Light Processing in Iranian Houses;
Manifestation of Meanings and Concepts

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ABSTRACT: Light is one of the many wonders in the architecture Iranian houses. It is a major tool for space creation and design. An important consideration in the Iranian architecture, which takes a functional and conceptual approach to the extensive subject of light, has been that light should create a beautiful and spiritual space in addition to being functional. The light used in a house should be pleasing to the eye, and it should not be dazzling or bothersome. Optimal use of light plays a major role in creating mental peace and physical comfort and saving energy. This paper investigates different methods of exploiting natural light in the architecture of Iranian houses. For this purpose, three houses of historical interest in the city of Kashan in Iran (Boroujerdi-ha, Tabatabaei-ha, and Abbasian) were studied for the position and role of natural light in them. A qualitative research method was used within an analytical-interpretative approach. First, the elements and components used to exploit natural light were studied, and then the strategies employed to manifest values, meanings, and concepts were explored within an analytical model.

Keywords: *Light, Natural light, Light processing, Iranian architecture, Iranian house, Concepts, Esthetics.*

INTRODUCTION

The role of light cannot be ignored in any discussion of architecture. Light has enclosed the environment. Nature, as a whole, is light (Kahn cited in Giurgola, 1975, 2). Light appears to be everywhere, but it is not touchable or catchable. "Light is really the source of all being" (Lobell, 1979, 22). However, one can bring it into an architectural space and give it a material framework through an innovative design. Light is a prerequisite for every kind of visual perception. In absolute darkness, neither space nor form and color are visible. Light is not just a physical necessity. Its psychological value is an important factor in human life in all dimensions (Grutter, 1987, 449). "The human body evolved in the diurnal cycle of light and dark, and is tuned to the spectrum of the sun's radiation" (Tregenza and Wilson, 2011, 3). The intensity, direction, and color of light are influential elements in an architectural space. These aspects of light and also where it comes from affect space and individuals in different ways, and any change in each of these variables draws different reactions from individuals. Optimal use of light brings about physical comfort and mental peace. "The capacity of light to penetrate matter and temporarily produce an inward glow and intensity of being is a timeless source of human wonder" (Plummer, 2009, 218). Providing appropriate light is considered one of the most important factors in designing architectural spaces (Habib and Alborzi, 2012, 2). Light is the creator of forms, shapes, and images. Light arrangement and processing play the most significant role in changing

spaces (Habib and Alborzi, 2012, 3). Shadows can make some changes in form, shape, and space. In the Iranian architecture, attempts are made to use these properties of light in a very beautiful manner. In studying light in Iranian houses, this research revisits the role of light in giving life to spaces. The passage of light rays through openings in the building creates beautiful events on the inside which, in collaboration with other events, redefine identity. "Each building gets its Character from just the patterns which keep on repeating there"(Alexander, 1979, 95). "These patterns of events which create the character of a place are not necessarily human events. The sunshine shining on the windowsill, the wind blowing in the grass are events too" Just like social events, they have influences on human beings (Alexander, 1979, 64). "Every place is given its character by certain patterns of events that keep on happening there" (Alexander, 1979, 55). "The meaning, concept, recognition, and identity of architecture would have remained unknown and unachievable without knowledge of space" (Falamaki, 2007, 129).

An Iranian house has particular characteristics, is a space for all seasons, and is in a perfect harmony with culture, values, climate, and the surrounding environment. A balance exists between full and empty surfaces, and it is possible to optimally exploit light in different spaces by creating an appropriate relationship between these surfaces. Many openings are provided in different spaces. An appropriate harmony is created between open and closed spaces. Furthermore, spatial and visual broadness is apparent at different levels. The yard is located in the middle of the house surrounded by house

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spaces. Also, there are yards at different levels of the house which make a substantial contribution to space broadness.

MATERIALS AND METHODS

This research aims at investigating methods of exploiting natural light in the architecture of Iranian houses. Three historical houses in the city of Kashan in Iran, i.e. Boroujerdi-ha, Tabatabaei-ha, and Abbasian houses, all dating back to the Qajarid era in the 19th century, were studied. It is possible to visit these houses and to take pictures and films. In addition, their drawings (plans, elevations, sections, and perspectives) and documents are available. The position of light in these buildings was the major focus of this research. A qualitative method was used within the framework of an analytical approach. First, the position and role of each element in the optimal exploitation of natural light in each of these houses were studied, with the results being summarized in tabular format. Then, all the elements involved in the admission and spreading of light were examined within the framework of several conceptual models. Finally, the methods of light processing were explored from functional, conceptual, cultural, and esthetic perspectives using a conceptual and analytical model.

RESULTS AND DISCUSSION
Architectural Elements for Exploitation, Control, and Adjustment of Natural Light

Architecture expresses ideas and values through a system of visual elements (Della volpe cited in Falamaki, 2007, 181). It could be said that light is the most important of these visual elements (Fig. 1). "Variability in space and time is the dominating characteristic of natural light" (Tregenza and Wilson, 2011, 4). The elements and components used to exploit, control, and adjust natural light are studied below.

Entrance and Vestibule

The entrance space controls light and vision. In the Iranian architecture, one cannot enter a building straight away, but rather there are several intermediary spaces which are hierarchically arranged. Elements and components such as forecourt, portal, vestibule, and corridor constitute the entrance to the yard, and this passage is accompanied by a gradual brightening of space. "Light has always played a pivotal role in successions of space" (Plummer, 2009, 54). Vestibule is a reminder of pause and silence and creates a spatial privacy by separating the outer space from the inner space. "Space formation in an Iranian house is based on privacy. As a spatial reflection of respect, privacy adjusts the relationship between the individual and society. The question of privacy concerns many applications, ranging from the most personal spaces to the areas designated for family gatherings. These spaces are arranged hierarchically in the form of intermediate and sequential spaces" (Haeri, 2009, 116). Skillful use of light plays influential key role in defining private spaces.

Vestibule is a low-light space which sometimes receives moderate light from the ceiling. As one moves from the vestibule to the yard, the space gets brighter and brighter, with full light being available in the yard. "Immediately after one enters the yard, it is light which shines, differentiates, and is focused" (Habib, 2006). "The roofed, cool, and dark space is connected to an open, unroofed, warm, and light-filled space" (Habib, 2006).

Yard

The yard provides spatial broadness and allows an experience of life in both open and closed spaces. This experience is full of beautiful views. The yard is the receiver of light and air, gives a sense of space and the environment, and creates a sense of spatial belonging (Fig. 2). A private open space is created inside the house to permit connection with the nature, water, sky, and plants. Sky is framed by the walls surrounding the yard. Sky has always been present in the Iranian house and affords the chance to benefit from the sun, moon, night, and stars, wind, rain, and breeze (Alborzi, 2012, 283). In the yard, water reflects light. Also, the trees absorb part of the light and create a pleasant shade, thus displaying light and shadow."Trees are important to daylight: they enhance a view, they scatter and block sunlight and skylight, and they modify other aspects of the microclimate" (Tregenza and Wilson, 2011, 160). Further, colorful manifestation of plants in different seasons adds to the beauty of space (Table 1).
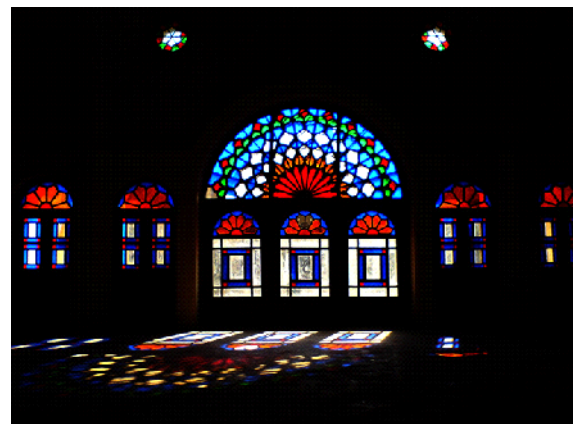

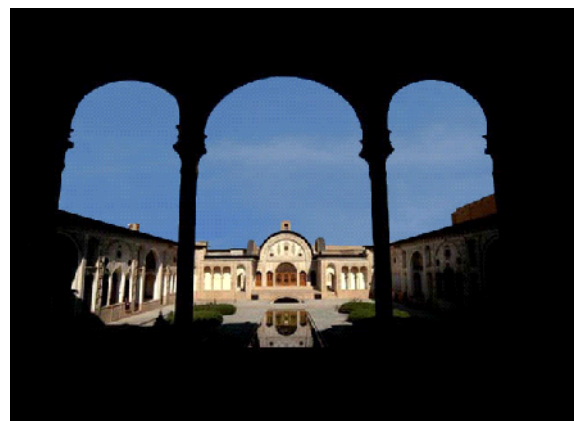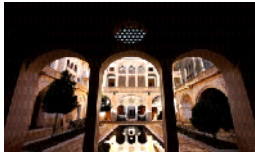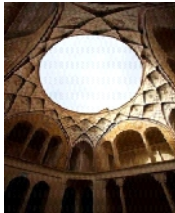Fig. 1: Colorful reflection of light, Tabatabaei-ha house in Kashan

Fig. 2: A view of yard, Tabatabaei-ha house in Kashan

Table 1: A conceptual model for the position of the yard in the architecture of an Iranian house

Viewpoints	Position of the yard in the architecture of Iranian houses	Picture
Functional	Center and heart of the house Unroofed space for life Connector of spaces Exploitation of light and the sun Movement of air and breeze Nature at the heart of house A place for visits and watching Holding family gatherings	 Fig. 3: A view of yard, Abbasian house in Kashan
Conceptual	Light Reflection Brightness Relation with the sky and A focus on spiritual viewpoint	 Fig. 4: A view of yard, Boroujerdi-ha house in Kashan
Cultural	Creating an open space surrounded by buildings at the heart of the house for the comfort and peace of the family Focus on privacy Sometimes more importance is attached to privacy through creating courtyard and outer yard. Family gatherings and social interactions	 Fig. 5: A view of yard, Abbasian house in Kashan

Symbolic	A small manifestation of the paradise
	Symbolic view of the:
	  Sky, light, water,
	  Trees and flowers and plants,
	  Birds,
	  Wind, rain, breeze,
	  Sunlight, moonlight,
	  Night and stars
		
		Fig. 6: Backyard, Tabatabaei-ha house in Kashan

Esthetics	Light and shadows, contrast Light, color, shade Presence of the sky in the Iranian house Sunlight, moonlight, night and stars, wind, rain, and breeze Presence of water and reflection of images and colors Changes of plants during different seasons Manifestation of colors during different seasons Decorations of the inner sides of the walls of the yard Flavor of flowers Singing of birds	 Fig. 7: A view of yard, Tabatabaei-ha house in Kashan

Veranda

Veranda is a covered space connected with other spaces from three sides and to the yard from one side. It receives light and causes spatial broadness, a wide eye span, and spatial openness. In addition, it makes a desirable environment by providing shade. Shadow complements light. In other words, there is a kind of grading between bright surfaces and shaded surfaces (Meiss, 1986, 125).

Belvedere

Belvedere is similar to a veranda, but it has no ceiling. In some cases, is an unroofed yard on upper floors and is used in moonlit summer nights.

Window

Window is a frame for light to enter. It is also used to connect the inner and outer spaces, permits seeing out, and provides visual perspectives. One can note the quality of light

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which changes from one place to another, but it is impossible to recognize this change before light is manifested through an artificial form. Many architects have designed windows which materialize light and create a sense of locus (Norberg- Schulz, 1984). The following applications are considered for the window:
Light admission
Air change
View and perspective
Interaction with the outside

Orosi, Multi-Doors, and Stained Glass

Orosis are special windows in the Iranian architecture. In most cases, they have Stained glasses which add to the beauty of the house space by creating colored lights. "Just like fire which creates light, light creates color. Colors are children of light" (Seyyed Sadr, 2001, 6). These Stained glasses refract the white light and create beautiful and variable scenes (Fig. 8). "Light, the first phenomenon of the universe, reveals the living essence and nature of the world through colors" (Seyyed Sadr, 2001, 6). "Colors reveal the interior richness of light"(Burckhardt, 1985, 84). Appropriate light processing has a good and influential effect on human health and comfort. Intense light hurts the eyes and results in eye strain; on the other hand, faint light causes tiredness, eye strain, headache, and stress.

Tabeshband

Tabeshbands are vertical separators which are placed on the openings in order to allow appropriate light via partial refraction of light. Using Tabeshbands is employed as a technique in the Iranian architecture to adapt to the bright sunlight. The installation of Tabeshbands creates three-door (Seh-dari), five-door (Panj-dari), and seven-door (Haft-dari) openings.

Roshandan and Horno

Roshandan and Horno are traditional skylights placed in the ceiling. They allow light into the inner space and provide a view to the sky. They show time by creating a shining area inside the space. Also, they display variable light qualities because light enters at different angles and in different directions at different times of the day.

Rozan

Rozan (Aperture) is an opening on the wall, usually on top, which admits light and provides ventilation. It also provides contrast, visual variety, light and shadow, and virtual composition.

Shabak

Shabak is a kind of lattice window which allows light into inner spaces. It creates visual manifestations of light and at the same time limits visibility.

Feriz-o-Khovan

Feriz-o-Khovan is a kind of latticed brickwork which creates beautiful appearance, admits light, and limits visibility. In some cases, it provides air. Sometimes it is used as a parapet and at other times as part of the façade and portal of a building. It can also be embellished by the addition of ornaments and colors. The particular arrangement of bricks creates fine light
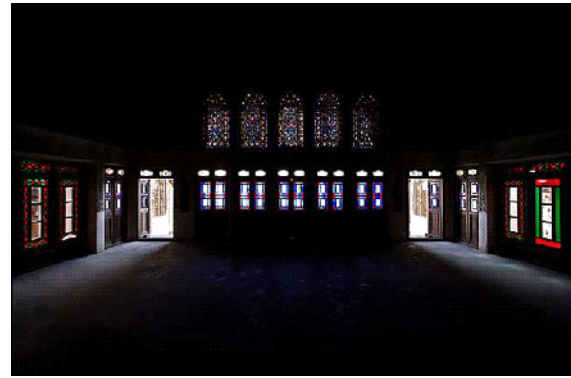

Fig. 8: Stained glass, Tabatabaei-ha house in Kashan

and shadows.

Mirror

Mirror reflects light, gives representation, creates virtual images, and causes spatial broadness, transparency, radiation, shining, beauty, and brightnesss.
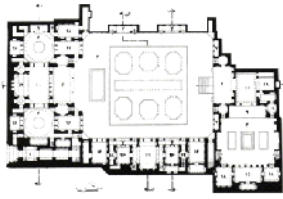
Muqarnas, Yazdi-bandi, and Rasmi-bandi

These are ornaments in the ceiling which are used for beauty, light admission, spreading, and refraction. They create depth in space through light and shadows and embellishment. "Muqarnas also serve to trap light and diffuse it with the most subtle gradations"(Burckhardt, 1985, 84). Light shines in a different directions and makes materials brightness. "There is no more perfect symbol of the Divine Unity than light. For this reason, the Muslim artist seeks to transform the very stuff he is fashioning into a vibration of light"(Burckhardt, 1985, 84). Light magnifies architectural decorations.

Light Quality

Another important factor in the exploitation of natural light is light quality. Light quality differs in different sides of the house. Considering the geographical features of Iran, the warmest and most appropriate light comes from the south. "South light is dynamic and generally more intense as well as having different color-rendering qualities"(Baker, and Steemers, 2002, 72). In this side, the light, brightness, and heat of the sun exists throughout the day, but its quality and intensity di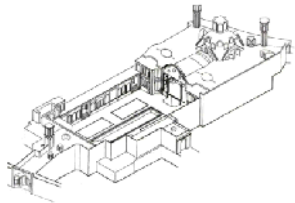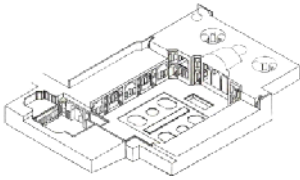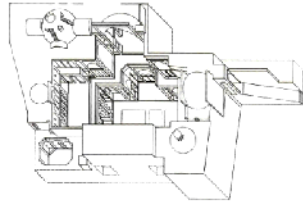ffers during the day and in different seasons. In the north side, brightness exists, but there is no direct sunlight. "North Light is typically more constant and cooler, and thus particularly appropriate for spaces that require high daylight levels without the risks of overheating or glare"(Baker and Steemers, 2002, 72). In the east side, the horizontal shining of light is seen at the dawn, but there are shadows and penumbras during the day. In the west side, there is the horizontal shining of light into the house space and severe heat at dusk. On the other hand, the space of the house is divided up into two parts in terms of function: some parts of the house are used in the summer (Tabestan-neshin) and others in the winter (Zemestan-neshin), and this has been a technique to adapt to the climate. Optimal use of light plays a major role in creating mental peace and physical comfort and saving energy.

Table 2: An analytical model for contrastive comparison of houses from the point of view of light exploitation

Building		Iranian Houses		
		Boroujerdi-ha House	Tabatabaei-ha House	Abbasian House

Architectural elements for natural light exploitation

Plan

Fig. 9: Plan of Boroujerdi-ha House (Source: Haji-Qassemi, 1996, 36)

Fig. 10: Plan of Tabatabaei-ha House (Source: Haji-Qassemi, 1996, 114)

Fig. 11: Plan of Abbasian House (Source: Haji-Qassemi, 1996, 125)

Picture

Fig. 12: A View of Boroujerdi-ha House (Source: Haji-Qassemi, 1996, 35)

Fig. 13: A View of Tabatabaei-ha House

Fig. 14: A View of Abbasian House

Perspective

Fig. 15: Perspective of Boroujerdi-ha House (Source: Haji-Qassemi, 1996, 35)

Fig. 16: Perspective of Tabatabaei-ha House (Source: Haji-Qassemi,1996, 115)

Fig. 17: Perspective of Abbasian House (Source: Haji-Qassemi, 1996, 123)

		Boroujerdi-ha House	Tabatabaei-ha House	Abbasian House
1	Yard	With a light-filled big yard	With numerous yards, a main yard, a small yard, and two backyards, the walls of which create a with round roof plans	With a small yard and tall walls on the ground floor. With the wider and broader in top floor, more brightness and light
2	Vestibule	With three vestibules, A long entrance to the yard, passing from darkness to light, With mild light entering from the ceiling in some parts of the passage	With two vestibules, A long entrance to the yard, passing from darkness to light, The main entrance in the southeast side, the entrance composed of several sequential spaces	With two vestibules, An entrance vestibule with a long route to reach the yard The southern vestibule leads to an unroofed entrance and then connects the yard through intermediate spaces
3	Veranda	Big veranda in the southern side of the building and in front of a big and beautiful hall A small veranda with pillars in the west side	An veranda with pillars in the middle of the southern side of yard Small verandas with pillars in all sides and backyards	A veranda with a high ceiling in the northwest side Small verandas around Panj-dari rooms Platforms on the first and second floors

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Continu of Table 2: An analytical model for contrastive comparison of houses from the point of view of light exploitation

4	Belvedere	In front of the hall in the north side of the building	A relatively large belvedere in the north side of the main yard A belvedere in the middle of the west side of the small yard (The hall of the house opens onto two belvederes from two sides, one to a big yard and the other to a small one) A belvedere on the top floor of the east side of the small yard	On the second mezzanine in the northeast side of the building
5	Window	With several windows	With several windows	With several windows
6	Multi-doors	Seh-dari Panj-dari	Seh-dari Panj-dari	Seh-dari Panj-dari
7	Stained glass	In multi-doors, Orosis, and Rozan	In multi-doors, Orosis, and Rozan	In multi-doors, Orosis, and Rozan
8	Orosi	Space connectors In certain Seh-daries and Panj-daries	Space connectors In certain Seh-daries and Panj-daries	Connectors of inner spaces Connector of hall and two Seh-dari rooms in the southeast side Connector of the roofed space (Tabestan-neshin) of the east side to the adjacent Seh-dari room
9	Tabesh-band	Divider of multi-doors	Divider of multi-doors	Divider of multi-doors
10	Roshandan and Horno	In the ceiling of the hall On the passage from vestibule to yard Openings in the middle of Yazdi-bandi units across the ceiling (Fig. 18)		Pond hall Roofed space (Tabestan-neshin) with light coming through the ceiling Openings in the middle of Yazdi-bandi units
11	Rozan	In the hall In the big room	In the hall In entrance space In front side of Seh-dari rooms and intermediate spaces (antechambers)	In the hall In the rooms on the second floor In the veranda
12	Shabak	Shabak with beautiful stuccos on top of the hall To allow light into the basement	To allow light into the basement	
13	Feriz-o-khovan (Brick work)		As a fence around the second floor	As a fence around the second floor
14	Mirror	In decorations	Mirror room	
15	Water	A pond in the middle of the yard	Two pond in the big yard A pond in the small yard A pond in each of the two backyard	A pond in the middle of the yard A pond in the middle of the pond room in the northwest side of the building
16	Muqarnas, and Yazdi-bandi, and Rasmi-bandi	The main hall has a Yazdi-bandi domed roof	In the entrance portal of the southeast side Cellar and basement	The main veranda in the northwest side Roofed space (Tabestan-neshin) decorated with Rasmibandi

After studying the architectural elements used to exploit natural light (Table 2), their position in the architecture of an Iranian house was studied from functional, conceptual, cultural, and esthetic perspectives, and a conceptual model was formulated (Table 3).

Fig. 18: Openings in the middle of Yazdi-bandi units across the ceiling, Boroujerdi-ha house

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Table 3: A conceptual model for the position of light in the architecture of Iranian houses

Architectural elements	Functional value	Conceptual value	Cultural value	Esthetics value
Yard	Admitting light Admitting air Perception of the environment Connectors of spaces	Introversion Privacy Sense of belonging	Creating a private open space inside the house to connect with the nature Privacy Private space For family gatherings	Connection with the nature, land, sky, water, night, stars, flowers, plants, wind, breeze, rain, birds, and open air Focus on the senses of sight and smell
Vestibule	Space division Showing direction Intermediate space for entering main spaces Determining privacy Separating the inside from the outside	Leading toward light Privacy Limited visibility Halting Silence	Privacy Delimitation Limited visibility	Entering from darkness to light Light and shadow Contrast A frame of light at the heart of darkness
Veranda	Spatial broadness Sight broadness Spatial perception Spatial opening Creation of shade	Spatial experience	Sense of spatial belonging	Visual perspective Creating light and shadow
Belvedere	Spatial broadness	Spatial experience	Sense of spatial belonging	Visual perspective
Window	Admitting Light Air change Heating View and perspective Interaction with the outside	Transparency Spatial fluidity	Transparency Delimitation	A frame to admit light Visual perspective A view of the outside
Door	Boundary between the inside and the outside Lack of visibility of the inside Interaction with the outside	Delimitation	Delimitation	Visual perspective
Multi-doors	Admitting light Air change Heating View and perspective Interaction with the outside	Transparency Spatial fluidity	Transparency Delimitation	Visual perspective
Stained glass	Limited visibility Space beautification Creating happiness and enthusiasm Psychology of colors Keeping bugs out	Separating white light into different colors Unity to plurality and plurality to unity	Limited visibility Psychology of colors	Colorful reflection of light Space beautification Creating a colorful image Creating colorful lights Creating a colorful view Creating beautiful patterns Visual perspective
Orosi	Admitting light Air change Heating View and perspective Interaction with the outside	Transparency Spatial fluidity	Privacy Limited visibility	Creating a colorful image Creating colorful lights Creating a colorful view Visual perspective Geometrical patterns Variety of patterns and colors
Tabesh-band (light preventer)	Light refraction Light adjustment Dividing the opening into smaller components	Light control Light adjustment Light modification Light manipulation	Light control Light adjustment	Creating rhythm in the facade of the building Creating recess and projection in the façade Creating form variety Creating light and shadow in the façade Creating depths in the façade

Continue of Table 3: A conceptual model for the position of light in the architecture of Iranian houses

Architectural elements	Functional value	Conceptual value	Cultural value	Esthetics value
Roshandan and Horno	Admitting light into inner spaces Allowing light to go in different directions and different intensities	Sky view	Focusing on the sky	Creating a shining area inside the space Showing time
Rozan	Admitting light Ventilation	Privacy Limited visibility	Privacy Limited visibility	Creating contrast and visual variety Light and shadow Creating virtual composition
Shabak	Admitting light into inner spaces Light refraction	Privacy Limited visibility	Privacy Limited visibility	Visual effects of light Creating virtual composition
Feriz-o-Khovan	Separator	Transparency	Limited visibility	Creating contrast and visual variety Light and shadow Creating virtual composition
Mirror	Light reflection Contributing toward spatial broadness Transparency Luminance Radiation Shining Brilliance Representation	Transparency Beauty Brightness Honesty Truthfulness	Brightness Cleanliness Honesty	Reflection of images Light reflection Transparency Luminance Radiation Shining Representation Virtual image
Water	Contributing toward light reflection Freshness of space Providing required humidity Contributing toward spatial broadness Washing-up	Symbol of light and brightness Symbol of cleanliness Transparency	Brightness Cleanliness Holiness Blessing Prosperity Life One of four main elements of universe (the other three being air, fire, earth)	Reflection of images Reflection of light Reflection of sky in water Virtual image
Plants and trees	Freshness and greenness of space Light admission Creating shades	Close relationship between humans and nature	Focusing on nature	Beauty Creating light and shadow
Muqarnas, and Yazdi-bandi, and Rasmi-bandi	Ornaments Beautification Light admission and distribution Decorating and covering the ceiling and changing a square plan into circular one	Plurality Symbolic meaning of unity to plurality Components that make a whole Secrecy and mystery	Ornaments Creating beauty	Light and shadow Light refraction Light adjustment Light admission Light distribution Creating depth in space through light and shadows Decoration Beatification and of space

CONCLUSION

This research was an investigation into the position and function of light in the architecture of Iranian houses and its role in enhancing the quality of house spaces. For this purpose, three historical houses in the city of Kashan in Iran, i.e. Boroujerdi-ha, Tabatabaei-ha, and Abbasian houses, were studied. The elements and components involved in the optimal exploitation of light were the following: Yard, Vestibule, Veranda, Belvedere, Window, Multi-doors, Stained glass,

Orosi, Tabesh-band, Roshandan and Horno, Rozan, Shabak, Feriz-o-khovan, Mirror, Water, Muqarnas, and Yazdi-bandi, and Rasmi-bandi. These elements and components were extensively explored in functional, conceptual, cultural, and esthetic terms. The following conclusions can be drawn:

Variable approaches are taken in the architecture of an Iranian house for the optimal use of light, light admission, light adjustment, light spreading, light refraction, and light control. Light and light-admitting elements give functional, conceptual, cultural, and esthetic values to space.

Entering from darkness to light is a common feature in the architecture of Iranian houses.

Light reflection creates beautiful visual effects.

Creating light and shadows is a light processing technique in the Iranian architecture.

Light determines spatial privacy.

Space gradually becomes brighter from the vestibule to the yard, which is full of light.

The yard causes spatial broadness and light spreading.

The yard makes it possible to concurrently experience life in open and closed spaces. This experience is filled with beautiful visual perspectives.

The yard is a recipient of light and air, offers a perception of space and environment, and creates a sense of spatial belonging.

A private open space is created inside the house in order to connect with light, nature, water, sky, and plants.

Water reflects light.

Trees absorb part of the light and create a pleasant shade. This brings about light and shadow.

Colorful plants and flowers in different seasons of the year add to the beauty of the house space.

Veranda causes brightness, spatial broadness, and sight broadness and creates a pleasant shade in the environment.

The window is a frame through which light enters. Additionally, it connects the inside with the outside, makes it possible to see the outside, and is used for air change and visual perspectives.

Orosis, multi-doors, and Stained glass focus on transparency and add to the beauty of house spaces by creating a continuum of colorful lights.

Orosis increase transparency, cause spatial broadness, and enable space flexibility by combining spaces.

Tabeshband somewhat causes light refraction, thus admitting more moderate light into the architectural space.

Tabeshband creates depth, rhythm, and light and shadow in the façade of the building.

Roushandan and Horno admit light into inner spaces and allow sky view. They also show time by creating an illuminated area inside the space and display different qualities of light by allowing light to enter at different directions and in different intensities.

Rozan is used for light admission and ventilation. It also creates contrast, visual variety, light and shadow, and virtual composition.

Shabak admits light into inner spaces and at the same time allows visibility limitation, visual effects, and virtual composition.

Feriz-o-Khovan allows the passage of light and also moderate and limited view of the other side.

Mirror causes light reflection, spatial broadness, transparency, radiation, shining, representation, beauty, and brightness and creates a virtual image.

Ornaments such as Muqarnas, yazdi-bandi, and Rasmi-bandi are used for beautification, light admission, light spreading, and light refraction. They also create depth in the space via light and shadows and space beautification.

The quality of light is another important factor. It differs in different sides of the house.

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