

## **"STUDIES ON THE PERCEPTION OF BUILT SPACE. PHOTOGRAPHY AS INSTRUMENT FOR MENTAL REPRESENTATION OF ARCHITECTURE"**

### **PhD Thesis – Summary**

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*„Architects live and die by the images that are taken of their work, as these images alone are what most people see. For every person who visits a private house, there are maybe 10,000 who only view it as a photo.”*<sup>1</sup> Julius Shulman, 2008

In the present, architects live, at a large extent, through the photographs taken of their creations, and on the other hand, architecture is mostly consumed indirectly through the bright screens of the devices through which we are connected to the Internet. By approaching photography as a process capable of generating a mental representation of space, this thesis wants to analyze how the perception gained through photographic images works, what are its limits and limitations, comparing it with the direct multi-sensory perception of space. In this way, the theme of the thesis is linked to two different ways of perceiving architecture: through photography and directly through direct experimentation of space. Thus the structure and character of the thesis proposes an interdisciplinary perspective on the studied topic.

The image is a fairly vast concept, which is "halfway between the concrete and the abstract, between the real and the unreal, between the sensible and the intelligible" and many passages of this thesis underline the superiority of the multi-sensory perception. However, the research direction is intended to be a constructive approach to architectural photography by outlining the things that make it an interesting, original and useful tool of architectural representation. In addition, both the mass-media and the contemporary culture in general are based on visual communication through images, which makes the actuality of the theme quite obvious.

The thesis begins with a prologue that is an introduction in the studied area, and it defines the basis of this research. Starting from the Vilém Flusser hypothesis, according to which we are on the verge of a fundamental change in human culture, the present context is presented from the point of view of the subject. It also introduces the basic theme, of photography, its functions and some essential features that are revealed. The first chapter also defines general terms and how they will be used.

The second chapter, entitled "Perception of space through photographic images", is an analysis of the photographic image and the way it is used as an instrument of space representation.

<sup>1</sup> Julius Shulman in the documentary: *Visual Acoustics: The Modernism of Julius Shulman*, Director: Eric Bricker. USA 2008

The image is a concrete representation of a material thing or an abstract concept. Being a representation, it possesses a certain independence from reality. Photos are material images on which the observer builds a mental image of the represented subject.

The photos capture a fragment of time and space, allowing the observer to analyze it and return to it whenever it wishes. The film, on the other hand, does not have the same power. Showing an interval of time, the images succeed in a continuous stream, tending to cancel each other.

The photographic image is not a copy of reality, being a subjective and sensitive representation of its referent, influenced by a wide spectrum of intellectual, cultural and affective factors. In the process of perception and mental representation of space through photographic images, the subjective filtering is doubled. The first filtering takes place at the photographer's level, consisting of a material image, the photograph, based on which a second filtering takes place at the level of its observer, who builds his own mental image. The representation of space at the observer's level becomes the image of the image of the space. At these two levels, between the objective reality, the photograph and the final representation, there are, in fact, a number of eight intermediate images.

From the point of view of the links between vision and cognition, visual perception can be considered visual thinking, Gestalt Theory defining a set of principles. The semantics of the image highlights its three functions: that of illustration, sign and symbol. The photographic image, viewed as a sign-image, is endowed with a message, a connotation that can or can not be coded.

The way pictures are structured to convey an idea is given by their syntax. Images may have the power to function independently, but joining two images, a more comprehensive series, a sequence, a group or an essay will generate different relations between the component images.

In visual communication, photography exceeds the limits of written language, being an efficient, universal language understood by any observer. Despite the fact that the photographs are a subjective and often deformed interpretation of the world, they have a great power of credibility attributed to them.

The photographic image is largely a testimony of the photographer's personality, but besides this, the image undertakes a whole series of transformations generated by the mechanisms of the media channel through which it is distributed. Mass-media, like photography, is a built product, shaped and distorted by a number of factors. It is not only about informing, but also about influencing opinion. Through photography and media, people build their reality. The concrete world doesn't matter as much as how we relate to it - the mental image we build. Therefore, we need to be critical consumers of visual representations.

In the contemporary times, the media is transformed into personal media, the internet in its second generation becomes participative, a virtual social interaction environment. In this context, the image is the most powerful medium of communication, and the changes that have occurred recently have a major influence on our structure. Photography had a fulminating evolution through its successive stages of liberalization and development (the 35mm "narrow" film, digital photography and the post-mass media), now becoming a social ritual that strongly influences our existence, but not all the time in positive way.

Architectural photography covers a wide range of images and techniques, but we can define it as the photographic image that has the denotation of architecture. It resembles portrait photography because it has to penetrate the physical shell and recreate the character, the atmosphere, the identity of the architecture.

Trough case studies, two different approaches of making photography are analyzed. The captured image is the characteristic image of the documentary photography, it involves non-interference with the subject and its presentation as part of the spatial and temporal context to which it belongs. An entirely different approach is the built image, which is the environment for the transmission of a message or concept, the image characteristic of advertising and propaganda. In this category of images, the intention and ability of the photographer becomes vital. Studying Julius Shulman's work, we can not fail to consider his approach to take over the architect's intent, transform, translate and transfigure reality.

Since photography, as a representation of reality, can not be related to objectivity, the theme of the authenticity of photography becomes a relatively complex one. However, we can state that the authenticity of a photograph may result from the veracity of the representation process and the consistency of the final result.

The photography works unexpectedly with time and memory. We would be tempted to think that it is a memory, but, as Roland Barthes highlights, it is rather counter-memory, that with time is taking the place of authentic memories. By highlighting the relationship of photography with time, Susan Sontag, associates it a strong melancholic character.

The main limits of photography, as representation of architecture, are given by: the transmission of purely visual content, the flattening of the three-dimensional space, the full subjectivity of the process and the character of human visual perception.

Photography represents a subjective transfiguration of reality, which, actually, manages to replace it.

Chapter Three analyzes the direct physical relationship of the individual with architecture, the direct perception of the built space and a number of particularities of this process.

Perception is the selective psychic process of knowledge and understanding of the exterior world through the senses. It involves the interpretation of a direct set of primary sensations to generate a unitary image. The process of interpretation is indissociable from a series of subjective factors like the individual's consciousness or its mental state, so the way in which space is perceived varies from one individual to another. Through perception, we build our representation of a certain environment, in the form of a mental image that persists after the direct contact has ended. In some cases, this construct is wider than perception, including areas inaccessible to the senses. Mental representations of space can be considered both a set of statements about the environment and its subjective deformations because of the two-way relationship between perception and representation. However, the individual tends to give his mental representations the status of objective data.

Phenomenology draws attention to the fact that architecture is not strictly limited to the visual dimension - built objects, it must be understood in concrete terms, as an existential space, a background for people's lives. Architecture for Peter Zumthor "has a special physical relationship with life. I do not think of it primarily as either a message or a symbol, but as an envelope and background for life which goes on in and around it, a sensitive container for the rhythm of footsteps on the floor, for the concentration of work, for the silence of sleep. ..."<sup>2</sup>

Through the body we relate and perceive the environment, but since antiquity it has been used as a benchmark to measure, modulate, and proportion architecture. The space that surrounds the body can be divided into three egocentric regions: the personal space, the space of action and the space of vision.

<sup>2</sup> Peter Zumthor *apud*. prof. Ana Maria Zahariade, *Curs Arhitectura Locuire Oras, UAUIM 2007-2008*, Online: [www.scribd.com/document/238339707/curs-alo](http://www.scribd.com/document/238339707/curs-alo) [retrieved on 01.11.2018]

By the synesthesia of the senses we perceive the space. But the spectrum of perception exceeds the classical five senses in generating a rich multi-sensory experience, impossible to acquire through other means of representation. In this process, sensations are not summed up, rather merging into a total perception, a polyphony of senses. The sensory input is not equal, the sight offering more information, generating a structure completed by the other senses, considered "archaic" and by motion.

The vision is the ideal sense of distance, through which we acquire a superficial summary of reality. It is a passive sense because it does not require to be in direct contact with the perceived subject. The vision is conditioned by the presence of light, which influences the way we see. When we do not have enough light, we can not perceive colors, the sight being reduced to nuances of black and white. The sight has two components: foveal sight provides the perception of details sometimes extracting the individual from the context in which they are located, and the peripheral sight that integrates the viewer into the perceived environment. It is interesting to note two particularities of the peripheral vision: it has a higher priority over the foveal one, and that it seems to provide strictly black and white information, the color being subsequently given by the brain.

Beyond the physiological aspect, once with the emergence of perspective, in Western culture the eye was defined as the center of perception. Over time, its importance has grown, reaching a hegemony of vision, an ocularcentric culture.

The haptic perception sums up the tactile and the kinesthetic perceptions, the movements of body and its parts. It is the deepest and perhaps the most philosophical, with a more complex nature, as it sums up a series of sensations such as touch, pressure, vibration, stretching, temperature, pain, itching. The other senses can be considered different ways of touching, being different skin specializations. The vision touches the surfaces before the hand, giving us an aprioristic tactile appreciation, we touch to establish the authenticity of the information acquired by visual means and the nature of the experience. Last but not least, touching is also the sense of affection and intimacy, a way of emotional communication that exceeds the power of words. So during strong emotional states we tend to suppress vision.

Hearing is passive, while listening is its active and conscious component. Man is constantly influenced by the sound environment, both physiologically or psychologically, as well as behaviorally or cognitively. The sound landscape has the power to "illuminate" a built space, to define its atmosphere or character and to create a sense of interaction and solidarity. Music, like architecture, has the power to trigger emotions in an easy way, but it also contains a hard-to-define spiritual dimension. The most famous acoustic property of a space is reverberation, but specialists define a set of over 20 properties, including: texture, heat, space, brilliance, privacy, presence or clarity. Looking at architecture from the perspective of these many acoustic properties, it is fair to consider it a musical instrument.

An important part of the perception of space can be given by its olfactory signature. The smell is perhaps the most mysterious and illusive sense, which on one hand can not be fully represented by memory but, on the other hand, it has the ability to instantly revive a memory, based solely on association. Odorous memories have a strong emotional load because no other senses have such a close connection with the neural substrate of emotion and memory. Relating the smell to architecture can be done both as a sensory stimulus and as an evocative factor.

Visual or tactile stimuli can trigger oral sensations, due to a close connection between taste, vision, and touch. A number of surfaces of built spaces can be appreciated in an indirect way by the sense of taste, like the glossy surfaces. The taste can be used in a direct way to support certain characters of space. Architecture and culinary products can be



influenced in both directions, as the source of Frank Gehry's architectural forms versus Marie-Antoine Carême's culinary products. Beyond these aspects it is important to highlight a cultural component of gastronomy as a form of manifestation of *Genius Loci*.

The path gives architecture (its perception in) the fourth dimension, the time. The path, consisting of a starting point, a route and a destination, can be a powerful scenographic instrument whose main themes are movement, orientation, rest and encounter. The lack of landmarks can cause disorientation, the feeling of being lost in a vast space or labyrinth. In general, the amplitude of the perception is determined by the speed of the movement. The perception process is a continuous one, dynamic, but also unique and unrepeatable.

Proprioception is the set of kinetic sensations, cutaneous or vestibular (balance, acceleration, head position) that define the perception of body movement through space, its state and its position. The perception of architecture is a continuous and dynamic one, based on space exploration, while photography is limited to a static and fragmented perception.

A point of interference of architecture and photography is the light. It influences the perception of surface texture, space dimension, movement and orientation. The light is invisible until it reaches a surface and, to fully appreciate its delicate character, a certain degree of darkness is needed. Excellent illumination is about its quality and not just its quantity. Architecture is often brought to life or transformed by light; natural, dynamic and unpredictable light constantly changes its character, and at night artificial light transfigures architecture. From a psychological point of view, light has the ability to shape the observer's mood.

Low light perception is different, both chromatically and in terms of content, abstracting and eliminating details. Poor light encourages imagination, reverie and onirism. In the absence of light, the representation of the environment is based on the other senses, which, although they can replace the view in qualitative and quantitative terms, generate a completely different mental picture.

Beyond the physical character and other concrete aspects of architecture, its quality resides in its atmosphere, air, character or identity. This largely defines the ability to touch the individual, to generate a memorable encounter. The atmosphere is instantly perceived. The identity or particularity of the atmosphere of a place defines its spirit, *Genius Loci*.

In the end of the second chapter we address the subject of environmental psychology. It shows that architecture must be studied as a whole composed of people, psychological processes, space and time, the relationship of the individual with the architecture is not that of strict perception, but rather a bidirectional link, space leaving its mark on physical existence and mental health of the user.

Thus, the perception of architecture is a multi-sensory one, in which all senses merge into a total perception. We perceive through our whole body as we travel through space and time. Starting from the physical world, objective reality, each individual generates itself a representation, as a result we can say that architecture is essentially reduced to a constructed mental picture. This varies considerably from individual to individual because the objective data is in a perpetual interaction with memory and cognition.

Nowadays, image-based knowledge is the most widespread way of relating to reality, because we tend to push more and more aspects of our existence into the virtual space. Based on this context and on the premises of the previous chapters, in the forth chapter we draw the following conclusions:

The representations of the space obtained through the two ways of perception are different constructs, which may have a very small common area, in the best scenario.

Photography based perception is acquired only through visual stimuli and gives us a mental picture outlined by the photographer and the media channels through which it has been distributed. Hence the importance of the ethics and the quality of the photographer or the people involved in the distribution of images becomes evident. The photography will always be a crop and a selection, it will only show a certain face of the subject, that will be immortalized at a particular moment. The representation of architecture based on such images will always be related to a certain past, while the exploration of living space generates an instant perceptual mental image built on the basis of multi-sensory perception. The amount of sensory stimuli existing in direct perception is much wider, space being explored with the whole body, relying on visual, haptic, auditory, olfactory, taste, thermal, vestibular, sensations etc. that are giving both nuances and new dimensions to the mental image of space

The shape, texture or color, that is the visual and material side of architecture, is a superficial part of it. Beyond the physical dimension, architecture must be understood in qualitative terms as an existential space. The photo should focus on its representation in this environment, with human life centered on it. Moreover, photography, although being a visual representation, must look beyond the Cartesian space to convey the atmosphere, the character, the identity of the space.

Ocular-centric culture also has a negative influence on the architecture represented by the so called retinal architecture. This is a photogenic intended architecture, a predominantly visual but superficial construct. It is devoid of the refinement, sensuality and depth of other sensory dimensions.

The writings of Le Corbusier, Bachelard and Roland Barthes<sup>3</sup> show a common essence of architecture and photography - that of emotioning, of touching a sensible side of the observer, moving ourselves and even transforming the way we are. By extrapolating, this goal is true for any art.

From the two subchapters that address the topic of technical perfection in photography, respectively explores an anti-technical current of imaging by improvised means, we can make a clear distinction that cameras have two functions: they are consumer goods for the general public or tools for specialists such as architectural photography.<sup>4</sup> The dissociation of these two functions is essential.

A humanistic vision of photography emphasizes that the true lens of the camera is the heart and mind. Photography is an art of observation, through which the photographer indicates something, and in essence, the process of representation becomes more important than the subject represented.

One way of making things more interesting and bring the observer closer to the photo is to truncate the sense of the image or to generate an ambiguous image. This is the result of an open work that allows the observer to personally relate to, interpret, and identify with it.

In a similar way, the space between images is essential, it's about the moments that allow the observer to analyze the accumulated information, build his mental representation. Often this space between images is the pretext of reverie and onirism, generating a suspended reading state. Studies have shown that the same area of the brain is used both for visual perception and for the representation of mental images in the absence of visual stimuli.

<sup>3</sup> See the 5.4 and 5.10 Chapter

<sup>4</sup> Vilém Flusser, *Towards a philosophy of photograph*, Ed. Ideea Design & Print, Cluj-Napoca, 2003, p.17

The value of a photographic image is given, to a large extent, by what's going on in the observer. The photo may possess the ability to touch a sensitive side of the observer, to move him (what Roland Barthes defines through the concept of Punctum) and even to change him. It is less relevant if an image was captured or constructed or the technique used, the connotation of the photographic image, the way in which its message is articulated, the purpose in which this universal language is used, thus its echo inside the observer remains quintessential.

The architectural photographer is both operator and observer. He is the person that is exploring the space to be represented by him, who decodes the intent, reason or mental image of the architect, and is the one who has the task of forwarding it to the observer of the images. Most architectural photographers are architects because the process of space representation is not a surface one, an exhaustive representation of the physically constructed object, but instead, the operator must have the capacity to deeply penetrate the essence of architecture, in order to rebuild it in its own way, synthesizing it in a few frames.

The limits and limitations of photography are precisely those that define it's charm: the isolation of a fragment of space and time, giving the observer the chance to look at it as he wishes, the cropping of a rectangular frame concealing more than showing, the possibility of being a representation different from human perception, being monochrome, containing grain, having another magnification or other depth field. But perhaps the most important (beneficial) limitation is represented by the fact that photography is a subjective, poetic process that transforms, transcends, transfigures and translates reality.<sup>5</sup>

After examining the previous subjects, the epilogue addresses the fundamental question - What is reality and how do we relate to it? Thus, the thesis underlines the concept that we can not perceive things as they truly are, what we call reality is a personal and individual construct, based on subjective interpretations of our multi-sensory perception, a replica of the objective reality. Each individual lives in it's own Plato's cave, in a reality with the diameter of his own brain.

Reality is the product of perception and not its cause. The contemporary culture eminently ocularcentral in which images play a primary role, photography being an essential tool by which we build "reality".

The five annexes present a series of photographic, didactic or editorial projects in which I was involved and which have relevance in this research field.

<sup>5</sup> Marc Kristal, "True Hollywood Story" in *DWELL*, vol.07, nr.10, Oct. 2007

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