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UNDERSTANDING MULTISENSORY ARCHITECTURE

A look at why it is important to include a person's complete body in the spatial experience, making it unique

Architecture has the ability to serve a deeper function than merely providing shelter. It acknowledges the feelings, desires and the pleasurable capacities of the people. Many buildings have become image products that lack existential depth. Multisensory architecture finds its relevance in this context. As Finnish architect Juhani Uolevi Pallasmaa puts it, 'In memorable experiences of architecture, space, matter and time fuse into one singular dimension, into the basic substance of being, that penetrates our consciousness. [….] Architecture is the art of reconciliation between ourselves and the world, and this mediation takes place through the senses'

Fig. 1: Interiors of Museu De FozCoa Photographer: Nelson Garrido, Source: http://www.dezeen.com/2011/05/16/museu-de-foz-coa-by-camilo-rebelo-and-tiago-pimentel/: Accessed 01/05/14

Ocular centrism in architecture

Since the built environment is mostly designed keeping in mind the visual appreciation or function, there is always a tendency

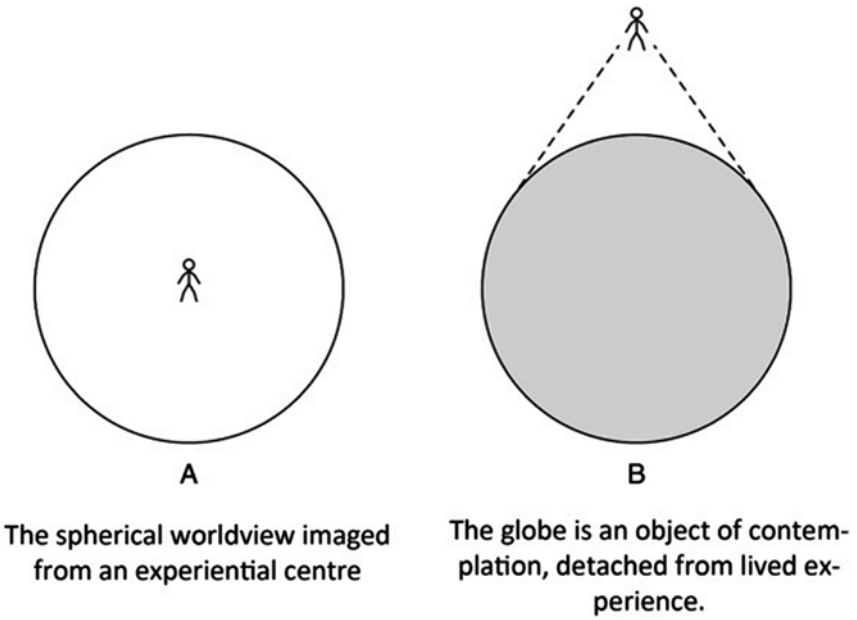

Fig. 2: The environment as life world (A) and as globe (B) Source: Ingold, T. The perception of the environment, Routledge, London, p. 209, 2000.

of visual bias in architecture. Projective and perspective drawings, and later photography and photorealistic rendering technology were developed to analyse existing places and design new ones.

During the design process, architects hardly place themselves in the spaces they design. They are satisfied using various visual tools. They end up assuming the position of the creator as well as the spectator, instead of the occupant. This phenomenon of adopting the position of an outsider can be explained by the concept of 'objectification'. Tim Ingold(2000) connects objectification of our surroundings with what he calls the modern project.

Also, the human body was merely utilised as a tool for dimensioning during the design process. Scale and proportion were developed using the human body as the key. For architects, it is not just the human body that has to be addressed but the body in action.

Architecture and the senses

Perception is of prime importance when it comes to studying architecture in relation to the senses. Our perception of spaces is always mediated by the senses. 'Traditionally, there are 5 main senses—the sense of **sight, hearing, touch, taste,** and the sense of **smell**. Other senses can be added to the list, such as the sense of temperature, pain, and what is sometimes called the kinaesthetic sense, which informs us about the movement and position of the various parts of our bodies" (Maclachlan 1989)

Integration of one's body with architecture

'I confront the city with my body; my legs measure the length of the arcade and the width of the square; my gaze unconsciously projects my body onto the façade of the cathedral, where it roams over the mouldings and the contours, sensing the size of recesses and projections[…] I dwell in the city and the city dwells in me.' (Pallasmaa, 2005)

The role of eyes: Architecture is regarded primarily as a visual phenomenon. Thus, we have many buildings that are designed to please the eye but fail to delight the body as a whole. Eyes absorb the visual qualities of a space. Vision is capable of stimulating other senses in our body.

The auditory experience: Vision is directional while sound is omnidirectional. Thus, sight isolates while sound integrates. The loss of senses in contemporary architecture can be attributed to the ignorance of acoustic intimacy. Sound can lend characters to a space: intimacy or monumentality, invitation or rejection, hospitality or hostility. For instance, an echo created in a narrow street or inside an empty cathedral not only yields the spaces their own identity but also connects you to them. But today, the buildings are designed to absorb and censor the echo and wide open streets in cites have rejected echoes completely. "Our ears have been blinded" (Pallasmaa, 2005)

The form and the volumes of a building and the materials, with which it has been built, contribute to the sound generated in its interior and exterior spaces.

The olfactory imagery of spaces: The memory of a space that lingers around in us is fostered by smell. Every space has its own characteristic smell. The scent can either hang heavily in the air or pass by us in a gush of air.

This can either be enhanced or subdued depending on the chosen finish; wax, varnish or polish. Likewise, every city has its own collection of

scents and odours, which are powerful tools of identity.

Induction of oral sensation: There is a delicate transference between tactile and taste experiences. Also, taste is generated by the combined action of nose and tongue. Eyes collaborate with tongue as well. It has been found that certain colours and delicate details generate oral sensations.

The tactile experience: The skin is capable of reading the texture, weight, density and temperature of an object. The tactile sense is the one that actually establishes a connection between our body and the world. It is not just about physically touching an object but about accepting the volume and temperature of space. Architects, such as Carlo Scarpa and Alvar Aalto created designs that appealed to the eye and also invited one to touch and explore.

It is an accepted fact that vision reveals what touch already knows. The perception of light and colour also relates to the tactile sensation—both light and colour radiate temperatures that can be felt on the surface of the skin.

The loss of tactile experience is fostered by the weakening of materiality. Natural materials like stone and wood allow us to perceive the integrity of the built. Machine-made materials used today fail to convey their age or properties since they are designed to achieve ageless perfection for the building. Reflective glass facades bring about alienation.

The role of disability in understanding multisensory architecture

People with a visual impairment during their daily life enter various spaces designed from the perspective of the sighted. Even though that is the case, they tend to filter out their acoustic, olfactory and tactual qualities to understand such spaces. There exists a twofold potential of critique of built spaces by them:

i) In their day-to-day lives, they confront several issues of being excluded from a major part of the environment. This helps us understand the problematic areas or building parts that fail them
ii) They have an embodied knowledge of non-visual qualities in the environment and how to rely on them in their activities.

Phenomenology in architecture

Phenomenology is the study of the phenomena or experiences of daily human life and is part of the develop-

Fig. 3: Circulation diagram of ThermeVals, Source:http://arch1101-2010kjb.blogspot.in/2010/04/engaging-with-landform.html; Accessed 21/07/2013/ Circulation added by author

ment of Western philosophy. Phenomenology in architecture embraces the aim of transforming people from uninvolved spectators to active participants. It is essentially a qualitative examination of the experiences of people. Each of us experiences world in a different way because we develop a unique personalised model of the world and exist in it. Phenomenological investigation focuses on the sensory experiences developed by a person in a particular environment. The unique understanding of a phenomenon a person encounters induces a response in him which is also unique. This is deeply influenced by culture, age, gender and beliefs.

The question now remains: how do we create an architectural tectonic that can stimulate multisensory phenomena? Here are a few studies of spaces based on the phenomenological approach.

Therme Vals: Peter Zumthor employs several ideas to make this bath (Refer Figure 3) located on the thermal springs of Switzerland multisensory. The materials used, the integration of the building to the site, the internal layout of spaces, the careful and restricted use of visual elements, the temperature and humidity differences help awaken all the senses of one's body.

Also, the bath offers numerous ways of moving around the space and exploring certain predetermined areas. The supplementary spaces are scattered around the pools so that they are independent from each other and also ensure or restrict the view from a point along the path.

Loyola Chapel

The chapel by Laurie Baker has massive walls pierced with *jalies* and the

Fig. 4: The altar of Loyola Chapel (Source: Authors)

entrance is an interplay of textures, brick walls with green leaves brushing against them, steel wire grid reinforced glass doors, their wooden frames, stone plinth, and concrete steps. Inside the chapel, the scale changes drastically from the humble entrance. Wooden truss work makes the ceiling dynamic. The altar is naturally lit by the lateral opening against the wall. With this, the chapel completely expels uniform lighting and elevates the ambience and focus of the altar. Exposed surfaces and the brick work control the reverberations and render remarkable acoustical features to the space.

Inferences

The following are a few design guidelines developed from the studies: An unknown destination helps trigger curiosity in the visitor. Constraints to the visual sense force people to use their auditory senses.

Constantly changing walls and floor panels keeps the person alert, and thus, his senses alert. This helps distort the visitor's perspective often incorporating various contrasting

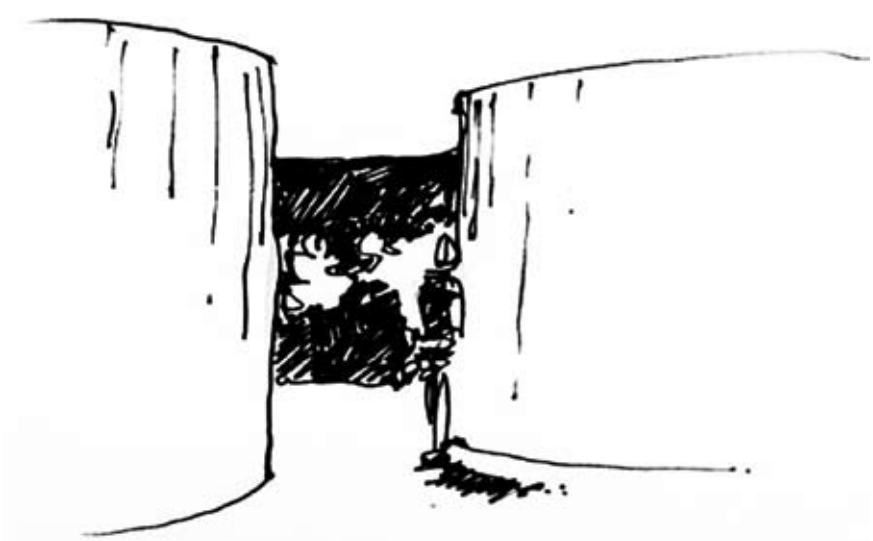

Fig. 5: An unknown destination (Source: Authors)

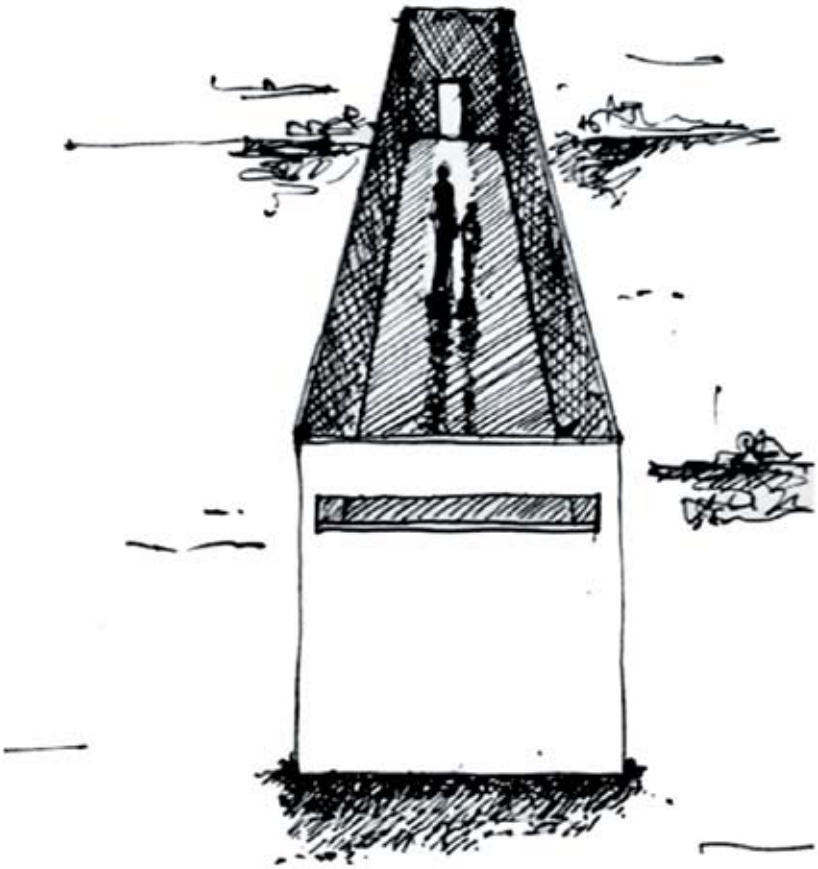

Fig. 6: Confined spaces (Source: Author)

textures to the building elements. Vision will compel the visitor to touch. Confined spaces awaken other senses, namely auditory and haptic, as a result of the urge to know what lies outside.

A sudden change in the scale of the spaces can stimulate the senses at various levels.

For instance, a door leading to a larger volume of space from a smaller volume of space is capable of making you raise your head and look up and around, and experience the changes in the haptic sensations generated by the change in volume. Also, the acoustical properties change drastically. Playing with light and shadows not only stimulates the sense of vision but also the haptic sense. Avoiding uniform lighting reduces monotony. Artificially regulated interior spaces have almost no multisensory quality to them. Increased use of reflective glass should be deferred since it brings about unreality and alienation of spaces within.

Even the complete absence of one of the sensory data can enhance the rest of the sensory experiences. In fact, any space capable of establishing the presence of your body is multisensory. The most important task of the architect is to make sure that the complete body of the person is included in the spatial experience and this experience for a person is unique, not universal.

Fig. 7: The drastic change in volume of spaces, (Source: Authors)

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