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JUHA LEIVISKÄ: ARCHITECTURE AS A DIALOGUE BETWEEN BODY – BRAIN – SPACE

The link between the man and architecture take us to research about how we perceive the space, how we embody the space focus on Juha Leiviskä's works. Here we present Männistö Church, in Kuopio, Finland as a case study to understand how we experience this building, not only as a church with a religious and historical meaning but as a social center. We are analyzing this projects based on Maurice Merleau-Ponty theories about phenomenology of perception, neural and corporal reactions and responses based in neuroscience developed by Antonio Damásio and Juhani Pallasmaa argues about a phenomenological conception architecture. For this we are using several methodologies, from observation In situ, historical analysis of the architect and context. We establish several important architectural concepts for the perception of the space, from the body to the brain. Our body is a biological and cultural organism that is constantly changing, based on the environment that is developing in, when we talk about our body perception in architecture we talk about human scale, movement (promenade architectural). Another concept is time, we measure the time trough architecture and our own bodies. "We are incapable of living in chaos, but we can't live outside of the passage of time and duration. Both dimensions needs to articulate and give specific meanings. Time must be reduced in scale to human dimensions and concretized as a continues duration." (J. Pallasmaa, Habitar, 2016, p. 9) Our brain and body are mutually correlated, they represent two aspects of the same thing, as Merleau-Ponty defend. We started from visual and auditory perception to understand how we experience the space, but architecture is a bodily experience, more than a visual sense or other of 5 Aristotle's senses which are not enough to capt all architectural experience. From this aspects and based on Juhani Pallasmaa writings we are developing this analysis of Männistö Church and other Leiviskä's works. Architecture is a stimulus generator for certain uses but also is an receptor of this uses by the inhabitants, as Juha Leiviskä argues "The aim of [architecture] is to create from human dimensions space to be experienced by people." (Leiviskä, 1999, p. 9).

Keywords: nordic architecture, phenomenology, neuroarchitecture, space syntax, juhani pallasmaa

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JUHA LEIVISKÄ. Architecture as a dialogue between body - brain - space

Architecture as a dialogue between body - brain - space

Body, brain and spaciality are intertwened in the architectural experience. Juha Leiviskä, Finnish architect, one of the most important Nordic architects alive of the XX century project several churches in Finland,where the presence of the finnish landscape, culture are essencial to understand the experience of this buildings, we focused on the analysis of Männistö Church. Here we present architecture, as an answer, a symbosis between our brain, body and our geographic and cultural places. Studying his works represent an opportunity to understand how his architecture is capable of producing sensory effects on its users, changing their mental, physical and social behavior.

The aim of [architecture] is to create from human dimensions space to be experienced by people.

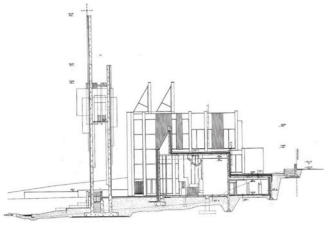
J.Leiviskä

How the buildings we design, where we educate, read, study and pray affect our way of being and our behaviour? How does the morphology, materiality, qualities of this space affect human development and behaviour. Here we present some architectonic concepts importants to demonstrate a phenomenological conception of architecture, that acts as a cultural model of interaction between body, brain and space, using Bakthin's concept of Chronotope.

Human Scale

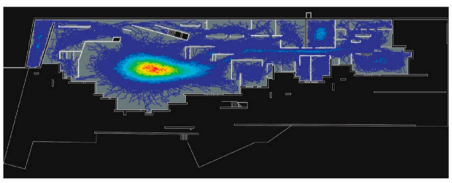
In so far as I have a body through which I act in the world, space and time are not, for me, a collection of adjacent points not are they a limitless number of relations synthesized by my consciousness, and into which it draws my body. I am not space and time nor do I conceive space and time, I belong to them, my body combines with them and includes them.

Merleau-Ponty, Phenomenology of Perception, 1994, p.162



Movement

The concept of promenade architectural demands time and a body for the appreciation of the building, movement as the Juha Leiviskä says, we experience this building by moving through the spaces. Männistö church is projected as a spatial process, establishing relationship between different spaces. With an space syntax analysis we pretend to perceive the potentialities of this space using UCL Depthmap, this agent analysis allow us to see how this church was organize to flow with movements, showing the possible flows. The configuration of spaces with the Rithm of natural lights suggest a rithm to experience this building, induce the user to connect with the cerimony church and reinforce the perception of time.

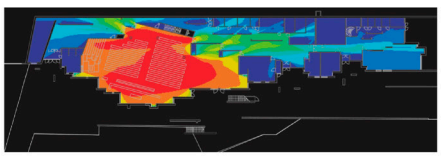


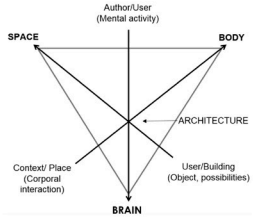
Time and Space

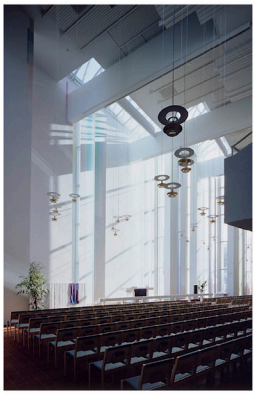
Architecture has the duty to situate us in space and time. The presence and Accesibility map, was define as a topographic method that allows the representation and interpretation of spacial configurations. From axial graphs we verify the presence on spacial units. Space Syntax Analysis of Mannisto Church, show us this church as sum of transitional spaces and interstices that open and become room spaces or by opposition are reduce and converted into corridors hat lead the movement of the user to the cerimony room, establishing a kind of microclimates.

To me, architecture and music are the arts which are closest to each other. They are the same thing spoken in different tongues. The aim in both is to create from human dimensions space to be experienced by people […] In both of these arts the dimension of time is a key characteristic.

J. Lei viskä, 1999, p.9





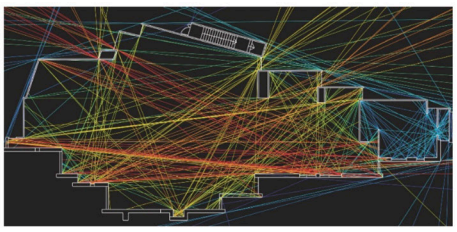


If body and braind interact with each other intensely, the organism they form interacts with its surroundings no less so. Their relations are mediated by organism's movement and its sensory devices. The environment [space] makes its mark on the organism in a variaty of ways.

Damásio Antonio, Descartes error, 1995, p. 90

Visual Perception

On axiality and visibility map we can verify the different visual relationships inside of the building. At Männistö one of the axis with more and better visibility in relation to the configuration of the building is where the architect place the altar. This studies help us to understand how the architectonical decisions affect the users appropriation of the spaces and produce mor or less probabilities to develop certain activities, or uses.

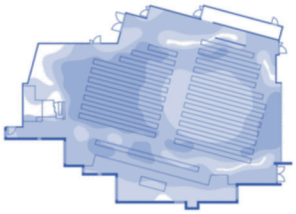


Acoustic Perception

How do we locate sound on a space? We compute an internal space, there is regions with multimodal neurons that activate with congruents visual and auditory stimulus. Our brain build auditory objects and an auditory space with information from Cilicia cells and auditory neurons. The auditory space is calculated from differences on the intensity, time and spectral composition of the sound waves, that are our left and right ear. There is a superposition of the auditory maps and are coherent with the visual space

Hearing structures and articulates the experience and understanding of space. We are not normally aware of significance of hearing in spactial experience, although sound often provides the temporal continuum in which visual impressions are embedded.

J.Pallasmaa, Eyes of the Skin, 2005,p.49



Embodiment

For the experience of architecture, embodied simulation is integral to the immersive feeling we may have when, for example, walking through the Pantheon. […]we not only enter this space through embodied simulation by feeling the nature of the architect's intention, we also enter the hand of the builder that constructed it, […]. This act of embodiment is possible because we share in the neurological knowledge of what it means to be in that place and feel what the architect and builder felt

Kelley Rooney, Kevin. (2018) Binding experience. Intertwining: Unfolding Art and Science. 01/2018. P. 52

Hapticity

The most important building material of the church itself is daylight, which affects the space mainly as indirect reflections. […] The character of the spaces changes continually according to the seasons, the time of the day, the sun and the clouds.

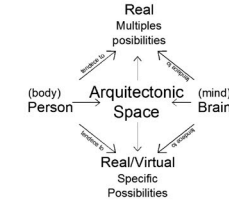
Juha Leiviskä, p. 130, 1999

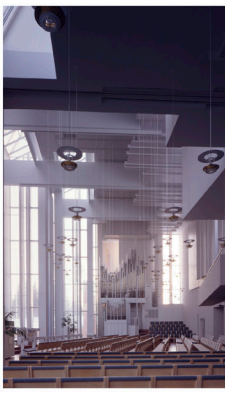
Matrerials and surfaces have languages of yheir own. […] Brick makes one think of earth and fire,gravity, an the ageless traditions of construction. […] Wood speaks of its two existences and time scales;its first life as growing tree and the second as a human artefact made by caring hand of the carpenter or cabinetmaker

J. Pallasmaa, Matter, Hapticity and Time, 2016, pp.177-178

Hapticity, is the tactility that make our bodily experience. On this church we can see a cultural vision of J. Leiviskä by choosing red brick,a strongly rooted and typical material in Finland, which fits in A,Aalto path. The roughness and color refer us to the manufacturingprocess and contrast with the interior,white concrete walls that dematerialize with the vertical openings and overhead light and remite us to the Aristotelian concept of Topos, where the limit of the object (space) is not define, but always changing.

Juha Leiviskä's architecture is a stimulus for certain uses. Architecture in its real manifestation (construction) and cultural (meaning) determine the physical use.





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