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Creativity and Spatial Urban and Landscape Perception in Architectural Imagination

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Abstract

The paper proposes to debate through a main radiography, the field of creativity applied in spatial and temporal perception of urban, landscape and architectural space. In terms of transdisciplinary field, it is possible to integrate the related sciences of a field, in another field of science or art, and make a hybrid, a border between sciences and art, between different areas of specialty, with certain creative valences in the basic field. Creativity in the urban-landscape landscape is based on the sensitive reading of space and landscape, passed through the own and different perception of urban actors (specialists in the basic and related fields, people of different ages, tourists, public administration, politicians, users, etc.) The paper starts comparing form and history on hand of traditional or modern approaches in the 20th century. This is the outgoing point to look at different typologies in architecture beyond function, and the best example of architecture beyond function are the monuments. On the other hand, the different developments in the 20th century were influenced by technology. Iron and steel in architecture introduced engineering, and Le Corbusier industrial thinking to architecture. Industry also shaped cities, as the ideal city of Chauc shows. Returning to architecture beyond function, new technology made possible the new architecture of the museum, which brings memory of other functions, for example at Centre Pompidou. And today the memorials of the traumatic events of the 20th century, man-made or environmental, can be seen as a result of these considerations of presenting the unrepresentable.

Keywords: *monument; technology; philosophy; architecture; creativity.*

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1. Introduction

This paper is investigating the challenges of modern architecture with the arrival of technology, which led to separation of specialisations. Further, it explores the role of memory for the architectural imagination, in landscape and urban metabolism of the city, using creativity and imagination, in transdisciplinary understanding.

The knowledge is related to cognitive science (a set of concepts and techniques derived from psychology, artificial intelligence, semantics and semiotics, hermeneutics and heraldry) which is useful in understanding the perception mechanisms of the landscape and metabolic urban phenomenon of creativity, the mechanisms involved in the formation of notions or the living mechanisms associated to metabolic neural processing.

Science thus offers the framework and infrastructure capable to directly tackle the solution of nonlinear equations and offer a special research space in Creativity and Spatial Urban and Landscape Perception in Architectural Imagination, a numeric space in which we can fully study the genesis, dynamics and evolution of the metabolic urban system, through the phenomena, behavior, evolution and the dynamics of the system's internal processes from a metabolic perspective [1].

2. Problem Statement

Architecture is a discipline of creation, for which in research the so-called “research by design” is important. For this reason classical research methods do not apply, but an innovative approach is required. Such a research method is the investigation by methods of philosophy, epistemology and from transdisciplinarity field.

The paper starts with the approach by Hays [2] on architectural imagination. Some important philosophic approaches employed to enquiry the architectural imagination are those of Wittkower [3] and Hegel [4]. Further we chose some examples to analyse with these methods, mainly from the architecture of the 20th century and related literature as further explained in the text.

3. Research Questions/Aims of the research

Architecture is defined by activities and containers of these activities, shaped by them. As such, it differentiates between function (related to

activities which define the usage of a space, in history and time context of evolution) and form (the container, the space where these functions take place, the urban morphogenetic typology of urban morphostructural “seed” / urban tissues), which is the first research question. The form is defined by the material, and also the structure. As such, the paper dedicates a significant part to how the structure shaped architecture with technology arrival in the Modern times. The research hypothesis relates to the architecture object as an urban system, between user, usage and usability.

A second research question relates to typology. Different architecture programmes, resulted into different forms in terms of architectural language, although the programme is related to a function, and hence the issues of the first research question apply.

And finally the third research question addresses representation, related to memory, being it in museums or in memorials. The monument gets a new definition. If we were to classify, memorials are a different categories of the buildings with a function, as they are not used by humans to perform an activity. Here the form and the symbolic message prevails.

The architecture, urban and landscape design have an important symbolic and hermeneutic sense of space and form in time, and the human perception is different.

4. Research Methods

The research method is based on a transdisciplinary approach to creativity and imagination [5] in the field of landscape and urban planning, between art and architecture, science and perception, landscape and the psychology of the built space. It employs philosophy as a method of research in architecture.

Auguste Berque says that the landscape is a social fact, a natural, subjective and objective, material and cultural product that is real and symbolic [6].

5. Findings

This chapter presents the results, in a structured manner.

5.1. Form and history

A first study case is a comparison between villa Savoye by Le Corbusier and Robbie House by Frank Lloyd Wright. These are two buildings of 20th century architecture, two classical examples, by Le Corbusier (Villa Savoye, 1928) and F.L.Wright (Robbie house 1908)

respectively. Although both from the 20th century, the philosophy of the two architects was different. F.L.Wright practiced organic architecture, integration in nature. Le Corbusier was an adept of technology. This can be seen in the materials chosen. For Robbie House the material is ceramics (brick and the roof material as well). For Villa Savoye the material is painted and not visible, but must be steel, glass and concrete. Through this the building and F.L.Wright relates to the region and to the past while the building of Le Corbusier breaks with it. The colours of the two buildings are underlining the materiality, while Le Corbusier's building looks sterile like a hospital, in the spirit of white modernism, the building of F.L.Wright relates to the colours of nature. Another aspect what can be compared at the two buildings is the vertical partition in foundation, main part and top. Both buildings have a not classical top, although F.L.Wright displays a roof, but it is a flat roof, with wide cantilever, a new language as well, but still derived from the classical. Le Corbusier instead breaks totally with tradition making a roof garden on the flat roof. The foundation is also different. Like in the example of the temple in the lecture, F.L.Wright's building sits on the ground with an accentuated fence. Le Corbusier's building is presenting a transparent public ground floor, on columns, thus inverting gravitation. The middle is revealing the structure, which is not load bearing at Le Corbusier and load bearing in the brick walls of F.L.Wright, as the partition of windows shows. The partition proposed by Le Corbusier is in accordance with his 5 principles of modern architecture. Finally, Le Corbusier's house stays free on a grass field, with no neighbouring buildings, in a lighting in a forest, while F.L.Wright's building is in the middle of trees and buildings. This is in concordance with the principles of modern architecture in case of Le Corbusier, who denied contextualism, for which Italian architects had other 5 principles. From philosophy we can related to Norberg-Schulz and phenomenology, which promoted genius loci, but also to Heidegger.

5.2. Architecture and typology

In a second case study Aldo Rossi's Monument to the Resistance is a good example of memorial architecture. As memorial monument it relates to the typology of funeral, and as such uses references to symbolic architecture. The cube as primitive form is a form of symbolic architecture. The steep stairs remind of the pyramid. The cube is empty and open above as it will be the ceremony space in the Modena cemetery. It is architecture in the sense that it is and it is not enclosure of a space. If we had to build Aldo Rossi's monument of resistance in Seagrata the best material I can use is so-called Finpappe. This is a beige cartoon but easy to cut. Both sides are identical

and it has the necessary resistance to build walls by itself. The thickness of course depends on the thickness of the Finpappe and not necessarily reflect the scale. Alternatively mus (pappe filled with foam) could have been used, but this would have made the section visible, and it is more difficult to glue, or timber plates. More difficult is with the stair which cannot be made as such but as a slope. I think the steps would have been essential. This made me think differently. The monument in Segrate has an essential new element, the steep roof. Although this does not cover the openness of the closed precinct, it makes a difference connecting the stair to it, which is detached along an axis. This makes the shape longitudinal instead of centered as in case of the cube. Aldo Rossi is a good example for typology [7], and through this we go a step further.

5.3. Technology

A third case study is the investigation of infrastructure and detail in the Crystal palace [8] [9] [10]. One effect is that of immensity. Through its size and shape, the Crystal palace seemed never-ending. Another effect is that of transparency. The large sheet glasses permitted a communication with the sky and the park, which included also the trees within. The third effect is that of a sacred space for modern technology. The crystal palace reminded a cathedral not only through its polychromy, but also through its structure in naves.

Then we return to Le Corbusier and Le Corbusier's machines for living [11] [12]. Concrete was a material for a new architecture because it allowed for a better structural response with a minimum of material than any other material except of steel. French architects of turn of the century used it innovatively. Concrete allowed for the five new points of the architecture of Le Corbusier because it allowed for a frame structure, with no load bearing walls, through its tensile response due to the reinforcement. The frame structure meant pilotis which allowed free plan and free facade (with band window). The floors were flat and this allowed for the roof garden. However, we want to emphasize frame structure, meaning columns and beams. The flat slabs in Domino are not suitable for earthquake prone countries as the beams were abolished, to allow for free plan. A suspended ceiling might help. Not like in the work of early engineer-architects the technology is dictating the form (as we saw in steel architecture and we see today at Calatrava) but the technology is enabling innovation in dealing with a rather classical composition of planes in multi-storey buildings as also the comparison of Palladio and Le Corbusier villas show. It is difficult to design a house on pilotis, we are used to have the living room at entry level. To

overcome this problem I designed a house on a slope. Thus, opposite to villa Tugendhat (Fig. 1), from entrance side there are pilotis, but at garden side the living room is at ground level. It is also difficult to design a row house on a slope. In order to get light for all bedrooms, the slope had to end at the level of the bedrooms. I have one bedroom facing the entrance side and one the other side. I designed a 2 level living room, with a "supanta" a hole from the second level to the first, which is a passage along the bedroom for parents which looks to the living room. Under it is the dining room, leaving the other part with the fire place free on two levels. In the middle the living room is closed by the staircase which goes down to the pilotis. The transparent ground floor has been chosen to concorde with an architectural language for public space also by Béla Lajta at Rozsavölgyi house in Budapest and by Adolf Loos for house at Michaelerplatz in Vienna but these are not earthquake prone zones. In Bucharest, Romania, these proved vulnerable in the 1940 and 1977 earthquakes (Fig. 2a). However, the new developments with base isolation in L'Aquila after the 2009 earthquake use exactly this language of Modernism and are earthquake safe (Fig. 2b), but do not correspond to the philosophy of the transparent public space from the early 20th century in Budapest and Vienna (Fig. 3). They are however derived from Le Corbusier's pilotis in Villa Savoye for the garages.



Fig. 1. Villa Tugendhat in Brno by Mies van der Rohe, an icon of the Modern Movement (1929-1930). *Photo:* M. Bostenaru.



Fig. 2. The principle of pilotis and earthquakes.

A. Earthquake prone building in Bucharest, Romania. B. Earthquake resistant building with base isolation in L'Aquila, Italy. *Photos:* M. Bostenaru.



Fig. 3. The facade language for the interior functions.

a. Rózsavölgyi house in Budapest, Béla Lajta (1912-13), b. House am Michaelerplatz in Vienna, Adolf Loos (1909). *Photo:* M. Bostenaru.

5.4. Representation and context

In the 18th century the issue of planned cities reemerged. To bind it with technology, was the ideal city of saltworks at Chaux [13]. One important change in the history of plans is the change from square shape to round shape. This has to do with the circle shape having to do with nature (how waves propagate etc.). Second, the development occupies just half of the circle leaving half to nature, just as in the 18th century city of Karlsruhe. Integration in nature was an important point. Third the functional relationships change, for example the position of the director's apartments.

Architecture as representation, a next case study is the Pompidou centre in Paris [14], an iconic work present also in the Minieurope exhibition

in Brussels (Fig. 4). To Pompidou centre the philosophy of Baudrillard applied [15], which we also investigated in a dialogue with Jean Nouvell [16].



Fig. 4. Centre Pompidou.

Photo in reality, Maria Bostenaru 2010, and at Minieurope in a model, 2014.

Another example is a museum in China, Wang Shu's Ningbo History Museum (2008). In this museum architecture returns to tradition. The tradition is reflected first in the materiality. Bricks up to 1500 years old from demolished villages around are used. These ancient materials, not like in case of stone where stone from the same quarry may be used to replace deteriorated materials, give a sense of authenticity for that regional area. Second, the tradition is reflected in the way these bricks are put in oeuvre, which helps preserve ancient crafts used by the inhabitants in case of catastrophes, and demolition is after all also a catastrophe. Again, like in case of Centre Pompidou, the museum building itself is the real art work which might accommodate the void. The technique of using material from demolished sites was used also in Warsaw for the Jewish neighbourhood to build blocks of flats of the material but given the epoch this material was hidden since the former inhabitants did not survive and the new inhabitants did not want to live in a memorial. From this point of view a museum is a more adequate programme.

Finally, continuing from Aldo Rossi's memorial, presenting the unrepresentable is investigated in the case of Holocaust memorials. Eisenman's memorial in Berlin (Fig. 5) promotes critical memory by avoiding to materialise the memory of the loss. The void is acknowledged by the walking without direction as well as through the bare prisms, with no names on them. The monument is the opposite of monumentality since it is not central, it has no center, it can be entered of anywhere and there is a search for exit. It is actually a grid equalising the site. It is instructive through the fact that the ground losing stability, being undulated displays the loss of life and the burying under the horizon line when it is entered symbolises the

loss of landmarks for a civilisation which existed for more than 1000 years and still was not accepted. From Nora's [17] distinction I would chose the passage about archives. Archives are obsessed with the record, which is frozen in time. Instead, memory should be accessed by entering that time in the past, like in literature. The memorial act is an anniversary which is the pendant to the memorial, while the work of Eisenman is about multiple. A discussion point is the relationship of scale, from the building to the city, as also land art monuments such as the Cretto of Burri in Gibellina used the destruction of a site for a memorial. The Cretto petrifies the ruins and the walk through the ruins is similar to the one in the Holocaust memorial. Also the natural disaster leads to loss and numerous times there are no memorials to it, the ruins of natural disasters are created by a moment and destroyed in the moment of reconstruction. The idea of labyrinth may have its origins in landscape design, in the initiation gardens of Poliphilo from the Renaissance who was lost in the Paradise garden, the garden after death where the Sleeping beauty awakes. Memory relates also to the previous research on *genius loci* and the philosophical approach of phenomenology (Heidegger).



Fig. 5. Holocaust memorial. Photo M. Bostenaru



Fig. 6. The labyrinth in landscape: Versailles gardens

(a) and Schönbrunn gardens, Vienna (b). *Photo* M Bostenaru.

Another memorial, Judenplatz Holocaust by Rachel Whiteread in Vienna [18] is a symbolic one, on three levels, symbol, icon, and index. For example the icon is used in the way the books are represented, highly realistically on shelves, evoking the Jews as people of the book. The room is also an icon, although we can see it only from outside. The door is an index that a room has to have a door. Every room has to have a door, an entrance. The closed door is a metaphor (symbol) of the memory, a memory which cannot be accessed. Maybe the door is the best symbol to memory, as explored in an artistic work of us, which also explores the labyrinth and the paradise garden in a philosophy approach [19]. The books, which have an archival function, are also closed and cannot be extracted to see written memory records. This reminds the void left behind. The books in themselves are kinds of doors to memory. The petrification is also an element of symbolic vocabulary, through the fact that memory is old and already petrified through history, it is not living anymore, it is dead.etc.

6. Discussions

One of the discussion points is sincerity in creative architectural approach, if the structure of the container shall be expressed or not. We first saw it in dealing with the form and function hypothesis. The container, the architectural structure, can consist of different materials, which can be or cannot be expressed in the form. This is a choice of the architect depending on style, not on the time. Especially in the 20th century a number of simultaneous styles existed.

If we look at architectural programmes, we come across the structure of the container again. The function is expressed in the architecture language, in the material which can be transparent or not. This resulted into different forms, and so we come back to the first research question.

The landscape design space and form, consists in an urban system, integrated in the human settlements, through specific and particular urban and landscape morphotipologies, with with distinct perceptions.

The third research question deals with the memorial, seen also as a large landscape formation, as land art. In the same meanwhile, The Landscape is the expression observable through the senses, of the earth's surface, resulting from the combination between nature, technology and human culture. It is continuously changing, and it cannot be perceived otherwise but in its dynamics, the history being the fourth dimension [20].

Mental affectation generates through perception a phenomenon of appropriation of the metabolic urban and landscape space, perception being

a constructive process, a result of the analysis and synthesis of information coming from two sources: external sensory stimulation and memory [21].

7. Conclusions

The urban perception and identity, depends on reshaping the urban landscape following the restructuring of the city, during the creativity and imagination process.

The new identity must be related with the urban history, with the value and the character of the places, with the specificity elements which gave birth to the establishment of the human settlements. The natural structure, the spirit of the place, the spatial coherence, the existing heritage and the architectural objects are the elements that make (together) the context of this identity creation [22].

Regarding the systems theory or cybernetic theory applied to investigate the buildings, we can conclude that apart of structure mathematics pure mathematics lead to a patterns model. The perception is important in the use of the contained and in the appropriation of memory.

Numerous philosophical methods can be applied for the investigation of architecture, between phenomenology and deconstruction. Creativity, cultural transformation and the appearance of a new conception of the world and reality can generate new components of the urban and landscape metabolism at a phenomenological and behavioral level, causing the restructuring, recalculating and rethinking of the metabolic urban and landscape system, according to the new systems of urban thought, values and perception, using creativity and imagination [23].

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