. However, the amount of sunlight reaching the Earth varies according to geographical location, time of day, and season." [15]

## 6.3 **Radical innovation Competition – hotel industry**

Snoozebox is an innovative form of on-place hotel facility, a pop-up utility, a combination of future thinking and present technologies. The hotel is a response to the need of accommodation in specific locations (sport events) with a limited time span of manifestation. Punctual events do not develop the need of hotels because of the short period of usage. On the other hand, sports events (motor

events) bring a lot of spectators, with specific needs and budgets. A portable hotel, possible to arrange in 48 hours with 150 rooms is an innovative response to a specific need. The hotel is self-contained, truck delivered, and the rooms are made from metal containers with intelligent interior arrangements that permit different room connections. Everything is tide arranged and ergonomic. Taking under consideration the need for public space, the construction can extend it self using portable elements in order configure meeting areas, balconies and courtyards. The investment is very rapidly developing, accessing information and new technologies from hotel and prefabricated construction industry.

The innovative aspect is radical and architectural innovations, the main idea requiring a new approach towards the utility of a temporary construction for short period of time. All of the components that construct the pop up hotel are innovative, with a short history of practice.

The reason for presentation of Snoozebox is more related to a future use of the temporary accommodation for a short period of time. This solution is constructed in order to make money for providing a service that doesn't exist before and the technologies embedded in the construction, make it quiet expensive. On the other hand, the same idea can be used for providing shelter in areas in which disaster can occur. In this case there is no need for costly furnishes and the technologies are already developed, there is no need to reinvent. Housing assembled in 48 hours in cases of calamity using a cheaper Snoozebox model can be a radical innovation, with better effect over the social and natural environment.

## 7 CONCLUSIONS

Through innovation in architecture we must support the right direction for the construction market. Setting goals in line with future sustainable development, we can identify the innovative processes, technologies or tools that can be used in order to achieve greater results over a longer period of time (in beauty and utility). A sustainable building must address the relationship that mediates between man and nature, and help the users to understand that the vast majority of decisions they take, have a great influence over the natural environment. A sustainable building can greatly interact with the user as it can change its behavior towards understanding the main features of sustainable development: location and linkages, sustainable sites, water efficiency, indoor environmental quality, materials and resources, energy and atmosphere, homeowner awareness, and innovation and design process.

Studying various Evolo winners, we can be seen different ways to respond to local needs (issues), especially through innovative solutions that tend to solve the cause and not the effect. It is a feature for winning projects to propose a solution for a specific community, an existing place. Reaching for high technological means to solve the proposal is so normal with day to day evolution and technological leap in communication or IT industry. The study of Solar Decathlon winners was very interesting because it led to an analysis of completed housing constructed by mix teams (architects, engineers and economist) that are exposed publicly in order to study the relationship between new construction elements and society. The general public can observe that a sustainable house is no different than other and gain direct access to the flow of internal data: renewable energy management, occupancy monitoring, electrical loads, energy consumption on month or year base. Radical innovation competition can be translated from costly pop-up hotel solution to a modern way to solve the housing problem in disaster struck areas.

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## TECHNOLOGY IN | BETWEEN SCALES. CONTEMPORARY LANDSCAPES

Cristina Enache<sup>1</sup>, Mihaela Hărmănescu<sup>2</sup>

<sup>1</sup> "Ion Mincu" University of Architecture and Urbanism (ROMANIA)

<sup>2</sup> "Ion Mincu" University of Architecture and Urbanism (ROMANIA)  
*cristina.enache@uauim.ro, mihaela.harmanescu@uauim.ro*

### Abstract

Technology has represented time a way of human adaptation to the landscape since the dawn of evolution. The use of resources to build shelters and to achieve protection against nature's aggressions led to innovation and successive discoveries. The needs have become increasingly complex and have lost the original motivation. The technologies have developed from the first building techniques to the informational era techniques – based on communication and the spread of information. These developments continued to represent an answer for the society requirements, speaking either of an object or the major landscape.

The landscape is perceived and understood through the point of view of the relationship between man / society and the observed space – delineating a first perception which establishes the difference between the natural landscape and the anthropogenic landscape – depending on the level of human intervention on nature. The way man interferes with the landscape primarily depends on the technical means available to him. The landscape has been transformed from virgin nature in which man sought shelter in caves, with the discovery of the first building techniques, and progressively continued throughout history. If – starting with the agricultural revolution – the emergence of the first cities gave birth to the first urban landscapes, in the preindustrial period the urban landscape constitutes the very identity of cities. The industrial revolution produced the urban explosion, together with the transformation of the concept of *landscape*.

21st century technologies allow perceiving the landscape from detail to territory, by successive zooming and sequential approach. Globalization facilitates the transfer – almost immediately – between scales – from local to global. Paradigm changes have implications on the landscape perception and its comprehension. The way of conception and design becomes a language which aims to facilitate the dialogue between technology and the physical environment – be it natural or built. The takeover, the interpretation and the transformation of the models existing in nature into an instrument, lead to formal, functional and aesthetical solutions which constitute contemporary landscape.

The Landscape – dependent on technological development, place of urban community existence, is strongly influenced by the changes – fact which was demonstrated by the industrial revolution. New technologies change the scale of manifestation of the consequences, the information assuring the transition from local to global. The danger of flattening, of global standardization, determines that terms like "identity", "character" or "tradition" be updated – in the context of an emphasis of local, regional or territorial specificities. The generated phenomena strengthen the statement that information proves to be an element which, beyond the caused conflicts, restores a number of concepts ignored for a long time, trying to solve issues raised during the last century, tending to establish a balance on the urban development level, on the relationship between tradition and living environment, a kind of "urban naturalness".

If the new technologies disturbers the inherit urbanism, their implications on the landscape are, in fact, a feed-back reaction, an answer which society offers through the city to the overwhelming

movement of increasingly technologisation of the informational era. The emerged paradoxes are the manifestation of the way in which this answer is perceived on two levels – physical and informational, being more than a reaction of adapting to the new technological reality. It is about a superposition of two different realities – as language, logical structure and purpose, and bringing these in the same context, despite their antithesis. Difference doesn't mean opposition, but complexity and complementarity. Hence results the need of interference and diversity which society requires to the new urban space, and the need of transforming the landscape so that it reflects the complexity of the contemporary world. The individual denies standardization and even if, apparently, information leads to uniformity, the city receives new functions, despite the tendency of territorial de-localisation; the public space becomes the attribute of urban coherence, in the same time with the process of virtualization and with the development of the online space of the internet.

The Landscape is still unexplored and offers future challenges because it is an image of a world dominated by the accelerated rhythm of change, of technologization, so this research investigates how the Landscape undergoes a continuous process in between scales of intervention and structures expresses the desire of the society for shaping the urban environment according to its new ways of life. Landscape is no longer a monotonous factor: we are not partakers of a rehearsal of a model, but rather different models of "nature" and the scope of this research to read different approaches of the Landscape use which is as product of a new system of recycling unused/used territories. It is an open paper and continuous another paper of the authors - "Vernacular and Technology. InBetween" (2016).

**Keywords:** model, interference, nature, recycle, green.

## 1 INTRODUCTION / ARGUMENT

The proposed subject follows the complex understanding of the contemporary landscape from the point of view of technological development – from the architectural object's scale, to the territorial scale. We are constantly affected by the transformations resulted from the implementation of new and various technologies which influence varied aspects of life.

Technology – an instrument designed to ensure humans' survival, becomes a factor which shapes the lifestyle, the social structures, mentalities and generates landscapes.

Due to the communication, mobility and the speed of information transmission, the perception of space is no longer connected to time. Switching from local to global happens instantly, and the speed of crossing the physical space compresses the phenomenon. Architectural details and the macro-landscape become elements to be perceived almost simultaneously. Jumping between scales is a fact of everyday life – from the individual space scale to the global scale – mega structures, macro-landscapes, virtual spaces.

### 1.1 Definitions – technology, landscape, contemporary landscape

Identified as a neologism, the term "technology" is defined as 1. The study of methods and means used in various industries; 2. set of procedures, techniques, etc. belonging to an art, science, craft.[1]

As underlined in the first article dedicated to this research [2], the first technologies developed were directly dependent on the landscape's existing resources and represent the human ability to adapt in the effort of survival and integration within nature. Metal processing technologies (for weapons, tools, and constructive elements), building technologies, transport and agricultural technologies have evolved over time, from the condition of survival to the domination of nature by transforming it. Mankind has experienced throughout history three major technological revolutions that have significant implications on human life – the Agricultural Revolution, the Industrial Revolution and the Information and Communication Technology Revolution.



The Landscape is the background of society's existence, being a witness of its history and its evolution [3]. The agrarian and industrial societies gave rise to specific landscapes, seen as a synthesis not only of the social or economic nature of their inhabitants, but also of their historical and cultural foundations.

Urban development from the second half in the 20th century and the current globalization characteristics raise important issues on today's society new landscapes. The urban sprawl, the mobility growth, the information and communication technologies produce specific landscapes.

## **1.2 Short discussion about the paper and the present research trends. Open paper – the second article of the authors**

This paper's background is represented by the individual researches of the authors - technologize landscape (Enache) and cultural landscape and heritage (Härmănescu) and the common approach started with the paper for ECOSMART - Environment at Crossroads: Smart Approaches for a Sustainable Development International Conferences, "Vernacular and Technology. inBetween". That paper aims to highlight the concept of "vernacular" and "technology" and underline how their relation can be reinterpreted in a sustainable and resilient vision, in a way that responds to the continuous changes of the landscape [4].

Highlighting that has been already identified the importance of knowledge transfer using information technologies on the fundamental values of landscape in the previous research, this paper continues the discourse on contemporary landscape and its technological challenges: "Smart landscape brings a sustainable answer to anthropogenic demands. The way that nature and human interventions interact has experienced various hypostases throughout history. The actual context requires solutions which integrate into a sustainable and resilient approach, but at the same time belonging to the 21st century." So, the questions under discussion in this paper are how do we integrate technologies into the landscape and how do we distinguish between time and design.

## **2 TECHNOLOGIES, ARCHITECTURES AND LANDSCAPES**

### **2.1 THE TECHNOLOGY AND ITS INFLUENCES ON THE ARCHITECTURE – FORM, FUNCTION, SCALE**

The technology development throughout history has directly or indirectly influenced the structure of society's life framework - whether it is about buildings, settlements or landscape. The technologies of construction, transportation, material processing have had different implications and have determined the specific images of different periods throughout history.

The first technological revolution dates back to the Neolithic Age – Agriculture – and has led to the formation of agricultural settlements. Due to agriculture, two new items appear: the city as new type of settlement and the citadel as a fortification; a double revolution occurs – a technological revolution and an urban revolution.

Technology evolves further – both in metalwork (the Metallurgical Revolution – the Bronze and the Iron Age) and in the constructive performance level – monumental ensembles appear as an expression of power – palaces, town halls, monasteries, necropolis (the pyramids).

During ancient times, infrastructure was also developed – roads, bridges, aqueducts, water supply systems (Aqua Appia – 312 B.C. – the first Roman aqueduct which supplied Rome with spring water from the Sabine Hills), public lighting in cities in Asia Minor. The invention of concrete leads to impressive architectural achievements – overlaid orders on several registers, construction of vaults, the urban "insulae" (collective housing with 3-7 levels) – authentic and innovative urban landscapes.

The occurrence of typical medieval images of monumental stone buildings – cathedrals, town halls, bridges – is the consequence of developing technologies in engineering and architecture.

The 17th and 18th centuries provide the centralized water supply with pumps and public lighting with lamps and mirrors. Due to the public transport with omnibuses, the circulations inside big cities are restructured, by drawing large urban axes.

The Industrial Revolution has unquestionably had the greatest influence on the configuration of cities and, thus, on the urban image, in the form which we inherit today, representing the second urban revolution. Discoveries like the steam engine, railways, electricity, electrical telegraph, telephone, gas and diesel motors, advances in metallurgy, steel structures, reinforced concrete, electric elevator – all had strong influences in the evolution of cities and in structuring the urban organism.

The industrial period has not only determined the development of the cities, but intervened on the natural landscape. If until then the reduced mobility required only earth roads, integrated into the landscape, connecting the settlements, developing the transport industry has brought new elements – often powerful images – adding new identities, transforming nature. The railways, the steel structures of the bridges, the highways – are different items of developing technologies of land transportation. In the same period we can find industrial centers developed in natural landscapes, related to exploitation areas (stone pits, mining sites, coal, natural gas, hydropower plants) or to rivers which could facilitate the transport of materials or machinery – brutal silhouettes, often polluting the surroundings.

Developing new technologies implies a completely different typology of landscape approach. The necessary infrastructure and the equipments had greatly reduced dimensions; these can be framed within an architecture that can build a more friendly relation with the environment. Space perception is affected by the growing speed, requiring powerful nodes, new local identities. The urban object acquires a greater importance in this new landscape – public spaces, iconic architectural object, urban art item. The evolution of information and communication technology overlaps the context generated by a standardized and rationalized society, generating a different vision due to the increase of access to information – which affects and modifies the perception scales (caused by mobility and communication which ignores the physical space).

The theoreticians of post-industrial culture - including Jean Baudrillard, Christine Boyer, Paul Virilio, wonder about the transformation and dematerialisation of the physical world through electronic media, raising questions about the possibility of replacing natural place experience with the virtual paradigm.[5]

## **2.2 ARCHITECTURE, URBAN DEVELOPMENT AND TERRITORY– FROM MICRO TO MACRO LANDSCAPE**

Throughout time, human intervention expands as technology becomes increasingly prominent from the object to the context; technology discourses shift and implicitly embrace the landscape. 'Architecture goes landscape' [6] is the primary relation, but landscape is extended also to the urban / city / territory scale and reinterprets all the processes.

These technologies over the territory highlight the "anthropic particularities of the action dictated by the possibilities of practical action on the natural element and its needs" [7] and their knowledge means the selection criteria and tempo-spatial distribution of landscape characteristics. Impact on planning is done at regional scale, domestic [8] analysis thus providing directions and perspectives in shaping the landscape by choosing scale analysis, reading the various dynamics and identifying changes made by human activity through an assessment that takes into account the macro-scale, mezzo-scale and micro-scale.

Regardless of the scale, the reorganization of landscape analysis is based on two levels: morphology of the territory and technological processes that occur on morphology; differentiation is done through specific interventions and genius-loci.

Transformation of micro and mezzo –landscapes involves geographical configurations and interaction between society and culture is focused on the community [9], local materials [10]; therefore, technology can be identified as technologized design that will be detailed in the paper's next chapter.

Transforming the landscape to macro scale is directly related to spatial planning, with all its characteristics, and clarifies the various approaches and positions of its characteristics in relation to the vast Landscape issues in the Territory [11]; industrialization is correlated with infrastructure (mobility and communication).

## 2.3 TECHNOLOGIZED DESIGN – TENDENCIES AND INFLUENCES IN THE LANDSCAPE

The Information Technology determines defining new structures of architectural and urban projects, according to the mode of controlling and administrating the territory. There are several approaches of urban design which discuss the relation with the territory [12]:

- The relational or parametric paradigm (ex – Zaha Hadid's urban projects – One North masterplan, Singapore, Zorrozaurre Masterplan, Bilbao)

A parametric model can be understood as a digital simulation of a project constructed with the use of computers as sets of geometry and relationships which have driving parameters and a singular or set of driven associations [13].

One North Masterplan (Zaha Hadid's project) illustrates this model on an urban level, and operates with parameters such as density, activities, network, taking into account technical and financial data. The project defines the parameters which should be optimized, the parameters which should be minimized (density, free spaces), aiming to achieve a strong morphological identity. The project emphasizes the connection of the site with the existing infrastructure and its continuation into an internal network, whose configuration is specific for Zaha Hadid's aesthetics.

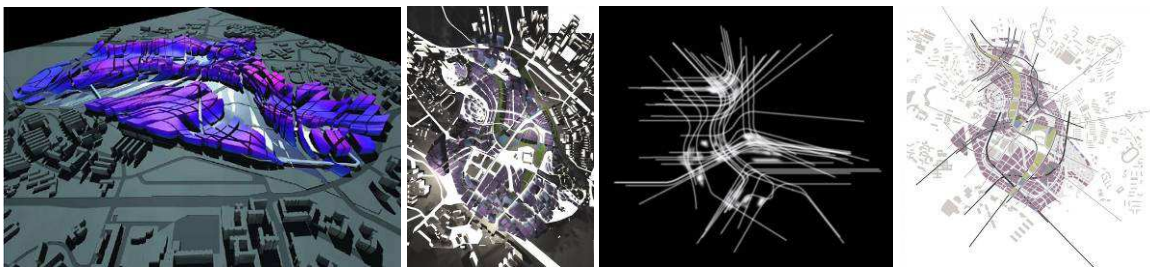


Figure 1. Zaha Hadid, One north Masterplan, Singapore [14]

- The genetic paradigm

This model develops genetic algorithms as a design support for architectural and urban projects, going back to the principles of evolution and Darwin's theory of natural selection in the 19th century [15].

Kaisersrot, a software tool designed by Kees Christiansen and the Chair of Professor Hovestadt, optimizes the architectural and urban criteria, starting from the physical context and its items (site, roads, infrastructure)[16].

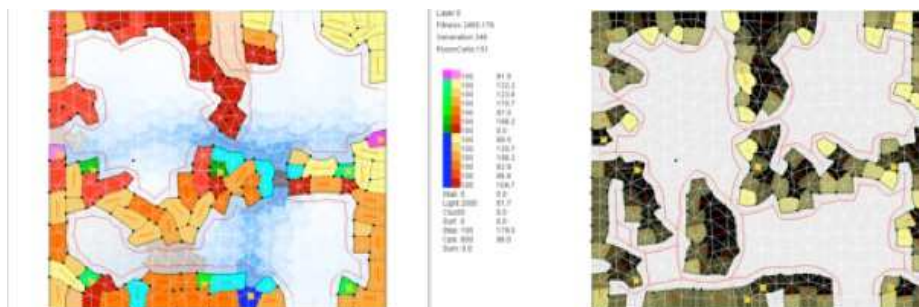


Figure 2. Urban Picturesque project, 2008, Kaisersroot [17]

Space Fighter<sup>ii</sup> [18] is a project that wants to shape in an interactive mode the complexity of urban developments, comparing the processes, actions and responses of the urban organism. The process

is a “perpetuum mobile” of creating spaces – continuous, asymmetric, unstable temporality. By connecting the biological model with the urban reality, Space Fighter shows the evolution of public space, the fight for survival through adaptation, innovation, transformation. The project is a virtual simulation – an evolving, Darwinist attitude; similar to the biological organism, as the urban space accumulates features which contribute to mutations and selections, providing an increase of its resistance and complexity. As a response to uncertainty, the system must constantly improve its capacity to adapt – demonstrating how different environments perceive, influence and change each other.

The computerized design caused not only the change of the process (of design), but also the issues related to the morphology and aesthetics. Geometrization, parameterization, modulation, imitation of natural patterns determined different emblematic, iconic configurations. New architectures and urban spaces build new landscapes – the urban landscape is reshaped, while the natural landscape acquires anthropological valences, born from its own features (resources, growing models, etc).

### 3 CONTEMPORARY LANDSCAPES

With the urban explosion in the last period, new types of landscapes appeared – related to emerging technologies (informational, communicational, connected to mobility) and to the needs amplified by these – great communication infrastructures, intermodal nodes, intermediary landscapes, media landscapes. The concept of landscape becomes ambiguous, complicated by the overlap of different structures, images and various features, often opposed as typology (urban / rural, natural / anthropogenic, etc). The complexity derives from the spatial and morphological structuring of a succession of landscapes, specific to the relation between man and nature and to the different modes of dwelling the space. The resulted landscape is characterized by multiplicity, variety and structural and spatial discontinuity.

#### 3.1 MOBILITY AND COMMUNICATION – TRANSFORMING THE LANDSCAPE

The urban sprawl in the territory, specific to the second half of the 20<sup>th</sup> century, increased mobility and globalization features and has produced new landscapes. These are the results of the territorial model drawn by the new mobility and communication flows – which includes new items such as communication nodes, highways, gas stations, multiplexes, airports. The mobility is now the main feature of land occupation, generating specific landscapes.

In urban areas, the urban form changes to a polycentric or multicentric form, which functions as a whole [19] strongly structured by major traffic networks. The nodal transport connections between networks, connecting roads and sub-centers, areas of high significance – streets, squares, public spaces, landmark buildings, complex services and social infrastructure – train stations, stadiums, auditoriums, shopping centers, airports – are the key element in the urban development strategies.

The new urban structure is a networks structure, in which the urban form plays a very important role in establishing its nodes.[20]

The nature and the size of the cities are in a continuous process of change, facilitated by the technological innovations which allow them to communicate, to interact through the global infrastructure (submarines optic fibers and satellites). New theories and projects are designed to anticipate the permanent change of the relationship between space and time.

#### 3.2 LANDSCAPE URBANISM – THE URBANIZED NATURE. TECHNOLOGIZING GENIUS LOCI

“The crisis of the dimension concept appears (...) as a shift from a space substantially homogeneous inherited from archaic Greek geometry to an accidental space, where heterogeneous parties, fractions are again essentially-of, defending atomization, a disintegrating figures, visible parts that fosters all transmigration, all transfigurations, the space which the urban topography urban never ceases to obey, like landscapes and soil in front to the agricultural mechanization. Actually transparency recently replaces appearances classical, depth of perspective field has been renewed since the early twentieth century through time depth advanced techniques .” [21]

As architecture is the first engine of the landscape, the landscape becomes the first engine for the urban development and the territory, as it was mentioned in the introduction, highlighting the evolution process of the landscape, and besides sustainability and ecology there are also social, economic and / or political problems.

Currently, the landscape reflects new directions resulting from the correlation of various different disciplines (ecology, architecture, urbanism, culture, etc.) with increasingly blurred relationships. Thus, unidirectional solving / design no longer exists; the landscape is integrating cross-disciplinary approaches.[22]. "The meta-concept of 'everything is design' is embodied in the recent proliferation of 'design lab' that places conventional design fields, such as architecture and industrial design, into direct conversation with non-design fields, such a business, computer science, engineering and cartography. These environments represent an opportunity for the landscape to transcend territorialism by injecting narrow, prevailing conceptions of design as technology/product/market-oriented with broader social and environment agendas".

#### 4 CONCLUSIONS. OPEN RESEARCH DIRECTIONS

The paper discusses the relation between technology and landscape in a global approach, from the perspective of major changes caused by the last technological revolutions – the industrial revolution and the informational revolution – which change – the first one, in an invasive and intensive mode, especially the physical living environment, and the second one, in a persuasive and complex manner - perceptions, mentalities, connections.

Since technology can cover any type of design, it is starting to be more valuable to design decisions and far surpasses its initial purpose of being a tool; it should be manage responsible the landscape resource for the community because the existence of landscape is created by the processes that configure the place we inhabit, the nature of our living. To combine the landscape with technology is creative and innovative but should be also a living balance.\_

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<sup>i</sup> *One North Masterplan* – project designed by Zaha Hadid for Jurong Town Hall Corporation, Singapore (2001), in order to develop a 200 ha area which will attract a number of 150 000 residents and employees for a 30 years period

<sup>ii</sup> *Space Fighter* is a project initiated in 2005 by Winny Maas (MVRDV) with DSD (Delft School of Design), Berlage Institute Rotterdam, cTrough – Eindhoven and MIT, Department of Architecture – Cambridge



## PARKING LOTS: THAT FORGOTTEN URBAN SPACE

**Marta Rabazo Martín**

*PhD candidate Università Degli Studi Roma Tre (ITALY)*

*rabazomarta@gmail.com*

### **Abstract**

Parking lots are urban spaces of modernity. Born in the early twentieth century with the standardization of the car, they have intervened decisively in the architecture of the contemporary city. They have extensively contributed to redesign the historical city, becoming one of the most important components of urban living. But they are valued largely for their technical character, part of the infrastructure that allows the urban machine to work, neglecting its landscape potential.

The car has become such a huge part of our civilization that it is hard to find any streets that do not contain them. One of the requirements for living with a certain quality of life is being able to park your car just below your house. As a result, streets have currently been adapted to meet this need. But while the streets are being adjusted to meet the needs of different local identities, we should question ourselves, "Why have parking lots always looked the same? Why can't they reflect our local identity?" Especially when cars stay parked approximately 90% of their life.

In addition, the fact that parking lots fulfill their function producing significant profits, even without the support of design or the attention necessary to make of them a quality public spaces is a double-edged sword. It is difficult to invest in their aesthetics when their performance is so high. However, in the American context, parking lots are probably one of the outdoor public spaces most used in everyday life. They can be utilitarian and practical. They are not exceptional and even unpleasant, but their magnitude and ever increasing presence deserve our attention.

If we don't want to revisit its importance as a public space in our cities, we should at the least consider their importance within an ecological and sustainable framework where the proper use of its materials can help reduce impervious surfaces, fight heat islands, and contribute to the control of water runoff and effective groundwater recharge. Planting and vegetation in parking lots are there as a means to hide the lot, to mitigate its edges or to shade the cars. But we should not forget that when people are at a place that is looked after, they will also feel looked after.

Maybe due to their humble nature, often vague and a result of left over space parking lots have been looked over in landscape architecture and public space studies as opposed to other more "obvious" infrastructures. But parking lots are public spaces in their use by the community and their great impact on land use.

The fact that they are very lucrative spaces cannot discriminate them from having a good design or becoming aesthetically attractive spaces that enrich our cities. If traditionally their use was limited to parking cars, in the contemporary city, more and more parking lots are presented to us as hybrids. These are flexible and multifunctional spaces, even for spontaneous appropriations, spaces that can positively contribute to urban ecology and as relievers of the increasing presence of cars in our cities. These forgotten spaces deserve not only our economic investment but our attention as designers of our urban environment.

**Keywords:** parking lots, infrastructures, urban ecology, new urban ways of life, towns and mobility, lost space.



Figure 1. Parking Lots' aerial views by Alex MacLean. The pictures show how parking lots are not integrated with surroundings creating a discontinuity and how there are no efforts or investments on their design

## PARKING LOTS AS PART OF THE GATEWAY EXPERIENCE

Due to the standardization of the car, our cities and streets have been modified and modeled following the necessities of traffic and parking demand. Nowadays we take for granted the possibility to park close to our homes, to go by car (and park) in the shopping center where we do groceries or in the school we take our children. But those parking spaces are not seen as the arrival point to an architecture or landscape project but are seen only as technical areas. We can appreciate the architecture of a museum but there are few instances when we consider the parking lot as part of it. Diana Balmori, founder of Balmori Associates and based in New York, was correct when she stated that "A Parking lot seems an unlikely place to begin the design of a new building and landscape" [2] but she managed to make it the main public space of the Botanical Research Institute of Texas.

From the moment you park the car in the area of the Institute, the botanical experience begins, and it is the botanic to leads you towards the building and its surroundings. The parking spaces that the project required, were split into smaller rows with strips of rain gardens (highly permeable spaces where collecting rainwater to promote their percolation) between them for infiltration and rainwater purification. A large sample of plant species that are under investigation, run along the paths leading from the parking lot to the building and a collection of native oaks shade and characterize this space. Where ever possible, porous pavements was used and roads were designed to follow the contour lines. The parking does its job, but the goal was not to generate the most efficient parking the world, it was to create a sustainable and pleasant space.

A similar attitude guided the design for the Dia Art Foundation by Robert Irwin and OpenOffice in Beacon, New York. Here the entire complex, including the parking lot, was designed as part of a circulation sequence to approach the building that benefited from the existing rising natural topography. Allowing for a glimpse of the building set behind a geometrical grove of canopied trees. The central parking allée is perfectly lined with the museum entrance allowing for clear visual connection. After leaving the slightly shaded parking, you are led to an open grassy space flanked on both sides by evergreens. The parking lot was conceived by the authors as the lobby of the museum where we can admire the time passing by and the changing seasons, while reducing the size of interior lobby to a small room.

The standardization of the car has also highly contributed to the disperse city. Future archaeologists will look at our cities and wonder what the purpose of all those vast paved spaces surrounding our commercial and business centers? Aerial photographs reveal parking as the predominant land use along with roads and streets. However, despite their main role in today's societies, and despite being

the element that people experience more often in their daily lives, despite their large visual impact and use of land (looking the streets of our neighborhood should be enough to realize), we pay little attention and creativity to its design, planning and innovation. They are often seen by citizens as "ugly" and "a waste". It was Lewis Mumford that predicted the problem as early as 1981: "The right to have access to every building in the city by private motorcar, in an age when every- one possesses such a vehicle, is actually the right to destroy the city." [16]



Figure 2. Botanical Research institute of Texas by Balmori Associates and DIA art foundation by Robert Irwin and OpenOffice

In 1991, renowned landscape architect Peter Walker proclaimed: "the day will come when parking lots routinely win top design honors" but this prediction has not yet materialized. Few parking projects have ever won a prize. There are only a few books that help us with their design as most publications are about standards and regulations. For example, since 1990, only one parking lot design has won an award from the American Society of Landscape Architects: the project "12000 factory workers meet ecology in the parking lot" from Michael Van Valkenburgh Associates (MVVA), incorporates innovative storm water and hydrological techniques, showing that not only the number of parking spaces matter in these spaces [5]

Instead of establishing an approach to the parking lot as a place of opportunity to integrate activities, regulations tend to care more about how to hide these spaces to the city. In his book *Finding Lost Space: Theories of Urban Design*, Roger Trancik defines parking lots as "those undesirable urban areas that are in need of a redesign –antispaces, making no positive contribution to the surrounding or users...on the other hand, they offer tremendous opportunities to the designer for urban redevelopment and creative infill and for rediscovering the many hidden resources in our cities" [20] Parking lots can be considered urban lost space at the same time they are an essential part of our urban environment.

## THE PARKING LOT AS A MULTIFUNCTIONAL PUBLIC SPACE

In America, the original use of the word "parking" refers to parks (excluding vehicles). In 1888, Frederick Law Olmsted introduced the concept of a "parking system" to describe the broad streets of Washington DC, and referred specifically to the vegetated tree-lined strip along sidewalks; no reference to parking for vehicles. "Parking" to store vehicles comes through the military usage of the word and refers to the space set aside for artillery wagons in a military encampment [5]

Its spatial characteristics and its (so far) simple morphology as a paved extension aiming to have the maximum space to park cars, make parking lots highly versatile. Because these are governed by clearly defined schedules (working hours for residential and office use, weekdays for business, etc.) an alternative look at their use, is almost an immediate parameter to be dealt with. Based on this superposition of uses and users, forms and function, Büro Kiefer designed a parking lot in Flämingstrasse (Berlin) with a small number of structural elements and a strong graphic character that gave a clear identity to a new residential building. The position of the building defines two



separate areas, one dedicated to a convectional garden design in the south side and a playground and car park on the north side. Different alternate uses are permitted here.

A more complex morphology was adopted by a parking lot of a residential block design by Sanfeliu/Martorell/Lamich architects in the Verneda's neighborhood, on the east side of Barcelona; a neighborhood consolidated in the 70's with an architecture that was unable to create an interesting urban landscape. Typically, the courtyards inside the blocks of Barcelona's Cerdà's *Ensanche* are left as simple spontaneous off-street parking lots isolated from urban life. In this case, this courtyard turns into a very dynamic space, an urban plaza that undulates to cover vehicles alternating between paved and vegetated areas.

The intervention deals with integrating vegetation, parking, access to private underground parking and outdoor spaces for dining into a multi-functional area used by all its neighbors. Formally, the design is generated through a series of parallel strips of different paved sections that create a new artificial moving topography. These strips organize the project and give character to the different activities on site. The parking lot with stalls for cars proposed will vary the strips and configuration of these bands in size, depending on the amount of cars it is parking. A perimeter path accesses these stalls and the private parking, and a pedestrian north-south axis connects the interior of the courtyard with the outside.

The strips fold, undulate and group themselves to create all of these different areas both horizontally and vertically, visually hiding the cars parked in the perimeter from the central pedestrian alley and creating some small steps.

Even the materials that were chosen reflect the characterization of the different functions: a colored precast concrete that requires a fast and easy application is used in the pedestrian areas in order to create the artificial topography, in contrast, cement tiles similar to those already existing in the area are used in the perimeter path for vehicles. The parking stalls have yet another material made of cement tinted with iron sulphate over a base of sand.

This application is repeated throughout the whole site even when transitioning to the external sidewalk inviting pedestrians to enter this space. There is no need to say how many ways the children in the neighborhood have found uses for these concrete waves and how joyfully they use this public space.

Finally, we should talk about probably the most published parking lot project in the last year, Kaiak Market from Topotek 1, an example of alternating uses where the main square of Kopenick reinvents the traditional market, rhythmically following the typical division of parking lot stalls. Its powerful color and huge umbrella indicating the activity in use at each moment, manage to create a public space of huge dynamism and identity.



Figure 3. Parking Lot at Flämingstrasse by Büro Kiefer, Verneda's Parking Lot by Sanfeliu/Martorell/Lamich architects and Kaiak Market by Topotek 1

## PARKING LOTS' LANDSCAPE

Since the 80's officials had relied on the manual published by the Institute of Transportation Engineers (ITE): Trip Generation and Parking Generation, to calculate the quantities required in each example of urban development. But as it often happens with the standards and codes created by engineers, planners and politicians take this data as 100% reliable. Recent studies show that the parking for residential and commercial areas are oversized, because the codes advise 3-5 places for each 90m<sup>2</sup>. A study made in an office building in Southern California noted that while codes advised for 3.8 spots per 90 m<sup>2</sup>, actually only 2.1 places for the same surface were used in the peak traffic moments (they were oversized to almost twice of what needed). Another study in a commercial district of Iowa reveals that at the peak traffic time during the Christmas season, only 74% of the spots were occupied.

Donald Shoup is one of the authors who has studied these phenomena most. In his article "Truth in Transportation Planning", he argues that engineers often use precise numbers to reflect uncertain approximations. After carefully studying the variables used to calculate the parking needed, he states that "it will be difficult to find two variables that have less relationship than built surface and parking needed" [18]

While there have been significant efforts to regulate the number of parking places required for each situation, there has been little or no attention paid on how to design them. An example of this paradigm is the city of Cambridge, Massachusetts who has very sophisticated parking regulations, including 30 pages on how to calculate the necessary spaces according to uses. Yet, nothing in their regulations say anything about the aesthetics that these car parks should follow. Moreover, it considers the parking as an unsightly element in the urban fabric that needs to be mitigated. Instead of establishing an approach to the parking lot as a place of opportunity to integrate activities, regulations tend to care more about how to hide these spaces in the city (isolating them even more).

Vegetation can contribute very actively in reshaping these spaces. In the Project for Biosphere Plazt, Büro Kiefer uses the confrontation between the historical models of open spaces (the tradition of formal gardens so important to a sense of identity) and new uses of the contemporary city (such the use of the car). Just by changing the scale and introducing a vegetated component as a construction element, he creates a sophisticated car park where shrubs are a maze of parking spots imitating the nearby Prussian gardens.

The scheme for the parterre in the historical garden becomes the inspiration for the design, through a series of bushes just over 1.5 meters demarcating the parking spots, pausing briefly and reappearing, reminiscent of a labyrinth (element of the classic imaginary). Parking spaces have a subtle change in paving, alternating between dark gravel areas in the stalls that ensure permeability and brick bands. Between the stalls are shrubs, and when those disappear the lines are continued with an uninterrupted Cor-ten steel embossed band, marking a cadence and operating to limit speed. A metal plate always marks the change of materials. Similar color shades in all the materials used gives the project a certain abstraction, enhancing the texture variation within the materials.

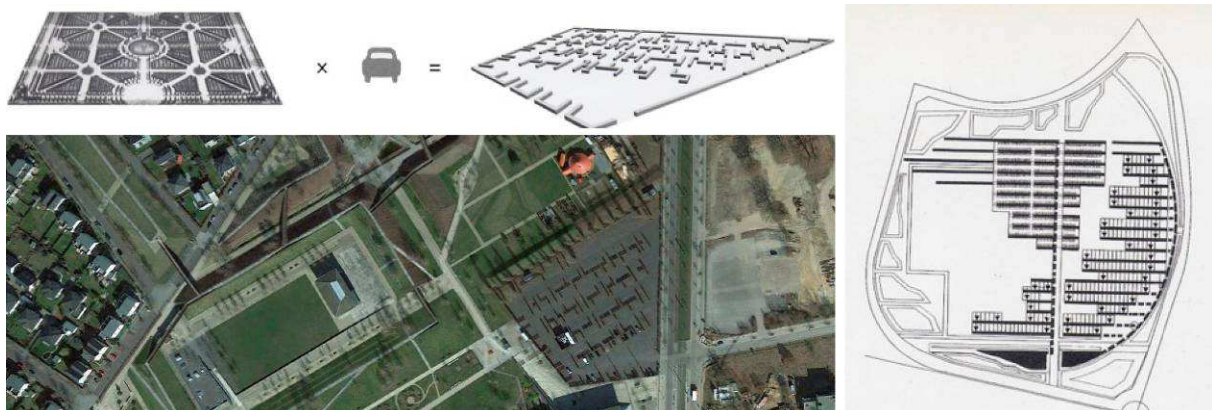


Figure 4. Parking Lot at Biosphere Plazt by Büro Kiefer and Thomson Factory in Guyancourt by Desvigne and Dalnoky

But perhaps the clearest example of the interaction between nature and parking areas is the project for the Thomson Factory in Guyancourt, designed by Desvigne and Dalnoky where the concept of planting within the car park is associated with the creation of a system of parks: a micro-landscape that connects to the urban scale landscape. In this example, they not only carefully studied the planting but its development over time and the evolution of the overall system, treating the project as if it were a garden.

## PARKING AND SUSTAINABILITY

There are a few environmental costs that large asphalt surfaces produce that mainly have related to soil, vegetation and water. Several studies support the importance of using permeable materials in order to reduce water runoff and to allow water to percolate recharging aquifers. The runoff in a paved parking area is 16 times higher than in a similar planted area. In a wooded area 10% of rainwater runs off, 25% infiltrates to aquifers, another 25% ends up in waterways and 40% evaporates; an urban environment with 75-100% of impermeable surfaces produces more than 55% runoff. And not only that, but the heat accumulated in the impermeable materials heats rainwater decreasing oxygen levels. The pollution in the surface of the parking areas such oil and metals are dragged into aquifers, contaminating them. At the very same time, this water that is not collected will not reach the aquifers and cannot be reused. These surfaces produce no additional expenditure of drinking water. It is estimated that cities like Atlanta annually "lost" water for households for the equivalent of 1.5 million people annually [4]

A common practice in car parks and large paved surface areas in general is to evacuate the rainwater as quickly as possible through the drainage system, pouring that water into a nearby stream. What seems the logical use of these facilities results, however, that when the rains are very strong there is a huge amount of water pouring from these canals, quickly eroding the stream bed, dragging the vegetation and existing debris of its banks, and leaving a wide rocky water course. It seems much more logical to imagine an on-site water detention system that can encourage a progressive evacuation of the water, avoiding water runoff and promoting a constant influx of water into aquifers. These retention ponds must be accompanied by appropriate vegetation (*as a rain gardens are*) as not to appear as mere empty sockets when there is no water.

Parking areas also highly contribute to the heat island effect which happens in asphalt surfaces that do not consider any vegetation, making these surfaces 20 to 40 warmer than a vegetated one. Asphalt accumulates heat all day and dissipates it during the night hours creating constant heat islands which could be reduced by a simple addition of small planted areas. These areas not only could provide a place of shade, but they could also become a moment of pause in the vastness of asphalt; they can act as a sort of oasis.

All these considerations are beginning to be considered by the few designers who have worked in the field of parking lots. The Botanical Research Institute of Texas is a clear example of these new techniques of water collection and an intelligent reuse of rainwater.

The site cannot be considered as an isolated element but as part of the same watershed, which literally means that the water flows in one direction according also to its surroundings. All efforts to counteract this process alone can result in a lot of effort and money, often without results. We should also consider landscape on a larger scale, almost aerial view, to see the surroundings and discover the implications of this large-scale in how it links to the project site. Everything we do on this site relates to its surroundings and vice versa.

From this large-scale, BRIT is part of the ecological corridor of the Trinity River. The continuity of the landscape is critical to the health of the larger systems in which they are located, and the project for BRIT should be noted from this point of view [2]

At first, the large space required for 358 parking spots presents an important problem from an economical point of view. If we consider the parking area together with the building roofs as part of an active system of collecting rainwater and a research field, it becomes an ecological operating system; it is no longer a problem to solve, but an element to delight visitors from the moment they



park their cars. The water collected from rooftops can be accumulated in a tank and be reused for watering during dry seasons.

The materials also follow these hydrological continuity lines. The stalls for the cars are paved with porous asphalt to facilitate the percolation of water and have no separation with the vegetated areas. There are only small barriers to prevent the machines to invade the rain gardens. The lanes use impervious materials, but they always pour water to the pervious stalls or directly into the park.

Pedestrian paths work the same way. A group of 5 paths wave and intersect and create between them a research field. To clearly mark these different paths, they have different materials and are limited by a thin Cor-ten steel curb, which marks the limits without creating barriers, perfectly aligning with the stone so the water can still get to the planted areas.

We can distinguish four clearly different planted areas in this intervention: the open area behind the buildings is consolidated for the Fort Worth Prairie, buildings with green walls and green roofs where rainwater is collected, the research fields where there is a display of native grasses, *Asteraceae*, *Poaceae*, *Cyperaceae* and *Rosaceae*, and finally the parking area, where existing trees, new trees and rain gardens make a continuum that articulates the whole site.

Different types of *Quercus* are planted in rain gardens, *Acer* are planted close to the building and the research fields have *Prunus mexicana* which provide a beautiful flower and wonderful aroma.

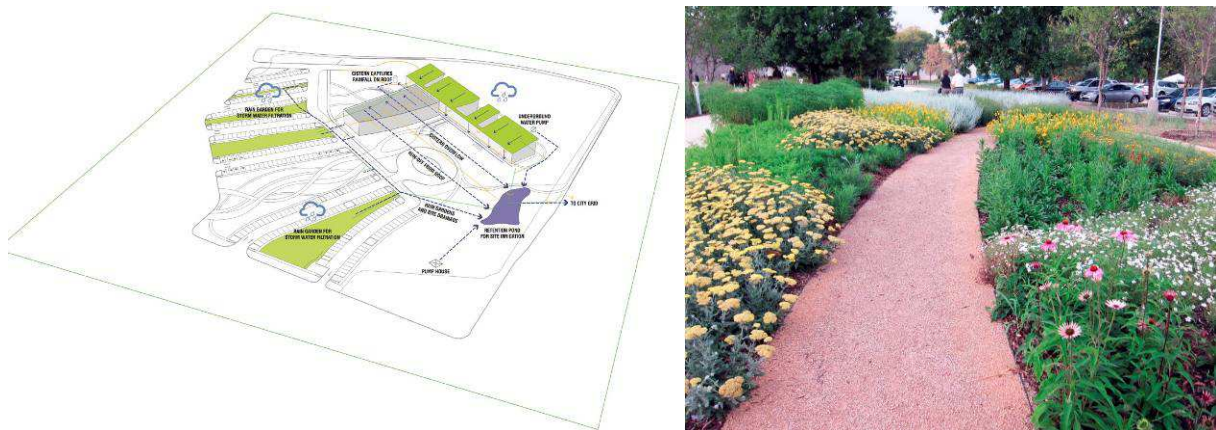


Figure 5. Botanical Research Institute of Texas by Balmori Associates

A similar system has already been used previously by Michael Van Valkenburgh in his project entitled "12000 factory workers meeting ecology in the parking lot". The Herman Miller Furniture Factory for production and assembly is located on a site of 70-acres in rural Georgia, where the client wanted a parking lot for 550 cars and 120 trailers within a total area of 10 hectares. The water runoff from parking surfaces, the necessary roadways, and 330,000 square meters of rooftop would have a devastating impact on the surrounding ecosystem composed by fragile water streams. The first action taken by MVVA was establishing water collection as an essential priority for the project. They then considered its treatment and slow release afterwards into the surrounding landscape in order not to create further violent water intake into the adjacent ecosystem.

MVVA integrates ecology elegantly and honestly with enormous paved surfaces, creating a new model of environmentally friendly, low-maintenance landscape. This model can be applied with equal success in urban and suburban areas, and shows how landscape architects can play a crucial role in producing an effective hydrological management system with good design. You can see why the Herman Miller factory was the only parking lot project since 1990 to win the 2005 ASLA Design Honor Award from the American Society of Landscape Architects.

Initially this humble project did not include any provision for landscaping, the architects in charge have not invited MVVA Office to participate in the design. It was MVVA that showed the stakeholders how to redirect the money allocated for engineers and technicians to model the soil, vegetation, to create an appropriate environmental management and integrated organization of the site. They were able to integrate storm water management for a large industrial development using this as a

key design element of the project. In this scheme, the parking becomes part of a thriving eco-system that neutralizes the effects of water runoff, provides habitat for wildlife, and offers an experience of arrival and departure for the factory employees.

Rather than create ample parking, it was designed as a mosaic of small triangular lots with no curbs, placed in flat terraces planted with marsh vegetation where the water would settle during storms and would be filtered slowly through the soil, recalling rice fields. One concern was that mosquitoes breed in water, but the terraces are designed to retain water for not more than seven days, below the incubation time of a mosquito egg.

In order to eliminate curbs, pipes and manholes, the MVVA team placed the main building on a predominant spot and shaped the whole site with a gradient of 5% to allow the rainwater of the whole lot to get to the pervious areas.

This bioengineering hydrological system forms the basis for the landscape project design. The car park has been redesigned as part of an ecological system rather than as a barrier to ecological processes; sections of wetlands act together with parking strips to purify the water, stop the rainwater runoff, prevent erosion and add and manage wildlife habitat.

Narrow rows of small trees of different species are planted along the edges of the terraces. Over time, these trees will grow and will clearly distinguish the parking areas on the site. This intervention can be defined as a fusion of infrastructure, landscape and program.

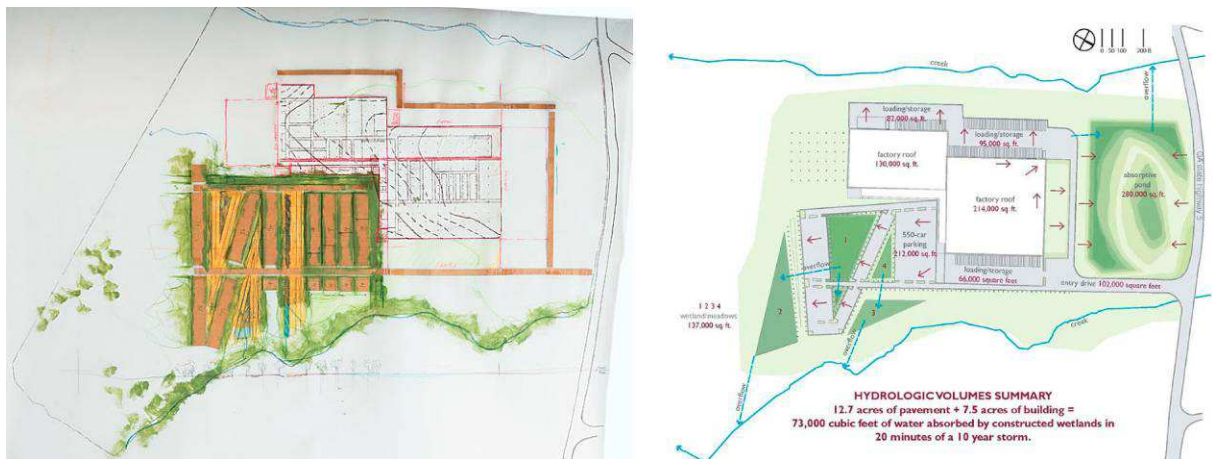


Figure 6. Herman Miller Furniture Factory, “12000 factory workers meeting ecology in the parking lot” by MVVA



Figure 7. Verdon's Beach Parking Lot by Agence Ter



Also Agence Ter links the parking lot on Verdon's Beach (Martigues) to the hydrological and vegetative territorial system. Because it is located where the Verdon Valley meets the Mediterranean at a popular beach site, the area is prone to massive flooding in the rainy season. It was crucial to understand the hydrological functioning of the site, to avoiding flooding, to reorganize the parking area and to propose a system capable of regulating water flows. The water flow is controlled by gently inverted sloped terraces that hold back and slow down the water naturally flowing toward the beach area. A large meadow in the service area works as an occasional retention pond while the whole area is heavily planted to produce shade and give continuity to the wooded slopes of the valley.

## CONCLUSIONS: THREE ACTIONS TO INTEGRATE PARKING LOTS

- Reconsider alternative uses and multifunctional **programs** according to the needs of contemporary cities. We need to abandon the static and already defined traditional open space and look for vibrant programs that can satisfy a large number of users. The spatial characteristic of a parking lot offers a unique opportunity to use them beyond mere car storage. Markets, game and sport areas, cultural and social event gatherings... all these activities can occasionally come together in the parking lot as part of the public realm. The parking areas both with its desired or undesired uses, forms the unplanned space within the urban fabric that fills the physical and mental gaps in our projected environment. Parking lots don't need to be overdesigned but we definitively need to look at them again. Their standardized character needs to be overcome by their innate ability to generate identity and its potential power to transform a space into a place
- Adapt the **materials** used in constructing parking lots to create local identity that can participate in the hydrological and environmental performance of the area. Use pervious materials that allow water percolation and groundwater recharge, which do not accumulate heat and can be easily maintained and keep in good condition as these areas generally depend on public administration.
- Rethink **vegetation** as part of a system, at a zonal level not only to be a punctual intervention, but as a whole system giving continuity to green territorial systems that might be somehow crossing the site. The landscape project can be the element that knits together all the puzzle pieces as stated in the article "La scala intermedia per il progetto di paesaggio italiano" [9]. This scale does not understand extension but links to the territory and its surroundings, whether they are temporal, spatial, environmental or social. Thus, the projects operating within a public space can be constituted as a network to enrich a local project.



Figure 8. Public off street parking lot in Berlin, Stresemannstrasse at Niederkirchnerstrasse, showing how minimal efforts can produce great solutions and give some continuity to the urban vegetation system

It is important not use landscape as a superficial practice to mitigate or embellish these anti spaces, but to understand the landscape as a methodology which allows us to work with and from the contradictions of contemporary territories, assimilating all technical and engineering components and cityscape's figures.

With these three small gestures we can change the role of the car parks in our cities, giving them an importance that relates to the occupied area and the impact they have on our daily lives, transforming standard spaces in places linked to a network of urban public spaces.

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## DIVER-CITY: BUCHAREST, A CITY WITH CITIES

Andrei Eugen Lakatos

*“Ion Mincu” University of Architecture and Urbanism (ROMANIA)*  
*aelakatos@yahoo.com*

### Abstract

Bucharest nowadays faces difficulties in the realm of the built environment as a result of the vast investments in constructions and of the chaotic growth of the post-communist real estate market. The difficulties generated by the new urban interventions come to add to the major dysfunctions that resulted from radical changes suffered by the urban fabric prior to 1990. Such multi-layered effects of interventions and changes led to a contrasting built environment, shaped by the *glamorous* contemporary architecture, the shabbiness of the former communist neighbourhoods and by the mixture of modernist and eclectic architecture.

Still, Bucharest is a picturesque city with a discreet charm that waits to be (re)discovered, and which offers itself, little by little, piece by piece, to the pleasure of the strolling eye. The Bucharest's *big picture* catches something from the essence of a city which was not spared by history, but managed to keep its identity.

Generally speaking, the history is a continuous accumulation of material or immaterial layers, the present could be understood as a (continuous) limit between past and future. In the same way, Bucharest is formed by a multitude of temporal and physical layers, overlaid and juxtaposed, without any order or clear distinction between any historical period or architectural style.

Bucharest is a city of contrasts, discontinuity, and surprises, formed by apparently independent urban fragments, being marked by different historical periods and urban interventions, which left behind a mixture of buildings and styles, pieces of old, traditional and/or modernist tissue, brutally cut by the interventions from the communist period.

Bucharest is at the same time a *hidden* and a *transparent* city, positioned between two worlds: then and now, yesterday and today, old and new, tradition and contemporaneity. Bucharest is a heterogeneous city, highly diverse, maybe even chaotic, but precisely these features give the city its identity and form its distinctive character.

The city of Bucharest can be compared to an *urban palimpsest* formed by disparate fragments, like a *puzzle* which has to be (re)composed. In fact, Bucharest is *a city with cities*, its historical layers being co-present, coexisting side by side, superimposed and interposed. The *Oriental* city, the Garden city, the Modernist city, the Socialist city, they all form the current city, giving it its specificity. Despite the amalgamated image and the diverse built environment, the city still preserves its identity and unity in diversity.

The conceptual reading of the fragments which survived the history can lead to the discovery of the (lost) significations and to a better understanding of the current city, for its future development. The inhabitants of Bucharest should become aware both of the details that form the identity of the city, its distinctive character, and of the specificity of the city that connects people, places, atmospheres, and builds-up the collective (urban) intimacy and conscience.

**Keywords:** cities within a city, layers, scale, contrasts, urban palimpsest, identity.

*“In the old Bucharest, « the city with one hundred cities », so dear the friend Tudor Arghezi, for the sweetness of life and the promiscuities picturesque, the present writer could see in a long, too long half a century, the deployment of epochal transformations, all linked to the restless and implacable times running...” [1]*

*Constantin Beldie, “Memoirs. The kaleidoscope of half a century in Bucharest (1900-1950)”*

Bucharest nowadays faces difficulties in the realm of the built environment as a result of the vast investments in constructions and of the chaotic growth of the post-communist real estate market. The difficulties generated by the new urban interventions are being added up to the major dysfunctions that resulted from the radical changes suffered by the urban fabric prior to 1990. Such multi-layered interventions and changes led to a contrasting built environment, shaped up by the *glamorous* contemporary architecture, the shabbiness of the former communist neighbourhoods and by the mixture of traditional-eclectic-modernist architecture. To speak about the current urban life in Bucharest means to speak simultaneously about context and continuity, communism and disruption, democracy and anarchy.

Bucharest developed assimilating at the same time eastern and western cultural influences, demonstrating its capacity to integrate them naturally, in the midst of its organically growth. The many urban fragments, a result of the stratification of the urban elements from various historical eras, are coherent by themselves, but mixed together in a way which is not very comprehensible; however, all of these layers, having left their own imprint, can still be read in their historical succession [2].

Despite the very diverse and heterogeneous image of the built environment, Bucharest is still a picturesque city with a discreet charm that awaits to be (re)discovered, and which offers itself, little by little, piece by piece, to the pleasure of the strolling eye. The city has multiple facets revealing scattered fragments of (built) history. Contrasts like the ones between a crowded urban centre and quiet peripheries, or between the quarters of the garden city and the grey, socialist areas, are creating a city of discontinuities and surprises built out of buildings, cityscapes, unusual places and unnoticed spots, all together becoming pieces of the city's urban *puzzle*. The *big picture* of Bucharest catches something of the essence of a city which was not spared by history but managed to preserve its identity. Bucharest lays between two worlds, *then* and *now*, yesterday and today, old and new, tradition and innovation.

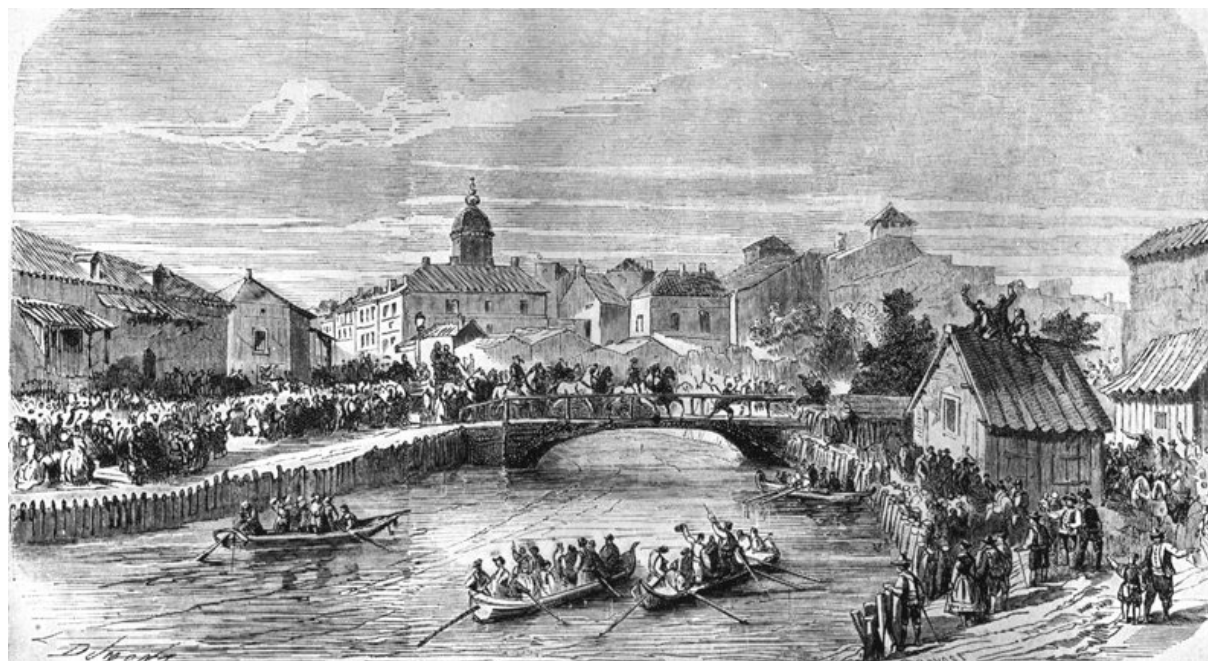


Figure 1. Entering of Carol I in Bucharest; 10 May 1866



## 1 BUCHAREST: A CITY OR A (LARGER) VILLAGE?

The outlines of the city of Bucharest have been growing over the past six centuries, in a place which was inhabited since the prehistoric times, on the banks of the Dâmbovița River. The settlement developed on both riversides: on the left side could be found the original urban core formed out of early wood fortifications and the Princely Court, while on the right side, on the river terraces, were located the monasteries, and their concentrically neighbourhood parishes [3]. The opinions regarding the birth, the formation and the evolution of Bucharest are still divided. Some researchers believe that Bucharest, starting from its beginnings, was conceived to be a city and that it was settled after a formal planning; in the same time, others argue that it is just a village that developed in time and finally became a town.

One of the authors who believed that Bucharest was planned to be a town, was Dana Harhoiu [4] who characterised Bucharest as the city between East and West, between the Oriental, Byzantine Orthodox culture and the Western Latin influence. Harhoiu thought that the ancient city had a hidden (urban) diagram formed by geometric ordinating paths, where the churches and monasteries were seen as nodes or centres; the background for this development were the force lines drawn by the principal access roads and by the natural landmarks, like Dâmbovița River, its cornices, and low hills. According to Dana Harhoiu, the diagrams discovered by her are not only a reflection of the ideal medieval scheme of a city, but they also represent the importance of the symbolic spiritual elements for the religious ancient man. In a profound byzantine orthodox context, the sacred spaces were understood as reference points, their position and influence being thought crucial for the well-being of the people and their everyday life [5].

The churches formed a network of fixed points around which the residential neighbourhoods were developed (in ancient Romanian "*mahala*", from Turkish "*mahalle*"; could be translated as suburb or quarters), seen as the church parish and made up of modest dwellings and their gardens. During the medieval period, besides the (sometimes fortified) churches or monasteries, another reference point was the fortified inn, which also played an important role in the urban morphology articulation, being a physical and functional landmark for the commercial life of the city.

Another author which advocates exactly the opposite thesis is Giuseppe Cinà; in his book, "Bucharest, from village to metropolis. Urban identity and new trends" [6], he argues that Bucharest is the result of a "transition from a large village, or an archipelago of villages, into a metropolis" [7]. In his opinion, the "pre-modern Bucharest possessed a low-density urban fabric that was, to a large extent, discontinuous and semi-rural, in other words, a city-village, lacking the physical structures belonging to those civil and religious powers which organised the urban organism in Western cities" [8]. Cinà states that Bucharest suffered a transition from the original village settlement model to the modern urban one; because of its mission of bridging the Roman West with the Orthodox East, Bucharest, from a simple village, became the capital of Wallachia, the main Orthodox centre of the Eastern Roman World. In his opinion, the existence of Bucharest as a village-city could be explained by the fact that the fortifications were forbidden during the Ottoman rule, therefore the extension of new un-build areas was made without regulatory physical boundaries, and this caused the mixing of high-density areas with rural ones, with no apparent formal or functional principles [9].

However, the truth may lay somewhere in-between these two positions: Bucharest was neither a city with a hidden, mystical urban planning diagram nor just a simple village that coincidentally grew up and finally became a city. Andrei Pănoiu [10] which was a thorough researcher of the historical evolution of the urbanism and architecture of Bucharest, shed an objective light on this controversial subject. In his well-documented opinion, initially, the settlement was a borough born between the meadows of Dâmbovița River, under the lee of some low hills and at the crossroads of many commercial routes. In time, the urban settlement developed around the old medieval core determined by the Princely Court and its surrounding hills, by an important number of inns, monasteries, trade fair areas, and became the well-known Dâmbovița Citadel. Two documents from the period of the Prince Vlad Țepeș, one from 1458 and the other from 1459, are the first documentary evidence of Bucharest, at that time imposed as fortified Princely residence. A French traveller, Pierre Lescalopier, testifies that in the year 1574 the city was surrounded by wooden

fortification systems, which had a double role: defence but also marking the limit between the city and the farming land [11].

In conclusion, putting together all these facts and opinions, one might say that the urban history of Bucharest begins as a flourishing commercial borough, not necessarily a town (at least from a Western urban culture point of view) and for sure not only a simple village. Compared to the citadels from the Western Europe cities, Bucharest may not look much like a town, but analysed in its specific temporal, spatial and cultural context, it may clearly appear that its destiny is that of a settlement with an (at least Eastern) urban vocation.



Figure 2. Image of Bucharest and the Dâmbovița River, by painter Amedeo Preziosi (1868)

## 2 BUCHAREST IN SPACE AND TIME

Generally speaking, history is a continuous accumulation of material or immaterial layers, the present could be understood as a (continuous) limit between past and future. In the same way, Bucharest is formed by a multitude of physical and temporal layers, overlaid and juxtaposed, without an order or a clear distinction between the historical periods or architectural styles.

Bucharest is a place of contrasts, a city which always looked unfinished. The city is marked by various historical periods and urban operations that left behind a blend of constructions and styles, a layering of modernism and eclecticism, mixed with fragments of Byzantine and Ottoman architectural remains, with pieces of old traditional tissue brutally cut off by the communist period (or more recently) interventions.

The city developed step by step, intercalated layers of periods and styles being added successively. One of the first and still present, easy to spot layer is the post-Byzantine one (1700-1850), characterized by modest dwellings that grew up in concentric circles around the traditional churches (*"mahala"*). It was the Phanariot period, "a time in the 18th century, when the Ottoman Empire used to appoint rulers for the Romanian Lands from among the Greek aristocracy of the Phanar district of Istanbul" [12]; defined by a mercantile village, the urban form was like an archipelago, the main coagulation space being the *"maidan"*, a vacant gathering lot, functioning as a public space.



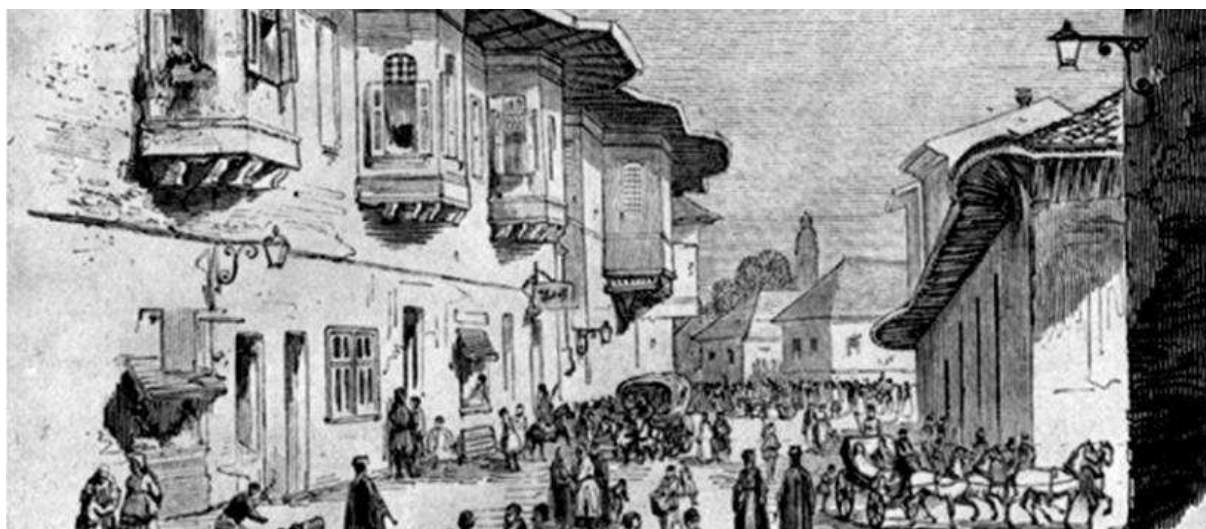


Figure 3. Image of a neighbourhood and its *public space* ("maidan") (Phanariot period)

After approximately one hundred years, a new, fresh layer was added to the historical heritage of the city. During that time, it became almost a rule that young future Romanian architects should be educated at "*École des Beaux-Arts*" in Paris; once returned home, they began to build under the influence of the trend promoted by the French school. This way, a new layer was added, ambitious, impregnated by the European, monumental style, creating a true capital city (1850-1918). That was the period when Bucharest was called *The Little Paris* when great boulevards were opened and the city was equipped with public gardens. At the same time, the imported academically style was rivalled by another trend called the *national* or *Romanian* style, which was regarded both by architects and the general public as representing an authentic Romanian way of living. This architectural movement which rose to prominence at the end of the nineteenth century was meant to embody the national identity [13].



Figure 4. Elisabeta Boulevard (1916)

The period in-between wars and right after the Second World War (1918-1947) was the moment when an important and valuable contribution was brought to the built heritage of Bucharest. After the First World War, changes in the social life and the acceleration of the economic development began influence also the new urban configurations. Heading towards an European modernity, the life of the city began to look increasingly more as a Metropolis, where the culture for both the elite and the masses, was moving outside, into the public space; this way, new social spaces offering attractions and relaxation appeared: gardens and restaurants, parks, cinemas, theatres, libraries, and museums. The Bucharest Master Plan (1934-1935) was reflecting all these changes, anticipating at

the same time the extension of the capital beyond the city limits, into the green north area, for outdoor recreation activities. Despite the desire of architects, town planners, and municipal councillors to create a coherent urban fabric, a coordinated planning remained far from becoming a reality [14].

Although modernism was widely adopted as public architecture, because it was depending on the personal preferences of the architect and also on the placement of the building, this did not bring uniformity to the urban fabric. That is why Bucharest was usually described by the foreign visitors as a place of contrasts. In the opinion of the German reporter-photographer Willy Prager, “who photographed the capital with finesse and attention details” [15] and gathered his photos in an album called “Bucharest, City of Contrast, 1941” (*“Bukarest, Stadt der Gegensatz, 1941”*), the city was “chaotic, like a miniature Metropolis.” [16]



Figure 5. Take Ionescu Boulevard (1939)

The communist period has marked and influenced the evolution of the city, in an (almost) irreversible way that tragically changed its course and destiny. The Socialism and the progressive communism transformed gradually, in several stages, the image of the city. The continuity of the traditional urban tissue was dramatically affected by the urban interventions and transformations.

The first stage (1947-1977) was characterized by the colonization of the already constituted city outskirts, with new districts for the newly formed working class. The population of these neighbourhoods, mainly consisting of people from the rural areas, was brought to work in factories and plants, for the uprising Romanian industry. The new built areas, designed after the modernist urbanism principles of the Athens Charter, were conceived like small autonomous cities which did not necessarily had to have functional and social relations with the other parts of the city.

In the second stage (1977-1989), the major earthquake from 1977 which destroyed many buildings from the city center, was a good reason for the communist regime to implement the totalitarian urban interventions. That was the moment when a large-scale demolition was deployed, affecting a great part of the valuable traditional tissue. The interventions were often arbitrarily located in relation to the natural topography of the site, disrupting the continuity and texture of the urban structure, blocking the streets, transforming the local scale [17]. The destruction of the temporal and spatial continuity was doubled by the destruction of architectural values and together with them of a certain picturesque atmosphere. Large socialist boulevards were opened cutting through areas of low-rise specific urban texture, and creating a scenographic urbanism. The fragments of old tissue that survived the demolitions remained trapped behind the curtain of concrete block of flats boarding



the new boulevards. That was the period when the city structure suffered one of the most brutal interventions: the 4 km long Victory of Socialism Boulevard (*"Bulevardul Victoria Socialismului"*) and the giant House of the Republic. In order to build this totalitarian urban axis, historical values were destroyed and the temporal depth was annihilated.



Figure 6. Ștefan cel Mare Avenue (1960)

Figure 7. Victoria Socialismului Boulevard (1989)

In 1989, when the communist era came to an end, the urban condition of Bucharest became a controversial issue, the meaning of the capital city, and identity being the subject of large debates [18]. In fact, the capital became a battleground for everybody – architects, politicians, businessmen, common people, the stake being not necessarily the welfare of the city and its citizens. In the opinion of Kiril Stanilov, “the collapse of the political system in the Eastern Block countries during the second half of 1989 ushered in a new period, commonly referred to as post-socialism. Similarly to the terms post-industrialism and post-modernism, already quite popular at the time, this expression signified a condition that was defined primarily by the disintegration of the characteristics of the preceding system, rather than by a coherent vision of what should follow.” [19]

The transition period (1989-nowadays) has brought an uncontrolled urban sprawl which generated new dysfunctions in the urban fabric; the urban planning (when existing) kept its incoherency, the new developments being dictated not for urbanistic reasons but (much) more from opportunistic ones. The *old city* seems to *evaporate* under the pressure of contemporary architecture attachment towards objects (production); the *new city*, in its present form of evolution, risks becoming nothing more than a gathering of dispersed individualistic objects.



Figure 8. Bucharest nowadays

### 3 UNITY IN DIVERSITY: CITIES WITHIN A CITY

The history of humanity in its various aspects, including urban history, is like a large *open book* that is being written and rewritten permanently, the present (continuously built) being nothing other than an incessant writing in the great (*urban*) *text*. Every city can be seen as a book (or a chapter in a book), as a base of a text or as a composition of layers and meanings, whose reading is similar to the research in an archive. The city is like an incomplete text, made of layers and successive writings, with multiple opportunities of appropriation.

Very much like a *palimpsest*, understood as a “writing material (as a parchment or tablet) used one or several times after the earlier writing has been erased, or something having usually diverse layers or aspects apparent beneath the surface” [20], the built memory of the city, remains marked by the successive stages of the evolution, preserved as printed marks in or on a place; palimpsest can be seen as the state of a place where the coexistence of the layers is obvious.

The city of Bucharest can be compared with an *urban palimpsest* formed by dispersed city fragments, like a *puzzle* which has to be (re)composed. In fact, Bucharest is *a city with cities*, the historical layers being co-present, simultaneously coexisting in the same place and time, side by side, superimposed and interposed. Bucharest is a city of contrasts, discontinuity and surprises, an eclectic heterogeneous city, highly diverse, maybe even chaotic, marked by different historical periods and urban interventions which left behind a mixture of buildings and styles. However, in this apparently disorder, the chaos has a certain harmony which forms its distinctive character.

One of the aspects that characterize the urban identity of Bucharest is “that of being a many-time-over unfinished city: each new urban-planning project left traces and fractures on it, and they are now asking to be re-composed.” [21]





Figure 9. Bucharest: a city with cities

The Ottoman city, the Classicist city, the Eclectic city, the Garden city, the Modernist city, the Socialist city, the Contemporary city, they all form the current city, giving it its specificity and originality. Despite its amalgamated image and diversely built environment, the city still maintains its identity, and also its unity in this great diversity. A fascinating example of ever-changing reality, the Bucharest's indecisive and successive mixture of styles was due maybe to its constant oscillation between East and West, which "have battled each other (...) not only in terms of architectural styles, but also lifestyles and ways of thinking." [22]

Like architect Peter Zumthor would say: "architecture is not about form, it is about many other things" [23]. One could add that architecture is not about buildings, styles, and details, but rather about the atmosphere. The historical layers may consist of buildings, objects, and things, but also of emotions, memories, and experiences. The *Oriental* city, the traditional city, the romantic city, the classical city, the in-between wars city and so on, together with *national*, traditional motifs and elements, classicised structures, *Art Déco*, modernist structures and *Cubism*, are blending in and creating an original city with a discreet charm and a picturesque atmosphere.

#### 4 CONCLUSIONS

The perception of the built context as being a written text or as an archive of memory and history, involves a deep knowledge of the meaning of the surrounding urban reality. The conceptual reading of the fragments which survived the history can lead to the discovery of the (lost) significations and to a better understanding of the present city, in order to envision its future development. This can result in an approach that implies (re)integration of previously preserved fragments of the layers as a resort for the future interventions, laying the interventions foundation on the site knowledgebase.

In order to keep its identity, the city of Bucharest must not remove the temporal dimension of its concerns, its existence being certified by the reference to the past, space and time being a continuous accumulation of successive layers of changes and evolution. The contemporary urban interventions should engage the historical layering conservation, thus preserving the typological continuity of the tissue and the coherent continuation of urban morphology. Architecture means history and memory

(of a place), an imprint in time and space, representing itself a past heritage, but also a legacy to future generations.

The inhabitants of the city of Bucharest should become aware of both its history and of the details that make up the identity of the city and its distinctive character; all these elements form the city's specificity which connects people, places, and atmospheres, building up the collective (urban) intimacy and conscience. The writer Mircea Cărtărescu said in an interview that for him Bucharest is an *out of time* city: "It is a unique city in its own way, this mixture – it's a cliché, but a real thing – of the East and the West. This resemblance, sometimes to Paris, sometimes to Brussels, sometimes to Cairo or Istanbul. All these things make it unique. But it is also a strange mixture of super-modernity and ruin, derelict and desertion. All these things are part of its formula. I would not want to change it; I would not like Bucharest to become a city like New York or like other very modern cities, like Berlin. No. Paradoxically, in my mind Bucharest it should be so. And exactly this paradox is beautiful. I like to see in Bucharest the new and the old; together, somehow." [24]

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văd în București și noul, și vechiul. Împreună, într-un fel.” \*\*\* (2014). *Interview with Mircea Cărtărescu, Orașul meu, București*. [www.agerpres.ro](http://www.agerpres.ro)



## HERITAGE IN PLACE IDENTITY. AN OBJECT-SCALE APPROACH

Alexandra Păcescu<sup>1</sup>, Vlad Thiery<sup>2</sup>

<sup>1-2</sup> *“Ion Mincu” University of Architecture and Urbanism - UAUIM (ROMANIA)*  
*alexpacescu@yahoo.com, vladthy@yahoo.com*

### Abstract

Today's pace of globalization had also brought about a fading of the local features, that are now being surpassed or even replaced by more generic ones. As a result, our cities are beginning to look more and more the same, as we are witnessing a commodification of the urban image. At the same time, countries, regions and cities all over the world are engaging in a fierce competition to attract economic activities. In this endeavor, they are reinforcing or even building place identities to act as a key differentiator on the global market. In this sense, almost every big city comes up, every few years, with a new built structure designed to become an iconic building everybody should talk about. This process of producing new spectacular architecture to act as a point of difference in generating place identity involves huge expenses with no guarantee for success. Contrary to this trend, key differentiators of a city that architecture can provide are not to be found only in the contemporary dazzling buildings, but also in the existing ones or in the old urban fabric. It is from there, from heritage, that the most specific features can emerge if to be emphasized by contemporary works.

The link between Place Identity and Heritage, from the standpoint of financial sustainability, occurs on at least three levels. Firstly, Heritage as a whole, as part of the city system, acts as key differentiator in building or reinforcing place identity. Secondly, Heritage seen at an object-scale, also seen as key-generator of Place Identity, is a valuable resource that can be directly marketed based on its “uniqueness”. Thirdly, Heritage can become part of an indirect commercialization, in helping promote goods and services connected to it or derived from it. (D. Harvey)

The present study deals with the second fore-mentioned aspect, Heritage in its direct tradability and its connection to Place Identity.

The aim of the present article is to formulate some paths that can help increase the relevance of Heritage in city life, by actively including it in the every-day lives of the communities.

This can be achieved by studying some principles used in the brand building process, with the goal of adapting and including them in the architectural field. The main purpose of a brand is to be relevant to its public. Since we are looking to increase relevance in Heritage, why not look at brand building strategies at the early stage of the architectural process, when drafting the design brief? This does not signify that branding alone can come up with specific design solutions. It only states that architects have a lot to learn from understanding this mechanism and its principles, in order to generate a design that is relevant to its users. Financial sustainability is a secondary outcome, not to be neglected though.

The methodology allows for two parallel levels. Firstly, one needs to identify the key branding principles that can work for the architectural field. Secondly, case studies from both fields (architecture and branding) will try to prove the validity of the comparison.

In contemporary architecture, branding started to play an important role with the last decade. Still, up till now, both research and practice were mostly focused on creating new iconic buildings more or less relevant to the public. In this context, shifting our attention towards Heritage to become a key

element in building place identity, when well promoted, is an important and relevant topic to be discussed.

**Keywords:** branding, heritage, marketing, strategy, brand book.

## 1 INTRODUCTION

Emphasizing specific local features had become a goal nowadays, since with globalization came a uniform display of products and services all over the world, that in many cases erased local markets and crafts, displacing people and unbalancing habitats. In this scenario, Place identity has to be built or reinforced, in order to counteract an unproductive over all homogeneity and help promote social and economical sustainability. The main trait of Place Identity is the differentiator, the factor that creates “uniqueness” and one can search for it in many places, including architecture. Heritage is that part of architecture that is significant to the community, because it relies on memory, appropriation, symbol, in other words, it is relevant because it is appropriated by its users.

On the other hand, the main purpose of the brand building process is to generate relevance to its public. This is where the parallel stems from. Since Heritage is already a differentiator in local communities and our aim is to increase its relevance, some techniques of branding can be translated to the architectural field, in the early stages of design, in order to generate a good response from its direct users at the end. This says by no account that branding provides the key solution for architecture or that it is a method of design. It merely wants to state that in planning, some basic principles from branding can help the architect understand mechanisms of communicating a product and market traits that influence the final embracing or rejection of architecture, including Heritage artifacts that have been refurbished, repurposed, reused. Sometimes, change is hard to accept, especially when changing something that is a witness of the times passes, as is the case of heritage architecture. It already has a symbolic value attached to it and it already has a place in the collective memory. So, in the end, change can make it or break it, depending upon the approach. It is the responsibility of the architect to support continuity, by preserving “meaning” in the process of change. When drafting the design brief, he or she must take into account the needs of the users, their psychological response, as well as the laws of the market that make an investment viable or unhealthy for a community. This is where branding principles might come in handy, if they can find their way into the design strategy.

## 2 HERITAGE AND ITS “UNIQUENESS”- KEY-GENERATOR OF PLACE IDENTITY

“Monopoly rent” arises when one possesses a “tradable item” that is “unique” and “non-replicable” [1]. Because of these two qualities, the product holds high value and priceless reputation. The two cases of monopoly rent are direct trading, where the product is marketed in itself, and indirect trading, where products derived from the initial product and that rely on its popularity are, in turn, marketed. To translate this in the case of architecture, if a museum is visited, then a process of direct trading is taking place. If you buy an album showing exhibits from the museum, that has the museum name on it, or a coffee mug as a reminder, this would be the case of indirect marketing. To extend this to heritage artifacts, Tate Museum is “unique” and “non-replicable” because it used to be a former industrial relic, turned into a museum, under an already famous brand. Then came the extensions, made by star-architects, and this added to the initial value. Now it has become a must-see London landmark. All these overlapping layers in the end translate into “added value” and become major contributors to brand equity. So, in the end, sometimes there is a happy merger between star architecture and heritage, even though this is a seldom case.

David Harvey points out a contradiction that arises from monopoly rent: “the more easily marketable such items become the less unique and special they appear. In some instances the marketing itself tends to destroy the unique qualities (particularly if they depend on qualities such as wilderness, remoteness, the purity of some aesthetic experience, and the like)” [2]. In the pursuit of new ventures, one needs to soften the cultural clash but still experience local authenticity. There has to be



an ethical balance between global marketable features that help enlarge the interest pool and local differentiators that ensure continuity in heritage recognition and appropriation.

### 3 KEY BRANDING PRINCIPLES THAT CAN WORK FOR THE ARCHITECTURAL FIELD

David Ogilvy speaks of ideas that result in flashy, brilliant copy or exquisite illustrations that, although perfect in technique, do nothing for the product they advertise, because they are memorable in themselves, so one remembers the campaign but not the product that it's meant to promote. He calls this "the slippery surface of irrelevant brilliance" [3], in other words, container without content. The same can be said about "iconic architecture", in many cases perfectly designed and executed, but that says nothing about context, site, city, the community it is supposed to represent. So, the end result is that the building is memorable as statement, but not acknowledging the cultural background it is supposed to enhance.

The same thing is happening in architecture. As almost every city is struggling to have a landmark building, the content is sometimes left aside, forgotten or not taken into consideration from the very beginning. It seems that everybody is more interested in the dazzling container. Comparing the role landmark buildings have in a city like Dubai with that of edifices which are "telling" something about the place and the community they are hosted by, Simon Anholt comments:

'Most of the 'trophy buildings' built in places like Dubai aren't expressive of anything in particular: they are just very large glass and steel filing-cabinets which, if they communicate anything at all, are simply monuments to money, power, modernity, technology, and the desire to show off. You need a veritable forest of such buildings before they really mean anything – and even then the only meaning is how much money there is in your city.

'Make me a landmark building' is no kind of brief for an architect: but 'tell the world our story' might be. Buildings must say something about their city and the country, or they are just bricks and mortar. Or steel and glass" [4]

Many of the teachings of David Ogilvy, from his book "On Advertising" first printed in 1983 still stand today, although the market has changed in so many fundamental ways.

The first thing he emphasizes is: do your homework! – in the first place, about the product and its traits, secondly about the competitor's achievements in similar endeavors, thirdly about consumer's response to campaigns.

In architecture, this is a crucial point as well. When dealing with Heritage, we need to know everything there is to know about the history of the artifact, the layers that succeeded in time, the "stories" that surround it. We study the work of other architects that dealt with similar projects and try to find if the end result was a success or a failure. But what we rarely do is take these kinds of surveys in advance. We rarely think of the why, the what and the how of the investment. This is where a key principle in branding could be extremely helpful for architects: positioning.

It is a well known fact that it is very hard and risky to promote a new brand. Huge budgets are spent for market studies and creating awareness and even when the job is perfectly done the result can be a total failure. That is why companies are trying to use their already built brand equity and to transfer it to their new brands especially in the Corporate (Monolithic) and in the Endorsed approach [5].

Consequently, when building or reinforcing Place Identity through architecture, it seems like a wise decision to look at the heritage first. A building already present in the consciousness of the community acts like the brand equity. Having a base already, it is easier to start building on it than starting from scratch. But for this it is fundamental to know that piece of heritage with all the stories it has to tell. Basically there is nothing new so far, since heritage preservation and restoration is carefully revealing all the precious layers of the past in its work. But the result of this process is most of the times "encoded" and impossible for a common observer to read. Maybe a better approach would be a kind of "decoding" of the heritage to make it more accessible to the general public and to enhance its chances to be appropriated.

Again, Ogilvy states that every advertisement is just another contribution to the brand image and advertising should be characterized by consistency: project the same image, year after year [6]. In architecture, any piece of Heritage that is being refurbished is part of a bigger scheme: of the city, or, in the case of smaller objectives, of the neighborhood. The test of success is “relevance”, to the community, to the neighborhood, to the city.

A reality of the market is that a lot of cultural clichés get embedded in the way we perceive a certain place. When speaking about his experience on how to advertise foreign travel, Ogilvy, who participated in campaigns for London, Costa Rica and US, said that his surveys about London turned the results that Americans were interested in history and tradition, meaning Westminster Abbey, the Tower of London, the changing of the guard and Oxford. Europeans wanted to go to US to see Manhattan, Grand Canyon, San Francisco, Niagara Falls and cowboys. So starting by saying something that resonates in the listener’s mind is a sure way to start a dialogue, and dialogue is the only way to convey your ideas, even if your final goal is to branch out to other topics, maybe less known to the general public but more interesting.

“My advice is to choose things that are unique to the country concerned” [7]...charm works well in tourism advertising. And differentiation” [8]. But this type of advertising works for well established place identities, as found in London, Paris etc. When dealing with Costa Rica, a little known tourism destination at that time, another kind of approach was necessary. It is important to inform (language, food, costs), to break the fear of unknown. The same applies in architecture. When dealing with Heritage, for a lesser known city it becomes a crucial differentiator. It needs to work at object-scale the same as it works at city-scale: as emphasizing local features. That is why any refurbishment should start with the questions: what does this heritage building represent to its community? Why is it relevant? What would be the most appropriate use? And for whom? The “story appeal” is crucial in coming up with the right positioning.

A piece of heritage can be linked with local stories, known only to a small community, but also with legends known worldwide. For the general public medieval castles look pretty much the same, but when associated with a story people are able to tell them apart. Sometimes the “monopoly rent” that David Harvey is talking about is not only in the walls but in the story the walls are telling.

#### 4 ON HOW THE “DIFFERENTIATOR” WORKS

Seth Godin comes up with an additional concept: “the Purple Cow” [9]. What he is saying is that, basically, any beautiful feature ends up losing its appeal if it does not stand out. Seeing brown cows in their natural habitat of France, peacefully grazing, can be a capturing experience for a while. But after that, a basic human drive is to look for the “purple Cow”, the same brown cow with a twist. His thesis is that in this post-Television age, “the post-consumption consumer is out of things to buy. We have what we need, we want very little, and we’re too busy to spend a lot of time researching something you’ve worked hard to create for us” [10]. So “the new rule is: create remarkable products that the right people seek out” [11].

So what is the Purple Cow in architecture? What can make it remarkable? In this bland world, some would say: iconic architecture”...and they would be wrong. We believe that in this new world of seen-everything-done-everything, authenticity and relevance are the only kind of Purple Cow. Authenticity is linked to Place Identity by a mechanism that extracts local features that make a place stand out and reinforce them to create an “experience” of place. Following the trend of current advertising in an unfiltered way is dangerous when it comes to architecture and even more dangerous when it comes to Heritage. The commoditization of the “image” is, in the end, what led us to the inflation of “iconic” in the world of architecture and the constant search for “different”. With so many “different” statements, they ended up being all the same. So the only way to get the purple cow left is to be authentic, specific, contextual.

## 5 CONCLUSIONS

The strength of a brand lies within its constancy, that is being true to itself and to its own values. This means that it acts as a container that is constantly filled with meaning, but this meaning never contradicts the spirit of the brand. Otherwise, the brand loses its reputation and reputation is one of its most important assets.

Working with heritage relies on adding layer after layer as well, while the container remains the initial and constant differentiator. How can we build, i.e. “add another layer”, without distorting the existing container? In the first place, by not damaging it... In the second place, by not contradicting or challenging beyond reasonable limits the initial artifact. This is in many cases a shortcoming of extensions, because they overpower the historic building, placing it in an unfair battle. A direct example would be the extension of the Reina Sofia Art Center by Jean Nouvel, versus Rafael Moneo’s Prado extension, both situated next to each other in Madrid. While the Moneo extension is a highly contextual one, Nouvel’s attitude is a “bold” one, but not necessarily in a place where a bold statement would be appropriate. The same goes for many other examples of displays of power that hinder historic buildings and their place in the city. That is not to say that extensions in themselves are inappropriate or that you need to build a pastiche. It is merely saying that a more subdued attitude must prevail, in order to keep the right hierarchy between the objects in place. Each layer must relate to its time of construction, to the ideology of its period and be flexible to change. The same goes for a brand that, in spite of its consistency, must still be open to the challenges of the future. This is where the difficulty in both fields lies, in heritage much more than in branding because the end results are far more of substance.

The parallel between architecture and branding can only go so far. Still, one common feature that keeps both brands and heritage alive is flexibility and the capacity to absorb new layers, considering that the layers are well-thought and responsibly planned. This may be a way to keep heritage alive and relevant for the contemporary world, by allowing new meanings to add to its core...

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## PLANNING IN RESTRICTIVE ENVIRONMENTS – AN ANALYSIS OF BEST PRACTICE EXAMPLES FROM EUROPEAN COUNTRIES

**Radu-Matei Cocheci<sup>1</sup>**

*<sup>1</sup>Urban Planning and Territorial Development Department, “Ion Mincu” University of Architecture and Urbanism, Bucharest (ROMANIA)  
matei.cocheci@uauim.ro*

### **Abstract**

While social and economic factors are often taken into account when analysing a city or region, with specific development policies being specifically designed to tackle such issues, environmental problems do not receive as much attention from policy-makers. Nevertheless, planning today has to face environmental issues, as some territories can be labelled as restrictive environments for development. It is the case of areas with high susceptibility of natural hazards (natural restrictiveness), but also the case of territories where anthropogenic transformations have determined environmental degradation, often with powerful social and economic consequences (anthropogenic restrictiveness). The latter includes mining and heavy industry areas, but can also refer to high territorial anthropization determined by land use changes. Territories where certain development constraints are imposed by law or regulation, like natural protected areas or designated flood-prone areas, can also be labelled, from a legislative point of view, as restrictive environments.

When choosing the most appropriate planning approach in restrictive environments, however, one has to take into account the global challenges that planning faces today. Firstly, shrinking cities and regions are being confronted with severe demographic and economic decline, thus calling for a change of paradigm from economic growth to non-growth or de-growth. Secondly, rural development remains a difficult task, especially in post-communist countries where there is no strategy for restructuring the rural economy, in spite of the high rurality levels and the importance retained by agriculture in the local economy. Thirdly, the transition from government to territorial governance has led to the development of innovative participatory planning approaches, which are presently not sufficiently capitalised upon. Finally, the threat of climate change influences planning today, as we notice an overall shift from planning for disaster and risk reduction to planning for climate change adaptation.

In this context, several approaches can be identified regarding planning in different types of restrictive environments, each proposing their own planning instruments and intervention principles: integrated risk management, ecological restoration, brownfield redevelopment, social innovation models and non-financial compensation schemes. Based on a literature overview of this approaches, I propose a multi-criteria analysis of several best practice examples of planning in restrictive environments in European Union (EU) countries: the “Room for the River” programme in the Netherlands, IBA Emscher Park initiative in Germany’s Ruhr area, Torino – Spina Centrale project in Italy andAVINGUDA DE FRANCIA development in Valencia, Spain. The four examples are analysed as planning models, following nine criteria: proposed objectives, scale of intervention (local / municipal / regional), initiator of the programme / plan / project, duration of implementation, legislative aspects, planning instruments used, financial mechanisms, proposed governance structure and lessons learned.

The conclusions of the case studies’ analysis are then used to pinpoint some principles that could be adapted when dealing with restrictive environments in Romania. Consequently, it becomes clear that

undergoing the implementation of medium to long term strategies for tackling restrictive environments in Romania's cities or regions requires designing programmes and policies that enable both the integration of multiple funding schemes and the creation of governance structures that can aid in the implementation, as well as encourage social engagement and community participation. Adapting innovative planning instruments to the existing law in Romania is also a prerequisite, as planners need to convince local and regional policy-makers of supporting new and integrated planning methodologies.

**Keywords:** restrictive environments, planning instruments, brownfield redevelopment, integrated risk management, social innovation, territorial governance

## 1 INTRODUCTION

Social and economic factors are often the only elements taken into account when analysing a certain territory, as the main parameters used to assess development options remain those related to productivity and economic efficiency [1]. On the other hand, environmental issues can contribute to widened territorial disparities [2], thus limiting development opportunities.

In this context, we can define the concept of restrictive environments as an area within a territorial system where development is restricted by natural factors (natural environmental restrictiveness – e.g. areas with high susceptibility of natural hazards) or anthropogenic factors (anthropogenic environmental restrictiveness – environmental degradation as a result of human activities or even development constraints imposed by law or regulation, like in the case of natural protected areas) [3].

It is possible both to define a typology of restrictive environments (based on the two main categories – natural and anthropogenic restrictiveness), as well as to quantify environmental restrictiveness at local or regional level [3]. As a result, the concept of restrictive environments can be considered an operational one in spatial planning, with several planning approaches being possible according to the types and severity of environmental restrictiveness.

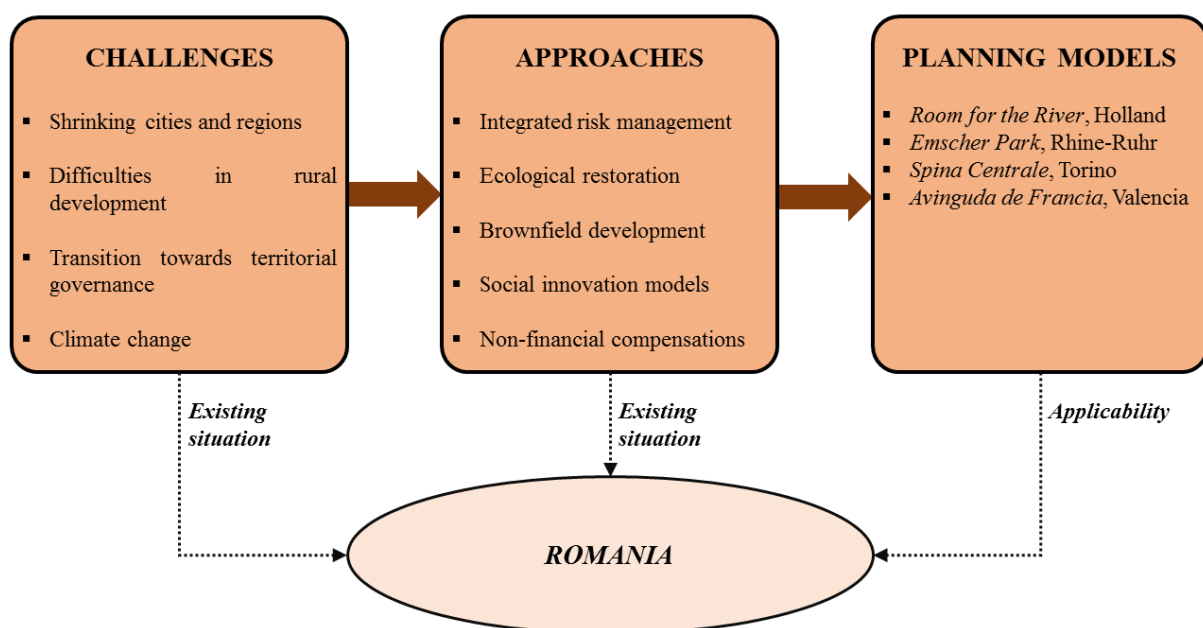


Figure 1. Structure of the study



The aim of this paper (see Figure 1) is to analyse several models best practice examples (which can also be labelled as planning models [4]) of planning in restrictive environments across Europe and assess their applicability in the case of Romania.

### 1.1 Global challenges for planning in restrictive environments

When choosing the most appropriate planning approach in restrictive environments, one has to take into account the global challenges that planning faces today, with four major issues being identified.

Firstly, shrinking cities and regions are being confronted with severe demographic and economic decline, thus calling for a change of paradigm from economic growth to non-growth or de-growth [5], [6]. This phenomenon is also present in Romania, especially in the case of small towns, which have registered a global decline of population of almost 9 % between 1990 and 2012, with some cities even losing half of their population in the same period [7].

Secondly, rural development remains a difficult task, especially in post-communist countries where there is no strategy for restructuring the rural economy, in spite of the high rurality levels and the importance retained by agriculture in the local economy [8]. In the case of the new member states in Central and Eastern Europe, the Common Agricultural Policy appears to be insufficient in supporting rural development [9].

Thirdly, the transition from government to territorial governance has led to the development of innovative participatory planning approaches, which are presently not sufficiently capitalised upon [10]. There is a need for territories to be planned taking into account existing functional areas, so as the proposed development strategies become of interest for multiple stakeholders involved in planning and implementation processes [11] – including new stakeholders from outside the political arena [12]. Intercommunity associations appear to be the most suitable level for planning in restrictive environments, however this solution is difficult to apply in Romania because of the current legislative and institutional framework.

Finally, the threat of climate change influences planning today, as we notice an overall shift from planning for disaster and risk reduction to planning for climate change adaptation [13]. This is mostly determined by the fact that initial previsions for cyclical natural hazards, like drought, become more and more difficult to make as they are disturbed by man-induced climate change [14]. Romania has defined a national strategy for climate change (2013-2020), which includes both measures targeting the reduction of CO<sub>2</sub> emissions and adaptation measures to climate change effects. However, planning documents in Romania rarely include detailed baseline studies regarding climate change issues.

### 1.2 Planning approaches in restrictive environments

In this context, several approaches can be identified regarding planning in different types of restrictive environments, each proposing their own planning instruments and intervention principles.

Firstly, one can notice in the last decade a transition from disaster risk reduction policies to a more integrated approach [15], with planning having a more important role, especially in the prevention phase of risk management through coherent land use planning [16] and emergence of non-structural measures instead of physical ones [17]. In Romania, certain progresses have been made especially in the field of flood prevention, with flood risk maps being used in risk planning, urban planning and awareness-raising campaigns [18].

Secondly, ecological restoration, defined as the rehabilitation of damaged ecosystems, becomes an adequate response especially in shrinking cities, through the creation of green corridors in abandoned industrial areas [19]. In Romania, the *Danube Green Corridor* initiative, launched in 2000 by the World Wildlife Fund [20], represented a first step in a much-needed ecological restoration programme targeting the issue of excessive antropization in the Danube floodplain during Romania's communist era.

Thirdly, brownfield re-development programmes have become a common approach in post-industrial cities, with the temporary use of abandoned industrial areas playing a strategic role in urban regeneration and acting as a catalyst for the local economy [21]. In Romania, the *Integrated Urban Project* represented an interesting proposal for a specific urban planning instrument to be used in the requalification of industrial areas, representing a strategic approach coordinated through a participative planning process [22]. Nevertheless, the study, funded by the Ministry of Regional Development and developed between 2008-2010, was not followed by any legislative provisions to institutionalize the *Integrated Urban Project* as an official planning document recognized by law.

Fourthly, social innovation models, seen as social entrepreneurship actions [23] or co-production strategies [24], can play a significant role in restrictive environments with structural deficiencies [3]. Hence, social innovation models can be adapted to capitalize on a community's local capital and improve environmental quality through bottom-up initiatives.

Finally, non-financial compensations have also been considered as a possible approach for restrictive environments. Non-financial compensations are based on the possibility to offer financially quantifiable rights instead of direct financial compensations for landowners who are restricted by the authorities in the use of their land [25]. However, this approach is more difficult to be adapted to the Romanian context due to the differences between the Anglo-Saxon law (property as a *bundle of rights*) and the Roman law, applicable in Romania (property right is absolute and indivisible [26]).

Table 1 realizes a synthesis of these possible approaches, along with their applicability in the issue of restrictive environments.

Table 1. Planning approaches in restrictive environments

No.	Planning approaches in restrictive environments	Applicability
1	Integrated Risk Management	Territories with high incidence of natural hazards.
2	Ecological restoration	Management of flood-risk related issues. Rehabilitation of damaged ecosystems.
3	Brownfield development	Rehabilitation of degraded environments: mining areas, abandoned industrial areas.
4	Social innovation models	Restrictive environments with structural deficiencies (demographic decline, ageing population)
5	Non-financial compensations	Rehabilitation of degraded environments. Conservation of natural protected areas.

## 2 METHODOLOGY

Having the above-mentioned five planning approaches as a starting point, I decided to realize a multi-criteria analysis of several best-practice examples of planning in restrictive environments in EU countries: the "Room for the River" programme in the Netherlands, IBA Emscher Park initiative in Germany's Ruhr area, Torino – Spina Centrale project in Italy and Avinguda de Francia development in Valencia, Spain (Table 2).

Table 2. Planning models studied in this paper.

No.	Planning Model	Country	Type of planning approach
1	Room for Rivers	Holland	Integrated risk management (flood).
2	Emscher Park	Germany	Brownfield development. Ecological restoration
3	Spina Centrale - Torino	Italy	Brownfield development.
4	Avinguda de Francia Valencia	Spain	Brownfield development. Non-financial compensations.

The four examples are analysed as planning models, following nine criteria: (1) proposed objectives, (2) scale of intervention (local / municipal / regional), (3) initiator of the programme / plan / project, (4) duration of implementation, (5) legislative aspects, (6) planning instruments used, (7) financial mechanisms, (8) proposed governance structure and (9) lessons learned.

### 3 RESULTS AND DISCUSSIONS

The tables below (Tables 3-6) synthesize the main findings resulted from the comparative analysis of the four planning models.

Table 3. Analysed criteria – Room for the River, Holland.

Criteria	Room for the river – Holland
Proposed objectives	Flood protection in the Dutch delta (Rhine hydrographic basin – 4 million potentially affected people) and improvement of spatial quality.
Scale of intervention	Macro-regional
Initiator	Ministry of Infrastructure and Environment – central level
Duration	2008-2015 (34 projects implemented at local level)
Legislative aspects	Based on a <i>Key Planning Decision</i> drafted by the central government [27].
Planning instruments	Programme with correlated projects. Using the <i>Building Blocks</i> model in public consultation.
Financing mechanisms	Governmental funds (2.3 billion euros)
Implementation structure	Project management realized by <i>Rijkswaterstraat</i> – Ministry department. Programme coordinated by 3 Ministries. Projects implemented by regional or local authorities (including water management institutions) [28].
Lessons learned	Multi-level governance as a solution for integrating planning and flood risk management: connecting regional and local authorities with central ones through the programme's managing authority.

Table 4. Analysed criteria – IBA Emscher Park, Germany.

Criteria	IBA Emscher Park – Germany
Proposed objectives	Reuse of abandoned industrial sites in the Emscher river area – Ruhr district (800 sq. km), based on integrated regional development principles.
Scale of intervention	Sub-regional
Initiator	Ministry of Urban Development and Housing – Nordrhein - Westfallen
Duration	1989 – 1999 (120 projects implemented) [29]
Legislative aspects	Priority given to the projects realized through the IBA Emscher Park.
Planning instruments	No imposed top-down instruments – the approach was based on individually financed and implemented projects, which had to respect the quality standards imposed by the IBA Emscher Park GmbH [30].
Financing mechanisms	36 financial support programmes (Land level), governmental funds, EU funds, private investment. Total budget was over 5 billion DM [30]
Implementation structure	Public company with limited responsibility – IBA Emscher Park GmbH – as a structure for coordination, monitoring and assessment. The proposed projects were bottom-up initiatives of local public authorities or private companies.
Lessons learned	Successful example regarding the management of industrial decline at regional level, by connecting bottom-up initiatives with top-down directives and monitoring system. It remains a fragmented approach, which did not manage to answer major challenges at regional level (e.g. the lack of jobs) [31].

Table 5. Analysed criteria – Torino Spina Centrale, Italy.

Criteria	Torino Spina Centrale – Italy
Proposed objectives	Requalification of industrial areas along the city's north-south railway – underground displacement of the railway and the creation of a new urban boulevard, bordered by new residential and commercial areas.
Scale of intervention	Local (municipal)
Initiator	Torino City Hall
Duration	1995 – 2010 (4 programmes: Spina 1, 2, 3, 4) [32].
Legislative aspects	The possibility to adapt the provisions of the normative urban plan according to the changes in the real estate market (30 % reduction of building density).
Planning instruments	<i>Piano Regolatore Generale</i> (PRG - 1995) – normative planning. <i>Programmi di riqualificazione urbana</i> (PRU Spina 1, 2, 3, 4) – implementation. Strategic plans of the city of Torino.
Financing mechanisms	Governmental funds (PRU), local budget and private financing (public-private partnerships).
Implementation structure	Public-private partnerships between the local public authority (Torino city hall) and private investors / landowners.
Lessons learned	The intervention of local public authorities in the project's coordination was decisive for its success, as the 1995 PRG couldn't be applied in its initial form. The strategic planning, which was correlated with the normative (PRG) and operational planning (PRU) represented an opportunity for consolidating partnerships and to access European and national funds [33]. The choices made regarding the conservation of industrial heritage is debatable, as well as the architectural and urban design quality of some spaces. However, the objectives regarding environmental quality improvement have been attained [34].

Table 6. Analysed criteria – Avinguda de Francia, Valencia, Spain [35].

Criteria	Avinguda de Francia, Valencia – Spain
Proposed objectives	Transforming an industrial area into a new residential and commercial area in order to create a connection between the city centre and the harbour area.
Scale of intervention	Local (neighbourhood)
Initiator	Valencia City Hall
Duration	1991 – 1996 (land readjustment and infrastructure)
Legislative aspects	Land readjustment technique – proposed by the National Law no. 1346/1976 and the Royal Decree no. 1079/1997.
Planning instruments	Urban plan at the end of the 1980s, which regulated the transformation of the industrial area.
Financing mechanisms	Private funds – investment realized by a developer selected by the competition after a public competition.
Implementation structure	Partnership between Valencia City Hall and the landowners' association in the area, which also included the developer. Land readjustment was established after negotiations between the three parties.
Lessons learned	The quality of the urban intervention determines the success of a real estate project – not only the building density obtained after re-developing the industrial areas. The importance of land readjustment as a legislative technique that can support the involvement of local public authorities for realizing the necessary public infrastructure.

Consequently, the **Room for the River** programme illustrates the fact that a change of paradigm regarding natural risk management (Figure 2) can happen even in countries with a strong tradition of controlling hazards – as in the case of floods in Holland. By adopting an integrated and adaptive risk management, in correlation with the EU Flood Directive, *Room for the River* becomes a planning model for combining risk management and territorial planning without neglecting the participation of local communities and authorities.



Figure 2. Project proposed in the city of Nijmegen – *Room for the River* programme [36].

The **Emscher Park** initiative highlights the importance of an independent agency – the IBA Emscher Park GmbH – in connecting top-down directives with bottom-up initiatives. Implemented in 10 years, the Emscher Park international exhibition introduced new approaches regarding the management of a specific type of restrictive environments – the abandoned industrial areas. The creation of landscape parks at regional level (Figure 3) appears to be an adequate solution for re-defining the degraded industrial landscape, contributing (along with the decontamination actions) to an overall improvement of environmental quality in the area. Even if this type of approach does not solve the structural issues of such an area (like the lack of jobs), it represents a first step in changing a region's image and in opening new development possibilities in the post-industrial era.



Figure 3. Conserving industrial ruins – Duisburg North Landscape Park [37].

The **Spina Centrale** complex project in Torino showcases a way in which major urban projects can transform the image of a city through the reconfiguration of the abandoned and degraded industrial sites. It is also an example of combining normative, operational and strategic planning instruments, with the Spina Centrale project aiding the transition from an industrial city to a cultural city with a knowledge-based economy.





Figure 4. Avinguda de Francia area – before (1992) and after (2006) the urban interventions [35].

The **Avinguda de Francia** requalification project in Valencia (Figure 4) is an example of the way in which non-financial compensations can be applied in a country where property rights are based on the Roman law. The land readjustment mechanism regulated by the Spanish legislation could also be adapted, even at local level, in the Romanian legislation, while also encouraging the association of landowners and their partnership with local public authorities. These associations could play an important part in the reconfiguration of extended industrial areas, with a very fragmented land ownership – the case of numerous industrial platforms in Romania.

#### 4 CONCLUSIONS

We have already briefly explained how the four major challenges for planning in restrictive environments manifest themselves in Romania. Moreover, we discussed five possible approaches for planning in restrictive environments and the manner in which these approaches have been already tested in the East-European country. Eventually, the analysis of the four planning models has revealed several principles which should be taken into account when facing similar issues in Romania.

First of all, the programmes and projects presented in this paper have been part of medium or long-term strategies, with a time of implementation ranging from 6 years (Avinguda de Francia) to 15 years (Torino Spina Centrale). Moreover, the projects and programmes have been associated with multiple financing sources: structural funds, governmental funds, local funds or even loans and private investments.

Consequently, the need for complex governance structures was underlined by both the long period of implementation (with independent structures being able to continue implementation regardless of political changes) and the multiple financing sources (with numerous managing authorities being involved). The governance structures envisaged have also encouraged social engagement and community participation, thus determining the projects' long term success.

Adapting the proposals to the existing legislation (EU directives, national and regional laws, local planning regulations) has also proved to be very important for the success of planning in restrictive environments. Innovative mechanisms, like the use of non-financial compensations, can be applied only if local council decisions exist. There is also the need to maintain a balance between offering stimulants for realizing certain actions and penalizing those who do not respect the established legal provisions (carrot and stick techniques) in order to achieve the desired planning objectives.

Nevertheless, these planning models need to be adapted to the cultural, institutional and legislative characteristics of the Romanian planning and governance systems. They represent best practice examples which could be used as a model for planning in specific cases, such as degraded mining and industrial areas, flood-prone areas or terrains susceptible to desertification processes.



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## INTERMITTENT WATERS NEW DESIGN APPROACHES TO CLIMATE CHANGE IN SARDINIAN LANDSCAPE

Francesco Marras<sup>1</sup>

<sup>1</sup>DICAAR Università di Cagliari, Sardinia (ITALY)  
*francesco.marras@unica.it*

### Abstract

The research starts from a renewed attention towards the countryside in terms of habitat, production and multi purpose, that imposes a change of approach to rural system, considering them as a dynamic space with a new relation between long time stratifications and short time contemporary actions. Rural areas have always been considered as a sort of ecological reserve of the urban ones, but in front of climate change, today it seems necessary a rethinking about the management of land and water. Territories of Sardinia offer interesting series of case studies because of the economic role of rural area transformations is important for Sardinian development, aiming to differentiate tourist offer and internal exchanges. Mediterranean climate and in particular the Sardinian one is characterized by a continuous alternation between drought and rain, but the climate change radicalizes this alternation in favour of an extreme drought that reduces the water for villages and country irrigation.

The hypothesis proposed in this paper starts from a radicalization of Sardinian climate, so what could happen in Sardinian rural landscape in case of an extraordinary precipitation reduction and a peak of sudden devastating rain? Could water project be a valid architectural item for designing rural landscape?

The method for answering this question is based on an approach research-design, where architectural project becomes a realistic test of techniques on the territory. The research is based on a multi scale approach to the urban and territorial forms of water infrastructure and the traditional use of them with a deep conviction that tradition and long time could still offer sustainable models for contemporary age. Traditional technique heritage starts from the position choice of the village, drainage and protection techniques but also collection and stockage, could be the base for starting purposes on the theme of intermittent waters. Knowledge and reading of territory through Muratorian territorial figures could help architects to build a crossing-scale structure, that goes from the territorial scale until the architectural object. The research will concentrate on three Sardinian rivers, Riu Mannu, Riu Mar'e foghe and Riu Santa Caterina, characterized by a deeply discontinuous flux, often without any water in drought periods. During rainy time these "double face rivers" are able to hardly damage villages and countryside, as in the last flooding that come back one time every five years. We choose to study three particular topics in these areas that explore three different kinds of countryside dynamics: village borders, rural district and isolated object. The dissolution of village borders towards flooding areas opens a series of questions around border protection in rainy periods, rural districts are often closed to external relations and isolated objects have been abandoned for a long time. Water and soil design can be an important item in order to solve collection and protection of borders, combining architectural technology and the creation of new spaces for the habitants. Drought and flooding vs Collection and protection. The multi scale technique of guide lines is based on this double dichotomy that introduces a series of graphic simulations elaborated through climatic data of Sardinian area with the historical flood and drought in order to understand the dynamics of the site and the possible effect of a future radicalization of

the problems. The purpose operates from the architecture of wide scale to detail with new scenarios for living rural borders (including villages, districts and objects), with the aim to solve not only a technical problem but to build a common good for the community, opened to multipurpose practices of the countryside between production and mixed uses.

The thesis tries to overcome a strong gap between traditional water technologies, result of a millenary stratification, and contemporary ones, that are often only a result of a mathematic calculation and engineering design, through an approach based on the centrality of the space design. New rural spaces are a product of a multidisciplinary background where architects, urban planners, engineers, agronomist and hydrologist work together for community interest. In this context in-between areas become multipurpose producer, from intermittent waters to continuous uses.

The result of the work is a series of pilot project in order to build a frame work of guide-lines for rural landscape of Sardinia that starts from water as design item. Water is seen as territorial founder, without any technical superposition but as an element able to intensify the strength line of territory and his figures.

**Keywords:** climate change, drought, flooding, rural landscape

## 1 CLIMATE QUESTION IN SARDINIA

The research starts with an active study of department of Architecture of the University of Cagliari for regional landscape plan rural landscapes. Dealing with rural landscape today signifies reflecting on its processes of contemporary transformation. Rural landscape is struck by a renewed interest in productive, touristic and settlement terms. Demographic growth of the towns that signed all the period after world war has been closed since more than twenty years, the increasing cost of the life in town have convinced the habitants to buy a land for the settlement, searching better life conditions, linked to cars or trains efficiency, and linked to the world by internet cable and wi-fi and mobile network. At the same time the countryside starts a new phase of his history based on a new agriculture, not coming from the familiar self-sufficiency, but linked to habitant *loisirs* and free time<sup>1</sup>. Guide lines of European research Horizon 2020 explore the theme of countryside modification and proposing a new multipurpose challenge for the countryside. The multipurpose request gives answer to the micro receptivity, today already present in territories, but still bad controlled by the project. Multi-purposing is composed by activities linked to cultural promotion of territories, such as concerts, meetings and conferences or expositions, Architectural and landscape project have to face with the new system of needs that the rural areas promote in an operative way, particularly proposing a new framework of rules able to manage this new stresses that strikes contemporary countryside. Most of climatologist data deals with urban question, such as the study on the increase of temperatures in towns and the definition of a heat cupola that often leads to increase settlement pressure towards countryside. However climate changes have damaged lots of agricultural productions. The geographers since the end of nineteen century have told about *climatic whim* of Sardinian climate and its problems linked to intermittences. The French geographer Maurice Le Lannou defines Sardinian climate as the Mediterranean climate for excellence characterized by dry summers and wet winters, but a new study of the last hundred years shows that the inconstancy of water can not be only seasonal but also it can cover more than a year. Always Le Lannou tells that the city of Cagliari, the most populated centre of Sardinia has been forced to import water from the continent because the resources of water in basins were empty. On the other hand sudden heavy rains are very frequent, and Sardinian rivers overcome the banks and flood close areas. Climate whims are strictly linked to intermittence that characterizes the most of Sardinian rivers that have a stream character with a very variable flow rate during the year. Le Lannou collected data of this important annual variation: “ in Cagliari with a medium annual precipitation of 431 mm, there is a peak of 934 in 1898 and a minimum of 133 in 1913, when the city had to ask water to the continent”<sup>2</sup>. Similar conditions

are very hard to find in western Mediterranean areas with substantial differences, like in Mongolia or Iran. ARPAS, Sardinian institute of meteorology, monthly records rain data, showing continuity of intermitences. Data reveals an elevated temporal variability where there is never a medium year (Fig.1). However it is possible to underline that rain medium absolute value is reduced of a hundred millimeters in the last ten years, with consequences on the outflows of the most important rivers. Sardinia has controlled these dynamics through large artificial basins, useful to control volumes of water for countryside and settlements, a monthly report of drought has been opened by the regional climatologists in order to control the problem through continuous confront between seasonal and annual media. Drought control is accompanied by a survey on risk desertification areas, where wind action increases the problems linked to water absence.

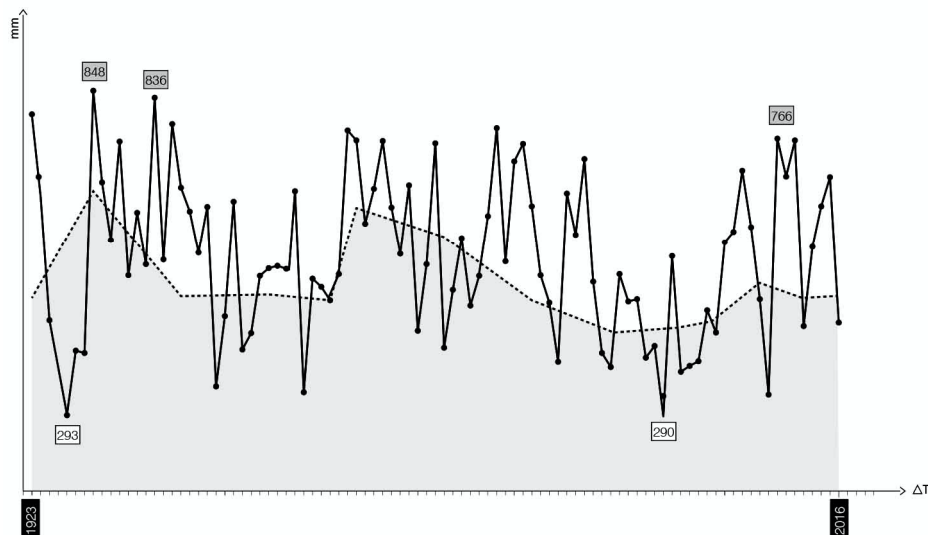


Figure 1. Rain data between 1923 and 2016 in Oristano, middle western Sardinia.

## 2 ARCHITECTURE OF CLIMATE

The relationship between climate modification and architecture has a long bibliography, easy to insert in the theme of resilience, seen as the ability of a system to keep its characters in time, despite the external forces that press it. Resilience obeys to Latin philosophy *flectar non frangar*, (literally folded and not broken) that means that a territory have to rest, absorb, reject in itself the climate modifications. An architecture of intermitence has to take position on this theme. It is the challenge of a project-process able to read different temporalities of the river, ready to rest dynamics of too full and too empty.

Literature offers a series of research that face problems separately and not in a coordinate manner. French architect Frédéric Bonnet, in its *Atout risques* talks about risk flooding problems through a series of case study in French territory, proposing measures for containing flooding through punctual micro devices, and local operation of a large territorial network<sup>3</sup>.

The thesis is based on the attention towards territories and simulations of the process, in order to overcome an approach to landscape design based on constraints and technical rules, towards an approach on the quality of spaces for the wellness of habitants. Paola Viganò and Bernardo Secchi propose in their project of isotropy, a careful analysis with a predictive character for sprawl city of Venetian plain, going to define punctual project such as the quarry of Merotto, near Conegliano (Treviso). The isotropy is an "extreme and ideal" figure because the territory is not absolutely isotropic and homogeneous, but it is characterized by variations. Project has to read energy production and water, infrastructural and agricultural network. Isotropy project starts with the question of flooding caused by alpine rivers in Venetian plains and with a research on the water spaces<sup>4</sup>. The theme faces the transformations in countryside that becomes opened to different use

possibilities in terms of public space. In this case the project aims to rethink water network in order to find new conservation areas, to propose new solutions for canals.

On the other hand Shlomo Aronson and Pietro Laureano speak specifically about drought, in a project dimension, analyzing the role of traditional architecture. In both cases the starting question is climate change and desertification tendencies. Laureano proposes an analysis of water control techniques in historical desert areas, underlining the role of the water, in particular the founding complexity of water fabric, starting with village positioning until domestic supply. The second, Shlomo Aronson, Israeli architect, shows a series of project where the correct management of less water that characterizes Israeli territory could be the structural element of public space. These researches analyze the extraordinary centrality of water as design item and process activator and in particular a new landscape design need that takes a dialog position in front of an historical protectionist position.

### 3 MULTISCALAR APPROACHES

The research is based on a multi scalar approach that analyzes landscape from the large scale to detail trying to understand the role of structural invariants of territory. Large scale architecture has to define a network of links that allow deep crossing scales, from landscape to detail (Fig.2). The theme of intermittent vulnerability can be read with two different points of view, the nature and the man. Natural point of view is strictly linked to water control and risk themes. On the other hand the vulnerability is linked to the absence of human activities and territorial abandon.

The border areas of small Sardinian villages represent limit cases, between a vulnerability linked to hydrogeological risk and a technique void linked to the absence of a demographic pressure. The industrial programs of Sardinia during the last decades have never produced a real economy contributing to break the relationship between rivers, villages and countryside. The thesis tries to analyze these in between spaces through a diachronic reading work and morphological analysis on muratorian model, with a reflection on uses that have produced contemporary transformations in the areas.

Through risk simulation, obtained with data of risk prevention plans, we deal with the theme of water management and its paradigms: conservation, collection, distribution. The correct use of three traditional techniques measures the contemporary intervention. The need of a realistic dimension of project starts from the control and water management to generate new spaces in countryside. It deals with “non-coincidence” operations<sup>5</sup> that project generates on territory through the work of technology of architecture in processes of space organization and relationship between materials, forms and techniques.

For doing this it is essential to study the technical and technological heritage that have ruled water management, depositary of a constructive culture that has its reason in water control paradigm, basis of a communitarian and systemic micro-project. The reading, redrawing, analysis and comprehension of constructive characters of traditional devices represent a fundamental base for contemporary project.

Traditional model can offer a character of formal simplicity and relational complexity able to produce territorial forms. Traditional model tells about a project process where the strata increasingly overlap<sup>6</sup>. The method of the research proceed through a study of traditional techniques in situ, the comprehension of principles and a series of project test that verifies the operation of principles of water and land management. It seems necessary reflect on techniques operations and possibilities to develop them. The hybridization of paradigms of water management emerged by the reading of traditional system. Project is the essential test field of the research, useful to measure the realism of the studies. For doing that It uses a series of data inherited by climatologist studies that show the projection of Sardinian climate in the next years and data linked to medium flow rate of rivers. Through these data it is possible to operate a predimensioning of basin dimension, in accord with hydraulic engineers. Thesis has to face a deep interdisciplinarity in each phase of the project both on the large, both on the detail scale.



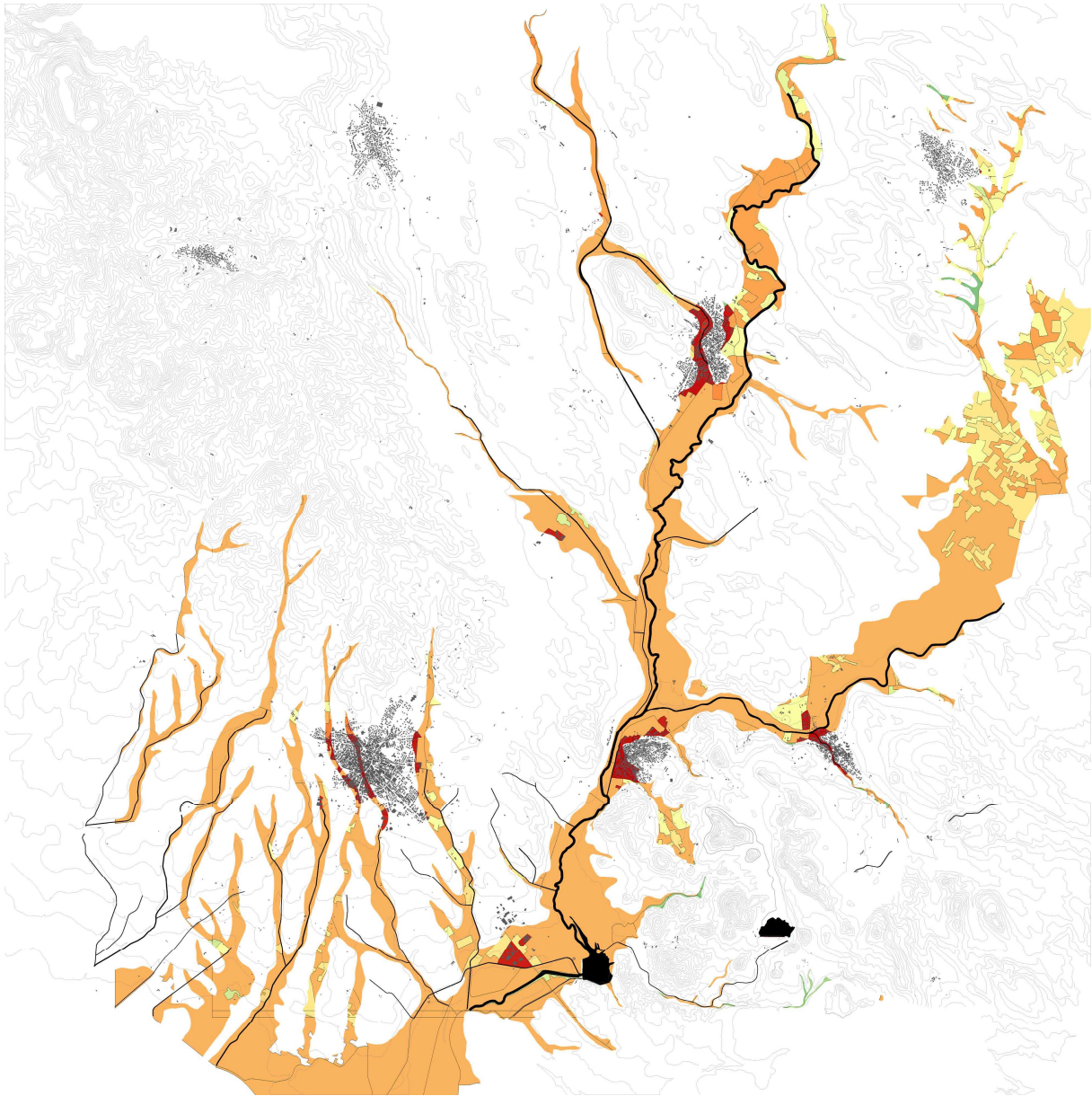


Figure 2. Large scale architecture of rivers Rio Lanessi and Rio Mannu.

#### 4 CASE STUDY

Case study choice is done on the basis of transformation phenomena that have struck lots of Sardinian in between areas, modified by reclamation work, river canalization. Transformations have exposed territories to risks caused by modification of soil permeability on the one hand, and on the other hand by an absence of in between areas management. The first case study is that of the area of Sessa, in the countryside of Cuglieri, studied with a group of student in the Studio Rurbanlab 14|15, at the University of Cagliari. The area is located in middle-western Sardinia, on the western front of Monti Ferru, and it is a basaltic volcanic plateau facing the sea. It represents an episode of the great reform of Sardinian agriculture, made by the regional agrarian institute ETFAS until '70s, with the foundation of new rural villages. In some cases ETFAS intervention loses its challenge, caused by hydraulic intermittence and difficulties linked to historical use of lands. The case of Sessa plain, in the north of Santa Caterina River, in the territory of Cuglieri, represents an example of failure of the agrarian reform; the aim of the Rurbanlab studio was to propose a new model of development for this area characterized by an extraordinary water intermittence and a strong agrarian plot. The choice of the project has been to understand the relationship between reform plot and bocage forms

that characterized areas during the centuries. The comprehension of residual bocage and the analysis of plot forms has chosen naturalization of humid areas as engine of the project. The new bocage starts from the residual existent and follows the reclamation lines, until the dwelling areas. In this nodal points an architectural device define the in between areas and the transition bocage-public space. The devices have different possibilities of use like landscape observation and small hospitality. The reading of pre-existing bocage plot has allowed the strengthening of residual wood lines into reclamation plot, with new devices that defined thresholds and crossing points.

Second case study tells about Is Argiolas area of Segariu (Fig.3). The village of Segariu has an interesting toponymy etymology, and it means “village cut by a river”, expression of a usual settlement character of middle Sardinia. This area is characterized by an almost desert climate, with dry and hot summers and less wet winters. The extreme proximity of river village has caused lots of damages during the history. Data of Sardinian climatologic institute ARPAS tell about an area characterized by minimal rain data in Sardinia, with a historical drought of '80s, between '88 and '90 the rain has overcome the 700 mm in three years, with a Sardinian medium of 600 mm each year.

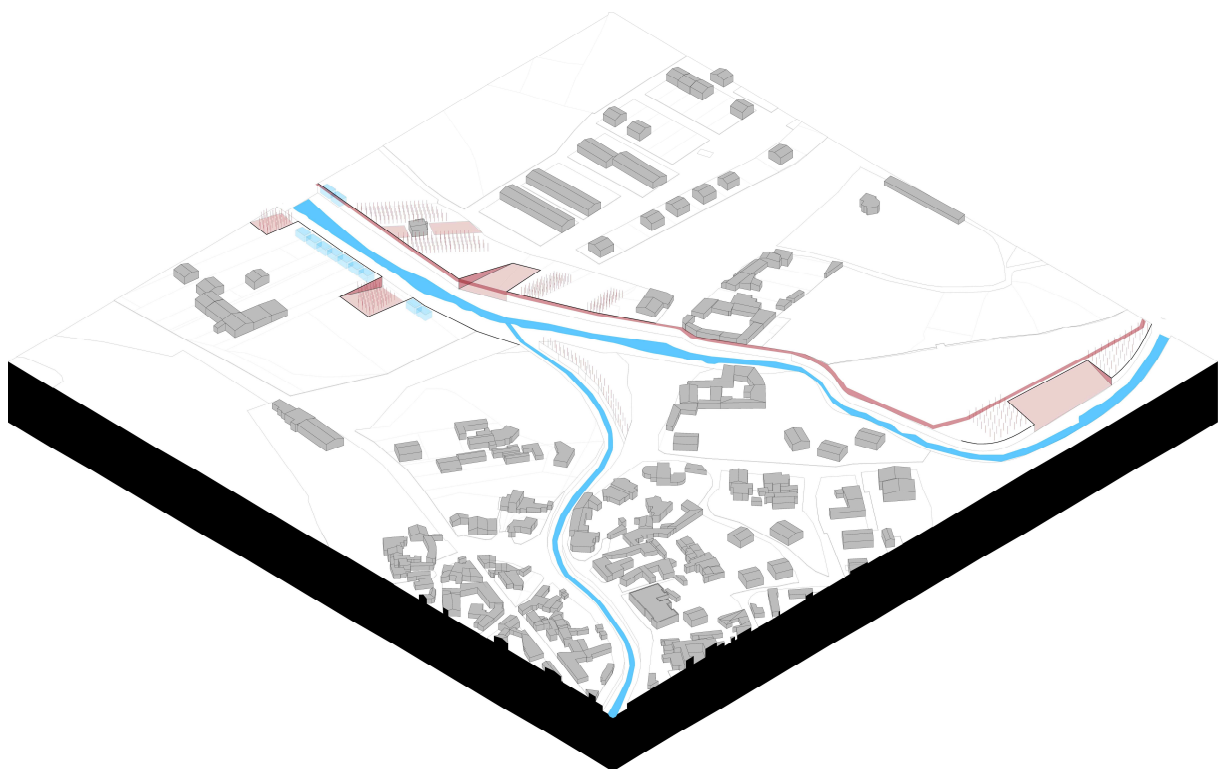


Figure 3. Border area of Segariu between the rivers.

Long time has read the necessity to conserve water and to collect it from the rain, through a series of techniques that limit dispersions and follow the strength line of landscape. Terraces represent capitation and conservation techniques, based on the mass, the wall that contains the land, humid by the slow-down of river flux. In front of drought problems the intermittent behavior of rivers have damaged a lot the village. In November 2008, in two hours it fell down more than 150 mm of water, a quarter of annual rain. Segariu is located in an intermediate position between intermittent rivers, Rio Lanessi and Rio Pau, exposed to flooding risk. The project area is the northern margin area of villages, where the rivers unify. The area is characterized by a process of sprawl that got empty the historical village. This area presents a series of archeological emergences that show a significant historical stratification in settlement. Rio Lanessi and Rio Pau have suffered in '60s a deep transformation caused by the re-definition of the bed, on the one hand, it flows under a concrete roof cutting the village. On the other hand it flows in a concrete canal. The project aims to restore border river unity, through the naturalization of the border with new planted area that make in contact the river with archeological areas. In this way the project can increase the permeability of

soils and create a space for the habitants. The second step consists in a modification of river bed, through the opening of borders and to control water expansion through lamination basins, useful for agricultural use. The intervention is a work of water and land management through the modification of river borders and recovery of proximity relationship between river and village, often denied by modern transformations.

## 5 CONCLUSIONS

The thesis deals with the paradigms of water management and how they had significant roles in intermittent water landscape working on strength lines of landscape and traditional practices. The result of the thesis is the construction of a guide lines framework based on a correct use of paradigms in front of intermittencies. The actual displacement of the territorial project from a constraint approach to a more project-oriented one can be a real opportunity to face through a realistic point of view the project of rural landscape in front of climate change. The project is a fundamental verify item of the research. Design has to insist on two different aspects, the time and the use. Projects have to reflect on temporalities of action, developing a prediction with a long temporal horizon. The phases of the project allow to read the action and reaction of territories of intermittence, reflecting on the permanence, reversibility and use of architecture; this triad is the basis to reduce vulnerability unifying protection and restoration of intermittence suffering areas.

### Author's information

Francesco Marras (1989, Oristano\_Sardinia) is an architect and PhD student in DICAAR (Dipartimento Ingegneria Civile Ambientale e Architettura) of the University of Cagliari and in LRA (Laboratoire de Recherche en Architecture) of the ENSA Toulouse. The topic of his research is rural landscape, with a particular deepening on the use of water in architecture design. Since 2013 he works as assistant at the University of Cagliari, and he actively participates of research group Type\_UNICA, specialized in architecture in weak context, and the relationship between rural landscape and on Sardinian territory. He co-founded 04401 Architects and in 2015 obtained the winning prize in European 13 in Austrian site of St Polten and a runner-up prize in Azenha do Mar (Portugal).

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## A PROGRAM FOR THE URBAN EDGES

**María A. Leboreiro**

*Escuela Técnica Superior de Arquitectura de Madrid, Universidad Politécnica de Madrid  
info@taula-marianleboreiro.com*

### **Abstract**

The relationship between the city and the rural areas is increasingly diffuse, less defined. Urban peripheries move towards the rural areas, before productive, sustenance of the city, today turned into expectantly, abandoned and degraded places, lost its original value. Thus, the edges become unfriendly, poorly connected and cause aesthetic and functional degradation of the built environment.

In areas of scattered settlement, which our work will be referred, with strong characterization of the territory, this situation has resulted in the first stage of settlements absorption in the city limits and then, following the guidelines of contemporary development, converting them into growth centers for new developments, without the parallel generation of equipment and services that had given life to the traditional places, but only fulfilled a function. Urban pressure on its nearest rural environment has produced the emergence of discordant elements that disrupt the urban image, that were until recent times well integrated into the landscape.

This alteration has influenced not only the housing occupation but also other utilities, spontaneous or not, as industrial, commercial or large equipments that take advantage of the presence lower economic value grounds and not only changing the scale, but also requiring new infrastructure, of which roads are the most visible, destroying softer connection guidelines and generating confused and dangerous connections, besides being powerful physical borders in the territory.

Urban edges represent, today, a place of opportunity. Crisis has clearly raised growth limits that were becoming useless according to sustainable principles. It thus enters a stage that will build the city over the city and talk about integrated urban regeneration. City limits represent the possibility of recovering the relationship between the inhabited areas, at any scale, and its immediate surroundings reinventing the relationship between built space, natural and agricultural areas. They are areas of excellence, today without visibility or with negative perception, which introduce connectors to help redesign the urban image, unstructured today, decreasing volumes, integrating utilities and incorporating functional and visual criteria favoring the connection between humanized area and the natural and agricultural areas adjacent, understanding that in the periphery is the future of our cities.

It is intended, from the analysis of the case, the Spanish Northwest, which is based on sustainability in abroad sense along with the works of Secchi, Indovina or Bruegmann, to know the reality from its recent evolution to propose criteria for future development.

In short, the aim would be to recover the previous balance between city and country through mutual synergy from ancient urban life, from already accepted approaches of rehabilitation, regeneration and renewal, incorporated into the concept of integrated urban regeneration, in the construction process and actual debate; as well as other emergent treatment in built space density, design and diversity.

**Keywords:** Rural-urban, Peripheries, Landscape, Regeneration.

The relationship between city and country is becoming increasingly more intermediate, less defined. Urban fringes move towards areas that were formerly productive, that fed the city. Today they have become expectant, abandoned, and deteriorated, having lost their original value. Thus, the frontiers of our inhabited areas constitute limits that are not very friendly and that are poorly connected, accentuating the aesthetic and functional deterioration of the built surroundings.

## 1 REFERENCE CONTEXT

This work focuses on a very specific territory: the north west of Spain. It has quite unique spatial organizational features, which are the consequence of its peripheral location with respect to the Iberian Peninsula and the rest of Europe. Consequently, even when it is inserted in the European Arch, from the point of view of geography and economic development, it cannot be compared to other regions in the north of Spain or along the French Atlantic coast, its closest reference because of its geography, climate, and historical economic activity. Both territories are linked to the strong presence of the coast and an agricultural inland area.

We work in the context of a territory that is fragmented as a result of its harsh topography, its numerous small-sized waterways, its small land division, and its connection to agricultural activity. In the past this led to rural settlements being small in size and numerous, surrounding the parish that grouped them together in a varying amount—between ten or fifteen—with the parish acting as the intermediate echelon of a territorial hierarchy with regard to the township that, in the case at hand, is an artificial grouping of parishes without an administrative body.

This territory kept its balance until recent times, where housing, with an adjacent vegetable garden, was grouped with a greater or lesser intensity, depending on the climate conditions, and was surrounded by external arable land which was devoted to corn, rye, potatoes, or flax. All this was circled by communal scrubland, belonging to everyone with permanent residence in the parish. They were autonomous nuclei, connected to each other and providing common services: an oven, a washing place, a mill, and common guarantees for its defense, such as livestock breeder benefit trusts. The parish area comprised the church, the cemetery, and the fair ground, where the patron saint was, and still is, celebrated, and on occasions the school.

There appeared a town, the seat of the town hall, which was in fact a larger nucleus with features that were more urban-like, and with a population that had a higher educational level, where the doctor, veterinarian, and pharmacist resided, and its was also inhabited by a merchant class. The economic activity was based on agriculture, the weekly or monthly market, and on the early activity of wood, leather, or flax processing, which were the minor industries that closed the system.

The urgency of urban problems, the theories being easy to issue and verify, in a field of growing interest for the population it affected, disregarded addressing the problems of the rural areas, abandoned, in this case, since the 1980s, due to the lack of qualified jobs and the economic expectations compared to those of the city. The loss of agricultural activity, which was hardly competitive in comparison to that of Italy and France because of the low level of specialization and the scarce value of farming products—with the exception of wine—, possibly a consequence of land subdivision, resulted in the country being neglected, with houses gone to ruin and an aged population. However, what did not suffer was the affection felt towards the place that was strongly anchored to the collective memory, which led to a return when the economic situation changed and the accessibility conditions improved, as distances became smaller.

The first migratory movements from country to city were later followed by an inverse weekend and summer holiday migration. The new concept of urban buildings and services changed the perception of the rural environment, and during a second phase resulted in the recovery of life in the rural area,



through urban behavior patterns. However, this movement has now become one of final return. Housing is no longer a second residence. It is supported by an improved mobility, and sprawling began as a wavering movement by commuters, or of people travelling to shop, or for leisure.

The return, when it happens, is not to the old home, but to a newly-built house, following urban patterns and a style that is foreign to the area. This has caused the landscape to change and often results in a negative visual impact that contributes even more to the deterioration of the surroundings. This phenomenon sees the coining of the term *feísmo* (eyesore); the ugliness of that which is strange, poorly built and finished, and that destroys the values of a countryside that is outmoded, but that still maintains values for its regeneration and revivification.

During the early years of the 21st century higher incomes and cultural levels led to people setting their sights on the magnificent abandoned heritage, which, together with the environmental quality of the nuclei had a call effect, not only on the former residents, but also on a new population, and resulted in the rehabilitation of that which had already been built, through an in vogue element of restoring an old house. That which already existed grew or was expanded, but it lacked the character of suburban urbanization, creating new "urban" landscapes. This could be seen as a sign that change is possible.

We are thus before a territory that is dispersed since its origin and that has little or nothing to do with the phenomena that, as of WWII, began in Europe and the United States. Initially it could have been a phenomenon of dispersion, linked to the acceptance of Howard's Garden City model, but without its degree of autonomy, consisting of residential areas that are dependent on the use of cars and on commuting to the city for jobs and services. It was treated as what are today known as anti-urban movements of returning to the land and of the conquest of vital space. The country offers the possibility of larger houses, with a small or large garden, but always with a better quality of life, linked to a return to nature as the ideal of a life that had been lost. There is, however, an important aspect: "close to" nature has now become "in" nature.

## 2 THE SCOPE

In these scattered settlement areas that this work refers to and which reveal a strong characterization of the territory this situation has developed during an initial stage into the settlements being absorbed into the city limits. Later they followed contemporary development guidelines, becoming nuclei of growth that gave rise to new residential areas, without the generation of amenities and services that had formerly given life to the traditional locations, which were limited, but that performed a function. This urban pressure on the immediate surroundings has given way to the emergence of conflicting elements that alter the urban image which until quite recently had been integrated into the landscape.

The concentration of population in coastline areas, which in the case of Galicia is of 80%, leads to the shaping of a large conurbation, linked to a motorway that acts as the territory's backbone and structures the urban conglomeration, encompassing five of the seven main cities in the region and stretching all the way up to the north of Portugal to Porto, the largest of the metropolitan areas that hang off the axis. In Galicia the main regions are Vigo and A Coruña. Vigo is our case study in that increasingly more moderate distinction between city and country, where the frontier between the rural and urban world has become blurred, generating what Indovina describes as the sprawled city.



Figure 1. Traditional centres. Sardoma, situated in an urban edge, hosts industrial uses without altering its original structure.

The question is: What is the significance of a city's growth and the generation of a metropolitan area on the surrounding rural territory?



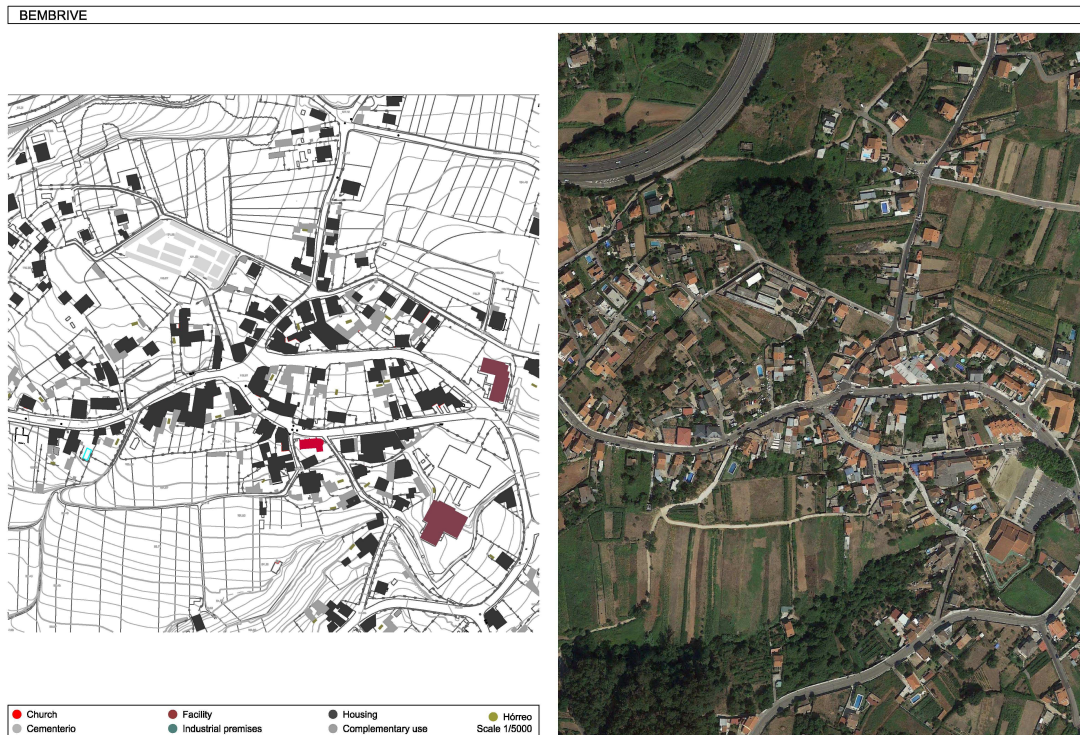


Figure 2. Bembrive. Traditional rural town well connected to the urban edge, its closer links with the world of agriculture prevents its transformation. It starts to appear urban single-family housing.



Figure 3. Fragoselo. Traditional rural town, its location in the coastal tourist area favors the widespread change of type of housing.

Vigo, located on the coast within a unique geographic setting and surrounded by an outstanding landscape, was a city with scarcely 16,000 inhabitants at the beginning of the 20th century. In recent years this figure has increased to 300,000, first because of the absorption of the bordering townships, and later because it continued to grow on itself both in height and size, supported by the strong industrialization of the naval, automobile and fishing sectors, the latter in the field of frozen foods.



This was the origin of the phenomenon that attracted population from the rural areas, with the resulting emptying of the previously mentioned region and the demand for new housing and land for economic activity.



Figure 4. General view of Vigo

Over the years the city has become the head of a metropolitan area that encompasses fourteen townships within a radius of 50 Km; a large functional area of 500,000 inhabitants with a strong dependency on the central city.



Figure 4. View of the urban edges of Vigo

This situation and the lack of territorial organisation has exploded as a result of higher income and the revolution fostered by improved mobility, as Ascher points out, derived from the generalised use of cars. The increase and improvement of road infrastructures has encouraged territorial growth in spurts, leaving large empty urban spaces and generating a spontaneous urban sprawl on fallow land

that is expectant, as defined by Secchi when he refers to land that once it has lost its agricultural value awaits urban development.

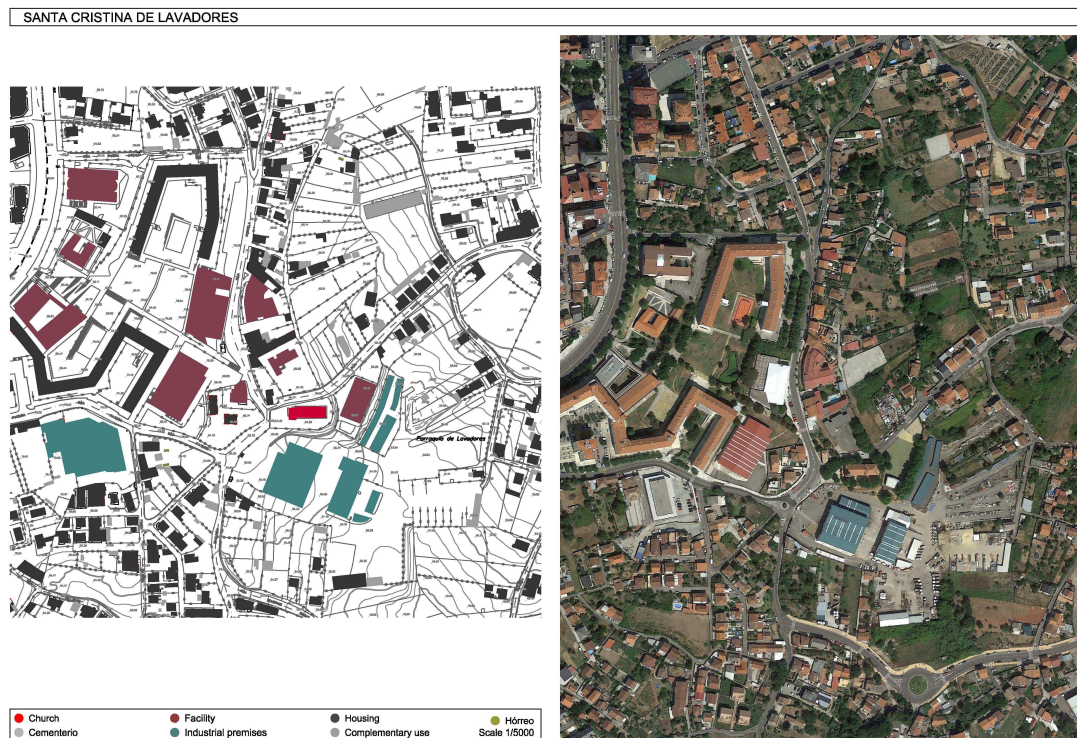


Figure 5. Lavadores, traditional town centre absorbed. There are typologies of urban public housing, city facilities, and industrial buildings.

Growth in spurts gives rise to parallel movements; on the one hand the absorption of the nuclei closest to the city and the surrounding ones in a radius of approximately 30 Km that continue to be rural nuclei, as per what is described above. Notwithstanding, these nuclei follow urban habits and are disconnected from the primary sector, little by little recovering their vitality.

This is how the fragmentation of a territory that was previously part of an agricultural world takes place. It is hierarchically organized and well-communicated by a fine network of roads and strongly established in firm communal relationships that used to guarantee social cohesion and set the bases for coexistence. We are before heterogeneous territories, both because of their geography and because of their economic disparities. They are fragmented regions, where urban areas alternate with depopulated rural areas within a territory that is by no means balanced.

But let's not deceive ourselves: these physical spaces, following Bruggmann's discourse, are often seen by casual observers as rural areas, but in fact the vast majority is part of the urban daily routine of the nearest city, with which they maintain economic and social links: "almost all the inhabitants are more connected to the urban world than to the rural one" (Bruggmann, 2011).

This change has been influenced not only by housing, but also by other uses, spontaneous or not, modifying not only the scale, but also requiring new infrastructures, of which the roadways are the most visible ones. They change to more moderate connection patterns, generating heavier circulation and confusing and dangerous connections. Moreover, they are powerful physical barriers in the territory: "with quite a degree of naturalness, the main points of exchange, of access and visibility have served in the periphery as an anchor for the logistic and commercial functions, as well as residential dispersion" (Mangin, 2004).

This leads to the transformation of barren land, the more or less controlled dissemination and the "redistribution and noticeable division of the functions" (Mangin, 2007). The reasons behind the change appear to be derived from the mobility of cultural patterns, but also from the need for land—



that the city demands— and that, because of the lack of urban planning, it tirelessly absorbs, creating a banal periphery without references, that will later require action. “Development operates increasingly more in the periphery of the conglomerations, with absolute anarchy in the occupation of land, having disastrous consequences on the environment” (Laborde, 1996).

The results are the already accepted phenomena, such as urban dissemination, synonymous of spontaneous urban peripheral development, therefore lacking urban development, sprawling and low in density. This dissemination “does away with the natural areas, invading farming land, making equipment expenses soar, undermining urban social life, aggravating inequality, exhausting the natural resources and damaging the environment” (Brugmann, 2011) as well as making it ugly. This issue of ugliness has, in recent years, taken up page after page of the local press, and no measures have been taken with regard to urban planning or citizen awareness.



Figure 6. General views of Vigo

This unstoppable movement towards land occupation, which was previously occupied and organized according to a historical balance, generates poorly structured peripheries, takes over centers without generating new ones, is a complex periphery and in its disorganization there appear a wide variety of urban life modes. When Koolhaas refers to this new city, where there is city and country everywhere, he calls it a generic city: one which has lost the personality that had previously defined it and where the distinction between centre and periphery is lost: there are no longer any limits.

Today the city is everywhere (it is not a centre, it is not a place, and it is no longer countryside). Corboz confirms that today we are reduced to “working towards a broken and heterogeneous city that is under uninterrupted transformation; to thinking simultaneously about order and disorder.” We are in a situation where we recognize the evidence collected by Mangin and put forward by P.P. Pasolini: “Where one thinks the city ends, and where instead it begins again.”

There are undefined borders that we need to be aware of. We are up against a situation that is happening on a worldwide level in developed countries and with a greater fury in countries that are considered emergent. What we aim to point out here, however, is the overlapping of a blurred model over another model that is traditionally disperse, and consolidated throughout the history of the territory. It is a network that is very fragile, but that has an unquestionable capacity for reception, and that overflowed from an uncontrolled process and during a very short period of time in favor of economic growth. It is now worth considering the present reality as of its recent evolution in order to set forward criteria for its future development.

### 3 OPPORTUNITY

Today frontier areas are places for opportunity. The recession has clearly established limits on growth, which had been uselessly suggested from the perspective of sustainability guidelines, to then enter a phase that leads to building a city on top of a city and to speak of integral urban regeneration. The frontiers of the built surroundings represent the possibility of recovering the relationship between the inhabited environment at whatever scale and its environs, reinventing the relationship between the built space and the natural and agricultural spaces. They represent spaces of excellence, that are



not visible today or have a negative perception, in order to establish green areas and introduce new facilities as connectors in badly-structured urban areas, that could help to loosen up the image of the city and integrate the uses, volumes, and the height of buildings, incorporating functional and visual criteria to foster the connection between the anthropic zone and the adjacent natural and agricultural space.

#### 4 AIMS AND CRITERIA

It would be a matter of organizing and managing the new complexity of urban frontiers, reconsidering the urban typology of transition from city to country, improving the accessibility and connectivity of the territory, seeking to improve the environment in order to enable the integration of new urban demands without altering the former balance, and introducing measures that permit the restructuring of the evolution that has recently taken place.

This would entail the sharing of territorial layouts and individual interests, which would represent the integration in the old territorial structures of the population and housing, taking over them and redefining them against a false premise of progress that only leads to using up more land without a clear need to do so, basically for road infrastructures. These do not guarantee a reduction in mobility and accessibility and leads to unviable energy consumption. What is even worse is that it destroys a landscape that is unique, without adding any new value. In short, we are faced with the need to sensibly incorporate a new sustainability—in its widest meaning—that would promote social cohesion, economic development and the improvement and protection of the environment and of the built heritage.

#### 5 TO CONCLUDE

In summary, it is a question of laying down the criteria to achieve a new transformation of the territory, one that is more balanced, through universally accepted approaches of rehabilitation, regeneration, and renovation, included in the concept of integral urban regeneration, under a process of construction and debate. This must be accompanied by other emerging concepts on the handling of built spaces: density, design, and diversity. Through a slow and calm approach (as opposed to the speed of recent times) this would contribute to the recovery of the former balance between city and country and to the mutual synergy that since ancient times has been provided by urban life.

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## **PUBLIC AND PRIVATE SPACES IN NOMADIC HOUSING:**

### **A RECENT CASE STUDY IN TURIN**

**Simona Canepa**

*Politecnico di Torino (ITALY)  
simona.canepa@polito.it*

#### **Abstract**

Identity and diversity – whether cultural, ethnic, religious or political – mark our contemporary global context on a daily basis. We live in an age that might be defined by migration, of population flow, by the movement of people, of information, of knowledge... From continent to continent, from nation to nation, from region to region, from city to city, individuals or groups of people overcome geographic borders and cultural or linguistic barriers in search of an economic comfort zone; for a new lease on life for their children; as well as for study purposes; for tourism or to experience new lifestyles and social relations. Old and new nomads, inscribe traces, invisible or real, on the places they cross and where they stop, generating linguistic, cultural, lifestyle contaminations. They remark, delete or reconfigure their identity, absorbing or rejecting differences. By traveling and stopping – temporarily or permanently – they retrace paths followed by others or design new ones. It's a movement of global intensification that configures ways of living, inhabiting, and being in the world. On the other hand, the concept of the Interior has profoundly changed. It is no longer tied to the domestic and work sphere only, it now includes all places of associated and collective life.

In the multi-ethnic district of Porta Palazzo in Turin a temporary residence with communal facilities primarily designed to accommodate singles and couples without children for a maximum of 18 months was built. Porta Palazzo is a district characterized by problems of urban decay and social tensions with a high rate of immigration coming first from southern Italy and, more recently, from abroad. The coexistence between different populations in this area has been and still is partly a source of tension, but also helped to create a multicultural, creative and rich environment in terms of stories and traditions. So the choice by the Administration was not random and the temporary residence aspires to become a new polarity of the neighbourhood and a further local node capable of interacting with the network of subjects that animate it. On the side that overlooks the Market Square commercial activities related to the urban context have been planned.

The social purpose of this program is to provide an answer to the growing housing needs expressed by the population that is placed in the so-called "gray band", to whom belong people who have no access to social housing but, at the same time, cannot compete on their own in the free market. The design of the Temporary Residence is both a technical and social experimental intervention aiming, through the recovery of the existing degraded property, to transform it into a new living model of Social Housing, from which will benefit not only the residents but also the entire community.

The project chose to use the ground floor of the building for the relevant collective spaces: multipurpose area for living room, small library, public meeting and entertainment, launderette, ironing room, storage rooms, technical equipment rooms. The common living space is divided into three large rooms, open and interconnected, in which different activities can be made: a projection room, a small library, a public meeting room and an entertainment area for residents during afternoon and evening.

The 27 housing units (13 studios and 14 apartments) are composed of a living area with kitchenette, a

sleeping area or a bedroom depending on the cut of the accommodation and a bathroom.

The apartments are characterized by different equipment, inspired by a common concept, the area of Porta Palazzo: popular market in the centre of a multi-ethnic neighbourhood. Each unit is in fact characterized by a subject (theme), with specific colours in order to define even the smallest detail of the curtains, accessories, furnishings and crockery: the construction site, the marketplace, between past and future and the change.

The furnishings were designed using local products and, where possible, abandoned objects converted to other functions and objects made from waste materials, such as samples and end of line stock for fabrics, antique furniture and accessories recovered by a furniture firm in collaboration with organizations that deal with mental health and social distress.

**Keywords:** Building and social renovation, temporary housing, sustainable intervention, public, common service and private spaces.

## 1 THE PHILOSOPHY OF THE PROJECT AND THE USER

"Common Places" is the name chosen to designate the project of Temporary Residence in Piazza della Repubblica in Turin: a name that represents the spirit of the initiative by the Housing Programme in collaboration with the Compagnia di San Paolo. The apartments are in fact the "places" for excellence, real as bricks, protective, comfortable. But in this case they are also "common" because in and out of the apartments there are spaces where tenants can meet, learn, talk, exchange experiences, but they are also "common" because those who live in these units know that it's not forever and every room, every piece of furniture, every furnishings, will soon be used by other people.

The Temporary Residence is intended for people that need a living arrangement in a short time and for a maximum of 18 months, waiting for an apartment by local councils, people experiencing housing stress, needing a new housing solution due to unforeseen events (separation, eviction for termination, change of employment or reduction in income, etc.) and that, expecting to find it, they can use these sites as a bridge between the old and the new house. Users may be represented by students, interns, singles, single parents with children who need an apartment to rent for a period of time, waiting to be able to settle permanently; for people who travel to Turin to visit or use services, the Temporary Residence offers a residential cost-effective solution and an orientation to the use of the city; trainees, workers and professionals from outside Turin, for whom Temporary Residence is a residential accommodation for the period of stay in the city or a temporary solution when searching for accommodation. A solution is offered to these people, however, it is also a proposal of a social nature with the intent to contribute to the emergence of a new housing culture. In fact the active involvement of those living in the Temporary Residence is very important, it wants to be a home for those who stay, even for short periods, enhancing mutual understanding and exchange, involving the people in the care of common areas and in the organization of different activities.

Many experiences of cohabitation teach that, in order to develop a relationship of solidarity and collaboration within a condominium, common spaces that respond to concrete and daily necessities of the people are necessary and that should constitute a point of meeting and sharing. The temporary residence provides for this a common space for shared use by the tenants, not to be considered an alternative to private housing but rather complementary. This space is set up for different functions that affect the daily lives of residents, with the aim of facilitating the reconciliation of the times, the enhancement of skills and the solution of everyday life small problems. So it is a meeting place for social occasions, space in which to organize collective services amongst tenants.

## 2 THE CHOICE OF LOCATION AND FUNCTIONS TO BE SET UP

Porta Palazzo, where the building is settled, is a district characterized by problems of urban decay and social tensions with a high rate of immigration coming first from southern Italy and, more recently, from abroad. The district is among those that attracts the highest odds of foreigners who move within the city area. However, the substantial inflows are offset by equally large outflows, making the area a sort of transit place for many foreign immigrants. Part of this population, however, is rooted in the territory, promoting home and commercial space reuse. Coexistence between different populations of this territory has been and is still partly a source of tension, but also helped to create a multicultural environment, creative and rich in terms of stories, traditions and attractive spaces. A daily market has been taken place since 1835 (Fig. 1).



Figure 1. Daily marketplace in Porta Palazzo, Piazza della Repubblica



Figure 2. General view of Temporary Residence

The building, built in the early nineteenth century, in the last twenty years was first owned by the University of Turin and then by the State. In the nineties it has been illegally occupied, then cleared and later the property passed to the City of Turin that sold it through a tender on free loan in 2008. The complex consists of a historic building of 4 floors on the front towards Piazza della Repubblica, bound with regard to the facade on the square, and two underground floors of cellars; on the side facing Via Priocca in a later building perpendicular to the main one, consisting of 3 floors above ground and a basement; in an outdoor courtyard open on the street (Fig. 2).

The proposed redevelopment of the winning group Fagnoni & Associati Architetti from Florence, has provided for the building of Piazza della Repubblica commercial units on the ground floor and housing units (studios and apartments) in the remaining three floors above ground and in the attic; for the building on the front of Via Priocca, a restaurant arranged over three levels and the manager's office; for the courtyard, arrangement and furnishing of the open spaces towards the city and the construction of inner service areas for temporary residence.

### 3 SUSTAINABILITY OF THE PROJECT

The mix of functions, namely the presence of different functions (residential, services, catering, trade) and, in particular, the letting of economic activities spaces contribute to curb the rent of temporary residence and to ensure the full economic sustainability. The Compagnia di San Paolo, by Ufficio Pio, has in turn sold the entire structure on a free loan for five years renewable to the social manager, which receives and retains the rents of the apartments and commercial premises to cover the operating costs and routine maintenance and assumes the risk to cope with losses from vacancies and arrears; the manager is also required to annually allocate a portion of revenues to the creation of a fund for extraordinary maintenance of the building.

In addition to economic sustainability there are two other forms of sustainability behind the project: social sustainability and caring for the land - they want to contribute to the redevelopment of the area affected by the intervention both architecturally and socio - cultural, becoming a new polarity of the neighbourhood and a further local node capable of interacting with the network of subjects that animate it - and environmental sustainability - the building allows the production of energy through photovoltaic and solar panels, to contain consumption and uses low-dispersion building components.

### 4 FEATURES OF SPACE

#### 4.1 Public spaces



Figure 3. Public spaces in front of the entrance

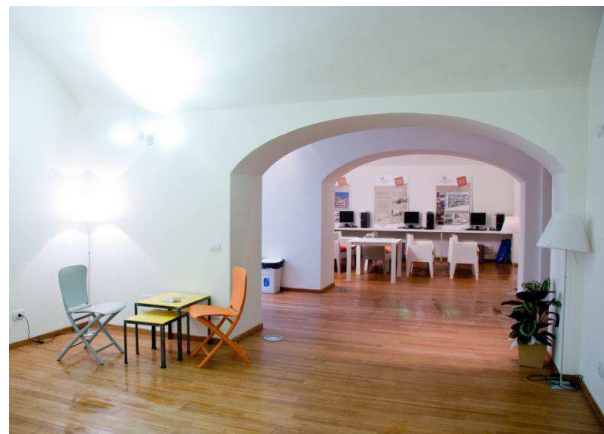


Figure 4. Common service spaces

With the construction of the new building on the ground floor near to the historic building, the overall size of the courtyard garden has been reduced to about 150 square meters. The aspect that has significantly influenced the design choices is the height difference between Piazza della Repubblica ground floor and the entrance area to the backyard (- 2,50 m). The overall design of the new square has taken form from this problem: a filter space between the house and the road, but at



the same time an integration space between "internal" and "external." The courtyard design was imagined with the construction of terraces and stone seats that could accommodate in the new square all those looking for a place to stop and have a rest (Fig. 3).

On the head of the lower building it was placed a restaurant, which is accessed from the courtyard and from the space on the side facing piazza Don Albera. The head of Via Priocca, despite being completely transparent, photovoltaic glass, has no access. The restaurant is on three floors: on the ground floor, in addition to the hall, there are the kitchen and services; the first and second floor is accessed by an internal staircase, placed parallel to the window, where there are tables for customers, but also places accessible to residents from distribution galleries.

#### 4.2 Common service spaces

The access to the core of the apartments is from the courtyard towards Via Priocca. The main entrance leads directly to a disengagement zone which distributes to the stairwell and elevator. Alongside a separate entrance leads to the new core which abuts the main building and overlooks the courtyard. This new space (80 sqm) has large windows that look out on the courtyard garden space and is a multipurpose space where are concentrated the information services of the residence. This communicates, through a series of arches on the existing historic façade (reopened during renovation) with what was once the wine cellar of the property. The perceived space is represented by the new core from a wide portion of basement. The basement is used in part to create a multipurpose space (200 sqm) where you can do activities that do not require the habitability, or to accommodate common areas: use of multimedia connections, small library, tables and chairs where you can carry out activities or where you can organize public training meetings or entertainment (Fig. 4). The portion of the basement to the south-east of the building houses the main plants (thermal power plant). The inside leads instead to the laundry and ironing room for the use of the residence. On the opposite side of the large communal living room are the places for equipment and storage. The common living space is divided into three large rooms, open and interconnected, in which different activities can be made: a projection room, a small library, a public meeting room and an entertainment area for residents during afternoon and evening.

#### 4.3 Commercial spaces

On the front of Piazza della Repubblica there were five commercial units, but during the refurbishment, by a valuation made in consultation with the Client, it was decided to reduce the number of retail spaces, taking them down to three. The retail area of each unit in fact, appeared small for market needs and with low visibility on the square. Every unit now comes with toilet and a small space for the storage. These units can still easily be combined with each other in various possible combinations in order to optimize the lease. In this sense it is also possible to have one single commercial space.

#### 4.4 Private spaces

The type of housing consists of small temporary units (studios and apartments) as well as of dedicated service areas. The housing units are accessed by stairway surrounding a lift block placed in the corner between the two buildings with distribution to the gallery. The objective was to obtain the maximum number of apartments using the distribution logics compatible with the morphology of the buildings. Considering the constraints of various nature, it was possible to create 27 apartments, including 13 studios and 14 apartments. The studios consist of one living room (sofa bed, a kitchenette, a small table and bathroom). The apartments however are composed of two habitable rooms (living room-kitchen, small hallway leading to the bedroom and the bathroom).

### 5 COMFORT AND QUALITY ' OF THE INTERVENTION

Comfort and quality are two terms that have characterized the design of the building from the beginning. Thinking of a building that can express, whilst containing the investment budget, quality and comfort means first of all think of the building covering. In this sense, the materials used and the

insulation choices have led to having apartments very isolated acoustically and thermally protected both in winter and summer. From the standpoint of plant engineering, they have tried to introduce home automation for some elementary functions: thermal control of the heating, control of artificial lighting systems and access systems. Other items that required attention in the design were the window frames (which were sufficient to comply with the acoustic comfort and thermohygrometric) and especially the furniture.

All these components have had a not insignificant impact on the budget, but it allowed to provide living spaces that would allow residents a high comfort and great quality. To reach this result a design process that would combine the objectives to be achieved by the choice of components and materials produced through a sustainable path was followed. The choice to follow a sustainable path led to analyze which innovative products were introduced in the market and, after a careful cost-benefit analysis, the choices that led to the final execution was made. All of the apartments floors (except for the bathrooms) and common areas (multipurpose room) were covered with wood, using a wood floor in bamboo. Bamboo is a plant with very high renewability and certainly is considered a sustainable choice. The coating tiles of the bathrooms have a percentage of 40% of the recovered material from production waste. The same applies to the facade shading and external floors of the balconies and the stairwell; also in this case it is a highly environmentally friendly material (80% product from scraps of wood).

## 6 INTERIOR DESIGN

The interior design of the building was carried out by Galliano Habitat in partnership with Re(f)use Lab of None and, for the textile part, with the Laboratory Micca in Turin. This synergy has allowed to propose and implement a real social project within the building's redevelopment, a project coordinated, in the modern way of approaching the integration of people, things, systems and values with a view system (systemic approach).

The furnishings of the apartments have been designed following the wider use of local ingredients wherever possible or otherwise made in Italy and, where possible, of the functional recovery of disused furnishings. Even when they were used standard products, they have tried to reinterpret the use of a non-contractual basis, as suggested by the logic of the redesign. They then selected two main types of products: the standard items supplied by companies with industrial production cycles, but strictly Italian and recovered or objects designed and manufactured from waste materials or produced locally. The use of industrial products was necessary for all components that must comply with specific warranty requirements and intensive use (kitchens and appliances, chairs, sofa beds, beds and mattresses), and where possible, especially so for products which characterize the project from the decorative point of view, it has been used waste or recovery material.

### 6.1 Project themes

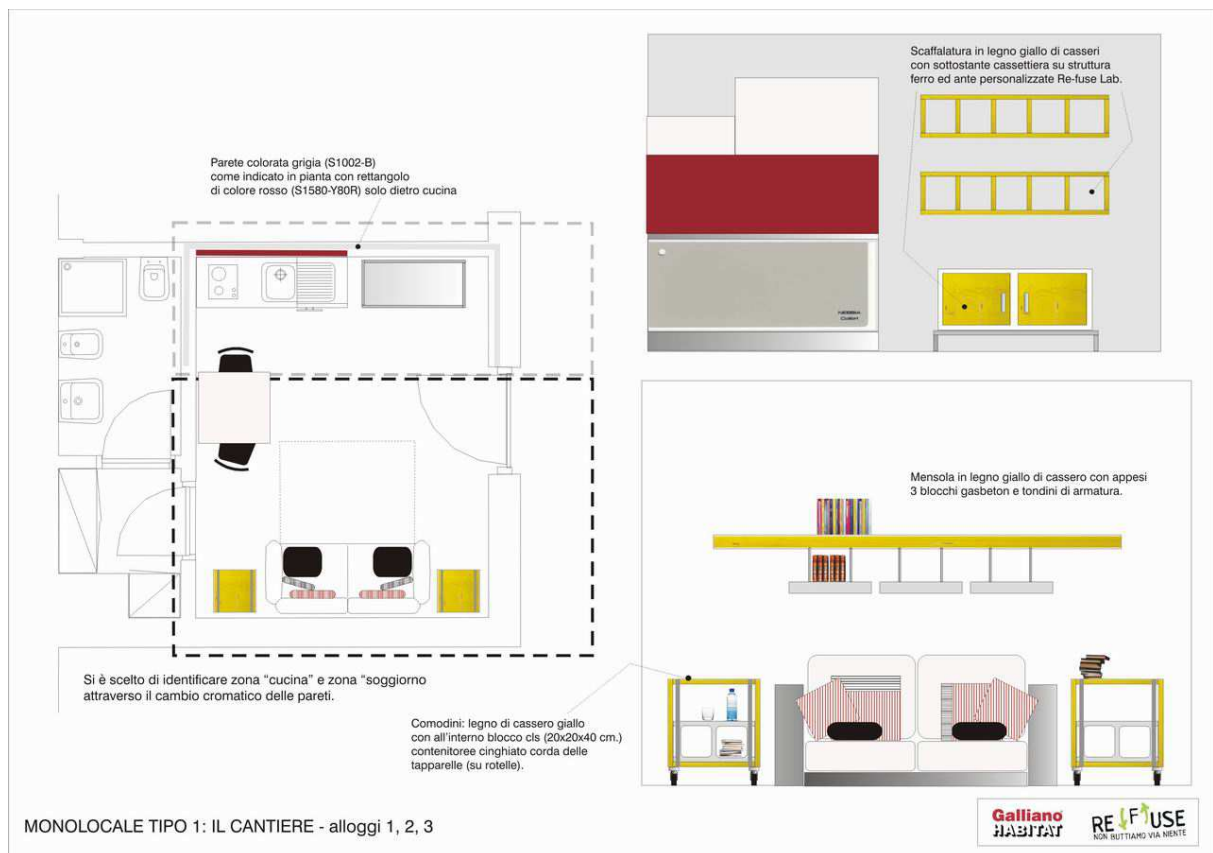
Four themes were identified, divided among the 27 apartments.

The construction site is the starting point for an integrated requalification of people and city. When the project has gone from concept to design, which is its first two-dimensional representation, we imagined the design process that starts from the hand that draws black lines onto the white sheet, and thus describes a design. When it arrives on the construction site, then everything takes its red colour of the bricks, grey of dust, yellow of the formwork (Fig. 5).

The marketplace: the neighbourhood is a symbol of two types of markets, the daily one of fruits and vegetables, the protagonist of the square and in the neighbourhood since 1835, and that of the Saturday flea market, the Balon. Walking among the wooden stalls of the first, surely we get drunk from the colours of purple, orange, yellow, but what prevails is the green of vegetables, of the mint sold for the Arab tea, of the lemon leaves. When, at dawn, on the other hand, you enter the Balon, the first impression is of old iron, rust, antique woods. Hence the choice of grey, red rust, recycled wood (Fig. 6).

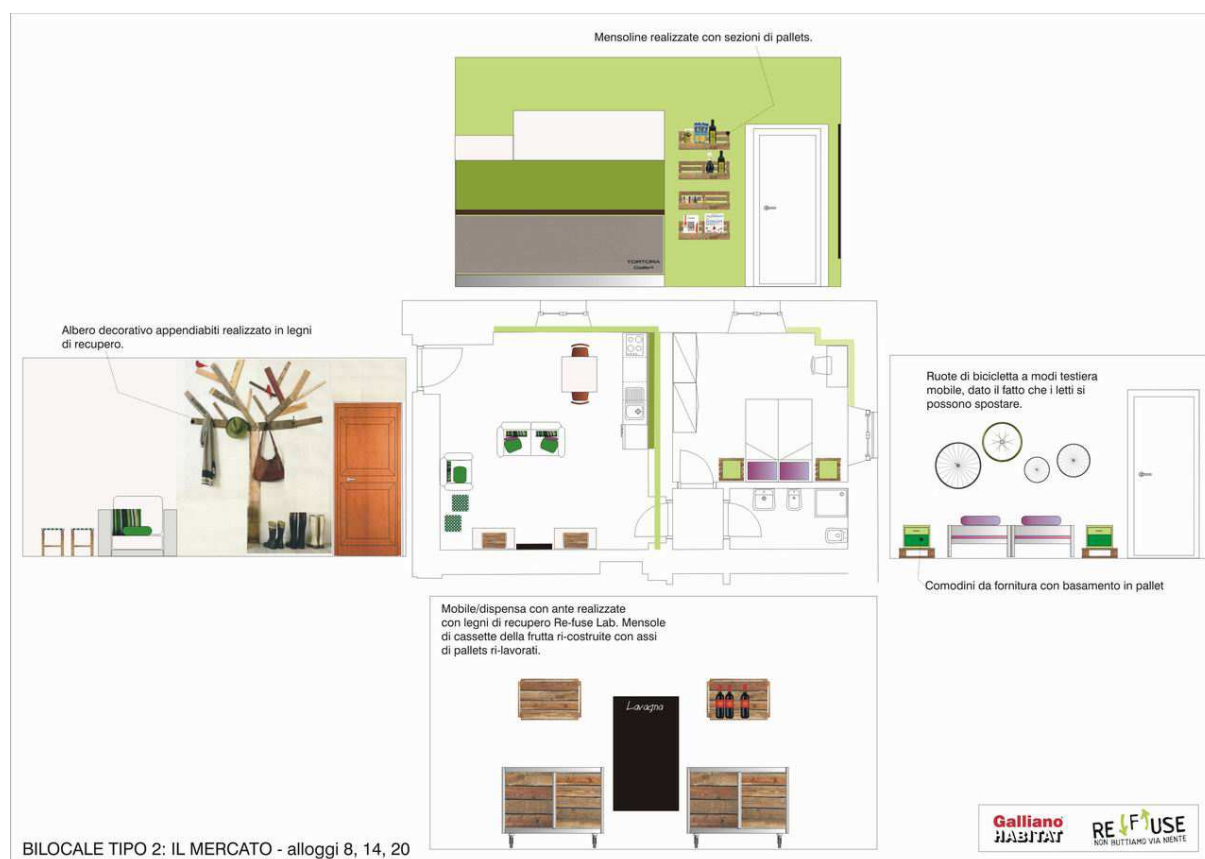
Between the past and the future: they have imagined a future that captures the past and projects it into a renewal of urbanistic use involving and transforming the existing one. In these lodgings is the red that is the master, along with the white and the grey. It is the energy and the desire to integrate all the realities living in the neighbourhood to improve and revalue. So is the commitment to a common purpose, to go beyond, to be re-born.

The changing: it is the goal that makes explicit the common design intent of designers, clients, cities. Belong to this theme the apartments in the attic, the ones who are directly in contact with the sky. In these premises is expressed the sense of the project that started from the ground floor came up to the last space level; the desire to communicate, through creativity (blue) the harmonious behaviour towards the environment and therefore, as a whole, the desire to integrate the diversity of all kinds: economic, social, racial, colour.



Figures 5. Apartment drawings: construction site and marketplace type

The chosen typologies (construction site, marketplace, between past and future, the changing) have suggested the materials and the colours to be used in each of them. It was enough to look out of a window to steal the suggestions that the market stalls, fruit and vegetables, the structures that over the years have characterized the neighbourhood asking us to talk about themselves and how those very same elements, could be the starting points to talk about a broader language of an integrated social city.



Figures 6. Apartment drawings: construction site and marketplace type

## 6.2 Re(f)use Lab furniture

The items of furniture designed and manufactured by Re(f)use Lab were made using waste materials like samples and stock end series for the fabrics, old furniture and accessories recovered and readapted, or recreating objects with new materials but of local origin, such as the chestnut wood. The philosophy of Re(f)use Lab is to redesign, ie the transformation of furniture and items of furniture that combines aesthetics and functionality of the design with the challenge of psychosocial rehabilitation, starting from the preliminary draft and following all the stages of realization through to installation and commissioning at the customer (Fig. 7).

The initiative was born from the synergy between organizations that deal with mental health and social hardship and an entrepreneur who has grasped the strong design value of the idea. Within a short time, the Re(f)use Lab has become a laboratory of creative skills with ideas, potential, dexterity, a shop where furniture and objects are transformed into unique pieces in a logical and ethical operability and environmentally friendly; a nursing laboratory and education to the design, recovery and development of creativity and craftsmanship in design. One area of excellence for the training and for the apprenticeship of young people and people in need. The objective of the workshop is the recovery of things through the recovery of the people and vice versa, but also of the skills introduced in the tradition revisited with new technologies. The Re(f)use Lab craftsmen are people who, as part of a psychosocial rehabilitation path, are aimed to experiment in a real working environment to learn manual skills and planning and creative skills in a controlled progression of stimulation and tasks of different difficulty. Rehabilitation then shifts from the conventional areas of the structures in order to enter into the reality of everyday life. After a variable period of training, according to the starting capacity, once acquired some useful skills to a job, work placements are activated where apprentices can work side by side with mentoring expert craftsmen.



Figure 7. Examples of new furniture from reused objects and materials

Breaking down the furniture and objects no longer used until you get to their essence can start a new creative design, dynamic and environmentally friendly. A piece of furniture to be changed is not scrapped or recycled, but welcomed back into the design cycle and into the virtuous design. In Re(f)use Lab does not throw anything away. Old complementary-you furniture, semi-finished and raw materials are reused.

Many disused furniture have been recovered from a parish cooperative which clears cellars and from retailers closing their businesses. Recovered items such as old chairs and tables out of fashion, has been repaired and carried forward thus realizing a true redesign. Other objects considered waste and no longer usable were instead reused by changing their original function, such as the old ladders no longer complying with regulations and now used to hang kitchen towels, wheels of bicycles and shutters revisited as headboards for beds. Many semi-finished materials were taken and extrapolated from their usual context, creating diverse and innovative furnishing accessories such as, for example, plumbing hoses assembled together to compose bathroom accessories.

Even simple raw materials like fabric and wood have been used to create the furnishings. Thanks to high quality fabric samples but at the end of the series were created curtains, pillowcases and bedspreads and using of the Pellice Valley chestnut wood strips, pallet reproductions and fruit boxes

have been made, both designed following the suggestions of the theme "the market". Industrial furnishings were customised affixing handles made of recycled industrial band.

## 7 CONCLUSIONS

Building and social renovation, temporary residence, sustainable intervention, public, common and private spaces, participation in the project: these are some of the key words that have guided the refurbishment of the Temporary Residence, made with the aim to improve the urban and social centre of a shattered city area. The operation has returned to the city and the neighbourhood a renovated building in its exterior appearance and interior spaces, able to provide an answer to the growing housing needs expressed by the population that is placed in the so-called "gray band", to whom belong people who have no access to social housing but, at the same time, cannot compete on their own in the free market, and also an environment in which they can feel active part in the social life that derives from it, so as to avoid that housing vulnerability situations become uncomfortable and even social exclusion.

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## THE SCALES OF MAPS

Maria Bostenaru Dan<sup>1 2</sup>

<sup>1</sup>*"Ion Mincu" University of Architecture and Urbanism (ROMANIA)*

<sup>2</sup>*Fernuniversität Hagen (GERMANY)*

*Maria.Bostenaru-Dan@alumni.uni-karlsruhe.de*

### Abstract

This paper presents a geographic digital representation of natural disasters. A method has been developed to deal with the different scale of representation of disasters, from the building to the world. In conventional Geographical Information Systems (GIS), the layers are at the same scale. This approach proposes that each layer represents a zoom of the other layer. At world scale, the first one of these, disasters from different databases on their impact have been mapped. These databases are those of the European Geosciences Union session, Canadian Centre for Architecture archives, different books and exhibitions by fellow scientists (namely the "Illustrated history of natural disasters" and respectively the "Images of disasters" project in Heidelberg, and finally study works of students at the protection of localities against risks course. On urban scale, the next one, story maps have been created for the cities of Lisbon, Cologne, Bucharest and Rome. The GIS story map is in connection with the world mapping. Instead, the multimedia information systems map is in connection with the building scale and can contain reference to the building plan. The digital method is being put thus in context of theories on mapping, the most innovative ones being for paper maps from the 1960s, such as those of Guy Debord (derive), Kevin Lynch (Image of the city), Muratori and Caniggia. They bring further what was the first cartographic map of Nolli for Rome, but also previous versions such as the Mappa Mundi. The plan of Nolli proposed that the ground floor of public buildings is represented in a city map, as these are accessible like the outdoor public space. Muratori and Caniggia proposed for different Italian cities that all ground floors are represented in a map. Angelika Psenner from Vienna developed based on this a digital method. In case of Kevin Lynch, emblematic buildings, not necessarily these, constitute the landmarks. In a digital application such as the story map the ways and the landmarks from Kevin Lynch get represented. In our proposal of different scales these can be 3D modeled and thus getting to building scale from the urban scale. For this the above mentioned building plans are necessary. The landmark was modelled also in Mappa Mundi. Guy Debord proposes equally a different scales approach, based on perception of the city as in case of Lynch, with parts of it represented at different scales and constituting a collage. Thus, the digital representation in the story map gets a theoretical background in the kinds of representation based on different walking based sciences (ex. Burkhardt). This built the topic at a workshop in Helsinki. The comparison between the adequacy of GIS systems and multimedia systems will be made. In the multimedia system a guided tour and a quiz based on the current places of historical landmarks were modelled. Since the multimedia system better allows the drawing as with pencil on paper, a proposal is done on how to further develop the GIS system based on the multiple layers proposed here. In instances, a CAD system might prove better, allowing the inclusion of objects at different scales into the drawings.

**Keywords:** map, digital methods, scale, perception, public space.

## 1 INTRODUCTION

We review in this paper some proposed geographic apps, in comparison with multimedia apps, continuing a work started to represent the impact of the 1755 Lisbon earthquake. In frame of the COST action TU0801 forms were developed to compare the semantic enrichment of 3D city models [1]. GIS, Google Earth, CAD systems strive at an equal covering of the city when represented digitally, which is many times not feasible for reasons of manpower to produce it. Instead, based on the theories of mapping which will be presented, we proposed a concept in which parts of the topography of different importance are represented at different detail scales. These scales start at landmark buildings until world scale. The concept was initially based on that of the multimedia guided tour presented in the following. In traditional GIS systems layers are at the same scale. Our proposal is to include each scale in a different layer and connect the layers through zoom [2]. Multimedia systems such as the Prezi presentation system allow this zoom, but without georeference. However, recent GIS apps allow for fully digitally born and georeferenced story maps serving similar functions.

## 2 MULTIMEDIA

As mentioned, the first application of the system was done using a multimedia authoring system, namely Macromedia Director 8. The drawback of such multimedia systems is that they produce operating systems specific output files, which may become obsolete with new operating systems. Our application was produced in 2000, and is now museum ripe, as we saw in an exhibition on digital art conservation which included Director 7 movies, since the Shockwave plug-in to see it in the browser does not work anymore. The screenshots in Fig. 1. were done based on the .exe file. The browser version has however the advantage of being scalable and independent of the type of computer (Mac, PC). Macromedia has been later acquired by Adobe who continues developing the product. The mentioned presentation system Prezi is done with Macromedia (now Adobe) Flash which is the web feasible version of Director.

In the multimedia system we designed two sequences connected to maps: a guided tour and a quiz based on the current places of historical landmarks were modelled. [3] The guided tour has as basis a contemporary map, and a drawn parcours of the tour. When scrolling over the nodes a historic image of the place to be visited appears (Fig. 1a). The quiz has as base a historic map of the city. Contemporary images have to be dragged and dropped to the position today's place has on the historical map. The application was developed for the city of Cologne in Germany.

The dialogue of the contemporary and historical map proved useful in the conversion of the application to the impact of the 1755 earthquake on Lisbon [2] where the state before and after the earthquake could thus be compared on hand of landmarks represented on a seminal ceramics silhouette of the city.



Figure 1. Concept Shockwave 3D

The multimedia system could contain reference to the building plan or the 3D volume of the building instead of the historical images.

### 3 GIS

We developed two applications.

#### 3.1 GEOREFERENCING THE GIS MAP

##### 3.1.1 Map of natural disasters in the world

At world scale, we mapped the georeferenced disasters presented at sessions convened at the European Geosciences Union, researched in the archive of the Canadian Centre for Architecture, reviewed in the books *Illustrated history of natural disasters* [4] and in the exhibition catalogue “Images of disasters” [5] along with study works at the course “Protection of localities against risks” which we co-taught. We used ArcGIS online to do this mapping, after georeferencing in MSEXCELL with conversion to CSV for the import. The georeferencing is able to deal with localities and natural features such as riverbeds or mountains for example. In Table 1 it can be seen for what kind of items the georeferencing was done in case of the “Images of disasters” database. In Fig. 1 the final map can be seen. In addition to giving a different shape for each kind of disasters across the 5 databases, each database has a certain colour. This gives the map a certain complexity making it feasible for inclusion in ESRI living atlas of the world. The webmap can be found at <http://www.arcgis.com/apps/Viewer/index.html?appid=6092a2d378404d6faab09b44a85f0aa2>. A developer account has been created and the map will be exported for this purpose. Further enhancements might include the historic view on the occurrence of disasters as in the DESURBS map (<http://desurbs.eu/>), and which we have already done in the multimedia system. A geoform was developed to collect more such images of disasters and let the map grow (Fig. 3), as from archives they are expensive to acquire (<http://bostenaru.maps.arcgis.com/apps/GeoForm/index.html?appid=1e3fc0febd024f56aa34b2cba0fbdd69>)

##### 3.1.2 Storymap

The multimedia application was done as we saw for the city of Köln. Doing a webapp we converted the guided tour to an ESRI storymap and submitted to the contest of the 2016 user conference. The storymap can be seen here <http://arcg.is/1oD45LB> and in Fig. 4.

[2] showed a conversion of the multimedia system for Bucharest. Out of this we want to highlight an ArcGIS online map for the central area of Bucharest featuring the cooperation between engineer and architect (Fig. 5). The same map was done in ArcGIS (fig. 5) and in Google Maps, the later can be found at [https://drive.google.com/open?id=125PrLF33m3uunXSv8a\\_OvS8o6hU&usp=sharing](https://drive.google.com/open?id=125PrLF33m3uunXSv8a_OvS8o6hU&usp=sharing). Also the Disaster map was done in google maps (<https://drive.google.com/open?id=1oET0aVLih-17Yb3IgQjBUO4zCK4&usp=sharing>) following the same described principles, as well as a map on the works of the first woman architect, to be embedded in a guided tour we developed for her (<http://virginiaharet.blogspot.it/>). The area coincides partially with one we developed a GIS application for, using ArcView and MS Access for the database, connected to it, and, for visualisation, CityEngine. Different attributes of the buildings can be mapped with CityEngine extrusion, not only the height, but for example the number of apartments to see the density (Fig. 6). For the connection between the two ESRI products it was important to pay attention to the georeferenced system of coordinates, unlike when doing extrusion in a CAD system. Fig. 5 already represents a combination between Google Earth and GIS, as analysed by means of a form in [2]. By superposing the extrusion on Google Earth in case of representation of height landmarks already modelled with Sketchup for Google Earth benefit of a different level of detail. The urban route on architect-engineer cooperation is the subject of a storymap as well. The google map presents the advantage that KMZ files which are useful in inSAR assessment of the change of height of the ground, useful to assess the performance of foundations which is an essential criterion at these buildings.

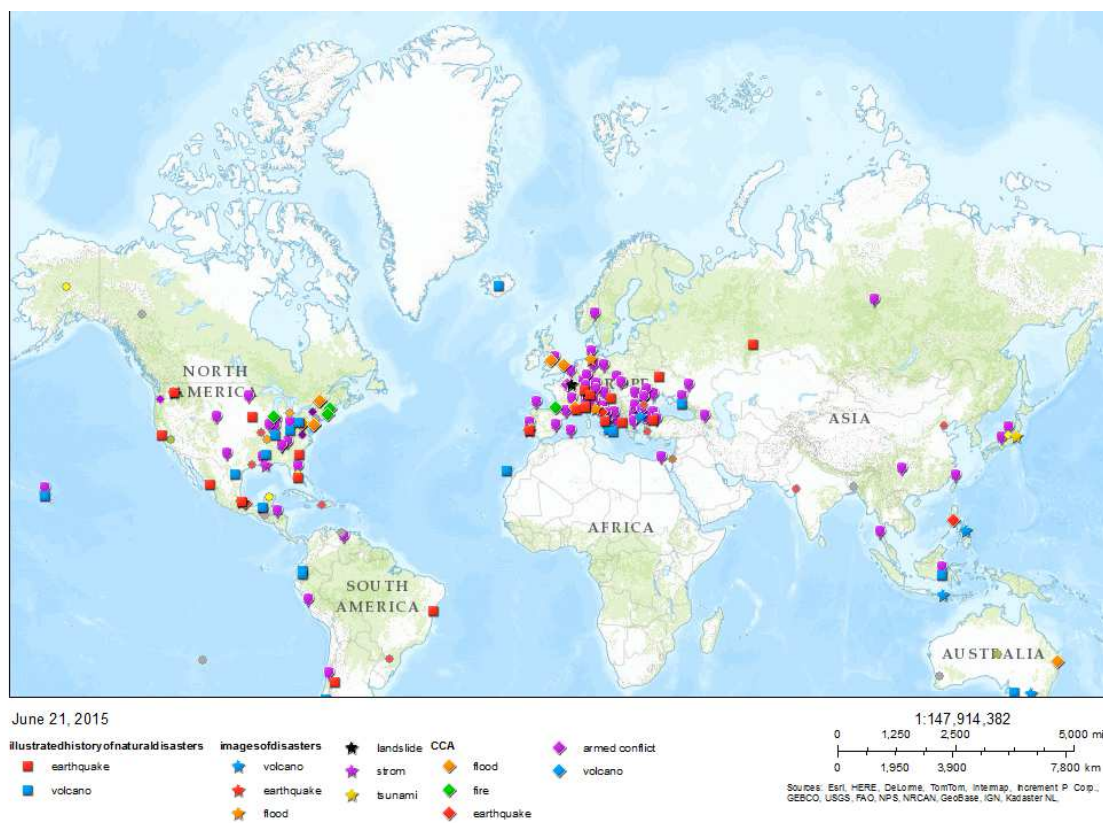


Figure 2. Map of the images of disasters

Table 1. images of disasters project

Location	type of hazard	number of dataset	Subnumber
Thera	volcano	1	
Santorini	volcano	1	
Pompei	volcano	1	
Laki	volcano	1	
Tambora	volcano	1	
Krakatau	volcano	1	
Plurs	landslide	1	
Lisbon	earthquake	1	
Goldau	landslide	1	
San Francisco	earthquake	1	
Tokio	earthquake	1	
Hamburg	flood	1	
Firenze	flood	1	
New Orleans	strom	1	
Fukushima	tsunami	1	



Figure 3. Geoform

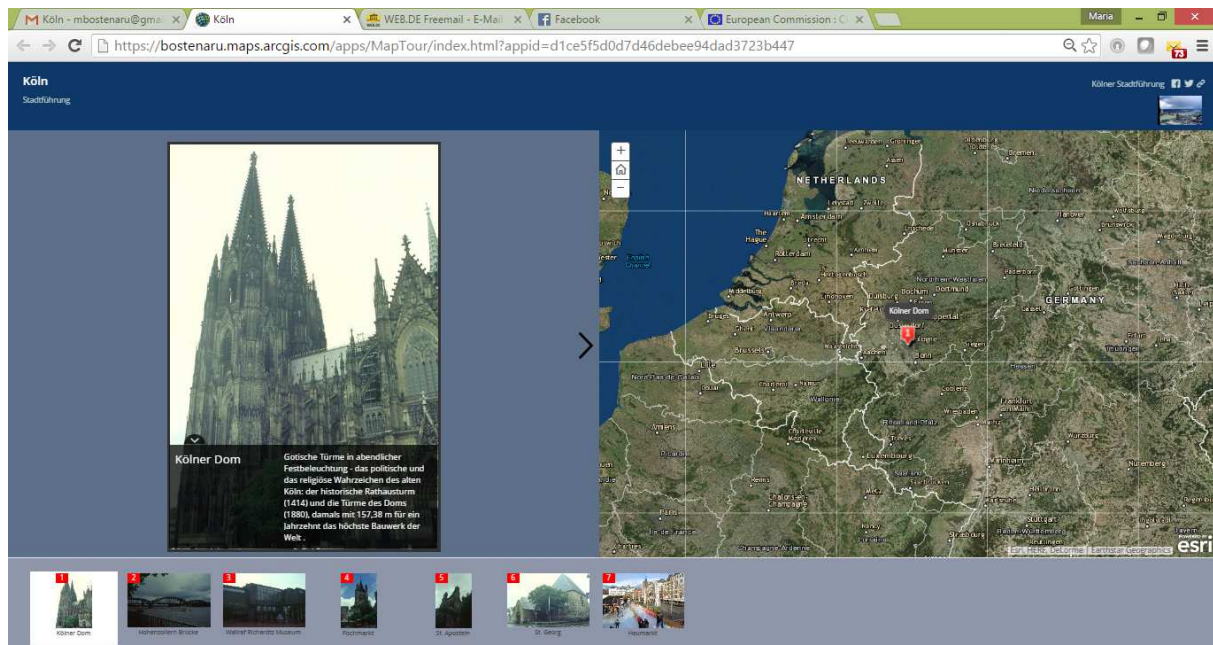


Figure 4. GIS story map

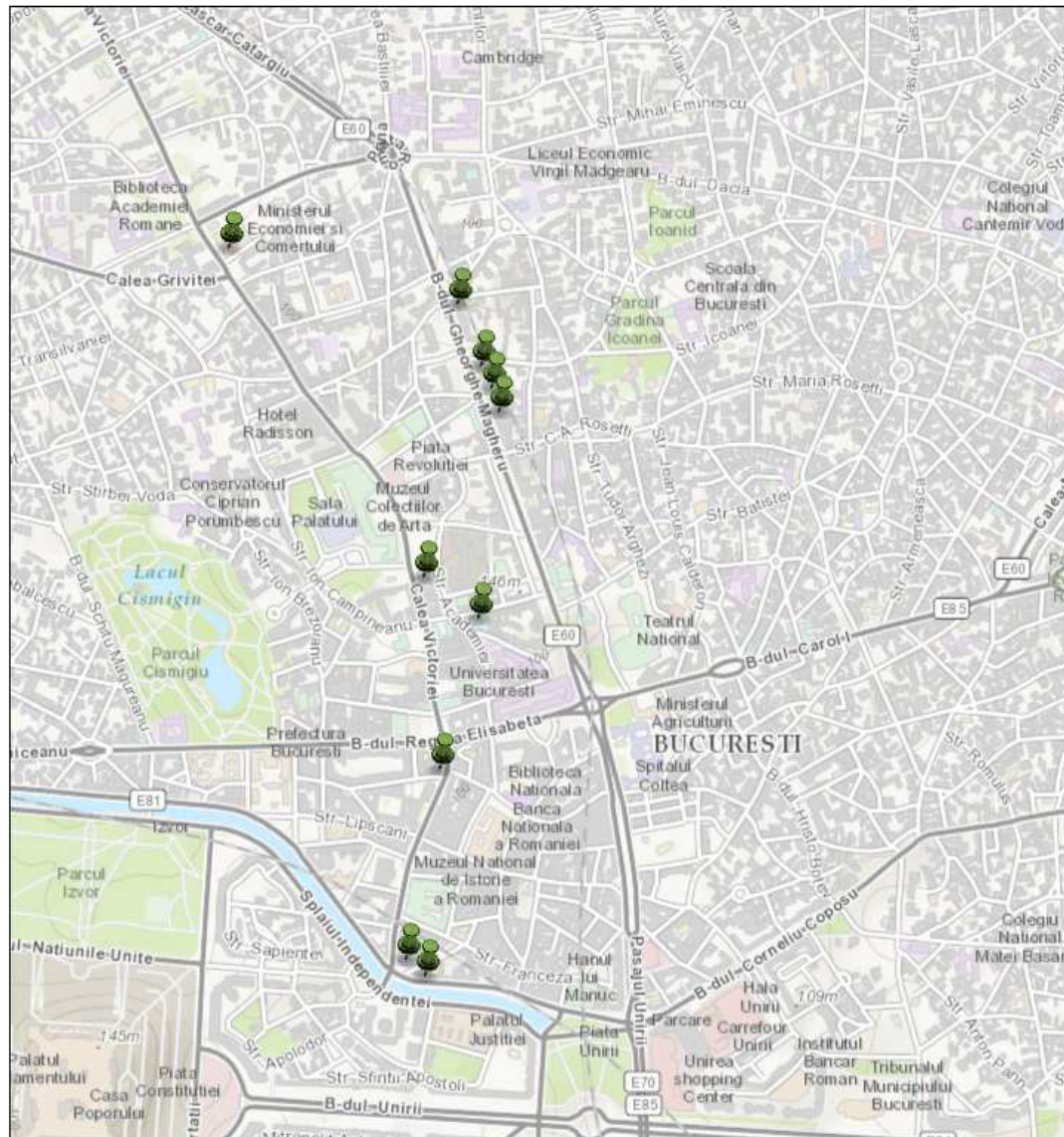
#### 4 THEORIES OF MAPPING

To better understand the philosophy behind those shown, we looked at theories of mapping, those based on exploring the map through walking along the routes. The most innovative approaches to modify the paper map are from the 1960s, namely the *Derivé* of Guy Debord [6] (inspired by filmmaking as the *Director* software is), the image of the city or how we read the city by Kevin Lynch [7] and the urban morphology approach by Muratori [8] [9] and Caniggia [10].

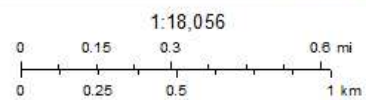
These approaches are further developments of the 18<sup>th</sup> century one of Nolli [11], who did what we wish, approached different scales for different categories of buildings. Public buildings were represented with their plan, hence at another scale. The participative approach of the 1980s brought this difference of scale in discussion in urban planning by stipulating the key areas shall be detailed, while others are only generally shown, and for these key areas pilot projects shall be developed. This is thus different from the urban regulation as the traditional GIS layers of the proposed concept. Previous approaches such as *Mappa Mundi* [12] from the middle ages

presented landmarks in a cut away manner as we will see at Guy Debord.

### Urban route architect-engineer cooperation



June 21, 2015



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Figure 5. Cooperation between architect and engineer map





Figure 6. Urban density with ESRI city engine, with marking of the architect engineer cooperation

Guy Debord proposes to cut the map according to perception, and his approach founded the so-called psychogeography. The distances are as perceived, not as physically measured. Kevin Lynch proposed to identify landmarks, boundaries, zones, paths and nodes of the city, also according to perception. This is what we've shown in the multimedia application. Muratori looked at a complete plan of the ground floor of the area, and for Rome it is exemplified for the area of Pantheon-Piazza Navona, which can be compared to Nolli. Venice and Florence are shown exhaustively by Muratori and Caniggia. Angelika Psenner from Vienna developed based on this a digital method. Jeffrey Cole, a fellow at the American Academy in Rome analysed in detail in a lecture the influence of Nolli and Muratori on strategical planning in cities of the Orient. There is a difference between the landmarks of Kevin Lynch and the public buildings of Nolli, since they not always coincide. In our approach presented in [2] we focused on strategical buildings from the point of view of response in case of catastrophic events.

## 5 DISCUSSION

One who instrumentised walking based sciences was Burkhardt [13]. Based on this Pia Fricker from the ETH Zürich developed digital landscape architecture based approaches. Also the extrusion of attributes to Google Earth led to digital landscape architecture apps such as the one by Nadia Amoroso (Datappeal) [14]. The story map has a theoretical background as we saw. Fig. 7 shows the semantic enrichment concept of our system.

## 6 CONCLUSIONS

Since the multimedia system better allows the drawing as with pencil on paper, a proposal is done on how to further develop the GIS system based on the multiple layers proposed here. In instances, a CAD system might prove better, allowing the inclusion of objects at different scales into the drawings.

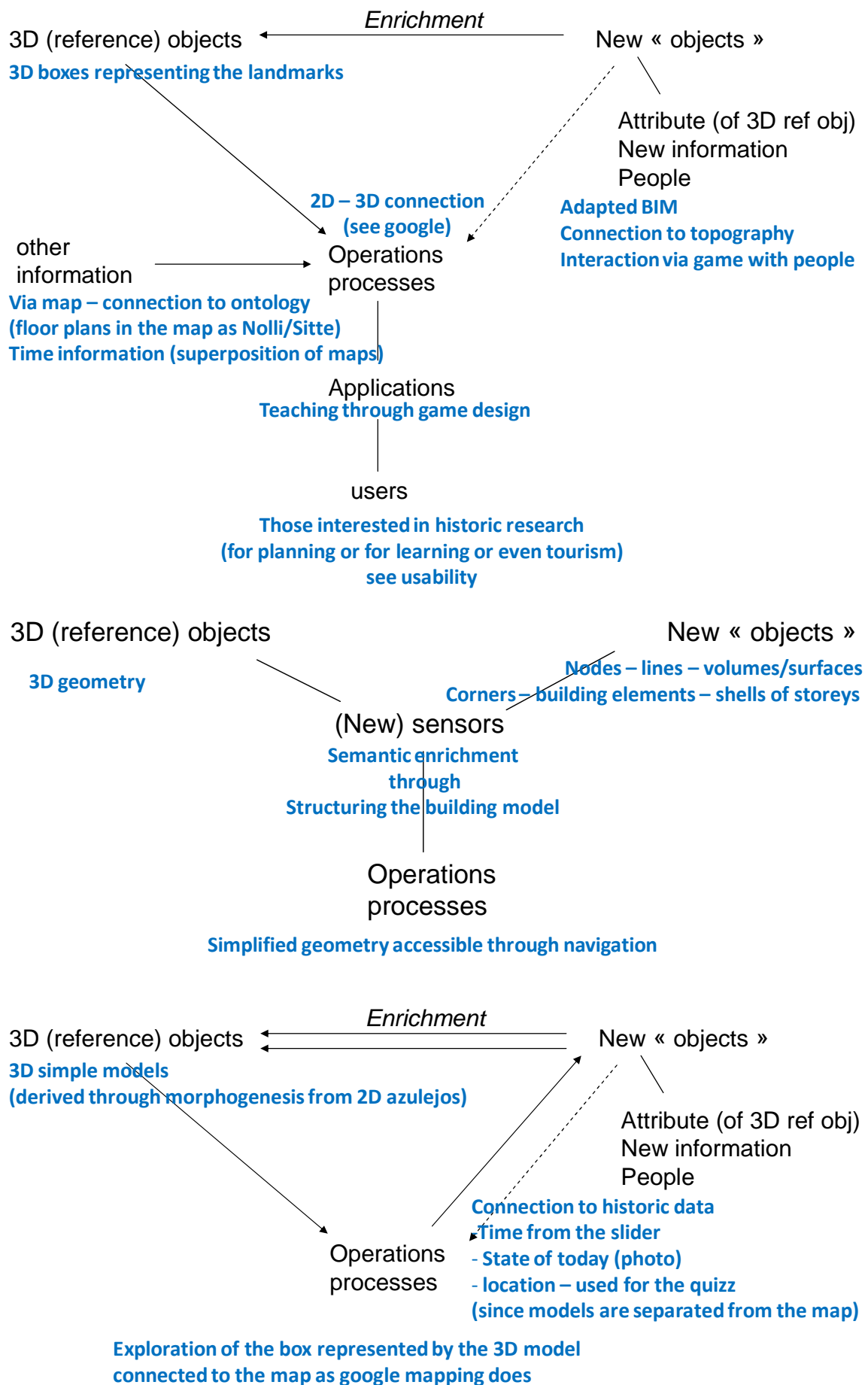


Figure 7. Semantic enrichment concept (from [1])

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## PSYCHOARCHITECTURE

**Codruța Iana**

*Faculty of Interior Design, "Ion Mincu" University of Architecture and Urbanism (ROMANIA)*

*kodruyana@gmail.com*

*<http://kodrutza.wixsite.com/arhitecturdeko>*

### Abstract

We, architects should understand better how the human mind functions, because of our way of working: on layers that contains parts of the whole projects, that are presenting a new world that it not exists yet, but only in our mind. We draw our ideas using symbols and signs, like an alphabet that tells a story. In the same way, but in a reverse process, the mind records the information given by the sensitive human system, the emotions, the scenes, the odours, the images...

In his TV series and book, "The architecture of happiness", Alain de Botton, concludes that architecture is only a scene that does not counts for real, is not crucially in the process of human life. He argues that unchanged same spaces have witnessed scene of crime and love, joy or murder. They were simple scenography for the inhabitants. But the problem is putted wrong in this way, and a little bit rough and simple. Between the walls of a house are acting the same gestures and attitude like in front of any piece of art. It is too much to expect that the architectural space influence the human been more than any piece of art does. Although there are testimonials, comments on the architectural elements such as colour or proportion or how the light falls, or the space appears which prove something else, equally convincing. There is a thin line between the reality and the imagination and that is present in our mind, the influence and the act of doing something physical.

Perhaps we should aim to understand not only how the built environment changed man but to examine how is perceived it by the human mind, how it influence human emotions, feelings and behaviours to help us to improve his comfort. It is interesting to see how the built environment, that cluster of cold and impersonal material, assembled by the artist's vision, is filled with life by its inhabitants, how the two worlds are intertwined so far: the blunt - material concreteness- and emotion - fluid , unreal and impossible to palpate. Everyone has his own life story as they select the set of own truths. But whether it is the story of our similar beginning, the common origins or unconscious, there is a common denominator that makes people to act and feel similar in some situation, in front of a piece of art or in a cathedral interior. The reality demonstrates how we all perceive the same the wavelengths of light as colours. A same mood given by a musical arrangements proves the same. Anyone can remember the feeling that same architectural space has left it upon himself, depending on the mood he had at the time.

I'm studying for a while this science area at the border between form and perception, between the thought and the wall, area that I would call "psychoarchitecture" or psychology of built space, and not "neuro-architecture" that is called by American scientists. And that because the word "neuro-architecture" can give significance confusion: one can believe it is about the brain structure of neurons and not about space in architecture. The interaction between construction and the environment, human or natural, have been thoroughly studied and written about, as that one between man and the environment. One of the newest areas of psychology is called environmental psychology and even one of the three branches of ergonomics is cognitive ergonomics. Psychoarchitecture could be a specific domain on border area between many specialties, a complex scientific field research to bring new information both in psychology and architecture.

This paper will present a scientific approach, from the point of view of an architect, about the profound link between the architecture as complex structure and the very human mind which interact with it. I will speak about the mental processes involved in the perception of inner and outer constructed spaces and the implications of it, the influence of architectural space upon the human psychological comfort.

After all, a question rise up for us, the creators of the constructed environment: is architecture space perceived like an usual object of art or has more profound and direct impact on human mind?

**Keywords:** psychology, architecture, space, mind, emotion, research.

## 1 BIRDSEYE VIEW OVER THE CONCEPT OF PSYCHOARCHITECTURE

This essay aim to define a new word, a concept and a notion, not philosophical at all: psychoarchitecture. I consider that this important event as this one, is suitable for it, because it is necessary to mark the Romanian contribution to the research on the theme of the influence of the architecture on the human psychic. Into the following pages, I shall introduce and define the term of "psychoarchitecture", demonstrating the utility of this approach further deepening of the design process. I must point out from the start that, although the term "psychoarchitecture" belongs to me, already imposed through a few conferences organized in UAUIM, the approach is not new in our University. Reputable professors and architects from UAUIM, researche the theory of architecture through the point of view of the influences that architectural space has on the psychological level. This term is not the Romanian word for the international "neuroarchitecture" because the paradigms are not the same. I consider that the term "neuroarchitecture" induces ambiguous connotations which direct the researchers to the field of neurological architecture or the architecture of the neuronal paths and relations. But the big difference between the two terms is that "psychoarchitecture" links the space -like architecture designed and manufactured by man- and the human psyche, that is not reduced only to its neurological processes -only the tangible and material part of the human mind. I want to delimitate my research from the concept of "neuro". I consider, as Jung remembered from his earlier writings, the human mind is not just the simple patterns of neurological processes, but one of the incomprehensible wonders of the world rather than been comprehensible or measurable . For example, the common but the important notion of "comfort" has dimensional-physical- connotations but also an important psychological, emotional component. If the term "psychological" is pretty well defined by specialists, "emotional" remains a word that is written on paper and read between the lines.

The essay has three main parts. First of all, as I started already, I define "psychoarchitecture" an its fields of knowledge. After that I present the two opposite poles of architectural concepts and their consequences. It is about "narcissistic architecture" - the architecture built for itself and not for the community, and "healing architecture" - the architecture that has an important contribution in the healing processes. I made some short analysis on a few "narcissistic" buildings from Bucharest and, on the other pole, some hospitals which apply psychoarchitecture paradigms. In the final conclusion I recommend some protocols in the process of conception of an architecture as an art for the people, for the community and for the city and not only for his own mighty glory.

## 2 TO BE OR NOT TO BE PSYCHOARCHITECTURE

I'm studying for a while this border field between form and perception, between thought and wall, field that I call "psychoarchitecture" or psychology of built space. About the Interaction between construction and the environment have been thoroughly studied and written, as one between man and the environment. One of the newest areas in psychology is called environmental psychology and even one of the three branches of ergonomics is cognitive ergonomics. Psychoarchitecture is the specific border-field between many specialties, a new scientific field research to bring new



information both in architecture and psychology: sociology, theory and history of architecture, psychoanalysis, aesthetics, cognitive ergonomics and the environment psychologies.

The question is **whether this relationship is two-way (reciprocal), or only from beneficiary to experienced space?**

In other words, **can the space, and how much, influence the mental state, the spirit, the emotional state, briefly the inner state? Or is it just a pure subjectivity of perception given by the mindset of the inhabitant?**

What is certain is that same space, the same architectural form, the same artistic gesture have totally different results from a viewer (who lived) to another. Even more, we ourselves can have different moods in the same places that we find now absolutely banal, places that once were most wonderful places on Earth, just because we were in love. That can easily demonstrate that what we see with our eyes is only a projection of what we perceive with our mind.

In his book "Architecture of Happiness," inspired by a series with the same name, Alain de Botton demonstrates that the built environment does not matter at all in becoming of man and mankind. As a Royal Quint in a game of poker, he throws on the table the decisive argument: unchanged spaces were silent witnesses to love, crime, petty or brave acts, without affecting in any way the actions. They were mere scenography. The problem put in this way is misplaced and slightly rough. Between the walls of houses are parading an array of gestures and emotions as large as before a Brancusi sculpture. We should not expect the built environment to influence man more than does an artistic gesture. Although, an entire architecture history proves something else, equally convincing: the architectural space induce powerful emotions in human spirit.

It is interesting to see how the built environment, the agglomeration of cold and impersonal material assembled by any artist's vision is filled with life by its inhabitants, as the two worlds intermingle so far: roughness- the concrete material and the fluid emotion- so unreal and impossible to palpate. Everyone has a life story that select his own set of truths. But whether it is the story of our similar beginning, parentage or any common unconscious, there is a common denominator that makes people to be similar in some aspects. It demonstrates how we all perceive in the same way the wavelengths of light as colours. It is proved by the moods given us by colours or music, moods which are quite common to a majority. Anyone can remember the feeling that same built space has left upon himself, depending on the mood he had at the time.

## 2.1 NARCISSISTIC ARCHITECTURE

When I begin this study and the disseminations of my research, my colleagues, architects, have made the observation about the subject: it was already known in our branch. My opinion is that yes, connected subjects are studied and applied in various courses, but only at theoretically level. In fact, the majority of architects consider the subject of psychology too specific and too far for their occupation. Unfortunately, in Romania the circumvention of concepts like psychoarchitecture gave results that we all benefit in a negative way. I called one of the phenomena of urban design, "narcissistic architecture", comparing with the term "narcissistic behavioural"<sup>i</sup> deviation defined in psychology. We, as architects, are used to work the space with shapes, placing them in special compositions, using colours, textures carefully chosen to get that unique beauty that characterize our vision and talent. The visual part is probably the most important for us. Composition, volumetric and functional balance, the proportions between emptiness and fullness, technically and economically parts of the projects are all important coordinates on the path to the final product of creative architecture that gives complexity to vitruvian formulas: "firmitas, vetustas utilitas".

Then, in the perfectly designed scene, the people appear, occupying the space, and appropriate it and suddenly the cold wall is alive. The same effect is perceived on an empty plank stage: the actor comes, reciting his role and everything is filled with poetry and words and richness of feelings; you begin to perceive a whole world out there, on that empty stage. "If you give to people nothing, they will work somehow compensate," said Tadao Ando.

I believe Romanian architect forget too often that the main actor in his scenography, designed with passion and talent, is the human being. I once read the presentations of some projects for an architecture exhibition, and I was struck that, beyond the diversity, creativity and originality, those works had something in common. All were either "end of perspective", "central point", "dominant mass or height", "point of interest", they solved volumetric problems of the site, they were interesting ideas which addressing to certain situations and one could not say that they do not respect the vitruvian principles. But neither of them speaks about the man or the community. No project contained any paradigm of humble integration or modesty in the site or the enhancement of the existent, not to mention any dialogue with the city. All those projects were beautiful and executed with talent but they were turned to self, to one's own personal site or his beneficiary. They respect the three vitruvian paradigms but evading emotional and psychological impact that any construction has on people. None addressed, at least in part, toward the town or community where human beings would be forced to swallow those walls as they had in the past with others who obstructed their way home or even deviated, who demolished their neighbourhood or their trees.

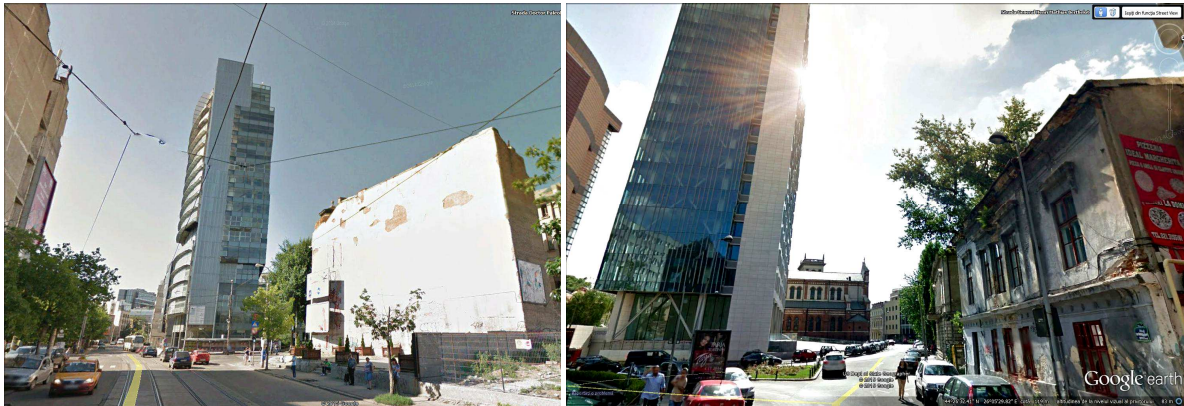


Figure 1. Image from Google maps, B-dul Dacia, Bucharest. Here is the "head of perspective" that rise over a slum part of the boulevard.

Figure 2. Image from Google maps, Bucharest-controversial site-case: St.Joseph Cathedral plaza- another star that rises over all, despite the site aspect and need or values.

A few years ago, hearing me talking about how can psychology meet architecture in behalf of a common subject- human being- my son told me: "it must be something called "buildings psychotherapy". As usual, the children have most original ideas! Watching the high construction raised on that slum site as if it landed there from Mars, I thought one of the most common psychosis: narcissism. It is said that once upon a time, it was a beautiful boy, named Narcissus, who was cursed to fall in love with himself. The reason was his lack of soul and the self-love. Psychology defines narcissism as a behavioural pathology which is defined broadly by the fact that the man put himself in the centre of the world to which it has an interest and a special appreciation. Narcissists are distinguished by their lack of emotional empathy and self-centeredness. In some cases, a narcissist can be a manipulator without mercy. Chief always, always brilliant, never considered guilty or liable for anything wrong. They love to have spectators from which compliments are always welcome.

The new buildings are in love with themselves from the concept phase. They considered as prima-donnas and learn a single language-their one, therefore they speak for themselves, alone. In time, bored that nobody is so good to answer them, they shut up. Architecture becomes silent... High, sumptuous, rich, smart, innovative, perfect moves but it did not know to speak with his city.

The specialist said that when you addressed someone else, regardless of the modality, the communication begins. Even if the other do not respond, that lack of response can be interpreted as a kind of communication: "I'm not interested". Narcissistic architecture has no interest about the needs of the community and is not interested in communicating with the site. So communication between man and building stops. Blankly rejected, the man rejects the new architectural appearance in his site. Slowly, rejected by the city walls, the man withdraws himself behind its windows, pulling the drapes.

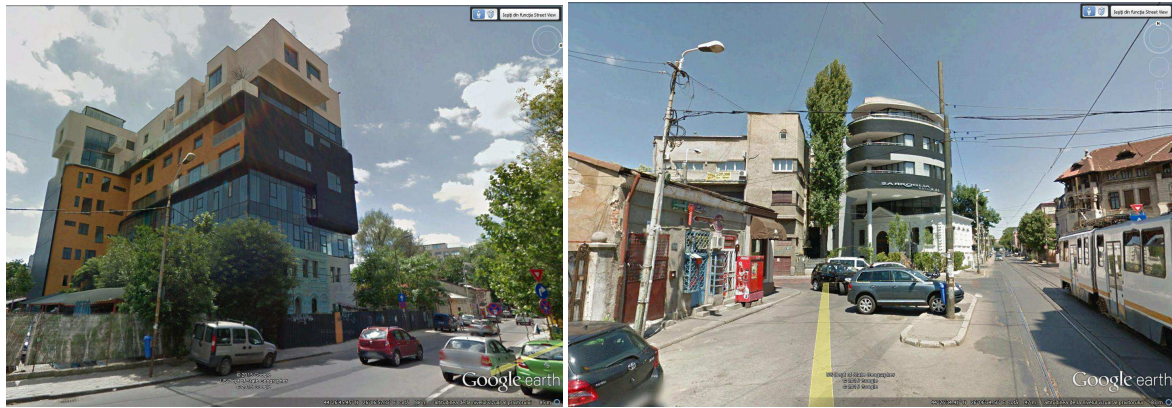


Figure 3. Image from Google maps, Eminescu street, Bucharest, one of the specific streets that have a mixtures between slum and rich sites. Another "innovative" building

Figure 4. Image from Google maps, Rosseti street, Bucharest, an example of innovation in bed taste and artistic education. But the building is a "rising star", over the historic neighborhood.

We should know that the architecture belongs also to the other because we, architects, are also bystanders and consumers. We can't penetrate beyond the gates, because we hit others walls equally, as they hit of those built by us. We encounter the walls because we do not know how to get in actually, through the big and bright doors, wide windows that shows us the inside world. But that world is not ours, the world that we seek and that we need. This type of architecture is a narcissistic architecture, preoccupied only by his own image and state. No one ask people if they would or not an office building or if they would rather have a playground instead of another successful mall.

And because space was already occupied by the mall and elsewhere you've nowhere to go, you get in mall. The investors felt this and called the alleys like streets. People walking in the interior of the mall space that reflects and amplifying all the sounds like an empty tin cage. You are alone but surrounded by a background strong noise and images that overwhelm you because they do not come toward you but in you, as that building was raised not for you but for him, the almighty beneficiary. US fashion mall has gone as the result of researches that demonstrate that are damaging for people so they are now looking for parks. In Romania is still constructing after the price per sqm of land which should bring profit.

The construction rises defiant, no matter how high or massive, always the dominant of the area. It is shine a bright, but the people not accept it, neither the surrounding buildings, offended by the blatant personality of the newcomers to the neighbourhood. Soon, the building find itself alone. It appears on the intersections or in the middle of the street front, always different, always proud, and therefore does not want to communicate with anyone. She is so special. One by one, the special buildings are sticking in the flesh of the city, suffocating the urban site with their originality.

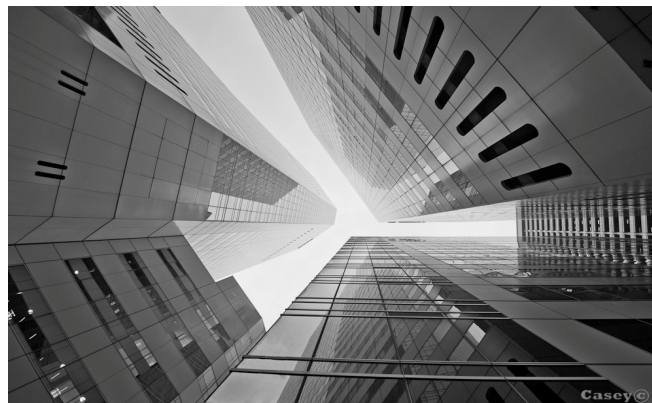


Figure 5. Architecture dominates the inhabitants so much that they are not feeling they are important in the site anymore so the space remains empty, constructed for his own function and pleasure.

<https://lukecaseyphotography.files.wordpress.com/2012/08/looking-up.jpg>



Once, the houses speak one to each other and invite the inhabitants in, proud for their hospitality. Now the building dominates everyone. If you look up, their tops are bounded with cable wires. It appear that they communicate through those cables. In fact there are people closed in, desperate to communicate. They fill the sky with wires to have the impression that they are connected and not single. The wires are not the symbol of the communication but of the desire to be connected.

Narcissist architecture respects the vitruvian precepts. It is always solid and durable, with good functionality and splendid aspect. But, with or without knowingly it, this kind of architecture circumvent entire planes of these three concepts "firmitas, utilitas, vetustas".

Firmitas but at what price? - what is the impact over the ENVIRONMENT?!

Vetustas but in what context? - what is the benefit of THE COMMUNITY AND THE SITE?

## 2.2 HEALING ARCHITECTURE

At the opposite site, there are extraordinary achievements as a result of substantial differences in approaching the concepts of architecture. This is "healing architecture" which has today an extraordinary contribution in changing the paradigms of architecture, and not only dedicated to the healing process. The hospital spaces dull and septic, whose only aesthetic was the white walls, becomes a pleasant and relaxing place, with homely ambience and a room where tubes, pipes and equipment is as hidden as possible. Flowers, sun and beautiful views from the windows, elements designed to induce a good feeling to help relieve disease. The results were not left too much expected, spurring the artists and physicians to explore new ways to doing things, with the expected beneficial effect scientifically. In hospitals or children area they were made perhaps the most spectacular design effects because more than adults, which can control rational to some point their reactions, children find it very hard to do. Remembering the alienation from parents because an operation or treatment will be enough to create revulsion to these spaces, fact that decrease their recovery. Therefore some changing has to be done. The pain will be traumatic and the mere sight of a physician or hospital will be enough to provoke a reaction, sometimes violent opponent of the child. Thereby spaces for children hospitals have become friendly, trying to mimic as much as possible fairytale places or play.

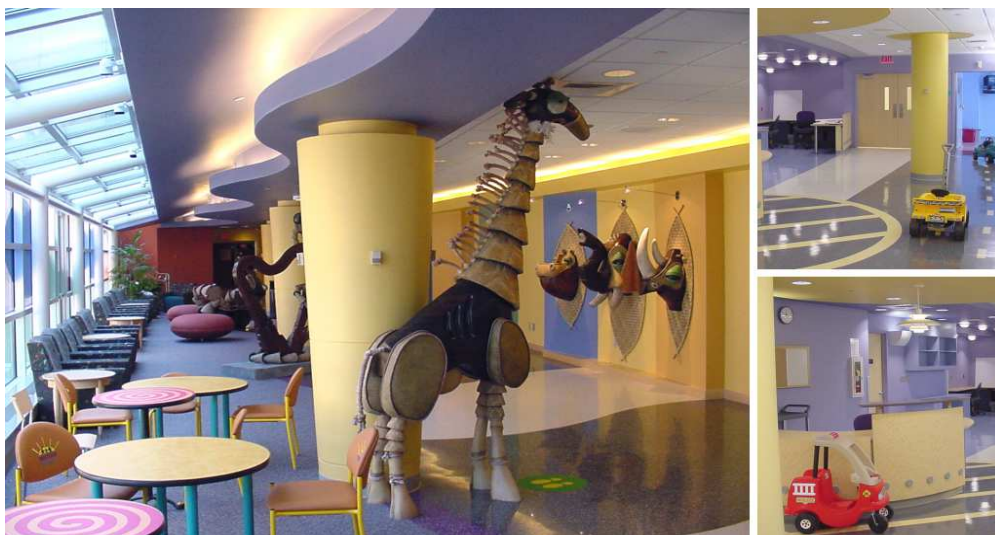


Figure 6, 7, 8. Bristol Royal Hospital for Children. <http://nplun.pl/bristol-myers-squibb-childrens-hospital.html>

Bristol Royal Hospital for Children is one of the most important achievements in this regard. Into the waiting spaces are positioned figurines, toys and cartoon characters and fairy tales known. The same kind of "treatment" they have the walls decorated like a playful space. The colors are used for their symbolic meaning (color therapy) and in line with the aesthetics of children: vivid colors, strong, optimistic, playful and cheerful combinations. Spaces are decorated and furnished as far away from the idea of hospital treatment or through the language addressing their children and not adults.

I cannot pass over one of the first revelation about the psychological comfort that provides built environment is not exactly new information in the field of theory of architecture. Sanitarium Paimio, Finland in 1932, designed by Alvar Aalto is one example of change of paradigms in designing spaces for hospital and treatment. Dialogue with nature and integration into natural site are coordinated. So the knowledge about the impact that has architecture on the human mind and spirit is not new at all. We don't have here the place and the time to talk about religious spaces, that from the antique times has controlled the architectural effect on the believers.

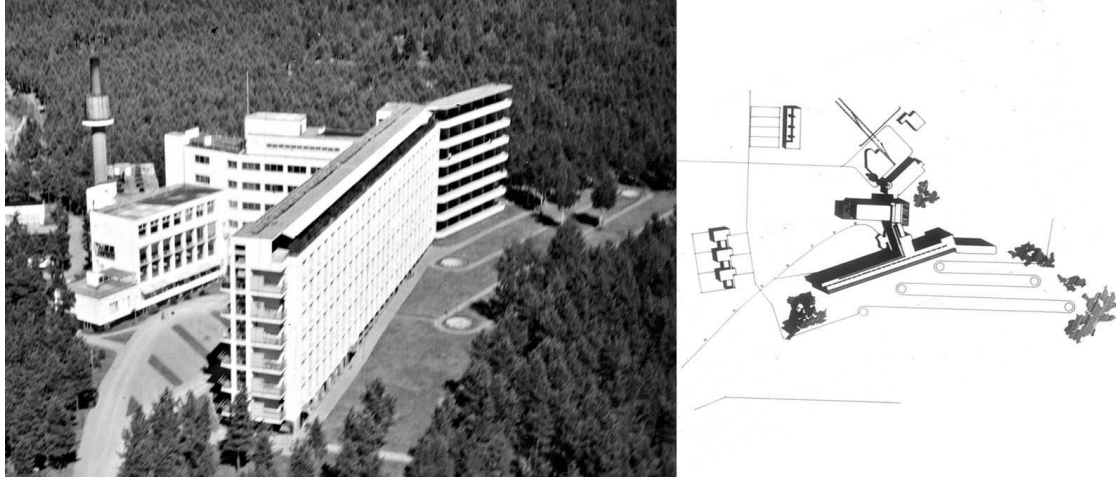


Figure 9, 10. Paimio Sanatorium, Finland, 1932, Alvar Aalto,: wikipedia.org

It is interesting to notice the main paradigms followed by "healing architecture", as I selected on the conference Healing architecture-UAUIM-2014 because it rise up the values of an architecture for a good state of his inhabitants<sup>11</sup>:

- A harmonious dialogue with site on three plans: constructions, natural, human, for a better integration. It will be take in consideration many human aspects: educational, historical, traditional, social, psychological. The function and the design looks up to integrate the construction in the site from all aspects, from the local specificity to the human needs.
- The construction will follow the principles of sustainability at all levels: material, techniques, human resources, energy savings, ecology etc.
- The nature will be integrated in the architecture like an ensemble, taking part not only as esthetical but as an instrument in healing process: the site, inner courts, views and environment.

### 3 THE GOAL AND THE PROTOCOLS OF PSYCHOARCHITECTURE

It was always a strong link between form and function, the concept of beauty and the social conditions.

**Psychoarchitecture is a field of research that has a special goal: to change the paradigm in architecture for increasing the human well being.**

It is our role, the architects, to gather all the information about the subject, to filtrate trough our talent and intuition and to introduce it in the processes of building conception. We architects should understand very more clearly how human mind works, precisely because we work with layers of translucent paper, looming plans of other spaces, drawings illustrating other views of the construction of their designed dreams, using, in fact, symbols - aren't the forms from imagination symbols which expresses our beliefs about people and space ?! In a similar way, emotions, memories, images, moods, express themselves on the layers of the mind. We can see a single layer- one memory or emotion- or we can see some of them together, creating a new

picture of a part of our universe, our own image about the universe. The big difference is that this own and particular image is continuously changing, depending the new layers of memories or emotions retained from life. The memories are not remaining as they were. Fresh, they are power in our mind but, once in the lower planes the influence on our perception became more pale, even though, because they have not a consistency fixed position, they can influence each other, they are in a continuously changing relation.

Our thoughts form large visual fields in which the vast universes can be foreseen, cosmic winds can be felt, sometimes even see the light of creation. And still there are small and dark corners where dust tighten unlive emotions or thoughts consciously denied. Our mind is like a house. It has basement -the subconsciousness, ground floor-conscious, floors and attic - the layers of our thoughts. It has a sky overhead where the stars are watching us. We live in our minds because everything begins and ends there. Winds of thoughts can shatter the fragile inner walls of our house. They crack windows and leap into sharp pieces and, although all are just thoughts, they are hurting us and each other, frightened and stray like sparrows caught in hermetically sealed rooms. We should know them, make friends and coordinate them. We should care our mind home because is the only true really important home.

In theory all of that looks very bright. But was is the protocol in fact? Is there one or all remains to the mercy of the creators? I think first of all it is very important that the architect keeps in mind that his final goal is not only his glory and its creations but the benefit of the inhabitants. Creating architecture is an act of art but architecture cannot be built only for the "connoisseurs", as they say about some form of art, because, one of its first qualities must be functionality. Another quality is comfort on all levels of perception:

- Visual- beauty, visual harmony at the level of forms, colours, ambiance, perspective
- Tactile- smoothness and suitable materials, climatic factors etc.
- Kinetic- some form of visual stability, dimension ergonomics, etc
- Olfactory- controlling the smells
- Hearing- controlling the sound at all aspects

Still, we cannot forget, one of the most important level of comfort, the emotional, the mental level that can rise you up or bring you down, despite the beauty that surround you. If the architect introduces in the equation of the design process the human psychological factor, he will take the first step toward an architecture for the people. But this step brings after it another one. The act of architectural creation must include researches, in the psychological field, about the community or the inhabitants. Mostly for big project for public or community functions must include in his team, some sociologists or psychologists, or at least studies in the field that gives the coordinates about the future users of that building. Information about the social level, the need of the community, the need of the inhabitants, the expectations of the community about the building, the set of local traditions or habits, the level and kind of education, information about or cultural, native, local specificity are very important for the architect so he can express his art into a language, set of symbols, colours, materials, forms with certain significance for the inhabitants. In this way his building will be recognized, accepted and integrated in the city.

These are some measures taken to ensure that we make a good quality architecture in an age where everything seems can be constructed, an architecture for the people but well integrated in the site, natural or architectural.

I let Zumthor the final words: "There is still this expectation as a building in its context to contribute to the beauty of its site. A building can be like a declaration of love made for its city ... this is an example of how things are interrelated and there can be "beautiful" single, broke by the context".



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## URBAN IDENTITY - BRANDING BETWEEN ART AND ARCHITECTURE

**Simona Butnariu**

*Lecturer PhD Architect, "Ion Mincu" University of Architecture and Urbanism, Bucharest, (ROMANIA)*  
*butnariu\_simona2000@yahoo.com*

### **Abstract**

In a Global World is the urban identity a future challenge for us the Architects? From decades already, the literature on place making in various fields of creativity is set on this demanding and, yet most challenging task, new ways of thinking urban identity and intelligent ways to brand it and sell it to attract capital and interest upon their location. The aim of present paper is to review these new methods of approaching urban identity. In academic theories you can distinguish two areas: the hardware design of shaping the urban space in terms of creating distinctive urban forms and the software design of a more subtle area of mutual influence between artistic elites, civic voices and empowerment structures in a collective effort to exist and make a point on the map of capital flowing.

Paul Knox in his book *Cities and Design* sees design as an important link between urban image and capital accumulation at the expense of human need. Another perspective is added by Hal Foster that criticised in his book *The Art-Architecture Complex* the connection between art-architecture as being a generator of urban identity and place branding. Finally, Guy Julier in his article *Urban Designscales and the Production of Aesthetic Consent* studies the urban identity in different stances. Guy Julier introduces this concept of urban designscale, a term to express the network of activities and artefacts that produce place-identity within city.

The present research considers a more extended version of the role of design in this process. It is a critical approach to three designscales: Barcelona, Copenhagen and Valencia, which I personally felt and experimented during study trips with our students. In doing so, it evaluates contrasting contemporary approaches in building urban identity: fashion districts, the landmark as architect brand and the unconventionally spaces – places in flow. The notion of hard and soft branding allow useful tools to critique and understand the cultural role of design in urban regeneration. Is the metamorphosis of the architectural program - the museum - reflects the future challenge in architecture? These new identities embedded within creative industries will have a bigger impact to a wider population through their urban designscales? In sum, this fusion in-between art and architecture reveals subtle ways of rebranding urban identity in the contemporary city.

**Keywords:** urban identity, place branding, urban designscale.

### **1 INTRODUCTION**

A future challenge for our cities in this global world is to remain authentic and genuine. We often refer to urban culture as being the sum of those distinctive features and local brands which makes unique a place inside the city or the city itself. Over the last twenty years, it took place a fusion between design and urban planning, between art and architecture this encounter, sometimes collaboration, sometimes a competition became now a primary site of image-making and space-shaping in our cultural economy.

These research aims to synthesize different perspectives of the contemporary approach of urban identity and place branding. The central concern of this article is to provide a more profound understanding of the process of design-led urban regeneration. Three contrasting case studies are used to interrogate this process. While in each case design is mobilized within a response to post-industrial regeneration, these three cities Barcelona, Copenhagen and Valencia represent different and varying degrees of programmatic, top-down direction. Although these are the most oft-cited examples of urban regeneration I had the opportunity to visit them and find out during discussions with architects, locals and architecture students more about their internal dynamics and meanings that are, I believe only superficially understood and are invariably misrepresented as being far more programmatic than, in practice actually happened.

## 2 CONTEXT

### 2.1 Fashion districts

Paul Knox in his book *Cities and Design* rallies around one principle theme, which is to show that the design is an unambiguous part of capital accumulation. According to Knox, contemporary design shapes human behaviours and urban fabrics but in fact, are really just *codes of consumption* that seek to present landscape as *symbolic content* in an effort to stoke consumerism and ultimately keep capitalism going. While he acknowledges the crucial role that design plays in the physical, social and economic life of cities in the twenty-one century, these positive values are usually undermined by a much larger issue – that design is being put in service to capital accumulation at the expense of human need. Therefore this legitimates a question: have been lately culture became a product of consuming?

According to Paul Knox cities are crucial settings for both the production and consumption of design. Design massive contribution in the material culture and the complex linkages among designers, producers and distributors generates specialized concentration within the urban fabric that accentuates global competitiveness between cities. For example: fashion and graphic design in New York; architecture, fashion and publishing in London; furniture, industrial design, interior design and fashion in Milan; haute couture in Paris; and so on. These cluster design urban areas convey a strong character and identity to their cities and are known globally as the fashion districts in New York, Paris, London or Milan.

### 2.2 Landmark architecture

Hal Foster, author of the acclaimed *Design and Crime*, argues that a fusion of architecture and art is a defining feature of contemporary culture. While architects such as Zaha Hadid and Herzog and de Meuron draw on art to reanimate design, architecture has inspired fundamental transformations in painting, sculpture and film, which Foster explores in his book *The Art-Architecture Complex*. His theory is that the *global style* of architecture, as practiced by Norman Foster, Richard Rogers and Renzo Piano is analogous to the *international style* of Le Corbusier, Gropius and Mies van der Rohe. This global style more than any art, conveys the look of modernity today, both its dream and its delusions. In this way Hal Foster demonstrates that the art-architecture complex is a key indicator of broader social and economic trajectories, and in urgent need of analysis and debate.

On the other hand, Hal Foster sees a new way of interpreting the imageability and here the architecture-art connection is explicit. The increased prominence of art museums and their recent design are revealing a new concept of urban identity. Institutions, as corporations and governments turn to the art-architecture complex in order to attract business and to brand cities with art centers, festivals and the like.

### 2.3 Places in flow

Guy Julier noticed in his article the identity formation of urban centres and the use of aesthetic markers within the regeneration process largely fall into two camps that reflect their academic provenience. On the one hand is the urban planning and architectural process that implies the design

hardware of buildings, streets and public spaces and how are they used to differentiate and communicate. On the other is the marketing strategies of place branding that use the emotional software of brand identity programmes, as carried through literature, websites, slogans and other 3d-media platforms.

Nonetheless, the most interesting concept that is emerging from all written above is the notion that the place branding is performed through a series of aesthetic platforms. Guy Julier created the term urban designscape to define this symbiosis between design, art, architecture and urban space. Julier suggest that a nurtured co-existence of producers, consumers and designers in a coherent circuit of culture, can in turn generate economic, social and cultural value for a location<sup>i</sup>. This term of urban designscape actually illustrates the most powerful contemporary trend: information flow to merge with the lived and experienced urban space. *Culture is now three-dimensional, as much tactile as visual or textual, all around us and inhabited, lived rather than encountered in a separate realm as a representation*<sup>ii</sup>. Lash concludes that we have become an architectonic spatially based society and information is reworked in these plans.

### 3 METHODOLOGY

#### 3.1 Barcelona – design culture

Barcelona is the most well known model of urban regeneration. The city adopted a coherent strategy for regenerate some of urban deprived areas using the infused funds for organisation of Olympic Games in 1992. Revisiting the 'Barcelona Paradigm' The 'Barcelona effect' of the 1980s and 1990s came about through the interaction of several layers of design activity and consumption. In his article Guy Julier introduce us behind the scenes and reveals some less known aspects of the sophisticated network of elite artistes and key characters that had a major influence on Barcelonese urbanscape.

Oriol Bohigas's *Combat d'Incerteses* (1984) maps his pre-eminent position within the developments of a Barcelonese sensibility towards urban planning and regeneration. Bohigas was in charge (1980-84) with the City Council's Planning Department. *Combat d'Incerteses* tells the story of a dense network of architects, designers and politicians and their friendships, debates, informal and formal points of contact. Another key character is Andre Ricard and his *Resumen* (2003). He has an historical position in the professional and institutional development of design. He has brought the concept of industrial design in the late 1950s. He created the hub of design promotion and the foundation of Barcelona's Design Center (BCD) in 1976. Guy Julier unveils Barcelonese design-led regeneration successful process as a product of cultural elite at work in a highly localised and dense framework of activity.



Figure 1-2. Richard Meier Museum of Contemporary Art, Barcelona, photo by Simona Butnariu

These were all connected by both formal and informal networks that coursed between governmental policy-making, design promotional institutions, associations, civil society and the industrial and retail infrastructure for design. Furthermore, a range of mediative systems for design products and discourses existed, from local press and TV coverage, to design festivals, to emergent new bars and restaurants. I visited Barcelona in 2009 and among its exceptional architecture, vivid urban life, I felt this vibe and freshness of the industrial atmosphere that gives uniqueness to urbanscape and it can be called Barcelonese urban identity. The Museum of Contemporary Art (MACBA) is

located in the Plaça dels Àngels, in Barcelona's Ciutat Vella. Although this project has initially been an infill in the urban fabric of the Raval District designing a new landmark architect brand, the urban space around it was assimilated in the fine structure of affinities and uses of the locals. The plaza in front of the Museum of Contemporary Art designed by Richard Meier (as you see in figure 1) became gathering point for the young skaters gaining this new identity in the mental pathway's map of Barcelonense people. The surrounding square is famous for being one of the best places for modern skateboarding in the city, and maybe the world.

### 3.2 Copenhagen – a new generation of young architects

Copenhagen is famous in the architects and urban planners' world as the Gehl City. In 2014, I visited the city during the study trip made with our students from Urban Planning and Landscape Design Faculty and we discovered a fascinating walking thru world of *arch daily* alive and much more unique than we read about it, in literature and media materials about Gehl urban laboratory. The relation between design and urban space, between art and architecture, between architecture and city itself gives special identity to Copenhagen in my eyes and my heart. The experience of spaces and the feeling I had there as architect set Copenhagen on the primary position on my personal top in cities by now. In my opinion Copenhagen illustrates the most refined artistic expression of design-led urban regeneration process.

The emergence of a new generation of young architects and their successful practices became a contemporary trend in Danish architecture inspired more by international trends than by the modernist tradition of Scandinavia. During the 1990s, Danish architecture was increasingly oriented towards the Neo-Modernism which was dominant internationally at the time, and at the start of the 21st century, it still has a strong hold on Danish architecture. In addition, sustainability is an increasingly important factor at all levels of Danish architecture. Neo-Modernism seems to follow several trends. The most obvious is the sophisticated use of materials: glass and steel but also wood, natural stone and brick as facade materials. One is the minimalist treatment of building volumes and surfaces and another trend involves conceptual simplification of form. Building forms and room layouts can be severe and calm or highly dynamic, both demonstrates a strongly poetic interpretation. One of the most recent and largest prestige building projects in the capital the Playhouse from 2008 by Boye Lundgaard and Lene Tranberg, is also in a different way based on the Modernist tradition, which is so strong in Denmark. A new trend, the so-called Pragmatism, has emerged in recent years. This takes an extremely unconventional approach to the projects and re-interprets the assumptions of architecture in a provocative way.

But, what builds the Copenhagen urban identity is this fusion in between massive contextualization and designing landmarks as architect brands that proves how much architects love and respect their city. Similar to a number of other cities, a renewed focus was put on the industrial areas along the harbour front. Two examples as materialization in this major ambitious atmosphere are the *Playhouse* by Boye Lundgaard and Lene Tranberg and *Black Diamond* the addition of the Old Royal Public Library by Schmidt Hammer Lassen. These houses illustrate in distinctive manners the contemporary concept in urban identity in Copenhagen. The buildings are designed as an embrace between the architectural object and the urban environment surroundings. In the Black Diamond case (as you see in figure 2) a gigantic slit cuts the house in two, providing a fabulous view over the harbour from within; this feature has made the escalator in the foyer a popular goal for tourists. Also an important urban street goes beneath the building and you can look down thru the glass wall how practically the house is hovering over the city.

In the Playhouse a gigantic wall of glass that limits the foyer's side on two levels makes from the river and the built frontage from opposite riverbank the virtual wall of the space. Transparency in between spaces with various interpretations: interior-exterior, inside-outside, house-street, house-city, thru the entire building making possible for urban landscape background plan to be seen, on eyelevel, on vertical and on horizontal human cones of vision is the main theme interpreted in creative ways in Copenhagen.





Figure 3-4. On left: Schmidt, Hammer, Lassen, *Black Diamond*, photo by Simona Butnariu

### 3.3 Valencia – landmark as architect brand

This year, in spring Valencia was on our teaching map of interesting places to see with students and learn from. Valencia's Green River is the most particular transformation of a city's urban identity. How can new landscapes like the one created on Turia River old route can be woven in the existing urban fabric? This is not the only one linear landscapes thread through the heart of the old cities. New York's High Line, Atlanta's Beltline, and Madrid's Rio project all relied on abandoned or superseded rail or highway infrastructure. The situation in Valencia relied on a crisis and sometimes serious crisis gives opportunity that cannot be wasted. The devastating flood that took place in 1957 changed forever the relation between the city and the river. Nearly three quarters of the city was inundated by floodwater and over 60 people lost their lives. The following year, the city embraced a plan to divert the river around its western outskirts to the Mediterranean Sea. The ambitious plan, known as "*Plan Sur*," was completed in 1969. The resulting design establishes a monumental green and long path within a dense and diverse urban fabric. This park has sections with distinct design style ranging from Ricardo Bofill's formal gardens with modern touches, built in 1986; and Calatrava's biomorphic *City of Arts and Sciences*, completed in 1998; to the sinuous landforms of *Header Park* by Eduardo de Miguel Rabones, Blake Muñoz Criado, and Vicente Corell Farinós, completed in 2004. The final zone connecting the park to the Mediterranean Sea and the city's marina district has been master planned by Tomas Llavador Architects.

Ricardo Bofill design the master plan in 1982 and made a framework that divided Jardín del Turia into 18 zones. While heavy-handed conception, even sometimes problematic, currently, all but one of the zones has been developed. The project is a fascinating modern example of the transformative effect of landscape infrastructure on a city's identity and well-being. It is now a brand and an iconic image for Valencia and it is difficult to imagine the city without his green river. The city has created a space that brings together both its residents and visitors from around the world.

*City of Arts and Sciences* by Calatrava is one of the end-point destinations of this green path and marks the encounter between the Green River and the Mediterranean Sea. Although touristic slogans affirm that this project signed by Calatrava puts Valencia on the map, locals are not so happy about the cost and the immense impact on the local budget. We had the opportunity to exchange professional points of view with students from The Universitat Politècnica de València, School of Architecture. The architectural local community critics are that the Calatrava's insertion design has no relation in urban context and has exaggerated proportions in the urban fabric of the city, like there is Calatrava landmark as architect brand and nothing else in urban surroundings. In contrast they acknowledged the positive impact that *Veles e Vents* by David Chipperfield had in establishing urban identity in the design-led urban regeneration of Valencian port area. The house has, without doubt, become an architectural icon in the city of Valencia. Situated on the banks of the canal, facing the main beach entry points by the Marina, it is the perfect setting for all kinds of events. The sculptural architectural object is a symphony of horizontals white stripes of concrete and transparent glass surfaces of the railings. The building (as you see in figure 3) has that simplicity and cleanness in

volume and lines that make you wonder and reinforce that beautiful and authentic things are most of the time very simple and clear. *Veles e Vents* is located in the best place of seeing around and in the best place to be seen. A problem that occurred in time can be that smooth large surfaces of glass don't resist in time very well in the marine climate.



Figure 5-6. Chipperfield, *Veles e vents*, Valencia, photo by Razvan Ichim



Figure 7-8. The terraces in front of Energiea and Origo Cafe, Bucharest, photo by Simona Butnariu

### 3.4 Bucharest – places in flow

From few years, two or maybe even three, I have this distinct feeling that Bucharest, our city is changing, growing into a city with that particular *look* – a sheer volume of cultural producers and, perhaps some shared sensibilities about being renegade but also versatile. Cultural forums involving architects, urban planners, landscape designers, interior designers and artists are created and they are into this, more and more, active process of exchanging information and knowledge in a collective effort to promote a design-led urban regeneration bottom-up process. Research and urban interventions platforms named in terms that include the word *laboratory* were recently created as Zeppelin, B-Lab, Make a Point, Nod Maker Space and others. Their main task is to involve creative minds and community in shaping and reactivating urban public spaces or other sites that lost their initial meaning and functionality. Their central quest is to show how local aesthetics is important to the business climate to generate that *industrial atmosphere*.

Furthermore, this trend of ideas nurtures a mediative system for design products and discourses, from local specialized press to expositions, design festivals, to emergent new bars and restaurants. In Bucharest, in the last few years, mapped differently but somehow gravitating around the academic hub from University Square were opened cafes and bistros, like Alt Shift Pub, Energiea or Origo Cafe and progressively there are becoming those place-branding locations that we name places *in flow*. What makes this places great and so frequent full booked? Is it because are easy to reach on walkable distance from various working places? Or because are

sociable, the highest rate to meet friends and colleagues randomly, without further involvement? Or maybe because the places have this great ambiance that makes you enjoys quality and refined design but not a formal environment (as you see in figure 4). These places in my opinion represent a sample of an emerging urban identity of nowadays Bucharest, a city of contrasts and a vivid culture.

#### 4 CONCLUSIONS

The paper consists of case studies, which are hardly complete analyses; I might have chosen other examples, too, but these are the most telling for me. The research aimed to inquire various modalities to reinforce, to reinvent or to create urban identity in cities following the design-led urban regeneration process that characterizes this Post-Industrial Era. Drawn on the theoretical part from the ideological presented context and drawn on case studies described there are some final consideration and conclusions that follows.

Urban identity is a concept laid out in the heart of urban transformation process that currently takes place among almost the all cities in the world. Place branding is a term that describes a very complex network of hardware aspects implying design and material reality or of software aspects implying information or emotional flux. So we can think of it as both an academic form of enquiry and a descriptive term. Urban identity is a product of the urban culture. Design practice is becoming increasingly demanding. Contemporary urban culture is massive influenced by design. Guy Julier<sup>iii</sup> even considers design culture an academic field study of the interrelationships between design artefacts, in all their manifestations, the work of designers, design production (including marketing, advertising and distribution), mediation and their consumption. According to Julier culture is no longer one of pure representation or narrative where visual culture conveys messages. Instead, I would add, design culture formulates, formats, channels, circulates, contains and retrieves information through a number of channels.

Any form of ‘-scape’ has to be seen from a vantage point. Design is more than just the creation of artefacts. It conspires in the structuring of systems of encounter within the visual and material world. Collectively, these add up to the creation of urban designscares. Within the term ‘designscares’, I infer an extended system that engages not just spatial attributes, like one-image building, but also issues of taste, practice and the circulation of design that are nonetheless still inflected by power mechanisms, like fashion districts. However, this identity-forming process also purports to extend into the consumption sphere of the city. Lifestyles, taste patterns and every day practice supposedly become attitudinal markers of an urban identity that starts to grow from the emergence of some small places cafes; bistros that become those places in flow. A cluster of this kind of places starts to evolve, as it tends to attract one to another and seeds a kernel in urban life of the city that nurtures creative atmosphere that helps the welfare of people, making them feel like belonging.

The distinctiveness and preservation of the local particularities determine the urban identity.

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## HIGH ALTITUDE ARCHITECTURE

### A LINK BETWEEN PRIMITIVE AND GLOBAL ARCHITECTURE

**Ana-Maria Machedon**

*Arch.PhD., "Ion Mincu" University of Architecture and Urbanism - UAUIM (ROMANIA)  
ana@machedon.com*

#### **Abstract**

The following comparative study explores an unexpected link between the fundamental characteristics of primitive architecture and contemporary high altitude architecture. Both types of architecture, although very far from each other on the historical timeline, are samples of a basic global phenomenon.

One essential characteristic of primitive architecture is its independency to any other external, cultural reference. It is basically an auto-referential gesture of an autonomous and independent society. Primitive society is composed by small groups of individuals, with no hierarchy, sharing a common interest and basic activity. This transforms architecture into a unique, primordial and self centered attitude, independent from other cultural influences, reacting only towards the natural and territorial context. It uses the same myths, rituals, techniques and materials. Primitive architecture is similar in geographical areas having no connection with each other.

We can talk about primitive architecture as the primordial gesture of global architecture. The difference between primitive global architecture and contemporary global architecture spread is the process through which globalism has been produced. Worldwide similarities are not due to the mechanism of transmission, as nowadays, but to the same genesis typology and basic elements.

High altitude territories represent a unique experimental environment having the same characteristics as the primitive territories. They are un-subordinated, isolated from external influences. Their users, high altitude climbers, are organized similarly to primitive societies: very small groups of individuals sharing a common goal, with no particular social hierarchy, in a nomad movement. The relation between humans and territories is also essential. There are no permanent settlements. We can talk about a new type of contemporary nomads. Architecture is, as for the primitive societies, a method to occupy and control territories. It is placed in very specific locations, connected to natural territorial elements and to the human capacity to move by walking through the territory.

High altitude architecture is a rather recent trend. It refers to territories above the limit of inhabitable environment, where the extreme natural phenomena, the lack of water, food and oxygen restrict human presence to very short periods of time. The access into those zones is due to two main facts. First, the development of new technologies, materials and air transportation, made possible to produce architecture in extreme and isolated environments. Second, the increase popularity of high altitude tourism, using the slogan of going beyond human limits, produced the perfect background to a substantial economical support for those new architectural challenges. The recent years, many famous architects got involved into high altitude projects.

This new type of architecture has appeared in virgin territories and, although it is on the edge of the newest technologies, it also shows a fundamental primitive side: independency from other cultural influences, reacting only towards the natural and territorial context, with a strong symbolical

character and basic functions. The architectural objects go beyond contemporary tendencies and return to primitive architecture. They reveal essential, symbolical and conceptual gestures.

The high altitude architectural objects share fundamental characteristics with primitive architecture and become unique forms of contemporary architecture. Primitive architectural gestures mutate into essential objects. They become limit experiments for the latest materials and highest technologies and future territorial conquests, even beyond terrestrial territories. This specific and unique context is the perfect background to produce a new, auto-referential architecture. High altitude essential architecture reveals a global, generic and specific language sharing the same meanings as primitive architecture. It becomes an unexpected contemporary link between primitive architecture and contemporary global architecture.

**Keywords:** High altitude architecture, primitive architecture, territorial conquest, globalism.

## COMPARATIVE STUDY BETWEEN PRIMITIVE AND HIGH ALTITUDE ARCHITECTURE

The following paper is based on a comparative study regarding two architectural phenomena placed on opposite ends on the historical timeline: the primitive architecture, as first gesture of anthropological built environment and contemporary high altitude architecture, as ultimate product of highest technologies. Both types of architecture share one unexpected fundamental common characteristic: globalism.

The research first defines and investigates separately these two types of architecture: the factors that generated them: functions, symbols, the specific context and their particular users. The next step is to extract and analyse their fundamental characteristics, in order to understand their similarities. Starting from primitive architecture and its intrinsic global side, the study investigates high altitude architecture as a possible link between primitive and global. High altitude architecture becomes therefore an experimental contemporary phenomenon, proving the connection among globalism and primitive gestures.

### 1 PRIMITIVE ARCHITECTURE

In order to demonstrate the global character of primitive architecture, the study will start by analysing the particularities of the first anthropological built objects, which enabled their worldwide similar identity. It will investigate the origins of primitive architecture, its type of creators and users and the relations it had established with the natural territory.

#### 1.1 Origins

Primitive architectural objects had appeared in areas where *"architecture does not exist"*. [1] The essential characteristic of primitive architecture is its independency to any other external cultural reference. It is basically an auto-referential gesture of an autonomous and independent society. Primitive societies believe being the center of the world and their architecture is seen as a central inside result with no other external influence: *"[...] any free society considers itself as being in the center of the world, and its architecture must be, at its turn, considered from the inside, the product of a group that positions itself on the center of all others."* [2]

Primitive societies use for their architecture simple gestures, based and structured on their own inside myths, rituals and symbols, that can be easily identified and recognized by any individual, even belonging to foreign groups. Different primitive societies share the same mythology, the same symbols for cosmogony and foundation rituals although they do not communicate with each other. Those common myths, and rituals, related to cosmogony, settlement and foundation process, are one of the factors that give to primitive architecture a global language, worldwide comprehensible, in areas or even continents far apart.





Figure 1. Shelter for Local Inhabitants, Himalaya, Nepal © Ana-Maria Machedon

## 1.2 Users

The users and creators of primitive architecture are small groups of individuals, totally independent from economical and political point of view, unsubordinated to any external domination and with no contact to cultural influences: *"We can therefore define as primitive architecture the full expression of spatial activities of a pre-state society that occupies a precise territory holding a high level of economical and political independency towards other societies with which it has no contact [...]."*[3]

The inner structure of primitive groups also plays an important role in the production of architecture. The small groups lack a strong hierarchy. All members of a primitive society share the same activities and play the same role within the community. Therefore architecture is basic and almost identical for any member of the group. Building is not a social event and it does not

require the implication of the entire group, on the contrary, very often only one individual settles or builds a shelter.



Figure 2. Wind Shelters, Laguna Verde in Atacama Desert, the Andes, Chile © Ana-Maria Machedon

### 1.3 Territorial Relation

For primitive societies architecture does not mean only creating a built environment. Building in primitive times signifies also the establishment and definition of the human link to the territory. The human primitive positioning attitude implies the relation with the external wild, unknown and unsubordinated territory: to occupy, to control, to settle a shelter or to hide from dangers: *"[...] architecture is not made only of the built object, but includes a global attitude toward the surrounding space, its transformation and its interpretation [...]"* [4] All primitive societies share the same behavior towards the territory, based on the basic needs of protection, control and orientation. This transforms primitive architecture one step further into being a global attitude. *"[...] context should be perceived in its total sense, without any reference towards exterior conditioning sources."* [5].

In the primitive building process, the way architectural objects are placed in relation with each other is more important than the single living unit itself. The settlement is conceived in order to sustain the functioning and activities of the small society, for protection, optimal work and communication. These guidelines of settlement for primitive architecture are similar in different geographical areas and represent another important factor that transforms singular and separate built objects into global architecture.

### 1.4 Primitive Architecture and Globalism

The short overview on the main characteristics of primitive architecture reveals its global meaning, as result of a similar genesis: isolation towards external influences, same architectural language issued from common myths and rituals, same type of users and social organisation and same attitude towards the territory.

Different from the contemporary globalism is only the mechanism through which it gets spread. Contemporary globalism is based on transmitting information and consequently architecture. In the case of primitive architecture its global character is the result of similar origins that



reproduce similar forms of architecture worldwide, with no contact or communication between its creators and in separate moments of history.

## 2 HIGH ALTITUDE ARCHITECTURE

High altitude architecture represents all human built objects placed over the altitude limit where the natural environment enables life: the oxygen is below normal concentration, water in liquid state misses and extreme meteorological phenomena occur. Depending on the correlation between latitude and altitude this combination of high altitude environmental factors can be found in the Alps, over 3.000m and in the Andes and Himalaya, over 5.000m.[6]

### 2.1 Origin and Evolution

High altitude architecture starts from two different sources. In the Andes and Himalaya primitive architecture survived, being perpetuated over the history by the nomad populations, small groups of individuals with restricted contact toward civilization, maintaining a primitive life style. Their architecture represents a contemporary continuation of the ancestral primitive architecture and a present-time case study for primitive societies. They mostly build and use primitive shelters, transportable tents and religious objects that can be investigated *in situ*, as samples of a primitive anthropological stage.

Another relevant source of high altitude architecture is the development of science and tourism. This new type of architecture is a rather recent phenomenon. During history, high altitude territories where considered dangerous environments with no specific advantages for humans. Therefore high mountains were avoided and ignored.

European Illuminists were the first to turn their view towards higher peaks to admire and praise their beauty and mystery. High altitude alpinism was initiated during the Heroic Age of climbing, when the highest summits in Europe were reached, with the representative Mont Blanc conquest in 1786. The concept of conquering and controlling new territories enhanced an increasing number of climbers to fight high altitude environment for pure glory. [7]

This tendency has been exported over the European borders, aiming the conquest of the highest peaks in the world. Another significant event for the climbing Heroic Age was the conquest of Mount Everest summit in 1953. Further on, high altitude tourism and architecture continued to grow. It first copied the primitive shapes, than it mutated from primitive to basic architecture and lately it became the expression of the most advanced technologies and materials.

Although with a slow evolution in the beginning, following and using primitive shelters, the development of new materials, gear, building technologies provoked an unprecedented development of altitude tourism the last decades. The worldwide slogan that encourages everyone to go beyond limits, fitted perfectly to the high altitude tourism trend, and it became lately a mass phenomenon.

The increasing need of accommodation on highest peaks and the spread of alpine life style combined with the energetic independent architectural trend received significant worldwide financial, cultural and scientific support. High altitude territories became the perfect testing laboratory for the newest sustainable building technologies and materials. Due to high altitude architecture international cover and symbolic image, many famous architects became interested in getting involved into projects in high territories. Significant projects were produced and soon after they became reference prototypes for this new type of architecture: *Monte Rosa Hütte*, 2009 – Andrea Déplasez and Valentin Bearth, *Bivacco Gervasutti*, 2010 – Luca Gentilcuore and Stefano Testa, *Messner Mountain Museum Corones*, 2015 – Zaha Hadid, *Chäserrugg Cable Station*, 2015, Herzog and de Meuron.

All High altitude projects followed the same principles: to create a symbolic representative object, with a global language worldwide recognizable, to respect the basic needs of shelter for a very specific type of users, to use the newest technologies and to be self standing in the middle of a harsh and extreme environment. That was the step when contemporary high altitude primitive objects mutated into global basic high –technological objects.



Figure 3. High Altitude Tents on Geodesic Dome Structures, Atacama, the Andes, Chile © Ana-Maria Machedon

## 2.2 Users

Following the description of primitive societies, an interesting parallel can be made between alpinists and primitive individuals. High altitude tourists are often teamed up into small homogenous groups. Every individual shares the same type of interests and activities with his companions and has similar physical abilities. Inside the group there is not a strong hierarchy. Usually there is only one leader, with restricted authority. The individuals in the group mostly function together. We can talk of a contemporary type of nomads.

There are three typologies of climbing: expeditionary style, alpine style, *fast and light* style. Expeditionary style implies the existence of previous built shelters: bivouacs or huts, placed in strategic territorial positions. Tourists don't have to bring along food or water supplies. This type of movement corresponds to the semi-nomadic primitive shepherd populations. They also used fixed settlements for shelter or food supplies for short periods of time, before moving forward.

The alpine style is a climbing method based on carrying all gear, shelters and supplies along. It is more adapted for virgin territories. The basic type of architecture is the tent, which, as for the primitive societies, represents the most important property: "[...] *the transportable house is the most important tool and the shelter of all personal belongings.*"[8] High altitude tents became samples of the most advanced high-technological materials and structures in order to resist to the extreme harsh environmental conditions and to be easily transportable and built.

*Fast and light* style is a very difficult climbing strategy, when alpinists don't use any type of tent and take supplies only for a very short period of time. For shelter, they improvise bivouacs using the natural elements: rocks, snow. As a parallel to fast and light alpinists it is interesting to discover the primitive hunters behavior. They were using the same fast moving method, while following the prey. They also used to build only basic shelters from the local materials: stones and tree branches.



Figure 4. Altitude Base Camp, Himalaya, Nepal © Ana-Maria Machedon

### 2.3 Territorial Relation

Contemporary high altitude tourism relates to the territory in a similar manner with primitive societies. They follow the need to conquer, control, get protected and oriented in a natural, unfriendly environment. Ancient populations were covering large areas of land in order to have an extended source of supplies. Nowadays, alpinists try to reach the most untouchable peaks at elevated risks, for prestige.

Architecture, in both contemporary high altitude zones and primitive times, became a tool to control the territory. Human settlements are placed in strategic positions to cover an extended area. The distances between settlements are dictated by the traveling capacity of walking groups or animals. The precise spots where architecture appears play an important role in orientation. There is a fundamental need of order and orientation in the relation towards the natural environment to insure an “existential foothold” for humans [8].

Another essential condition in relation towards the wild territory is to settle and build in areas that are naturally protected from dangers. Very often architecture is rather weak confronted to the natural forces and it needs itself to be protected.

### 2.4 High Altitude Architecture and its Global Meaning

High altitude architecture became lately a worldwide phenomenon pushed by the development of tourism, gear and technologies. From its origins, this type of architecture shared the same basic elements and mechanisms all around the world. It had to answer to similar fundamental needs and users. This almost identical genesis worldwide gave to all built objects a global language. Therefore there is a strong analogy between primitive architecture’s globalism and the new global high altitude architecture.



Besides genesis, high altitude architecture also reached the global level through the process of transmission. In the contemporary age, all newest discoveries are very fast spread all over the world. Technologies and materials were successfully exported in all high altitude areas. Very often the users are not only similar but the same: climbers travel worldwide in a permanent desire to settle new records and conquer new summits. They bring along, on all continents, at high altitude, a common life style, habits and architecture.

High altitude architecture receives a global meaning from two different sources, genesis and transmission. Therefore it becomes a unique experiment of combined globalism between primitive and contemporary gestures. Its language, development and functionality are fundamentally global, with no local cultural influences.

### 3 CONCLUSIONS

High altitude architecture provides an example of unique experimental contemporary phenomenon. It goes from operating with the same genetic mechanisms as primitive architecture, to the use of the latest building technologies and materials, towards becoming an essential manifest of architecture. Its genetics are the source of a basic and fundamental architectural language that transforms it into a global gesture. The contemporary existence and spread of high altitude architecture induces also a transmitted globalism through the direct export of knowledge, life style and attitude.

Building in territories where life supporting element miss, becomes a worldwide provocation and even an experiment for eventual future space architecture. The global themes: sustainability, energetic independency, symbolic, conceptual and essential architecture provoke architects to create special projects.

High altitude architecture represents an interesting source on information on anthropological behavior due to a unique combination of environmental and human factors. By studying it, it becomes possible to discover an unexpected link between primitive architecture and the contemporary global architecture.

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## **RURAL AREAS: GREEN HOPE FOR A GREY FUTURE**

**David Hidalgo Pérez**

*Escuela Técnica Superior de Arquitectura de Madrid – Universidad Politécnica de Madrid (SPAIN)*  
*dhidalgoperez@gmail.com*

### **Abstract**

To proclaim that the boundaries in the relationship between city and rural areas are increasingly vague is an understatement. So it is to declare cities and metropolitan areas as definite champions of this battle, opposed to rural territories which suffer a progressive abandonment, exodus, economic and productive depreciation.

However, should we accept this defeat? Is it possible to change this model of submission of rural areas to urban places?

The article and proposals on which we are working assumes metropolitan and rural spaces do not need to be limited by this kind of connection, but must pursue a new ideal of alliance between both. Rural areas are not simple fresh food suppliers for cities, neither mere leisure spaces for metropolitan citizens because of their landscape and natural conditions. Countryside is not a carbon drain for pollution generated in cities, nor must it depend on the pressure of a seemingly certain growth of urban areas.

Cities clearly provide some kind of assistance to rural areas, but it comes as a mutual dependence where both sides work towards common good. One and the other must exercise an integrated approach in their future strategy, as they both constitute one single region. Because of this, they share equal responsibility for their prospect and development.

EU's policies of landscape, environment and territory encourage this ideal of balanced evolution, as they are gathered in the European Spatial Development Perspective. Nonetheless, not every region is reaching these goals.

Considering a small, insular space, as the Canary Islands, we find one distinctive example of rural area's conditions amongst the European Union.

In spite of being a small-scale scenery, one island can present economically robust urban areas located near the coastline and associated to a sun-beach touristic destination opposed to interior, agrarian, impoverished municipalities. This is undeniably due to the importance of the tourist industry in this region: it constitutes 31.4 % of this region's GDP and 35.9% of its work placements.

Canary Island's rural area's survival against more appealing zones -sun-beach ones- positively requires readjusting the situation through a more creative territorial management.

With nearly a 40% of its surface under some kind of environmental protection, the islands must qualify the cultural potential of their rural areas with a new model of sustainable development understood in a comprehensive way, which includes environmental, social and economic factors seen and appreciated from the same point of view.

Indeed, if authorities have decided to protect a substantial part of the limited Canary territory it's because of the many conditions that have influenced in the generation of landscapes we now find very appealing. It is not only for the quality of these natural spaces, but by the interaction and coexistence that occurs between agricultural, livestock or fishing activities along with areas of special ecological or natural interest, creating both a cultural and environmental ecosystem of great value

whose preservation and future depends on us.

Consequently, the question which is trying to be solved in this research is if the island territorial model could be rebalanced, so that economic activity and development could not only be concentrated in the perimeter coastal ring of the island, but also looking for a way in which their benefits can also have an impact on rural areas advancements.

Instead, our aim will be to raise a sustainable development strategy for the island rural areas, which can even serve as a base for other areas of similar characteristics, but always depending on local conditions of each territory.

To draw up this strategy, we will proceed to study various aspects encompassed within three main topics: economic, social and environmental. But it will be also important to analyze how they may interact with each other, both at the island and local level, to achieve this territorial balanced development model that allows the survival of landscape, traditions, heritage and population of rural areas.

Therefore, we shall introduce a spatial model and methodology which comes forth as more responsible with local conditions. One that enables the territory and the value of its landscape and cultural heritage, increasing allure and giving a chance not just to rural areas' visitors but also to their inhabitants and their future.

**Keywords:** Territory, Rural areas, Sustainable development, Comprehensive strategy

## 1 INTRODUCTION

According to World Bank's data, in 1975 urban population around the globe reached 1.524 million people. Twenty years later we made it to 2.540 million. Two more decades went by and the population in rural areas continued its particular freefall, so that in 2015 we already where 3.943 million people. This means that over the last year, only 46% of the whole world's population lived in rural areas.

This ongoing rural population drift adds up to the continuous aggressions suffered by these spaces. The pressure exerted by cities over their most immediate rural surroundings is undeniable. As it is the unattainable goal of reaching better living standards in the city when facing low qualification job offers and poor economic propections. Amongst these urban prosperity expectations rises the fact that the vast majority of rural areas define themselves by an increasingly aged population unable to guarantee further productivity in these spaces without the helping hand of new generations.

Does this mean the end of these areas? Are they really doomed to die off in spite of their importance to human survival?

## 2 EUROPEAN SPATIAL DEVELOPMENT PERSPECTIVE. A VIABLE SOLUTION?

European territory does not escape this reality either. In 1999, the European Commission published the European Spatial Development Perspective, designed to face this and many other territorial issues along the EU by addressing them in an integral way and precisely diagnosing the situation.

EU's goal for its territory is reaching a balanced and sustainable development model. One able to smooth at least the great economic unevenness created amongst these regions due to the unequal distribution of economic potential.

This demands the enforcement of social and economic cohesion, given the fact that every European citizen must enjoy the same rights disregarding where and how he lives. Natural resources and cultural heritage's protection must also play an important role, understanding both as essential engines for these regions' economic development.

To this end, the EU establishes three basic principles for its regional development politics:

- European territory's structure must be supported by a balanced and polycentric system of cities capable of servicing their nearest spaces, creating a new relationship between city and rural areas.
- Equal access to infrastructures and knowledge must be guaranteed, betting on the reduction of any territorial determinant impeding it.

Sustainable development, smart management of resources and nature's protection must be at the base of every improvement made in these paths.

### **3 POTENTIAL AND DETERMINANTS OF RURAL AREAS ACCORDING TO THE ESDP**

European Spatial Development Perspective understands that rural areas' potential inhabits not only in location factors. Disregarding a good situations or more competitive salaries, elements such as good quality and maintenance of natural and cultural heritage, the existence of networks or associations defending and promoting innovation in their regions and the commitment of local and regional politicians can also play a crucial role in one territory's development and welfare.

These elements can build the key to reaching one more than necessary structural reestablishment of the weakest areas, dealing with a series of issues these regions usually share and which involve lesser economic success.

These obstacles could also be rooted in an extensive amount of low qualification jobs and scarce innovation, both of them mostly focused on agriculture. Another source of concern could lie in the peripheral location, sometimes even isolation of these areas, motivated by their lack of infrastructures and accessibility.

The ESDP assumes the kind of relationship established between bigger or smaller cities and the countryside is critical to rural areas' performance and their future. That is, urban and rural areas must integrate one single functional and territorial entity, defined by multiple and bidirectional bonds of reliance. Consequently, in the polycentric scheme of territorial configuration described earlier, the small and medium sized cities are the ones in charge of answering their neighbouring rural areas' demands of infrastructures and core services. Thus, the development strategies should start by one blending all these agents.

Despite agriculture being the main livelihood in rural areas, it will be necessary to find new ways to diversify their economy in order to avoid an excessive dependence on the first one. Conquering this goal will require a more inventive approach, opening new possibilities in sectors such as tourism, renewable energies and research and development.

Nonetheless, it is in the uniqueness of different landscapes where these areas can play their best cards. The singular identity of these regions is one exclusive token they can offer: long periods of human-nature interactions have created ways of living, folklore and extraordinary sceneries. This is what we conceive as cultural landscape.

The main issue most of EU's rural areas are facing is the population draining that ends up threatening the living standards and the viability of their public services, incurring in even further weakening of the appeal of the life there. The shortage of population will definitely entail these landscapes fading and this will cause the loss of their identity.

We must understand that cultural and natural heritage of rural areas are crucial to their social and economic survival, as they could allow them to diversify their activities into sectors such as sustainable tourism and recreation. That is, their protection is relevant not just from a historic or aesthetic point of view, but it also can catalyse a decisive engine to these regions economic development and welfare.

## 4 FROM PRINCIPLE TO PRACTICE: TENERIFE, AND ISLAND IN IMBALANCE

Tenerife is a 2.034 km<sup>2</sup> island located on the Canary Island, northeast from Africa. Despite not being situated in the European continent; its territorial model mirrors it on a smaller scale. The insular territory finds itself determined by diverse elements beyond its own narrowness. For example, the fact of 45% of its landscape being protected and its steep geography end up shrinking even more the available space in terms of where to settle urban areas.

Although originally, when the Spaniards conquered the Tenerife in 1496, the island was structured in a relatively homogeneous manner regarding its population centres' location, both its capital and its influence area as coastal touristic zones eventually became poles of attraction of population and economic activity, causing the abandonment of most of farming lands and the population drift towards these development nodes.

In this manner, the services sector has ended up accumulating most of the island's economic activity, while the rural areas –historic means of livelihood– keep on fading, with the consequences this has over the surrounding landscape.

Both east and west of Tenerife we find two protected areas, the rural parks of Teno (80,6km<sup>2</sup>) and Anaga (144,187 km<sup>2</sup>). The need to preserve this spaces, which cover no less than the 11% of the island's surface, comes from the coexistence of deep traditional farming and agricultural activities and a rich environment populated by a great deal of unique animal and vegetal species.

### 4.1 The city-island as a model

Now we will define those elements that best describe the present territorial an urban structure of the island. We introduce a model of city-island as, due to dispersion, it's quite easy to recognize an almost continuous urban ambiance determined by two essential poles of attraction on the east and south of the island.

#### 4.1.1 Population

As we mentioned earlier, after the conquest, Tenerife organized its people around a series of population centres, most of them located at the interior and middle height areas of the island, in a perimeter disposition, excepting harbors a fishing cores. Those equally depended on San Cristóbal de La Laguna, where the capital and the main institutions were settled. Only four of the 31 municipalities have their administrative centre near the coast. This predilection for internal main settlements justifies itself as a natural defense strategy against potential attacks, but those were also the places with best conditions and resources for human establishment, as opposed to the coast's aridity.

Nowadays, the situation is completely changed. Administrative centers are certainly kept at the interior, excepting the cases described earlier, but the whole demographic weight rests in the coast and metropolitan area. The regions located near the capital (it was moved to Santa Cruz de Tenerife on the XIX century), always where an element of attraction due to the presence of infrastructures, port and, later, an airport.

However, the tourism's arrival, mostly during the sixties entailed a radical change for the island, its demographic model and its production system. The agricultural territorial structure progressively lost its importance to the enlightenment of increasingly succeeding coast areas, because of the need of workforce both in the construction sector and in services, due to the touristic demand.

Today, we can divide the island's municipalities in three main classes:

- Metropolitan area: assembled by the capital and its neighbouring municipalities.
- Touristic municipalities, where most of the touristic infrastructure resides.
- Rural municipalities.

The next chart clearly shows the consequences this change of model has had over the island's population. Almost every one of them has increased its population, but not in the same way. Thus,

while in 1986 touristic municipalities barely incorporated 14% of the island's total population, in 2015 they had already reached 28%. That is, the number of people living there has duplicated itself in less than 30 years.

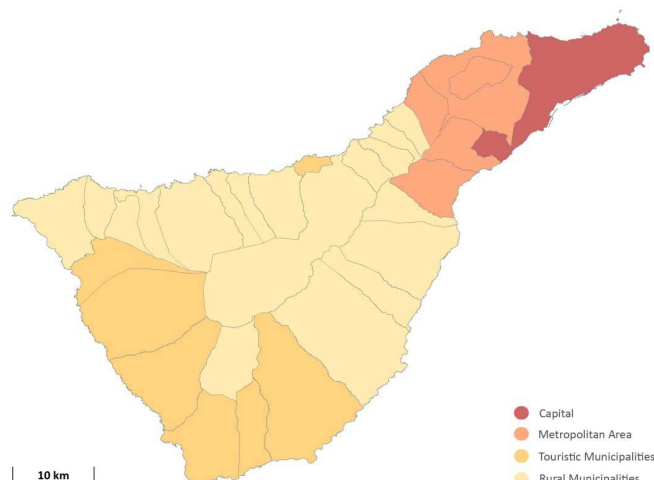


Figure 1. Three main classes of municipalities. Own development.

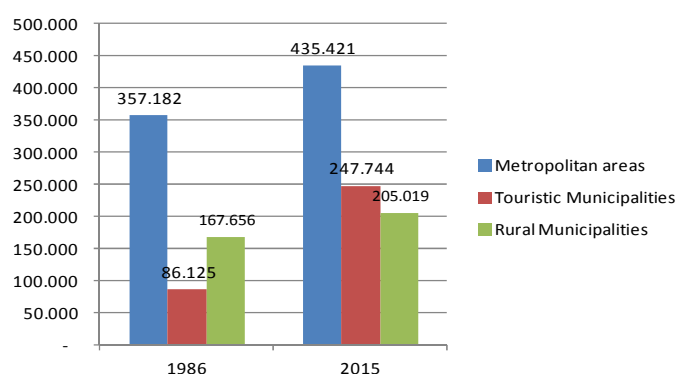


Figure 2. Evolution of the population of these areas in 1986 and 2015 (right). Source: National Statistics Institute. Own development.

On the contrary, the demographic weight of what we have come to call 'rural municipalities' only represents 23% of the island's population in spite of covering a surface larger than the one made by metropolitan and touristic municipalities combined.

#### 4.1.2 Employment and Commerce.

This population drift has undoubtedly been determined by the search of new opportunities in the metropolitan area and touristic municipalities, far beyond the hardship of agricultural activities.

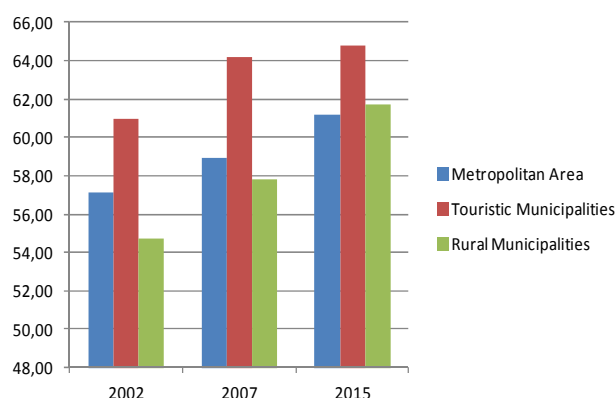


Figure 3. Evolution of employment between 2002 and 2015. Source: Canary Statistics Institute. Own development.

The upper chart shows that employment rates in touristic municipalities are higher than the ones in the metropolitan area and rural municipalities. This could be expected. However, it's surprising how close the rates are in the last two. In 2015, the employment rate of rural areas even surpassed the metropolitan one.

Although rural municipalities offer less opportunities this situation can be explained by the existence of more stable jobs in these areas. Activities that haven't been damaged by the economy breakdown, at least, not as much as the others.

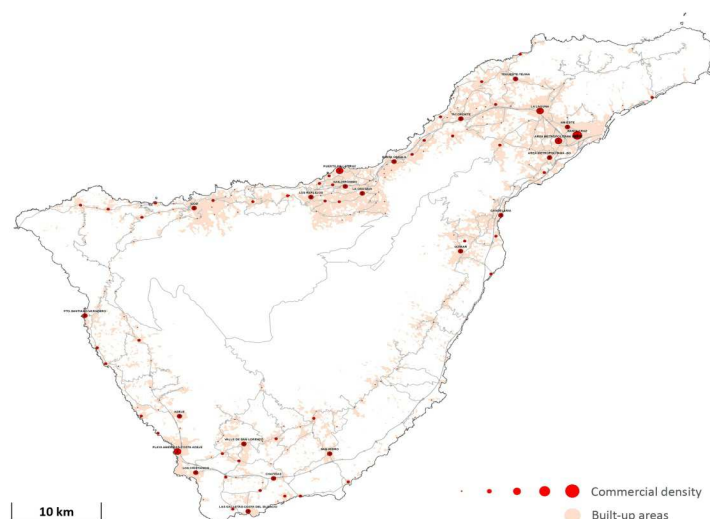


Figure 4. Commercial Density of the island. Source: Tenerife Council. Own development.

On the other hand, the previous map shows how the structure and weight of the population absolutely fits the territorial distribution of commerce areas. And, of course, the last one is not at all balanced. In this case, the capital and the metropolitan area of the island compound 38% of the commercial establishments of the island. Touristic regions also contain a solid percentage of them, though.

It should be pointed out how, while rural municipalities' administrative centers have managed to keep their commercial preponderance; touristic areas' original ones have completely lost this role to the coast, now hosting most part of the hotel industry.

However, the supremacy of the metropolitan area remains undisputed, so these regions can claim another element of attraction, as opposed to a consequent loss of 'allure' for the rest of the island.

#### 4.1.3 Tourism

In 2015, 6.396.567 tourists visited Tenerife. The sun-beach touristic model is the most demanded by the island's visitors, which bring the largest part of them to the southern coast of the island.

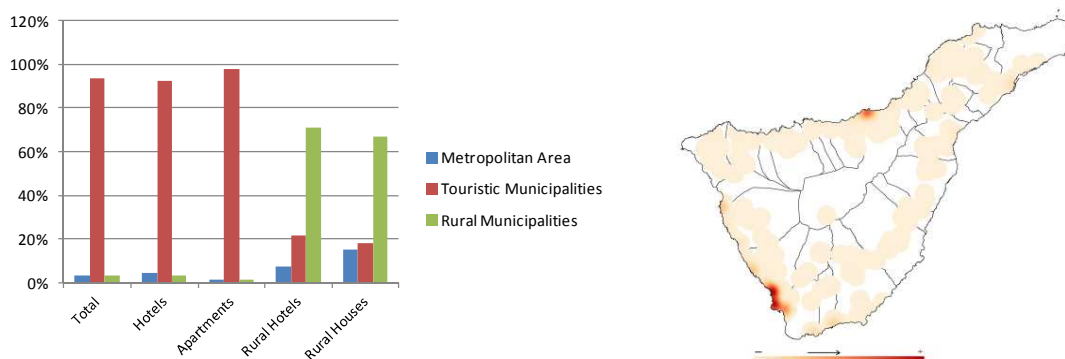


Figure 5. Island's accommodation capacity. Source: Tenerife Council. Own development.



Along these lines, we see how 94% of the island's accommodation capacity gathers around what we have designated as 'touristic municipalities', mostly as hotels and apartments.

On the contrary, metropolitan and rural areas' weights are minimum, as each of them barely hosts 3% of the island's offer. Nevertheless, it is important to point out that 71% and 67% of rural hotels and houses congregate in rural municipalities, notwithstanding the fact that this kind of accommodation only represents 7% of the 133.317 hotel beds available on the island in 2015, according to the Council of Tenerife.

As it has already been explained, the main determinant in the actual territorial model of the island is tourism. Despite being the leading economic engine of the island it is necessary to study how can this yearly increment of visitors remain sustainable, considering almost every resource necessary to supply both the island inhabitants and the tourists has to be imported from overseas. The island is absolutely unable to be self-sufficient, and that cannot continue this way, when we know our path must be the development of crops and proximity foods in order to build a more sustainable future.

Regulation and assessment of the touristic model will certainly be key in the solution of the island's territorial imbalance, adopting a new way forward, more responsible with local culture and reality; one that enhances the region and its cultural and natural heritage.

## 4.2 The potential of midlands

The medium altitude areas are nowadays essentially ghost grounds. Rural municipalities only host 23% of the population, while they represent 51% of the total surface of the island. It is true that most of the protected natural areas lay within their borders, but never have their population been driven out their original settlements; this kind of coexistence is actually well appreciated.

Next, we will analyze those elements we find determinant to the regeneration of Tenerife's rural areas.

### 4.2.1 Rural areas

We have already stated that up until the sixties, the island's main economic engine was agriculture. However, to what extent has this situation changed?

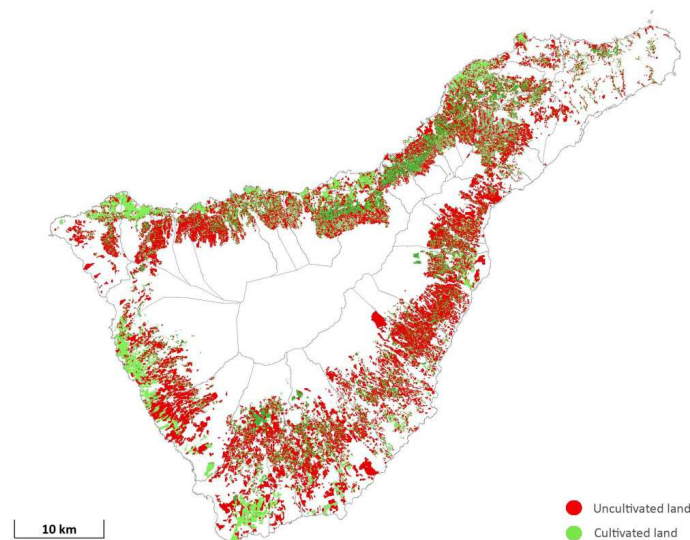


Figure 6. Uncultivated and cultivated areas. Source: Tenerife Council. Own development.

According to the data gathered by the Tenerife Council, in 2008, Tenerife had 428,98 km<sup>2</sup> of farming lands: 57% of them was in recent or old abandonment status (marked in red in the previous map).

As it could have been expected, the southern face of the island is the one where we find the largest uncultivated surface, as the population there has chosen to massively transfer to the touristic sector.

The answer to the question of the sustainability of keeping on importing the vast majority of the basic food supplies from outside the island is obvious, moreover if we take into account the fact that almost three fifths of the island productive soil remain utterly unfarmed.

This situation only encourages the creation of disperse new constructions. Merely three of the island's rural municipalities (El Sauzal, La Matanza and Santa Úrsula) have increased their weight in population since 1986, and it's not precisely due to an improved situation in their agricultural activity. These regions proximity to the metropolitan area along with its better environmental quality have driven a great number of metropolitan working people to move their residence to them.

This might be a new way of reinvigorating the old rural areas, always from urban behaviours and never accepting the possibility of this implying changes into their landscape. This is why the main challenge must certainly be the regeneration and relaunching of this abandoned land's farming, with a subsequent update of the appliances and practices in this sector.

Agricultural areas commonly display low population density, as well as a high level of dispersion and isolation. If we add scarce public services, poor training and absence of innovation to this mixture, will obtain a perfect portrait of today's situation. For this reason, it will be essential to reach an improvement of the socioeconomic situation of the rural area's population, leaning towards a wider economic diversification as opposed to an exclusive dependency on the agricultural activity. The population's training can contribute to renew the sector but if we also turn to more compact ways of urbanization around rural centers, it will be possible to guarantee better access to quality public services which in turn would become an element of attraction (and retention) for the population.

#### 4.2.2 Protected natural areas

Protected natural areas cover 45% island's extension. A surface of this dimensions cannot become a negative determinant for Tenerife's economic development. It should grow into one more resource to pump it.

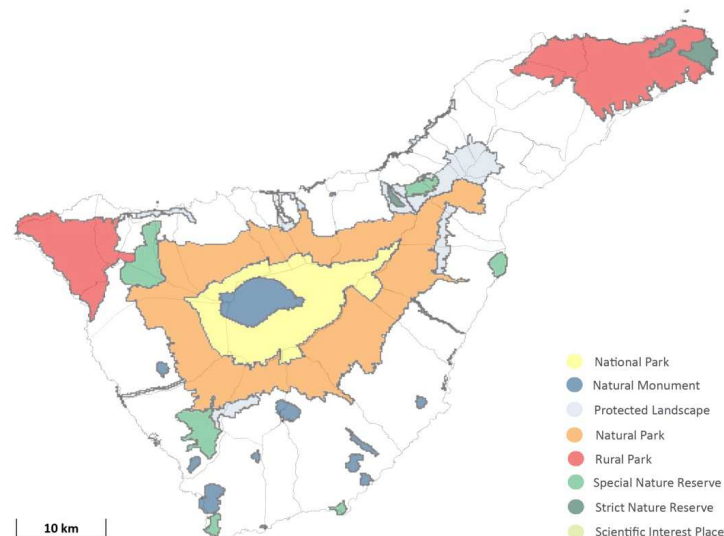


Figure 7. Protected natural areas. Source: Tenerife Council. Own development.

The Canary Islands constitute the fourth world's region in endemic vegetal breeds, with over 600 different species. Amongst them none less than 140 live exclusively in Tenerife. This must be conceived as one more element of attraction. Today forests such as 'laurisilva', whose species once covered the whole European continent (during the tertiary), can only be found on some of the Canary Islands and the rests of the Macaronesian archipelagos. Moreover, the island has a National Park recognized as World Heritage (El Teide) and a Biosphere Reserve (Rural Park of Anaga). Therefore, besides the tourists visiting the island in search of sun and beach, the destination must know how to sell all its potential, even surprising the visitors with unexpected offers. An island living of tourism must protect its landscape but also enhance it.

### 4.2.3 Heritage and Ethnography

The 'cores' of urban municipalities have not suffered great urbanistic pressure. This has allowed a pretty good conservation of most of them. A great deal of this historical ensembles have been protected and declared places of cultural interest, but this has failed to increase their importance.

The insularity certainly determined the ways of live, production systems and territorial structure of the island. This created a unique culture of the territory. A rural development programme must take into account these elements. Not just from the touristic point of view but also regarding the local population, as a way of getting them to know and understand their own identity.

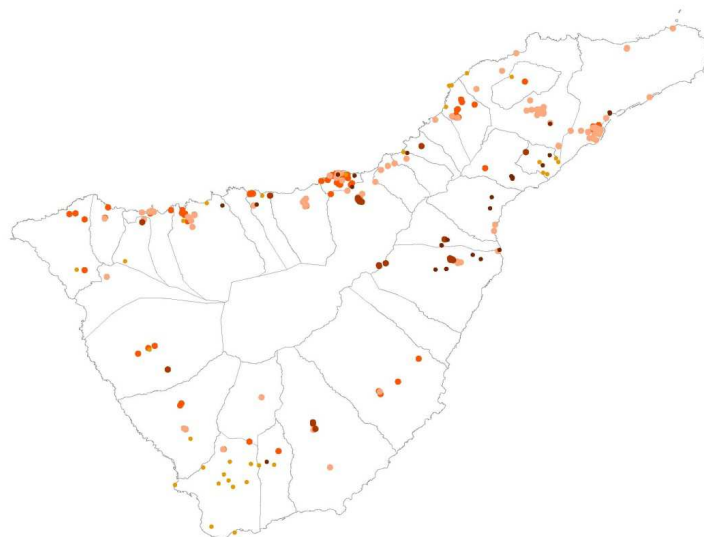


Figure 8. Places of cultural interest. Source: Tenerife Council. Own development

## 5 BETTING FOR A MORE SUSTAINABLE TERRITORIAL AND TOURISTIC MODEL

It's obviously hard to modify territorial and production systems that are so focused on tourism. However, precisely this sector can become the best ally in the fight for a more sustainable model, rooting the strategy in the exclusive and inherent values of each destination.

In defiance of giant hotel resorts, we must encourage the creation of small establishments on rural areas as a strategy to regenerate and reinvigorate them. The activity of this hotel could as well be tied to agricultural production. This must not only be assumed as a touristic attraction, but also as a more responsible way of production and consumption of resources.

That is, linking farmers and their production to the people in charge of these hotels abandoned farmlands can once again come to life, and this can turn into an efficient tool to 'broadcast' the local products and culture to the visitors.

The rehabilitation of historic ensembles combined with these establishments would help revitalize commercial activity and urban life in these areas. This way, local economy becomes diversified and less dependent on agricultural activity and the people moving to other areas of the island in search of more qualified employments might just have the chance to remain in their hometowns.

The possibilities regarding leisure activities in rural areas are certainly different from the ones that can be found in the urban and touristic areas near the coast. These municipalities must bet on new ways of active and outdoor leisure to make the most of the advantages of natural spaces, historic ensembles and ethnographic elements. Hiking, climbing and other adventure sports are not just a means of entertainment but also a way to advertise the resources and lifestyle. All the above considering the kindness of the Canary weather that allows and incites the enjoyment of life outdoors in almost any time of the year.

However, the weight of the task of balancing the island's territories must not only rely on tourism. Rural municipalities also need some support to improve their conditions. A more entrepreneurial and innovative culture must be promoted to help enhance the conditions in which agricultural activities take place. To this end, it is crucial to improve the level of education of this industry's workforce. This would increase productivity and, finally the contribution of food and agriculture industries to employment creation, which, combined with the diversification of the business networks promoted by touristic activities would definitely improve the conditions and expectations of life in these areas.

Ultimately, we must not lose sight of the main goal of every territorial planning: to improve the living conditions of the population. Economic development is one of the most influential aspects in this, but it is not the only one. If we can also balance the situation with the enhancement of cultural, natural and ethnographic heritage and guarantee appropriated services to inhabitants and visitor, we will be right on the path to a much more thriving future for rural areas.

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## FUTUREPORT

**Markella Menikou<sup>1</sup>, Adonis Cleanthous<sup>2</sup>**

<sup>1</sup>*Assistant Professor, University of Nicosia, Architecture Department (CYPRUS)*

<sup>2</sup>*Associate Professor, University of Nicosia, Architecture Department (CYPRUS)*  
*menikou.m@unic.ac.cy, kleanthous.adonis@unic.ac.cy*

### ABSTRACT

The paper will present architectural explorations for future scenarios of seaport cultures.

Port cities have traditionally and historically provided a cradle for nurturing brave-new urban settlements. Innovative, inventive and at times shocking in their planning strategies, port cities since antiquity and up to today have exhibited a shameless approach to embracing trade and monetary exchange, as well as multicultural exchange as a necessary by-product. New and radical architectural and urban planning typologies have frequently emerged from the establishment and subsequent development of port-cities. More often than not pushing the boundaries of available building construction technology such as in the case of Porticus Aemelia a vast Roman shipping warehouse, or redefining urban planning such as in the case of Carthage a port city planned as a fortified trade hub, port-cities have constantly reinvented the notions of both 'building' as well as 'city' and 'planning'.

The paper assumes and predicts that port-cities will continue to provide vital clues to future urban innovation.

The paper will present and discuss four port cities and their possible long-term future as divined with knowledge from past and present.

The future is framed in sequential stages through depth of time, ranging from 100-1000 years ahead. These explorative scenarios are based on the premise that we must start from where we are, imagine how our civilisation will develop and justify our speculation within the context of the deep future. It is therefore valuable to understand the evolutionary momentum developed over the last thousand years to assist in the understanding of a trajectory for the next millennium. So we have a 1000 years in the rear view mirror and 1000 years through the front screen simultaneously visible.

Four specific cities case studies will be utilized as vehicles via which the evolution of logistical port systems point to a foreseeable future. The port cities of Copenhagen-Denmark, Venice-Italy Hamburg-Germany and San Juan-Puerto Rico have been chosen to reflect varied and contradictory contexts. Differences such as new world vs. old world, privileged vs. unprivileged, geographical and climatic divergence and cultural specificities provide comparative tools for divining the future.

The four port-city case studies to be discussed in depth, are all propositional and hypothetic projects that consider past patterns and project selected patterns into the future with additional framed parameters. These are varied and range in nature: from hard-core scientific data to elusive social structures. The case-study projects have been developed during recent years within the context of an architectural research laboratory led by the authors (unit-4 at the University of Nicosia), and as such provide not only a theoretical basis for the future, but also detailed, quantifiable and visual architectural representations.

Technological port systems become a focal point of study as the authors understand technology as a lens through which the world is viewed. Therefore design of that lens may enhance our engagement with the world and more specifically relating to port cities as primary connectors of the world.

The case studies culminate in propositional architectural scenarios for the four port cities that often oscillate between the micro and macro scale, namely, between equipment and 'furniture' to building and the city. The focus lies mainly on strategizing rather than presenting finite or singular propositions. The propositions will be presented using timelines, diagrams, ideograms, strategies, quantitative and qualitative analyses as well as representational drawings and models. The scale will vary from the intimately close-up to the wide angle urban, encompassing the micro and macro scales.

**Keywords:** Future Port Cities, Technology and Architecture, Projective Planning, Micro/Macro Scale

## 1 INTRODUCTION

The paper will present architectural explorations for future scenarios of seaport cultures.

Port cities have traditionally and historically provided a cradle for nurturing brave new urban settlements. Innovative, inventive and at times shocking in their planning strategies, port cities since antiquity and up to today have exhibited a shameless approach to embracing trade and monetary exchange, as well as multicultural exchange as a necessary by-product. New and radical architectural and urban planning typologies have frequently emerged from the establishment and subsequent development of port-cities. More often than not pushing the boundaries of available building construction technology, or redefining urban planning, port-cities have constantly reinvented the notions of both 'building' as well as 'city' and 'planning'.

The paper assumes and predicts that port-cities will continue to provide vital clues to future urban innovation, on both building as well as city scale.

The paper will present and discuss four port cities and their possible long-term future as divined with knowledge from past and present. Four specific cities case studies will be utilized as vehicles via which the evolution of logistical port systems point to a foreseeable future. The port cities of Copenhagen-Denmark, Venice-Italy Hamburg-Germany and San Juan-Puerto Rico have been chosen to reflect varied and contradictory contexts. Differences such as new world vs old world, privileged vs unprivileged, geographical and climatic divergence and cultural specificities provide comparative tools for divining the future.

## 2 FUTUREPORT-RESEARCH AND METHODOLOGY

The future is framed in sequential stages through depth of time, ranging from 100-1000 years ahead. These explorative scenarios are based on the premise that we must start from where we are, imagine how our civilisation will develop and justify our speculation within the context of the deep future. It is therefore valuable to understand the evolutionary momentum developed over the last thousand years to assist in the understanding of a trajectory for the next millennium.

The four port-city case studies to be discussed in depth are all propositional and hypothetic projects that consider past patterns and project selected patterns into the future with additional framed parameters. These are varied and range in nature: from hard-core scientific data to elusive social structures. The case-study projects have been developed during recent years within the context of an architectural research laboratory led by the authors (Unit-4 at the University of Nicosia), and as such provide not only a theoretical basis for the Futureport, but also detailed, quantifiable and visual architectural representations.

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### 3 FUTUREPORT SAN JUAN

#### 3.1 Cruise City

The project attempts to respond to pressing questions concerning the future of the port of San Juan, Puerto Rico. As the projection for the year 2065 witnesses an increase of tourists to 10 million per year, the port as well as the entire city might need to adapt: How will the old port accommodate more ships, and how could this exponential docking expansion be used in a way that reunites the port and the city that are currently divided.

The project proposes a “fast-track-tourism”. The future-need to accommodate much more tourists arriving by cruise ships rather than local population causes the land to gradually reduce up to 50%, while this strategic land shrinkage creates a much longer shore-line for docking, and parallel increase in symbiotic relationships between port and city: the volume of docked ships gradually equals that of buildings therefore cruise ships blend in with urban landscape and gradually become the city. (Fig.1)

The strategies employ a total remaking of the coastline, a facility for “through” trafficking of ships, alternative land transportation systems connecting the tourist attractions, and dispersing varied programmes through the remaining land. Cruise City is developed organisationally and logistically as a theme park. Theme park technologies (roller coaster, slides, monorails, gantries etc.) enable the fast transfer of tourists within the city along the programmatically charged infrastructure while providing stops at main attractions and intersections. Navigation through the city is aided by a tourist map which in principle resembles an animated theme park map. Visitors could embark on an array of different journey speeds depending on the nature and duration of activity. (Fig. 2)

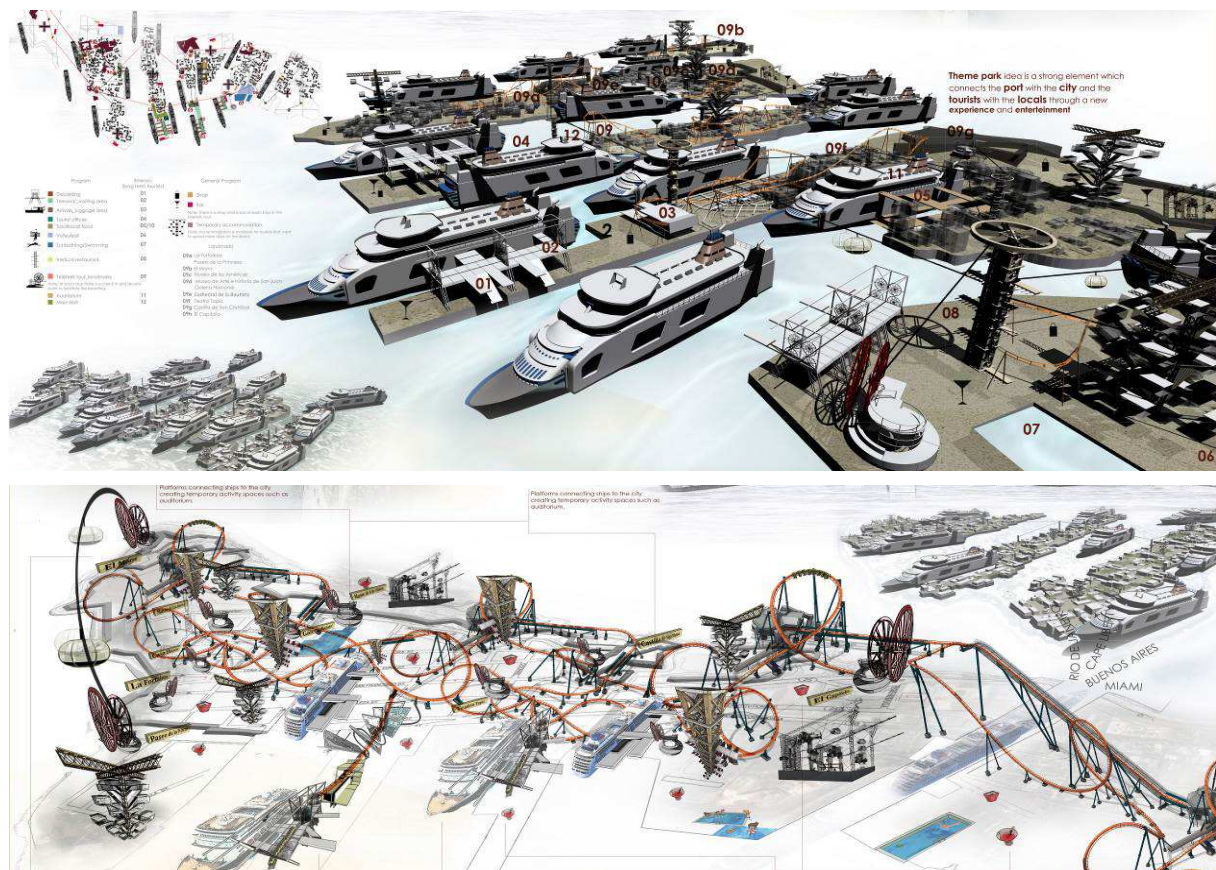


Figure 1. Indicative part of Cruise City. Figure 2. “Theme park” map of San Juan

Cruise City with the employment of “fast-track tourism”, compresses all the activities a tourist would have done in 5-7 days in just 24hrs. The advent of social media points to this trend: for example a Facebook post of fast bathing might have lasted only 12 minutes, but it will appear as if it lasted for days. Likewise “fast-track-tourists” will “tick all the boxes” expected (landmark visits, souvenir shopping, tasting local cuisine, swimming, tanning etc.).

### 3.2 City-Port (edge of tomorrow)

The project attempts to revisit the current trend that separates the port from the city. The main reasons for this global trend are understood and attributed mainly to increasing complex logistical demands, as well as security concerns. The aim is therefore to reintroduce an organic and active relationship between city and port. This is attempted through immersive strategies that fuse the two to an extreme degree making the constituent parts virtually indistinguishable.(Fig.3)

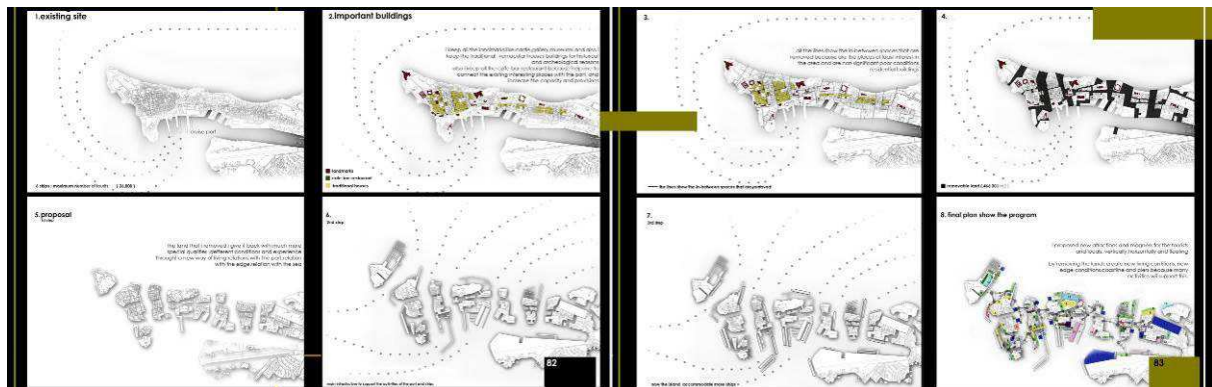


Figure 3. Key strategies

Through a timeline study (Fig. 4) focusing on primary port infrastructure, two main provisions were identified: piers and storage. As a historical example of utilising piers in the planning of a city, the new built Phoenician port-city of Carthage was studied. A seamless fusion of port and city in function as well as in plan is observed. The innovative circular plan incorporating an outer and inner pier offer safe docking for trading ships protecting them from unfavourable weather conditions. The circular plan acts as an effective military defence system for both battleships and also for the city. The planning of Carthage is an organic continuation of the port that initially imprinted it. Subsequent city growth follows rules of efficiency, speed, economy, safety and logistical order. [1]

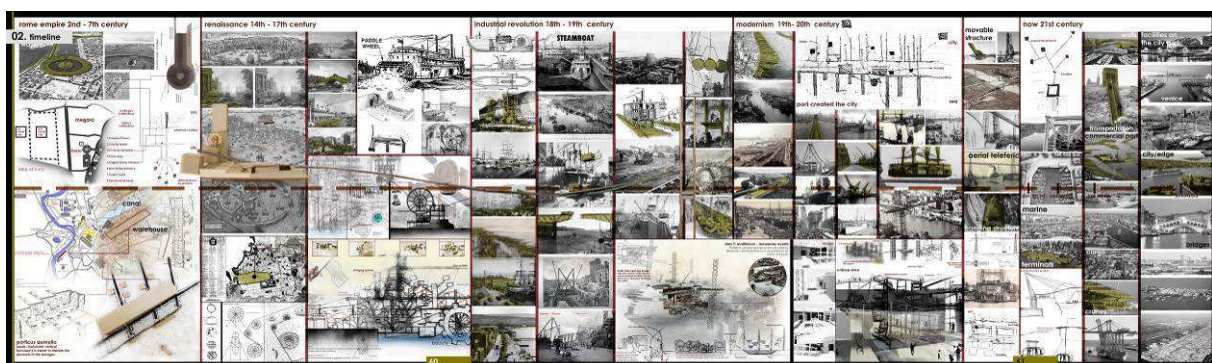


Figure 4. Timeline study of port infrastructure

As a historical example of port storage provisions the Roman port storage building “Porticus Aemelia” was studied. The building’s ingenuity lies in its chameleon-like ability to adapt to increasing capacity requirements. It is designed as an individual module consisting of four main vaults (two primary and two secondary). This module is repeated in rows on incrementally rising levels that create rows of clerestory windows. The module is also repeated in columns, allowing endless expansion or contraction in both directions. The natural light through the clerestory windows permits Porticus



Aemelia to have a potentially endless plan without jeopardising light and air provisions to the building. Again strategies of organic negotiations between port and city were here observed. [1]

The project uses categories of port infrastructure and utilises them for a parallel city infrastructure. As observed through the historical studies primary infrastructure is piers and storage, secondary infrastructure is railways, cranes and bridges. All infrastructure is shared and each transaction is a cause and effect, as the infrastructure causes a natural cross-programming: passenger terminals fuse with commercial and residential buildings, piers fuse with museums, floating performance stages and cranes fuse with bridges. Each of the seemingly unlike programme fusions benefits in unexpected ways; the new housing typologies may now afford an otherwise luxurious water-edge siting, with views, unobstructed light and natural evaporative cooling.(Fig. 5)



Figure 5. Programmatic fusions

Another strategy is essentially cataloguing the existing city components (in relevant categories such as landmarks, vernacular, historic and archaeological value). (Fig. 6) Likewise categories of derelict, unsustainable, structurally unsound were also developed in order to identify areas to be restored and redeveloped. The quantitative assessment of city component catalogues help decide which areas to remove, which to keep, and which to modify. Land removed is calculated and reallocated to maximum efficiency; buildings removed get components upcycled within new-built areas. [2]

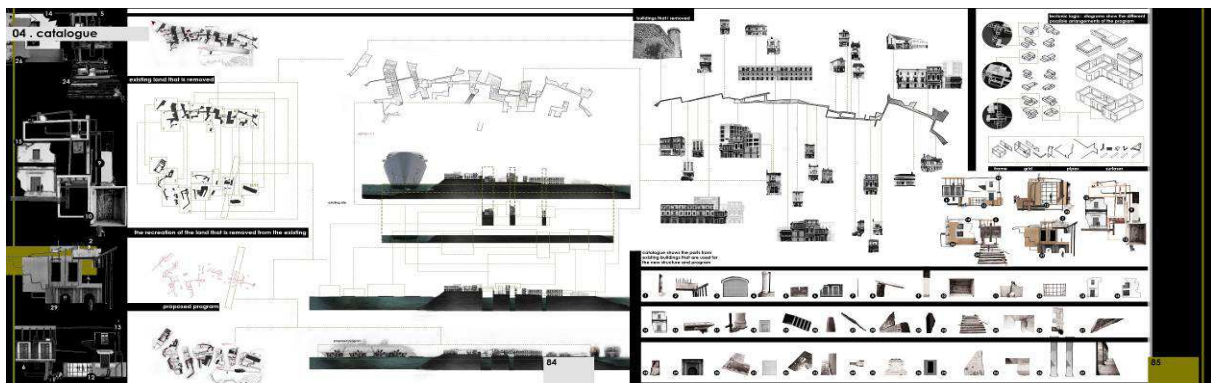


Figure 6. Cataloguing existing city components



The project utilised an indicative area of San Juan to further resolve in detail. This would act as a pilot design for the rest of the city. Zooming out to observe the overall plan of the proposed Futureport San Juan, one notes that paradoxically the land has diminished by almost half its original area, while provisions for both city and port have almost doubled. (Fig.7)



Figure 7. New housing typologies – indicative detailed resolution

## 4 FUTUREPORT COPENHAGEN

### 4.1 Port Circuit 7.0

The project is located in the centre of Copenhagen, specifically in the area that includes the old port of Nyhavn. The city has been through transformation in the past decades and the old port has since ceased operations. The area has seen strong urban and cultural development, facilitated by investment in its institutions and infrastructure. Indicative of this development is the new Copenhagen Opera House which lies opposite the project's site.

The project deals with speculating about the future of the old port area via a pilot project for a new library. For the citizens of Copenhagen libraries are a true point of encounter and exchange, therefore the library is a fundamental building in the culture of the city. The city of Copenhagen offers 20 libraries located throughout the city, comprising somehow a network of information. (Fig. 8)



Figure 8. Mapping of Copenhagen libraries network

Testing a library programme in relation to the port, the water edge, and the city network, offers opportunities in envisioning the future of the port area. The library programme is here approached as a vehicle for exploring new ways of virtual/digital networks and flows of information in the city. Ports have historically dealt with physical flows from sea to land and vice versa. It is inevitable therefore that the adaptation of port sites in the future would have to be challenged in relation to advancements in digital culture. In a highly digital future, the port area library becomes the new port terminal; where physical and non-physical flows merge.



The spurt in internet use has led to the need for boundless digital data processing. This is challenging towards rethinking the model of a new library-terminal. The proposed hybrid building is located in the year 2114 and aims at the instrumental use of hardware as the infrastructure for a new experiential cultural hub. (Fig.9) The building is a “data station” where the in-between spaces of the structure/infrastructure are infused with various programmatic activities. [3]



Figure 9. The library-terminal concept

This is a new city experience where data is no longer an alien process but something users can interact with. The data processors (hardware) become the instrument for constructing the infrastructure of the building. Information becomes the ultimate experience where data being accessed is processed and encoded by the building.

The building becomes an instrument for virtual vs physical reality experience reached through the programmes of arrivals/departures, dispatch centre, temporary accommodation and library. A capsule system connects these spaces to the city and back, and allows users an extreme reality experience through land, water and sky coordinated through the information sent from various data centres located within the city. The building is elevated to keep a clear connection to the city and the sea. It is suggested that the physical aspect of port operations and flows will still be a vital ingredient in city life in the future. (Fig.10)



Figure 10. Proposed capsule system docking station



The infrastructure will integrate cooling systems that will allow heat transfer and reproduction of energy. The data being accessed will be encoded by the building through a phytoplankton membrane enabled by the building's favourable water-edge siting, thus maximising its interactivity with individual/local and collective/global users.

Information control centres are placed at various points in the building allowing it to evolve over time based on the city needs. The programme adapts to the infrastructure and needs of the users. The users can download and upload information contributing and adding to the library-terminal and thus turning the building into a physical/digital imprint of the evolving collective memory of Copenhagen.

## 5 FUTUREPORT VENICE

### 5.1 Dysmotia

The project assumes that 100 years henceforth, the city of Venice is flooded and therefore the whole city is buried underwater. The main aim of the proposition is to test how the unique experience of Venice could be revisited under this assumption. Venice has been the product of a thriving trading economy in the past, but in recent decades its future has been almost exclusively reliant on tourism. The current unavoidable waterways transportation system connecting all points of the lagoon's islands is overloaded with boats, causing water turbulence that in turn further erodes the building foundations. The project attempts to rethink Venice's future transportation, habitation and tourism in a holistic way. The project is located on the islands of Poveglia and Ottogono within the Venetian Lagoon.

The dystopic scenery of the island of Poveglia and Ottogono and associated dark moments throughout its history has earned it the title of the most haunted island in the world. Horror stories, legends and rumours about the dark side of the island have made it an attraction for tourists around the world. The fact that the island has served as a place of exile and the possibility of Venice being flooded and buried under water in the future inspired the narrative of this proposition.

Starting from envisioning an extreme dystopic environment for the future state of the island, a new means of transportation and accommodation is proposed so visitors and tourists can experience this dystopia via the launch of "dys-m.o.t-ia".

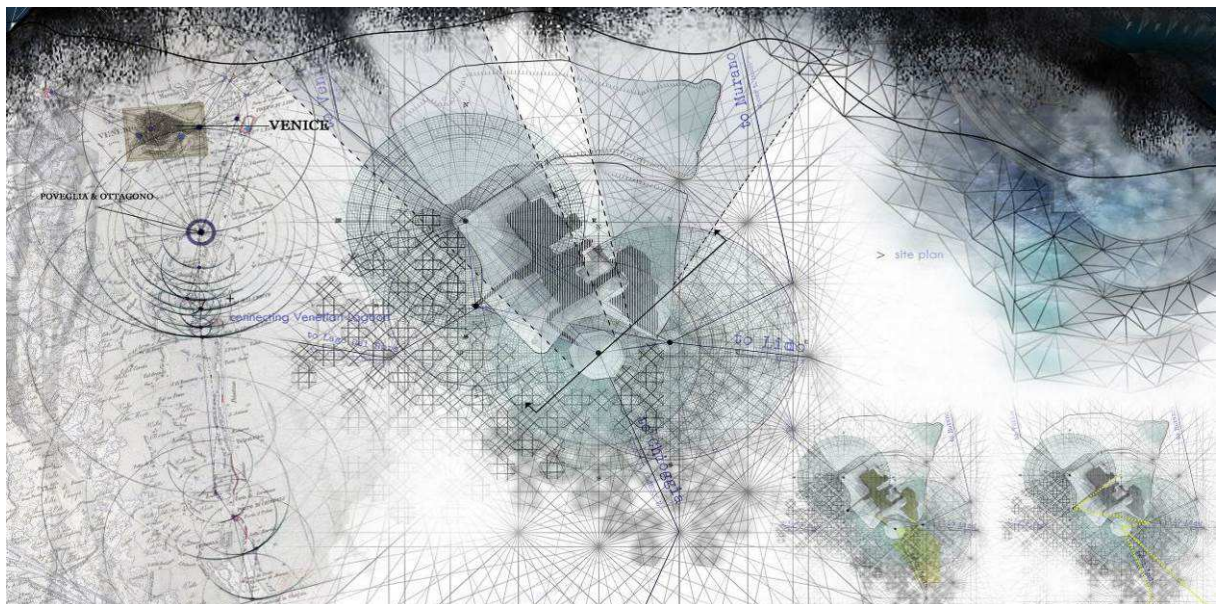


Figure 11. Mapping future transportation routes via studying old military defence systems in the Venetian Lagoon

The use of the efficient 19<sup>th</sup> century military defence system in the Venetian Lagoon is utilised to define future transportation routes, taking advantage of the strategic positions to propose new transportation hubs serving the entire Lagoon. The island of Poveglia and Ottogono are now



identified as the centre of the proposed transportation network that will drive and define the future development of Venice.(Fig. 11)

Under the future flooding scenario, visitors and inhabitants see the remains of Venice laying beneath the sea surface and inevitably are not able to experience the essence and romance that imprinted Venice for so many years. The aim of the project is to provide visitors with the opportunity of experiencing Venice through a new proposed Means of Transportation, called the MOT. The MOT recreates the essence of the gondola rides, the famous and traditional way of travelling around Venice. (Fig.12)

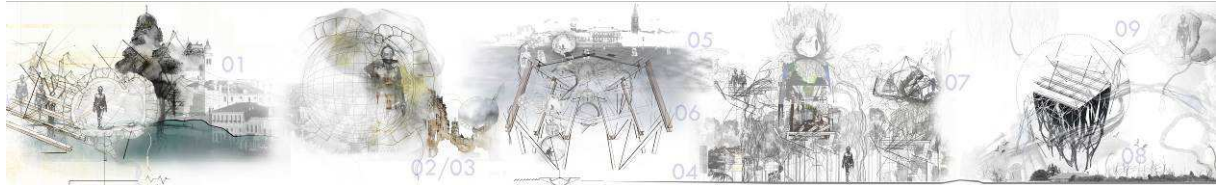


Figure 12. Moments in future Venice through the MOT

The visitors are now able to travel underwater and the MOT functions as a living unit at the same time, possibly substituting the conventional hotel room. The MOT may reach back to a mothership, where it is recharged and exchange goods such as steam and energy in order to continue travelling. Infrastructures rising above water level may become motherships, or temporary colonies of travellers. The MOT may accommodate up to two persons in addition to the operator throughout its journey, occasionally reconnecting back to the island of Poveglia where the centre of the mothership is positioned together with additional provisions for the visitors. (Fig.13)

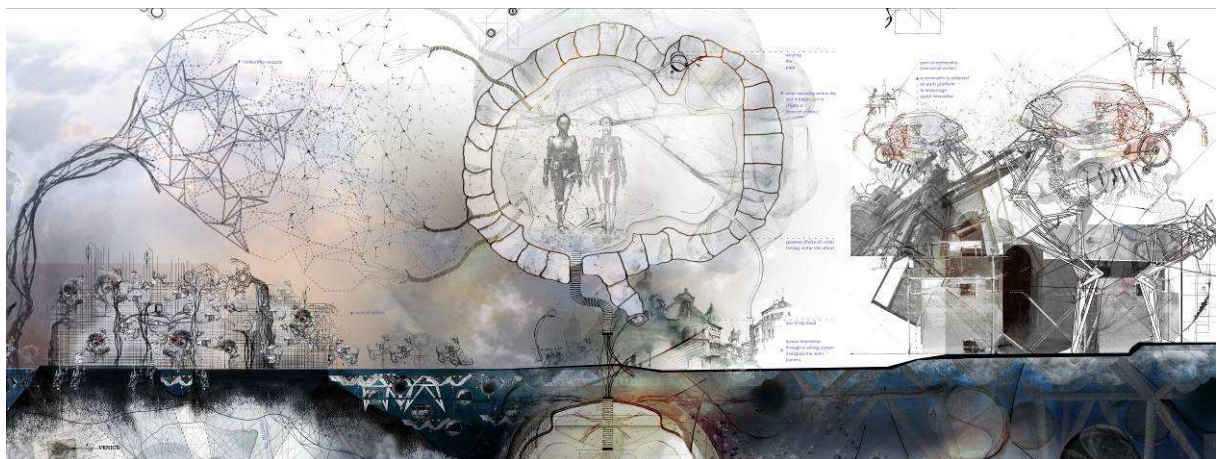


Figure 13. Zoom-in of the MOT next to the mothership on the island of Poveglia

Living conditions on the island of Poveglia do exist in the form of inflatable structures and underwater living units. The inflatable structures function as the living units on the island and consist of platforms that can carry two inflatable living units. (Fig.14) The operator of the MOT is positioned at the living units' underwater part and remains there for as long as he is operating the MOT.

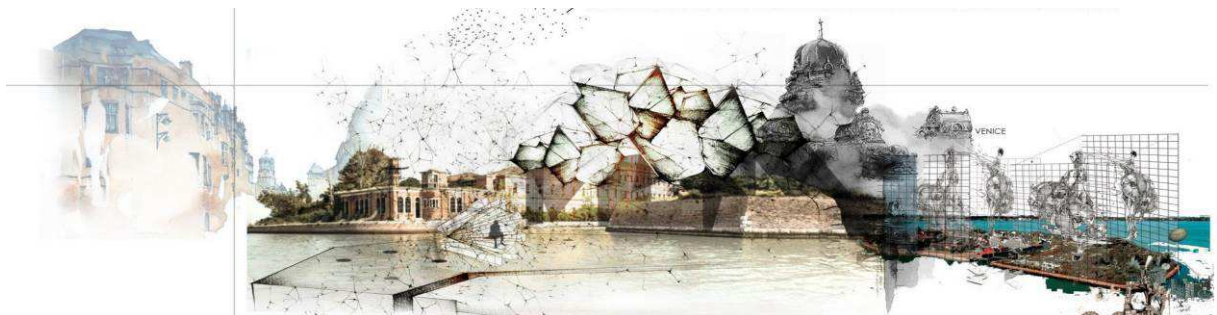


Figure 14. Living units on the island

## 6 FUTUREPORT HAMBURG

### 6.1 Densetopia

The project attempts to test maximum density in a traditional Hamburg port city urban block. Paradigms of the old might of Hamburg port as a vital member of the region's Hanseatic League are adopted to the city scale as a combination of urban transportation and mobile living unit devices. Two parameters are set in order to frame the objectives: a. the minimum required population density will be at least four times larger than the original Hamburg block and b. the block will be a hybrid of residential and commercial programmes. Part of the programme is static becoming a platform through which functions are aggregated and distributed throughout the city.(Fig.15)

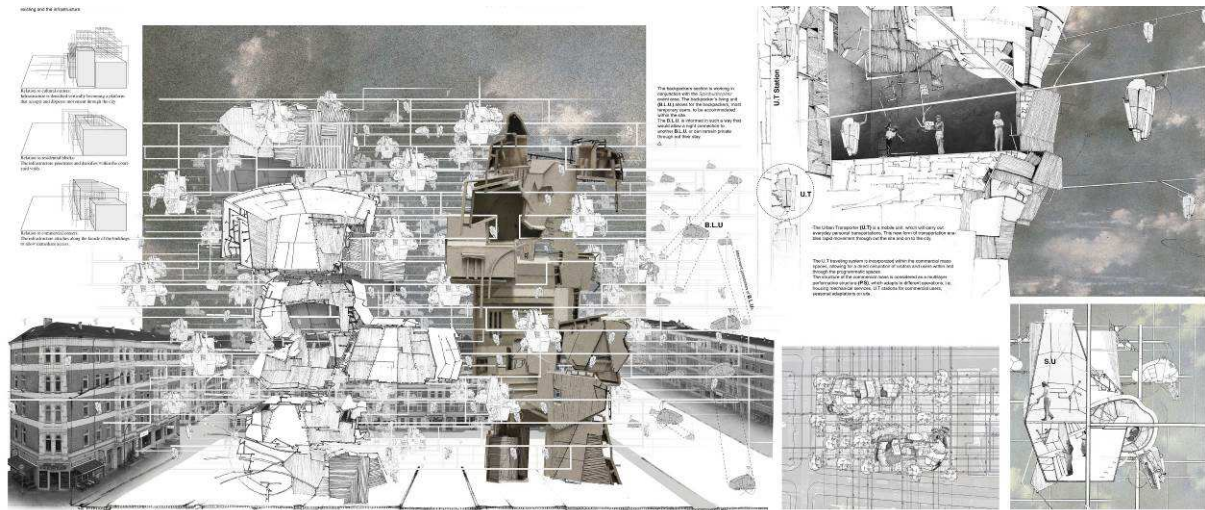


Figure 15. The proposition within the urban block

The kinetic nature of the living unit allows for flexibility in order to create temporal programmatic spaces. The residential units are envisioned as personal living spaces addressing the single person household and critically challenge the current conventional living typology suggesting a new system where personal spaces are integrated with semi-private communal areas.

The Urban Transporter is a mobile unit, which carries out everyday personal transportation. This mobile unit is provided with each living capsule, and is also available throughout the surrounding city-port context via a new network of urban transporter stations. Static Service Units are situated on the permanent infrastructure within the city block. These are also communal units facilitating the shared economy of clusters of residential units. The mix of the static and dynamic parts allows the formation of clustering with varied degrees of permanence. The structure of the commercial mass is a multi-layered performative structure, which adapts to different operations, i.e. housing mechanical services, Urban Transporter stations for public use, and accommodating seasonal adaptation : during summer season the system assumes a contracted nature and allows for the residential units to be dispersed in an open environment ; during winter the performative structure expands in order to create a greater enclosure that engulfs the other components and allows all the operations of the system to perform within an internalised environment. The operations of the residential and transportation units are negotiated through a user interface that regulates all of the operations of the system as a whole comprising a new network. The Urban Transporter network may penetrate neighbouring residential blocks initially through the existing courtyard voids, and subsequently allowing for future transportation infrastructure and therefore enabling a larger area to densify. The infrastructure may also attach on existing building facades creating a second skin allowing operations to be performed with immediate access to the commercial programmes. It may also be extended through the wider urban fabric to attach to and complement existing public transport infrastructure. (Fig.16)



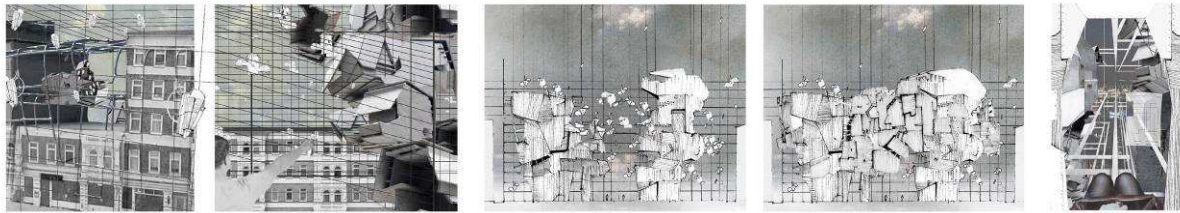


Figure 16. Seasonal variations of the residential and commercial programmes – expansion into the city

Clues on future residential typologies are extracted by observing current trends such as ‘backpackers’ pointing to a growing demand for temporary residences. This newly envisioned need for mobility is also the continuation of older systems through the waterways of the Baltic, but now adopted more holistically to encompass urban settlement on dry land.

## 7 CONCLUSIONS

Port-cities globally, but especially those in the ‘aging’ western world are currently undergoing a sharp decline in regard to their historically vibrant seaport-cultures. Through attempts in re-establishing future scenarios that recognise local and global mobility as primary generators of building and planning innovation, the paper manages to critique and identify present day ailments concerning this issue: zoning in planning that commonly separates port and city, and overbearing historic conservationism that tends to reduce port cities into mere ‘living museums’.

The paper recognises that sea-port operations alone and as we know them are inadequate to put in motion the necessary evolution of Futureports. Current and projected factors such as technology and societal evolution must also enter the equation.

The historic role of ports as organising factors for the wider city operation and the organic relationship of port and city has been eroded. This rift between port and city is a relatively recent phenomenon, an outcome of “zoning” (separating urban programmes) as a result of seemingly conflicting logistics and needs.

The paper suggests that in the future a closer integration and dynamic interaction between port and city will be necessary. This might be aided by new emergent technologies and societal restructuring. Ports can be catalytic in providing the model for wider urban planning solutions.

Viewed this way, Port cities may continue to provide the cradle for nurturing brave-new urban settlements; innovative, inventive and vibrant.

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## EXPLORING THE ARCHITECTURE PROCESS WITH ENVIRONMENTAL PSYCHOLOGY

*Hakim nia Mostafa<sup>1</sup>, Moayyer Rouhollah<sup>2</sup>*

*<sup>1</sup>Hakim nia Mostafa, Ph.D. Cand., "Ion Mincu" University of Architecture and Urbanism (ROMANIA)*

*<sup>2</sup>Moayyer Rouhollah, Student, "Ion Mincu" University of Architecture and Urbanism (ROMANIA)*

*Mf\_hakimnia@yahoo.com, Rohola.moayer@gmail.com*

### Abstract

Are architects able to design buildings which their framework could improve creativity and help to reduce people's psychological and social disorders? The answer to this question requires to have a correct and rigorous understanding of issues that have a direct influence on the subject such as, being familiar with occupant's needs and their cultural and physical environments. This knowledge provides a suitable foundation for architects to design more suitable and appropriate buildings. Because of interdisciplinary nature of the profession of architecture, apart from regular subjects in the architectural curricula subjects like social science, sociology and environmental psychology and arts have direct influence in architectural design courses. Therefore, not only the final product but also the design approach or process should be taken into serious consideration. In other words, between the development of design concept in the mental environment of the designer and final result or physical product must be a direct and appropriate correlation, although the distance between these two processes are not very close.

Throughout the history, the initial source of all inventions and innovations were based on the needs of individuals or societies, and in the course of time they usually have developed and evolved. Considering the population increase, pollution of global environment, limited natural resources and finally the social intricacy and complexity in the past decades have caused the development and application of environmental psychology in the profession of architecture unavoidable. Today environmental psychology is one of the important subjects in the well known universities in mostly developed countries. Being inclusive and multifaceted, architecture directly and indirectly affects all community affairs and the prevailing of architecture culture, specifies the importance of education. Conduct individual or group may be due to the pressure and environmental conditions change.

This issue by maximizing the environment capabilities and training practices to people in using it is solvable. The goal of environmental psychology is to investigate the meaning of space in terms of psychology, sociology, anthropology, art, architecture, general epistemology, philosophy and ultimately a better understanding of human beings from space, especially artificial spaces. 1)Privacy concepts, 2)personal space, 3)space domain, 4)of the original congestion Communication Studies with human behavior and vice versa.

This discipline deals with the positive and negatives aspects of the built environment in relation to the people's behavior. In other words, the reaction of people's behavior in relation to the physical environments and vice versa. Consideration of these phenomena in the building design would improve the quality of the built environments.

This article, by stressing the importance of educating the environmental psychology, as a ring lost in the process of architectural education and one of the most important lessons in the process of Academic training of Architecture, is seeking to achieve a general framework for an effective training of environmental psychology for architectures. In this context, some points on the need to teach

these lessons have been studied and will achieve some points which have a key role in teaching process to the students.

**Keywords:** Psychology, environmental psychology, environmental behavior, educational process, architecture

## 1 INTRODUCTION

Being inclusive and multifaceted, architecture, direct and indirect impact on all of society and the prevailing culture, and this shows the importance of education in architecture specifies.

The decline during the Iran contemporary architecture shows that architectural education is flawed and not doing their job well. In the last decade, the architectural education it became in the attention of country's academic system and they have done many researches in this field.

Creating a fundamental change in the architectural education system such as changing the integrated masters to a bachelor and a master, which offers expertise. Due to the achievements of these field, as well as analysis of past experiences, according to a proper understanding of the characteristics of the discipline of architecture, and the difference with other disciplines, we can make room for a new beginning in architecture education provided.

Due to pressure and environmental conditions, conduct individual or group may change and evolve. This issue with maximizing the environmental potential and "how to use to environment" to their teaching practices can be solved. The goal of environmental psychology to investigate the meaning of space in terms of psychology, sociology, anthropology, art and architecture and in general epistemology and philosophy, and ultimately a better understanding of human beings from space, especially artificial spaces. Concepts of: 1- privacy, 2- personal space , 3- spatial territories, 4. Swarm, are the main parts of the studies about the relationship between environment and human behavior. Each of these concepts in the past decade for various reasons by social scientists and environmental design are of particular interest. For example, the growing global population, environmental pollution, congestion. Motivation to study crowded spaces and populated and psychological reactions of people in front of the built environment. The increasing use of tranquilizers and psychotropic substances and Social violence refers to this issue.

In general, the concept of internal matters and to turn back or reflection these concepts to the physical world by environmental designers should be one of the important topics in environments designed studies. In the other words this lesson should be used in courses are designing and find its place in architectural education.

## 2 HISTORY OF ENVIRONMENTAL PSYCHOLOGY

Lack of attention to psychological needs, Psychological security, In the design and construction of residential buildings for low-income areas like "Perot, Ego" in Saint Louis, America, Many problems such as lack of a sense of belonging to residents in public spaces, Lack of attention to the concept of territory in the design of public spaces, Lack of attention to the culture and lifestyle of low-income, Uniforms of all the blocks and clients has led to confusion (Figure 1). Social and psychological abnormalities residents of the housing complex that was designed and implemented using modern architectural patterns, Researchers from the social sciences were considered and multiple. After studies, since due to the high cost of the project was not amendable, two or three blocks to rebuild, and more than forty-three eleven-storey building destroyed. This is a serious and remarkable warning for the architects.

Although the need for cooperation between designers and psychologists to resolve the existing shortcomings, spaces Architecture and urban design for people who use them, without hesitation



seemed necessary. But it soon became apparent, that Designers and psychologists have a different attitude from each other on how to tackle environmental issues. In idea of psychology the problem is that the main criterion in architecture was aesthetic aspects of it and form and in the design process more emphasis were on aesthetic of designed spaces To address issues related to the psychological needs of the architecture and function. Therefore, Psychologists believe that designers have to sacrifice the real needs of everyday consumers to personal aesthetics. The result was that More and more people are unfamiliar with designed the environment. It seams, differences in attitudes between the two groups occurred were Because of the different nature of the architectural profession and knowledge regarding the interaction of humans research and the environment and Contact This knowledge with Designer. Design requirements based on problem-solving and providing the necessary data was to create capabilities that so can directly convert the data into design. While psychologists, to be able to respond to the demands and needs of architects, were not explicit. Psychologists in data collection and experimental studies were valuable contributions, But, the attitude of positivism is simply derived from its scientific approach to the phenomena, In opposition to the views and prescriptive norm of Architects and environmental design that their attitude was influenced by the performance and beauty, road to nowhere. According to "Thomas Kuhn" when soars the need for new model and or new paradigm, that previous archetypes are not able to meet the demands and scientific ideas. Environmental designers and researchers have Many incentives to work together to create a suitable habitat for life in the sixties in America. Experienced designers found that Is essential designed to build in harmony with the desires of the human environment in communities large and complex structures. So, a small group of architects have recognized the need for a common language and in an effort to build and create new knowledge, to build an environment that is familiar to people better than before. Their attention was building a paradigm that can include motivation and human needs based on different backgrounds in architecture, social sciences, psychology and anthropology and have the nature of multi knowledge.(Figure 2)



Figure 1. Prout Ego residential complex



Figure 2. Prout Ego residential complex



Figure 3. Residential complex "Navab".Tehran.IRAN

In Iran, residential complex located on the Nawab street has Big problems of architecture. Construction of the residential complex, which consists of 743 640 square meter residential building, 160,000 square meters of commercial and administrative began in 1994. In first the high-density 15-storey buildings and residential applications, commercial and administrative proposals were. Was anticipated that the project will be completed within 4 years but the area of intervention and heavy financial burden and weak urban management led that the project will last for several years. Finally, financial pressures forced city officials to remove all spaces cultural, educational and green spaces because of its non-economic. The complex of the early 70's in the architecture press as a bold design brought samples but studies show that lack of attention to the needs, tastes and lifestyles in the urban fabric, Has lead to project failure. If in this massive project was assisted from experts in all disciplines, Including psychology, sociology and the anthropologist, certainly the plan was made to better , and satisfaction attracted residents.( Figure 3)

Other examples include Frank Lloyd Wright's Fallingwater (figure 4), Philip Johnson's Glass House (figure 5), that which are regarded as signs of architectural design, noted. When a psychological view these works are studied, the question arises that these works are monumental buildings or residential building? Is this a good home for children and elderly people is growing? What factors should be considered that A set of materials to be converted to a house with soul? What factors makes an environment for people to places?



Figure 4. Frank Lloyd Wright-designed building waterfall



Figure 5. The Glass House designed by Philip Johnson

### 3 BEGINNING OF ENVIRONMENTAL PSYCHOLOGY

The beginning of the field, is usually known between 1961 to 1966 when the first Psychology of Architecture's conference was held in America; However, some believe that Environmental Psychology is as old as the history of psychology<sup>1</sup>, Gifford<sup>2</sup>, Egon Brunswick<sup>3</sup> and then Kurt Lewin<sup>4</sup> are known as the founders of the field. Brunswick in 1943 for the first time used the term psychological environment, in German sources, Mlpakh (1902)<sup>5</sup>, is the founders of psychology called peripheral. Privacy, personal space, territory, congestion are among the topics of this field. In general we can say that the field of psychology is a subset of the Behavioral Sciences and branch interdisciplinary field such architecture, landscaping and urban design interfaces closely.

In the '70s, research that examines the environmental and human interaction, were assigned as a specialized field of study "Environmental Psychology", or ecological psychology, behavioral eco-sciences were published. It should be noticed that architects do not need to attention physiological aspects, their psychology. Environmental psychology as a branch of psychology which the architects have made a major contribution in the provision and development of it, studies the human behavior

with it's Settlements. On the subject of environmental psychology, only negative or positive impact of human on environment and vise versa is considered, regardless to physiological causes, as a result of discussions leading to the physiology.

What chain of reactions in the brain or nervous system and the inadequacies of the environment affect humans, are not considered by Architects?

According to the theory of "Creek"<sup>6</sup> environmental psychology, is psychological study of human behavior in such a way, that, to his everyday life related to physical environment.

In psychology, environment, customs, traditions, values and social norms and cultural are in attention.

Gifford, defined Psychology environment as "cross-check between the individual and his physical base". In his opinion, in such interaction, the individual changes the environment and at the same time, his behavior and experiences, to be transformed by the environment.

#### **4 NECESSARY OF TEACHING THE ENVIRONMENTAL PSYCHOLOGY IN ARCHITECTURE**

Architecture is a creative act. The purpose of shaping the space of human life, in its integrity, and scope, to respond to humanitarian needs linked to the environment and nature to express her emotions and beliefs, and covers a broad spectrum. Human perception of the environment is a central issue in environmental psychology. Environmental perception is a process through which the necessary data is gathered based on the need from the surrounding area.

The perception is a targeted process and depends on the culture, attitudes and values that rules the perception of thinker. Because architects are the builders of physical environment and on the other hand they can feel and look the positive and negative effects on consumers and they can consider better and more aspects to functional side of psychological, For these reasons, the best that is to architects study environmental psychology. Separating master level from bachelor, inclusion, this course graduate curriculum in the fields of architecture, landscaping, is a step toward a more accommodating environment to the needs of individual, group, the contemporary human culture. Although in the 1950, 60, 70, it was much attention to the issue of environmental psychology, but in the past two decades by raising the global village the attention is decreased.

#### **5 ENVIRONMENTAL PSYCHOLOGY ACHIEVEMENTS IN UNIVERSITIES ABROAD**

In North America the ESRA<sup>7</sup>, in Europe IAPS<sup>8</sup>, in Japan MERA<sup>9</sup>, and in Australia and New Zealand PAPER<sup>10</sup> are agencies which focuses its efforts on the study of human behavior and its relationship to the physical environment. Journals "Environment and Behavior", "environmental psychology", "Research in architecture and planning" is among them. Urban design movement, "new urbanism" and "physical and human development based on the development of the transport network TOD"<sup>11</sup> and even movement" new traditionalism in urban design a special place have been made for environmental psychology. At the National University of Mexico, the largest environmental psychology training program is underway. These studies are more into housing, environmental attitudes, smaller crowds and location have attracted his attention unfortunately, Iran has not been established institution in this regard.

#### **6 ENVIRONMENTAL PSYCHOLOGY TEACHING ACHIEVEMENTS IN IRAN**

In history, education has been one of the pillars of civilized societies, in the present time it is important to measure the quality of education improved as has been defined value. In this definition, the quality of the educational system determined by the level of the graduated people of this system of acquiring knowledge, attitudes and abilities, so that any existing level, capabilities and attitudes acquired attributed to the educational system. With the changes that have taken place in the past two decades today, higher education programs in Western countries has been revised.

The architectural education is the basic growth factors and promotion of architecture in each country. Iran in the past decade and with quantitative development of architectural education in

colleges and various levels of this importance is increasing. In this case, the optimum planning and deliberate, in schools and various levels to develop the quality of architectural education in this field is necessary.

As mentioned, this paper emphasizes the need for education on environmental psychology, along with architecture education. The future architecture enables the creation of human environments. Accordingly, the authors believe, revision of syllabi and retraining of teachers with short-term courses for higher efficiency in the process of education is among the strategies, which should be taken to promote architectural education.

This is where the role of environmental psychology and proper training are highlighted for various theories of environmental psychology in relation to environmental effects on humans and the interaction between the physical environment and the human experience and how it is created are made and the right questions raised in this communication are to be able to experimental research fits that theory into practice.

Therefore, environmental psychology, in fact, to create experimental theories through observations of human behavior in everyday environment, it is also used in such a way that the theory can be used by designers.

## 7 SUGGESTED METHODS FOR TEACHING ENVIRONMENTAL PSYCHOLOGY

Today, the effort of many architecture teachers is finding new ways to teach better architecture. According to this, one thing that has become increasingly important in recent years: attention to the students and their capabilities. Students can be examined from three directions to improve the quality of teaching. The three approaches are:

1. *Recognize Students*
2. *Students help in the production of knowledge*
3. *The student's role in the evaluation of projects*

Experience has shown that when students learn more efficiently and feel more satisfied from learning, which will be present in your classroom curriculum. According to the above points, and that environmental psychology courses offered in master's degree, and taking into consideration the extensive content, it is suggested that these lessons are not held formal and classic. But after a few sessions to explain the basic principles and introductory material by professor, class based on student-centered seminars based on studies and research on the topic of the lesson was to be held. This method enables students to apply the concepts of psychology at the architecture and encourages them to take initiatives. 'Teaches students to be responsible for their own educational development. This method is highly sensitive and valuable learning experience for students in a university training program that the broad concepts to their students' learning has in. Students' experiences and their perceptions of what they have learned using peer to peer education as conferences and lectures will affect the traditional methods.

Another proposed research methods in psychology environment is observing behavior in natural conditions. Considering this point, studies on a half-day trips takes place for imperceptible study the behavior of individuals in different environments with different conditions such as squares, parks and... Target is to evaluate the positive and negative aspects of these spaces in terms of psychological and behavioral needs of the users that a report is prepared by students. For example, in most parks, the seats allotted to those not used, and the places that used to sit, does not built for sit. (Figure 6)

Confucius believed: "a picture can be worth a thousand words more". In this regard, students will be asked that instead of writing multiple-page report, field observations in relation to the positive or negative aspects of the behavior of individuals and the physical structure at the community level using photographic techniques provide in a poster size A3 (figure 7).





Figure 6. The misuse and inadequate of fountains in the city



Figure 7. Environmental Psychology posters

## 8 SUGGESTED TOPICS IN ENVIRONMENTAL PSYCHOLOGY WILL BE DISCUSSED:

- 1- *The nature and scope of Environmental Psychology*
- 2- *knowledge of human from himself*
- 3- *Man and understanding of the environment*
- 4- *The emphasis on general concepts that have a direct impact on their psychological environment*
- 5- *The inner self in relation to environment*
- 6- *Private space or private sphere and techniques to achieve it*
- 7- *The definition of privacy*
- 8- *Domain of belonging in individuals*
- 9- *Congestion*
- 10- *Color psychology*
- 11- *The residential environment and environmental psychology*
- 12- *Social environment and environmental Psychology*
- 13- *The learning environment and environmental Psychology*
- 14- *Business and environmental Psychology*
- 15- *Nature and environmental Psychology*

## 9 CONCLUSIONS

Moments of deep learning creates very good pleasure that for him is unforgettable. In the past two decades due to the quality of higher education has become more important than before. Higher education systems in most countries In order to pay more attention to the quality of education, research and professional services, to the establishment of assessment and accreditation systems

have. It seems that developments in architectural education, changing traditional practices to modern teaching methods Design, is undeniable.

As a branch of special educational process, the architectural education, needs to develop initiative potentials, these days.

On the other hand, what can be seen as the face of a city's architecture reflects the concepts and values that education begins, and finally in the community to come true. The architecture in its most profound sense, divide and create order and harmony in space and time and the human will to impose them.

Although over decades, psychologists and designers feel the need and cooperation in various fields such as architecture, urban design, landscape design, industrial design, etc., does not pass, but in many universities in the world, architecture students it is position was special.

However, lack of information of Iranian architecture and urban designers interdisciplinary subjects at the University of Architecture has allowed them less able to take advantage of the correlation between science and even in libraries, schools of architecture, it is rare to find a book on the subject of environmental psychology.

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<sup>1</sup> Psychology Environment

<sup>2</sup> Gifford

<sup>3</sup> EgonBrunswik(1955-1903)

<sup>4</sup> Kurt Lewin(1947-1890)

<sup>5</sup> MelPAkh

<sup>6</sup> Creek

<sup>7</sup> Environmental Design Research Association: [www.edra.org/](http://www.edra.org/)

<sup>8</sup> International Association for the Study of People and Their Physical Surrounding

<sup>9</sup> Man-Environment Research Association

<sup>10</sup> People and Physical Environment Research

<sup>11</sup> Transit Oriented Development



## **BUILDING-INTEGRATED GREEN SYSTEMS: COMPARATIVE ANALYSIS OF THE ENVIRONMENTAL, ECONOMIC AND SOCIAL BENEFITS**

**Simona Guergova**

*Department of Urban Planning, Faculty of Architecture, University of Architecture, Civil Engineering and Geodesy, 1, Chr. Smirnenski Blvd, 1046 Sofia, (BULGARIA)  
simonagergova@abv.bg*

### **Abstract**

Once shifted and replaced with concrete, paving, steel and glass, impermeable materials which define the rhythm of the city structure, nature comes back finding ways and places to resettle. Squeezed by a densifying urbanized “flesh”, present-day citizen more and more dreams about the natural environment. The biophilia hypothesis suggests that there is an instinctive bond between human beings and other living systems. Wilson who introduced and popularized the hypothesis defines the biophilia as “the urge to affiliate with other forms of life”[1][2].

Meeting the challenges of environmental crisis, depletion and pollution of natural resources, destruction of the natural environment conquered by the urbanized and man-made infrastructure, more sustainable building approaches are required. Calculations of the Energy Information Administration in the United States for 2010 show that 74% of the total consumption of electricity is consumed by buildings [3], while its carbon dioxide emissions are 40%. Built environment-integrated vegetation could be this missing link between the “back to the nature” desire and the urbanized real lifestyle. It is no longer enough just to know the positive impact of greenery on microclimate, but we have to be able to manage and handle its use as a powerful tool. “Our built environment must imitate ecosystems in all respects” [4], said Ken Yeang discussing the eco-design ideology.

Recently more and more vegetation is introduced as a component in the building structure and has its ecological, economic and social positive effects in the modern urban lifestyle.

This paper discussed the vegetation into the building structure and its impact on urban quality of life. The building envelope is the possible transition of the inner and outer space, the possible connection of the public and the private spaces. The aim is to assess the social, environmental and economic benefits of the integrated greenery systems accommodated in the building structure thus serving either as envelopes (roofs and exterior walls) or as part of the interior or exterior functional space. The green roofs, the vertical greenery systems (VGS), the indoor gardens, the greened balconies, and the sky gardens are evaluated against the following criteria: storm water management, air purification, noise attenuation, improvement of energy performance of the building, building life extend, visual amenity, enhancing the biodiversity, mitigation of UHI (urban heat island) effect.

Green facades and vegetated sod roofs are known from thousands of years. Nowadays, there are many innovative and competitive systems. Green roofs are classified as intensive or extensive. Vertical greenery systems are classified as greened facades or living walls (vertical gardens). They all offer environmental benefits by enhancing the biodiversity; improving the air quality, the energy performance of the building, the storm water attenuation; mitigating the heat island effect. Economic benefits are related to environmental. Visual and aesthetic qualities and the noise reduction enforce the social profits.

Integrated greenery systems in building spaces are: indoor gardens, sky gardens (podium gardens) and greened balconies. Here the environmental and economic burden retreat a little bit to the social

benefit, despite the inevitable improvement of air quality and energy performance. Modern urbanized society lifestyle requires more than 80% of the time to be spent in interior space. Improving the quality of interior air is increasingly important for human health. Statistics show that indoor air pollution costs about 14 times more deaths than outdoor air pollution. In total, indoor air pollution is estimated to cost 2.8 million lives each year [5]. Indoor vegetation is not only a bio-filter but may reduce the need of HVAC systems and save energy.

To reveal their full potential, building-integrated greenery systems have to be applied to an appropriate way pursuant the main concept of the project and the relevant features and advantages of the chosen system. The paper reports the findings of a comparative analysis of the environmental, social and economic benefits of green systems in the building structure. A framework for upscaling and evaluating the impacts in dense urban areas is proposed.

**Keywords:** vertical greenery systems, green roofs, urban environment, building envelope, sustainability.

## 1 INTRODUCTION

According to the United Nations report [6] 54 per cent of the world's population lives in urban areas, a proportion that is expected to increase to 66 per cent by 2050. Densifying urban areas will face numerous challenges in meeting the needs of their population. Statistics show that air pollution which is the 4th highest-ranking risk factor for death globally, was responsible for 5.5 million deaths in 2013 [7]. Urban heat island effect (UHI) describes urban microclimate warmer than its surrounding rural areas due to human activities. Extreme high air temperatures contribute directly to deaths from cardiovascular and respiratory disease, particularly among elderly people. In the heat wave of summer 2003 in Europe for example, more than 70 000 excess deaths were recorded [8]. In line with all negative effects of urbanization and climate changes, the mental health of citizens is affected due to the urban jungle where street canyons are normal and urban scenes are defined by the variegation of the façade "forest". The global burden of depressive disorders increased by 37.5% between 1990 and 2010 [7].

Finding mediation between the built environment and human nature, between paved surfaces and human mind and soul, between the need of shelter and the prison. Could be the nature in particular the vegetation this lifebelt, this module to re-associate the human scale to the urban aggregation?

In dense urban areas vegetation finds its refuge in building structures as a principal volumetric unit. Using the five main ways of integrating greenery systems on buildings [9] a literature overview and comparative analysis of their benefits are made. The two main groups defined by functional and morphological features of the unit are building envelope and building spaces. This paper emphasises the benefits more than the features of the various greenery concepts.

## 2 GREENERY SYSTEMS INTEGRATED INTO BUILDING ENVELOPE

Building envelopes include roofs and exterior walls (façades).

### 2.1 Green roofs

Green roofs are well known and there are established classifications and guidelines for implementation, exploitation, maintenance. Generally they are classified as intensive, semi-intensive (or simple intensive) and extensive, but the transitional concept could not attribute to this research.

Other terms substituting green roof are Eco roof and living roof to become clear for developers and designers that does not always expect a vegetated roof to be green [10].

### 2.1.1 Extensive green roofs

Extensive green roof are characterized by thin (less than 15 cm) layer of substrate, low capital cost, no maintenance and no additional irrigation needed. Extensive greening involves cultivation of vegetation in forms which create a 'virtual Nature' landscape [11].

### 2.1.2 Intensive green roofs

Intensive green roofs (Fig. 1) are characterized by thick substrate layer (between 20 and 100 cm), wide variety of species, irrigation and maintenance needed. The wide range of options available for designs and uses means that sites can be fitted out in such a manner as to create an amenity comparable to park facilities at ground level [11].



Figure 1. Intensive green roof

## 2.2 Greened exterior walls (Green walls) [9][12] / Vertical Greenery Systems [13]

There are many terms describing the concept of a greened external building wall as: green façade (bio-façade), living wall, vertical garden, vertical greening, vertical greenery, green wall, vegetated façade, plant-covered wall etc. [14]. In general green walls can be separated in two main groups.

### 2.2.1 Green façades

Green or greened façades typically feature woody or herbaceous climbers either planted into the ground or in planter boxes in order to cover buildings with vegetation [15]. The case with plants using the wall for supportive element (Fig. 2) is defined as traditional green facade or direct green façade [16]. Species variety is limited.



Figure 2. Traditional greened façade in Germany

### 2.2.2 Living walls (vertical gardens)

Living wall systems (LWS) or vertical gardens involve planter boxes, modular panels, or geotextile felt-layer (hydroponic-based) system with additional construction without relying on rooting space at ground level. Irrigation system and maintenance is needed. Wide variety of species is possible depending on specific climatic features of the region. According to the different type of the system, different substrate layer is possible. Hydroponic is the technology of growing plants without soil using balanced nutrient solutions to provide all the plant's nutrition and water requirements.



Figure 3. Quai Branly Museum Living wall façade, Paris, France

## 3 GREENERY SYSTEMS INTEGRATED INTO BUILDING SPACES

### 3.1 Green balconies

Balconies can function as a mediator space to connect the indoor with the outdoor environment [9]. There are plenty of examples (traditional or extravagant) all over the world through centuries showing the possibilities for this greening concept. Easy for implementation it contributes directly with the shading and evapo-transpiratory effects to the microclimate. Recent years there are more major projects involving this concept generally like Bosco Verticale in Milan, Italy. The project was designed as part of the rehabilitation of the historic district of Milan between Via De Castillia and Confalonieri. The two buildings have 730 trees (480 large, 250 small) 5,000 shrubs and 11,000 perennials. Overall, the vegetation is the equivalent of that found in a one hectare woodlot. Another similar project is designed for Lausanne, Switzerland called The Tower of Cedars.



Figure 4. The Tower of Cedars, [www.dezeen.com](http://www.dezeen.com)



### 3.2 Sky gardens (podium gardens)

Sky garden is a term referring to planted landscapes built above the ground: in intermediate floors of high-rise buildings or at the rooftop [17]. A study for Hong Kong shows that the actual area of podium gardens is more than eight times of roof gardens in the total study area [18].



Figure 5. Hotel Marina Bay Sands, Singapore

### 3.3 Indoor gardens

Indoor vegetation could be conventional like variable sizes of plants or trees in atriums, or vertical greening like interior living walls. They all benefit the indoor air quality and the innovative systems propose bio filtration (Fig. 6).



Figure 6. Bio filter in Magenta station, France , [www.notre-planete.info](http://www.notre-planete.info)

## 4 COMPARATIVE ANALYSIS OF BENEFITS

### 4.1 Storm water management

According to FLL [11] reference values showing percentage annual water retention on green roof sites are maximum 60% for extensive greening (20 cm substrate) and more than 90% for intensive greening.

For the greened façade systems the water retention possibilities are determined by the planted area or planter boxes and the volume of the water tank storage if provided. In this case practically no water waste is possible [19].

Living wall systems including growing media have potential of water retention through the whole surface but no objective research for quantifying the water volume was found because of the variable features of numerous systems.

Indoor gardens have no respect to the storm water management unless there's no storage cistern provided.

## 4.2 Air purification

All of the mentioned greenery systems could contribute to air quality improvement. Plants consume gaseous pollutants directly or intercept particulate matter with their leaves. Researches quantified the total weight of air pollutants removed of specified area green roofs per year [20]. Another calculated that one square meter of green roof could offset the annual particulate matter emissions of one car [21].

Larger than the roof area, external building walls if vegetated offer more air quality benefits. Near a high daily traffic road researchers found heavy metal concentrations.

For green walls there are also studies focusing on particulate matter concentrations using for sampling climbing vegetation of different environmental conditions. Ottelé investigates two locations: a woodland and a green wall near traffic road [22]. Another research suggest ivy can retard bio-deterioration of building facades and may thus serve a conservation role on historic stone surfaces and built heritage [23].

The full potential is determined by the density of leaf foliage formed by the specific system and species chosen. LAI (leaf area index) is defined as the single-side leaf area per unit ground area [17]. For this reason living wall systems have more potential compared to green façade due to the variability of species with higher index.

Indoor vegetation contributes the air quality improvement by increasing the humidity and filtering the harmful chemicals.

## 4.3 Noise reduction

There have been claims that rooftop with 12 cm and 20 cm of substrate could reduce sound by 40 dB and 50 dB [10]. 10 cm green roof was shown to reduce sound transmission into buildings by a minimum of 5 decibels.

Recently the potential of green wall systems for acoustic insulation have been investigated. Wong examines 8 different vertical greenery systems and the results indicate up to 10 dB noise attenuation [24]. Latest study made by Pérez show the acoustic performance difference between a green façade and a living wall system [25]. Due to the substrate layer and the structure homogeneity the vertical garden shows more regular graphic profile.

## 4.4 Building energy performance improvement

Measurements for green roofs have shown that a 20 cm to 40 cm layer of grass growing on 20 cm substrate layer is equivalent to 15 cm of mineral wool insulation [10].

For green facades and living walls there are many studies made [26][13][27] and all their conclusions agreed that vertical greenery systems are effective as passive protection systems for energy savings. Measured reductions of exterior wall behind traditional green façade ranged from 1,7°C to 13°C on warm temperate climate. For living walls reductions ranged from 12 to 20.8°C [28].

The combination of various factors of the system (as substrate layer thickness, presence of air cavity, species incorporated, leaf density etc.), the orientation of the wall and the climatic conditions explain the wide range of results.



#### **4.5 Construction life extension**

The presence of greenery offers protection of solar radiation, wind, extreme climatic conditions. Thus lifecycle span of construction materials is prolonged [29]. For the traditional green façade this criteria is delicate due to studies pointed the damaging effect of roots [15].

#### **4.6 Visual aesthetic qualities improvement**

All of previously mentioned greenery systems suggest aesthetic improvement plus social benefits for the roof gardens - intensive green roofs and sky gardens where the public access is distinctive. Only extensive green roof puts on lower score due to the lowered visual standards on account of cost savings.

#### **4.7 Biodiversity increase**

Living roofs acts as habitat for colonizing species, spiders, beetles, wasps, ants, bees, ground-nesting birds. As part of the city's biodiversity strategy in Basel (Switzerland), green roofs are now mandatory on new buildings with flat roofs, and guidance is provided for the creation of different plant and animal habitats on the green roofs. Extensive systems can provide suitable habitat, but the thin soil layer in extremely dry periods worsen the life characteristics of the site.

#### **4.8 Urban heat island effect mitigation**

According to Price and al. [30] vertical greenery systems theoretically offer the most practical and abundant space per square meter in an urban environment for the implementation of vegetation. It's pointed that due to the greater area than roofs, green walls could contribute more to urban heat island mitigation, but only if they are exposed to sun. As shaded facades anyway do not contribute to the urban raised temperatures, benefits of greened walls related to UHI are combatting urban air pollution and energy consumption reduction. Those two factors are directly related to urban heat island effect.

According to these eight criteria a comparative analysis is made in Fig.7 evaluating potential advantages of the five main building-integrated greenery concepts.

### **5 CONCLUSIONS**

In the past decade the scientific interest of innovative greenery systems for incorporating into built environment grown up. Overcharging the urban tissues with artificial inorganic components incite the subconscious need of balance. Stress, allergies, insomnia are the most harmless manifestations reflecting the results of man-made habitat.

Incorporating greenery into building structure in dense urban areas could introduce many benefits some of which outlining the comparative analysis exposed. It is essential to say that per se a building-integrated vegetation guarantee as minimum advantages directly related to all type of vegetation. The implementation of more complex concepts excluding traditional greened façade only, suggest careful analysis of the specific environmental context, climatic features and expected results on targets. These factors determine the effectiveness of the system and if chosen adequately, it could reveal the potential of numerous positive effects.

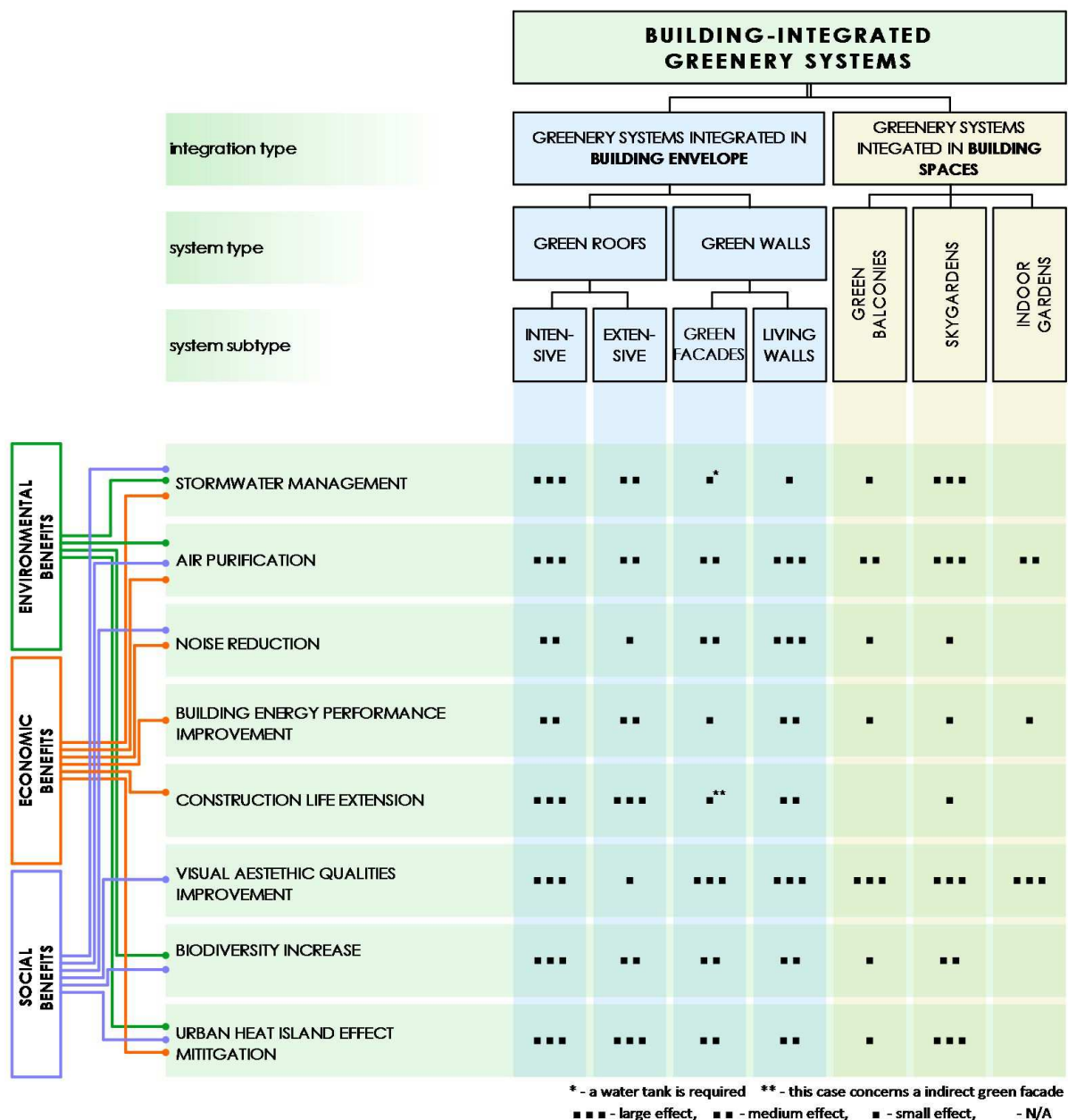


Figure 7. Comparative analysis of environmental, economic and social benefits

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## **INTRICATE COMPLEXITY OF DEVELOPING ARCHITECTURE AND URBAN DESIGN PROJECTS IN SUB-SAHARAN AFRICA: CASE OF LAGOS, NIGERIA**

**Ifonima Essien**

*Department of Real Estate & Construction, Oxford Brookes University, Oxford OX3 0BP (UK)  
Ifonima.essien-2012@brookes.ac.uk*

### **Abstract**

This paper discusses some of the issues peculiar to the development of urban spaces in Sub-Saharan Africa, in particular in Lagos, Nigeria. Issues related to rapid urbanization, as well as strategic responses of government, practitioners and researchers in the development of Architecture and Urban Design (AUD) projects are also highlighted with a view to espousing the characteristic difficulties found in this complex project environment. Consequently the study contributes to the discourse on future challenges of AUD projects.

Urbanization is the increase in the proportion of people living in towns and cities. It occurs because people move from rural areas to urban areas. Among the general characteristics of cities in the developing countries are rampant changes in land and building uses, increasing population densities and expanding spatial size which if not adequately managed may lead to urban decay and resultant health hazards. Other problems of urbanization include urban poverty, poor sanitation and health, solid waste management, water pollution and so on.

Therefore, urbanization has been identified as one of the root causes of the high rates of environmental degradation, pollution and social delinquency which have persisted in developing countries due to poor environmental management, inconsistencies of government policies, neglect of indigenous knowledge, inappropriate technology, inadequate funding, and inadequate environmental awareness. The case of Lagos, Nigeria is no exception, having experienced an accelerated shift of its population from rural to urban areas with the attendant challenges of improving social and physical infrastructure to match demand.

Consequently, research reveals that the concerted response includes the development of building and infrastructural projects to mitigate the negative effects of rapid urbanization and improve the quality of the urban space. However, the outcomes of this projects in Lagos have been largely less than desirable and project success strategies continues to challenge government, AUD researchers and practitioners at all levels in their bid to ensure sustainable development of this city. These peculiarities and inadequacies will be assessed with a view to deepening the understanding of issues of urbanization and developmental responses.

Specifically, this research questions the linear-reductionist approach to the developmental agenda in this mega city by providing a theoretical perspective. Complexity theory will be espoused to lend credence to this research and provide a basis for underpinning our understanding since complexity has arguably been described as an inherent condition within the urban phenomenon. Therefore the paper will analyze the difficulties experienced in AUD building and infrastructure projects in Lagos, Nigeria in response to rapid urbanization by collecting and analyzing secondary data from thirty published sources. Content and thematic analysis will be applied in analyzing the secondary data to create an understanding of this phenomenon.

It was found that the majority of AUD construction projects failed to meet the objectives set out at inception, which is exacerbated by defective project management approach, poor governance and

weak regulatory institutions in the study area. Furthermore, it was revealed that project management remains the most significant issues of AUD projects while competent professionals, adequate project financing and capacity building of the construction workforce are essential for the improvement of the urban spaces in response to rapid urbanization.

This paper's main contribution is that it provides a strategic outlook to complex systems in the built environment and it is intended that the interconnections and cracks will be explored and wider conclusions drawn to improve knowledge of this complex urban environment and enhance success of building and infrastructure projects in the future. Similarly, it is hoped that the results of this study will lead to further studies into AUD development strategies in response to urbanisation.

**Keywords:** Urbanization, Complexity, Systems, Projects

## 1 INTRODUCTION

The cities and towns in Africa, as well as Asia and Latin America, have been described as central to the demographic, economic and environmental challenges of the 21st century with virtually all the world's population growth being projected to occur in these regions. In 2008, 3.3 billion people lived in these towns and cities, this figure is expected to rise to about 5 billion by 2030 with 80% of this growth expected to take place in Africa and Asia [29].

Urban transformation can be viewed as a set of momentous demographic and economic developments that present opportunities and challenges to Government (policy makers) and AUD professionals. Cities present the hope of social advancement for residence of both rural and urban areas which makes them the nucleus of economic expansion. The welfare of billions of people depends directly on how the world prepares for this inevitable growth in these developing cities [29].

Unfortunately, the negative effects of rapid urbanisation such as uncontrollable urban sprawl, massive congestion, development of slums, concentration of poverty, extreme socioeconomic disparities, poor public transportation, noticeable lack of proper sanitation, crime issues, and other negative social and environmental consequences continue to plague cities such as Lagos since the necessary systems are stretched beyond installed capacity.

Numerous studies on urbanisation have focused on the various aspects of urbanisation in Sub-Saharan Africa including social disorder [15] human development index [32], urban development policies [10] and global environmental change [39]. However, this paper focuses on building and infrastructure construction projects which are initiated in response to rapid urbanisation which constantly require the input of Architecture and Urban Design (AUD) practitioners.

Therefore, AUD practitioners as well as central and municipal governments must constantly seek to confront the challenge of providing the conventional urban infrastructure and building needed to accommodate these populations – the decent housing, roads, drains, water supply, schools, hospitals and other facilities [29] through AUD Projects.

Building and Infrastructure construction projects are very significant in addressing the problems of urbanisation. Construction can be aptly classified into various categories as follows; (1) Building Construction: building works include residential and commercial complexes, educational and recreational facilities, hospitals and hotels, warehouses and marketing facilities. Buildings constitute the largest segment of construction business. (2) Infrastructural Construction: these are capital intensive and heavy equipment oriented works which involve movement of large quantities of bulk materials like earth, steel and concrete. These works include dams, canals, highways and airports, railways and bridges. (3) Industrial Construction: these works include construction for manufacturing, processing and industrial plants like steel mills, petroleum refineries and consumer goods factories.



(4)Special Purpose Projects: these include environmental works, emergencies, remedial works, installation and commissioning of equipment and complex key operations [16].

Regrettably, the challenges of the construction industries in the majority of developing countries in Sub-Saharan Africa are more complex and shrouded with uncertainty, requiring a greater level of management innovation. Therefore construction project execution in these climes is more difficult owing poverty, poor access to capital, insufficient infrastructure, poor maintenance culture, rapid urbanisation, agrarian type economies and inequality in wealth distribution amongst other environmental peculiarities [40]. The case of Lagos, Nigeria is no exception.

## 2 THE CONTEXT OF LAGOS, NIGERIA

The city of Lagos was Nigeria's capital city from 1960 until 1991 and still remains the country's commercial hub having evolved from a trade harbour in the 19th century. The commercial and demographic importance of this city is only a few of the reasons why it continues to attract world attention particularly in the context of AUD project performance. It is Nigeria's most populous city with a population put at 17,552,942 million people in 2006 [28] and estimated by United Nations Human Settlements Programme to have attained 25 million by 2015, thereby ranking as the most populous city in Africa and be among the top 5 megacities in the world.

Its status as a mega city, which has been defined as the largest category of urban agglomeration, breeds attendant economic, socio-cultural, environmental, political and geographical complexities. According to [42], until 1975 there were just three mega cities in the world: New York, Tokyo and Mexico City and they observed that by 2012 that number had increased to 27 cities having more than the defined 10 million inhabitants, including Lagos. With its boisterous economy which has resulted in the city accounting for about 20% of the country's overall GDP and 52% of Nigeria's non-oil economic activity, the city continues to experience rapid urbanisation and the ripple effect remains a challenge to governments and AUD practitioners. Therefore, it is timely to evaluate the current state of the AUD construction projects and its future challenges.

Furthermore, it was argued that massive rural to urban migration has stretched existing public facilities which has justified the massive housing and infrastructural development that has been going on in the urban and rural areas of the Lagos in recent times [21]. However, as [21] put it, "an embarrassing feature of our building and infrastructural developmental strive is the failure rate verified among the existing structures and those under construction". The human and economic cost of these poor construction outputs, abandonment or outright building collapse, cannot be trivialised.

This paper argues that the project environment in Lagos, Nigeria as with most developing countries is indeed complex therefore problem solving and decision-making for development programmes have to be viewed from a more strategic level of abstraction, if the state of housing and infrastructural underdevelopment are to be reversed. Furthermore, it provides evidence that the erstwhile linear-reductionist approach to solving the problems of rapid urbanisation in Lagos have proved to be inadequate in today's realities and a different approach is proposed in the study. This is the main thrust of this paper and ideas emanating from complexity theory will be used to conceptually evaluate the problem and make recommendations on future challenges for researchers.

## 3 METHODOLOGICAL APPROACH

An inductive thematic analysis is used to investigate the issues influencing project success and failure in Lagos, Nigeria as well as key factors for the successful delivery of AUD projects. This process enhances the organisation and categorisation of data which can then be distilled for the identification of themes for discussion [18]. It is also used to summarise research outcomes through content analysis which ultimately results in the development of emergent themes. Publications were selected randomly after a rigorous web-search process for post-2010 authors using search criteria specific to the subject and the study area. Initial reading of abstracts, introductions, methodologies and conclusions resulted in the selection of 30 publications and the extraction of relevant secondary data. Principles of complexity theory were also used analyse the data to arrive at conclusions regarding the

problems of the construction industry in the study area, as presented in the following sections.

#### 4 COMPLEX ADAPTIVE SYSTEMS

According to [30], the linear model of thinking which involves cause and effect dichotomies has encouraged the tendency to assume that there are only one or two main causes underlying a phenomenon, whereas there may be multiple causes which is indeed the case in complex systems such as wildlife ecosystems and human societies. This argument may contend with a lot of management myths but clearly existing knowledge remains inadequate to ensure the delivery of AUD construction projects effectively, a situation that continues to frustrate the majority of stakeholders, particularly in developing countries.

Complexity theory will be used to explain the nature of the interactions amongst these concepts, their feedback loops and cohesiveness to enhance the understanding of complex construction systems and the relevance of this evolving theory. [30] defined complexity science as concerned with the study of the dynamics of complex adaptive and dynamical systems which are made up of many interacting parts which create patterns that become increasingly complex. Literature reveals that there is no unified theory of complexity but several strands of theories which have emerged from various knowledge domains.

Furthermore, it may be argued that, “it is this deeper insight that will allow strategists to develop better strategies and organisational designers to facilitate the creation of organisational forms that will be sustainable in a constantly changing environment”. There are five main areas of research in this domain namely; (a) autopoiesis (b) increasing returns and path dependency (c) chaos theory (d) dissipative structures and (e) complex adaptive systems [31]. It was concluded that research on complexity in these different knowledge areas has led to strategic thinking and the creation of new organisational forms.

With particular regard to organisational theory, [43] argued that researchers have typically embraced the remaining 3 approaches in complexity science including chaos theory, dissipative structures and complex adaptive systems (CAS). CAS is described as consisting of large number of independent agents, each capable of behaving according to unique principles of interaction and relation. Although, CAS is only one of three avenues of study in organisational dynamics available with complexity theory, it encapsulates most of the principles that underpin complexity science and is particularly useful in developing new organisational forms [31], which is the thrust of this paper.

Complex adaptive systems have also been defined as a set of interdependent agents that form an integrated whole where an agent may be a person or an organisation [38]. Complex adaptive systems are living systems otherwise known as complex dynamical systems which are able to learn and adapt to changes in their circumstances, their internal and external environments [38]. Likewise, the term ‘complex evolving system’ is sometimes used to refer to human complex adaptive systems in order to distinguish them from other complex systems [31].

Complex adaptive systems are self-organizing but differ from self-organizing systems in that they learn to adapt to changes in their circumstances or environment. CAS are adaptive because they do not respond passively to events but actively seek benefits from the situation. It must be emphasised that learning is key to understanding how a complex adaptive system differs from one that is merely a self-organizing system.

Learning, evolution and adaptation are key features for the anticipation of the future and these systems use information to predict and better interpret their environment. It must be stressed that CAS are spontaneously self-organizing such that an adaptive organisation does not just respond to external influences, but evolves and learns [43]. Therefore, these characteristics make complex adaptive systems peculiar and relevant to the development of AUD projects in mega cities such as Lagos, Nigeria.

The peculiarities of complex adaptive systems reflect the dynamic nature of the society in which organisations have to operate and underscore the description of the society or complex organizational systems as CAS, [9] argued that in a non-linear and dynamic world everything exists only in relationship to everything else, and the interactions among agents in the system leads to complex, unpredictable outcomes.

Age-long ideas on management practise, sometimes referred to as Newtonian-Cartesian paradigm and which basically refers to the command and control structure, as well as the cause and effect dichotomy is inadequate in the fast changing world of the 21st century [30]. Therefore, the new challenge for management of contemporary organisations is how to manage complexity instead of attempting to reduce it [38] and complexity science suggest ways of reshaping the organisational world so that it is more in tune with the times [30].

Consequently, in this complex world the main organising principle is centred on interactions and relationships among its agents; relationships between individuals and among teams; to other companies in their business environment and with the natural environment. These should be the focus of researchers and practitioners in new-age organisations and a different mind-set is required, particularly as we aim to respond strategically to the effects of rapid urbanisation. The next section examines some of the building and infrastructure development efforts of government and AUD practitioners in response to urbanisation in Lagos and the project outcomes will be evaluated in the light of complexity principles.

## 5 COMPLEXITY IN DEVELOPING AUD PROJECTS IN LAGOS, NIGERIA

The evaluation of the thirty publications revealed 10 major AUD implementation issues (see table one) which include Construction Delays and Costs Overrun [4], [25], [44], [31]; Construction Abandonment [13]; Building Collapse [7], [12]; Technology-related issues [17], [21]; Ede et al, 2014) Economic-related factors [33], [41], [2] and; Construction Procurement procedures [11] [1] [24] [26] and [14]. Others include Policy and Legislation challenges [5], [6], [36], [20]; Governance and Corruption issues [23], [35], [22], [37]; Contractor-related inadequacies [27], [3]; and Project Management issues [19], [34], [8] and [45].

These numerous industry problems are exacerbated by the shortage of skilled labour, both in terms of quality and quantity, which affects various aspects of construction projects, impacting on time, cost and quality of work. Similarly, site managers and public officials need to be kept abreast with the ever-changing construction technology, technical knowledge, management techniques and the dynamic nature of construction site-works, which requires training and retraining.

Project procurement methods have also been identified as an area which requires further development whereby majority of building and infrastructural projects are executed using variants of traditional method of contract procurement which has proved to be inefficient in complex environments. Furthermore, problems of project financing, high cost of building materials, difficulty in accessing land documentation and high interest rates continue to plague the industry. In view of the foregoing, it is evident that the construction industry in Lagos, Nigeria is indeed complex and shrouded with a plethora of problems. Although efforts have been made by subsequent governments to reverse this trend, progress has been slow and the problems seem to be rather daunting.

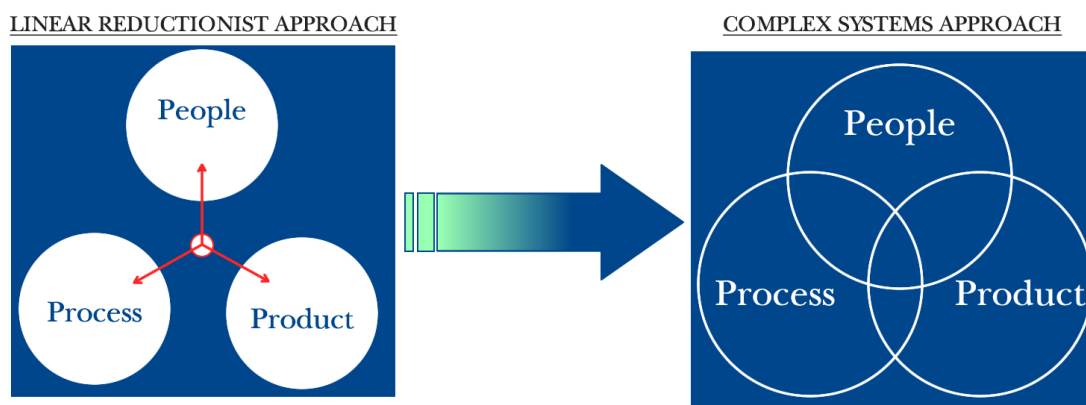


Figure 1. An idealized model illustrating the different approaches to managing AUD Projects

It may be argued that, “Government and the Planning Authorities alone cannot enforce all the planning ordinances and laws that are to be implemented to achieve a desirable environment, and they must seek for team work and collaboration with other relevant fields in order to enhance capacity building and functionality” [6]. It must be emphasised at this point that the objective of this study is not to reiterate the ubiquitous nature of construction failure in the study area, but rather examine the solutions proffered in literature to engage in the discourse on why these efforts have remained ineffective and contribute knowledge on the future challenges for researchers and practitioners, particularly given the increasing complexity of the operating environment.

## 6 FINDINGS AND DISCUSSION

A critical content analysis of the secondary data revealed 3 basic themes relating to the recommendations: people-, product- and process-relating recommendations. The study provides evidence of the linear approach of AUD practitioners to the construction challenges in response to urbanisation. From the sample literature, it may be argued that researchers and practitioners seemingly focus on specific subsystems, either people, process or product with less emphasis on the interactions and interconnections amongst these variables. This is exemplified in table 1 where project delays, cost overrun and abandonment did not attract any product-related recommendations. This is a divergence from the organising principles of CAS which emphasises problem solving by aggregating the interaction, relationship and interconnections amongst individuals, teams, firms and the natural environment, which may explain the persistence of project failure despite many years of research and developmental efforts.

It must be emphasised that all three sub-systems are interrelated and any effort towards resolving project or industry challenges must be tackled from a strategic, holistic and systems approach. To accentuate this complexity and interrelatedness, a critical examination of table 1 will further reveal that the categorisation of these recommendations is based more on convenience and assumption, whereas in reality individual aggregates may belong to two or more subsystems. This can be better visualised in figure one which clearly exhibits the departure from linear-reductionism of variables into component parts to a cohesive systems phenomenon where all variables are linked to each other.

Similarly, table two provides evidence that these problems have been articulated primarily by recommending the introduction of more efficient processes, as this subsystem has the highest aggregate frequency. However, principles of CAS suggest that greater emphasis is required on the People subsystem since success is informed by the nature of interconnections or cracks in the social ecosystem. Therefore, it is argued in this paper that not only is the linear reductionist approach to problem solving unsuitable in the present context, people-related strategies should be prioritised particularly in the areas of workforce capacity building and stakeholder involvement.

Likewise, the matrix in Table One reveals that engaging competent and qualified professionals to manage the design and construction process as well as proper budgeting and project financing are the most significant recommendations in addressing the problems in the construction industry in Lagos. Similarly, Project management is arguably the most significant issue in the industry, which

involves project planning, design, organisation, monitoring and control. Efforts towards training practitioners and regulators in project management methodologies is also desirable.

Table 1. Construction Issues and Recommendations Matrix

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Table 2. Frequency Distribution of Key AUD Issues

		RESEARCH RECOMMENDATIONS									
		People- related		Product-related		Process-related		TOTAL DISTRIBUTION			
AUD ISSUES											
Construction Delays and Costs Overrun		3		0		4		7			
Construction Abandonment		1		0		3		4			
Building Collapse		2		3		1		6			
Technology		1		2		0		3			
Economics		0		4		3		7			
Procurement		3		2		4		9			
Policy and Legislation		3		2		2		7			
Governance and Corruption		4		2		3		9			
Contractors		2		1		1		4			
Project Management		3		1		7		11			
TOTAL DISTRIBUTION		22		27		28					

## 7 CONCLUSIONS AND RECOMMENDATIONS

The study has examined the approach undertaken by construction researchers and practitioners towards reversing the poor performance of building and infrastructure projects in Lagos and revealed that a more strategic and systems approach is required if the problems of urbanisation are to be addressed adequately. The implications of this study for further research are as follows; (a) a new framework is required to guide researchers in evaluating the variable which impede the successful deliver of AUD projects, particularly in the micro- and macro-environment (b) further research into the over-arching principles of CAS is necessary (c) research on the human capacity requirements of industry is essential, particular the integration of project management knowledge into capacity building programmes (d) stakeholder collaboration is necessary to improve the social ecosystems and research into public – private partnership in construction project delivery may be timely.

## 8 LIMITATIONS OF THE STUDY

Some limitations do exist in this research such as the lack of primary data which makes generalizing the outcomes of this work impractical. Also, it is difficult to empirically substantiate complexity in this study and the random sampling and choice of published literature on building and infrastructure challenges may be viewed as biased and limiting because no rigorous scientific methods such as citation analysis with Bibexcel was used. Nonetheless, it must be emphasised that the essence of the study was to provide understanding of the inadequacies of the current approach to the research and development of AUD projects in this complex operating environment and open room for further studies to validate these outcomes. Therefore, the conclusion of this research suggests that the application of a different search criteria or research method may yield similar verifiable outcomes.

## ABOUT THE AUTHOR

Ifonima is an Architect and Construction Project Manager currently pursuing his PhD at Oxford Brookes University, UK. He has extensive work experience in both the construction industry and academia, having worked in the Nigeria and the UK. His research interests include exploring construction delivery frameworks, organisational management, complex adaptive systems and urbanisation in developing countries from a Project Management perspective.

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## THE TEMPORARY ACCOMMODATION PHENOMENON: HOUSING-TOURISTS IN THE HOME-HOTEL

Alessia Allegri<sup>1</sup>, Filipa Serpa<sup>2</sup>

<sup>1 2</sup> *Universidade de Lisboa, Faculdade de Arquitetura, Centro de Investigação em Arquitetura Urbanismo e Design (CIAUD), Rua Sá Nogueira, Pólo Universitário da Ajuda, 1349-055 Lisbon, (PORTUGAL)*

*allegri.alessia@gmail.com, filipa.serpa@gmail.com*

### Abstract

Over the past five years, a type of accommodation has emerged across cities worldwide that reflects a new way of going on holidays: living in someone's spare home and becoming part of the household for a short period. "Housing-Tourists" has become a means by which central urban areas adjust themselves economically, socially, politically and architecturally to new global dynamics.

This study builds upon a research project that investigated the impact of temporary accommodation on the contemporary city. In particular, this proposal seeks to study the role of housing accommodating short-term tourists in the transformation of the current city and its "cityness". What impacts are transient occupancy and short-term rentals of residential property having on cities, its residential tissue and the housing market?

In times of crisis "Housing-Tourists" may offer an economic benefit. The movement may help build a "sharing economy" and stimulate urban regeneration, while encouraging individuals to rethink established practices. On the other hand, this phenomenon works against the local residents, giving rise to gentrification processes and/or "touristification". After a period of decay, central and historical districts may go through processes of physical and functional revitalization that attract investments supporting their regeneration. Public or private investments usually promote new residents or/and activities, from restaurants and pubs to the creative industries, entertainment, design and fashion, along with the arts and luxury enterprises. These may be considered "charming" places for an increasing number of tourists.

"Housing-Tourists" also seems to be fuelling a lucrative shadow economy that contributes to an acute shortage of affordable housing in the name of tourism at any price.

The temporary housing phenomenon represents a fundamental shift in the use of land and buildings. It impacts on how housing is considered, with deep implications for urban life, policy and practice. It challenges urban sustainability, either by affecting the vitality and viability of the traditional areas, or because they marginalize some residents and reduce social cohesion. For this reason, we consider that any action that seeks to promote the quality of our cities cannot ignore the issue of transient occupancy as a powerful emerging urban dynamic.

This study aims to analyse the "Housing-Tourists" phenomenon, and its evolutionary processes, based on the premise that temporary housing places have a significant role to play in urban design and planning. It raises the necessity of seriously thinking about what changes in society, culture, technology and the economy are now driving urban processes. Inevitably, questions are asked about the emergence of new approaches in urban planning and design. Perhaps a more dynamic or flexible one, where the city is becoming more responsive to new needs and demands of its users in the face of economic uncertainty and rapidly changing possibilities.

Therefore, in order to act and build strategies that ensure a better quality of life for all within the contemporary city, a better understanding of the Temporary Housing Phenomenon is essential.

**Keywords:** temporary, housing, tourism, short-term rentals, city.

## INTRODUCTION: SOCIETY, CITY AND HOUSING DYNAMICS

*"Changing is not to be replaced, it is not stop being himself, is to be himself in a different way" [1]*

This paper presents a brief overview of a research project in its early stages based on evidence of the continuous, rapid and deep changes in the contemporary city.

**Change** is an attribute of urban systems that best characterises its history. Therefore, if the vitality of the city is recognised as driving ongoing transformation, then the **dynamics** of the system should be analysed when describing the equilibrium of the system. Rather than analysing something fixed at a given moment, we believe it is more important to perceive the on-going process that may strengthen or reduce quality of life in an urban setting.

A very important element in the urban fabric is the **residential tissue** and the way it affects our lives and the vitality of the public urban space.

Since the dawn of civilization, structures for dwelling have constructed the predominant part of our built environment, and have served to fulfil our most basic needs. If public space is the back bone and the protagonist of the urban complex organism, residence and its common buildings play a decisive "silent" role setting up the conjoined tissue that embodies the city and the conditions necessary for meaningful life.

Definitions of home and its relations with the urban structure and organization have been continuously questioned and challenged within diverse historical and cultural settings. However, over the last years our patterns of life have changed profoundly and have put even more pressure on the housing policy. These patterns include new social powers, gender roles, housing functions and time spent in the home, as well as the consequences of rising wealth inequality, mass migration (both voluntary and otherwise) and an ageing population. Accentuated and proliferated mobility and new technologies have displaced how, where, and when we work and socialise, while promoting questions about identity and privacy.

Moreover, these social changes are overturning traditional preconceptions about family structures and their relevance to the residential tissue. The classical family house, where a father, a mother and two kids were homeowners of a 3 bedroom house with garden, is assuming several and different forms: Pocket Living of 1 bedroom flat for a single young professional; Starter Home of 2 bedrooms for young-adult occupants that are leaving the paternal home later; Empty Nester with surplus capacity for retired or elderly couples still living within large family homes or Luxury Retirement Serviced Apartment; Overcrowded Flat or Sharing Rooms for younger occupants, normally students, or Purpose Built Student Accommodation for rich students; Rentable Creative Workspace-Living room inc. off-street parking; Co-living with 1 bedroom plus shared facilities; Local Authority Temporary Homeless; Hostel Accommodation with communal kitchen; Airbnb for tourist "by one day" visiting in a rush a place during a weekend but interested in "feeling himself at home" using a "real, traditional local flat [2], etc. How does the young hipster use his flat and the urban space around it? Or the elder couples? And the tourist? What does it means to be at home for a few days? And how does that differ for the urban space?

If this radical social change is a consequence of a change in our forms of life, it also inflicts a change on our housing supply - the container for those forms of life, the home - and consequently, the conditions that affect the surrounding urban tissue.

As a result, our understanding of **housing dynamics** and its relation with the **urban tissue** requires readdressing.

## 1 LISBON URBAN HISTORY: FROM DENSITY TO DEFLATION, A SHORT STORY

The process of concentrating capital and population in the city, which accompanies urban dynamics since the 70s, has dissipated. Lisbon has lost population, activities and services. During more than three centuries the city (industrial) has been continuously transformed while maintaining its own economic and social characteristics. However, from a certain moment onwards, the city explodes and creates a new urban condition. . It has been called: Global City (Sassen [3]), Sprawl town (Ingersoll [4]), Città Diffusa (Indovina [5]), Incorporeal City (Micheli [6]), Postmodern City (Amendola [7]), Infinite City (Bonomi, Abruzzese [8]), Networks City (Castells [9]). Whatever the definition is, the economic mechanism of the big city assumes selective characterisation (the urban space becomes more "valuable"): activities that occupy large areas and produce low added value are expelled and the population departs in search of different types of housing. The new territory becomes the container of it all (no longer the city) and it is articulated in its interior where, in fact, various forms of settlement coexist: concentrated city of medium and large size; small urban centres; residential areas without centre; widespread and isolated dwellings; areas of production facilities; scattered and isolated factories and laboratories; productive districts; commercial areas or poles for loisir; service equipments; logistic centers. The old city model is integrated in a context of much larger reports and giving rise to a new urban condition.

In **Portugal**, as a consequence of the industrial revolution, we witness the formation of two large urban areas, Lisbon and Porto. Both located on the western Atlantic coast, at the mouth of the two major rivers that cross the territory, these stand out amongst all other Portuguese cities in size and number of population, services and industries. During the second half of the twentieth century these two cities "colonise" gradually the surrounding hinterland and their importance grows to such an extent that their total inhabitants, come to represent almost half of the population of the entire country.

Lisbon, capital and main centre of services and industry, acquired over time the shape of a "classic" radial metropolis. This growth was supported by an expanding infrastructure network, with the consequent development of a more densely populated periphery, with greater commuting between home and work.

What happened to the city and its most central districts in the **process of urban sprawl**?

It has been observed that the city has expelled families, activities and services and has retained inside the institutions of government (not only political but also financial, cultural, educational, security and communication), as well as centres of learning (research and higher education). What about the rest of the urban tissue? What has happened to the majority of the urban fabric made of houses?

Over the last three decades, Lisbon has lost approximately 100,000 residents every ten years, which has brought its population down from 800,000 in the 60's, to its current level of around 500,000 with the highest proportion (24%) of residents aged 65 or over since 1999. [10] [11]

This strong **decrease of population in Lisbon** has two specific reasons that pushed the population to leave the city into the periphery, resulting in **urban degradation**. On one hand the metropolisation phenomenon and urban sprawl dynamic<sup>i</sup> encouraged by subsidized loans and tax incentives promoted the construction on the peripheries of owner - occupancy; on the other hand, the "freezing" of rents since the 1950s<sup>ii</sup> discouraged home-owners from maintaining and rehabilitating their buildings, leading a process of degradation of the real estate, offering less and less living conditions and shrinking the tenancy market of the historical area. The complete decline of real estate and urban heritage grew enormously. In 2010, more than a fifth of the buildings in the city centre were empty. Even the most expensive areas were not fully occupied, and streets that were home to luxury shops, hotels, banks and multinational headquarter offices also had their share of derelict buildings.

Naturally, the obsolete and abandoned city has been fertile ground for foreign investors who have found prices yet very favourable even in prime locations when compared with other European capital cities. In addition to the sheer value in the market, two programs have been particularly appealing to foreign investors: the Non-Habitual Residents (NHR) policy, which has attracted primarily European buyers; and the Golden Residence Permit (GRP), which has attracted primarily Chinese, Angolan and Brazilian buyers.

The NHR program offers people moving to Portugal for the first time reduced tax rates or tax exemption for 10 years on certain incomes. Some forms of creative income are also exempt from income tax. Portugal's so-called "golden visa" has also had a significant impact on the property market for non-European nationals – it gives foreign investors who spend €500,000 on a property the right to live in Portugal. They are also free to travel around the EU and after six years can apply for Portuguese citizenship.

As a result, since 2013 the Lisbon property market has been almost exclusively the beneficiary of the demand generated by keen international investors<sup>iii</sup>. Unsurprisingly, this situation has led to a loop of **intense real estate and land speculation** (and capital accumulation) which has considerably inflated housing prices (values have raised by 22,3% in 2015 with an average current price of €3780 per square metre in the city centre.) [12]

Despite the positive impact of the substantial foreign investment, most significantly to massive urban regeneration processes, the resulting high prices are driving away the few resisting inhabitants (and their activities) - the diaspora to the suburbs.

Therefore, the **historic centre** has suffered a considerable **decline in population** along with a consequent aging population (and weak educational and socio-economic capacity). If we analyse Lisbon's historical city centre voters over recent years, one observes a decrease between 2002 and 2016 by 28.9%, while the metropolitan area shows an increased by 7.5%.

## 2 FROM THE URBAN REGENERATION PROCESS TO THE *TOURISTIFICATION* PHENOMENON: A PATH.

... then along comes tourism, the new foreign investment "magnet".

According to World Tourism Organization (WTO), in 2015 **tourism in Portugal** increased threefold compared with the rest of the world in terms of foreign arrivals (18 million by plane, 501 thousand by cruise ship), establishing itself as one of the main economic drivers<sup>iv</sup>. The numbers are explicit: 8.4 million overnight stays in Lisbon last year alone with an occupancy rate of 72.8%.

The urban dynamics and impacts associated with this *touristification* are deeply linked with *gentrification* dynamics. Several authors already likened this relationship to the **Tourism Gentrification**<sup>v</sup> concept, defined as "A (totally) new type of gentrification" [12] which consists in "the transformation of popular and working class neighbourhoods of the inner city in consumption places, gaining markedly new middle classes and exclusively headed for entertainment proliferation and tourism sites, so that the recreation, leisure or lodging function begin to gradually replace the residential and commercial traditional functions, emptying the neighbourhoods of their original population." [13]

Originally, gentrification was associated with the replacement of lower income inhabitants by a higher income social class, associated with an urban regeneration process that necessarily increases the rents by expelling the original population<sup>vi</sup>. [13]

In Lisbon, the "tourism industry" and its investment along with public policy lead a process of Touristic Gentrification in central historical areas with effects all over the city.

A great part of the central historical areas have experienced changes in their functional composition, along with the rehabilitation of the buildings, under urban regeneration programs.

On one hand, in times of crisis it may offer an economic lifeline, helping build a "sharing economy" and encouraging urban regeneration, while reflecting the response of individuals in having to rethink



established practices. On the other hand, this phenomenon works against the traditional residents, giving rise to gentrification processes and/or “*touristification*”.

Neighbourhoods that were left behind by productive activities and central areas of retail and services with signs of obsolescence have undergone regeneration processes. These were followed by phenomena of **social and functional gentrification**. The change of use goes along with the socio-economic composition of the residents’ change and the raising of real estate values. Cafes, restaurants and bars, spaces for leisure and culture and innovators linked to the arts, such as art galleries, design shops, modern urban crafts, concept stores, media, ICT and art studios have strongly increased their presence in these neighbourhoods. This has promoted a social shift to higher educated inhabitants, increasing rents and promoting a shortage of affordable housing in the city centre of Lisbon. This dynamic would have typically unfolded as a “traditional” gentrification process if tourism would not have taken the main role.

**Massive tourism** facilitated by new digital platforms for short-term rental has introduced a new heavy challenge for city resilience, here perceived from an urban point of view, as the ability of cities to absorb change and recover from diverse pressures or traumas and yet preserving the essence of its original urban fabric and sense of urbanity, which characterised it prior to the change.

Besides the transformation of the urban dynamics associated with massive groups of tourists and emerging mobility vehicles (such as tuc-tuc) that flood the city, the lack of affordable housing is desertifying the central areas from its original inhabitants. Lisbon’s **resilience** is being put to the test and on the verge of collapsing. Tourism is killing its inner attraction – the authenticity.

One of the most recent and apparently unstoppable trends, highly correlated with the temporal dimension, is the residential transient occupancy. The **short-term rentals** of residential accommodation such as Airbnb<sup>vii</sup> are a phenomenon of key importance that represents a fundamental shift in the use of land and buildings, with impact on how housing is perceived, as well as producing deeper implications for urban life and policy.

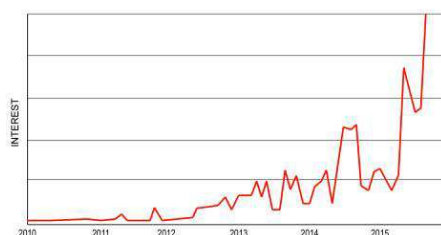


Figure 1. Trends for Google Search Entries: Airbnb Lisbon (Source: elaboration starting from Google Trends)

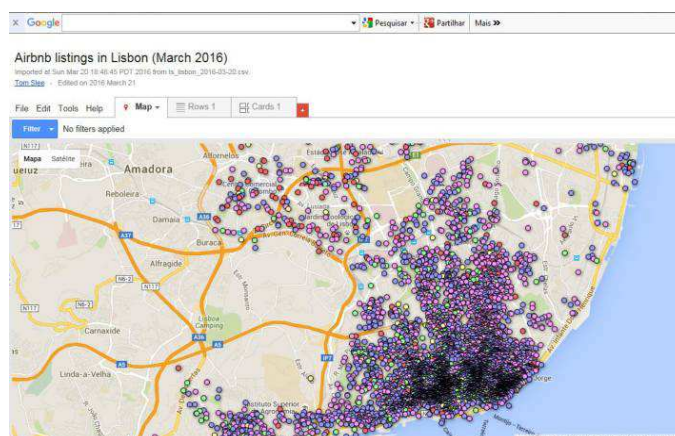


Figure 2. Airbnb listings in Lisbon, March 2016 (Source: www.airbnb.pt)

After decades of peripheral growth the city is ‘rediscovering’ its traditional centre and derelict areas, some of these subject to large investments that do not necessarily repopulate the inner city. Instead of achieving the Municipality targets for 2011-2024 [14] described as “increased social cohesion” or “rejuvenate the historic centre and attract new families”, these areas observe mostly temporary inhabitants “living” and redefining the uses of the city’s urban fabric.

In other words, tourists visiting Lisbon will be meet other tourists instead of experiencing the authenticity of its original population. [15]

Similarly to Indovina’s idea of city - “*The city is the projection of the economic-social structure in the space and not an autonomous body with respect to the society. Of that structure preserves the contradictions, inequalities, but also the opportunities, wealth, economic and social dynamism.*” [16] ,

we believe that these recent changes in society, culture, technology and the economy are driving forces leading the urban process.

Inevitably and in order to promote urban quality, it is essential that a better understanding of the emerging urban dynamics at a larger scale and an interdisciplinary approach is investigated.

Furthermore, these emerging urban dynamics could set up a new interesting urban planning challenge and a tool for city-making, leading to a more responsive approach to new needs and user demands in the face of economic uncertainty and rapidly changing scenarios.

This aim necessarily calls for research at two levels: (i) conceive a theoretical framework in order to evaluate many concepts linked to the recent urban transformations (*resilience*, *gentrification*, *touristification*); and (ii) undertake an empirical study to understand how urban residential tissue adapts to changes (or consequently encourages new ones).

Even in such an early stage of research, it is quite clear the “power” of the short-rental phenomenon and its strong and inevitable link to a fast process of *touristification* and gentrification of the central districts of the cities and Lisbon in particular.

### 3 LISBON’S TOURISTIC GENTRIFICATION: APPROACHING AN URBAN FRAGMENT

The case of Lisbon is a relatively recent phenomenon already with strong effects on urban life, people and city dynamics. The historical area (and now even the peripheral areas are beginning to suffer from the same problem) has been deprived of its inhabitants and traditional uses under a regenerated process lead by the municipality. This process involved investment in the rehabilitation of public spaces, along with legislation encouraging the private rehabilitation of the built environment. This meritorious aim has had positive results on what concerns to the public space and building rehabilitation and regeneration, as it is real. It is important now to evaluate whether these changes are being well absorbed by the city urbanity and inhabitants or if they are only at the service of tourism.

Fieldwork shows that the historical area of the city a) has a large number of houses in the digital platforms for short-rentals<sup>viii</sup>, b) that there are a shortness of hotels comparing to the needs, c) that there are still a large number of vacant properties, d) that the economic tissue has been renovated and e) the perception that short-rentals are more profitable than traditional long term urban rentals. [13]

Also, an urban analysis of the retail system, using the data of the ground floor only, for one urban fragment of Lisbon’s historical and renewed area – *Principe Real* “Fig. 3”, shows the density and quickness of these renovation dynamics.

In *Principe Real*, it is obvious the enormous shift occurred in 2010 in what concerns to the use of the ground floor, considered an extension of the public space according to Nolli’s conception of the urban space. The dynamics verified in what concerns to commerce “Fig. 4” is not (yet) followed by the hotels openings. The one that is going to open next year in Principe Real is a Boutique Hotel (another clear sign of the transformation of the area into a place functionally organized by tourism) “Fig. 5” and the official numbers<sup>ix</sup> also show the great dynamic in hotel licenses. The density (almost every door) and the use – mostly food and beverage spaces and concept stores, oppositely to services (as banks, pharmacies or laundrys) show an intense new life in the street with implications in the urban system dynamic and a significant valuation of the real estate. Being on trend boosted the short term rental in the area.

The real estate of the three districts of Lisbon’s centre historical area (where *Principe Real* is included) values 23% in 2015 and increases 11% the number of transaction and 37% the value of those transactions. According to recent numbers from Mercer consultant for the “Global Study on the 2016 Cost of Living”, Lisbon raised 11 positions in one year being the main reason the tourism impact on the real estate.[17] The numbers, once again, show what has been highly felt by the population [12] - the effect of deportation of inhabitants over tourists.

Looking for parameters to measure this felt tendency, two other reveal to be relevant in what concerns to evaluating the *touristification* in *Príncipe Real*: the property owned by only one company and the price for a cup of coffee. In *Príncipe Real* five of the biggest buildings were both by the same company - Eastbanc Portugal, Development and Property Management Company “Fig. 6”, revealing the large multinational investments in real estate in Lisbon’s historical centre.

In a completely different approach, the price of a cup of coffee in the area “Fig.7”, shows that the target customer for the urban and retail renewal is the tourist. The value of a cup of coffee in cafes existing before 2010 is the same as in other cafe in Lisbon - 0,50 to 0,60 euros (it happens in nine out of eleven); in the cafes opened after 2010 the price rises until 2,00 euros (only two out of nine cost 0,60 euros). Considering the Portuguese culture, we consider the coffee a very real parameter for measuring the urbanity *versus* *touristification* of an urban area.

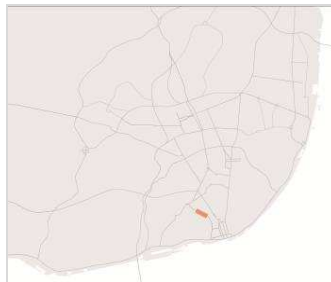


Figure 3. Príncipe Real, urban fragment location.

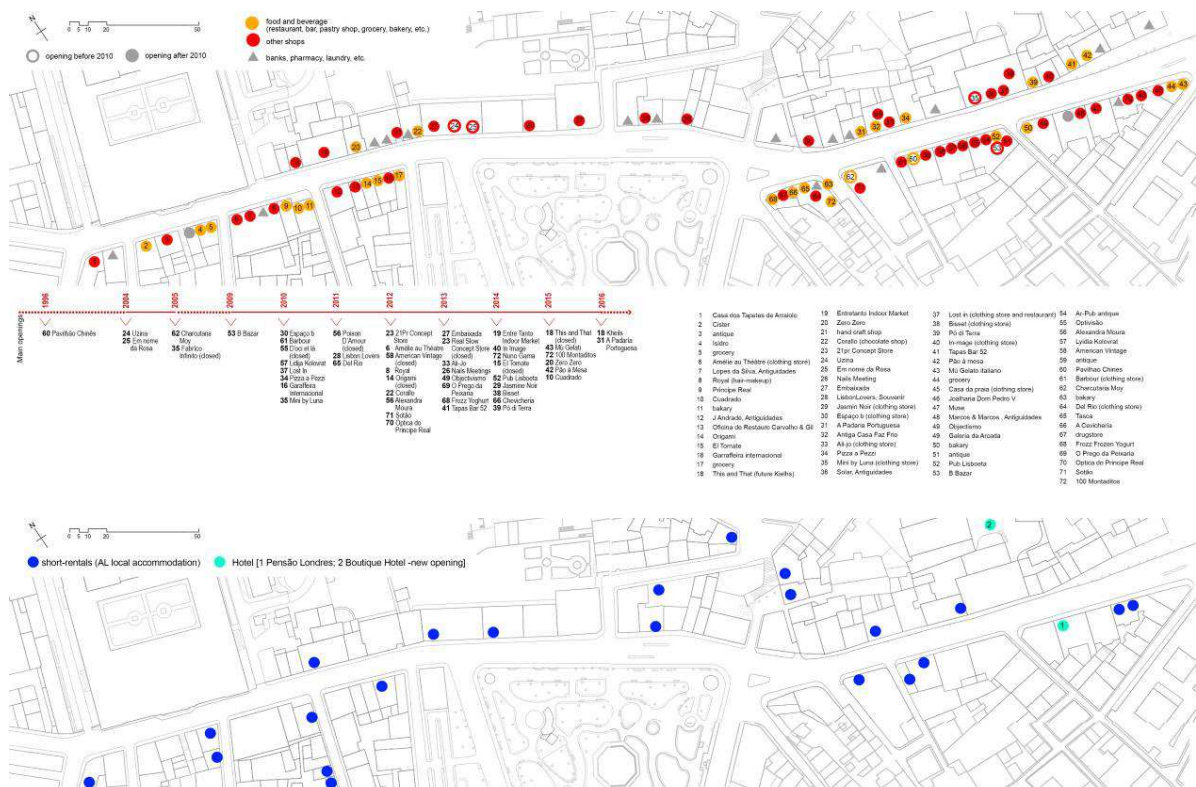


Figure 4. Príncipe Real: Retail description.

Figure 5. *Príncipe Real*: number of hotels *versus* number of short-rentals (AL local accommodation).



Figure 6. Principe Real: Properties both by Eastbanc Portugal.

Figure 7. Principe Real: Price of a cup of coffee (euros).

Although this research is at its early stages it is evident the great intensification of tourism in Lisbon and the significant changes produced in the city and in the lives of its inhabitants. In particular, the residential fabric is suffering enormous changes giving rise to new and important social and urban dynamics.

This is why we believe it is necessary to study the current phenomenon, convinced that if this process was properly led and thwarted in its most paradoxical episodes we could achieve a better city for tourists to visit but above all, made for its inhabitants.

In other words, it must be seized the opportunity offered by the processes currently taking place to uses it for its collective sense, increased opportunities and urban order. The aim is to build a strategy that not only enhances the general and common interests but also creates new opportunities for economic, social and collective growth.

Once again it proves that the city should not be a summary of individual choices but rather a collective and public project. The lack of such a project fails the objective of a well-ordered city/society.

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<sup>i</sup> According to OCDE index, between 2000 and 2006 urban sprawl phenomenon in Portugal was number 2 in the OCDE countries with 6,2%, only outdated by Estónia with 9,1% and much higher than the average of 1,0%.

<sup>ii</sup> Rules that allowed tenants to stay in the houses without incurring increased housing costs and, due to inflation, rents become almost symbolic, namely for tenants of middle incomes that had hitherto paid very low rents. Because property owners were not making enough money for maintenance or renovation the buildings became more and more depredated. Only in 2012 with the new Tenancy Urban Regime allowed owners to update the rents. .

<sup>iii</sup> According to a market report from Jones Lang LaSalle, foreign investment in Portugal's property market rose from 45% in 2012 to a staggering 70% last year.

<sup>iv</sup> Portugal won 29 awards in the World Travel Awards 2015. Condé Nast Traveller named Portugal the best country in the world to visit, and Lisbon was chosen as Europe's Leading City Break Destination by the Word Travel Awards and by the Amadeus & WTM Travel Experience Awards. The city also rose to 9th place in the world ranking of cities chosen to host international meetings and conferences, produced by the ICCA (International Congress & Convention Association). The Portuguese capital was also distinguished by Lonely Planet as the best of the Top 10 European travel destinations.

<sup>v</sup> Tourism Gentrification was already a discussed concept in the American Association of Geographers (AAG) Annual Meeting, 21-25 April 2015, Chicago by the theme "Tourism Gentrification in the Metropolis"

<sup>vi</sup> Caulfield, 1994; Smith, 1996; Hamnett, 1984; Savage and Warde, 1993: 87-88 in: MENDES, 2016

<sup>vii</sup> The short-term accommodation company Airbnb takes its name from "AirBed and Breakfast". The company's founders developed the concept after using inflatable mattresses to convert an apartment into a shared home for a couple of days.

<sup>viii</sup> The number of short-term rentals apartments is constantly increasing; the Alojamento Local de Portugal (ALEP) calculated that arise 200 new short-term rentals apartments per month in Lisbon.

<sup>ix</sup> According to *Registo Nacional do Turismo*, currently there is an offer of 184 hotel units, setting 36.481 beds and there are 40 new hotel units, 13 of them from national and international chains, currently under construction or being projected in the city, scheduled to open in 2016/2017.





## MAD CITY AND THE CONTEMPORARY CITY

Maria Pia Amore<sup>1</sup>

<sup>1</sup>PhD Student at the Department of Architecture, University of Naples "Federico II" (ITALY)  
mariapiaamore@yahoo.it

### Abstract

Within the contemporary city there is a particular category of abandoned buildings that let us to reconsider the "reuse" matter, as regards the permanence and change and the form - function relationship, under the weight of a bad memory. Scattered throughout the Italian territory, with a large housing stock and large green areas, 71 former provincial psychiatric hospitals are kept. They are deteriorated and abandoned. They are "service" monumental architectures to be considered among the great equipment the nineteenth-century city infrastructures had since 1978. The large concluded and introverted mental institutions which are included in a changed urban area not only for its extension but especially for its physical and immaterial structure are unable to establish relations with the immediate surroundings. As regards the Leonardo Bianchi, a Neapolitan case study, we can consider the former asylums as spaces in between: 1. in the neighboring settlements - in size and density, 2. in urban areas on a metropolitan scale - for relevance and position, 3. in the social and economic community - for usability and interest.

1. Mental hospitals which were born to meet a specific medical and social need, have acquired, since the initial creation, a dimension, a volume and a weight in the urban structure of the city equal to the great public buildings within the urban fabric. Built on rigid inclusion/exclusion mechanisms such as small scale cities they are usually built, in most cases, in the outskirts of the city but close to the main roads. These architectures are considered today as big black holes, with a difficult scale relationship with deeply changed different backgrounds: the former psychiatric hospitals, achieved by urban growth directions, have been sided by suburban buildings typical of the twentieth century considered as enclaves, separated from their enclosures.

2. In the reading of the contemporary city by layer, overlapping and subjected new levels change existing urban dynamics, exponentially increasing the variables to consider. Infrastructure networks constitute a new level that expands the territorial dimension reference, allowing you to establish relationships at different scales. What previously could be seen as an asset to the neighbourhood or the city becomes a potential resource for infinitely more extended geography. Combined with a zenith reading, the great territorial dimension that infrastructure networks bring former asylums into play by intercepting, it allows you to build new connections and endless possibilities.

3. Leaving aside the delicate and nodal question of memory, negative and painful, that of former mental hospitals hold spaces, taking shape as decommissioned and abandoned places, they would be potentially available for use of a community. Dialogue for a political re-appropriation by the communities concerned to the use of these spaces may use the concept of "common good", by known processes of participation from below. However, what characterizes a well as common is the perception of it as such from part of a community: invisible and ignored, despite the size of their built, do not constitute, for the social awareness, a resource. Resource instead perceived by those in the properties of these complexes: local health authorities, in most cases, begin to move to "make income" properties of which hardly recognize values other than those strictly economic.

Having taken away their original functions, the question would be if it is possible to imagine, within a short period of time, a new connection with the city and a new use which would be compatible with

the permanence of determined identity and morphological features. How can we conciliate on one side the need to preserve this kind of buildings, which of course can hardly be configured as “monuments” but which arguably still carry a strong historical value, and the need of transformation of the cities, taking into account new potentialities and necessities? The economical requirements of the health units can find common ground with the social requirements of communities who may also be unaware of the existence of these valuable buildings which are readily available to be utilised? To put again in circle this particular space of the abandonment, recognizing an attitude proper of the built to the adaptation, to the subversion, to the re-invention, to the dialogue with its own time but contemporarily pursuing a renewed principle of guardianship for the values proper of these architectures, it doesn't seem a simple operation. Through the concept of MUTATION, elaborated by Rem Koolhaas, a logical or physical reorganization can be experimented for the recycle of objects characterized by a core identity with a specific conformation, related to geographical, historical, economic and social situations and weighed down by painful memories.

**Keywords:** reuse, disposal, asylum, memory, mutation

## 1 A COMPLEX MATTER

About 58 former provincial psychiatric hospitals still endure on Italian territory, with a remarkable building heritage often deserted and in decay. These “modern asylum architectures” originate from the necessity of bringing together the *ex.novo* edification of mental institutions after the unification of Italy [1]. The history of the architecture of psychiatric structures in Europe and in Italy is strongly intertwined with the history of the single city, its environment and territory, as well as its psychiatry, legislation, society and economics. This type of service architecture represents prominent urban, territorial and architectural heritage and is born, develops and ends within specific temporal limits. The modern mental hospital, evolution of a proper and specific hospital structure and considerably different if compared to previous forms of asylum for mentally unstable patients, originates and rises in the 19<sup>th</sup> century and declines in Italy through the Basaglia Law in 1978. The psychiatric institution tries to adapt to two different lines of thought, social and medical, which both result in the idea of guarding and giving a shelter, therefore isolating the psychotic patients in a sort of “innocent prison”, and curing at the same time, in a hospital without the possibility of a temporary convalescence. The new psychiatry of 19<sup>th</sup> century strongly believed in the therapeutic benefits the inmate could receive from a state of isolation. The tormented mind was considered able to purify through calm and silence, thus transforming in a psychological *tabula rasa* ready to be filled with sensible thoughts transferred by the physician. The mental hospital was the place (*Kom*) where insanity (*mania*) could be cured, a place itself effective as it was strictly separated from external reality. Psychiatric hospitals locate in the outskirts of the cities accordingly, in conditions demanded by medicine operating in this field.

The peculiarities of mental hospitals are conceived in the perspective of a deep connection of function and form: they are instruments for psychiatric aid, moral remedies par excellence, conforming to every nation's needs. The institutes for the hospitalization and cure of the alienated had to be adapted, in a sort of environmental determinism, to the main mental pathologies of each country, while keeping the diverse civil, social and climatic conditions into account (Fig.1). J.B. Parchappe, in his *Des principes à suivre dans la fondation et la construction des asiles d'aliénés* (1853), describes the adoption in France of a composition of buildings of no more than two floors, distributed on both sides of a central service centre within a square enclosure; in England and Germany the prevailing concept is multi-floor structures with right angle wings, which invest the building with monumentality. In Italy, instead, we could find courtyard structures with porticos and separated or adjoining pavilions. Physicians' first instructions and conditions dealt with the number of patients, the extension and location of the area — mediating between the necessary isolation and the need of easy connections, the presence of hygienic requirements like the soil's disposition (flat or sloping), the

abundance of water, the clearness of the air, the good exposition and the panoramic features. More conditions dealt with sex, curability and social class distinctions, differently defined in the various national systems [2].

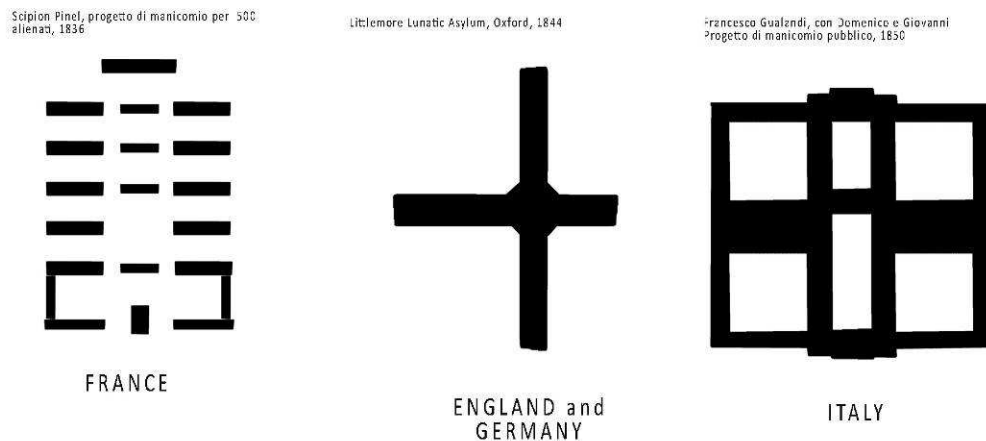


Figure 1. Graphic elaboration of the different national solutions

Almost always in the outskirts of the city centres, at a safe distance from the inhabited areas to keep the insane isolated, mental hospitals are independent cells replicating the idea of a normal life, a scaled-down city in the suburbs of the healthier cities, provided with walls, doors, paths, recovery and office buildings, services, productive structures and green areas, thus achieving the urban heterotopia theorised by Foucault. [3]

The asylum project settled down and more than 600 mental institutions took place all over Europe. In Italy, the assistance to mentally ill patients was a specific field of action in each province for a long time, consistently with the Giolittian order introduced by the communal and provincial law of March 20, 1865 (art. 174 n. 10). The mentioned law entrusted the provinces of the Realm with the task of taking care of the “poor imbeciles”, in the broader perspective of a project that awaited for each province to be provided with a specific mental hospital of competence. After the approval of 1904 law n. 36 *Dispositions on mental hospitals and the alienated – custody and cure of the alienated*, which reinforced and legitimised the internment, the modern-shaped asylum architecture comes to existence, unifying the new *ad hoc* psychiatric structures around Italian provinces, through uniform construction typologies and criteria (Fig.2). Five types of structural aggregations can be distinguished in the new psychiatric hospital complexes [4]:

1. The “conjoined pavilions”, which provide continuity between the various elements of the structure through porticos and covered paths on a geometric treble-segment layout. (12 out of 58)
2. The “separated pavilions” with isolated buildings, which can freely adapt to soil’s morphology or meet the demand of strict schemes through the same above mentioned treble-segment layout. (20 out of 58)
3. The “mixed pavilions”, which involve the presence of both conjoined and separated buildings. (5 out of 58)
4. The “scattered village pavilions”, which can be organized on a geometric or organic layout. It can be compared to the “separated pavilions” model, for it reprises its distribution schemes and prorates them on the basis of more dilated dimensions, thus integrating and merging with territories with remarkable natural sources. (12 out of 58)
5. The “isolated building” typology, which concerns the branch of psychiatric architecture built between the 30s and the 60s in accordance to a rationalist and then functional variation of the separated pavilions, variation which involved a bigger distance between the structures and the replacement of the buildings with apartment houses. (9 out of 58)

Manicomio Santa Maria di Collemaggio a L'Aquila, 1915

Manicomio Provinciale di Mantova, 1914

Manicomio Santa Maria della Pietà di Roma, 1907

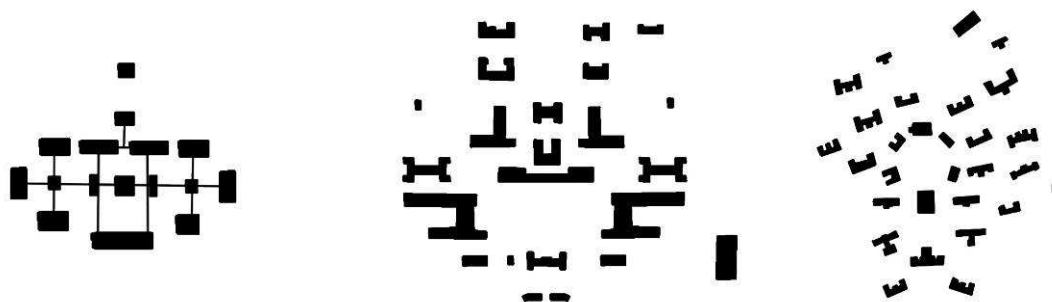


Figure 2. Graphic elaboration of the recurrent typologies in Italy

We can state, simplifying the general settlement rules, geometric asylums follow urban or peri-urban regulations; while village asylums face needs dictated by the territorial or sub-territorial scale they pertain to. However, there are common elements which can be attributed to the Hygienist approach of 19<sup>th</sup> century engineering: the distance between the buildings, always at intervals of 30-50 meters, which facilitates good wind circulation and adequate sun exposition; the composition of prospects, alternating empty and full spaces, thus allowing air currency; the use of technologies which are functional to the realization of sewerage and the waste disposal and recycling.

Mental institution complexes can be included in the cultural matrix of civil structures like prisons and military bases, which were defined “total institutions” in the 20<sup>th</sup> century by Canadian sociologist Goffman [5]: edifices where space is closed, delimited and organized in order to control and supervise institutionalised subjects. These places underwent a central administration with specific and internal dynamics, in a strict regime [6], built on exclusion/inclusion mechanisms where the psychiatric patient overlapped the figure of the detainee. The internment criterion was not mental illness but “dangerousness” and “public scandal”: mental hospitals started to face a series of diverse problems amongst the population, made up of mentally insane people as well as seriously disabled, social outsiders, emarginated, alcohol addicted, and homosexuals.

Starting from the second half of the 50s, psychiatric assistance activities in the West experienced the de-Institutionalisation movement, which questioned the psychiatric hospital and opened a debate on new procedures of taking care of mentally ill patients. In Italy, Franco Basaglia was one of the main supporters of the movement, promoting in the meantime a new anti-mental institution culture and concepts as decentralization, territoriality, therapeutic continuity between psychiatric hospital and territory, teamwork, education in order to create new professional competences, reception in structures between the hospital and the family. The end of the asylum solution started to become definite, also through the crisis of the institutional paradigm due to economic factors — old hospitals proved expensive, inefficient and harmful, the new sensitiveness towards the patients’ rights and the new awareness that psychiatric institutions were not therapy places, and other reasons concerning psychiatry itself [7]. In 1978, law n. 180 *Voluntary and mandatory inspections and health treatments* was promulgated, based on the theory according to which the rehabilitation of the mentally ill could not exclude social re-integration. This decree set psychiatric hospitals aside. After Basaglia Law, mental hospital complexes underwent a long dissolution phase that ended with Budget Law in 1995, which imposed the permanent closure of mental hospitals by December 31, 1996. In the following years, the main purpose to fulfil was the creation of a better future for both the patients who still had a “normal” lifestyle and the indefinite but high number of hospital structures. Isolated and partial actions pertained to the former Italian psychiatric structures and we can state that, in political and administrative structure as well as in common sense, there was not (and there is not, yet) any awareness of the material and intangible values of these places (Fig.3). Nowadays, they still represent something *different*, far from the city: their fruition is prohibited and all the relationships with nearby communities are suspended. There is lack of attention and care towards the preservation of these properties.



Figure 3. The heritage of “Leonardo Bianchi” hospitals, Napoli, 2014 photos

## 2 A POINT OF VIEW

Psychiatric treatment places are still in need of a further *re-form* that could function as a guide to transform this remarkable abandoned property, after the institutional amendment of the first years of 20<sup>th</sup> century and the deconstruction reformation of the 70s [8].

The need to *re-form* the former mental hospital centres emerges from the potential benefit of these places, their position within the cities and the role they could hold in renewed urban and social orders.

Then, how to work on this *re-form*?

Keeping in mind the strong importance of material signs and sediments, intervening on these architectures requires interpretational effort.

Underlining that material – and architectural – proofs are the authentic and incontrovertible data from which to synthetically interpret their meaning, mental hospital walls are said to be *the materialization of society's prejudice towards insanity* [2], and the mental hospital itself embodies the idea of urban heterotopia involved in the construction of autonomous insanity cities, independent from normality cites. How to find a meeting point between the protection of these places and the need to reactivate their spaces?

The heritage of provincial psychiatric hospitals, which belong to quite a singular category of dismissed architectures, forces us to specify their restoration, reuse, new functionality and recycling in comparison to the known conservation, transformation and form-functions topics as a consequence of a lumbering memory.

In a society driven by themes as ecology and sustainability, the complex matter of creating a future for this heritage cannot be faced without taking the inevitable concept of recycling into account [9]. This is not an unknown idea to architecture, for it allowed great masterpieces to endure over time, like the Coliseum, as well as more ordinary constructions and textures, preserved until our time as a result of uninterrupted transformations dictated by the acknowledgment of their spatial, material or symbolic features. Mentioning ancient restores or retracing the same method within modern times would herein be pointless. What is innovative from the perspective of contemporary research in recycling is the field of application and the cultural and scientific achievement, together with ecologic and environmental awareness. Nowadays, the activity of recycling city and territory materials formerly rejected or abandoned wants to overtake the weakness of the current restoration activities as well as the merely defensive tutelage logic. Recycling, then, recognises *mutation* [10] as a value, against a concept of conservation that tends to paralyze the architectural space and give importance to immutability.

Recycling means making it impossible for architecture to pursue something permanent and, at the same time, creating a contact between the two worlds we live in according to Koolhaas [11]: one defined by fast alterations due to modernity, the other caught in the grips of immobility of conservation. It concerns the fulfilment of an idea of tutelage that supports discontinuity and plans a change – concept nowadays separated from improvement, so to *preserve* and not merely *conserve*. The majority of strategies and norms to preserve architectural goods, however, put a limit to transformation. Koolhaas strongly believes it is necessary and important to establish new connections



with the field of conservation, in order to find models that include and validate new architectural interventions on what already exists, as the result of CRONOCAOS studies, exposed at the Biennale of Venezia in 2010, clearly show.

The *re-form* of these places, then, needs to be part of a renewed concept of conservation and preservation, able to systematically organize diverse matters that involve dimensions and ability to establish connections, as well as the insertion of these architectures in a new life cycle. Although the triple value of this heritage – architectural, urban and environmental – reveals a complex set of sources and potential, not only does the matter need to be examined from the perspective of the physical preservation places and memory, but the social and cultural texture that might grant the passage from past to future must be included as well. Gregotti wrote in 1984, *“Juxtaposition of social change and formal inertia: on one side are the fast urban dynamics evolutions; on the other, a heritage to reuse and adapt to new needs”* [12]. Is it possible, through the urban and architectural project combined with relational strategies, to activate such transformational dynamics to realize the interaction of these pieces with what surrounds them and the other areas of the city? Is there the probability to structure a layout of connections able to include these places, which are on hold for transformation without their peculiarity to be altered? Can we define an intervention methodology able to include the confrontation of change and stability, to adapt spaces and at the same time preserve connections to memory and architectural features?

### 3 AN INTERPRETATION

In order to simplify a dissertation on which considerations are still in progress, I am going to deal with the topic through the Neapolitan case of Leonardo Bianchi hospital (Fig.4), an “in-between” space (1) in the bordering urban fabric – for its dimension and density; (2) in the urban reality on a metropolitan scale – for its relevance and position; (3) in the social and economic reality – for its usability and interest.



Figure 4. The Neapolitan case of “Leonardo Bianchi” hospital, satellite images

(1) The colossal Neapolitan complex – about 140 thousand square meters, almost completely fallen into disuse, rises up on a tableland North-West from the ancient city centre in its nearest suburbs, an area delimited by Albergo dei Poveri, the slope of Capodimonte Park and the international airport of Naples. In 1897, Capodichino hill was chosen to locate the new mental hospital structure thanks to its geomorphologic, healthiness and overview conditions. This area appears on Rizzi-Zannoni cartography still unused and virgin outskirts, where Calata Capodichino plan, where the Bianchi structure’s main prospect will be edified, is already clearly delineated. On this road axe, the city of the



second half of 20<sup>th</sup> will develop towards north. Many other psychiatric hospital complexes, like the Bianchi, were surrounded by twentieth-century architectural textures of various densities expanding in the suburbs because of urban growth. These structures appear nowadays as huge black holes in a complicated scale with deeply mutated contexts, thus taking the shape of enclaves separated from their enclosures. This isolated condition is often made worse by the orographic conditions of the places designated for the construction of the complexes: the confinement of the former mental hospital of Naples, disconnected by the surrounding urban texture as a consequence of its function, is exacerbated by relevant height difference with the road plan. The Bianchi hospital shows the city its main prospect, which consists of a long, robust and outwardly unreachable tuff wall: nowadays, a one and only path grants access to the complex through a long vehicle accessible ramp. The enclosure, which functions also as embankment contentment wall, runs around Calata Capodichino's perimeter for about 370 meters. This layout belongs to a road system historically relevant in relation to connections between Rome and the cities in the hinterland, like Capua, Benevento and Caserta. The peculiarity of this gateway to the city is accentuated in the 19<sup>th</sup> century by the realization of Nuova del Campo Street, famous for the panoramic view it offered, this giving the Grand Tour visitors a majestic entrance, as Stendhal wrote in 1817. The access function of this area outside the old town centre is still connected to the presence of the airport, adjoined by the orbital road's intersections and the future metropolitan station. This surrounding system consisting of a strong infrastructural network makes the Bianchi face different scales within the city. (2) In the interpretation "by layer" of the contemporary city, new over- and underlapping layers deeply modify the traditional urban dynamics, noticeably increasing then the factors to keep into account. The infrastructural networks constitute a new lawyer that expands the reference territorial dimension, thus establishing innovative connections. What could become, at a first glance, a source for the district or the city is now a potential source for an infinitely broader geography. The "big containers" like the former mental hospital complexes are seen, starting from the infrastructural layouts and blending with the complex territory we are operating nowadays, as compact cores and spread settlements: spaces that are outside the city while being a part of it in search for a relational dimension with a potentially multi-scale context. The great territorial dimension put at stake by infrastructural networks, which involve the former psychiatric hospitals, makes it possible to build infinite new connections and possibilities – if combined with a zenithal interpretation: local and global relations to allow the formation of innovative communities (Fig.5). (3) Recycling the mental hospital complexes might represent an occasion to integrate territory and society, architecture and city, with a single action, in a metabolic architecture able to absorb sources in order to create others. In an era focused on the common good, keeping broader usability, new relations and modern collective spaces into account, a recycle of these places – which also mean reflecting on their function – has to mediate between those who own them, in the most of cases the ASLs (local health units), which represent the *private* in spite of their *public* sanitary function, and those who might benefit from them like the *public*, especially if we keep in mind the wide green areas shielded within mental hospitals. On one side are the ASLs, which often desire to earn an income from properties whose only value, in their view, is the economic one; on the other side is the community, still traumatized by the screams coming from the patients of psychiatric hospitals, who tends to ignore the potential significance of these places. Invisible and ignored despite their dimensions, the former mental clinics are not socially accepted as a source. Then, in order to overcome the public/private duality and reinforce the predominant collective interest, which would credit former mental institutions as "common good", a fundamental factor is still lacking: the common perception of these estates.

It is then extremely appropriate to use the term "in-between", stated by Berger in "Drosscape" [13] while referring to former psychiatric complexes, to describe the superficial condition of something that exists and lives in transition, repulsing a new stability and a fusion with the city. A space that remains in the borders, waiting for a social desire to reconnect it to the accomplishment of urban procedures. These in-between spaces are places where relations between elements and people need to be fulfilled, through pre-existent materials and contexts. It is necessary to guide the community to the social construction of the uses and the multiple values within the process of re-examination of the past.

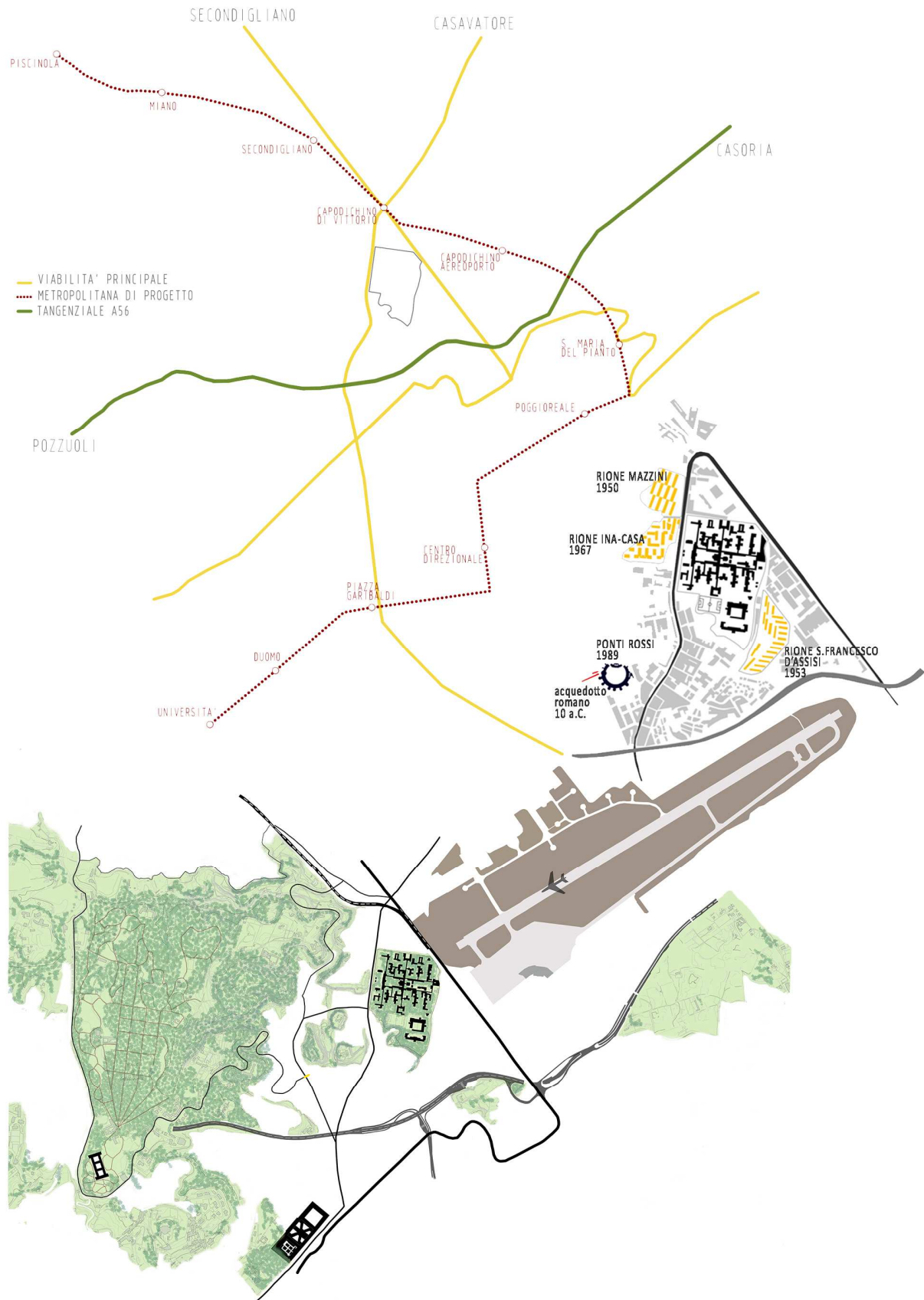


Figure 5. Graphic elaboration of “Leonardo Bianchi” as “in-between” space

#### 4 A CRITIC-METHODOLOGICAL PROPOSAL

Here another suggestion by Koolhaas [14]: “The march of preservation necessitates the development of a theory of its opposite: not what to keep, but what to give up, what to erase and abandon. A system of phased demolition, for instance, would drop the unconvincing pretence of permanence for [...] architecture.”

The speculated operation is linked to an idea of retrogression, spoliation, *progressive subtraction* (*subtrahere*, “to pull from under, subtract”, compound of *sub*, “under”, and *trahere*, “to pull”). One of the four elementary arithmetic operation opposed to addition, through which we obtain the number D (difference) that, summed to a given number S (subtrahend, second term of the subtraction), results in another given number M (minuend, first term of the subtraction):

$$M - S = D$$

If M is a former mental institution complex, what the project must determine is the entity of the subtrahend, namely the *number* of operations that can result in such a D to understand and explain all the premises to the argument.

What, how much and how can we subtract a former mental hospital complex in order that what remains can become bearer of memory and host new functions and meanings? How much must remain so that the painful and lumbering memory is not erased but, at the same time, is not seen as a limit to a new life, either?

The deinstitutionalization process of mental hospitals, which is the foundation of Law 180, law that launched the territorialisation of psychiatric services through the liberation of the patient and their transfer of Psychiatry into the community outside the mental clinic, can function as the first reference *subtraction*: the subtraction of the infirm from the control regime, from ghettoization and isolation. A valid operation, even if debatable from a medical-scientific point of view, determined the subtraction from the strict form of the mental hospital of its only crucial function. In this conceptual crux of the form-function connection, I put forward a first hypothesis: within the sanitary structures, reformed starting from 1978 and reorganized by the National Health Plan of 1998-2000, the Mental Health Department consists of a series of essential constitutive services of the Psychiatry Unit.

Among these services, the Daily Psychiatric Centre and the Day Hospital could be relocated within the former mental clinics. The temporary aspect of these services, indeed called semi-residential, is the essential discriminating factor: open 8 hours per day, 6 days every week, they do not contemplate the recovery for intensive psychiatric treatments. It is clear, however, that the reintroduction of mental health services within these architectonic machines would threaten the achievements of anti-psychiatric battles. We need to understand whether the reactivation of these places could tolerate this operation, and how the operation itself could function as the input of a process that regards health and psychic and physic human wellness as the key to recycling.

The subtraction, then, has to consider the form: how much can be taken away from the implant, the enclosure, the pavilions, the connections? How much from the matter?

The *re-form*, through retrogression and subtraction of the former psychiatric clinics – reflecting on the insurmountable nature of their enclosures, the functional complexity that defined their typological features, the role of memory in its double configuration of bearer of identity and inhibitor of new functions (considering the pain it carries), the social uses relevant for the life of cities, territories and environments potentially extended on scales never considered before –, represents a broad question on which to concentrate a research able to provide with answers that can avoid wastefulness of potentially rich architectural and urban matter.

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## SMALL IS BEAUTIFUL

### -ARCHITECTURE OF COMMUNITY-BASED DAY CARE CENTERS FOR ELDERLY, A CHALLENGE FOR AN AGEING SOCIETY-

Mihaela Zamfir (Grigorescu)<sup>1</sup>, Mihai-Viorel Zamfir<sup>2</sup>

<sup>1</sup>Faculty of Architecture, "Ion Mincu" University of Architecture and Urbanism, Bucharest (ROMANIA)

<sup>2</sup>Faculty of Medicine, "Carol Davila" University of Medicine and Pharmacy, Bucharest (ROMANIA)

*mmg\_architecturestudio@yahoo.com, mihai.zamfir@yahoo.com*

#### Abstract

The architecture of present and future society is the architecture of an ageing society.

According to data provided by UN, we are witnessing an unprecedented demographic shift, if in 2015 the elderly population was 12%, it is estimated that in 2050 the percentage will reach 21% at a global scale and to 34% in Europe (United Nations 2015). Basically, one in three people will be over 60 years. The process of population ageing must be considered together with the process of urbanization, these being two major trends of the XXIst century.

The trend for public policies on health and ageing is to pass from a functional perspective -the state as provider of care services- to a perspective that has in its center the individual and has as core principles participation and empowerment (United Nations, 2002). These core principles are encountered in the concept of active ageing – the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age (WHO, 2007).

Healthcare costs for elderly are increasing, ageing of patients is also described. A solution proposed in the second half of the XXth century was long-term institutionalization (Bogdan C., 2011). However, it was found that this public policy has less favorable outcomes in community integration of the elderly. In addition, long-term care costs are considerable and widespread practice is economically demanding even for developed countries.

All these reasons have led to search for alternative flexible solutions that have the main objective *ageing in place* - maintaining elderly in community as long as possible. Together with other disciplines- psychology, sociology, medicine, engineering, arts- ARCHITECTURE became to develop new concepts, age-friendly strategies.

The article reviews three care options for elderly, in community and institutionalized, focusing on community based day care centers:

- **Caring in community with maintaining the residence-** home care, other social and medical services, daycare centers, community based daycare centers;
- **Caring in community that implies changing of the residence-** Assisted Living Facilities (ALF), Specialized Dementia Care Facilities (Memory Care Assisted Living), Continuing Care Retirement Communities (CCRC);
- **Institutionalized assistance-** long term care-Nursing Homes and temporary care-Respite Centers.

The paper aims to reflect the importance of building and designing of day-care centers for elderly at a human, residential scale. Regarding the scale of these centers, it is recommended to be as reduced as possible, for a small number of users, especially for elderly with dementia.

What is a **daycare center**? A daycare center provides day-time socio-medical assistance for elderly, giving them the opportunity of socialization. It enables carers to carry out other activities. Generally they are small buildings, mostly developed on the ground-floor or one with floor only, with a modest architecture and a domestic expression.

The present article investigates some of the fine architecture contemporary examples of daycare centers for elderly and for elderly with dementia: *Day center for elderly Vialonga* (2009, Portugal), *Day Center for elderly in Cordoba* (Spain, 2013), *Day Care center for people with Alzheimer Dementia in Alicante* (Spain, 2011), *Day Care center for people with Alzheimer Dementia in Pontevedra* (Spain, 2006). All these examples provide small scale buildings with a residential design. The paper underlines the importance of an appropriate use of architectural instruments- light, shape, color, texture.

In conclusion, it is recommended a small scale of the daycare centers corroborated with a generous palette of socio-medical services, avoiding an aspect of institutionalization in interior and exterior design. Contemporary architecture is an architecture for an ageing society and brings an integrative perspective, by corroborating information from related field- geriatrics-gerontology, psychology and social care. For the future challenges of an ageing society, architecture also must encourage active ageing, designing age-friendly supportive environments that allow older people to live their life and to maximize their contribution to the society.

**Keywords:** daycare center, ageing in place, active ageing, architecture for elderly, age-friendly architecture, dementia environment, community care

## 1 AGEING POPULATION AND URBANIZATION, TWO MAJOR TRENDS OF XXI-ST CENTURY

The world's population is ageing in an unprecedented demographic shift. Population ageing is considered to be one of the most significant social transformations of the twenty-first century, with implications for nearly all sectors of society, including the demand for goods and services, such as housing, transportation and social protection. (United Nations 2015; 2002; Zamfir Mihaela & Zamfir Mihai, 2014)

If in 2015 the elderly population was 12%, it is estimated that in 2050 the percentage will reach 21% at a global scale and to 34% in Europe (United Nations, 2015). Basically, one in three people will be over 60 years. The process of population ageing must be considered together with the process of urbanization, these being two major trends of the XXIst century (WHO, 2007).

Older population is itself ageing. The "oldest-old" (80+) group is growing even faster than the older persons overall. Projections indicate that in 2050 the oldest-old will triple as compared to 2015. The older population is growing faster in urban areas than in rural areas. The number of older people increased between 2000 and 2015 by 68% in urban areas, compared to a 25% increase in rural areas. The oldest-old are even more likely to reside in urban areas: the proportion of 80+ persons residing in urban areas increased from 56% to 63% between 2000 and 2015 (United Nations, 2015).

Also, older people tend to spend more years living with disability. The prevalence of disabilities caused by chronic illnesses is strongly associated with age. Major chronic conditions affecting older people worldwide include cardiovascular diseases (such as ischemic heart disease, hypertension and stroke), diabetes, cancer, chronic obstructive pulmonary disease, musculoskeletal conditions (such as arthritis and osteoporosis), mental health conditions (mostly dementia and depression), blindness and visual impairment (WHO, 1998).



Disability is considered to be multifactorial determined and environment adaptation is one important modality by which disability and dependence can be addressed.

Addressing disability among older persons implies providing the necessary accommodations, such as accessible housing and transportation, to reduce the degree of functional limitations they cause. Care systems should be prepared to address the specific health, social and also cultural concerns of older persons (United Nations, 2002; WHO, 2002).

Ageism is a pervasive form of discrimination (Nelson T., 2011). One widespread ageist stereotype of older people is that they are dependent or a burden. Although the majority of older people will eventually experience multiple health problems, disability is only loosely related to age. There is no “typical” older person and older age per se does not imply dependence. With the right policies and services in place, population ageing can be viewed as a rich new opportunity for both individuals and societies, thus shifting ageistic views toward healthy ageing perspective.

Healthy ageing is more than just the absence of disease; for most of older people, maintenance of functional ability has the highest importance. WHO approach to population ageing recommends a transformation of health systems away from disease-based curative models and towards the provision of integrated care centered on older people. Delivering comprehensive and person-centered services that enable older people to live in comfort and safety should be the mainstay of health and social care policies on aging. Care systems for older people must be able to breakdown the many barriers that limit the ongoing social participation and contributions of older people (United Nations, 2002).

Many people will experience significant declines in capacity and may require help in basic activities such as transportation, eating, personal hygiene and health and social policies must address their needs too. A coherent narrative of ageing at a functional dimension best describes the diverse needs of older people as a continuum of functioning. (Zamfir Mihai, 2011)

In *Madrid International Plan of Action on Ageing* (MIPAA, United Nations 2012), an international reference document on ageing, one of the **priority direction of action on ageing is: Ensuring enabling a supportive Environments**. MIPAA recommends policies in the field of Housing and the living environment that empower older persons and support their contribution to society:

*“Housing and the surrounding environment are particularly important for older persons, inclusive of factors such as: accessibility and safety; the financial burden of maintaining a home; and the important emotional and psychological security of a home. It is recognized that good housing can promote good health and well-being. It is also important that older persons are provided, where possible, with an adequate choice of where they live, a factor that needs to be built into policies and programmes.”*

It is very important that governments design innovative policies and public services specifically targeted to older persons, including those addressing housing, health care and social protection.

Two important factors that influence healthy ageing are intrinsic **capacity**, which refers to physical and mental capacities of an individual, and **the environment** they inhabit. Environments provide a range of resources or barriers that finally will influence participation of older persons. Priority areas described by World Health Organization (WHO, 2015) for overcoming dependence of older people are:

- Aligning health systems to the older populations they now serve;
- Developing systems of long-term care;
- Creating age-friendly environments;
- Improving measurement, monitoring and understanding.

The central goal of long-term care systems should be to maintain a level of functional ability and ensure consistent human dignity and fundamental freedoms (United Nations, 2002). Functionality is not a purpose in itself, but a condition for dignity, participation and social and *community integration* of older persons. By treating older people as a homogenous category, there can be inadequate

recognition of their specific needs (Wiles JL., 2012). *Small is beautiful*, we could say. Built environments at the scale of people, in our view, is the architectural key to all these aims.

**Creating age-friendly environments implies** establishing policies and programmes that expand housing options for older adults and enable older people to age in a place that is right for them. Beside functionality, consideration needs to be given also to amenities that facilitate social interaction and cultural engagement (Wahl HW., 2003; Zamfir Mihai, 2011)

## 2 AGEING IN PLACE AND CARE OPTIONS FOR OLDER PEOPLE

**Ageing in place** refers to the ability of older people to live in their own home and community safely, independently, and comfortably, regardless of age, income or level of intrinsic capacity (Center for Disease Control and Prevention). Ageing in place also hold significant financial advantages in terms of health-care expenditure (Wiles JL., 2012).

Older people often face the situation of making transitions in their living environments due to their chronic health problems (WHO, 1998). They often view their existing home or community as maintaining their sense of identity and autonomy, connection to community. Home often provides a sense of cohesion, security and familiarity (Wiles JL., 2012).

Basically, three options are for elderly assistance, in community and institutionalized:

- **Caring in community with maintaining the residence-** *home care, other social and medical services, day care centers, community based day care centers;*
- **Caring in community that implies changing of the residence-** *Assisted Living Facilities (ALF), Specialized Dementia Care Facilities / Memory Care Assisted Living, Continuing Care Retirement Communities (CCRC);*
- **Institutionalized assistance-** *long term care-Nursing Homes and temporary care-Respite Centers.*

Nursing home settings are sometimes seen as posing cultural barriers to social interactions (69). Community care services take into account older persons preferences of aging in place and also to the need of health and social care services of dependent older persons.

Focusing on community based day care centers, the first two options could be taken into account.

**Caring in community with maintaining the residence** is addressed to the older persons that can live in their own houses, have no severe health problems or have family support. In the following section we will analyze contemporary day care centers from two integrated points of view, architectural and geriatric-gerontological.

## 3 CONTEMPORARY DAY CARE CENTERS. SMALL, HUMAN SCALE

What is a **Day Care Center**? A day care center provides services-medication monitorizing, meals offering physical therapy and chance for socialization- for "*frail, physically or cognitively impaired, seniors and their caregivers*" (<http://www.seniorresource.com/hsdc.htm>). It enables carers to carry out other activities: keep working with their jobs, have help with the physical part for their loved ones, free time may be good for their relationship, avoiding the guilt of putting their relative in a nursing-home, obtaining from what could be a 24/24 hours responsibility. [a]

In USA, for example, the range in a day care center is from \$40 a day to over \$100 per day depending on services offered (eg. meals, transportation, nursing supervision), reimbursement, and region [a], the average cost is about \$64 per day. It is important to point out that the costs will increase if professional healthcare services are provided [b]. In USA, are two different government-run programs, **Medicare** and **Medicaid** that are running from 1965 in response to the inability of older people to by private health insurance. *Medicare* is constructed beginning from age or disability and is not related to the income, *Medicaid* is centered on the income, providing support to for people with very low income. [c].

It is important to make a difference between **day care centers** dedicated to frail older people and **seniors clubs** that are offering possibilities to carry out social-leisure activities. In fact, we can talk about **three models, medical, social or mixed social-medical**, depending on users, staffing, services and costs. (Fairholm C., 2001) **In Romania**, the majority of “day centers”- as they are called- are in fact a kind of **seniors clubs that are offering the possibility to interact with each other, but are not providing social assistance and medical assistance/care**. Generally, the activities in a day center in Romania- at least declaratively- are: [d]

- Socialization, social reintegration, cultural educational activities;
- Psycho-social activities, advice and support, communication;
- Dynamic activities, rich from sensory point of view;
- Participatory activities;
- Pilgrimages;
- Health education to prevent illness and accidents.

Whatever we are talking about, Western day care centers or Romanian day centers, generally they are small size buildings, mostly developed on the ground-floor or with one floor only, with a modest architecture and a domestic expression. Typical images of elderly day care centers can be consulted by accessing links as [I], [II], [III]. However, countries like USA, Canada, UK, Italy or Spain offers also interesting examples of senior day centers- in terms of architecture- in **two formulas- day centers/community centers for independent and semidependent elderly people and day care centers for semidependent elderly people**.

**Day Care Center for Elderly People in Vialonga** (2009, Portugal, Lisbon, architect Miguel Arruda) is located in a peripheral area of Lisbon [IV, openbuildings.com] and has an area of only about 700sqm, in an relatively new neighborhood but already damaged. [e] The population of the suburbia is mainly divided in two groups, the active one that has to go every day to the main city to work and the elderly citizens. The day care center was designed as a space that can enable socialization, connection between elderly citizens.

*“In this social, cultural and urban context, the day care centre appears as a reference, enhancing itself from the surrounding buildings through form and scale.”* [IV, openbuildings.com]

Although relatively small, the center provides to the elderly users from the respective community what they need [IV, openbuildings.com]. In terms of planimetry, the center uses a relatively simple formula, a rectangle with an interior courtyard, but this is volumetrically renewed by proposing different heights, resulting non-orthogonal facades [V]. Indoor closed spaces for workshops are prevailing, more than 50% of the built area, but also the courtyard has an important share of 20%. [f] The result is a modern building that breaks out from so called elderly architecture patterns, but at a human-scale, with functions and spaces designed according to this age group.

**Day Care Center for Elderly People in Cordoba** (2013, Spain, Architects Francisco Gómez Díaz, Baum Lab, A=1540sqm) is an interesting example architecturally speaking of contributing to a better understanding of the historical urban layout, of making communication between old and new, *“trying to reach coherence both with new development and the old town”* [g], as the authors declare.

*“The new day care center for the elderly has a bordering nature. With its hinge-like condition, it links the recent urban extension and the old town, operating in the boundary and trying to achieve a consequent presence, both within the territory and the urban realm.”* [g]

Basically, there are three “fingers-volumes” that are opening to a beautiful view of the city [VI, www.archdaily.com], creating different degrees of permeability, from pure glazed facade till perforated panels in a contemporary reinterpretation of the traditional architecture of the place. The building of just groundfloor has a pleasant appearance, with no impression of institution. In the existing web sites with the descriptions of the project, there are no information about the functions, however we can try to read from the plan, are spaces for different social activities, meal facilities and a multifunctional space. There are no information about spaces dedicated to medical facilities.

As a criticism, we can notice within the project presentation the lack of information regarding thinking of the project starting also from elderly person's needs, rather insisting on architectural expression and the integration into a difficult context, very important in fact, but not enough. Architecture for a frail age group must need also to focus on user needs, in an interdisciplinary approach, together with specialists from psychology, social assistance and geriatrics-gerontology.

The last two examples that we bring into discussion are more particular, day care centers for elderly people with Alzheimer dementia, a progressive neurodegenerative disorder characterized by cognitive impairment, memory loss, temporal and spatial disorientation and psychological and behavioral symptoms.

**Urban Day Care Center for Alzheimer Patients** (2006, Spain, Pontevedra, Architects Jose Jorge Santos Ogando, Angel Cid Carballo, A=497sqm) is a very good example of good using of architectural tools- form, light, color, texture- in order to increase the quality of life of older people. A day care center for people with dementia it is recommended to be designed for a reduced number of users, 8 up to 12, (Zamfir Mihaela, Zamfir Mihai & Marin A., 2015) hence the small size of the center that *"is intended to escape from a ghetto center, providing a warm, pleasant, cheerful, with strong visual and above all a friendly relationship with the outside, both for the patient, to the passer"*. [h]

The center has a very interesting planimetry [VII, [www.archdaily.com](http://www.archdaily.com)] which promotes loop circulation useful for wandering behavior of people with dementia and also allow the visual contact between the indoors space and the street. (Zamfir Mihaela, Zamfir Mihai & Marin A., 2015) The wish was *"to make the space warmer, humanize it for use by patients, as well incorporating visual background of the interior spaces, as well as space relationship between the sick and the people on the street"*. [i]

Another example of day care center for Alzheimer patients that we bring into discussion it is all of Spain, built in 2011, **Alicante Day Care Center for Alzheimer Patients**, architects Luis Navarro, Carlos Sánchez, Ángel Martínez.

The situation was more difficult because the project assumed a rehabilitation of an existing building, *Jorge Juan School* and a new extension. [VIII, [www.archdaily.com](http://www.archdaily.com)]

The result is a just groundfloor "fishbone" building that proposes functions on both sides of a central circulation. However, the plan formula is not very adequate for people with dementia that tend to wandering behavior, being recommended the *"loop path"* formula used in the previous example. Neither the exterior chromatic is not very suitable for such function, being quite depressing, however the interior uses a proper chromatic, orienting and well stimulating the users.

#### 4 THE SITUATION IN ROMANIA

In Romania the architectural program of day care centre for elderly is almost inexistent. Although there are services of elderly assistance in community, no specific buildings for such activities exist. Many times, they are functioning in improvised spaces, inadequate suited for such a function. The Romanian day care centers are rather seniors clubs, that are dedicated to elderly with a high degree of independence and gives more the opportunity of socialization and recreation. We did not found examples of day centers that provide medical assistance also.

There are many examples of day centers in the north-east side of Romania, in Moldova, but not day "CARE" centers, such as: **Vovidenia, Alexandru cel Bun, Oancea, Moara de Foc**. In Bucharest, for exemple, **Day Center for Elderly Omenia** offers the possibility of developing recreational and entertainment activities based on principles such social equity and respect. [j] Caritas, Romania support the elderly assistance also by day center for elderly such as **Speranta Carei** and **Turulung** in Satu Mare or **Baia Mare** and **Sighetu Marmatiei** in Maramures County. [k] On the Romanian websites is met also the notion of **DAY CARE HOME**, more like the international notion of **DAY CARE CENTER** that targets older persons that need supervision and/or permanent care. These offer base services, support services and assistance services, including also medical care. The only example is **Day Care**

**Home Centre Saint Jacob**, Satu Mare. However, there are no information about the buildings where functions these centers and will be further studied.

## 5 CONCLUSIONS

Elderly day care centers are important facilities for people who choose or whose health condition allows them to age at home/ in place/ in community. It is recommended to promote accessible, age-friendly environments and architecturally speaking these refer to homes, public spaces and care facilities. Ageing in place corroborated with existence of day care centers represent a viable alternative to institutionalization.

In designing day care centers for elderly one must consider a **bio-psycho-social-cultural-spiritual model**, derived from the older people needs. From architecture's point of view, day care centers must to accommodate spaces that allow to provide structured, comprehensive health, social and recreational services, in variable proportions, depending on the center's profile, usually during the day, five days a week. (Regnier, V., 2002)

Day care centers for elderly are recommended to be designed for a reduced number of users, 8 to 12 maximum, at a small, human scale. Also a domestic architectural expression appears to be recommended in scientific medical or psychology literature, this recommendation must be adapted according to the bio-psycho-social-cultural-spiritual model. For example, the day care centers images differ, extending from American domestic, traditional expression to more minimalist Spain or Italy modern expression. Unfortunately, in Romania we cannot mention notable examples of day care centers for elderly in terms of architecture. However, it is recommended to study occidental models and have flexibility in adapting them, in order to design friendly, approachable day care centers.

We draw attention to the importance of a correct use of architectural design principles and tools such form, light, color, texture in a specific way, dedicated to older people. For elderly with dementia, it is recommended to use the follow hierarchy, **form- color- function**, according to memory issues, practiced on small or medium built areas, between 500sqm and 1500sqm.

The functionality and the design of the interior spaces must be corroborated with **day care center profile- medical, social-recreational or mixed-** and hence with the functional status of users, the final goal being to maximize the independence and to maintain or give back the joy of living.

Finally, we do not recommend recipes, it is important that architects have a comprehensive approach and find the right expression for each particular case of day care center for older persons, but applying a set of principles such stimulating social interaction, enable independence, stimulating the senses, whose validity can be universal, proper to this age group. The focus of all involved specialists must be on health maintenance, physical movement and mental stimulation.

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## RE-VERSE: THE MEDITERRANEAN 'MEDIUM-SIZED' AGROCITIES

Adriano Dessì<sup>1</sup>

<sup>1</sup>*Dipartimento di Ingegneria Civile, Ambientale e Architettura, University of Cagliari (ITALY)  
adrianodessi@unica.it*

### Abstract

The issues of most recent urban studies, and not unlike policies, see once more the city as an object, more or less morphologically defined, that have only internal rules, forgetting the ground and territorial structures that have generated it in the past. Instead, especially in the Mediterranean context, the city is spatially and structurally highly innervated by the countryside: it's very difficult in *domus* fabric not find that *hortus conclusus* which is the basis of historical European landscape, in the medieval terraced fabric not find the lots *en lanières* of specialized crops plantation, in porous and dense Iberian blocks not find that equally dense and close puzzle of Andalusian huertas that surround them. When city not only loses identity, but sees in its traditional internal components, the block, the square, the street, the most emblematic places of its crisis, it might be appropriate to come back to its historical dimension of "territorial organism", to osmotic relationship with rural landscape.

The rural landscape, however, is not only interesting prospect for recovery of a city-countryside relationship, seriously compromised, despite the high level of urban studies about it, but it is an effective tool of re-scaling the Mediterranean and European cities. At a time of decline and economic crisis, but even more social crisis of the European Metropolis, it is very appropriate looking to the "medium-size" of the historical Mediterranean city that appears a really solid balanced territorial system due to its vital relationship with its productive surroundings.

A real review process of some urban morphological paradigms, could lead to identification of new spatial categories for the city that we can find in contemporary rural contexts, like the interstitial agriculture, the ecological residue, the *moving garden*<sup>1</sup>, the green corridor, the *ecòtone*, that have the ability to innovate and undermine the traditional urban forms.

**Keywords:** landscape, medium-size, Mediterranean, rural palimpsest, agriculture, water.

### 1 THE MEDITERRANEAN 'AGRO-CITY' MODEL

The latest theories and ideas about the city, as well-highlighted by the "smart city" phenomenon, see the city from the inside again, into an apparent efficiency concept of its internal flows and, above all, no longer conceiving the city as an organism that interacts with its territory. In particular, given the ongoing look itself "from the inside" in a way more anxious than efficient, the question of the scale has gradually been forgotten.

Also within this framework we could address the issue of West urban development, in particular of the Mediterranean one, that today has reached a dramatic turning point but also interesting, a limit in which the city must take a definitive direction. The issues of sustainable habitat transformations and social and cultural mixes who had also composed and characterized the "European urban model", they are crossing a serious crisis in contemporary continental metropolis. This also happens in the great Mediterranean basin, a place historically built right on the cultural diversity, on the

landscape palimpsest, on urban hybridization, and on social and functional integration between the different layers of the city. Since the "medium-sized Mediterranean city" has lost its special relationship with the agricultural land, consuming and undifferentiating it, making it residual and no more foundational, this structural crisis is strongly cast on its social, productive and functional balance, and the historic and lively evolution urban has become irreversible alteration, incoherent processing. As the Portuguese landscape architect Joao Nunes says: «the Mediterranean cities, until the Second World War, had a really strong "auto-sizing" principle, based precisely on the productive value of agricultural land in urban fringes: the need of food was more urgent than the new homes one, as well as organically principle of metabolic osmosis. After the war, failed to fulfill this need for open markets, this relationship has been lost and, accordingly, we have lost the "scale" of the city»<sup>2</sup>.



Figure 1. Cities in field working landscape patterns. Image from "A cartography for the Catalan territory", Lotus 23, 1979.

### 1.1 Old and nowadays agro-city paradigms.

In this scenario, the city and the architecture have to re-found and re-think some paradigms, re-tracing some fundamental stages of their evolutionary process in the original territory. In the "New Athens Carta" Andrea Branzi says: «... the boundaries disappear and the law of profit makes homogeneous architecture and agriculture areas, where individual components are aggregated and are dispersed by following the flow of the seasons ... architectures become forests, without a border and without a function; agriculture becomes a living »<sup>3</sup>, it's foreshadowing an interesting " future challenge ", but at the same time proposing an archaic relationship between cities and agriculture (he proposes the figure of the "prehistoric metropolis "). Farinelli, from the geographical point of view, argues that the shift towards a landscaping concept of the city, means returning to its archaic relationship with the territory, figurative and imaginative, much more than geographic or cartographic<sup>4</sup>.

Donadieu and Boissiere, also, tracing the history of Mediterranean cities through its own specific relationship with the surrounding agriculture: «In the Arabic settlement fabric, the countryside was a source of income for the city (medina) in which the vegetable-garden spaces were already used for relaxation and leisure. In the coastal cities (Beirut, Tripoli) they were located within the walls and maintained through collective irrigation systems (dams or large tanks) or individual systems (wells, boreholes) and were located in the vicinity of the ports for marketing the produce. In Istanbul, the horticultural gardens are the Bostan, which face each side of the Bosphorus, whereas to the north of Tunis large orange groves (*jnina*) and olive groves have been preserved in the peripheral residential areas. In the countryside of Tunisia (the *rif*), the well-off people stay in *Swani*, properties and rural homes; urban oases in Damascus (*Waha*) represented a gradual and hierarchical landscape that allowed the passage from city to horticultural gardens and orchards, to grasslands and cornfields, before finally reaching the wilderness (...) In the whole area of influence of Andalusia, the Iberian peninsula and Mediterranean France, the "huertas" accompanied and structured the development of the cities»<sup>5</sup>.



Figure 2. The Palm grove city of Ghardhaia. An example of contemporary 'agro-city'. Urban orchard, Lotus International 149, 2012.

Thus we can state that the Mediterranean landscape is largely based on the devices that the city uses to structure its closer and more continuous production environment, the countryside, and to make it directly connected. In the nineteenth century the dominant spatial representation model was to Von

Thünen, that temporal concentric belts define different rural areas in depending on the time required to agricultural products from reaching the nucleus of this system, the city. We can say that on a purely conceptual way, this model has adequately represented the reality at least until the wars, after which the race to infrastructure and urbanization of the urban fringes areas has prevailed.



Figure 3. The south-east agricultural belt of Milan. Urban-rural pattern connections.

## 1.2 Structures and “aesthetic – functional figures” of the Mediterranean agro-cities.

Through these theoretical assumptions, this paper focuses on dual scales of Mediterranean agricultural Cities, the urban ecological networks and one of the main "aesthetic-functional" figures of agriculture within the city, retracing some fundamental historical steps of this formation and proposing a new design way that lead it back to a central role in the future development of the contemporary public spaces of the city.

About the ecological networks will delve into the historical irrigation frameworks of the Mediterranean periurbanity, agricultural production corridors along the main rivers, the networks of “bocage” and rural routes that keep tracks and turn inside the urban generating specialized and specific areas; it will analyze their historical role and their potential role in the urban areas. To this group belong for example, the nineteenth-century “navigli” of Milan, the Andalusian “huertas”, the ducts of the Agro Pontino or irrigated French Cistercian networks; hedges or enclosures Mediterranean agricultural, manufacturing fences and paths at the same time.

About “aesthetic-functional figures” of urban agriculture, the study focuses on the basics of the Mediterranean landscape that contributed to the foundation and development of the city as “the



productive Mediterranean garden", "the great rural courtyard", and the "Hortus Conclusus", the real community spaces of the Mediterranean city, deeply connected to the primary activities, the sharing of resources and to the market. It is no coincidence that both the Greek "kepos" (the garden) that Latin "hortus", in the Middle Ages, have been comparable to Indo-Germanic "ghordho", mid-way between "courtyard" and "garden", but also means only the enclosure, assuming and reaffirming just the closed, protected, restricted nature of the Latin garden, or "hortus conclusus"<sup>6</sup>.

Into the two different scales of Mediterranean agro-city model definition, however we can recognize at least another morpho-ecological meter of the relationship between the Mediterranean city and its rural suburbs: the production nodes with its agricultural pattern. They are composed of structures and elements and still characterize, now less than ever, the urban forms, the size and the space of the Mediterranean city. The Masias, the Cortijos and the Aciendas in the Iberian Peninsula, the Cascina, the Villa or the Domus in Italy, were the old cluster of the medium cities of rural regions or becomes agricultural neighborhoods into the metropolitan areas. They were based on the balance and the diversity of land use appropriate for the self-sustaining settlement model.

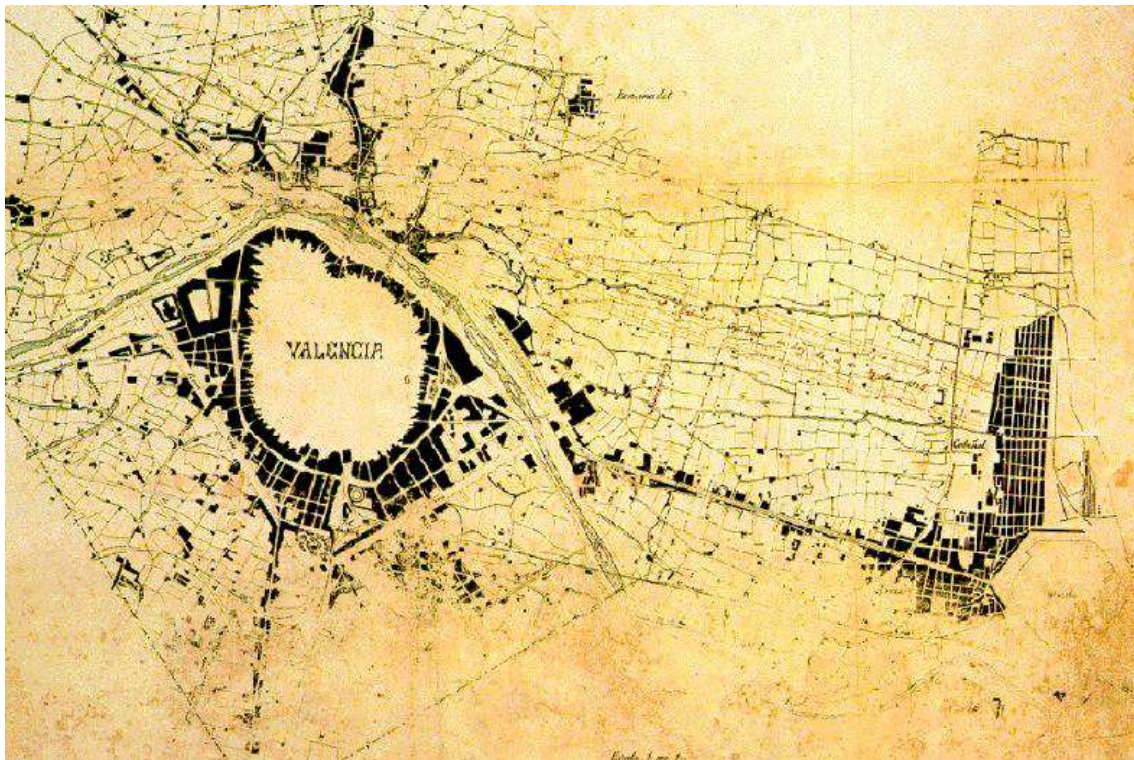


Figure 4. The early twentieth century Valencia expansion map. The dense "huertas" fabric all around.

For this reason they are often the elements that regenerate the rural space within the established contemporary urban grids or keep some main rural residual areas. Urban vegetable plots, historic gardens, some public parks or some rural production systems that remain within the city outskirts, are important ecological connections with the countryside and are guaranteed by the presence of these ancient nucleus. We could recognize, for example, into the Milan first the twentieth-century expansion fringes, the urban fabric shows some discontinuities linked to persistence of ancient rural villages, especially near the rivers.

On these two levels of interpretation, between history, nature and design, now we're going to show some exploration of contemporary urban projects that try to regenerate the city and to debate its historical acquired form, starting from agriculture and from this its dual expression scale, the "network" and the "basic elements", to build and think of an urban concept where past and future coexist and where the ancient urban agricultural model "again becomes the place of living multicultural and multifunctional and where to find more concrete perspective for the sustainable development of 'habitat'.



Figure 5. Historical “huertas” and the new one in comparison in Valencia (font: provinciavalenzana.es)

## 2 TWO ‘MEDIUM-SIZED’ APPROACHES FOR URBAN EXPANSIONS.

More specifically, we’re talking about of two growing processes of the European city that are quite different and far apart in time and in deployment as well as in the actors involved. Both include many interesting aspects regarding the strategy of the “medium-sized” and the work with the landscape components of urban fringes, in particular with water. Siza’s Quinta de Malagueira in Evora and Guallart’s Sociopolis in Valencia, although applied on considerable urban expansion, no longer use the traditional minimum urban units to define the framework of the new settlement, the road, the block or the building, but use the historical infrastructures of water supply and irrigation networks of the surroundings, which are carried-out long before the normal urbanizations, and is already working at full capacity for the management of public green areas. The Andalusian canals of the Valencian countryside “huertas” and historic Roman aqueduct become “figures-function”<sup>7</sup>: they are the framework elements round which the functional city idea was constructed where the natural element acts like a bio-climatic regulator of most internal spaces of housing district but also social and cultural catalyst. In this case the infrastructures of landscape, whether they are built in the thickness of the ground or they are ten meters above the ground, become perceptual guiding elements capable to proportionate the great intervention size and bring it back to a human scale; the aqueduct and canals crossing the squares, the roads and narrow streets, they are real district ports, link the private to the most public areas, forming shaded and cool routes, comfortable and diversified connections.

In the case of Evora, the contemporary aqueduct, like the Roman one for the historic city, divided the water in different forms, from simply canalization for irrigation, to private supplying, up to small neighborhood fountains and to small “running water” pools located into courtyards. The Malagueira Quinta has never been sufficiently described by the dynamism of its environmental infrastructures consisting, in addition to the aqueduct, of the green corridors that separate the large residential plaques and of the complexity of the pedestrian “informal” connections that cross the field crops park - the recent mini-documentary film by Ellis Woodman for The Architectural Review titled “Quinta da Malagueira estate” shows clearly these issues<sup>8</sup>. And all things considered in Evora, the approach is that of an extensive and very permeable form of the contemporary city, although the type and form of the housing blocks is designed for a dense city.





Figure 6. The new ecology of Malagueira aqueduct.

Figure 7. Two video cap of the Ellis Woodman mini-documentary for Architectural Review. Font: Archdaily.com

Quite different is the speech of Valencia. Here, a "hard" concept of masterplan articulated on housing towers and large blocks is "domesticated" by an intelligent design of the ground which serves the dual purpose of bringing the powerful large-scale urban work to the scale of the closer agricultural territories and making the public spaces and productive residual spaces of the historic countryside continuous. The ancient Andalusian canalizations are "prolonged" within the collective space to other open-air ducts transforming the same space in horticultural spaces, green spaces for sports, gentle paths and space for outdoor vegetable market. The canals are also used to create appropriate "wet" discontinuities between the built-up plaques, favoring, on one hand, the creation of new "neighborhood identity", on the other, the mitigation of the impermeability of the technical surfaces of the urbanization and the setting of the green. The canalizations then draw an internal cluster capable of contaminating the ground level with a collective agriculture patchwork which is intended to complete the social operation of the residential program, of course, but also to set up an agricultural regeneration system within the city through a new "multifunctional paradigm". The Guallart's description about this issue of work: « In this project the urban transformation is guided by a commitment to ensuring the maximum protection for the existing "huerta" (one of the traditional agricultural zones surrounding the city of Valencia) irrigated with waters from the River Turia by way of channels originally dug by the Arabs some 800 years ago. The new urban development reinforces the protection of the landscape and the environment while at the same time fulfilling a much-needed social function, making housing available at a controlled price to a great number of people»<sup>9</sup>.





Figure 8. The canals infiltration and the new landscape layout of Sociopolis, in Valencia urban fringes.

Figure 9. Two images of land transformation process and first uses of social orchard. Font: provinciavalenzana.es

### 3 CONCLUSIONS: AGRICULTURAL LANDSCAPE AS A TOOL FOR THE CONTROL OF THE CONTEMPORARY CITY'S SCALE.

From this brief theoretical setting and from the exploration of some historicized approaches to the Mediterranean urban landscape, in front of the dissolution of the city in the rural territories, it is possible to summarize the presented theory of the *medium-size city* in three key concepts that follow:

- The Mediterranean landscape with its primary elements and its basic “figures” could still provide an efficient tool to reach a “correct” scale of the city. It contains the principles of “auto-sizing” that allow to return to a sustainable process of cities transformation.
- The reconnection between the west medium-city and its countryside, as it was historically, allows to return to a productive and functional dimension of the public spaces linked to the aesthetic and symbolic values of primary goods (water, vegetable areas, historical cultures); the understanding of public space as a productive natural space could introduce the participation in management of it by citizens, practices already start-up in many regions of Middle-Europe.
- The medium-size city self-sufficient idea is based on the assumption that it depends on the soil and the subsoil where it grows; the level of resiliency and sustainability of a city and its size must deeply depend on the scale of the resources that lie around and beneath it.

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<sup>1</sup> the reference is to the concept of Mouvance and of the “moving Garden” of Gilles Clement.

<sup>2</sup> PhD debate with Joao Nunes, School of Architecture of Cagliari, June 2016.

<sup>3</sup> ref. to Andrea Branzi, *Weak and Diffuse Modernity: The World of Projects at the beginning of the 21st Century*, p. 7.

<sup>4</sup> European Landscape Council conference, Franco Farinelli forum presentation, Carbonia, May 2012.

<sup>5</sup> Donadieu and Boissiere, *agriculteurs urbains et changements sociaux au Moyen-Orient*, in *Interfaces: Agricultures et villes à l'Est et au Sud de la Méditerranée*, on *Campagnes Urbaines* edited by Pierre Donadieu, Donzelli, 2007, p. 68;

<sup>6</sup> ref. To Maurizio Vitta, *Il Paesaggio*, p. 135.

<sup>7</sup> ref. To Roland Barthes's sociological concept of “signs-function”.

<sup>8</sup> <http://www.archdaily.com/592436/reflections-on-alvaro-siza-s-quinta-da-malagueira-communist-housing-scheme-in-evora>.

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## URBAN REGENERATION ON THE EASTERN WATERFRONT AREA OF LISBON: HERITAGE AS A FUTURE CHALLENGE

Ana Nevado<sup>1</sup>

<sup>1</sup>*DINÂMIA'CET-IUL, ISCTE-Lisbon University Institute (PORTUGAL)  
anacnevado@gmail.com*

### Abstract

The contemporary city combines past, present and future scenarios, and it is fulfilled with challenges and opportunities. Considering that globalization and urban sprawl have triggered profound urban transformations, especially on waterfronts, it urges to rethink the future of inner and peripheral urban areas at different scales. In that context, waterfronts play a key role of articulation among local, metropolitan and global scales, due to their strategic location, relevant technical and logistical activities (such as ports and industries). In this paper – ‘Urban regeneration on the Eastern waterfront area of Lisbon: heritage as a future challenge’, we intend to theoretically explore the relationship between heritage and urban regeneration on waterfront areas, specifically on the Eastern waterfront area of Lisbon (EWAL). We highlight it as an old important socioeconomic fringe area located between the Commerce Square and the Nations Park. It is currently a post-industrial, complex and mostly declined territory in the city and metropolitan area of Lisbon. Although the Municipality of Lisbon is currently developing new urban plans for specific areas on that territory and the legal national framework focus urban regeneration as a priority, there is still lacking a global investment on urban declined areas such as the EWAL. We consider that heritage plays an important role on territorial re-development. Its concept has however changed throughout the last decades. We hence value it as an important asset for urban regeneration and local communities, since it links the past to the present and represents the future of cities through re-using pre-existing elements. As a process, urban regeneration must combine both public and private agents in order to promote successful changes. We aim to approach urban decline through an analysis of its physical, economic, political and social implications, considering heritage as an opportunity to link past, present and future of the city as specifically on the EWAL. Methodologically, we consider the EWAL as a case study and urban regeneration plans and operations carried out by the Municipality. We also consider the legal framework and international directives of urban regeneration, as well as the evolution of the concept of heritage by international entities (such as ICOMOS and UNESCO) and several authors (e.g.: Laurajane Smith; David Lowenthal; S. Labadi and William Logan), in order to construct a theoretical proposal of urban regeneration to the case study area, throughout the re-functionalization of industrial heritage examples. We also include a survey of the most significant structures in the case study area as well as the urban challenges that are associated to their future transformation. We conclude that the conservation and the re-use of heritage are crucial to articulate scales, especially between city and metropolitan areas, besides (re)constructing connections with the local communities. Urban past and history give meaning and are seen as main components to the present and future intervention of urban regeneration, since they represent vehicles that establish connections between different temporalities, communities, places and memories. We consider that gentrification is inevitable but its effects may be reduced, if there are integrated and inclusive approaches of urban regeneration and renewal. Heritage is hence a way of re-constructing and re-interpreting the city, not only from the point of view of Architecture, as also from the urban panorama. As future lines of investigation we highlight the urban regeneration possibilities of the pre-existing buildings (such as industrial sets and public spaces on the EWAL territory; e.g.: *Abel Pereira*

*da Fonseca*; old factory dwellings – *Vilas Operárias*) as urban facilities of the city and the metropolitan area of Lisbon.

**Keywords:** urban regeneration, heritage, Eastern waterfront area of Lisbon, gentrification, governance, metropolitan scale.

## 1 INTRODUCTION

The profound changes triggered by globalization and urban sprawl reveal urban regeneration as a priority action, in order to articulate scales and territories. The rapid urban development carried out especially since 1950s in Lisbon and the complex reality of the contemporary and global city, activate several challenges and questions within the scope of urban planning and management, highlighting the importance of urban regeneration.

Waterfront areas are peculiar examples of those changes, especially by economic worldwide transformations, due to its importance in the construction of the contemporary city. Although they are mostly technical, logistical and industrial areas, they are fulfilled with opportunities. On one hand, they reveal the past and contain examples of heritage (e.g.: industrial and port infrastructures). On the other hand, those areas establish important world connections, combining local, regional, national and international scales. However, since many waterfronts have progressively been disaffected and promoted disrupts among urban tissues. Facing major challenges, it urges to rethink the future of inner and peripheral urban areas at different scales. Waterfronts play a key role of articulation among scales and considering their *active* past [11], [15], due to several aspects:

- i. Considering their strategic location;
- ii. By containing relevant technical and logistical activities (such as ports and industries);
- iii. By representing important heritage elements (such as public spaces, buildings and territories) that reveal the past and the construction of the city.

In this paper we intend to theoretically explore the relationship between heritage and urban regeneration on waterfront areas, specifically on the waterfront of Lisbon. We highlight the case of the Eastern area considering it as an old important port and industrial area. It is currently a post-industrial territory that reveals severe signs of urban decline and it is not properly connected to the urban contiguous areas such as the Commerce Square or the Nations Park. Hence, we aim to approach urban decline through an analysis of its physical, economic, political and social implications, considering heritage as an opportunity to connect past, present and future of the contemporary city and especially on the EWAL.

Methodologically, we consider:

- i. the EWAL as a case study;
- ii. urban regeneration plans and operations that are/have been carried out by the Municipality of Lisbon;
- iii. the legal framework and international directives of urban regeneration;
- iv. the evolution of the concept of heritage by international entities (e.g.: ICOMOS; UNESCO) and several authors perspectives (e.g.: L. Smith; D. Lowenthal; W. Logan).

Finally, we construct a theoretical proposal of urban regeneration to the case study area, through the re-functionalization of industrial heritage examples. We also include a survey of the most significant structures in the case study area as well as the urban challenges that are associated to their future transformation.



## 2 URBAN PRESERVATION AND CONSERVATION IN WATERFRONTS

Considering the rapid urban development, re-development, effects and threats of globalization - to natural environments, traditional public spaces and buildings, archaeological sites, etc. -, contemporary cities struggle with several impacts and issues of whether conserving, preserving and managing old reminiscences, i.e., urban heritage [4], [6]. Hence, how to conciliate the conservation of urban heritage and territorial development?

Although the conservation of urban heritage in Europe has started in the mid-XIXth century [6], it has been considered and investigated especially long after the II World War considering vast urban areas that were destructed. Since rapid economic and social recovery was needed, the legislation of the management of land was revised (e.g.: UK) and many urban sprawl phenomena occurred. It was only in the 1950-60s that the renewal of inner areas of the city were considered (e.g.: USA), in order to protect its heritage [6], [7]. The interest departed not from the local or central governmental institutions, but from local citizens who actually valued the historic, cultural and sites in their communities [6]. In 1962, in France, the need for urban development led to the creation of the *Malraux Law*, in order 'to protect broad areas of historic, aesthetic, architectural or scientific interest, rather than simply focusing on individual monuments' [2], [6]. In 1964, a group of conservation architects that were working on the restoration of buildings after the II World War, met in Venice and formalised a set of principles to guide the conservation practices (i.e., the 'Venice Charter'), however under the old focus on monuments and sites, ignoring modern concepts [6]. In 1965, that same group created ICOMOS that work under UNESCO World Heritage Convention as an official advisory body to the World Heritage Committee under the scope of cultural heritage [6]. In fact, the creation of UNESCO in 1945 led to the internationalisation of the discussion and the approaches of urban heritage, and its connection between development and sustainability ([6]. In 1970s, the adoption of the '1972 Convention Concerning the Protection of the World Cultural and Natural Heritage (i.e., the 'World Heritage Convention') appeared from the analysis of the unsustainable models of development and their impacts on heritage, reflecting about the adverse environmental consequences of urban growth and affirming that the changing social and economic conditions aggravated the situation of damage and destruction besides the traditional causes of decay [6]. The Convention also reflects about the need to care of non-renewable resources, including cultural heritage [6], which was especially important since the oil crisis in 1973. During that decade, the conservation of urban heritage and urban fabrics was investigated and carried out especially through integrated conservation strategies [9].

The conservation of urban landscape was then also considered in the conservation and not only iconic buildings or monuments as it happened in the beginning of the conservation of urban heritage movements and where local communities were totally excluded [6]. According to Labadi and Logan [6], in the beginning of the XXth century, the Architect Camilo Sitte adopted a global comprehension of the 'urban fabric as an aesthetic entity', focusing on urban morphologies, and the urban planning with regular and grid-plans could not be detached from the socio-economic development. In this paper, we also adopt that position, defending that economic, social and cultural aspects must be considered in urban planning, management and conservation. Besides, we consider the protection of the historic urban environment as a whole and the integration of development projects within urban ecosystem, like Patrick Geddes has theorised [6]. According to that urban planner, the urban development projects should be seen in the broader context of the surrounding countryside as an integral part of the ecosystem [6]. We hence consider it as roots for the contemporary and sustainable regional territorial development and conservation.

But according to Smith (2006), 'there is no such thing as heritage', since heritage is not a thing with defined meanings and values, but an 'inherently political and discordant' practice that performs the cultural 'work' of the present [12]. Hence, everything can be considered as heritage since it is publicly recognized as such and gathers features of identity of a community/society. Heritage is nothing but a political and ideological negotiation. Hence, not only old but also modern/contemporary elements may be considered, as well as immaterial dimensions (e.g.: cultural values). Smith declares that heritage tells us more about the present than the past [12].

Heritage is both a *process* and a *performance*, relating the act of visiting with the experiencing and invoking memories, and in which we are able to identify values and sociocultural meanings that contribute to make sense of the present [12], [13]. The concept of heritage is, however, subjective, plural and immaterial [12]. Although the city embraces not only central but also peripheral areas, the conservation of urban heritage has mostly focused on inner areas, in order to emphasize identities, places, memories and sociocultural values [12], [13]. The author draws attention to the re-use of urban heritage - as a way of regenerating and promoting new urban centralities – with local populations [12]. Since heritage embraces both material and immaterial dimensions, the value of places, objects and intangible events are therefore attributed and/or recognized through the act of naming them ‘heritage’, as well as by the processes of heritage negotiation and re-creations that occur at them [13].

The concept of urban heritage has been developed and theorised by international organisations (such as UNESCO and UN-Habitat), seeking for balancing the conservation and urban development [6]. The conservation of urban heritage must be inserted in urban planning and management policies and integrated approaches. It is especially directed to urban contexts with a rich legacy of the past, both tangible and intangible [6]. But for whom are the conservation and development policies and programmes established? Are they directed for local communities or only potential (private) investors? L. Smith defends that there is an Authorised Heritage Discourse (AHD) – which is practiced by international entities (such as UNESCO and ICOMOS) - for archaeological engagement with community groups that influences the ways that heritage is interpreted and managed [12], [13]. The AHD requires a critical understanding of the nature, history and type of archaeological interactions with ‘heritage’ and with the interests of the communities [13].

Lowenthal (1985) developed an important critical review about the past and the way(s) that its changing role promotes in contemporary life, questioning why we want, know and change the past [8]. According to the author, the past is not only the past since it allows us to take conscience of the present, whether imposing dominant constraints to the evolution of the present, whether promoting a basis and a legacy to each generation [8]. The inherited physical elements, traditions and cultural values are however polemical, due to the interpretations that they suggest and by the cult of preservation and nostalgia that they induce [8]. However, the past is an important basis of national and personal identity, especially towards the massive and rapid changes of contemporary societies [8]. The interpretation of the past has, however, changed throughout the centuries and societies [8]. On one hand, the author draws attention to the misuse of the past nowadays, since it may important to understand the present, and on the other hand sow how and why the past has been excessively worshipped especially during times of great technological change [8].

Many other authors, such as Logan (2016) criticize aspects of the management of urban heritage, focusing on bottom-up approaches that consider local communities in the territorial re-development. Heritage is considered as a political and social construction that includes places and cultural expressions that are inherited from the past and contribute to validate the identity of communities, societies and nations [1], [6], [7]. However, heritage protection does not only depend on top-down governmental approaches but also by bottom-up actions, involving local communities, in order to get a sense of identity and ownership [6], [7]. Hence, heritage displays a leading role since it provides the establishment of foundations for sustainable development of cities into the future [6].

Urban studies about heritage conservation and preservation have evolved and nowadays it is not only about the architectural and/or archaeological conservation of monuments and sites (Logan 2016), nor about only inner areas. For instance, waterfronts and old port areas are privileged territories for urban history studies, since those urban areas allow to know about the processes of urban occupation and social appropriation [14]. Waterfronts are now considered as sites of historic and cultural interest where urban regeneration is needed [14]. However, the proposals (e.g.: strategic programs, projects, plans) must consider the historic features of the place [14]. Rufinoni considers that post-industrial sites are also heritage and territories of preservation and conservation, just like other urban areas of the contemporary city [14].

In the contemporary Portuguese panorama, we highlight the case of the waterfront of Lisbon, specifically the Eastern waterfront area.

### 3 THE EASTERN WATERFRONT AREA OF LISBON

In this study, the EWAL is located near Tagus River, between two important centres (i.e., the Commerce Square and the Nations Park; Figure 1).



Figure 1. Location of the EWAL in the city and metropolitan area of Lisbon.

The EWAL started as a countryside area in the XVth century, with leisure farms, convents, recreational docks and natural river beaches [3], [10]. In the subsequent centuries, with the inclusion of manufacturing production structures, the morphology of that territory started to change. Later, with the industrial Revolution in the mid XVIIIth century and especially with the installation of heavy productive industry, infrastructures (e.g.: rail and roadways) in the XIXth century, that rural genesis was overlapped and transformed [3], [10], [11]. In 1834, with the extinction of the religious orders, the EWAL witnessed a re-functionalization of the existing buildings, where convents and churches were transformed into factories or military structures. That implied not only a physical but also a socioeconomic transformation. In the 1930s, there was a need for dislocating an important factory of gas and electricity from the Western area of the city (*Belém*) to the Eastern area (*Matinha*). That change was completed in 1940s, only transferring gas and constructing new gas ducts until *Baixa Pombalina* area. Since then until 1970s, it was the most important industrial and port area of Lisbon and its metropolitan area. But although the EWAL was an important urban centre due to the existence of industrial production and military bodies, it was progressively being apart from the old city because of the pollution levels, the low income inhabitants and the lack of new accessibilities. That was also reinforced with the construction of new low income and municipal neighbourhoods since 1960s, such as Chelas and Olivais.

In spite of the international event EXPO '98 and the subsequent huge urban regeneration operation (currently, the Park of the Nations), the EWAL did not beneficiate from a global investment on conserving, preserving and regenerating the pre-existing elements [11]. It was then promoted single and punctual interventions within cultural (e.g.: exhibitions in the old warehouses of *Abel Pereira da Fonseca* industrial set) and physical renewal (e.g.: the railway station of *Santa Apolónia*) during EXPO '98 event, within the initiatives of *Caminho do Oriente* [3], [10].

The EWAL is currently a post-industrial and an old important socioeconomic fringe area. Since it has crossed several decades and urban activities since the XVth century until today, it is a complex and fragmented territory (Figure 2) [11].



Figure 2. Current view of *Xabregas*, in the EWAL. (Photograph taken by the Author, October 2014).

Due to the sequential superposition of temporalities and urban memories, the EWAL still contains several industrial sets (e.g.: old and abandoned factories), old factory dwellings (i.e.: *Vilas Operárias* Figure 3) and local clubs and associations.



Figure 3. Partial view of *Vila Flamiano*, an old factory dwelling located in *Rua Gualdim Pais*, *Xabregas*, Lisbon. (Photograph taken by the Author, October 2014).

The Municipality of Lisbon has recently developed several urban plans for the EWAL, in order to consolidate and regenerate that territory (e.g.: *Plano de Pormenor da Matinha e Jardins Braço de Prata*; *Plano de Urbanização do Vale de Chelas*; new Eastern Hospital Park) [11]. However, despite public participation is a legal obligation, the international directives and the national legal framework [5], the proposed urban plans remain as abstract and complex documents without benefiting from a real and effective public discussion.

According to the President of the Municipality of Lisbon, the EWAL is an emergent urban area due to its potential in the economic field and at an international scale [16]. It is planned to re-use vacant buildings (such as old factories) to create enterprise iHubs, promoting an integrated operation of urban regeneration. In order to avoid gentrification, they plan to include mixed uses that benefit local inhabitants, as well as promoting urban renewal and improving local housing.

However, considering that there is not a global plan for the regeneration of the EWAL from the Municipality, nor conservation principles for the specific urban heritage that contains, we propose below a theoretical and prospective proposal.

## 4 THEORETICAL PROPOSAL

In order to promote urban regeneration re-using the heritage and territory of the EWAL, we outline the following considerations:

- i. Since urban regeneration adds value to the existing territories and communities, gentrification may occur. Hence, we consider that urban regeneration operations can only be carried out through inclusive and integrated operations, working with populations and respecting the original territories (i.e., its morphology, structure, buildings and public spaces).
- ii. Although urban regeneration operations promote new logics and economic development, especially in post-industrial waterfronts, identity is a crucial issue. Thus, although new is introduced, it is needed to combine it with old. Besides, it is crucial to consider immaterial dimensions, such as traditions, cultural values, etc. Hence, Heritage displays an important role in urban transformations, being able to link people and urban space.
- iii. We believe that urban regeneration must invest on the improvement of accessibilities and infrastructures, in order to promote connections of the urban critical areas with other centres of the city and its metropolitan area.
- iv. Inserted in bottom-up and top-down approaches, re-functionalization is the key to the successful use of heritage and the pre-existing city. Urban heritage is a future challenge for urban conservation and re-development. We propose the creation of a re-functionalized net of public buildings, facilities and spaces (5.1) in order to re-structure and regenerate the EWAL from the inside to the outside, as well as to promote that territory as a new urban centre and to connect it with the city and the metropolitan area.

In order to implement the proposal in the EWAL mentioned above, we present below a brief survey of the most significant structures in the case study area as well as the urban challenges that are associated to their future transformation.

### 4.1 Survey

#### 4.1.1 Significant structures in the EWAL

Since there is a rich historic and urban legacy, we selected the following structures and sets in order to regenerate them and create a net and/or urban axis of re-functionalized buildings and public spaces:

- i. *Abel Pereira da Fonseca* (Figure 4);
- ii. *Palácio da Mitra* (Figure 5);
- iii. *Rua do Açúcar* (Figure 6);
- iv. *Vilas Operárias* (Figure 3).





Figure 4. View of Abel Pereira da Fonseca set in Marvila/Poço do Bispo, Lisbon. (Photograph taken by the Author, July 2014).



Figure 5. View of Palácio da Mitra, located in Marvila/Poço do Bispo, Lisbon. (Photograph taken by the Author, July 2014).



Figure 6. View of an old and decadent building in Rua do Açúcar, Beato/Xabregas, Lisbon. (Photograph taken by the Author, July 2014).



#### 4.1.2 *The urban challenges that are associated to the future transformation of the EWAL*

The future transformation of the EWAL is challenging and emergent, considering the several municipal plans. However, it is a complex set of social, economic and urban transformations, where gentrification is not discarded. We believe that strategies of conservation of urban heritage (i.e., the territory and the local communities of the EWAL) should take place.

On one hand, one of the biggest difficulties in executing urban conservation through the Municipalities is the issue of the ownership of buildings and the lack of available/reserve lands to operate. On the other hand, it is practically impossible to promote an effective public discussion about the proposed plans of urban regeneration, since they are mostly technical, abstract and complex to the general population. We believe that it is needed to include the action of multidisciplinary work teams (e.g.: Sociology; Anthropology; Economy; Architecture; Urban Planning; etc.), in order to contact with the population in the early and middle stages of the preparation of the plans and not only in the end of the processes. It would contribute to define integrated, inclusive and efficient proposals, as well as reinforcing the issues of identity and ownership of the citizens and territory.

Another challenge imposed by the future transformation of the EWAL is the connection with other urban centres of the city of Lisbon and its metropolitan area. We believe that it is possible to reinforce and redefine both new and existing accessibilities, in order to articulate scales.

### 5 FUTURE LINES OF INVESTIGATION

As future lines of investigation under the scope of urban regeneration of post-industrial areas and heritage we highlight the urban regeneration possibilities of the pre-existing buildings (such as industrial sets) and public spaces. In the specific case of the EWAL, we consider:

- i. the need of the Municipality carrying out strategies of urban regeneration with and for local communities. In that sense, it is needed to investigate ways of combine strategies of socioeconomic development, urban conservation and improving local housing conditions, in order to prevent gentrification.
- ii. The need to investigate about and apply urban integrated conservation strategies [9].

### 6 CONCLUSIONS

The EWAL is a complex territory with an important post-industrial and port legacy [11]. Hence, it is needed to conserve and preserve not only buildings but also the existing urban fabrics.

We highlight the following final considerations and main conclusions:

- i. The conservation and the re-use of heritage are crucial to articulate scales, especially between cities and their metropolitan areas;
- ii. They also provide the ability to (re)construct connections with the local communities;
- iii. Urban past and history give meaning and are seen as main components to the present and future intervention of urban regeneration, since they represent vehicles that establish connections between different temporalities, communities, places and memories;
- iv. Although gentrification phenomena is inevitable, its consequences may be prevented or even reduced, if there are integrated and inclusive approaches of urban regeneration and renewal;
- v. Heritage is a way of re-constructing and re-interpreting the city, not only from the Architectural perspective but also from the urban point of view (i.e.: urban planning and management);
- vi. Post-industrial waterfront areas are potential targets of integrated approaches of urban regeneration, due to their morphological, urban and historic features. It urges to

establish policies, directives and acting priorities, articulating public and private promoters.

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## DEDICATED TO A BETTER FUTURE

**Dorina Tărbujaru<sup>1</sup>, Ana Muntean<sup>2</sup>**

<sup>1</sup>*Assoc. Professor, "Ion Mincu" University of Architecture and Urbanism (ROMANIA)*

<sup>2</sup>*Stud. Arch., "Ion Mincu" University of Architecture and Urbanism (ROMANIA)*  
*dorina\_ot@yahoo.com, anamaria.muntean@efden.org*

### Abstract

EFdeN is an energy efficient solar house designed for the urban environment as a solution to the Bucharest's issues of low density and mobility, an adaptable housing unit both to the environmental parameters and to the inhabitants' necessities and desires. What is different about this dwelling in the Solar Decathlon Europe 2014 context is neither the flexible partition nor the intelligent systems that activate its installations, not even its modularity or the sustainability of the materials used. What stands out in the EFdeN prototype is the steadfast step towards innovation in energy efficiency: the integration of a productive bioclimatic greenhouse. Dedicated to the "urban farming" concept, this component is the central architectural element of the house being both a source of a spectacle of light on the inside and a community generator on the outside.

EFdeN Architectural Concept – The EFdeN project combines a contemporaneous langue of architecture with the traditional way of living in Romania. This approach is made to satisfy the nostalgic feeling of the people regarding the traditional houses and the new life style that they are having now. The house is made from primary volumes and the result is an archetype that will ensure the physical comfort of the users. Regarding this aspect a key point of this project is the integration of nature in housing through the greenhouse. This greenhouse ensures the basic food for the family and the thermal comfort in the winter time.

**Keywords:** Sustainability, Nature, EFdeN, Greenhouse, Solar, Comfort.

"Architecture is a social activity that has to do with some sort of communication or places of interaction, and to change the environment is to change behaviour."

Thom Mayne

## 1 ARCHITECTURAL CONCEPTS

### 1.1 The context

#### 1.1.1 A prototype – a residence – a city of the future

In the industrialized version, the EFdeN prototype will become a solution to problems such as habitation, density and mobility - nowadays current problems of Romania's capital city. We sustain the concept of a polycentric Bucharest, developing the abandoned places within the city by building on these very spaces real sustainable districts and a transportation network based on renewable energies. We want a biophilic Bucharest, where nature has its place by default, creating social and economic activities.



Figure 1. Title of the First Figure Figure 1. EFdeN Prototype; Source: Alin Craciun

## 1.2 The EFdeN concept

### 1.2.1 Filling the voids in the city- the EFdeN concept

Summarizing the problems that Bucharest is facing – urban sprawl, poor densification of housing in the suburbs, its zoning that contains the poles of urban development, brownfield sites, inadaptability to collective housing implemented in the communist time and also the loss of architectural identity and housing traditions - we can identify the aspects which require an immediate answer. A particularity of Bucharest that could be exploited is the central position of industrial sites, which offer a basis for these residential complexes.

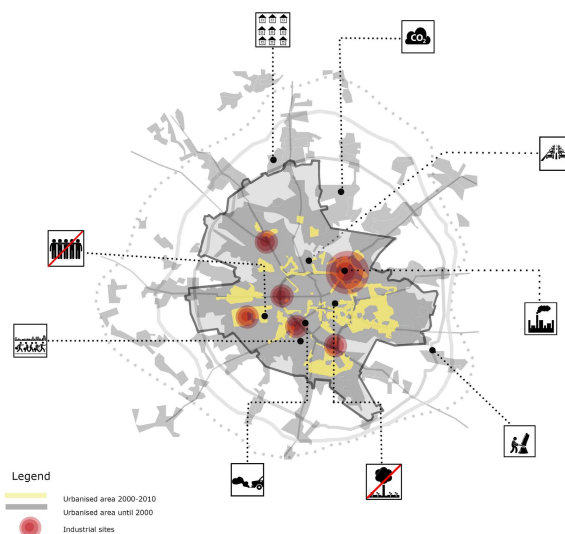


Figure 2. Concept; Source: EFdeN Gallery

### 1.2.2 The reuse of brownfield sites in Bucharest - case study of Obor Brownfield sites in Bucharest

The site chosen to represent this transition and reuse is situated in the Bucur Obor area, and the project is conceived in order to respond to the local context. Adaptation to the natural and built characteristics of the surrounding area is a goal, offering an attractive design, with multiple functions, an attraction to the vicinities, strengthening the community. We seek to integrate the project into the site and the city, with the advantages of a green sustainable neighbourhood and of a strong community, and on an urban level we try to solve the mobility, density and accessibility issues, but also the voids in the city created by brownfields.

### 1.3 Urban design

#### 1.3.1 Proposal

The urban design proposal follows three main objectives: the first one is to intensify social interaction for the community by creating green spaces which offer urban farming areas. The second one is to create a pedestrian spine as an identity element which revives the past qualities of Bucharest, with public facilities and recreational spaces along its way. The third goal is to obtain an optimal microclimate by encouraging a sustainable and energy efficiency solar development, with optimal orientation and using solar energy. Inside the neighbourhood are defined five capsules for residence, which are linked by a wide green area dedicated to urban farming. Other dwelling units complete these spaces, while the public gardens provide different images to the area. Urban form reflects the strong connection between activities, public spaces and optimal orientation.

Regarding the organization of the residential complex, it will be formed of linear buildings, with common spaces for socialization. The project acts as a social catalyst, offering activities which lack at this moment from the Obor area. The activities take place along green corridors at ground level of the buildings, the space between the buildings varying from public to semi-public and to private, which is the garden. This urban space has flexibility, being composed of inflexion nodes which offer diverse activities. The green-house will represent a space where neighbors can see and be seen, a true spectacle of nature and life.



Figure 3. Urban design proposal; Source: EFdeN Gallery

#### 1.3.2 Semi-collective housing

By proposing semi-collective housing, the EFdeN project merges the need of the inhabitants of Bucharest for comfort and green spaces offered by an individual house with the requirements of the density in the city. To respond to the need for densification and maturation of the human society, the typology of semi-collective housing offers openings for some semi-public spaces inside the residential complex that can be used for common purposes (sports fields, playgrounds for children, social spaces). The organisation is given by a few principles: a diversity of apartment typologies, a good orientation of the interior space in correlation to the cardinal points for energy efficiency and for the wellbeing of inhabitants, a large circulation that plays also the role of a socialization area, a greenhouse for each dwelling – correlated to the size of the dwelling, and also a mix function according to the position of the semicollective housing on site. The typology proposed for the project is that of row houses with outer circulation which respond both to energy efficiency and to the specific mentality of the Romanians who want their own yard and their own entrance. Modularity represents a key point in our project, offering a large diversity of the interior space, as well as adaptability to different types of users, from small spaces such as studios to two-room or three-room apartments or even to duplexes.

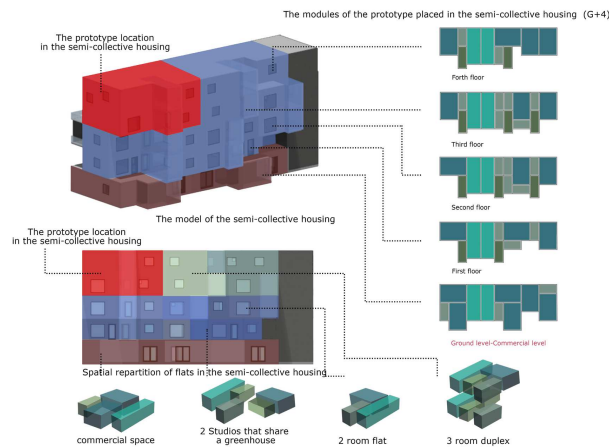


Figure 4. Typology; Source: EFdeN Gallery

## 1.4 The prototype

### 1.4.1 The prototype within the semi-collective housing

The position of the prototype within the semi-collective housing is at the upper levels, more specifically on the 2nd and 3rd floor, on the ` of the semi-collective building. It is accessed through a cursive on the North side of the semi-collective housing, while the access to the upper floor is made through an interior stair. The end position within the building offers the possibility of 3 opening directions: the SE, the SW and the NW. However, given the diversity and the modularity of the semi-collective buildings on site, the prototype can also have a central position within the semi-collective housing.



Figure 5. The prototype; Source: *Imi place sa fac poze*

### 1.4.2 Introverted architecture

For the competition, we chose to develop a small piece of the whole semi-collective housing presented in this project. The prototype is a duplex composed of the four different modules encountered throughout the semi-collective building, which are combined in this case both horizontally and vertically. It is designed as a single-family residence, having a 110 m2 usable area distributed on two levels. The ground floor corresponds to the area where current daily activities take place, consisting of the entrance area, the kitchen and dining area, a bathroom and the living area, with the stair to access the upper level. Arriving at the second floor, there is the master bedroom, a bathroom and the children bedroom (or the study room, depending on the function desired). On each level there is a technical room which contains the necessary equipment for all the technical solutions of the house.

### 1.4.3 The greenhouse- key point of the EFdeN project

The core of the house, however, in contrast with this white, introverted volume, is the green space encapsulated into the volume. This space represents a place of total exposure for both the outside



and the inside worlds. It also represents an oasis from everyday life, a piece of nature inside the house, with multiple functions, just like the individual housing gardens of Bucharest used to have in the past. From a decorative function to gardening and agricultural use, from a place of relaxation to a place of social interaction, the greenhouse offers a range of uses adaptable to the needs of the inhabitants. Referring to the exterior, it is the first plane of perception in the house's composition, becoming an important method of approaching the concept of housing, through a transit space. It can be considered a glass-case, extending, visually, the life of the inhabitants to the exterior and thus participating to other's lives as well and to the richness of the perception, encouraging communication between neighbors. On the other hand, the green space is a protected one; it can also function as a filter for the inhabitants of the house, from the outside world.

Analyzing it from the interior, the greenhouse is the focus point of the project, with the entire house surrounding it. Everyday life gravitates around this space, drawing light, heat and fresh air from its resources. This space preserves functional coherence of a normal house but it also generates the impression of a completely transparent space, which is segregated logically through clearly defined functions. Through the greenhouse, these spaces have permanent visual continuity with each other, linking the dining area to the living room. This space has multiple functions: it represents a productive place for growing plants during summer, and plays the role of a thermal buffer – providing heat for the house in wintertime, likewise. Moreover, the greenhouse is an instrument of raising awareness of residents on the fragility of the environment and helping them to become more responsible towards nature. At the same time, the plants inside the greenhouse need minimum care: through the reuse of grey water and the use of rainwater, we irrigate the vegetable area and green space inside and outside the house.

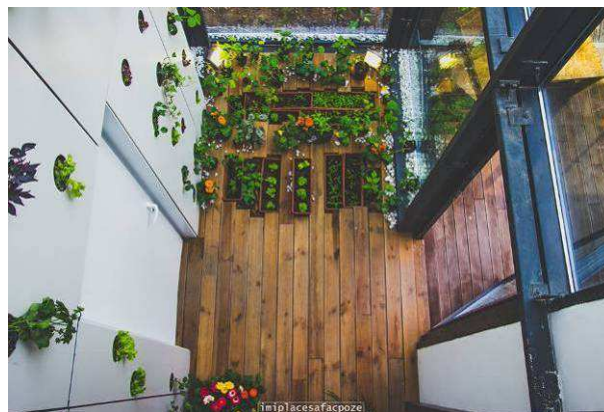


Figure 6. The greenhouse; Source: *Imi place sa fac poze*

#### 1.4.4 Passive

The process of creating solar architecture is driven by certain bioclimatic strategies that we considered mandatory for the project. The first step in this direction is the house's simple shape: it was designed to assist energy efficiency in terms of thermal inputs. In this regard, an important point in our strategy is the greenhouse. During winter, it serves as a thermal buffer due to its South-Eastern location. The glazed surfaces of the greenhouse facilitate the solar gain during winter, when the incidence angle of the solar rays is low. Also, in wintertime, the greenhouse will provide reheated air which will be used in the house thermal heating system. During summer, the greenhouse's volume will be overshadowed with a canvas surface, a passive mean of reducing overheating without additional energy consumption. The prototype's facade is important for the energy efficiency. It is based on a ventilated system which helps the overall cooling during summer, supported also by the exterior material- thin, white ceramic panels. Another passive strategy is using other thermal buffers: the technical chamber and the windfang, placed on the North side, will protect the house of wind currents. The technical chamber will aid the house in terms of heat transfer and air pre-heating. Furthermore, thermal mass elements such as black granite will be placed inside the prototype in front of the greenhouse, elements which will help gain heat during daytime (when temperature rises) and release it during night-time (when temperature drops), being shaded during summer. Moreover, we

decided to place plasterboard phase changing materials on some of the interior walls. These phase changing materials will increase the house thermal inertia, heat storage, insulation and it will create an even room temperature without creating draughts and other unpleasant side effects of mechanical air-conditioning systems.

#### 1.4.5 Sustainability strategy through materials

Thinking about sustainable choices whilst creating minimalistic architecture, the house's configuration is carefully designed for advantageous illumination, great thermal protection adapted to the extreme weather conditions in our country and low energy consumption. It gains maximum sunlight through the greenhouse incorporated as a core space and through the windows placed both on the South oriented facades. The thermal efficiency is solved through thick exterior sandwich panels which are well insulated and also a triple-glazing system for the windows. Likewise, an important focus in our strategy for the prototype's construction has been making use of low-cost, renewable and long-life cycle materials which originate or are processed from/at sources close to the prototype's construction place (such as the metal structure, wood-for the wall panels, cellulose, cork or natural stone for the interior finishing). We consider the prototype's structure an innovation, as far as the constructive system is concerned. It is the same one detailed in the housing complex; therefore the corner unit has a structure which consists of a mixed system of wood and metal, representing a new approach for Romanian's collective assemblies. We intend that these materials be used due to their recyclable nature and abundance. Materials which are part of the structure (not only from our house) come from recycling and are also 100% recyclable, through advanced processes that do not generate CO2 emissions. This system brings long-term economic benefits, besides ecological ones, through durability and ease of processing. The construction is also quite light, which means savings in concrete and other materials necessary to create a classic foundation. High resistance to earthquakes due to flexibility and reduced execution time, represent other advantages besides the one mentioned above.



Figure 7. Materials; Source: EfdeN Gallery

#### 1.4.6 The outside shell

A considerable aspect in the house's introvert image would be the treatment of the outside shell of the house. We use ceramic slabs with a size of 1m/3m to coat the ventilation system of the facade. From a constructive point of view, this is an innovative system in our country, where ceramics are still used for traditional methods of construction. The shading systems of the windows have the same material in order to preserve visual continuity. We have tried to explore the full physical capabilities of this material, so we opted for drilling the shading system slabs. By perforating them we have enhanced their effect, transformed the spaces according to solar light, and differentiated them with different drill sizes. The shading system that we have come up with acts as a shield during night-time, for increased intimacy, but it is not completely opaque. Basically, our house actively engages with its surroundings, and it is in a continuous metamorphosis. Through this type of facade we can save up to 30% more energy for heating and cooling the house. During winter it acts as a heat buffer – reusing heated air and in summer the white color and texture of the material provide protection from

sunlight. Furthermore, since the material recycles 100% and has a lifespan of over 50 years, it brings economic benefits. The ceramic layer that improves sound insulation is also a major factor. The grip minimizes execution time, and the ventilated ceramic facade requires minimal maintenance, as broken slabs can be quickly replaced.

#### *1.4.7 Architecture and natural lighting*

The lighting level obtained through these openings was not sufficient, so its supplementation was sought through an extension space of the house which would be used as a screen: the greenhouse represents this extension space in the EFdeN project. We consider that the emergence of a second light source in a room creates a certain uniformity of the light and reduces the dazzlement. The prototype represents the corner unit from the housing complex, thus it has the benefit of 3 naturally lit facades through glass openings, which is an important factor for natural lighting. The rest of the apartments are characterized by only two exterior facades, which only emphasize more the greenhouse's function as a second natural light source.

#### *1.4.8 5.2.4. Acoustic Design*

According to an optimum acoustic comfort, EFdeN team will use technical solutions, materials and finishes in order to fulfil the requirements of the SDE competition. Noise reduces the quality of life, perturbs the mind, and affects periods of rest and relaxation. Also, unwanted noise can have significant impacts on animal health and wellbeing. The way that sound behaves and affects the people in the room depends heavily on the room geometry and existence of absorption material.

## **2 INTERIOR DESIGN**

Our concept commenced from an attempt to answer the issue of detachment, human disconnection from reality, and the roots of its own existence. As an individual, the man is molded by the society he lives in. New technologies are changing our existence, with its multidimensional effects - by creating new forms of leisure and new virtual realities. This are the kind of times when we need to be guided back to the wisdom of the other living beings inhabiting the planet have for us. We need to reconnect with nature to bring our lives back into balance.

### **2.1 Principles**

#### *2.1.1 Bring the outside inside*

We focus on the concept of interconnectivity with nature - in a symbolic way and beyond - because human life has always been linked to nature. "Bring the outdoors inside" - emphasizes the importance of the relationship with nature in search of experiences beyond the walls and limits surrounding us. Thus, we will integrate in our space different accents of green that beside the decorative effect, have a lot of therapeutic benefits. For example, the plants filter the air, control the indoor humidity, reduce toxicity, oxygenates the rooms, have a calming effect and create a relaxing space.

#### *2.1.2 Step by step for a sustainable living*

Ethical living is the philosophy of making decisions for daily life taking into account the ethics and moral values, particularly with regard to consumerism, sustainability, environmentalism, wildlife and animal welfare. Nowadays it is largely a personal choice and not an organized social movement. An example is the bathroom batteries, with a sensor that allows the water to flow just as long as you are using it.

#### *2.1.3 Free to change!*

There are limitless benefits to purchasing furniture that's able to change its functionality. When moving or changing up your decor, having furniture that is able to transform guarantees you will keep it a longer period. Having multifunctional furniture means fewer items and therefore, more space available.

#### 2.1.4 *Emphasis of culture*

We consider that every individual, social and cultural element, contributes to our journey as a country in search of our own identity. Therefore, we are trying to integrate some Romanian iconic motifs in the design we propose (example: the motifs from the traditional costumes).

### 2.2 **Interior organisation:**

The interior space is organized around the greenhouse, emphasizing a strong visual contact between the green space and the rest of the interior. The greenhouse opens with glass walls towards the living room and the dining room at ground floor, and towards the two bedrooms on the upper floor in order to allow the richness of the nature to be integrated into the life of the inhabitants and into daily activities. Our concept emphasizes nature as an important part of the modern life, while functional and aesthetic features are combined. The interior space is well adapted to the needs of the users, encouraging their wellbeing. At the same time, an important principle is the need for intimacy through an introverted architecture, the green house being the only exception, as it plays a double role. The continuity of the space is sought on a horizontal plane, but also on a vertical plane through the green house that occupies two levels. Another important thing was not to obtain spaces that are unusable, which is why all of the spaces in the house have well thought functions, discouraging 'space consumerism'.

#### 2.2.1 *Windfang – the first impression*

The windfang is the entrance area inside the house, the space that connects the exterior to the interior, also becoming a filter between outside and inside.

#### 2.2.2 *Kitchen: cooking with feelings*

Inspired by nature, this futuristic green kitchen concept will use water and heat, generated from appliances, to fuel other functions in the eco-kitchen, promoting a kitchen oriented towards the concept of sustainability. For the dining area we designed an island worktop and storage. This island is a piece of furniture that can be moved using the masked wheels - here is stored an extendable table for eight people and the expandable system. The table has a simple and geometric design, and the expansion system in the middle is a beautiful piece as well. Because this dining arrangement is not fixed, nor is the lighting equipment, therefore in order to suit the position of the table and the island, the luminaires can be moved on a rail. The seats are made of recycled material, and they could be stored in the technical room in a scenario that requires a smaller table. The kitchen has direct access to the green space, having the chance of collecting our own vegetables or spices manually, supporting the concept of urban farming.



Figure 8. Kitchen; Source: Alin Craciun

#### 2.2.3 *Livingroom: a place in bright colours*

From inside the living room, the greenhouse appears as a scenery screen and also as a filter that connects the urban space with the interior living spaces, featuring a completely natural lighting during the day. This creates a visual seating area and at the same time gives the viewer a sense of

peace and relaxation. The center piece of the living area is the sofa, modular and transformable with strong visual impact. The outer fabric choice (tapestry) is a neutral color (gray), with soft texture, but also resistant to heavy traffic. Its pillows are made of Basotect<sup>®</sup>, the most advanced sound-absorbing material present - it is generally used to treat rooms with reverberations and echoes. The advantages of this material are open structure - open-cell, very low weight, thermal conductivity: approx. 0.035 W / mK, low flammability according to DIN 4102 B1, being suitable for any application in the field of acoustics.



Figure 9. Living; Source: Alin Craciun

#### 2.2.4 Under the stairs area – The reading corner

The first item of the pack is the lounge chair, made of stainless steel pipe structure completed with different colored rope (black, beige and light turquoise – our team's color.) The ropes create the seating and the backrest area and they achieve together a playful geometric look. The bookcase is a modular piece of furniture made of wood and stainless steel, starting with a basic cube shape, than cutting down different sides of it. The cube shaped module can be arranged in any desired configuration.

#### 2.2.5 Master bedroom – a space for everything

The master bedroom is a flexible and modular space with possibilities of repartitioning, designed for different social scenarios, with the option of closing different areas with lockable sliding panels, creating an open space. Thus, we have a multifunctional space: an office in the morning, a meditation space in the afternoon and a space sleeping area in the night.

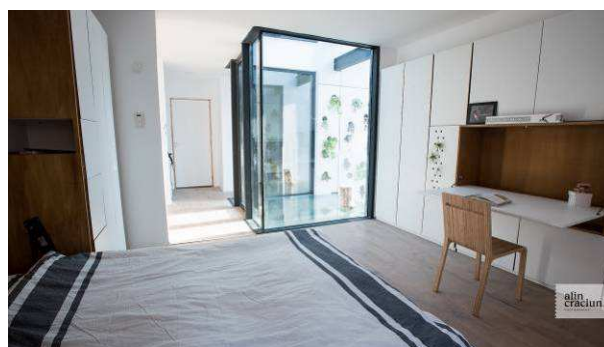


Figure 9. Master Bedroom; Source: Alin Craciun

#### 2.2.6 Second bedroom - for our children and guests

This space follows the same concept used in other areas of the house, being a reconfigurable space with green accents. The space includes two main modules and a secondary one. The two main modules solve the major functions of the room, whereas the secondary one has a double function: as storage space and as a nightstand.

### **3 CONCLUSIONS**

Turning back to the remnant elements from the semi-collective housing within the prototype, the special treatment of the North-East facade is part of the architecture strategy. The appurtenance to a whole complex of dwellings is emphasized by ending the ceramic ventilated facade at the N-E side of the house.

Furthermore, a printed canvas will be used as a statement to simulate existence of a blind wall on that side and also the (virtual) continuity of the house with a next unit, as it takes part to a whole and it is not an individual house.



## MOVING TOWARDS SUSTAINABILITY

**Dorina Tărbujaru<sup>1</sup>, Alexandra Tatar<sup>2</sup>**

<sup>1</sup>*Assoc. Professor, "Ion Mincu" University of Architecture and Urbanism (ROMANIA)*

<sup>2</sup>*Stud.Eng., member of Structural department EFdeN (ROMANIA)*  
*dorina\_ot@yahoo.com, alexandra.tatar@efden.org*

### Abstract

From the necessity of bringing nature closer to those who live in the crowded cities, drowned in concrete.

The ancient relationship between human and nature has always been a strong one, but nowadays the human mentality, due to our development, goes in one direction and one direction only: we can have nature close to us only by living in individual homes with large gardens, at the periphery. In the geophysical context of Bucharest (the most dense city of Romania), this trend leads to urban sprawl, which has evolved in other problems, such as heavy traffic, an inappropriate use of land resources, pollution and an increased carbon footprint. So we easily reached the essential question of our urban design research: how can we bring nature in the middle of the big city, closer to the individuals? The answer seemed to be *more* simpler in the perspective of sustainable strategies: find solution for building in a sustainable manner, promote in-fill development (rational density instead of spread density) and create human-nature relationship right in the middle of the city.

A strategy for the whole city - a particular realistic solution. In order to response to the Bucharest's urban sprawl our main strategy is to identify the fractures in the urban fabric, resulted from industrial decline and to use them to create a new face of the city, a more livable and walkable place for its citizens. From more than 15 sites, we considered that the most suitable to develop EFdeN project was the Obor site. Our project has the ambition to create a paradigm shift to 'Zero Brownfields', where these ex-industrial sites become areas of opportunity that deliver useful services for society. Therefore, the development of these brownfields sustains the secondary poles of the city's polycentric structure. In terms of micro – development of Obor site, the main direction is to reach the in-fill development by building semi-collective housing of maximum 5 levels with attached greenhouses and spaces dedicated to the urban-farming concept. By bringing nature into the middle of the town, the neighborhood becomes a destination, instead of only being a transit area, this making the whole structure to boost both economically and socially as a mixed functional area.

Nature becomes a community generator. EFdeN urban design proposes a change in the mentality of the Bucharest's resident. Our strategy is a shift in the collective imaginary - a community does not mean losing one's privacy, but a synergy of relationships between people where the link is the green space. This piece of nature becomes a pretext of conversation and gathering, a common interest around which the community grows and an example for disseminating a sustainable lifestyle. In our urban design concept, nature has the most important role, being the element that gives shape to the space, whilst being a catalyst, a morphostructural link with the role of: a driving element, an indicator of comfort, a promoter in forming community, an argument for investor and also an innovation element. Because of this approach, the build environment is integrated to this complex green ecosystem.

Mobility - one of the fundamental elements that creates a sense of place and space. Today, the city transportation system suffers from lack of intermodality at all levels, insufficiently integrated public transport and the mobility behavior is orientated towards personal car. In order to increase

accessibility for a broad category of users, the mobility strategy is based on the city development through secondary poles, supported by an intermodality public transport structure, which creates modern and economical supported connections. Thereby the modal structure is changing in favor of collective electric transport and calm eco-friendly movements (walking, cycling), leading to the reducing of travel by private car in the center of the city, reducing the pollution, decongesting the traffic and raising walkable neighborhoods. The mobility concept is an important instrument for community organization, based on restoring the community spirit, achieving a friendly environment and a lively atmosphere by the mild flows passing through the neighborhood. From spending the spare time in urban farming areas to going to work, the main forms of movements are by walking or cycling, as the major facilities are placed in the mixed core of the district.

**Keywords:** EFdeN, Sustainability, Urbanization, Nature, Urban farming, Community.

## 1 URBAN DENSITY

In order to control urban density and urban form, our solution promotes the transformation of gray areas in the city into new living organism through the green spaces. The urban form is inspired by the ancestral relationship between human and nature specific to the Romanian people where nature leads human behavior. Taking this into account, in our urban design concept nature has the most important role, representing the element that gives shape to the space. The green space acts as a catalyst and morph structural link, which intensifies social interaction and creates microclimates that built a coagulated community.

Our aim was to integrate natural elements as essential factors which determinate the physical organization of the assembly. In the same way as the prototype has an integrated green space, the urban project design proposes to integrate green space in the built morphology as a structural element, this combination creating a rational use of density in order to develop a new way of building residential districts in the city.

## 2 URBAN STRATEGY

The project intends to propose a strategy that takes into consideration the potentials of this high tech vision while not ignoring the realities of the present. Our strategy proposes the use of urban agriculture as a new industry that can bridge the gap between the low skilled workers and farming background of the area and the high tech and the research industries that will form part of the city's future. These categories comprise the vast majority of young people and young families as receiving financial social opportunities and packages-package first. Following the macro-territorial strategy, Bucharest 2020 Strategy and Strategically Concept Bucharest 2035, the project aims to have a new approach of the city urban interconnectivity and mobility, urban form, human mentality and public/green spaces for community.

Urban development is sustained by a polycentric structure: with core central zone and the secondary poles, strategically formed in the tangent zone between the central ring and radial axes. The development of the next urban poles must highlight the identity of the zone having a tolerance to the proximal urban development, the purpose being the growth of various zones with many working places, the generation of new dwellings so that the efficient use of the lot may be possible, benefiting from high capacity public transport (train stations). Bucharest city strategy is based on the idea of accelerating the densification process to combat the effect of "urban sprawl" following the integration of economical fundamentals city development, contributing to the development of a polycentric urban system that meets the mobility needs.



Figure 1. Objectives to a compact city development; Source: EFdeN

Brownfields can have a negative impact on the surrounding area and community, and hinder effective regeneration. The process of regenerating brownfields can stimulate opportunities at numerous levels to improve urban quality of life, enhancing urban competitiveness and also reducing urban sprawl and its environment impact. The beneficial re-use of brownfields is significant, pervading and impacting on so many other urban issues, that it warrants a high level of both technical and political attention. Finding site specific solutions for brownfield sites is an increasingly important part of the search for effective policies that are aimed at ensuring a sustainable future for land, and cities in particular.

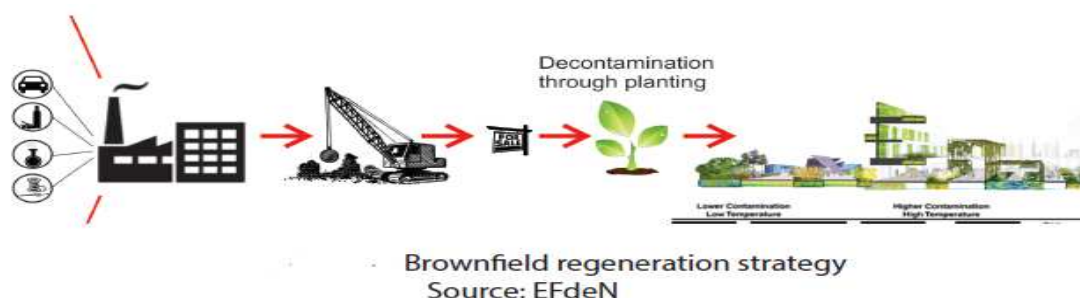


Figure 2. Brownfield regeneration strategy; Source: EFdeN

Brownfield redevelopment is smart growth because it efficiently uses existing services and reduces urban sprawl into prime agricultural area and its associated cost. Brownfield redevelopment will help Bucharest to achieve its growth management goals. In 2054, our city has already recycled and developed 10 out of 35 brownfield areas by implementing our EFdeN pilot program of mixed residential neighborhood. The project work to solve brownfield site contamination problem and farming-ground in an integrated water management system and specific urban design solutions.

### 3 URBAN DESIGN CONCEPT

The community center has a favorable placing that could attract both neighborhood residents and nearby communities' residents. It becomes an attraction and a place of social inclusion through the various activities that are held there: weekly social events, conferences, seminars and screenings. Inside the neighborhood are defined five capsules for residence, which are linked by a wide green area dedicated to urban farming.

Other dwellings units complete these capsules, forming a fabric in which the binder is The Green space. Therefore this public gardens are designed to provide different images with special characters:

- green spaces defined as points of social activation

- green spaces dedicated to sports activities
- green spaces for children, designed in Ecological spirit
- connecting green spaces configured as alignments, point group / meeting / redirection, spaces for relaxation

The objectives of the project are achieved by creating connections with the existing context through an efficient public transport system and green urban development, reducing the ecological footprint of the city.



Figure 3. Aerial view

In order to control urban density and urban form, our solution promotes the transformation of gray areas of the city into new living organism through the green development of brownfields. In our case, controlling urban density is achieved by responsible resource management and efficient urban form, developed at human scale.

Urban form reflects the strong connection between activities, public spaces and optimal orientation. In terms of functions, the „spine” represents the commercial area with public facilities and recreational spaces. Within the neighborhood can be found another small shops serving smaller areas. The design of the outer edges of the neighborhood is linked to the future neighborhoods in the vicinity that will be developed in the same way. Cultural and exhibition areas are distributed in order to create a gradually journey.. They remember the whole idea of the approach: innovative solutions

for increasing energy efficiency to ensure sustainability and respect for the community. Within the spatial planning there is a lake, which is designed to filter rainwater through ecological methods (specific vegetation). It is a more introverted space, for promenade and relaxation.

The structure of the urban development is flexible, composed of inflection nodes with green corridors that determine the pedestrian flow dynamics and proposed activities. Space created between the buildings is ranked on three types: public, semi-public and private, representing the garden.

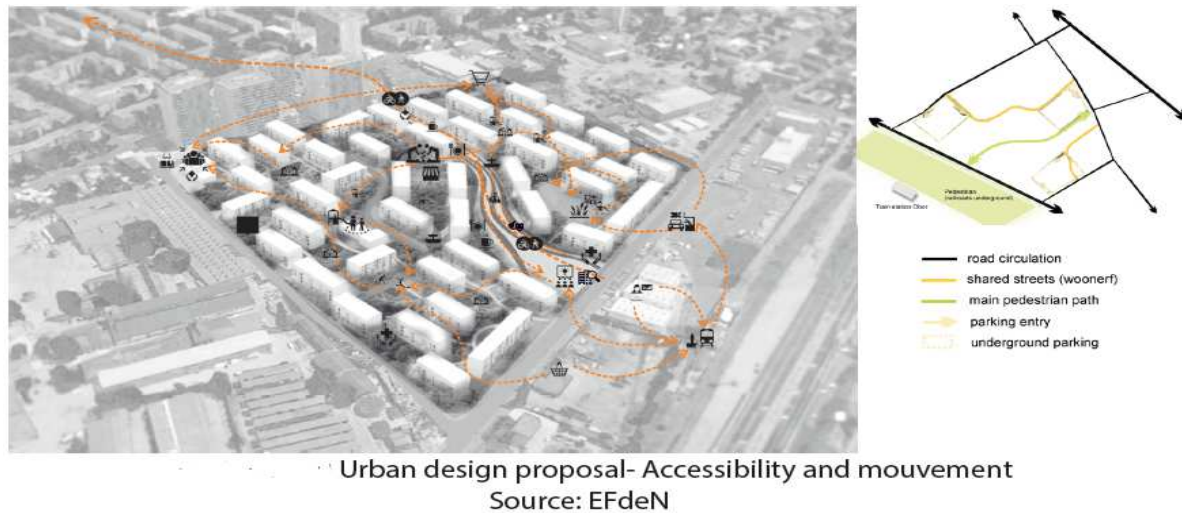


Figure 4. Urban design proposal – Accessibility and movement; Source: EFdeN

### 3.1 Accessibility and circulations organization

Whilst dwelling densities can promote less car ownership and use, and more walking and travel walking in particular, benefit people much at a social level: people are better able to regulate contact with others and have neighbors as friends. Also, higher densities create better social situations in terms of equality and mixed tenure (including affordable housing) than lower densities. Finally, higher densities of plants and some animals (e.g., birds) have tangible benefits to urban areas in terms of ecological sustainability. Pedestrian circulation organization is designed to provide multiple access points from both the station and constructed tissue, varied routes in terms of perception that stops the monotony “bedroom districts” in the vicinity. The proposal provides alternative travel calm inside the ensemble, creating a robust pedestrian system, animated with leisure activities and services that transform the district from a transit one in the destination.

Buildings have a good orientation in terms of natural light, with a strong energy efficiency standard. Proposed typology is of row houses with outer circulation which respond both energy efficiency and specific mentality of the Romanians, and that is to have their own yard and their own entrance. Grouping these two elements, urban design proposes a change in mentality of the Bucharest resident, showing that the community does not mean losing your privacy but this synergy helps to develop your personally.

Type of production depends on the needs of users. It may have, fruit and vegetables. Urban farming provides numerous community benefits such as community empowerment, public health, education.

Urban agriculture also has the potential to be part of green urban infrastructure. Our proposal is to re-generate a new urban structure that has been lost through time which creates varied interactions and opportunities within the urban fabric.

As the prototype has an integrated green space, we drove the idea of urban farming, as a connector between the new and the old, past activities and current activities, care for nature and healthy lifestyle. This idea focuses on the growing needs for fresh, organic growth vegetable and fruits as a way to inspire the community to work together in achieving this “green” lifestyle. Yet growing and caring for such gardens would be time consuming and unsustainable in a modern lifestyle environment, this is



why our design overlaps two uniquely innovative concepts in order to achieve a sustainable design. The solution we propose is innovative through the use of mixed cultures overlapped with the integration of permaculture concepts. In this way we will create an optimal microclimate, having the mixity between the fields and the vegetable fields and orchards.



Figure 5. Aerial view



Urban farming inside the assembly. Detail  
Source: EFdeN

Figure 6. Urban farming inside the assembly. Detail; Source: EFdeN

**Individual or collective housing building characteristics.** The site proposed for the development is adjacent to the central ring, situated near the East Train Station (also known as Obor Train Station), near the Obor market. The area is chosen for its position in the city and because it reunites elements of historical specificity, emplacement, vicinity and representatively.

The area of The East Train Station is an entry gateway into the city, ensuring the connection between the capital city and the east side of Romania. Presently, the Train Station is being underutilized, the Coach Station being the one which actually functions better, but the entire area has gained identity on the strength of this landmark.



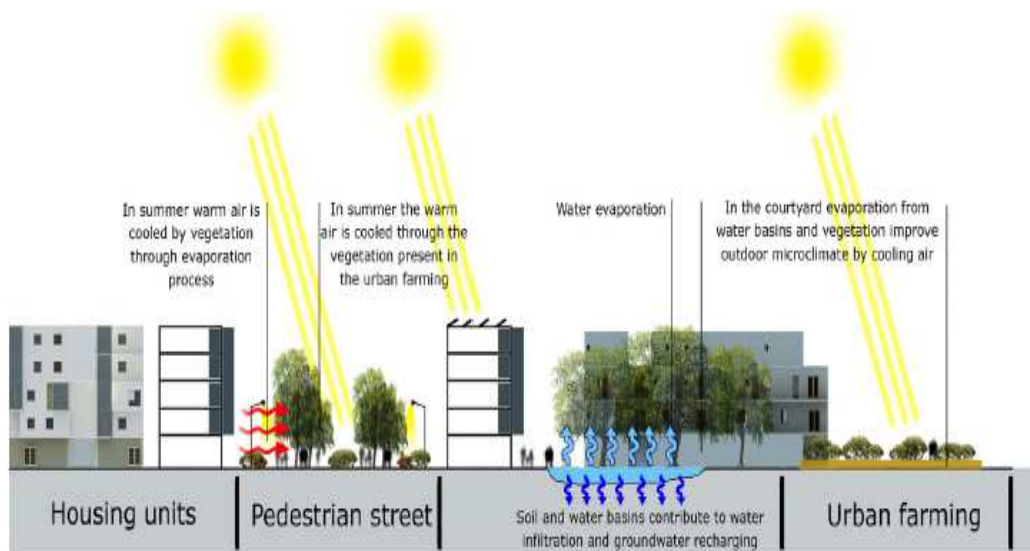


Figure 7. *Proposed design*

The context delimitation of the study area was made taking into account the impact of the train station in the urban development of surroundings (station infrastructure and adjacent specific industrial areas) that turned into a physical boundary, strangling the balanced development and affecting the socio-economic potential. It affects negatively the potential of the area in terms of connectivity, location and spatial opportunity segregating the east from the city. In this way, the strategy wants to respond further needs of housing densification in the city, but, at the same time, wants to satisfy social, economic and environmental present needs. All this types of structure and the transformation of the urban fabric located in Obor Train station zone and the old industrial zone left behind more than one abandoned building without any apparent function or use, with their own life and dynamic from a social and ecological point of view.

Traditional typologies have been studied and re-interpreted according to their space relations and flexible structure which consent to expand in time. The density gradient has been designed and controlled thanks to associative design, applying algorithms deduced from the analysis of the cultural and physical context. The elements concurring in setting the residential pattern are the traditional rules and uses, topographical conditions, climate control, water system. Relating to the local context, the EFdeN project aims to find solutions for the shortcomings of Bucharest's way of living which has underwent a chaotic evaluative process, skipping important phases which annulled the citizens' possibility of assimilating a new lifestyle. The current living standard doesn't resonate with the desire of the users for whom the individual dwelling represents the ideal answer to their requirements. In the search of this ideal in the last twenty years, a migration towards the periphery is observed, where the price of an individual house is far more accessible and the dream of having a personal garden can be easily achieved. Following this ideal, though, has its repercussions at an urban level, causing the urban sprawl which unbalances the density as well as the mobility within the city.

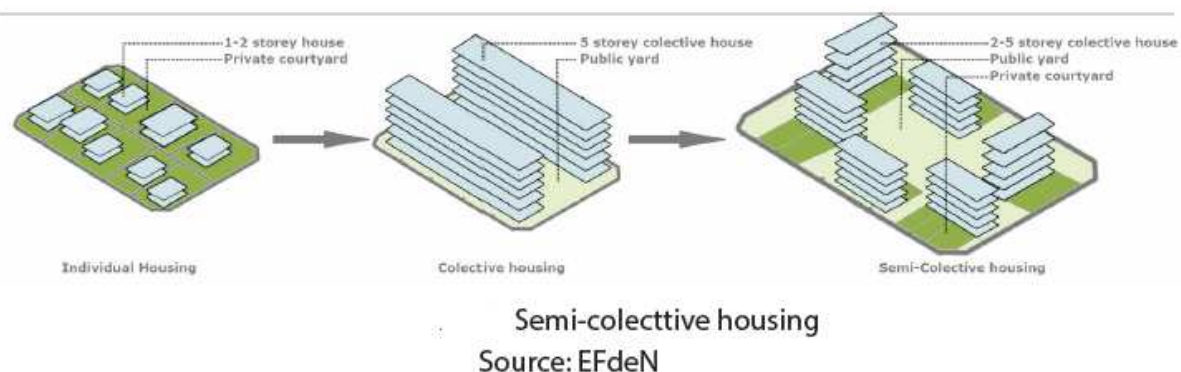


Figure 8. *Semi-collective housing; Source: EFdeN*

Housing typology proposed by EFdeN is the semi-collective type because it fits the requirements of a very large proportion of the population of Bucharest. This typology meets the maintenance and comfort of individual homes while responding to the population density the area is proposed by the PUG (General Urban Plan and regulation for Bucharest). To respond to the need for densification and maturation of human society, the typology of semi-collective housing offers opening for some semi-public spaces inside the ensembles that can be used for common purposes (sports fields, playgrounds for children, social spaces). This aspect contribute to the formation of local communities and to strengthen the feeling of belonging (absent in the types of housing in the proximity). This type of housing has the advantages resulted both from their architectural features and from the power of solving the city problems in terms of urban planning.

The organization of the semi-collective building is given by a few principles: a diversity of apartment typologies, a good orientation of the interior space in correlation to the cardinal points for energy efficiency and for the wellbeing of inhabitants, a large circulation that plays also the role of a socialization area, a greenhouse for each dwelling – correlated to the size of the dwelling, and also a mix function according to the position of the semi-collective housing on site. The typology proposed for the project is that of row houses with outer circulation which respond both to energy efficiency and to the specific mentality of the Romanians who want their own yard and their own entrance.

Regarding the semi-collective housing units, the diversity was the key for their realization, as they vary in height, in dimensions, but also in functions. A classification can be made by their size: 28 m long, 35 m long and 40 m long. Referring to their height, they have 3 or 4 stories above ground floor, and some are mono-functional (only housing), while others have a mix use, with commerce and services on ground floor.

This is our strategy to be affordable on the market, offering best solutions to a large numbers and categories of customers. There are 9 to 16 apartments per unit. The organization of apartments varies vertically, as well as horizontally: after the commercial ground floor, there are 1 to 3 room-apartments on the 1st and 2nd floor, while on the 3rd and 4th floor (where there is a 4th floor), there are duplexes with 2 to 4 rooms. In the mono-functional semi-collective building, there are apartments of 1 to 3 rooms on ground floor and the 1st floor, while on the 2nd and 3rd floor, there are duplexes with 2 to 4 rooms. The duplex with 4 rooms represents the maximum size, and it is thought to accommodate a large family or a large family with an office room.

The formal configuration of each building is made of different modulus, and is adaptable to the target market, and have different living spaces:

- 1 studio – composed of one room, a bathroom and a mini kitchen addressed to young adults
2. two rooms apartment- composed of one master bedroom, a living room, kitchen and bathroom addressed to a family without children
3. tree rooms apartment- composed of 2 bedrooms, kitchen and bathroom , addressed to a family
4. the duplex, the prototype presented by EFdeN in the competition, containing 2 bedrooms, a living room, 2 bathrooms, storage space

All the apartments have the greenhouse, except the studio. Located between individual and collective dwellings, in terms of height, the semi-collective houses concept is suitable in the development of a new sustainable and passive district, because the renewable energies can have a good performance and the combination between the architecture and the urban design can obtain, with a strong strategy, both economic and ecologic gains

For the semi-collective housing that accommodates commercial functions on ground floor, the apartments shifted towards the South in a console, creating room for the cursives on the North, but at the same time protecting the entrance towards the commercial areas through a portico.

The buildings are different: they have vibrant facades, with particular transparent volume of the greenhouses, that makes a dynamic rhythm of light and dark.

The environmental design of housing is conceived to gain light and natural ventilation. This new type of habitat in Bucharest is as close as possible to the chosen buyer, to it's needs and desires. The

morphology of the semi-collective housing give to the buyer the perfect combination between individual housing benefits( private access, private green space) and collective advantages(common use lots for urban farming, more energy efficiency and the common use equipment: heat pump, hot water boiler, circulation pump, distribution network).

The modules fit to the customer needs, and the direct relation with natural environmental increase theirs ecological expectations. This typology of housing has a big advantage through the direct relation with natural environmental, the green space is common use.

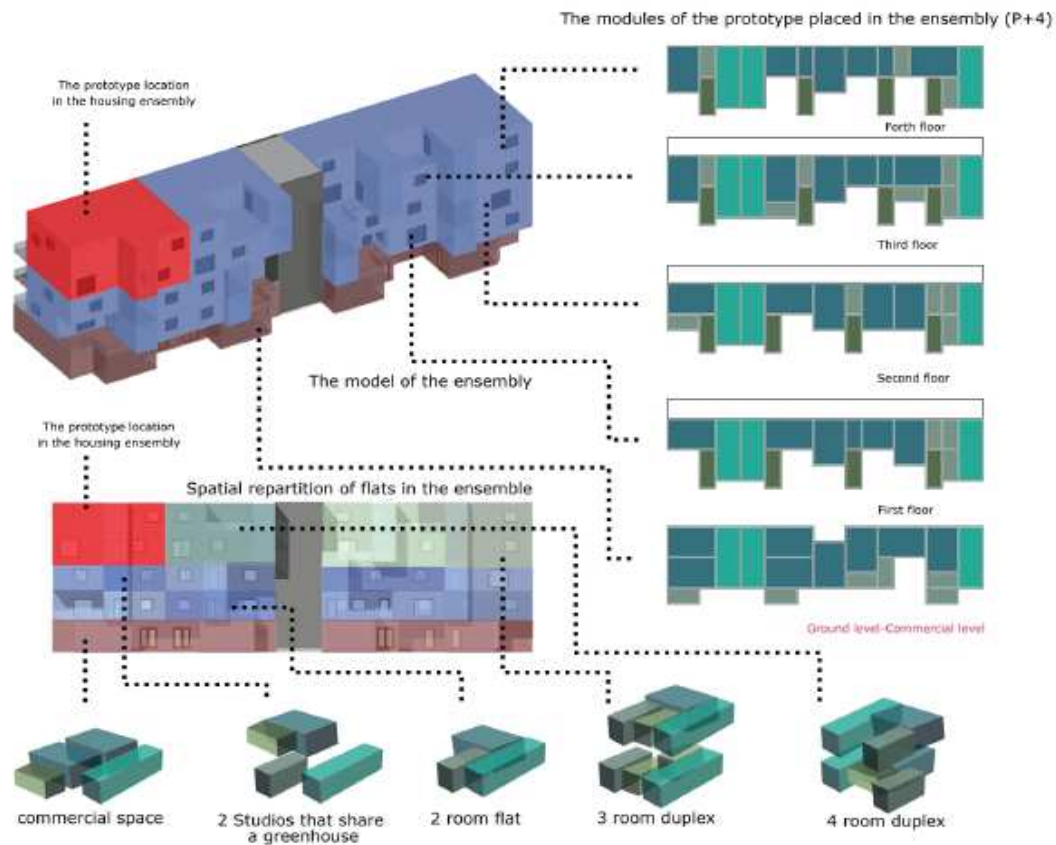


Figure 9. Design setup.



## SYSTEMIC RESEARCH IN ARCHITECTURE

Beatriz del Río-Calleja<sup>1</sup>, Alfonso García-Santos<sup>2</sup>

<sup>1</sup>*Department of Construction and Building Technology, School of Architecture, U.P.M. (SPAIN)*

<sup>2</sup>*Department of Construction and Building Technology, School of Architecture, U.P.M. (SPAIN)*  
*beatriz.delrio@hotmail.com, alfonso.garciasantos@upm.es*

### Abstract

Architecture is one of the most complex areas. It is said by the scientific community that we need a new perspective to manage complexity in Architecture. A holistic vision is required. Logic and creative thinking must remain integrated. An Architecture systemic vision is required today because the great complexity that the profession must deal with. A strong theoretical approach is needed.

This work is a part of a research project that is studying a systemic approach of construction process, focusing on architecture design and construction integration. This article corresponds to the first part of the research project that consists in establishing the links between creativity and building technology. That is studying the construction process under a systemic optic; specifically centre the integration between building processes and architectural design. Two disciplines of study are selected for elaborate a theoretical base: 1. General Systems Theory, Complexity Theory and 2.Design Methods. The two knowledge areas studied to set up this review have been selected because they concern about understanding process. The interest of the research is to seek the common concepts in these two disciplines to explore the connections between them. The scientific literature employed for make the analysis has been selected with a double intention. On one hand looking for the principles of each discipline, on the other hand searching the application of them in construction industry and architectural design. These subjects share a special interest in knowing in depth how processes work. So from each discipline not only concepts are taken in count, but also actions. In that way, actions and concepts are the two principal categories under examination. There are many common concepts and actions between the disciplines, so it can be achieve the relationships between them. Each discipline describes the concepts and actions in a different perspective. One paper objective is to obtain a global vision of actions and concepts in different disciplines, and later take the common part of it. Some examples of the concepts treated are: system, subsystem, structure, order, hierarchy, levels, configuration, selection, behaviour, problem structure, problem space, relationships, links... Examples of actions are: interaction, communicate, decompose, represent, interpret, select, connect... To achieve the main concepts and actions, diagrams have been done. These diagrams summarize the analysis of each discipline. Chronological concept emergence, variations and development can be seen on the diagrams. The result of the analysis and synthesis process is a conceptual an actions review, does not have a chronological development. The article result had been outline in a systemic manner focusing in the interest created by links or relationships between actions and concepts. The result has been structured in seven groups: components, configuration/structure, properties/characteristics, behaviour, relationships, actions/operators and models. About every action and concept some aspects are described: emergence, evolution, character, typology and the different ways of knowing preferred for each discipline. From each action and concept two different parts have been analysed: the circumstantial one and the essential meaning, in order to extract this shared essential part. That will be indeed the sought theoretical basis.

**Keywords:** General Systems Theory, Design methods, Project Complexity, Integration, Architecture and Construction.

## 1 INTRODUCTION

If the artistic expression capacity that is conferred to architecture is disassociated to the technical knowledge, that enables a proper materialization, architecture is reduced to simple aesthetic intentions. Art and technique excision should not be considered in the architectural discipline. Technical knowledge and artistic expression must be conceived as a unit. The increasing current specialization favors the increase of knowledge, increase which hinders the integral vision and justifies the divisions. The scientific community argues that a new perspective that makes possible the management of growing complexity present today in architecture is required. «What is now required in the architecture, engineering and construction industry is a comprehensive research concerning the origins, disciplines and contexts of complexity ». Thus conclude Hannah Louise Wood, Poorang Piroozfar and Eric R. P. Farr his article entitled *understanding the complexity in the AEC industry*.<sup>i</sup> They express the need for a systemic study of complexity in construction with the aim of developing a methodological approach to the concepts. «What is needed are new ways to look at today, complexity, new models and techniques that it examined new methods to handle it, in fact new paradigms to support our approach to them».<sup>ii</sup> Laufer (1996) concludes his investigation saying «new type of project, defined as complex, requires the management of integrated elements, systemic vision, simultaneous and autonomous management of teams and functions. »<sup>iii</sup>

This article is a partial result of a research that aims to search for a systemic perspective of the constructive process that allows establishing a more integrated vision and understandable relationship between the architectural design and the construction process.

## 2 DISCIPLINES

In order to provide a theoretical basis on which to base future research two disciplines of study have been selected to develop the aforementioned theoretical basis. On the one hand the general systems theory and complexity; and on the other hand the design methodology. The first is a general framework to support the theoretical basis, who aims the explanation of complex dynamic processes and systems. The systemic analysis, the systemic vision relies on this theory, currently used in academia to solve complex scientific problems. The second is a specific discipline of design that studies the design process and its methodology. Studied theories have the common denominator of focus their interest in the compression of the processes as well as pursue a holistic view of knowledge by giving greater importance to relations between the parts of a system than the elements that compose it.

### 2.1 General Systems Theory, Complexity

The General theory of systems and complexity is defined as a scientific perspective which postulates a holistic view of reality, not fragmented. From the standpoint of General systems theory and complexity what is important are the relationships between the parts of the system, as well as sets that emerge from the interactions that occur between them. The theory of complexity, complexity science or complex systems theory studies how interacting components organize themselves to form potentially changing structures that show a hierarchy of the emergent system properties. Sven Bertelsen (2002) concludes his article stating that the complexity appears to provide a new and fruitful way of understanding the construction process. This new way to understand the construction as a complex system calls for more research. A Deep understanding of the theory of complex systems in relation to the construction is proposed as a possible area of research.<sup>iv</sup>

### 2.2 Design research, design methods

Traditional methods of architectural design are put in question in the 1960s. A great interest in what is known as *design methods* appears. One of the reasons for the emergence of design methods is because the possibility of transfer technologies. There is a common interest in systems and processes. The model called the Analysis-Synthesis-Evaluation (ASE) proposed by Morris Asimovw (1962) was



quickly accepted as the base model by agreement. Mihajlo Mesarović (1964) adapts the ASE model to his diagram called the spiral model of design process in which a series of iterative spiral shaped cycles that allows moving from the abstraction of a problem to the concretion of the result. The three stages of the model (analysis, synthesis, evaluation) were defined by John Luckman (1969). One of the most influential attempts was proposed by Christopher Alexander (1964) who summarized his work in *Notes on the Synthesis of Form*.<sup>v</sup> Bruce Archer (1981) defines «Design research is systematic inquiry whose goal is knowledge of, or in, the embodiment of configuration, composition, structure, purpose, value and meaning in man-made things and systems. »<sup>vi</sup> Vladimir Hubka and Ernst Eder defined design science. «The term “design science” is to be understood as a system of logically related knowledge, which should contain and organize the complete knowledge about for designing»<sup>vii</sup>

### 3 RESULT: CONCEPTS, ACTIONS AND RELATIONSHIPS

After the study and analysis of both disciplines, diagrams are carried out. These diagrams allow us to do a chronological reading of contributions, and emerging concepts of each knowledge area. Interest in the understanding of the processes is a common link from the disciplines of study. From this derives the emergence not only of concepts, but also of actions. The synthesis carried out in diagrams enables the grouping of concepts and actions. Seven groups are identified: components, configuration/structure, properties/characteristics, behavior, relationships, actions/operations and models.

#### 3.1 Components

##### 3.1.1 System

According to Ludwig Von Bertalanfy (1976), «a system may be defined as a complex set of interacting elements»<sup>viii</sup>. For Morin (1977), system can be defined as an organized global unit of interrelations between elements, actions, or individuals. Sven Bertelsen (2003) mentions an important aspect of complex systems, its nature. Complex systems are characterized because the whole is more than the sum of the parts, and the whole, frequently shows emerging behaviors which cannot be foreseen through the study of isolated elements<sup>ix</sup>. Hannah L Wood and Kassim Gidado (2008) argue the need to consider systems as a whole, attending not only the parts of the system but also the environment in which they operate. (They point that this consideration has capital importance in the construction project) <sup>x</sup>. Rolando García (2006) conceives complex systems as organized totalities composed of "non-separable" elements. This concept allows Rolando García to introduce the term inter-definable. According to Rodríguez Zoya (2011), this term exceeds the concept of interaction or interrelation. The inter-definable requires to the components of a system to be defined and studied according to the rest of the components and, therefore, studying the separate parts is not possible. In short, complex systems are not decomposable systems whose elements are inter-definable.<sup>xi</sup>

##### 3.1.2 Subsystem

It is understood by subsystem a set of elements and relationships that respond to structures and specialized functions within one larger system. In general terms, the subsystems have the same properties as systems (synergy) and its delimitation is relative to the position of the systems observer and to the model that have of them. From this point of view it is possible to talk about subsystems, systems or supersystems, as long as they possess the systemic features (synergy). Martin Landherr and Engelbert Westkämper (2014) with the purpose of propose a method for integrated product and assembly configuration. First of all, they create a common understanding of the terms used to describe the method where a subsystem or module is a way to reduce the complexity of systems by separating it in partial functions (subsystems)<sup>xii</sup>.

##### 3.1.3 Element or component

An element of a system means the parts or components that constitute it. These can refer to objects or processes. For Martin Landherr and Engelbert Westkämper (2014) a component is described by a set of properties, ports of connecting it to others components and constrains of each port.

#### 3.1.4 *Environment or context*

A system will always be associated with the context that surrounds it, or rather the set of external objects of the system but that influence decisively to this, and at the same time the system, although in a lesser proportion, has an influence on the context.

### 3.2 **Configuration, structure**

A system is a structure. The concept of structure is related to the concept of form, setting, and connection. «A structure describes a set of mutually supportive elements, or whose parts are functions each other. The components of a structure are interrelated; each component is associated with each other and with all. [...] in structure, therefore, there are link and function rather than addition and fusion».<sup>xiii</sup>

#### 3.2.1 *The idea of order*

The world is only understandable through a system of rules, an order. The idea of order, the existence of relationships between phenomena, is inherent to our brain and the main axiom of our consciousness. Based on a heterogeneous ensemble, we manufacture categories to be able to join together, according to abstract criteria, the components of this set in different groups. Order is to establish relationships. The systems resulting from the combination of these relationships should be manageable (operating). Warren Weaver (1948) supports that the complexity of a problem does not depend on the number of variables, but how they are related. It is a matter of organization. To explain and define the concept of order in a system we need a model, a conceptual construction. Bertalanffy (1976) made the open system model. The dynamic interaction between its components is the open system model base. Morin (1977) defines organization such as the disposition of relationships between components or individuals which produces a complex unit or system. He argues that to allow organization interactions are necessary; for interactions meetings are necessary, for meetings, it is necessary to have disorder.

#### 3.2.2 *System structure*

System structure consists of more or less stable relationships between parts or components of the system, which can be verified (identified) at any given time.

According to Buckley (1970) particular kinds of more or less stable interrelations of components that occur in a given time constitute the particular structure of the system at that time, thereby reaching a sort of "totality" endowed with some degree of continuity and limitation. In some cases, it is preferable to distinguish between a primary structure (referred to internal relations) and a hyper structure (referred to external relations).

Yona Friedman (1973). «We will define "structure" as the set of relationships between the subsets of a set, and where necessarily exists rules of composition of the elements among themselves. Every structure will be, therefore, implicitly, a system, without this wants to say that a system has a structure implicitly».<sup>xiv</sup>

Schön (1987) proposes that a designer can structure a design problem by setting its limits, identifying relationships and imposing coherence on movements.

John Restrepo & Henri Christiaans (2004). Structuring is a process that is drawn between knowledge and information to provide structure to the problem space.<sup>xv</sup>

Yin et al (2005). They point out five key concepts of mapping structures. These structures have their limits in terms of usefulness to the design process. They described five types of structures: 1. lineal. Issues and ideas are linked sequentially. 2. Circular. Issues and ideas will be joined sequentially with its ends chained. 3. Hub, issues and ideas emerged from a central concept. 4. Tree, a string of ideas and issues that have their ramifications joined. 5. Network, is a complex set of interconnected issues and ideas. The Network structure is seen as non-hierarchical and considered the most complex.

### 3.2.3 The hierarchy

Bertalanfy (1976) states that systems are often structured in a specific way, so that its members are at the same time the next lower level systems. Such overlapping of systems is called hierarchical order.

«The hierarchical order is a concept of remarkable importance in general systems theory. A hierarchy emerges in "structures" and also in "functions". Structure as the order of parts and function as the order of processes<sup>xvi</sup> [...] the question of the hierarchical order is intimately linked to differentiation, the evolution and the measurement of the organization»<sup>xvii</sup>

Herbert Simon (2007), supports that hierarchical structures have a high level of redundancy. The redundancy takes various forms:

- Normally hierarchical systems consist of few different types of subsystems that combine and arrange in different ways.
- Hierarchical systems are sometimes close to the breakdown. Therefore, only global properties of its parts enter in the description of the interactions between these parts.

Herbert Simon (2007) defines the hierarchical system as consisting of interrelated subsystems. In which subsystems can interact among them, in a subordinated way or not.

«A way for the construction of a non-trivial theory of complex systems must follow the path of the hierarchy theory».<sup>xviii</sup>

For Herbert Simon hierarchical organization is one of central structural schemes employed by which he calls architect of the complexity.

Zeiler (2010) the design process itself became a topic of study. The thinking in levels approach is applied to structure the design process in different levels of abstraction. Functions have a system role in the design process and they exist at the different levels of abstraction. An important decomposition is based on functions. This functional decomposition is carried out hierarchically so that the structure is partitioned into sets of functional subsystems.<sup>xix</sup>

## 3.3 Properties and characteristics

### 3.3.1 Characteristics

Ludwig Von Bertalanfy (1976) identifies the summative and the constituent characteristics. Summative characteristics are the same outside and inside the complex. The constituent characteristics depend on specific relationships that occur within the complex. Larsen-Freeman (1997) lists ten characteristics of complex systems: dynamic, complex, not linear, chaotic, unpredictable, sensible to starting conditions, open, self organized, sensible to feedback and self adaptive.

Several authors have determined the general characteristics of complex systems (Waldrop 1992 and 1995 Kauffman), also Lewin (1993), Lucas (2000) and Johnson (2001). Sven Bertelsen (2003) argues that the construction is a complex system whose characteristics are grouped around three blocks: autonomous agents (parties that make up the system are not governed by the same rules, they evolve independently). Undefined values, (communication between system and environment is result of its dynamic interaction) and non linearity (outputs are not proportional to inputs, behavior is not linear).<sup>xx</sup>

### 3.3.2 Properties

Herbert Simon (2007) describes in his article "the architecture of complexity" four properties of complexity:

- Hierarchy (System and subsystem). Complexity adopts hierarchical structures. Complex systems are composed of subsystems which in turn are subdivided into subsystems.
- Systems structure. Theorizing about the relationship between the structure of a complex system and the time required by the system to emerge through the processes evolution. Hierarchical systems evolve much faster than the non-hierarchical.

- Dynamic properties of hierarchical systems. Explore the dynamic properties of hierarchically organized systems and shows how they can break down into subsystems to analyze their behavior.
- Relationship between complex systems. It examines the relationship between complex systems and their descriptions.

The central theme of the remarks made by Herbert Simon (2007), is that complexity often adopts hierarchical forms, and hierarchical systems have common properties independent of their specific content.

### 3.4 Behaviour

Ludwig Von Bertalanfy defines the system behavior as the invariant particular relationship in time, specified to a set of amounts and to a level of resolution given and based on samples of a certain model.<sup>xxi</sup>

Three basic types of behavior are distinguishes:

- Permanent behavior (real): the absolute relationship that meets during any time interval.
- Relatively permanent behavior (known): relative relationship which is met everywhere in a particular activity.
- Temporal behavior (local): a relationship that meets during a precise period of a particular activity.

The event of a breakdown of the system behavior into simpler behaviors implies that the system is composed of simpler systems, called elements (subsystems), each of which is characterized by their own behavior.

Merry (1995) says that complex behaviors emerge from a number of basic rules which control parts of the system. These behaviors are not predictable from individual elements knowledge, no matter how much you know about them, but if it can be discovered through the study of how these elements interact and how the system adapts and changes over time. What seems chaotic at first can be predictable through the understanding of the patterns and complex behavior rules.<sup>xxii</sup>

#### 3.4.1 Evolution

Herbert Simon (2007), attempts to explain the evolution of complex systems.

- Complex forms can arise from simple forms due to strictly random processes. Direction is provided to the scheme by stability of complex forms, once they appear.
- Not all large systems appear hierarchically.
- The effect of the existence of stable intermediate forms exercises a powerful effect on the evolution of complex forms which can be joined to the effect of reaction and the arranged distribution state of elements that react in open systems.

#### 3.4.2 Non-linearity

Richardson (2000) says that a complex system (Adaptive) can be simply described as a system that brings together a large number of entities that show a high level of interaction. The nature of this interaction is nonlinear.<sup>xxiii</sup> Stacey (2001) synthesizes the complex systems behavior. A system comprises a large number of agents that interact with each other according to rules that govern the interaction between them. Constantly agents repeated its interaction, referring again to his rules, that is, the interactions are iterative, recursive and self referenced. The interaction is non-linear and non-linearity is expressed in the variety of rules on the large number of agents. Variety in the development of these rules is generated by a random mutation and replies exchanges. Complex systems do not exist in isolation, are always connected to other systems, resulting in a dense network of connections between complex systems.<sup>xxiv</sup>

#### 3.4.3 The good fit

Gabriela Goldschmidt (1997), based on the results of Christopher Alexander (1964), argues that a system achieve coherence and unity, if all its components and elements must reach the so-called good fit.

### 3.5 Relationships

Internal and external relations of the systems have taken different denominations. Among others: interdependencies, interrelationships, reciprocal effects, organization, communications, flows, benefits, partnerships, exchanges, coherences... The general systems theory (GST) supports those systems properties cannot be significantly described in terms of its separate elements. Understanding systems occurs only studying globally, involving all the interdependencies of their parties.

Hannah L Wood and Kassim Gidado (2008) argue that complexity studies how the interrelationships between parties give rise to the collective behavior of a system and how the system interacts and forms relationships with its own environment.

The relationships between the elements of a system and its environment have capital importance for the understanding the systems behavior.

Thompson (1967), identifies three types of interdependencies between organizational units:

- Pooled: in which each element provides a discrete contribution to the project, each element proceeds independently of other elements.

- Sequential: the output of an element becomes the input for another element.

- Reciprocal: each element output becomes input for other elements; actions of each are modified by the actions of others. This kind of interdependencies represents greater complexity and dominates the construction process.<sup>xxv</sup>

Vinod Goel & Peter Pirolli (1992) argue that parts or components of a system are not interconnected logically. There are many contingent interconnections between the components.<sup>xxvi</sup>

T. M. Williams (1999) highlights the importance of considering the nature of the interrelations. He distinguishes only two: 1.The interrelations with sequential nature, which affect subsystem to subsystem successively. 2. The interrelations with feedback the nature, in which a change may affect all subsystems.

### 3.6 Actions and operations

#### 3.6.1 Interpret, reinterpret

Darke (1979) argues that the structuring of the problem starts with the interpretation of the situation of the problem. Purcell and Gero (1998) argue that the reinterpretation brings new knowledge and guide this new knowledge towards more reinterpretation. John Restrepo & Henri Christiaans (2004) support that if the designer interprets the problem of design in a more abstract way, that interpretation may allow access and processing of much information. And therefore it will make a better structuring of the problem. They argue that the information necessary to structure the problem of design requires a lot of active interpretation and manipulation previously to be able to be used by the designer.

#### 3.6.2 Represent

How simple or complex is a structure depends significantly on the way in which we are able to describe it. The majority of complex structures found in the world are redundant, and we can use this redundancy to simplify its description. But to do so, to achieve the simplification we must find its correct representation.

Ferguson (1992) supports that sketching, as a form of representation, plays a positive role in reinterpretation. He identifies three kinds of sketches: the thinking sketch, the talking sketch, and the prescriptive sketch.

Wang and Habraken (1982) used as a method of representation a graphic network where nodes correspond to decisions and the arrows correspond to operations.

Gabriela Goldschmidt (2005) attributes great importance to the action of represent. Multiple representation is a useful cognitive strategy to solve complex problems because it facilitates the creation of relationships and helps to structure the design problem. She establishes two types of

representation, the figurative and the conceptual representations. She uses the Linkograph to represent, where nodes of the network correspond to relations. She proposes to measure the quality of ideas according to the intensity of relationships that are created between them.

### 3.6.3 *Communicate (transmit information)*

The information is a way of control, a negentropic way, because it reduces the level of uncertainty. The information could be considered an element which generates order.

J.C. Jones (1966) studied the reasons which make difficult the design at the system level. It argues that a new way, that allows communicating, is necessary. In the craft design the fragmentary information is stored in the own design product (form, model, memory). The traditional design uses the drawing scale as a tool to store information. Design at the systems level should find a tool that allow to store and manipulate relationships between elements. «Continue with the traditional use of the drawing is to inhibit the invention at the systems level. System Designer is not free to concentrate on a part of the problem and lacks a way to communicate. »<sup>xxvii</sup> Gabriela Goldschmidt (1997) argues that design problems need to generate and to represent large amount of additional information in order to establish the relationships between the components of the system and therefore its structure. Gijsbertus T Luiten (1998) it is necessary to improve communication between design and construction. Remko van der Lugt (2005) to incorporate the ideas into a relationship system or link system puts two premises: the ideas must be well communicated and in addition they must contain in themselves part of the solution.<sup>xxviii</sup>

## 3.7 Model

Models are constructs designed by an observer that seeks to identify and measure complex systemic relationships. Any real system has the possibility to be represented in more than one model. The decision, at this point, depends on both the objectives of the designer and its ability to distinguish the relevant relationships in relation to these objectives. The essence of the systemic modeling is to simplicate. The best known systemic metamodel is the scheme input-output.

J.C. Jones (1966) develops a model for mapping relations, consisting of three stages; divergence (analysis), transformation (synthesis) and convergence (evaluation). It is not easy to think in these three categories as independent entities, but there is no doubt that their separation is a prerequisite for any necessary change of methodology for each stage, prior to reinstate them for the formation of a process that works well at the systems level.<sup>xxix</sup>

Archer (1984) develops a model made up of seven steps: experiment design, data collection, problem definition, analysis, synthesis, hypothesis and solution. Gather around three stages: research stage, analysis stage and development stage.<sup>xxx</sup>

Luiten (1998) separates the building execution in three activities: design, management and construction. The model proposed requires the integration of information and knowledge employed in the design, management and construction. He determines two mechanisms of abstraction: product-activity and concretization. The first abstraction mechanism looks at the relationships between the different types of project information; the second abstraction mechanism looks at the information requirements for problem solving processes. In the product-activity abstraction mechanism there are three types of information in building projects. For products, the characteristic proprieties are shape and material. For activities the characteristic property is time. For construction resources the characteristic proprieties are cost, capability and availability. The concretization abstract mechanism supports communication during design and construction management and it also supports the information needs of a problem-solving process by modeling and relating the evolving states of information during this process. There are three evolutionary states of concretization representing: function, solution and result.

Zeiler (2010) the design process itself became a topic of study. The thinking in levels approach is applied to structure the design process in different levels of abstraction. Zeiler supports that building design is a creative process based on iteration. The activities sequence in their method of integral



design is design: defines / generate, analyze/synthesize, evaluate/select and implement/shape. The model proposed by Eekels (1995) is composed by: analysis, synthesis, simulation, evaluation and decision. Transforming the program into characteristics for input and output (aspects) and formulation of the different relation between input and output (functions), leads to the construction of a morphological overview. Functions have a system role in the design process and they exist at the different levels of abstraction. An important decomposition is based on functions. This functional decomposition is carried out hierarchically so that the structure is partitioned into sets of functional subsystems.<sup>xxxi</sup>

Kees Dorst (2011) uses a formal logical model to describe key thinking patterns in design. This provides a basis for understanding of how design works, with open complex problems. It argues that the basic reasoning pattern in the productive thinking is abduction. At the beginning of the process of solving problems we only know the final value that we want to achieve. This open reasoning way is closer to the conceptual design. It means that we must create a working principle and a system in parallel. The creation and use of structures are inherently linked to the abduction.<sup>xxxii</sup>

#### 4 CONCLUSIONS

This article explained the results of the synthesis of the reasoning of the two disciplines of study selected: general systems theory, complexity and design methods.

- The selection of the study disciplines has been fruitful. The result may be even useful for the development of each one of them separately. This work verifies that a good complementation exists between the study disciplines.
- The study, analysis and the diagrams realized has allowed identifying concepts, actions and common principles to both disciplines.
- The combined synthesis of its basis has been carried out with the intention to provide structure, order to the knowledge exposed in both disciplines. Allowing the grouping of concepts, actions and common principles. There are seven identified groups: components, configuration / structure, properties/characteristics, behavior, relationships, actions/operations and models.
- The theoretical basis that this work has given rise is easier to understand, than the exposed by two disciplines separately.
- The realized study allows us to obtain an overview of the state of the art, as well as check that the scientific community expresses the need for further research in the search for the so-called systemic perspective that allows us to achieve a greater understanding of the processes. The demand for this perspective in the field of architecture and construction is being recurrent.
- The structure achieved through the synthesis of disciplines can be used to organize the description of systems.
- The results highlight the importance given by the researchers and by the research groups to the actions of represent and interpret. As next step of our research we propose to incorporate the action of expressing, together with represent and interpret will be studied, considering that the three actions form a subsystem. This subsystem will be described through the use of the organization structure resulting in this article.

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## ROMANIAN SPATIAL PLANNING RESEARCH FACING THE CHALLENGES OF GLOBALIZING SCIENCES

Alexandru-Ionuț Petrișor<sup>1</sup>, Andrei Mitrea<sup>2</sup>

<sup>1</sup>PhD (Ecology), PhD (Geography), Habil. (Urban Planning), Associate Professor & Director, Doctoral School of Urban Planning, "Ion Mincu" University of Architecture and Urbanism, Bucharest (ROMANIA) and Senior Researcher & Scientific Director, NIRD URBAN-INCERC, Bucharest (ROMANIA)

<sup>2</sup>Department of Urban Planning and Territorial Development, School of Urban Planning, "Ion Mincu" University of Architecture and Urbanism, Bucharest (ROMANIA)  
alexandru\_petrisor@yahoo.com, andrei.mitrea@uauim.ro

### Abstract

There shouldn't be any doubt that globalization not only affects economies, but also other areas of scholarly interest, such as the research environment. Within research, multi-disciplinary approaches are now being utilized on a grand scale. As a result, the joint evolution of scale and multi-disciplinarity seems to direct modern research from the 'potholing' towards the 'sky-diving' approach. In this context, many countries where the research tradition was affected by isolation are trying to catch up fast and compete within the global research ecosystem. However, some of the research domains have a longer tradition and developed their own rules, which are rapidly adopted by other fields, in order to equal the visibility of their predecessors. The positivist approach, consisting of statistically analyzing data resulting from experiments, which are, in turn, designed to test hypotheses derived from empirical observations or theoretical reasoning based on a literature review, has left an important fingerprint on current research practices. It also appears to be related to the pressure of publishing research, translated into the 'publish or perish' adage, and more recently, to the use of scientometric approaches to assess the value of articles, based on their citations. These new trends, along with an emerging competition between the scientometric giants, Thomson-Reuters and Scopus, facilitated the evolution of 'predatory journals', but also engendered a propensity towards designing hybrids between science and economy or between science and social networking. At the same time, the pressure resulted into individual unethical behaviors; some authors are no longer interested in delivering their results to the appropriate audience, but are looking instead for those means that could facilitate their academic or research promotion. Consequently, some journals are also attempting to meet these needs. The global race for research competitiveness, measured in terms of scientific yield and citations, primarily affects fields where articles and citations are not the traditional outputs, such as the humanities and social sciences in general and planning-related disciplines in particular. When discussing planning, it has to be stressed out that research has a merely societal value and is not aimed at developing products that can foster economic growth or delivering scientific articles that profoundly change the theoretical perspectives. Simply put, research in planning aims at increasing the safety and welfare of people. As a consequence, planning research topics have shifted from providing scientific grounds to regional development policies, to addressing research quality and social responsibility or producing research guidelines. This article looks at the particular case of Romanian planning research based on SCImago data, in an attempt to assess whether this field is able to meet these global challenges, especially after the consistent, albeit uneven, in terms of goal and pace, application of new research policies designed after joining the European Union, which were aimed at increasing its article output and its international visibility. The findings indicate that the numerical growth of articles and publications is spectacular in Romania for most fields, and even more so within the humanities, the social sciences and planning. However, the

question remains whether this impressive growth is supported by an increase in quality. We have therefore left aside matters such as the globalization of authors, topics or citations. These aspects require a more in-depth research effort.

**Keywords:** globalization, positivism, scientometry, SCImago, multi-disciplinarity.

## 1 INTRODUCTION

These are interesting times for science, as several new trends have taken center stage over the past few years. Summarizing the changes of academic thinking in a keynote speech at the International Academic Forum joint Asian Conference on Sustainability, Energy, and the Environment and Asian Conference on Social Sciences, Professor Stuart Picken [36] mentioned that the way of doing science moved from ‘potholing’ to ‘mountaineering’ and now to ‘sky-diving’, *i.e.* from conducting research on a very narrow and specific subject, towards moving to a specific topic with an interdisciplinary view. In parallel, thinking within research has gradually shifted from linear (start point), to lateral (seeing links) and to dialectical (experiencing contradictions), thereby reflecting the internationalization and inter-disciplinarization of science (Figure 1). This trend is consistent with Lawrence’s remark [24] according to which interdisciplinary papers have better chances of acceptance for publication than uni-disciplinary ones. Apart from this publication bias, inter-disciplinarity increases the power of research [33] in times characterized by sudden changes, political fragmentation, fast circulation of information and conflicting values [6].

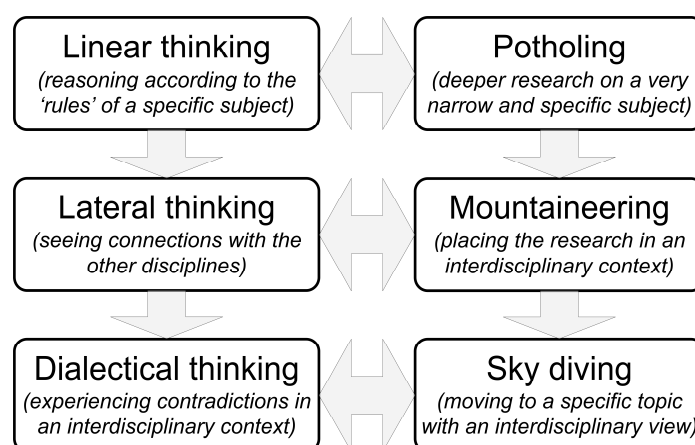


Figure 1. Paradigm of the new interdisciplinary science (based on Picken, 2015)

This new way of making science seems to be influenced by the positivist approach in all of its aspects [40]. On the one hand, the “publish or perish” slogan seems to be a direct consequence of positivism [3]; results must be disseminated by publication (conditioned by their validation through the peer review process), because apparently their value seems to reside in the number of citations ([15]; [24]). Today however, the simple acquisition of citations is not sufficient. A wide range of citations metrics, have been developed to measure the quality of research and compare researchers and journals. They are now used extensively [23], with the impact factor and Hirsch index being the most common. Nonetheless, the process of developing new metrics still continues. On the other hand, the positivist approach required a certain structure of articles, mirroring the research process: first, the author develops one or more hypotheses, based on a literature review; the methodological section then describes the methods used to test them and the results the author has obtained, and, finally, the discussion section addresses the relationship between the results and original hypotheses [27]. The validity of results is indicated by the analysis of statistical data resulting from the experiments [32].



In addition to the positivist influence, globalization [30] and the wide spread of inter- and trans-disciplinary research approaches have left a significant fingerprint on all disciplines, including the social sciences and the humanities [33]. At this point, we wish to stress the idea that planning research has merely a societal value and is not aimed at developing products that can foster economic growth or at delivering scientific articles that dramatically change existing theoretical perspectives [34].

Against this background, it was the planning-related disciplines that were primarily affected. While traditionally planners, including those in academia and research, measured their scientific yield in plans, the new policy forced them to publish. This article is trying to examine the impact of the new publishing-focused research, globalization and positivist influence on the spatial planning research ecosystem in Romania.

## 2 CHALLENGES OF PUBLICATION IN CONTEMPORARY SCIENCE

As mentioned earlier, the essential paradigms governing the publishing realm have changed during the recent period. Academic and research promotion criteria based on metrics have distorted the behavior of scientists [24], but also that of journals. Some authors are no longer interested in delivering their results to the appropriate audience, but are looking instead for those means that could facilitate their academic or research promotion; as a consequence, some journals are also attempting to meet their needs. The extensive use of self-citations and citation stacking ([18]; [22]) prompted Scopus, the well-known content indexing service, to re-evaluate all journals included in their database and to discard those with weaker ethics. Hence, the peer review process gradually shifted from analyzing the technical quality of articles to extending the analysis to the entire research process and, finally, to assessing the potential impact of an article, *i.e.* its citeability ([5]; [20]; [37]; [41]). Since most published articles address basic research, the model is applied to all disciplines; statistical analyses seem to be required due to this publication bias, and not as a real necessity [21].

Within such a context, a new ‘species’ of journals appeared. Predatory journals promise an easy-discoverable research repository, providing open access to readers, but charging the authors instead ([7]; [20]). There are other ‘advantages’, including a return to the old-style, technical quality focused peer review ([35]; [41]), and discounts advertised using a language borrowed from the business world ([4]; [35]).

In addition to mixing science with business (the ‘predatory journals’ case), journals have taken advantage of the Internet [20]. Most printed journals developed an online version and numerous online journals appeared. Predatory journals appear, almost exclusively, online. The use of the Internet has resulted into adding downloading / visualization criteria to the classical citation counts [38]. Furthermore, Altmetrics have developed Altmetric indicators, an alternative measurement addressing the societal value of research, based on the discussion of articles in the social media [25]. Consequently, some journals started to advertise their content within social media networks.

## 3 ADDITIONAL PRESSURE SET ON PLANNING-RELATED DISCIPLINES

At this point, it might be helpful to provide a concise overview of the publishing practices during the last few decades. Hence, by the end of the 1970s, social sciences defined the perspectives for assessing the efficiency of dissemination and the adequacy of research for phrasing social policies [8]. The first critical analyses aimed at providing scientific grounds to regional development policies appeared in the 1980s [14]. During the 1990s, large samples of social journals were used to build up indicators for measuring the relevance of research ([9]; [19]; [29]; [45]). Starting from the 1990s and continuing into the 2000s, some authors phrased clearer proposals for improving the quality of research within the social sciences in general, and within planning research in particular ([1]; [11]; [16]; [23]; [42]; [43]; [46]). At present, researchers tend to address research quality and social responsibility of researchers jointly ([12]; [13]; [26]; [44]; [28]).

However, this general picture is not consistent across disciplines and across countries. Planning-related disciplines, such as architecture, urban and territorial planning in particular, and social

sciences in general, are among the latest affected by the research ecosystem created by the application of the 'publish or perish' principle. In these fields the growth was even more spectacular, as articles are not necessarily the main output [17] and they often cite non-journal sources [2].

#### 4 ROMANIA AS A CASE STUDY

This situation is even more visible in Romania, a country that had to change its ways of doing science after joining the European Union. An analysis carried out around 2005-2006 revealed the gap between the visibility of Romanian scientists through publications and citations within an international context, and called for a new research strategy aimed at reducing this gap, by increasing, amongst others, the number of Romanian journals [39]. This policy was applied consistently, albeit with slight differences with respect to aim and pace, resulting into an overall increase of the scientific production of more than six times during 2008-2013 [31].

The data used in this study originated from SCImago journal data, which can be retrieved free of charge from <http://www.scimagojr.com/journalrank.php>. The website can display the number of journals for a specific subject (or group of subjects) and region (or country). The use of SCImago data involves adopting their classification; planning is a sub-topic of the social sciences, while in Romania planning-related disciplines are included in Arts and Humanities.

Figures 2, 3 and 4 display the worldwide and Romanian dynamics journals, focusing on social sciences, and particularly on the planning-related subjects, compared to basic sciences (physics and astronomy).

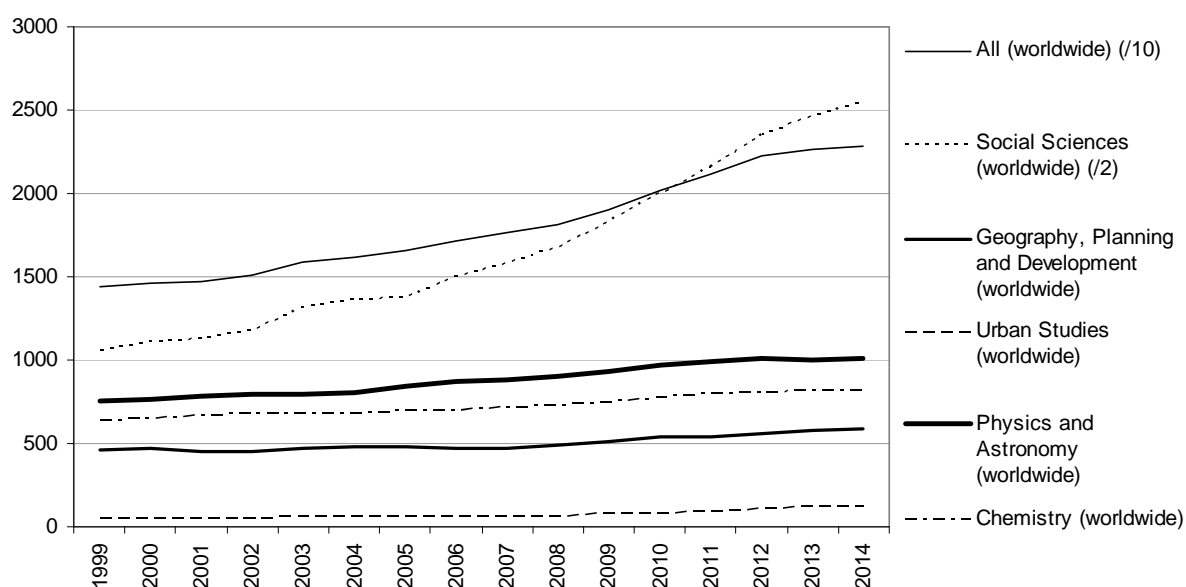


Figure 2. Worldwide dynamic of the number of journals by specific subjects, based on SCImago data (<http://www.scimagojr.com/journalrank.php>)

Figure 2 shows that despite the spectacular growth of the number of social science journals, compared to all subjects, but especially with basic disciplines (physics and chemistry), their number is still low (all social sciences journals sum up to less than physics and chemistry taken together). This trend reveals the fact that publication became customary to these disciplines only recently.

The Romanian situation (Figure 3) confirms this trend. In this case, it is even easier to notice the lag between social sciences, where the first journals appeared only in 2004, and physics and chemistry, where journals existed at the beginning of the period. The number of journals dedicated to social sciences, and also the two planning-related topics (Urban Studies and Geography, Planning and

Development), show the fastest growth rates among Romanian journals, especially compared to Chemistry and Physics and Astronomy, where the number of journals tends to stabilize after 2011-2013.

The fast growth of the number of Romanian journals, irrespective of subject, visible in Figure 4, which compares the total number of Romanian and worldwide journals, is most likely a consequence of the research policies started in 2005 and applied at different paces, but somehow consistently, and aimed at reducing the gap between the visibility of Romanian science within the international research ecosystem.

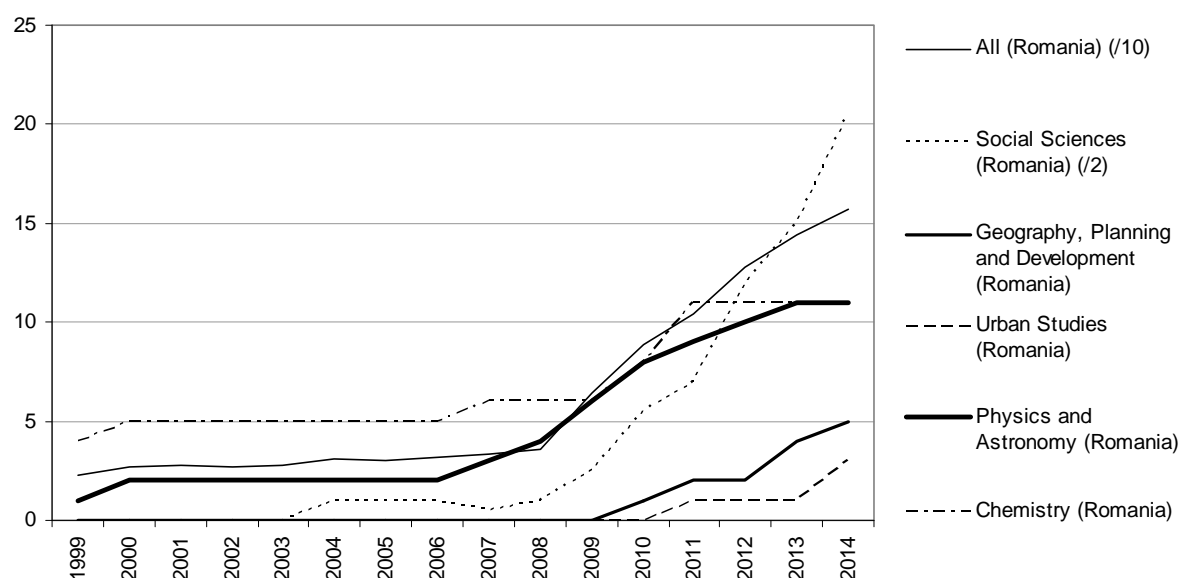


Figure 3. Dynamic of the number of Romanian journals by specific subjects, based on SCImago data (<http://www.scimagojr.com/journalrank.php>)

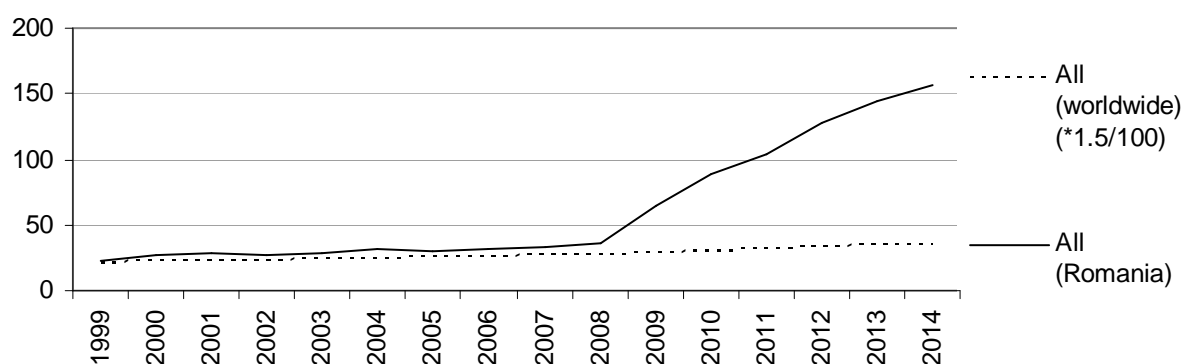


Figure 4. Dynamic of the number of Romanian and worldwide dynamic of the number of journals irrespective of subject, based on SCImago data (<http://www.scimagojr.com/journalrank.php>)

This overall spectacular growth shows that Romanian urban planning research is ready to take on the challenges of globalization and able to compete in the European research ecosystem [10].

## 5 CONCLUSIONS AND FURTHER RESEARCH

These new ways of doing science, and particularly the pressure to publish, have certainly influenced the Romanian research ecosystem, particularly within areas where publications were not the main output, such as spatial planning. In a rapidly changing context, the system provided a fast answer, showing its adaptation potential by increasing the number of publications and

articles. At a first glance, the Romanian research environment, particularly that evolving within the social sciences, seems to possess the ability to match up to the international scene.

However, these findings are based only on the figures; future studies should address whether these articles and publications are also able to face the global competition in terms of quality. Globalization of authors, topics or citations can provide a better answer to the question whether this growth is only mimicking the global trends or it is significant in qualitative terms as well.

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## Contents

### Introduction

1

### History

2

### Committees

3

Honor Committee  
Promoting Committee  
Organizing Committee  
3-7

### Keynote Speakers

8-17

Danilo Vespier  
10-16  
Andrei Șerbescu  
14-17

### SECTION 1 - Actions, permeability, reflexivity

20-257

GREEN ACTIVISM IN THE CITY AND URBAN AGRICULTURE  
Cosmin Caciuc  
25-33

URBAN DYNAMICS AND NEW CENTRALITY IN ALGERIA: CASE OF BISKRA  
Foued Bouzahzah, Naouel Hanane Boudjab  
35-45

THE INTIMATE SPACE AND THE SHARED SPACE: FROM OPPOSITION TO HYBRIDIZATION  
Gioconda Cafiero  
47-55

THE WERKBUND IN CROSS COUNTRY COMPARISON: MOBILITY AND GENDER ISSUES  
Maria Bostenaru Dan, Alex Dill  
57-64

DESIGNING WITH ALGEBRAIC SURFACES AS THE BASIS OF CYBERSPACE ARCHITECTURE  
Unciuleanu Oana  
65-70

THE ECOLOGICAL PROJECT'S CAGE

Andrea Giachetta

71-81

"THE PLACE" OF THE ARCHITECTURE MUSEUM

Turturică Ștefan Ciprian

83-91

ANOMALOUS SPACES AS A NEW OPPORTUNITY FOR THE PUBLIC REALM

Marta Rabazo Martín

93-101

STATUS PASSAGES: PROXIMITY AND CONTACT BETWEEN AGRO AND URBAN

Aurora Perra

103-111

BETWEEN THE VISUAL AND THE TACTILE

Alexandra Vișan

113-119

ON PERMEABILITY AND SPATIAL CONTINUITY IN URBAN FABRICS

Păcescu Alexandra

121-128

MATHEMATICAL THEORY IN ARCHAEOLOGY

Oana Diaconescu

129-137

EXTRA-LONG RESIDENTIAL INFRASTRUCTURES: COLLECTIVE HOUSING ON THE LARGE-SCALE

Sálvora Feliz Ricoy

139-149

NEW IN-BETWEENNESS ARCHITECTURAL AND VIDEO CODES IN THE DAN GRAHAM'S HOUSES

Angela Juarranz

151-159

BUILDING FROM INSIDE OUT. ON AN (ALMOST) FORGOTTEN APPROACH

Vlad Thiery

161-166

THE PARADOXES AND PARADIGMS OF MINIMALIST ARCHITECTURE

Iana Codruța

167-173

PLAY IN BETWEEN SCALES

Carlos Arcos Ettlin

175-184

IN BETWEEN THEOLOGY AND ARCHITECTURE

Ruth Adalgiza Constantinescu  
185-191

THE FUTURE FLOATING CITIES – A COMIC STRIP

Gențiana Iacob, Irina Mereoiu  
193-202

IN ARTS WE TRUST, SO HELP US ART: SHAPING PUBLIC SPACE AND EXECUTING COMMUNITY IN A DIVIDED CITY  
THE CASE OF MOSTAR (BOSNIA AND HERZEGOVINA)

Sonja Lakic  
203-211

THE ARTICULATIONS OF THE IN-BETWEEN PLACES. LEARNING FROM ALDO VAN EYCK

Francesca Oggiano  
213-220

MEET THE GLOBAL AND LOCAL CHALLENGES SUSTAINABILITY NECESSITY OF FLEXIBLE ARCHITECTURE IN  
EDUCATION SYSTEM

Hakim nia Mostafa, Kaveh Nazanin  
221-228

ADAPTIVE REUSE FOR POWER PLANTS: CASE STUDY – FILARET POWER STATION, BUCHAREST

Moisescu Radu-Ioan  
229-236

RE-APPROPRIATING EXPANDING CITIES: A PROPOSAL FOR A LEGITIMATE SQUATTING

Marta Busnelli  
237-244

THE PERFORMATIVE CITY: WOOOSH! WINCHESTER

Rosa Herrero, Sam Howard, María José Martínez, Mariana Sastre  
245-253

**SECTION 2 - Actors, processes, constraints**

258-483

THE SCALE AND THE FAÇADE. STUDY ON CONTEMPORARY ARCHITECTURE

Letiția Bărbuică  
263-271

THE ROLE OF LANDSCAPE ARCHITECTURE IN INTERDISCIPLINARY PLANNING PROCESSES: PARTICIPATION,  
PROTOTYPIC DESIGN AND APPROPRIATION IN PUBLIC SPACE PROJECTS

Tobias Baldauf, Florian Otto, Marie-Theres Okressek, Rupert Halbartschlager, Bianca Okressek, Kay Strasser  
273-281

PROCESS ANALYSIS OF ENVIRONMENTAL PERCEPTION OF PERSIAN GARDEN BASED ON PSYCHOLOGICAL  
THEORY OF ENVIRONMENT

Bahareh Bathaei  
283-289

RITUAL AND SPACE. TOWARDS AN ARTICULATORY METHODOLOGY OF WORLD VIEW, BODY AND ARCHITECTURE

Pablo Berzal Cruz

291-299

FROM TERRITORIAL TO DOMESTIC ENCLOSURE

Ivo Vidal, Ciro Vidal

301-309

THE SCALE OF THE IMAGE – ARCHITECTURAL SPACE IMPLICATIONS

Delia-Alexandra Prisecaru

311-316

FROM THE COUNTRYSIDE TO THE HOUSE: THE OTHER LIVING. PERSISTENCE AND TRANSFORMATIONS IN THE SARDINIAN RURAL

LANDSCAPE.

Federico Aru

317-326

BETWEEN THE APARTMENT BUILDING AND THE NEIGHBORHOOD

Mihaela Staicu

327-336

ARCHITECTURE AND COMMONS

Daniela Buonanno, Carmine Piscopo

337-346

INTERIOR WITHOUT NOSTALGIA BETWEEN THE GREY OF THE GOLDEN AGE OF COMMUNISM AND THE LUXURY GOLD OF THE GREY CONSUMPTION

Stefania Victoria Ruse

347-355

SHARING TERRITORIES

Guillaume Baron

357-365

SPACE APPROPRIATION AND URBAN PLANNING IN MACAO: A HISTORY OF IN BETWEENNESS

Regina Campinho

367-375

DESIGN OUT OF CONTROL

Claudia Chirianni

377-385

THE MAN WITHIN URBAN SPACE

Diana Ștefan

387-397

SENSITIVE BODIES IN THE CITYSCAPE

Javier Ruiz Sánchez, María José Martínez Sánchez

399-407

LIVING IN SPACELESS

Francesca Avitabile, Bruna Sigillo  
409-416

UNCOVER THE GROUND. ARCHEOLOGY AS RESOURCE IN THE DESIGN PROCESS

Oana Anca Abălaru  
417-421

INTEGRATING THE TOPIC OF FLOOD RISK MANAGEMENT INTO URBAN PLANNING AND URBAN DESIGN EDUCATION

Milena Tasheva-Petrova  
423-433

ACTORS AND POLICIES IN THE URBAN TRANSFORMATIONS. FAST RADICAL CHANGES OR SLOW EVOLUTIONARY PROCESSES?

Claudia Piscitelli, Francesco Selicato  
435-443

BUILDING AN ARCHITECTURAL DISCOURSE\_ A REVIEW ON SCHOLARLY ACADEMIC SPACE, UAUIM

Beatrice Jöger, Daniel Comşa, Andra Panait, Marina Mihaila, Mihaela Zamfir (Grigorescu), Oana Diaconescu, Anda-Ioana Sfinteş, Daniel Nicolae Armenciu  
445-452

3D MODELING AS EDUCATIONAL PROCESS OF DOCUMENTING STUDENTS PROJECTS: ARCHITECTURAL EXERCISES.

Marina Mihaila, Stefan Mihailescu, Sorina Vlaiescu, Andreea Nitu, Catalin Caragea  
453-462

SCALES OF BELONGING: NOTES ON SUSTAINABILITY AND GEOGRAPHICAL CITIZENSHIP

Stefan C. Popa  
463-473

TAME AND RECLAIM: DOMESTIC PERFORMANCES AS A MODEL FOR APPROPRIATION OF THE PUBLIC SPACE

Silvia Colmenares  
475-481

### SECTION 3 - Projects, methods, results

484-915

THE SYSTEM OF WATER MILLS ALONG ZAYA (LOWER AUSTRIA) AS AN ELEMENT OF MEDIEVAL SETTLEMENT

Mirela I. Weber-Andreşcov  
489-499

THE CONCEPT OF PLACE IN URBAN SPACE DESIGN: NOTES ON THE WORK OF FERNANDO TÁVORA

Bárbara Fernandes LEITE  
501-510



SHRINKING AND PERIPHERY: A RE-ACTIVATION FRAMEWORK. METHODS,  
TOOLS AND MICRO-ACTIONS

Angelica Stan  
511-518

BACK TO THE BASICS OF ARCHITECTURE: INTEGRATING SCALES

Hanna Derer  
519-529

SELF-SCALING AS A PROJECT METHODOLOGY IN OMA

Belén Butragueño, Javier F. Raposo ,Mariasun Salgado  
531-540

THE SCALE OF AN URBAN PROJECT

Ciro Vidal, Ivo Vidal  
541-550

THE LANDSCAPE PLAN OF THE TUSCAN REGION: IDENTIFICATION, ROLE AND  
PROJECT OF THE IN-BETWEEN SPACES

Massimo Carta  
551-560

SURVEY OF BUILDINGS, ELABORATION OF URBAN MAPS, DATABASES FOR  
DESCRIBING THE SEISMIC BEHAVIOUR OF HISTORICAL SITES

Elena Teresa Clotilde MARCHIS, Giorgio GARZINO  
561-572

AN EXPERIMENT BETWEEN DIFFERENT SIZES AND WISDOMS.

NAPLES RIONE SANITÀ

Gioconda Cafiero, Giovanni Multari  
573-582

THE FUTURE OF EXPO MILAN

Claudia Sansò  
583-593

THE REALM OF THE THRESHOLDS; CASE STUDY OF SANTA PALOMBA, ROME,  
ITALY

Arian Heidari Afshari  
595-601

SMALL SCALE HYBRIDISATIONS

Ana Horhat  
603-610

THE AIM OF THE SPACE IN BETWEEN OF NAPLES

Francesca Addario, Mirko Russo  
611-616

THE UP-CYCLE PROCESS. IN BETWEEN PAST AND FUTURE, THE HORIZON OF DECOMMISSION.

Maria Luna Nobile  
617-625

ANALOGICAL ASSEMBLY

Manuela Antoniciello  
627-637

THE INVISIBLE LAYER: TUBERCULOSIS SHAPING THE BUILT ENVIRONMENT

Ioana Virginia Craiovan  
639-644

IN-BETWEEN RURAL AND URBAN - RESEARCH AND DESIGN ABOUT TRANSITIONAL SPACES BETWEEN URBAN FABRIC AND FARMLAND: THE CASE STUDY OF BERGAMO

Marco Bovati  
645-655

METHODS OF ANALYSIS AND EVALUATION: CURRENT HOUSING AND URBAN CONDITIONS IN BRAZIL

Katrin Rappl, Leandro Medrano  
657-665

FROM IN-BETWEEN SCALES TO IN-BETWEEN SPACES THROUGH HUMAN DIMENSION

Maria Pia Amore, Marianna Ascolese, Chiara Barbieri, Adriana Bernieri, Marica Castigliano, Vanna Cestarello, Francesca Coppolino, Raffaele Spera  
667-676

MULTIFUNCTIONAL SPACE RELATED TO THE SCALE OF COMMUNITY CENTERS. FROM MERGING-CONCOMITANCE TO POLYVALENCE-ADAPTABILITY

Mihaela Zamfir (Grigorescu)  
677-684

PROJECT LOG: A HOUSE ON THE COUNTRYSIDE - A CONTEXTUAL APPROACH

Andra Panait  
685-693

2+2=7

IF THE PROJECT IMPROVES ITS PARTS

Luciana Macaluso, Flavia Zaffora  
695-704

IN(C)(V)ITE: THE IN-BETWEEN PROJECT  
Fernando Ferreira, Cidália Ferreira Silva  
705-714

TEMPORARY TOOLS FOR CHILD HOUSING WELFARE  
Alessandro Gaiani, Norma Bellini  
715-723

MAKING SPACE. THREE PROJECTS IN BETWEEN  
Luigi Siviero  
725-734

KNOTTING THE VOIDS: A METHODOLOGICAL TOOL TO INFILL THE HISTORICAL CITY  
Pina Ciotoli, Marco Falsetti  
735-742

THE "IN-BETWEEN" OF ARCHAEOLOGICAL SITES.  
THE CASE STUDY OF THE "VILLA OF AUGUSTUS" IN SOMMA VESUVIANA  
Raffaele Spera  
743-751

FILLING THE WALL: A PROJECT FOR THE MONASTERY OF SANTA CHIARA IN NAPLES  
Davide Buccione, Alberto Calderoni, Giampiero Castiglione, Vanna Cestarello  
753-760

SUSTAINABLE ARCHITECTURE: ACTIVE DESIGN INFLUENCE THE FAÇADE'S AESTHETICS  
Ștefan Mihăilescu  
761-767

URBAN COLORSCAPE STUDIES: BUILDINGS OR BILLBOARDS?  
Veronica Maria Zybczynski  
769-777

BETWEEN CODE AND NEUROAESTHETICS  
Mario Coppola  
779-789

SCALES OF THE INHABITED TERRITORY –  
FROM COMPLEXITY TO THE ART OF RESOLUTION  
Pedro Bragança, Marta Oliveira  
791-800

DISPOSAL AS OPPORTUNITY FOR NEW PUBLIC SPACES:  
THE STUDY CASE OF RIBEIRA DAS NAUS IN LISBON  
Giovanni Zucchi  
801-809

HOMOLOGY AND ANALOGY. TWO TECHNIQUES FOR THE LANDSCAPE PROJECT

Guglielmo Avallone

811-818

TIMELINES: LOOKING SIMULTANEOUSLY THROUGH THE FRONT SCREEN AND  
THE REAR VIEW MIRROR

Markella Menikou, Adonis Cleanthous

819-829

ȚIȚICA GEOMETRIES EMBEDDED IN THE ARCHITECTURAL  
DISCOURSE

Mircea Alexandru Mogan

831-841

ARCHITECTURAL GEOMETRIES IN DIGITAL DESIGN PROCESSES

Mircea Alexandru Mogan

843-850

ARCHITECTURE UNDER WAY.

AN ANTHROPO-ARCHITECTURAL APPROACH

Anda-Ioana Sfinteș

851-857

IN-BETWEEN SPACES.

THE FORMER PSYCHIATRIC HOSPITALS, NEW URBAN GHOSTS

Angela D'Agostino

859-867

FROM "IN-BETWEEN" TO "THROUGH" SPACE.

SCENARIOS FOR TODAY'S PADOVA

Luigi Stendardo

869-878

ARCHITECTURE-TERRITORY FOR THE URBAN DESIGN, 1970-2016

Giovanni Battista Cocco, Silvia Alberti

879-887

HOUSING AND URBAN SPACE

Matilde Plastina

889-894

WELL-BEING OF PATIENTS IN THE PEDIATRIC ONCOLOGY DEPARTMENT OF THE  
ONCOLOGY INSTITUTE OF BUCHAREST. SPACE, COLOR, SPUND

Mihaela Șchiopu

895-903

FOOD VS. ARCHITECTURE. FROM THE ARCHITECTURAL FORM EXPRESSIVITY  
TO THE SPATIAL INTERPRETATION OF A CONCEPT: 2015 MILAN UNIVERSAL  
EXPOSITION

Daniel Comșa, Marina Mihăilă

905-913

## SECTION 4 – Future Challenges

916-1246

TOPOGRAPHICAL ARCHITECTURE. FROM LOCAL TO TERRITORIAL

Ioana Moraru

921-926

FROM PRIVATE TO COLLECTIVE

Giorgia Di Cintio

927-933

INTERIOR URBANITY; IN-BETWEEN SCALES' SCENARIOS FOR CONTEMPORARY  
URBAN DESIGN, LEARNING FROM AHMEDABAD, INDIA

Arian Heidari Afshari, Mehrnaz Rajabi

935-942

NEW PUBLIC SPACE IN BETWEEN CLIMATE CHANGE

Paola Scala

943-950

RESEARCHING THE IMAGE OF THE STREET

Marianna Ascolese, Alberto Calderoni

951-959

THE INDUSTRIAL AREA FILARET-RAHOVA, A NUCLEUS FOR THE FUTURE  
SUSTAINABLE DEVELOPEMENT OF BUCHAREST

Elena-Codina Duşoiu

961-970

RENEWAL PROCESSES ON EXISTING BUILDINGS AND OPEN SPACES:  
ACTIONS, PRACTICES AND DESIGN STRATEGIES FOR REGENERATION IN MILAN

Barbara Coppetti, Elena Fontanella

971-979

MICRO-URBAN ARCHITECTURES: ASAKUSA AS URBAN AND RESEARCH  
LABORATORY

Chiara Toscani, Giorgia Cedro

981-987

ARCHITECTURAL COMPETITION AND INNOVATION, SUSTAINABILITY ISSUES

Ştefan Mihăilescu

989-996

TECHNOLOGY IN|BETWEEN SCALES. CONTEMPORARY LANDSCAPES

Cristina Enache, Mihaela Hărmănescu

997-1004

PARKING LOTS: THAT FORGOTTEN URBAN SPACE

Marta Rabazo Martín

1005-1014

DIVER-CITY: BUCHAREST, A CITY WITH CITIES

Andrei Eugen Lakatos

1015-1025

HERITAGE IN PLACE IDENTITY. AN OBJECT-SCALE APPROACH

Alexandra Păcescu, Vlad Thiery

1027-1031

PLANNING IN RESTRICTIVE ENVIRONMENTS – AN ANALYSIS OF BEST PRACTICE  
EXAMPLES FROM EUROPEAN COUNTRIES

Radu-Matei Coheci

1033-1041

INTERMITTENT WATERS

NEW DESIGN APPROACHES TO CLIMATE CHANGE IN SARDINIAN LANDSCAPE

Francesco Marras

1043-1050

A PROGRAM FOR THE URBAN EDGES

María A. Leboreiro

1051-1059

PUBLIC AND PRIVATE SPACES IN NOMADIC HOUSING:  
A RECENT CASE STUDY IN TURIN

Simona Canepa

1061-1070

THE SCALES OF MAPS

Maria Bostenaru Dan

1071-1079

PSYCHOARCHITECTURE

Codruța Iana

1081-1089

URBAN IDENTITY - BRANDING BETWEEN ART AND ARCHITECTURE

Simona Butnariu

1091-1097

HIGH ALTITUDE ARCHITECTURE

A LINK BETWEEN PRIMITIVE AND GLOBAL ARCHITECTURE

Ana-Maria Machedon

1099-1106

RURAL AREAS: GREEN HOPE FOR A GREY FUTURE

David Hidalgo Pérez

1107-1116

FUTUREPORT

Markella Menikou, Adonis Cleanthous

1117-1127



EXPLORING THE ARCHITECTURE PROCESS WITH ENVIRONMENTAL  
PSYCHOLOGY

Hakim nia Mostafa, Moayyer Rouhollah  
1129-1136

BUILDING-INTEGRATED GREEN SYSTEMS: COMPARATIVE ANALYSIS OF THE  
ENVIRONMENTAL, ECONOMIC AND SOCIAL BENEFITS

Simona Guergova  
1137-1145

INTRICATE COMPLEXITY OF DEVELOPING ARCHITECTURE AND URBAN DESIGN  
PROJECTS IN SUB-SAHARAN AFRICA: CASE OF LAGOS, NIGERIA

Ifonima Essien  
1147-1156

THE TEMPORARY ACCOMMODATION PHENOMENON: HOUSING-TOURISTS IN THE HOME-HOTEL

Alessia Allegri, Filipa Serpa  
1157-1165

MAD CITY AND THE CONTEMPORARY CITY

Maria Pia Amore  
1167-1176

SMALL IS BEAUTIFUL -ARCHITECTURE OF COMMUNITY-BASED DAY CARE CENTERS FOR ELDERLY, A CHALLENGE  
FOR AN AGEING SOCIETY

Mihaela Zamfir (Grigorescu), Mihai-Viorel Zamfir  
1177-1184

RE-VERSE: THE MEDITERRANEAN 'MEDIUM-SIZED' AGROCITIES

Adriano Dessì  
1185-1193

URBAN REGENERATION ON THE EASTERN WATERFRONT AREA OF LISBON: HERITAGE AS A FUTURE CHALLENGE

Ana Nevado  
1195-1204

DEDICATED TO A BETTER FUTURE

Dorina Tărbujaru, Ana Muntean  
1205-1214

MOVING TOWARDS SUSTAINABILITY

Dorina Tărbujaru, Alexandra Tatar  
1215-1223

SYSTEMIC RESEARCH IN ARCHITECTURE

Beatriz del Río-Calleja, Alfonso García-Santos  
1225-1235

ROMANIAN SPATIAL PLANNING RESEARCH FACING THE CHALLENGES OF GLOBALIZING SCIENCES

Alexandru-Ionuț Petrișor, Andrei Mitrea  
1237-1243







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# **IN BETWEEN SCALES**

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**Bucharest, September, 28-30th 2016**