

THE INFLUENCE OF IRANIAN ISLAMIC ARCHITECTURE ON TRADITIONAL HOUSES OF KASHAN

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Introduction:

This essay is an attempt to discover the place of residential houses in Iranian history and culture. As a place where they spend a significant amount of time there, should be able to fulfill their needs physically and spiritually as well as satisfying their cultural and religious aspects of their lifestyles.

Mainly focusing on the city of Kashan which is located in Isfahan province, where it is a locus of Islamic architecture. The city itself is a field where exhibits the traces of works of architects who could find suitable methods to organize the spaces in such a way that can function as a medium in order to signify the relation of architecture of landmark and lifestyle. By looking at many old buildings around the world, it is noticeable that there are reasonable relations between human lifestyle and the architecture of the place. As Alexander, who is the writer of architectural books about identity of places, has mentioned: The identity of old buildings come from each of their parts being united with their environment and, can recognize the forces around it and obeys the principle of environment and human nature. [1]

There are some articles published about Iranian Islamic architecture however, few of them are particularly focusing on the functions of residential houses. There is a need to question the principles of designing of residential houses in Kashan from the points of culture, religion and tradition along with environment and climate conditions of the city. Two key examples of traditional houses in Kashan will be investigated. As a brief introduction to the houses, Bafande's house and Shahyalani's house are two of the oldest traditional houses in Kashan and based on reports of cultural heritage organization of Iran, they belong to Qajar Period. Qajar dynasty ruled Iran from 1795 to 1925. [2]

Before starting to focus on different aspects of design of houses of Kashan, it is essential to describe the role of art in Islamic architecture as there is a one to one connection between traditional architecture and pure art.

Eastern art is based on spirituality. It pays more attention to traditions, which has been formed by the people of society. [3] Iranian traditional art can perform functionally in such a way that aims to console the human soul [4], while architecture attempts to create an environment that suits particular aspects of human life, which respects his believes and personal ambitions, his thoughts and high spiritedness [5] as well as providing safety and privacy. [3]

In addition to the importance of spiritual issues in architecture, Islamic architects has considered climate and environment as one the most important factors that generates a correlation between the spiritual demands of the inhabitants, the environment and the climate, and applied these factors to create a formal form. [6]

The ancient city of Kashan, situated in central of Iran where the history of human presence dates back to 6,000 B.C., the city can be considered as one of the first foci for the

organization of civilization. [7] It is situated in a hot and dry region with very hot summers and cold winters. For Instance In the year 2010 Minimum temperature in winter was -5 Celsius and Maximum temperature in summer was 45 Celsius [8] The difference between day and night temperature is high in Kashan, The reason is its proximity with the Kavir desert. [9] Shortage of water resources, few greeneries and desert winds which spread sands in the area, [10] are main elements responsible for the harsh situation there. In order to create a harmony within this climate condition, the vernacular architect has implemented some strategies in response to such weather, while basing his designs on environmental concerns and the sustainable interaction between the human and the environment is observed. [11] The architecture of residential houses in Kashan is based upon several principles in order to conceive a design that satisfies necessary demands of society.

1. Condensed Urban Fabric:

Urban fabric in the whole city of Kashan is condensed. Houses are compressed to each other and have merged walls. [12] This can minimize the contact of wall surfaces with air so there would be less thermal exchange between inside and outside of the buildings. Meandrous and narrow allies with high walls in sides can reduce winds speed and provide shady area in passages. (Fig. 1) Like allies, building has enclosure too. They are surrounded by high walls which make isolated from outside environment. These walls perform as a shell, protecting the building from intense sun ray and desert dust winds and in the cold season, from cold winds. There are few openings on the shell and in many cases the only opening is the main entrance. [10]



Fig. 1: Entrance of Bafande's house



Fig. 2: Entrance of Shahyalani's house

2. Introversion:

Before considering the word introversion in architecture, it's better to have a clear understanding of it from the moral point of view including meanings that have a tendency to inner feelings and avoid from showing them. Facades have been presented in Iranian Islamic architecture at very modest level, (Fig. 1-2) however the interior has been decorated in an elegance way. (Fig. 3) Here, this can be called as an introvert architecture. [13] This types of architecture has applied in many residential houses where there isn't any direct connection or openings between interior and exterior spaces. By creating some openings in interior spaces, it opens the spaces into a private environment that will be explained fully later.

Most of the times when walking in allies of Kashan, it is not easy to realize this phenomenon features on the other side of the walls without getting inside of the building. The only clues of domestic life are the entrances. These houses are modest in relation within their urban environment are like jewel inside an un polished cover. [5]



Fig. 3: Decorated interior facades of a traditional house in Kashan (Ameri's house)

3. Vernacular Materials and Giving Them Qualifying:

Materials available in Kashan are generally mud and brick and mud mixed with chaff. Usually the same soil that has been prepared for excavating the ground is also been used as the material for constructing of the house. The traditional architect knows every constructional and structural property of the materials. He employs them in the right place and in the appropriate amount [5] using this material with heavy thickness so that the walls surrounded the house function like a capacitor that observe solar heat during the day and transfer the heat to the environment during the nights time. So that it can balance the temperature and reduce fluctuation of it during day and night. The architect stripped the raw material, refined the attribute and adorned them with patterns and lines until it progressed to ascending degrees of perfection step by step. In this way the quality of raw materials which were unpleasant, heavy untamed and dull were shaped into a pleasant feature light delicate tamed and alive. [5]

4. Courtyard:

Almost all of the houses in Kashan has one courtyard or more and the rooms and other spaces of the house take place around the courtyard and have openings to it. The courtyard is functioning an element to unite the different space of the house. As this has been mentioned before the entire house so that the courtyard is surrounded with very high and thick walls that can make shady area inside the yard. The humidity provided by the water and the plants and in addition the shade provided by high walls, can increase the relative humidity of the air and cool the air in order to create a microclimate in the middle of the house. The airflow passing the courtyard and touching the water in the pond enters the spaces of the house and cool them. (Fig. 4- 5)

Courtyards are the main core of social gathering in Iranian culture. It provides outdoor activity and privacy. A family can get together in the evenings and water the gardens and enjoy the small environment and beauty provided inside their house in a private and comfortable atmosphere. Courtyard gives life to buildings in a dry climate and few greenery. Water in the courtyard not only smooth the air but also creates a good perspective. Sound of water coming from water work [14] and the reflection of light on it can all add a dynamic quality to

the space, while water and light are two aesthetical parameters in Islamic architecture.[15] Form inside the courtyard, the building seems like a statue that has embraced and surrounds people, increasing the feeling of intimate bond between humanity and the space.[5]



Fig. 4: Courtyard in Shahyalani's house



Fig. 5: "Godal Baghche" Courtyard in Bafande's house

5. Underground Structures

Usually the whole building and specially the courtyard is lower than ground level. In dry climate of Kashan, access to water resources was an important parameter in design.[16] Going down in the earth could provide easier access to water reservoir and underground water pathways. In addition by placing a part of the building under the ground heat transfer between inside and outside decreases and controls the temperature of day and night.[10] underground floor in Kashan houses are living places and the architect pays a lot of attention for designing and decorating it as a main part of the house. Underground floor is a cooler place although in some cases all of it is under the ground and in some cases it is one meter upper of the ground floor and light and ventilation is provided for it by this space. In some cases, in the middle of the courtyard and other yard take place in the ground in which trees are planted and it is called "Godal baghche"(Fig. 5). This place with more shade and humidity could provide a beautiful and cooler place for the house.

6. Orientation and Seasonal Function:

Most of traditional houses are formed along an orientation which is near to the orientation of north to south. This allows the house to be divided into a part in the north and a part in the south of the house. Due to geographical location of Kashan, spaces located in the northern part of the yard which face the south direction, observe more sunray and heat and become warmer where and can be used in cold seasons. In the opposite spaces located in southern part of the yard which face the north direction, observe less sunray and are shady so can provide a cooler place. They are mostly used in hot seasons although there might be some exceptions in some cases. This seasonal movement occurring between spaces in the house is one of the human responses to climate condition.[6] Houses in Kashan are living places for all four seasons of the year. Occupants may move to a more suitable place when season changes in order to advantage a better situation. For instance basements can provide cooler places for hot summers. "Sardab" is an underground semi open space which is usually located in southern part of the house that can provide a cooler place in hot summers. Sardab

usually has a pond and sometimes has access to underground water pathways which are called "Ghanat".

7. Privacy and Hospitality:

The concepts of privacy and hospitality have had a great impact on home culture and house formation in Iranian Islamic architecture.[6] Iranian family both needs to have privacy as well as social contact with neighbors'. In order to achieve this aim, the hierarchy of spaces starts with a public space and it continued with a semi-public space, semi- private and at last a private space. Spatial configuration to manage this divided the whole house into spaces with different characteristics such as the entrance, the exterior (guest room) and the interior (private rooms). In Iranian houses the entrance were extremely important and sequences as well. The intention of the entrance was to block direct sight to the interior. Vestibule or "Hashti" was designed as a stopping point and could be used as a temporary reception room for those who did not need to enter the quest room. (Fig. 6-7) reception area or exterior room is a part of the house into which male guests can enter.[17] This room is a main space in house where has been well decorated[18], at the same time marks the economic condition of the family. This room is situated in the main ax of the yard and has the best view to the courtyard with double height ceiling. Its interior is the most private part of the house where it has been designed in a way that should not be seen or accessible by guests. As walking from the entrance towards the interior spaces, there are usually two different corridors; first one is facing to the exterior part and the second one, which is usually longer curvy, facing to the interior part. This pattern of spatial configuration is by no means accidental, it is a carefully considered response to balance needed relation between hospitality and social contact as well as providing privacy throughout the house.

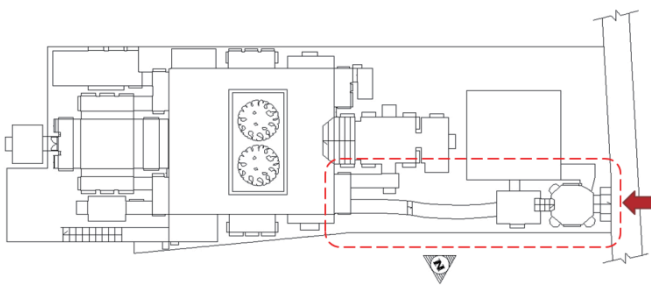


Fig. 6: Entrance in plan of Bafande's house with a long corridor to the interior part and a short corridor to the exterior part

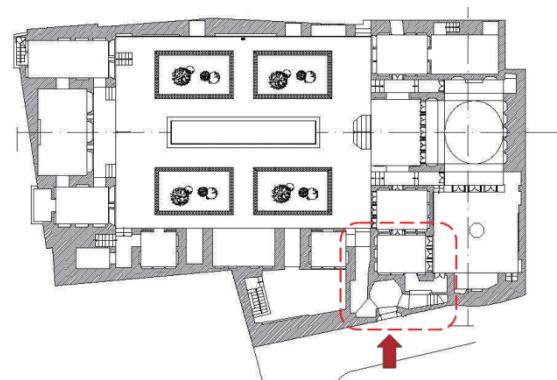


Fig. 7: Entrance in plan of Shahyalani's house with a long corridor to the interior part and a short corridor to the exterior part

Conclusion:

Residential buildings in Iranian Islamic architecture have been designed based on culture, religion, traditions and in response to climate and environment of each region and lifestyle. This architecture could create forms which is able to generate a correlation between these parameters. Old residential houses in Iran despite of having a simple outer shell or facade, they were providing a complex inner shell in order to create an elegance and comfortable atmosphere for its residence. In spite of the rich history of Iranian Islamic architecture of traditional houses, today residential buildings are not designed as carefully as before. They are mostly designed by focusing more on its appearance or its outer shell rather than

creating a complex and comfortable interior. As lifestyle in Iran has been changed quite fast recently, this has evoked new demands. It is the responsibility of contemporary architects to realize them and achieve a comprehensive understanding of these needs in order to be able to respond to the new conditions. They can design spaces and create forms adapted to the new lifestyle and be able to satisfy these requirements. Studying of history of architecture in residential houses in Iran can introduce a new path to architects that how those traditional houses could find suitable responses to people's demands at that time and lead them to create a better architecture appropriate for this period of time.

Notes:

1. All of the photos by Atefeh Zand Karimi.

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