

Studying Relationship between Application of Light and Iranian Pattern of Thought (the Iranians ideology)

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ABSTRACT

The view point toward the phenomena of light in the Iranian Islamic architecture, which is influenced by Islamic ideology and Pre- Islam trainings, has been reached its optimal level and is a symbol of spiritual ideology in the Iranian architecture. Reflecting the dynamic nature, it has aimed to create an interaction of humans and nature in the architecture. Besides, the Iranian architect, incorporating the light inside has linked interior and exterior design which has resulted in creation of a kind of aesthetic harmony. In this study, after reviewing background intellectual and spiritual knowledge in the Iranian architecture and also expressing the importance of application of light in dry and warm climate of Iran, the researcher has tried to inspect five featuring constructions of Safavid era (16-18 AD), with the purpose of analyzing different applications of light in those spaces.

The result of the present study demonstrates that incorporating natural light in the architecture of the respective era is a sign of spreading spirituality to those spaces. Also irritating light heat in this kind of climate has caused architectures advocate innovations to balance the required light and heat and to prevent too much heat inside as well as saving for the emergencies for the accommodation of residents.

These innovations include designing architectural elements, light controllers (shades, etc), windows (foramen, etc), and architectural decorations in creating spaces.

Keywords: Light, Esfahan, safavid Era, prominent monument

1. INTRODUCTION

Light has attracted the attention of human in architecture, art and other fields on the one hand as the final source of visual beauty and necessity of religion to provide the possibility of life and on the other hand by having effect on natural and social life of human in regard to their attitude toward cultural and historical issues.

This fact has made that human considers light as a holy and celestial thing and know it as a mediator between material and spiritual world. Perhaps it has been the reason why light and architecture have not been separable during the history.

Importance of directing sun light and sun heat toward buildings has caused that human, in hot and dry region, think about orientation and various openings for a building. In Iran this matter has made that people in hot and dry areas seek for various practical ways to supply the necessary heat, avoid entering the extra heat and save it urgently in different ways.

In this research after mentioning the importance and necessity of use of light in architecture particularly Iranian architecture in hot and dry regions, we deal with considering the thought and celestial backgrounds in architecture of Iran (mentioning the records and forms of using light from religious and historical points of view). Then we deal with exact considering of architecture in Saffavid Era (16th – 18th century) in Esfahan through an analytical –descriptive viewpoint and five prominent monuments of this Era will be discussed as following: Qeissarieh Bazaar, Sheikh Lotfollah Mosque, Chehelsotoon Palace, Qodsyeh and Panahandeh Houses. In order to achieve these goals, we analyze these monuments through three general perspectives .At first, the way of using light in space will be discussed not only from the viewpoint of avoiding receiving light but also from the viewpoint of light level and way of lighting .Then the general idea upon light designing and finally the connection between light and decoration in every monument will be explained.

2. CONSIDERING THE RECORD OF USING

2.1 From Religious Viewpoints

Allegory of light has an old record in Iranian's belief .Before the advent of Islam in Iran, religions like: Zoroastrian, Manichaeism and Mithraism have used the allegory of light to clarify their instructions. In the religion of Mithraism, Sun would be praised as god of light and faith . (Purdavood [14])Mani in her book called Arjang believed that everything in this world which is beautiful is worth worshiping. He believes that beauty belongs to the spirit and is related to a luminous supreme arena. Because of this matter, paying attention to light forms the basis of art and architecture of ancient Iran. The struggle between darkness and lightness forms the basis of Zoroastrian thought and it was believed that existence has been created by the interaction of two forces or two essences of lightness and darkness. (Purdavood [13]) In Era of Islam in Iran the influence of mystic's opinions and Islamic governors like Sohrevardi in artistic works can be recognized. Iranian architects have shown the idea of manifestation of unity in multiplicity and returning multiplicity to unity in their works. As a result, this architecture was always the reflection of holy place, life and presence of light and it has been effective on human's soul. (Maddad purr [9])

2.2 In Historical Era

Being familiar with the process of benefitting from sun light is as necessary as knowing the way of forming materials or different basic forms of building for designing .From the signs of remained houses in" the Burned city" left from second and third millennium, we can infer that every room has been related to the outside through a door without any windows. In Islamic Era ,there has been some types of glass windows including pipes of frit placed inside a frame and were used for brightness of the interiors (Falamaki [4]).In Iranian architecture among the oldest types of doors and windows, some has been found with the design of mad castles in the works of Sharokin Era . In Achaemenian Era in Takht Jamshid, doors and stones near the doors are remained frequently. Openings and pane houses above

the doors and roofs have also lightened a wide area Soltan zadeh [16]). According to the researches of a professor called Volfang, it has been clarified that deviation of angles of monuments in Takht Jamshid is based on a form which facilitates the determination of the first day of the year or season by creating different shading and has provided the possibility of choosing an appropriate place to live (set of articles in Congress about history of architecture and city planning in Iran, 1999) . About Hatra Palace left from Parthian Monuments, Sir Presi Sayks says that the light of Halls of this Palace is due to openings and arched doors and windows that have been opened towards the east. After the Achaemenian dynasty in Sassanid Era, the way of receiving light from pane houses has become the feature of its architecture Soltan zadeh [16]) .In addition, they supply their necessary light by building the openings on the dome and probably by their glass coverings. Nemat Gorgani [11])

3. ANALITICAL-DESCRIPTIVE CONSIDERING OF FIVE PROMINENT MONUMENTS IN SAFAVID ERA (16TH-18TH CENTURY)

3.1 Qeissarieh Bazaar

Bazaar of Esfahan left from Saffavid Era (16th century) is a complex; integrated and well-organized network which has different public uses especially business and commercial ones.

3.1.1 Ways of Using Light in the Area

3.1.1.1 Source of light

In Bazaar, open areas and central porches (caravansary, schools and mosques), peripheral areas (chambers around caravansaries, abodes) and places where the light vided from ceiling(the straight road of Bazaar) all are considered as areas that receive their light directly but central spaces of warehouses ,markets and small markets are considered as spaces that receive their light indirectly .

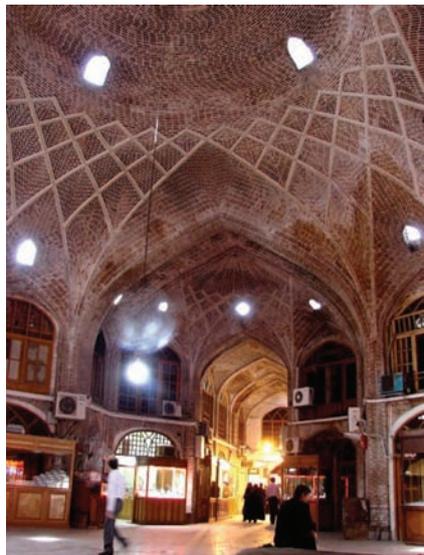


Fig.1
Qeissarieh Bazaar, Esfahan

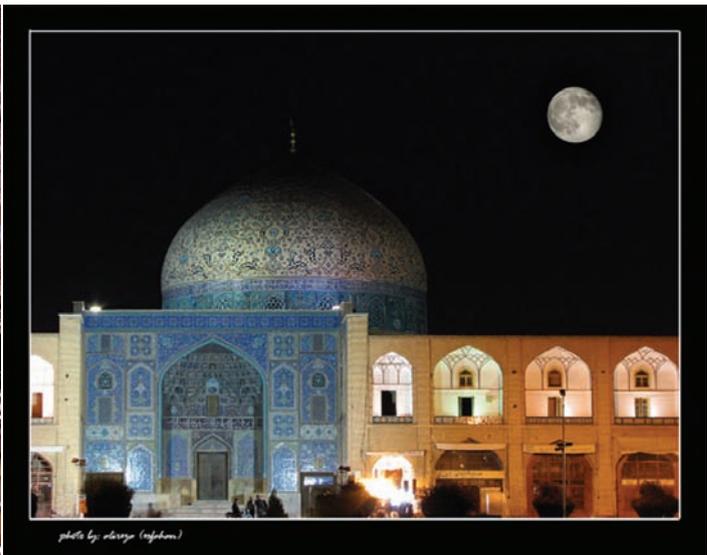


Fig.2
Sheikh Lotfollah Mosque,
Esfahan, Iran

3.1.1.2 Level of light and way of illuminating the area

In this respect, we can divide open areas into three categories:

- 1) Bright open spaces (porches)
- 2) Close areas that are completely bright and their light is local (light is almost homogenous) including side areas of porches in Mosques, schools and also caravansaries. It is worth mentioning that the porch in caravansary is as a main area but in mosques it was used for creating saturated light and determining the time of prayers for Moslems.
- 3- Areas that are half dark and half bright and their light are local (areas with certain light source) including: straight road of Bazaar, warehouses, baths and chambers. (Purtela [15])

3.1.2 General Idea of Light Design

The contrast between the space saturated with mosque light and half-dark space of Bazaar in which continuous spots of light make the visitor move provides the necessary spiritual difference between two spaces in spite of being near to each other. Local light has harmony with movements of space and open area in a way that in the straight road of Bazaar across from every shop there is a light hole that the downpour of light not only makes a person stop but also attract their attention, however after a few minutes make them go. (Ardalan [2]) At the intersection of two straight roads of Bazaar where you need to choose your way, the increase of light in pre-space of the entrance of mosques and schools makes people stop much more and this state reach to the summit in warehouses.

3.2 Sheikh Lotfollah Mosque

This Mosque is located on the east ward of Naqsh-e-Jahan Square and is one of the most precious works of 16th century in Esfahan. Although this Mosque lacks the perfect landmark of a Mosque in its general form, it has too many various features in respect of different characteristics of architecture and creation of space particularly in way of using



Fig.3
the entrance hall of Sheikh
Lotfollah Mosque

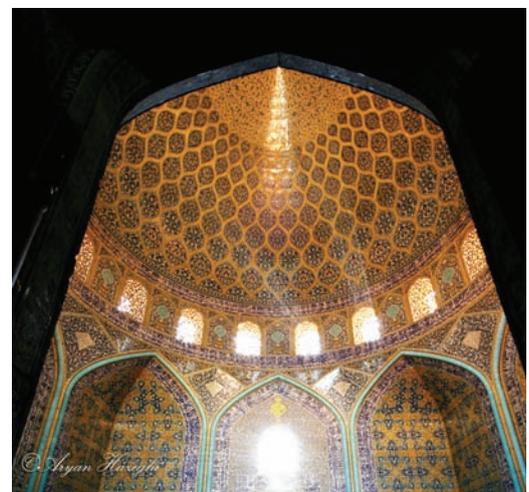


Fig.4
The burst of light in the main
area of Mosque

light and color.

3.2.1 Ways of Using Light in the Are

3.2.1.1 Source of light

This Mosque receives its light directly .At the entrance Hall, space obtains its light from the side area through the entrance door and an outward meshy window. The area under the dome receives the light through large eastern opening which makes the light shine Kibla and meshy window around the dome.

3.2.1.2 Level of light and way of illuminating the area

In this Mosque, lighting is local, well-organized and purposeful .When we approach the end of the Entrance Hall gradually, dimensions of space following its light become smaller and less bright Despite benefitting from the light of the North and the East, the brightness of space is as much as you can see the person who is going in advance and the pattern of tiles through the little reflection of light. Although inside the dome, light is local but steadiness of light is more than that of Entrance Hall.

3.2.2 General Idea of Light Design

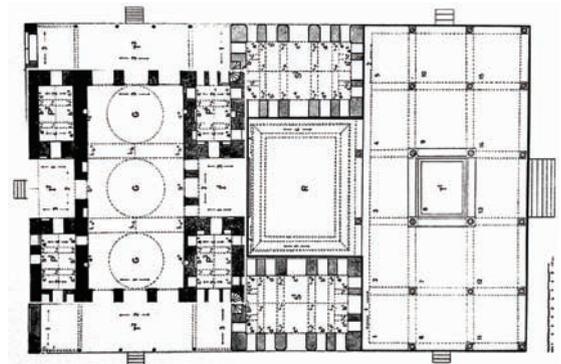
The light of Mosque like its other architectural features and as a powerful tool helps the visitor to reach the end of this complicated space through serial steps. When the visitor is placed at the entrance hall, he faces a contradiction between the space of behind that is the symbol of material world and the spiritual world of the inside. (Ardalan [2]). As the Hall gets darker, a small light at its end attracts the attention of visitor. In fact the architect prepares the visitor for a large event. When the visitor enters the main area of Mosque, the burst of light and vast space of area created by dimensional and luminous differentiation between two areas, suggests him an extra consciousness.

3.3 Chehelsotoon Palace

This Palace is one of the monuments of Saffavid Era and it was a place where celebrations were held and the guests were hosted .The central Hall of this Palace was built in the Era of shah-Abbas the First and the side areas were joined in Era of shah-Abbas the second .Although Iran –Islamic architecture has frequently introvert style, too many Palaces of Saffavid Era have extrovert style and this issue has a significant impact on receiving light in different ways in these monuments.



Fig.5 Chehelsotoon Palace



3.3.1 Ways of Using Light in the Area

3.3.1.1 Source of light

Because most areas in this Palace are introvert the rooms and side porches, they have direct light .Although ivans are spaces that have effective uses in monument, another effective role of them (in regard to Esfahan climate and outward style) is that they create a condition to control light and heat as well as balance them in central spaces –with direct light.

3.3.1.2 Level of light and way of illuminating the area

Outward style of the architecture of this Palace has effect on creating the spaces with the most saturated light and strong brightness which were made by light reception with various orientations .But the central luxurious area of Palace uses a way of receiving light which is in two- polar style (openings and interval windows were limited).Even the shading of paintings on either side of the Hall follows the light source next to it.

3.3.2 The relationship between illumination and Decorations

In Saffavid Era, a kind of luxurious decoration was invented called decoration with cut glasses .Consequently it has been used in every spaces, every pillar of eighteen-pillar porches and the Hall of this Palace, as a result; it cases the steadiness of light in the space.

One of the characteristics of Saffavid Palaces is frequent use of warm colors following flat or prominent decorations with golden sheets. So despite the fact that space is rather dark in the main Hall, the reflection of light upon golden decorations of Hall has effect on increasing the light of the space.

In this monument (like other Islamic-architectural monuments) paying attention to light is not limited to light reception but importance and holiness of light has even impacts on decorational patterns. For instance, drawings of main Hall and side rooms are the metaphor of sun which can be seen in the form of geometric shapes at the summit .These



Fig.6
Qodsyyeh house as a type of
Esfahan center-yard houses

Fig.7
The louvers and openings with
colorful glasses in Panahande
House,Esfahan



patterns are also observed in arabesques and the meshes of louvers and windows.

3.3.3 General Idea of Light Design

Saffavid Dynasty is the first intensive kingdom Iran. In this period interest in values and ancient culture has been created specially before the advent of Islam and this matter has a significant effect on designing this Palace. In Achaemenian Era in Apadana Palace the place for holding the new-year celebrations on 1st day of Farvardin had the main orientation toward the sunrise (east) because of having belief in holiness of sun light. After centuries, the same orientation created again in Chehelsotoon Palace and eighteen-pillar Hall due to feeling of closeness with ancient Eras of Iranian architecture. (Javani [6])

3.4 Qodsyeh and Panahande Houses

These Houses are two type of central-yard houses of Saffavid Era which have general characteristics of frequently built houses of Esfahan in this Era.

3.4.1 Ways of Using Light in the Area

According to ideological view of Iranian about light and its importance as well as its significant role in residential spaces of Iran, in these Houses special decorations and different functions are on the basis of using light so that most spaces benefit from light and heat. For this purpose, the architects have used different methods for constructing of various porches and receiving light from under the ceiling. In these two Houses interconnecting areas that are in use have half-dark spaces with local light and in Panahandeh House springhouse is also half-dark and has a local light too.

3.4.2 The relationship between illumination and Decorations

In these Houses all the louvers and openings are designed in a meshy style with colorful glasses. This matter is of importance not only in respect of creating the feeling of beauty but also providing the balance and avoiding the intrusive light. In addition, the use of crenellated Decorations in the place of "shah-neshin" (the area that king has chosen as his first priority to live) is a reason for spread and steadiness of light. (Cultural Heritage Organization [18])

3.4.3 General Idea of Light Design

Although in These two Houses the peripheral areas of the yard were the places of living for several families, the northern part of the House used in winter for benefitting from the sunlight and heat as much as possible and southern part used in summer for avoiding the intrusive heat and receiving light as much as they need. Another characteristic of these Houses is that their architects have endeavored to fracture and divide light in different areas like entrance porch of monuments in order to reduce the intensity of the outside light and avoiding the bothersome light. However this feature has been applied to other areas such as porches or places that shoes were taken off.

4. CONCLUSION

Generally speaking, light in Islamic –Iranian architecture is of importance in respect of three aspects especially in architecture of Esfahan School:

4.1 Functional

In Iranian architecture, light level, ways of receiving light, avoiding intrusive light and brightness of different areas have always been the focus of architect's attention. As conformance of brightness of spaces with their importance

and usage show the fact .The noticeable point is that dry and hot regions of Esfahan and significant intensity of light following the heat have made the architects try to balance and dissolve light and design the entrance light of the monuments in different ways as follow : limiting the size of openings ,creating networks and different holey decorations with tiles and bricks , windows, porches and verandas.

4.2 Ideological

Light has always vivid and dynamic role in Iranian architecture .Actually it is the symbol and creator of supreme and spiritual world .In Islamic architecture, the way of looking at light is the impact of Islamic thought and on the other hand is from the thought of the fight of light against darkness inherited from the Era of Zoroaster and Mani.. Moreover it is recognized as the sign of holiness and spiritual world. In fact in Islamic architecture light is the manifestation of God's existence as a result; an Iranian architect tries to use light in what they create as much as possible.

4.3 The Role of Light in Designing Environment

Generally the most important characteristic of architecture in Saffavid Era [in comparison with other Eras] is creation of more brightness and transparency in monuments. Light has significant effect on architecture because it is joined to transparency. In fact in this kind of architecture light is not an accidental thing but it is combined with the fact and essence of architecture. We can prove this fact through the role of light when it makes us hesitate, move or stop in front of monuments or when its psychological effects suggest the feeling of aesthetic, way of orientation and location of spaces on the basis of light source for different purposes .

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