

Perception of the Residential Environments Regulation: Iranian Traditional Architecture

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Abstract: People usually spend a considerable part of their lifetime living in residential spaces and specifically their houses. Having said that, residential spaces need to be designed carefully in order to satisfy user's both physically and mentally needs that improves their life quality. Designers should be familiar with the factors, which effect the user's perception of the environment and they need to be considered during the design process. Iranian traditional architecture has been successful in satisfying user's needs in houses and has taken noticeable steps to make houses comfortable for people who live in. In this article, the perception of the environment regulation is explained; and the "Tabatabaei house", which is an Iranian traditional house as a case study is analyzed using the perception of environment theory. The user's perception of environment is analyzed by dividing into four categories: 1.Auditory perception 2.Olfactory perception 3.Thermal perception 4.Tactile perception.

Keywords: Architectural design, environmental psychology, Iranian architecture, Tabatabaei house

1. Introduction

The way user feels in a constructed environment is directly connected to its perception process of the environmental stimulus. And it is on designer to shape user perception, in order to approach a successful project, based on satisfying user's needs and improving their experience of being in a space; if the environment doesn't satisfy user's need, stress level increases and arousal happens [1].

Iranian traditional architecture has been known as a successful one, based on considering the human's needs and satisfying both mental and physical needs. House, as a space, in which human spends noticeable time during its life living, can be mentioned as one of the most important places that designers have to care about user's needs during the design process. Observing Iranian traditional houses, makes it clear these places have been increasing user's life quality by improving their experience of living in the space. Needless to say, it would not happen, if satisfying user's needs was not considered by these houses designers.

Studying successful cases in improving user's mental health by satisfying their needs, in order to find out what factors have the most effects on the user's perception of the environment process, is necessary. Following that, this article analyses the Tabatabaei house, which is located in Iran; based on its effects on the ways users percept the environment to find out why this house has been known as a successful one, based on increasing users life quality.

2. Presentation of the Issue

2.1. Definition of Perception

Perception of the environment is getting information about the environment directly by the user. User perceives the environment mainly through the sensory apparatus, which can be roughly divided into two categories: 1) Distance receptors, which are used to examine distant objects i.e. the eyes, the ears and the nose

and 2) Immediate receptors, which are used to examine the proximate world, the world of touch, the sensations we receive from the skin, membranes, and muscles [2].

„Cognition“ should be defined carefully; although it is closely related to perception it is a slightly different concept. In psychology the term „cognition“ refers to the mental process of actively selecting and organising information, including sensory information. Cognitive processes thus give meaning to sensory data. In other words, cognition is the process during which experiences acquire meaning and man is thus enabled to understand the meaning of, and relations between various phenomena [3].

2.2. Iranian Traditional Architecture

Iranian traditional architects always paid attention to human's personal life and its personality, during the design process, specifically designing houses [4]. Considering both physical and mental needs of human is the key, what leads to approaching a successful project based on increasing human's life quality; and Iranian traditional architecture has used this key in the best possible way. For example, paying attention to the regional climate, in which the wanted to design a building, was an important concern for the Iranian architects [5]. The wind direction, sunlight regulation and the Qibla direction also can be mentioned as Iranian traditional architects during the house design [6]. Beauty, sustainability, avoiding pointless decorations and providing appropriate privacy for users are some other noticeable factors that traditional architects cared about during the design process.

3. Perception of the Environment

3.1. Different Ways of Perception

Because our perceptions of the environment are derived from our sensory apparatus, they can also be divided into four types. 1) Auditory perception, which is based on information carried by the cochlear nerve. 2) Olfactory perception, which is based on chemical sensing of odors. Olfactory perception not only differentiates individuals but makes it possible to identify the emotional state of other organisms. An interesting experiment is described by Hall in „The Hidden Dimension“: Bathing the other person in one's breath is a common practice in Arab countries. The American is taught not to breathe on people. He experiences difficulty when he is within olfactory range of another person with whom he is not on close terms, particularly in public settings. He finds the intensity and sensuality overwhelming and has trouble paying attention to what is being said and at the same time coping with his feelings. [2] 3) Thermal perception: it seems hard to imagine the skin as a major sense organ because information from other receptors, such as eyes and ears, plays such an important part in daily life, but it is. According to Hall (1990), humankind is well equipped to send and to receive messages about emotional state by means of changes in the skin temperature of various parts of the body. 4) Tactile perception: touch and visual spatial experiences are so interwoven that the two cannot be separated. The artist Braque distinguished between visual and tactile space thus, „tactile“ space separates the viewer from objects while „visual“ space separates objects from each other.

4. Case Study: The Tabatabaei House

4.1. Background

The Tabatabaei house (Figure 1) is a historic house in Kashan, Iran.; and it was built in the early 1880s [7] for the affluent Tabatabaei family. It consists of four courtyards, wall paintings with elegant stained glass windows, and includes other classic features of traditional Persian residential architecture. The Tabatabaei house was designed by Ali Maryam, architect of the Borujerdis house. The house is almost 5,000 square meters and has been very well renovated.



Fig. 1: The Tabatabaei house, Mehr News Agency

4.2. User's Perception of the Building

4.2.1. Auditory Perception

Almost every windows and openings of the Tabatabaei house are toward the central yard (Figure 2); and it helps users feel better in the house because of hearing less unwanted noises. Following that, the house reduces noises from the outside by having thick walls, which are made from the adobe. Considering the useful effect of being in nature on reduction of stress level [1], because of using the green gardens and water in design of yards, the Tabatabaei house users were supposed to experience a peaceful life, by hearing the water and birds sound during their lifetime.

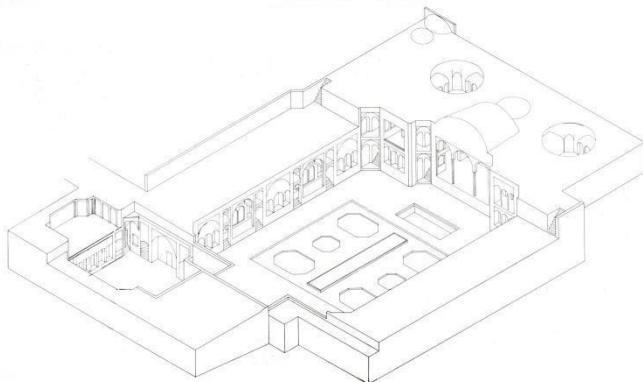


Fig. 2: The central yard of Tabatabaei house

4.2.2. Olfactory Perception

The Tabatabaei house architect, designed flower gardens in the house, what made users feel peace and be more comfortable, by smelling the flowers; having said that, not only the Tabatabaei house yards have flower gardens, but also users of the house always used pots and fresh flowers in almost every possible spaces.

4.2.3. Thermal Perception

Since Iran is located on the northern hemisphere of earth, sun during most months of the year shines from the south. Having said that, Iranian traditional architect always considered this fact during the design process. The Tabatabaei house architect in order to provide homeostasis condition for users in both cold and hot weathers divided the house into two parts; the winter space and the summer space (Figure 3).

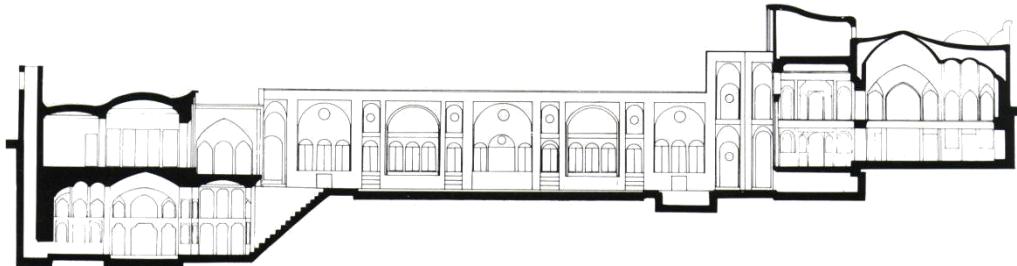


Fig. 3: The Tabatabaei house section

The winter spaces usually used for the cold months of the year, in which users needed more sunlight to be satisfied. The winter spaces in Iranian traditional architecture were always located at the northward of the house; to provide the most possible sunlight for the users during the day.

On the other hand, the summer spaces in Iranian traditional architecture were always located at the southward of the house; to provide shadow for the users during hot months of the year. The summer spaces usually have a part that is located underground, where the hot temperature doesn't bother the users. And some of these places were designed to have a small pool in them, which noticeably decreases the temperature. The Tabatabaei house also has the summer and winter parts that help users get the hot and cold weathers over easier.

4.2.4. Tactile Perception

Since this analyse of Tabatabaei house is based on architecture, the vision space is considered as the way user perceives the environment instead of tactile space in this section.

Privacy has been one of the main concerns for Iranian people as a basic mental need. The Tabatabaei house architect appropriately considered this fact during the design process. The entrance of house is designed to don't let strange people see the whole interior space once the entrance door is opened (Figure 4). Actually people need to walk through a corridor to get the central yard and see the interior spaces. Following that, designer avoided design windows and openers at the margin walls that provides privacy for users and doesn't let strangers invade their personal space. It is needed to say, if strangers invade human's personal space, stress, arousal and over stimulation can be mentioned as possible harmful consequences [8].

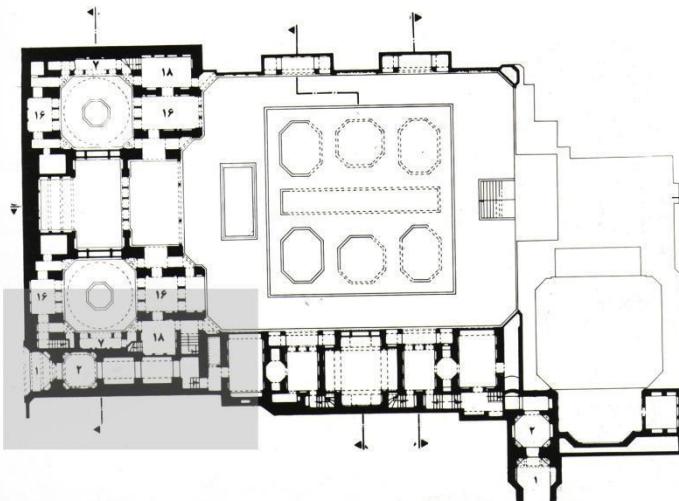


Fig. 4: The Tabatabaei house first floor plan

The Tabatabaei house interior spaces and façades decorations effect on users life quality by making the environment more beautiful. Having said that, the nature which is used in the house interior spaces, also effects on the user's mental health improvement.

5. Conclusion

Satisfying user's needs is the key to approach a successful project based on improving user's mental health. It only can happen if designer cares about both mental and physical needs during the design process by considering these needs in the ways user perceives the environment; the Tabatabaei house, as a successful example of satisfying users' needs in order to increase their life quality level, makes users have a better experience of being in the space by caring about their mental health in all ways they percept the environment; olfactory perception, auditory perception, thermal perception and tactile perception.

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