

## **Introduction to the Organization of Spatial Discipline in Architecture of Traditional Houses**

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**Abstract:** The organization of space in traditional houses is multilateral relations of space with each other and it is very flexible against the needs and changes in lifestyle. No space in these houses is finished and blocked. Each space in addition to independence have the possibility of combining with its surroundings. Iranian architecture inherited modes of organization of space and knew its patterns. Architecture of Iran is acted very artfully in the conversion of open and closed spaces and establishes their relationships through a hierarchy of half-open and half-closed spaces. Spatial perception, the sense of peace and beauty in traditional buildings are because of the discipline of outside and inside. Therefore, the traditional buildings of Iran have shaped their surroundings and were shaped by it. Unfortunately, the spatial organization in a contemporary home environment shaped and was shaped. Unfortunately, the spatial organization has undergone tremendous changes in modern homes. In this study, the first to introduce the spatial organization and the organization of space in traditional housing has been studied architectural design and the necessity of taking advantage of these patterns in contemporary architectural design to a model housing today is studied.

**Key words:** Modes, space, patterns, beauty, home

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### **INTRODUCTION**

Our today's architecture for several reasons has flaw and deficiency in many ways that makes the outcome of the existing architecture does not place on the expected role and position. Meantime, among the issues that have always preoccupied the minds of designers is the achievement of an ingenuous and identifiable architecture along with accountability and fitting the demands of today's society.

Our past architects knew to use "what", "how much" and "where" thus the continuity of architectural culture maintained (Qajar). Hence, among ruling ideologies of the architectural community and intended methods for achieving a desired architecture, referring to the past has allocated an important and significant contribution to itself.

Space is the main indicator that based on this, the concept of house can be developed. The space of the house is the same inner space where knowledge is achieved.

Emersion of architecture is known as the resulting of human perception of space: positive and vivid concept of space is responsible for all architectural creativity (Ardalan and Bakhtiar, 1960).

**Home definition and concepts:** The concept of home as a receptacle for human existence has the equivalent value to its contents. In fact, each space that can dwell in it has the concept of home. Home is a place of reflection and interaction between body and soul and as Beshlar said, it gives us the opportunity to drown in our dreams in peace (Hashemi, 1955).

In other words, home is a place for the synchronous growth of body and soul; it means that as it provides the physical security to human, it protects him from dangers of the outdoors. It creates a space indoors, this inner space brings peace for human which provides foundation for the development of mental and becomes the basis for the subconscious prosperity of human.

Young as a psychologist who knows self as an important element in interaction with human's self, he introduces self in a house which built self, in real focus of his life and he sees it as a sign of a mental and meaningful integrity.

**Housing and organizing:** Housing is one of the most important architectural spaces that make direct relationship with human as the most personal space in human's life. Traditional architects with the help of geometry as the setting system, the control of different

spaces and with spatial perception and visualization determined proportion and dimensions. They also created the main structure of traditional houses. The organization of space in traditional houses is multilateral relations of space with each other. According to this method of defining and combining space, the possibility of various experiences of human is provided. Iranian architect inherited modes of organizing the space and knew its patterns. This organization of space in modern houses had many changes. In such a way that the most residential design remains in the extent of biological needs of humans and with regard to what was mentioned above, it seems necessary to know how to organize space in architecture of Iranian traditional and modern houses than the appropriate model for today's housing design (Soltanzade, 1964).

**Space:** Jorg Greuther provides clear definition about space in such a way the closest definition is that to consider space as a vacuum which holds an object or fills with something. Space is not an entity that has precise and specified definition; however, it is measurable.

**Organization of space:** Spatial discipline is a system which specifies Dos and Don'ts structure of life and movement pattern. It creates loopholes in which the ability it fulfill various functions is provided. This system creates a wide range of spaces that events and functions of is and to be fulfill in them and as well as warp not only creates the overall order of texture but also permits the infinite varieties of texture and pattern in woof of schema (Taghvaei, 1966).

#### **SPATIAL SYSTEM OF IRAN'S ARCHITECTURE**

Methods of taking advantage of the space in Iranian architecture were introspective. Architectural systems of Iran both in the main sections and the subsections of the building are seen. They has created a set of open, closed, half-open spaces and spaces which are related to each other that in the structure of these systems, climatic parameters and parameters that are affected by nature were taken into consideration. Generally, these systems have followed a general role named as conceptual hierarchy that this system has manifested itself in architecture as access hierarchy from the most outer space to the most inner space or the least significant to the most significant space (Soltanzade, 1964). Housing is one of the most important architectural spaces that as the most private space of human's life have established a direct relationship with him.

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From the important features of this spatial organization of Iran's traditional houses can mention guiding entrants to different spaces of house in terms of their relationship with the family, the possibility of making residents to communicate with nature, variety of rooms, variety of planes, variety of floor coverings, variety of lights in Hashti (Porch), Dalan (corridor), courtyard and basement and variety of performance in spaces.

**Traditional house and organization of space:** The organization of space in traditional houses is multilateral relations of space with each other. According to this method of defining and combining space, the possibility of various experiences of human is provided. No space in these houses is finished or blocked. Each space in addition to its independence has the possibility of combining with its surroundings. Consistent criteria for organizing the space of historical houses is taking into account both inside and outside at the same time. According to this, simultaneous organizing of open, indoor and closed paces in the range of these two tapes of spaces played the role of joints and connections.

If we consider the smallest architectural unit in architecture of Iran as a simple indoor that is named room and if we consider the form of joining and consorting these indoors and rooms around the courtyard as a combination, we can consider rooms around the yard as one of the sustainable and permanent forms of Iranian past architecture. The relationship is between "the whole" and "the part". On the other hand, each of the components are as a "whole" itself and we are faced with is "perfection of the part" and "perfection of the whole".

**Hierarchical and spatial organization:** After going through the hierarchy of the city and getting home, the entrance to the house has also a hierarchy. In Iranian house, a person after passing the door reaches to the Hashti that is semi-public and semi-static then passes the Dalan and get to the house's courtyard. The courtyard as an intermediate space defines the surroundings and organizes functional relationships and net access hierarchy. Semi-private, half-open Ivan (balcony) and then room (private-closed) locate in the subsequent layer of the courtyard structure. Likewise, in Iranian house, the person finds out passing from the whole to the part in connection with the space and time. Residential spaces in housing can be divided into four groups:

- Biological spaces
- Intermediate spaces
- Service spaces
- Open spaces

The principles and features of spatial organization of the traditional houses:

- Simplicity in façade and lack of need to bring up themselves in urban environments
- Spatial design as heart of the house
- Axis
- Diversity and sequence of open-indoor and closed spaces
- Variety of distinctive element of space
- Light and landscape
- Hierarchy and spatial organization
- Climatic comfort

Past architects before decide to place which space in which front, they determined percentage contribution of each space of total infrastructure. For instance, they allocated ascertained percentage of the total area of the house to Ivan, this contribution is specified on average, afterwards, due to the impact of the sun's orbit on the different front of the house, the allocated each front to a season and time. With regard to this point, the building is a climatic rest home. In embedding the space around Miansara (central courtyard), the important thing is the space behind and in front of the sun that should be placed on both sides of the main axis of the building. At the same time, Iranian architects tried to coordinate this axis with Kiblah and this means they considered several aspects.

Hence, the front which is in front of the sun is winter stay section, the front which is behind the sun is summer stay section and the Western front is considered for a few hours of cold winter days. In order to avoid too much sunshine to the eastern front, they improvised arcades for it.

Mentioned classifications are based on priorities; otherwise by adopting various suitable factors, all four sides can be used in four seasons, except the eastern section in the summer. Therefore, in the northern section of the building that is the most desirable space, a colonnaded Ivan along with the ceremonial spaces such as Tanbi (windward mansion) and Tehrani (winter stay room) are placed. This projection causes that the sunlight passes to the end of space in winter and it does enter to the space in summer because the sun's angle is perpendicular. Similarly, they locate two doors, three doors and spaces in the southern section of Takhtgah (doorway) and also in the western section. Mostly, they

locate less important spaces such as store room, etc. in east or assign this place for eliminating the land's inappropriateness. In this regard, to reduce the sunlight in spaces, the architects applied some elements such as Tabeshband, Goljam, Kharakpoosh and Kiani.

**Spatial hierarchy:** Spatial hierarchy in traditional houses is the degree of changing space from one arena to another arena, from quite public arena into quite private arena. This concept guarantees the difference between inside and outside. Spaces of traditional houses organize both vertically and horizontally. In the horizontal area, this design is based on privacy hierarchy from outdoor to indoor space and also the variety of strengthen degrees of light and dark that is leading to the center of the courtyard. In the vertical area, this design is based on the direction and enhancement of input water pressure hashti, Dalan, courtyard and a set of interlinked spaces that systematically lead to the private section with this feature that eventually maintains the privacy.

**Spatial confident:** Confident is ruling on not only the differentiation of indoor and outdoor but also the differentiation of indoor and within the house. Spatial hierarchy system guarantees exterior confident and rooms and Dehlizes (vestibules) guarantees interior confident.

One of the beliefs of Iranian people was their private life and its reverence that in such a way this introverted architecture if Iran. Iranian architects with organizing structures of a building around one or more Miansaras have separated the building from the outside world and only a Hashti connected these two with each other.

**Symmetry:** Generally, symmetry is associated with the axis and centrality. Symmetry in traditional houses of Iran with beat and rhythm of itself creates balance and variety to the spaces.

The symmetry stems from a kind of thoughtful and fresh look that tries to create a balance between different weights in visual extension of facade (Mansouri, a peephole to the garden of Heaven).

**Axis:** Axis is the most primary instrument for organizing architectural forms and spaces. Sometimes axis has the obvious and significant presence and sometimes it is hypothetical and invisible. Axes are generally inducing symmetry and due to their linear shape reinforce the path and movement in their own direction.

Horizontal axis links spatial zones in the area. At the confluence of this axis with the vertical axis by means of proportions that creates by the appropriate height of

bodies and roofs, these unifying milestones disport from the land and locate in light and fluid style in the space (Noghrekar).

**Climatic comfort:** Traditional architecture of Iran in all stages has always been in interaction with climate and has met the comfort needs of residents. Elements used in this architecture comprise many modern concepts in the field of sustainable architecture.

**Spatial patterns:** There are three entirely specified and distinctive spatial groups in all the houses, the open spaces group, closed space groups, indoor space groups (half-closed, half-open). Open spaces group and all closed spaces are associated with courtyard indirectly and mainly through indoor space (Haieri, 1965).

**Open space pattern:** The concept of traditional space of courtyard as a room without a roof in courtyards of modern houses has completely changed. The definition of open space by closed and indoor spaces has lost its authority in modern houses. Courtyard's floor with regard to modern life style has dedicated to parking or car ramp for accessing the parking lot, crossing and entering path to the building from the street.

**Indoor pattern:** The amount of indoor spaces in this spatial sequence has been reduced or removed. The presence of indoor space in organizing the house due to the distance of this space from the land and lack of direct contact with open space does have features of spatial quality in traditional houses.

**Closed space pattern:** Two sidedness and monotony of spaces is because of uniformity of spaces' height and conversion of mass to area in the modern houses. In the meantime, the status of movement as well as relocation of kitchen spaces with adjacent spaces has changed. Now the kitchen and dining room are mutually considered as expansion of each other. This category represents the mutual impact of spatial organization and life style on each other. The design of open kitchen can follow empowerment methods in architecture of historical houses and it can have good quality.

#### **How to organize space**

**Entrance:** Recessing of entrance from pathway represents no infringing rights of others. Locating two platforms on each side has been considered because of values, national norms, valuation for communicating with others and regarding the civil rights for developing a rest place in the direction of movement and at the end in terms of

credence aspect, developing a suitable space for conveying and welcoming to guest and newcomers. The remarkable point in designing doors of traditional houses has been the distinguishing gender of visitors by placing two door knockers with different bass sound (Koubeh has been used by men and Halgheh (Ring) has been used by women) that this has indicated the importance of confident. The entrance of houses often opens from southeast side or to the southeast side or from other sides such as southwest or northeast opens to the courtyard. The entrance often is located in a front that there are no life spaces in it or it is located in the second layer of the spaces.

**Hashti:** This space as a front space of entrance has considered some arrangements, for example we can mention that in terms of religious aspect (the principle of confident) by opening door of the house, there is no direct view into the private space. But in terms of values and national norms (hospitality and respect to the admission of individual from environment) we can indicate to the existence of platforms around the porch in order to create an appropriate space for lightening candles, resting and waiting.

**Ivan:** Ivan is one of the most special architectural elements of Iran that is a half-open and half-closed space. One of the most excellent arrangement types is attitude and coexistence with nature. Ivan apart from adjusting perspective has calculated in pictorial format, it is also included the central lightening (light-dark) and it is the connective limit between internal and external space. It has been quite effective in adjusting optimum air quality in this area.

**Courtyard:** The courtyard of the house is two stairs higher than the alley. While the plane of alley and the plane of courtyard is the same. The entrance section from alley to the house goes higher as much as one or two stairs and again in entrance to the courtyard it goes down. Accordingly, it prevents flowing water of alley, entering dust of alley's floor and into the house. For accessing inside spaces of the house from the courtyard should usually climb a few stairs.

**Room:** In the traditional house, rooms of the house depending on the position of land and way of entering to the house can be placed on every front however, depending on the front it is placed in, the arrangements of the space for confronting climatic conditions are different. While there has been the possibility of creating summer stay and winter stay spaces, they have used the spaces

in front of the northern fronts (northwest- northeast) in summer and they have also minimized the number of openings in order to minimize the amount of heat penetration.

In the architecture of Iran, room is the termination point of architecture and the purpose of each architectural work. Unlike modern architecture that room basically does not convey specific meaning and concept and does not include special features, here room is symbol and result of the architecture.

In most cases, kitchen is located in a side of the yard which at that side there is no life spaces. This was for the way of cooking that because this has done with basic utensil, smoke production and other problems has bothered residential space therefore, kitchen has located in the far place than residential spaces. In some cases, kitchen has located in the far place than residential spaces. In some cases, kitchen has considered in the blind spots such as the corner of building.

### CONCLUSION

Iranian traditional architecture is the art of creative organizing the space. Optimal organizing of space and creating hierarchy in settlements for permanent human presence in this space is essential. Spatial organization and Iranian traditional architectural complex concepts about public and private spaces have the same meanings. The way of confinement and the prominence of the main and subsidiary axes in urban and residential spaces are alike and this similarity is due to following a pattern. The first difference between the two different spaces is being an open or closed space. Architecture of Iran in conversion of these two spaces has acted so artfully and establishes their relationships through a hierarchy of half-open and half-closed spaces. Spatial perception, the sense of peace and beauty in traditional buildings are because of the discipline of outside and inside. Therefore, the traditional buildings of Iran have shaped their surroundings and were shaped by it. Open spaces have an independent personality and with the nature of free space is considered architectural design. Half-closed spaces are effective in becoming more tangible indoor or outdoor space. Repeating close spaces create other open spaces.

The placement organization of indoor and outdoor spaces is effective. Repeating close spaces create other open spaces. The placement organization of spaces in the body is relatively fixed and in the corners is variable. There is always a deep relationship between the whole and the part of space and each element has a certain share of mass and space. As well as a variety of ways to define elements of roof, floor and walls to create a variety of light and air to provide different quality for human presence in space, plays a fundamental role in the organization of traditional houses. Changes in the pattern of organization emerged more in contemporary arena, so that in contemporary buildings, open, indoor and closed spaces is greatly reduced and the spatial organization of contemporary houses, most of the time is summarized into courtyard and building and modes of spatial patterns tends to similarity and neutrality and climatic comfort of residents is referred to mechanical equipment. Today, with passing of time and changes in lifestyle and human needs, old forms cannot be recreating but with perception of traditional architecture patterns and hidden concepts of it such as hierarchy of closed and open spaces, confident, respect to the nature and use of elements and application of its elements in design and usage of daylight and ventilation of spaces...and their optimal use in architectural design of residential spaces can create valuable architectural works commensurate with the needs of users.

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