

Evolution in the Correlation of Iranian Introverted Residential Architecture with the Surroundings Environment

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Abstract: The purpose of the current study is to analyze the correlation of Iranian residential architecture with the environment and its evolution in response to the social and cultural variation. These intangible interrelationships are not only represented in physical appearance in the building but also indicate the existing social, cultural and religious notions that were responsive to residential needs. Introverted housing buildings have had sequential connection to public urban spaces, neighborhood units, correspondence with the environment and ecology, emphasis on the privacy and spatial orientation as the most important environmental factors. Every element in Iranian housing is a response to the various requirements simultaneously which implies its functional, aesthetical and structural role in correspondence with the context. The emergence of modern movement and its social, cultural and environmental impacts resulted in fundamental changes in Iranian architecture. Imported architectural elements and principles without any association with the past principles and values caused drastic changes in residential architecture. Therefore, Iranian introverted architecture lost its notions and principles steadily and new architectural elements were replaced without considering its social and cultural consequences. This study investigates Iranian traditional residential architecture and its interrelationship with the environment and context. Borrowing from the primary principles and attitudes in traditional architecture, this study assesses the impact of existing modern movement paradigm and its imported architectural elements. Toward reaching the goal of the study, different traditional and contemporary housing complexes and neighborhood units were observed and evaluated. The results of this study indicate that Iranian traditional residential architecture consisted of outstanding principles which should be reviewed, preserved and combined with new technologies and new circumstances.

Key words: Residential architecture, correlation, surroundings environment, circumstances, Iran

INTRODUCTION

Iranian architecture through the history has developed its paradigm toward deep understanding of physical and psychological needs of the users in accordance with religion, culture, climate and socio-economic characteristics. The focal point in the concepts of the house in Iranian architecture is to how manage the functions and achieving high quality of the spaces. In other words, the culture of Iran society has conducted the use of patterns, techniques, materials, geometries and ornaments in every building. In this regard, the traditional elements in Iranian architecture had their identical meaning and principles. In this architecture, the role of designers were to derive these principles in correspondence with the specific context and apply the appropriate relevant architectural elements. The defined and specified elements resulted in the architect exemption from defining and concluding the concepts from the beginnings (Saremi and Radmard, 1997). As a result, traditional architecture has been emerged and derived from its origins in the society and developed. Aryan

(2001) indicated that Iranian residential architecture embodies the notions and values in the social groups of the inhabitants. One of the other contributions of Iranian residential architecture with the psychological requirements of the human beings is its consideration of social interaction. Human reaches his identity through the effective communications and interactions (Behzadfar and Razzaqi, 2009). With this in mind, house as a shelter would be a part of social identity and architecture as a cultural event benefits from every sources of culture (Haji, 2011). Iranian houses have the content of cultural identity in addition to structural, functional and aesthetical aims (Noghrekar, 2008). Therefore, Iranian housing along with the identity of Iranian architecture associates with the contextual and conceptual aspects in society (Ahmadi, 2008).

Whatever in Iran formed as a residential architecture had been pertinent to social and natural identity which had been particular in consistent with environment and circumstance. In this perspective, Iranian residential architecture not only does not confront with the environment to change it but also it is adapted with the

surroundings to complete it. This attitude is aligned with the goals of sustainable design from all cultural, environmental and economical perspectives.

MATERIALS AND METHODS

In order to assess the interrelationship between traditional and contemporary housing in Iran, different building were observed and analyzed from different aspects of correspondence with the environment. In addition, different literature and studies in Iranian architecture are reviewed and basic principles and concepts in accordance with contribution with society are defined.

Principles of Iranian architecture: During the centuries Iranian architecture shaped on the basis of variety elements, experimenting different styles and methods have achieved its identical styles and principles. The continuous process of Iranian residential buildings had led to intelligent principles which inspired by the values and notions of the society. Pirnia (2001) classified the most significant principles: harmony with physical dimensions of the users (anthropometry), frugality, Nyaresh, self-sufficiency (Platform outside the buildings which manage activities and spaces) and introversion of the buildings (privacy and ecological considerations). These principles have been intelligently and sophisticatedly applied in different buildings through the history of Iranian traditional architecture (Table 1).

Introversion is considered as the most significant and highlighted issue among all principles in residential architecture. Introversion in Iranian residential buildings has become the identical elements through the centuries. Rapaport (2009) indicated that shape and spatial orientation of the building is a result of different considerations. In this regard, it should be taken into account that introversion is not only the result of functional requirements but also it reflects the deep consideration of Islamic notions, ecological perspectives, cultural and socio-economical world view of the designers and users of the buildings. Shelter is the place where is the result of numbers of reasons and fundamentally is a cultural issue which is emphasizing the role of culture as a focal point on the presentation of its identity (Rapaport, 2009). Therefore, the formation of the house and its correlation with surrounding environment represents different attitudes and characteristics (Fig. 1).

The characteristics of Iranian introverted housing can be described as following:

- Lack of direct visual access between inside and urban areas
- Central courtyard or indoor Soffeh (Platform outside the buildings which manage activities and spaces) with windows and doors opened toward it as the means of spatial organizing and orienting different spaces (Memarian, 2008)

Introverted houses and correspondence with the surrounding environment: Iranian introverted architecture is the result of diverse parameters such as environmental sustainability, religious and cultural attitudes and also aesthetic issues. From the word “introvert” various notions could be explicated. This characteristic holds deep notions of morality and mysticisms besides the physical aspect. Therefore, Iranian introverted architecture maybe analyzed from four aspects.

Privacy aspect: In Iranian culture, house is the place to preserving family boundaries and religious uses against outside (Fazeli, 2007). Such a close area around the central courtyard is just estimated as an abstract presentation of the main idea (Nariqomi, 2010). Iranian architect have symbolically combined historical aspects with conceptual notions and presented tremendous outstanding buildings with central courtyard (Khatami, 2011). In explicating the notion of introversion in Iranian housing, five major aspects had been targeted such as: Closure, sequential entrance, required privacy, attendance and gender separation (Nariqomi, 2010). For most architects house domain had been a focal point which would be the basis of identity in every family house (Fig. 2).

Cultural aspect: Introverted architecture is associated with cultural aspect. There are some other notions about the conceptual role of the courtyard. One considers it as the close relationship between spirituality principles and unity with the importance of the negative (vacant) space in opposition with the positive (material) in the buildings. (Nasr, 2010).

Ecological aspect: There is no question about the correspondence of introverted forms and elements of the Iranian traditional buildings with the ecological and

Table 1: Classification of Iranian architecture principles

Principle	Notion
Anthropometric design	Architectural elements in harmony with the body dimensions and functions
Frugality	Prohibition of senseless experiment and preventing the wastes
Nyaresh	(Structural method) with deep vision analyzes and simplifies the different aspects of the building with integration to the ornaments
Self sufficiency	The use of local materials
introversion	Preference to be introvert than extrovert and privacy issues

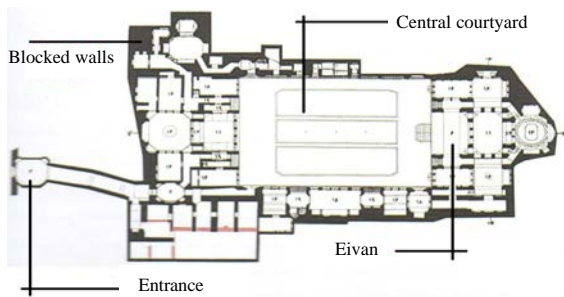


Fig. 1: Iranian introverted house-Sharifian house, (Meamar publication, No. 71)



Fig. 2: Salmasi house, Tabriz

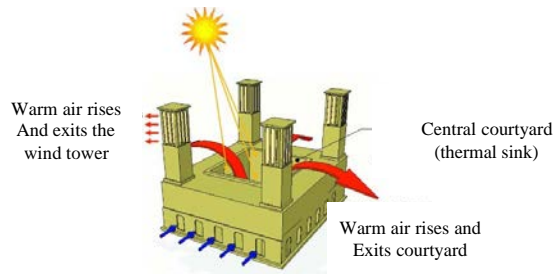


Fig. 3: Ecological aspect of courtyard

environmental design considerations. Among different reasons, ecological considerations are more apparent and highlighted in hot and arid climate in the central part of Iran which contributes to the sustainable advances (Ardalan and Bakhtiar, 2011). Placing all the openings and windows in the interior surfaces of courtyard also blocking outside walls of the building except entrance, separate the private environment inside from the outside public area of the building (Fig. 3). This establishes a micro climate inside the building which allows the occupants to benefit from the reduced transmission of the heat and diminished consumption of the fuels (Ghobadian, 1998). Additionally, exposing to the harmful winds in the central parts of Iran is a major issue. Convenient orientation of the central courtyards in Iranian houses reduces the wind disturbance within the building (Saremi and Radmard, 1997).



Fig. 4: Tabatabaei ha house (Memar publication, No. 71)



Fig. 5: Yazd city

Aesthetic aspect: Light and color are two major characteristics that emerged from the attendance of the central courtyard. Light has sophisticated and is used intelligently in Iranian architecture. In other words, it provides not only heat for the buildings but also it promotes the aesthetical aspects (Fig. 4). Vernacular and natural colors of materials unite scenery and landscape of the urban texture which were in harmony with nature and spirits of the culture of the people (Behzadfar and Razzaqi, 2009). The quality of compositions of the forms with light and shades and also colors of the natural materials contributes to the sense of unity and promotes the identity of the city (Fig. 5).

RESULTS AND DISCUSSION

Iranian housing connections with the surrounding environment: In every example of Iranian architecture there is a sophisticated connection between outside and inside. Nevertheless, the harsh climate in the central part of Iran indicates the defensive ecological mechanism inside of the buildings. There is an effective tendency to nature-based design inside of housing in traditional architecture which have become focal point in introverted architecture (Table 2).

Table 2: Connections between Iranian buildings and environment

Scale of connection	Characteristics of connection
Urban area	From pedestrian-center routes
Entrance	Sequential accessibility from outside with proportional hierarchies
Nature	Important vacant space, relationship with soil, water, green life and sky; from central courtyard; using nature-based materials
Light	The play of light and shades, aesthetically explicated from courtyard through Eivan and terrace
privacy	Privacy inside the building, crowding outside in urban area, sequential accessibility from public to private
Air	Processed by establishing micro climate inside the central courtyard

Modern movement, cultural and social revolutions: The emergence of modern architecture was the result of modernization in west countries. Modernization would be explained by revolutionary ideas and cultural changes in contemporary age and then would be criticized by industrial variation (Mohammad, 2009). Understanding the aspects of modernization would be possible to reach its main aims if the foundation and appearance of it analyzed in the society. With growing the modernization facts in traditional society, the cultural and social issues were changed suddenly and the pace of the changes in Iran were much faster than the other countries. In addition, modernization in the west countries had been normal slowly series of changes because every cultural and social events were changed slowly and in harmony with the different cultural and social levels of the society. The context of the society was ready enough to accept the modernization. On the other side, in Iran as a historical and traditional society, modernization caused drastic changes in lifestyle that lead to deep conflict between traditional and novel values (Fazeli, 2007). The point should be added that modernization and tradition would not be considered totally contrast because it would be unidentified to separate them totally though in every society always tradition and modernization coexist simultaneously (Mohammad, 2009).

The foundations of causes of modernization in Iran society had bolstered with the changes of government from Ghajar (Iranian dynasty during 17th to 19th century) dynasty to Pahlavi (Iranian dynasty, Since 1920-1978). Sending educated students to Europe, establishment of Darol-fonun professional school, publishing newsstudys, introduction of new of technologies and changes in customs by imported lifestyle of European countries represent the other reflects of modernization in Iran (Mokhtari, 2001).

Modernization outcomes on iranian residential architecture: One of the primary changes as a result of modernization was the revolution of urban texture. This transition was almost against the principles of traditional organization and hierarchies. Therefore, environmental and physical relationships notions were influenced by new coming movement (Mohammad, 2009). More importantly, introduction of automobile had a drastic



Fig. 6: Comparing streets before and after revolution

effect on the notion of the street and connection between private housing and public areas. As a result, the connection of house and urban areas changed its direction from pedestrian-based urban network to car-based one. The organization of courtyards beside each other on intensive urban textures changed and the concept that each building specified with central courtyard as an origin of life missed both its notion and identity. Additionally, the notion of semi-public and semi-private spaces had no specific definition in this new era (Fig. 6).

The effects of modernization on the culture of residential buildings can be scrutinized on the context of being updated with the rational tendency as a copy of international movement (Fazeli, 2007). Libber plan was the expression which was advertised by priorities of architecture modern movement. Its notionswaere simple and widespread area designed and were free from structural limitations such as beard walls Mozaiieni, 1997). As a result of revolution, Iranian Kushk (Iranian dynasty, since 1920-1978) which is pointed out as palace in the center of garden with panoramic view to the outside were generalized by shifting to the edge of streets, changed Iranian residential buildings extroverted and balcony instead of Ivan (Specific Kind of terrace beside courtyard) of the kushks made the opportunity for the occupants to have perspective of streets at the front directly (Mokhtari, 2001).

Therefore, Iranian house with traditional concept of introverted and one stage building which was located back to street and connected to urban texture with narrow indirect ways and alleys, lost its original notions and its outstanding correspondence with traditional urban areas

Table 3: Comparison of inter correlations between Iranian traditional house and contemporary house with surroundings environment

House in traditional architecture	House in contemporary architecture
Connection to urban areas through the organic ways and routs and emphasis to pedestrian	Connection to urban area from streets and car-based roads
Access from entrance, hashti (One part of entrance in Iranian architecture that connects inside to outside) sardar (Conceptual ornament in the entrance of building) (Sequential entry aligned with Iranian culture and religion)	Connection without hierarchy and no sequence, copy of modern imported architecture
Emphasis on the levels of privacy, spatial orientation through the sequence of public, semipublic, semi private and private spaces	Lack of consideration of publicity and privacy and no sequence between them
Windows and openings facing central courtyard considering cultural principles	Extensive windows toward streets, no privacy
Ecological considerations, sustainable design, the role of courtyard, Eivan in creating micro climate and reduction of heat transmission	International style, no consideration of traditional ecological elements
Nature based materials, self-sufficiency and consideration of economic issues,	Artificial materials, mass production, speed in construction
In harmony with human and environment	without consideration of local context and need



Fig. 7: Evolution of Iranian traditional architecture (Sharestan Publication, No. 27)



Fig. 8: Altered street, Lalezar, Tehran (Memar publication, No. 53)

In contrast, new methods of houses were proportional to modern urban areas and surrounding buildings. Shape and scenery of cities and avenues were similar to western ones. The newly designed were two stages buildings, extroverted and street-based that have had no similarity to whatever in the past. Modernization changed the traditional concept of buildings dramatically (Fig. 7). Since visual elements in novel areas were various and disproportioned, the harmony of cities ruined totally. Complexity and creativity of the buildings were shifted from inside the buildings to outside and the non-united had imbalanced reflects. The physical connections changed and other relationship between residential building and environment were created from the perspective of culture and social life. New imported materials were introduced to the architecture industry and the self-sufficiency was not the considered principle (Fig. 8) (Table 3).

CONCLUSION

The results of this study indicate that notions, concepts and values of the house as a part of Iranian residential architecture has been altered as a result of the introduction of modern movement, regardless of what had been achieved during centuries. As a result of physical changes, cultural, social and religious identities of residential buildings diverted and in most examples became in contrast with initial principles. The study represents the most important differences between house in traditional and contemporary architecture from the correspondence with the surrounding environment perspective. This study suggests that Iranian contemporary residential architecture is suffering from the missing keys of past principles of traditional architecture which sophisticatedly integrated with the tradition, culture, religion, society and environment. It is recommended that designers and architects have profound understanding of the initial principles of traditional architecture and consider these values in novel construction methods.

REFERENCES

- Ahmadi, F., 2008. Interview by Hamid Hoseinmardi. Abadi Publication, Tehran, Iran.
- Ardalan, N. and L. Bakhtiar, 2011. Sense of Unity. Elme Meamar Royal Publication, Tehran, Iran.
- Aryan, P.A.H., 2001. Art Sociology. Gostarde Publication, Tehran, Iran.
- Behzadfar, M. and A.S. Razzaqi, 2009. Main Streets, Expectations and Requirements of Urban Design. Abadi Publication, Tehran, Iran.
- Fazeli, N., 2007. Modernity and Housing. Tahghighat Farhangi Publication, Tehran, Iran.
- Ghobadian, V., 1998. Analyzing Traditional Buildings from Perspective of Sustainability. Tehran University Publication, Tehran, Iran.

- Haji, G.K., 2011. *Deliberating the Notion of Islamic Architecture and Methods of Its Understanding*. Soffeh Publication, Tehran, Iran.
- Khatami, M., 2011. *Prequel of the Philosophy for Iranian Art*. Asarehonari Publication, Tehran, Iran.
- Memarian, G.H., 2008. *Iranian Architecture*. Soroosh Danesh Publication, Tehran, Iran.
- Mohammad, Z.R., 2009. *Analyzing the Reflect of Modernity on Iranian Urbanism*. Soffeh Publication, Tehran, Iran.
- Mokhtari, T.E., 2001. *Legacy of Iranian Modern Architecture*. Cultural Research Center Publication, Tehran, Iran.
- Mozaieni, M., 1997. *The of Time and Architecture*. Iranian Architecture and Urbanism Research Center Publication, Tehran, Iran.
- Nariqomi, M., 2010. *Researching on Semantics on Conceptualized Perspective in Islamic Urbanism*. Fine Art Publication, Tehran, Iran.
- Nasr, S., 2010. *Art and Islamic Spirituality*. Hekmat Publication, Tehran, Iran.
- Noghrekar, A., 2008. *Introduction of Islamic Identity in Architecture and Urbanism*. Payamsina Publication, Tehran, Iran.
- Pirnia, M.K., 2001. *Styles of Iranian Architecture*. Honar Eslami Publication, Tehran, Iran.
- Rapaport, A., 2009. *Housing Anthropology*. Herfehonarmand Publication, Tehran, Iran.
- Saremi, A.A. and T. Radmard, 1997. *Stable Values in Iranian Architecture*. Cultural Heritage Organization Publication, Tehran, Iran.