5 Senses in Architecture (For visually impaired)

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Synopsis:
Aim: To study and explore how senses are important towards architecture.
Objective :
• To study the importance of senses in architecture.
• To study the parameters who impact our senses.
• To study about dominance of sense of eyesight.
• To generate a base for further academic studies on sensorial experience of architecture.
Scope: To study the senses in architecture and emphasis the phenomenology of architecture.
Research question: Does sensory architecture helps to improve the path direction signs for visually impaired Peoples ?
Hypothesis: Sensory architecture helps to improve the path direction signs for visually impaired peoples.
Need:
• Building designs for visually impaired peoples.
• Textured materials which they can feel are included in the sense of touch.

***Abstract*— Architecture, an important part of our environment, enhance our experiences, feelings, memories, and ultimately the decision we make. To explore the connection between architecture and the human senses was the intention aimed in my paper. Weather positive or negative, everything created or done by humans has an effect on the environment. Some peoples are more aware of their architectural environment and some are less but at the end we all live with it and have at least an unconscious impression of it. We understand and analysis buildings through our senses.**
Although the five basic senses are often studied as individual systems covering visual auditory, taste-smell, orientation and the sensations, there is inter-relations between the senses. Multi-sensory approach will helpfully lead to the development of the building. However, in order to promote our health and well-being, it is necessary not only to consider the impact of the various senses on the building inhabitants, but also to be aware of the way in which sensory atmospheric/ environmental cues interact. Multi-sensory perception research provides relevant insights concerning the rules governing sensory integration in the perception of objects and events.

Index Terms: **Architecture, Human Senses, Architectural Environment, Multi-sensory perception.**

1.INTRODUCTION

Architecture is an important part of our environment and is responsible for our experiences, decisions and more importantly memories. We experience architecture even before we hear the word through touching, hearing, smelling, moving and crawling through spaces. The built form can be mediated and felt through all the senses simultaneously. The human body possesses the five sense of: sight, touch, smell, hearing and taste. The summation of these senses results in the quality we called 'perception'. These are the biological tools that equip the mind and enable a person to experience space and appreciate design. Through the eye we experience line, form, color, through touch we experience texture and shape etc. In other words, sensory assume that this stimulation takes place due to the physical qualities of a space.

Thermal qualities - warm, cool, humid, airy, radiant - are an important part of our experience of a space they not only influence what are choose to do there but also show how we feel about the space.

The light quality - direct, indirect, natural, artificial, diffuse, dappled, focused - can be subtly manipulated in the design of a space to achieve the desired effects.

2. METHODOLOGY

The main body of the research comprises of the literature review and analysis of precedents and case studies. The literature review was used to identify the relevant positions and theoretical approaches of various scholars relating to the sense and how the

fundamental architectural elements can be used to trigger responses while the latter analysed and critiqued examples of social spaces based on constants. Through this research, a basis for a sensorial experience will be established.

3. SENSES IN ARCHITECTURE

The senses are mediators between peoples and the environment, the information we receive and how our brains process it; they tell us about natural phenomena, warn us of danger, and provide us pleasure. 5 senses and their importance are as follows.

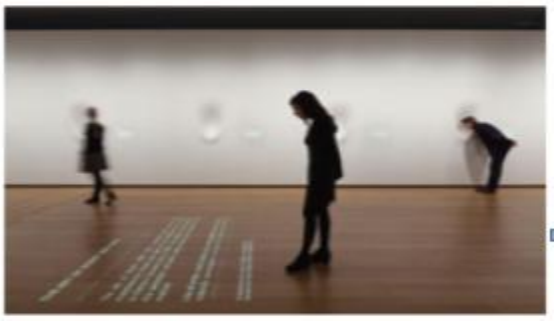
1) Smell
2) Touch
3) Taste
4) Hear
5) Sight

3.1. Smell

Traditionally in the area of architecture, smell has been something to design out of building through means such as a ventilation system in a commercial kitchen or measures to ensure traffic pollution is minimised within the building. In the modern world, smell has been factored into building as something that needs to be managed, a problematic element to be designed out.

The materials used for a building, its fittings and furnishings also contribute to smell. Timbers like oak, pine and cedar all issues their own unique smell, as do materials like terracotta, leather and somewhat surprisingly concrete.

When used in combination with other sensory elements, smell can play a central role in creating a specific atmosphere within a building. The considered and creative use of smell can generate new opportunities to create buildings and spaces that delight and satisfy all of our senses.



3.2. Touch

- Touch is the sense of closeness, proximity and effect.
- Eye touches the distance but touch sees the closeness.
- All senses containing vision, can be attachments to the sense of touch!
- Touch connects us to the time and tradition.
- Smoothness and roughness, bumps and hard, contact and touch, texture, weight, density, heat or material temperature are related to the sense of touch.
- Ex. mud structures seem to be native that are built more by tactility and muscular sense, not just the sense of sight.

3.3. Taste

- Taste in architecture begins with observing the apparent or objective character of the building, associating with fashion trends to it.
- Studies began on sensory perception and its implications in aesthetic perception from exterior side of the building and its relationship with art.
- From based features and characteristics of the external appearance of the building facade along with its impact on mind studied in beauty and art issues. Then functional aspects of architecture and the quality of human life in the building were considered.

It can be understood in two introductory ways :

1) Outward or objective characteristics
2) The perspective of the individual's subjective perception.

3.4Hear

• In our techno - visual culture, the ascendancy of vision as the primary means for sensing the physical world has undermined the importance of hearing. Yet the aural experience of an environment is critically important to the social and emotional well-being of the inhabitants. Listening has been proved as the highest order among all our senses.

- We don't listen only through ears, we listen through our whole body by the vibrations. So a user can perceive a space through listening.
- Aural architecture refers to the human experience of sound-in-space; the aural architecture of a space modifies the experience of sound sources as well as providing a means for experiencing passive objects and geometric directly.
- Aural architecture contains at least five types of speciality: navigational, social, musical, aesthetic and symbolic.

3.5. Sight

- This sense has common point with the other sense.
- Architecture became dominated and controlled by vision.
- Two movements, that rest on common ground, which is the power and importance of vision in architecture, realized the potentials that sight has and used it in totally different ways in order to achieve additional goals.

"As we look, the eyes touches. and before we even see an object, we have already touched it and judge its weight, temperature and surface textures."

4. ARCHITECTURAL APPLICATIONS

Gathering information on the senses can be applied specifically to the architecture qualities of a space, thereby providing a framework for future applications to follows -

4.1 - TOUCH - The tactile design of a space should take into consideration texture manipulation, furniture type and location, and materiality and scale.

4.2 - TEXTURE - The texture within a room beckon occupants to become aware of their material surroundings, and in some instances actively touch surfaces. Frank Lloyd Wright used contrasting textures, particularly along walls, to enhance the very qualities of differing materials.

So that, hierarchy of intensity or simple alteration of contrasting items juxtaposes opposites to bring out particularities.

4.3 - FURNITURE - The orientation and relationship of furniture in a room affect the kinetic experience of occupants. As noted by Hansel Bauman, architect of deaf space projects at Gallaudet University, circular

seating arrangements orient peoples bodies towards one another and allow visual contact to be made.

4.4 - SMELL - The olfactory design of a space should take into consideration the type of materials able to conduct smell, as well as take advantage of naturally occurring, iodine free smells.

4.5 - MATERIALS - Materials like stone, glass, steel and ivory don't evaporate at room temp. And therefore don't emit smell. So that selection of materials is key to olfactory qualities of a space, especially with regard to the changing of seasons.

5. SENSORY BENEFITS

Discovering positive impacts of sensory experiences helps extract silent features of beneficial environments, which can serve to inform future design goals.

5.1 - TOUCH

Understanding a space kinesthetically can increase the user's possibilities for moving in and using the space. Thermal perception and movement of air currents can serve as space locators for blind peoples. So that recognizing and understanding movement within a space cam expand design opportunities. Furthermore, engaging natural qualities like sun and wind can connect people to a specific place at a specific time.

5.2 - SMELL

Smells have been known to connect people to memories. In a test conducted by a perfume manufacturer, children who learned words in association with a particular smell had better word recognition. Smells also have obvious benefits, the smell of gas or smoke can betray the presence of danger, smell can signal different emotional states.

So that, the brain's link between smell and memory is much stronger then the link between smell and sound. Additionally, smells provide crucial information about an environment, its a survival tool that should be utilized.

5.3 - HEAR

Chemist James Olds notes that the pleasure centre of the brain is a complex mix of chemical and electricity that can be triggered in many different ways. Hearing can provide emotional stimulation through mediums like music. Selective hearing allows us to focus on a conversation in a loud, chaotic environment. There is a special sets of delays depending on the angle of incoming sound, the brain reads the delay and then locates the sound. Selective hearing is typically more developed in non-seeing peoples.

So that, hearing can be functional and enjoyable. However, it must be exercised in order to produce positive results.

5.4 – SEE

Sight has some very obvious benefits. A seeing person's perceptual radius can extend for miles unobstructed, but a blind person's perceptual realm is limited to a radius between 20'-100'. Vision can gather and convey immediate information.

So that, vision is information packed; it can gather and disseminate a wide range of information within one gaze. Perhaps this might cause us to consider the environments that under stimulate sight as a way of simplifying a massage and clarifying an experience.

6. CONCLUSION

Using senses in architecture is not new, but the level of perfection is by far not reached.

“Architecture reflects, materials and ideas and images of ideal life". Today we aim at the construction of intelligent buildings that helps their users and communicate that. So the method of communicating will always be an important issue. The usage of some senses like smell and taste appears rather difficult, but architecture is developing very quickly at the moment, so one can be confident that appropriate methods will develop to incorporate also these senses into architecture.

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