

The collection of mosque patterns with light hierarchy approach to perception space of architecture (Case Study: Ganjalikhan Mosque and Sheikh Lofollah Mosque)

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Abstract: Islamic architecture, addition to the application form, used several tools to understand and give meaning to their own world view. Therefore the mosque architecture undoubtedly should be at the highest Islamic meanings and forms application. On the other hand, there are some elements that can be used to give meaning to these Islamic perceptions. So, application of light hierarchy in this field can make the mosques architecture believable. This paper, tries to answer to this question that how can to improve perception of architecture space by the effect of light hierarchy in modern mosques. The research is a quantitative research that introduces two mosques in the field of Islamic architecture by using descriptive and analytical method, and also considers light hierarchy inside them. The findings of this research show that, to use correct light hierarchy can support the perception of architecture space and make it believable.

Key words: Mosque; Light hierarchy; Space perception

1. Introduction

The history of Iran Islamic architecture is the indication of well-known works, and the architecture of mosques was the expression center of architectural and semantically values. Undoubtedly, the mosques architecture is the most important element in Islamic cities; on the other hand, it had been an indicator space for crystallization of the architect's virtue and style.

There are some characteristics, such as hierarchy, sequences and rhythm in the mosque architecture procedure. According to the semantically approach and performance that are expected by using light in mosque, the hierarchy element is meaningful.

The light is the symbol of divine wisdom and the origin of all purity and goodness quiet often in some religions. The man out of the darkness of ignorance and shed light on his soul wisdom is the final ever target. The light, in quite often of some religious buildings is used as a clear and independent element from the other elements and implications that are used in the common buildings, such as the radius of the light clearly viewed through dark body of material and size. The inside of the mosques that is decorated by light element, can transfer mental and moral senses easily and make it acceptable. So far, the most important element in the mosque architecture is light that shows the sitting color on the pattern and is known as being symbol of the elements which make perception space within the mosques. Since Islamic art and architecture have closed relationship with the kingdom of the world,

consider the light element as a design of absolute being. So, the light is used as being through mosque space.

1.1. Research questions

- 1 - What relationship is between light hierarchy and perception of architecture space?
- 2 - How can to improve the perception of architectural space in modern mosques by the effect of light hierarchy?

1.2. Significance of the study

The history of architecture is the suggestion of mosques values and glorious. Whatever affects the study of Islamic architecture today is the construction of contemporary mosques without form and meanings. The religious centers are the most prominent places for following an architectural style up. Mosque is as a prominent religious center in Islamic Iran, so it is necessary to study right using of light as a small element on perception of modern mosques. Since light is one of the index element on definition and perception of the space of mosques architecture, the patterns of the past architecture of Islamic mosque can be presented by consideration of the main using of the light.

1.3. Hypothesize

Light application in mosque architecture cause to upgrade the perception of architectural space.

The light hierarchy has right relationship with space perception.

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2. Literature Review

With looking at the performed literatures in the case of light hierarchy role on perception of architectural space, in particular mosques, it seems to be not so much researches about it. The performed researches are included: attitude of spiritual light on architectural elements of the mosques (Sarban Goli, 2000; Razavi, 2001). The effect of mosque architecture on the recreation of the meanings and transformation of implications (Reza Zadeh, 2004). Handbook of mosque architecture included: the consideration of mosque applications, the architecture of the contemporary and historical mosques, theoretical and planning foundations of the mosque space (Zargar, 2007).

2.1. Research investigation

The objective of the present research is application and investigation of it, that is quantitative, used descriptive and analytical methods. The study of the research is library and used library documents, such as articles and books.

2.2. Mosque

The mosques as the most social places for the Muslim presence, is the place for intersection of Islamic art and religion, since different arts together creates special place and space for Islamic art and architecture which should be suitable for creating relationship between God and his creatures. But it should not engage man's mind in to the mosque glory and decoration, instated of paying attention to the great God. The mosque has application and symbolical aspects such as pulpit, sanctuary place, minarets and etc, that each one has its own history. The presence of perception in Islamic mosque is very important, to reach them needs to create suitable field.

2.3. Hierarchy

Hierarchy is one of the important sub indicators of the universe. The hierarchy principle is from fundamental principles due to the description of ontology. As far as the constant theme of the hierarchy improved through all the cosmological formation and has dose relationship with man intrinsic being. While some elements located close to each other, there will be a discipline relationship between them, all these elements may be the same value or function to a hierarchy (Hossin, Nasr, 2001, 167). the presence of elements with the same value isn't right, two space never to be completely the same value, even their size and form to be the same, because there aren't different relations between these two space with other space of the light, and the using of them isn't the same (Yorg et al., 1390).

2.4. Light

Light, is the first term for each visual perception, and it isn't only a physical needs, but psychological value of it is one of the most important factor of man's living in all terms. Addition to light application using, it has symbolical value, and it is a part of life essence, light and the sun considered as the God's element of light source, and the people respected it (Yorg et al., 2011).

2.5. Perception

Perception or understanding, is a complex process of knowledge or understanding via sensory information, and also is a process, that people use it to adjust and explain assumptions and removals which they have from their environment and hereby they give meaning to them. Perception can be different from visual reality, people sometimes have different removals from a unite order, so the people's behavior is dependent on perception, assumption or their removals, not reality.

2.6. Light effect on space perception

Light is one of the most important natural effective factors on space perception. Our perception from objects, colors, designs and space related to quality and quantity of the light. Whatever we see as light and color, then we perceive form and space base on changes. The light constructions are effective through viewer perception of space; these constructions can be change into two groups.

- 1 - The light characteristics of environment
- 2 - Subjective effects of viewer

2.7. Light in architecture

Light and architecture are inseparable issues. The natural light of the day has some properties that make space meaningful, especially when focused on form, color, and texture and material background. So the main factors of the light have direct relation with architect's work.

The Iranian architectures in the far past paid attention to importance of light in architecture and had innovation on using clever methods in building. Light has not been used as monotonic, but using of this natural element was very variable.

Architecture is a detailed artistic play of a collection of built material under light. Our eyes created to see forms under light; these are shadows and lights that uncover the forms in front of us. Cube, cylinder, pyramid, cone and sphere are the first forms that the light presents them to us. They have pure, tangible, and clear images (lookorybosye).

Light makes space and form familiar to each other. Gidoven believed that, architecture perception with organizing space and form is possible. Light not only has a main role in valuation of architecture, but also is one of main determinative factors of the space. The relation of light and architecture is the same as relation between spirit and body, that one is

for living and the other is for materiality of this universe. Some writers know light as mystical symbol by consideration of the light source and role in Islamic architecture and believe that an Islamic architect tries to use and form a material that affects by light vibration.

The presence of the light is the main Islamic arts in two dimensions, one is abstract arabesque designs and architecture, and the other is verbal painting. On the other hand this is light that determines self-intrinsic of art effect, means that not only located effect as symbol of light in self-hidden meaning, but also gives glory to it. And immediately illustrated to the God's light through sky and earth. So the description and analyze light is a bilinear factor to explanation of identity of Islamic art, since focused on the source of light in Islamic art in one way, and to a beautiful sight of art identity in another way (Hassan Balkhari, 2005).

In consideration of light as one of determination index of hierarchy in architecture, it needs case looking at architecture works, such as Shiq Lotfolah mosque, the most important Islamic architecture works during Safavi era, and Ganjali mosque in Kerman.

The present research considered light in mosque from five points of view:

- 1 - Hierarchy of full and empty spaces
- 2 - Entrance light
- 3 - Light for path definition
- 4 - Light in dome house
- 5 - Light in adytum

2.8. Hierarchy of full and empty spaces

Hierarchy is one of elements in architectural designing of building that the building spaces usually aren't the same but diversity. Light has main role in hierarchy definition. Light is one of the factors that supported to show hierarchy within the building. Light not only affect inside spaces of the building, but also the outside spaces and vice versa. Light links the intermediate spaces which are buffer spaces with inside and outside spaces. The light movement can make the outside to inside movement of spaces and vice versa low and high.

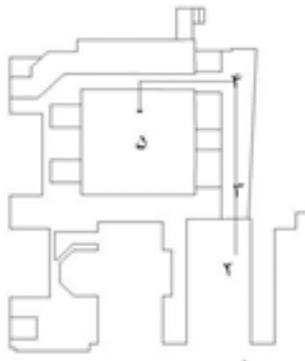


Fig. 1: plan of Ganjali khan mosque

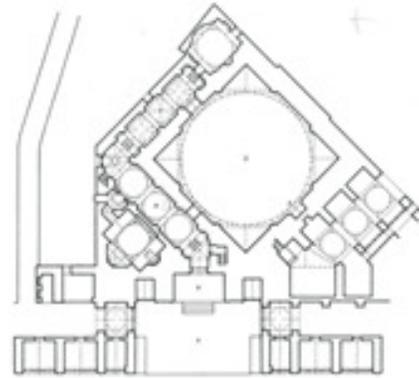


Fig 2: plan of Sheikh Lotfollah mosque

To reach Sheikh Lotfollah and Ganjali Khan Mosques in Kerman, man guide from wide field space in to inside space of the mosques. He first reaches outside door of Sheikh Lotfollah mosque by passing some stairs and Ganjali mosque by passing entrance porch. Then he goes inside a corridor that becomes perpendicular with angle. He is ready to reach the main space along the way from bedchamber in to the space under dome. All of this hierarchy is perceptible with correct using of light.

2.9. Entrance light

Entrance is one of the main elements of the building façade, that the location and designing of it show the building's role and activity. The entrance door; is the path mark from outside public space to inside space, it is a main element that could be named as building mark. The entrance needs absolute light for definition.



Fig. 3: the entrance picture of Ganjali Khan mosque



Fig. 4: the entrance picture of Shiq Lotfollah mosque

The main property for the entrance is readability and invitation affects indeed, that will be possible under light beam. This readability is very important in such place like mosque, because the space of the mosque as important urban element should be completely indicator. Since in extroverted mosques that have small spaces than introverted mosques, need to compensate this vacuum by using absolute light. The entrance designing of Sheikh Lotfollah mosque is a clear type in this field, that the light hierarchy is meaningful inside the mosque, after passing the absolute light of entrance part.

2.10. Light on the way

Man talks to place under the light on the way and can understand the way by the light because the light itself describes and make the way. On arrival to transformation space of the Sheikh Lotfollah mosque, you should pass up five stone stairs, and then going through entrance door a little bid on the left and askew. This transformation space is a dark and narrow corridor that is in contrast with the passed sun shining (Nader, Ardalan, 2001).



Fig. 5: entrance corridor of Sheikh Lotfollah mosque

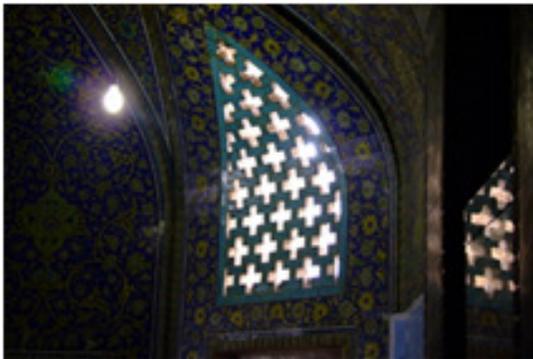


Fig 6: a picture of open up corridor of Sheikh Lotfollah mosque

Even the architect could give light from north and east directions; he just used a reticulated small window on the curve of the dark corridor with short roof.

Light is just enough to see front foot and tile figures. This light that shines to the front wall makes a vector through space that change view to the left and another light. When you look back again, you see

darkness in your heart at the moment and feel separation and change of direction from outside world. But that light that shines to the latitude of the way passes through something that's a door and space of behind it (Nader, Ardalan, 2001).

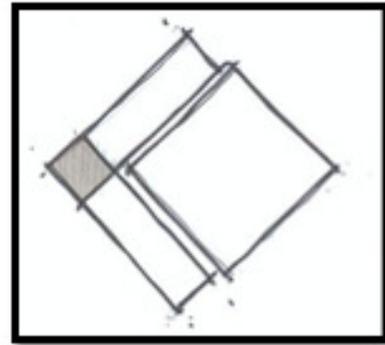


Fig 7: schematic plan of corridor joint of Sheikh Lotfollah mosque

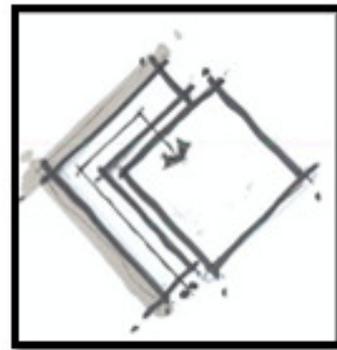


Fig 8: schematic plan of the corridor of Sheikh Lotfollah mosque

And also on the arrival of Ganjali Khan mosque, we reach a dim light and narrow corridor, while passing it we will suddenly reach a bright place, full of spiritual beauties. During this time, shows that we abandon the outside dependence and reach the inside of ourselves, so we passed the sensual darkness back to feel the influence of right light in our being on the way.



Fig. 9: a picture of the corridor joint of Ganjali Khan mosque



Fig. 10: a picture of the corridor of Ganjali Khan mosque

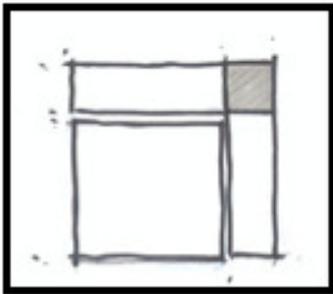


Fig. 11: a schematic of the corridor join of Ganjali Khan mosque

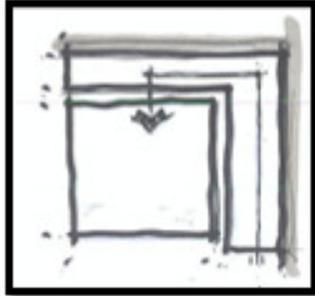


Fig. 12: a schematic of the corridor of Ganjali Khan mosque

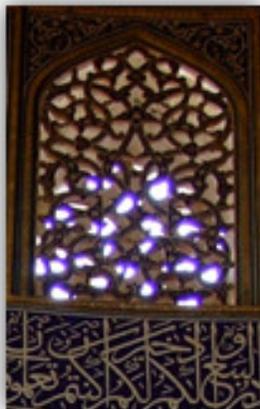


Fig. 13: a picture of lattice skylight schematic plan from Sheikh Lotfollah



Fig. 14: a picture of the domehouse in Sheikh Lotfollah

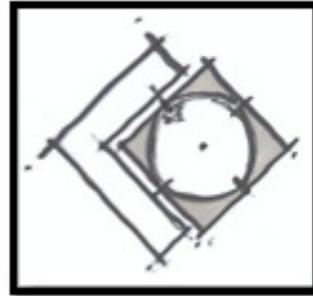


Fig. 15: a schematic plan plani in Sheikh Lotfollah Mosque



Fig. 16: a picture of lattice skylight schematic plan from Ganjalikhan Mosque



Fig. 17: a picture of the dome in Ganjalikhan Mosque

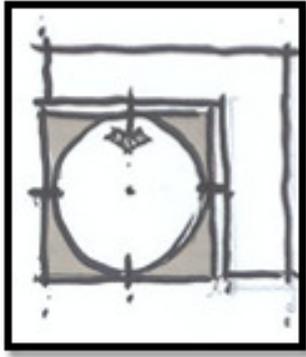


Fig. 18: Schematic Plan from Ganjalikhan mosque



Fig. 19: Sanctuary part of Sheikh Lotfollah mosque

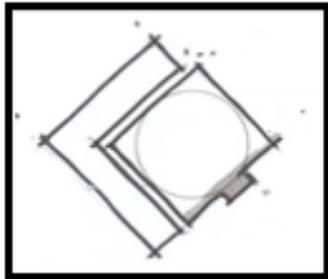


Fig. 20: Schematic plan from sanctuary of Sheikh Lotfollah

2.11. Light inside dome house

Dome houses were built alone and free as a palace for mosques. The light shows the space suspending. Embedded light is one of the impressive characteristics for the mosque. Some windows with a pair of lattices, one is inside, the other is outside embedded in regularly spaces inside dome stem, each one with prominent arabesque design that there is a relation between full and empty spaces where the light breaks again. The light is obtained from 16 skylights inside the dome.

High level of light is used in dome house of Ganjali Khan mosque, where the meaning of both darkness and brightness is clear. The light inside the mosque obtained from the sky through 12 lattice openings with bush and flower designations, that all

the day the sun is shining inside. there is a cornice on dodecagon under the light that separated the skylight dome from lower part interestingly.

2.12. Light inside sanctuary

The mosque sanctuary undoubtedly is one of Islamic art displays that joint with Islamic worships. Sanctuary is Qibla part of a mosque. Here the wall point changed in to sanctuary by wall shelf concavity (ma'ad poor, 2008, 258). The building of sanctuary place is an important architecture element in the mosque. There is a large opening on the east part of Sheikh Lotfollah mosque where the sky can be seen from inside dome and is exactly built against Qibla direction and diffuse the sunshine on sanctuary wall here sanctuary separated from other parts of the mosque. There is no place such as this mosque with playing of light, tile and color.

3. Conclusion

According to the performed studies, the effect of light hierarchy confirmed on perception of architecture of Sheikh Lotfollah and Ganjali Khan Mosques. So the light has an effective role on creation and stabilization of identity, readability, giving means and direction and also the perception of the mosques spaces. Since light is one of the most important tools for perception of mosque space. There is a close relationship between light and space perception, and also high effect of it on the addressed people based on harvested patterns and the results of this research.

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References

- Ardalan, Nader, Bakhtiar, Laleh, translator Jalili, Vandad Vahdat, soil Press, second edition, 2001.
- Bolkhari Qehi, Hasan, and spiritual foundations of Islamic art and architecture (second book), Chapter Press, first edition, 2005.
- Brand Helen, Robert, translation Ashrafi, Islamic architecture, Rozaneh publication, second edition 2008.
- Burckhardt, Titus, translated Memarian.R, GH, Islamic Art Language, publisher Samat, Tehran, 1986.
- Corbin, Henry, "Light in Iranian Sufism human" Book of the Month Art Gilban Press, July 2008.

Grvtr, Jörg Kurt, translated Pakzad, Beauty logy of architecture, martyr Beheshti University Press, 2011 Sixth edition.

Kayani, Mohammad Yousuf, Islamic architecture, Tenth Edition, summer 2012.

Kayani, Mohammad Yousuf, Tarykhhnmmary Iran during the Islamic Jihad University Press, Fourteenth Edition, 2012.

Najmabadi, Mohammed Hussain, Sheikh Lotfollah mosque and its features, Farzan publishing, prints 2002.

Nasr, Hussein, Haji Miezei translation, and Froozan Far Publication, 2001.

Poor Mohammad, Expressions of spiritual wisdom of Islamic Art, International Press, second edition, 2008.

Proceedings of the Conference on mosque architecture past, present, future, Tehran University Press, first edition, 1999.

Zargar Akbar, A Guide for mosque architecture, View Publications, First Edition 2007.