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IRANIAN COURTYARD HOUSING: THE ROLE OF SOCIAL AND CULTURAL PATTERNS TO REACH THE SPATIAL FORMATION IN THE LIGHT OF AN ACCENTUATED PRIVACY

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Abstract

In Iranian culture, the family's position and privacy are the most important factor in designing traditional courtyard houses. This type of Iranian house is a high point of introverted structures which is based on traditional and religious beliefs. Introversion, spatial flexibility, spatial hierarchy, legibility, family privacy and environment play special roles in the architecture of the Iranian courtyard housing. This paper seeks to understand the role of social and cultural patterns in space configuration in traditional courtyard houses in Iran: How do religious beliefs and lifestyles influence the Iranian courtyard housing concept? What beliefs are principles for the creation of each space? How does the spatial hierarchy contribute to privacy generation? And, in other words, how do people translate their sociocultural ideas into architectural spaces and forms? In this paper, we consider some physical and spatial characteristics shared by traditional courtyard houses in Iran. The factors that referred in this study consist of plan distribution and spatial function. Moreover, the architectural values in terms of sociocultural patterns in traditional courtyard housing design are explicitly highlighted in this paper.

1. Introduction

Courtyard housing is a widely considered to be a responsive typology for low-rise and high-density urban housing and is a suitable form of housing in contemporary mixed use sustainable urban developments. Many of western models of urban housing are affected by the cultural traditions, building methods and climate of the construction locations. Not only western typologies are built to scan regard to the social and cultural context, but also the building

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regulations and planning law adopted by countries such as Iran, Egypt, Libya and Saudi Arabia are modeled on European practice. Therefore, the traditional courtyard house which has been existed as the first urban building type for the nearly two thousand years, finds itself against the modern regulations. The courtyard housing is one of the primary forms of domestic development spanning and exists in various forms in many territories. Over the centuries, this type of house has developed into a logical configuration that maximizes the built-up area in the urban context and allows to control daylight, particularly in areas where it is abundant. While the climate and culture have given form to the type of courtyard houses in the Middle East, other examples can be found in Europe, China and Latin America where the patterns have been reinterpreted. In fact courtyard houses become a general typology in arid and hot areas and give form to the basis of urban context in their cities; in addition the influence of sociocultural patterns must be considered beside the climatic conditions (Edwards, 2006).

In fact, social and cultural principles dominate the traditional Persian architecture is derived from the religion's beliefs and vernacular culture. Architecture in Iranian territories in which the climate is hot and semi-arid possesses its own specifications. It is dependent with the climate, religion, and above all the culture which has the greatest impact on its architectural features (Hosseini and Zand Karimi, 2012).

Additionally, each cultural region extended shelter and enclosure along different lines, through the choice of a specific elementary cell or by addressing the topological process in a definite direction. The climate has its influence on many architectural and construction elements. However, many elements which characterize architecture, could be explained by sociocultural conditions too. In fact, design is all about giving meaning to form, and activity of architecture is engaged when man identifies himself with what he builds, using it as a means of expression, and making the building imbued with symbolic or social meaning. In territories where religious practices and traditional beliefs are strong and deeply rooted, sociocultural variables such as religion, culture and customs might be strong parameters to determine the spatial arrangement. This point of view leads to assess the sociocultural factors which shapes the mental image of courtyard housing that the social group might have and also how its members interfere in the formation, development and spread of the concept (Edwards, 2006).

Traditional Iranian courtyard housing evolved and developed over the centuries which have been conformed through social and cultural patterns and environmental considerations. Micro-climate control is achieved through natural processes. The seasonal positions of the sun and the direction of the prevailing winds create natural cooling effects and comfortable humidity levels. Normally the extended families live in this sort of housing and the community of these families based on Collaboration, cooperation, and mutual support between the inhabitants. (Yazdanpanah and Walker 2010)

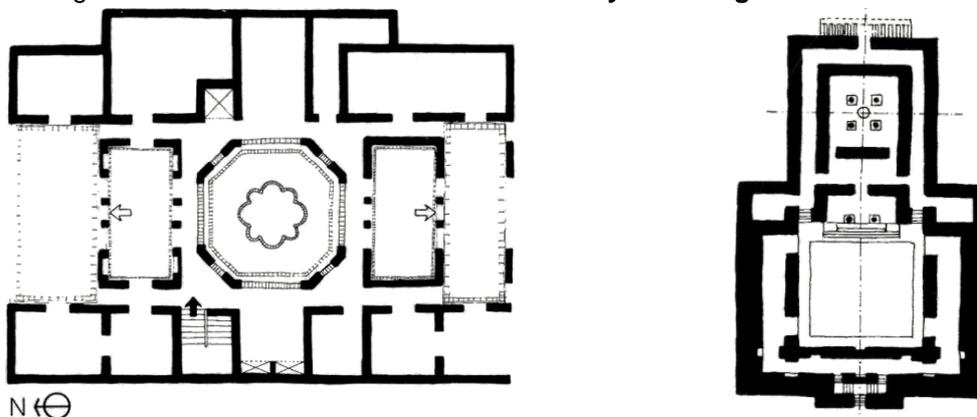
2. Iranian courtyard housing

Some evidence shows that houses with courtyards existed in Iran around 8000 years ago. These have been excavated in the *Qhazvin* region (Northwest of Iran). Rooms were positioned on one side of the courtyard, and included living spaces, barns and stores. Also, the courtyard was an important architectural feature in the later Mesopotamian civilization. There are a

number of surviving buildings with courtyards from both the pre-Islamic and the Islamic period such as the original building of the *ChoghaZanbil* from 1250 BC, the '*Suhkte*' building in '*TepeHesar*', *Damghan*, from 1000-800 BC, the 'Susa' palace of Dario of the Achaemenid dynasty from 550 BC; the '*Asur Palace*' from the Parthian period; the '*Firuz Abad*' Fire Place (third century AD); the Palace at *Sarvistan* (fifth century AD); the *Jami Fahraj* Mosque (eighth century AD); the Jami Mosque at Shiraz (ninth century AD); the *Nuo* Mosque at Shiraz (thirteenth century AD) and the *Khan Madresseh* at Shiraz (seventeenth century AD). These examples confirm the deep symbiotic relationship between courtyard and house in Middle Eastern Society (Edwards, 2006).

The courtyard house looks like a big farm. Rooms, kitchen, porches, and other spaces are all around the courtyard. The entrance always opens to a porch near by a portal. In the more elaborate houses, above the entrance there is an isolated room to receive people out of the family rooms. The same generic forms of Iranian traditional architecture combine with each other to compose the internal space with the same modular rhythms. The study of the plans shows that this space enclosed as a central, traditional and symbolical space can be found in the oldest Persian buildings. As an example, in these buildings, a double wall protects *Atashkadeh* (the place of the fire) where the sacred fire was burning in its center. Rooms and galleries around a yard were used for different sorts of trades, and as residences for the Zoroastrian priests (Figure 1). At the beginning of Islam, Iran was able to impose buildings that had precisely the characteristics of the old edifices. This basis attachment of the Iranian people for the everlasting of a typically Persian way of life allowed the builders to elaborate, strengthen and often even export concepts that demonstrate an astounding vigor in unity of thought and give evidence of a remarkable continuity in spite of the apparent formal differences, mostly due to geographical diversities. This environment is not (as it is often the case in other places) the more or less successful result of a deliberate conception, and is unceasingly made better within its natural setting. Indeed, the building genius of these builders achieves a rare synthesis of the social and cultural potentialities in adapting the human milieu to the environment and the natural resources. It was able to produce, at all levels (whether individual or collective), both harmonious architecture and urbanism at the scale of man (Khansari, Yavari 1986).

Figure 1. Left: Plan of traditional house – Abyaneh / Right: Plan of Atashkadeh



Source: Khansari and Yavari(1986).

Generally, courtyard housing in the traditional architecture of Iran was based on special principles. All these buildings have been built in order to fulfill people's requirements. It always has emphasized on the relation between users and building. In fact, the physical features of traditional Iranian houses reflect natural, cultural needs and occupant's requirements (Nabavi, Ahmad, Goh 2012). Culture and religious beliefs have been greatly concerned about the Iranian users to have a suitable dwelling to comply with their requirements. This effect of culture on architecture has been caused to organize plan distribution of the house in order to create privacy (Shabani et al, 2010). In fact, privacy is the most important issue that an Iranian courtyard house has sought to.

2.1 Social and cultural considerations

For Iranians family, relationship between men and women is in accordance with Islamic principles. In Islamic terminology, '*mahram*' and '*non-mahram*' is used to determine the sort of this relationship. Being *mahram* specifies the relationship between males and females either by marriage or close blood ties and any person who is outside this area, is regarded as a stranger or *non-mahram*. In the past, this sort of relationship and controlling the mixture of the sexes, were impelling women to stay at home and focusing on the domestic activities. On this basis, privacy (especially visual privacy) was one of the important points in the people's mind. In general, the private part of houses, such as bedrooms, females' rooms and especially the kitchen (as women workplace), were not exposed to such guests (*non-mahram*) and the reception has been carried out on the public part of the house (Kharazmi and Hajizadeh, 2012).

Generally the individuals who lived in the Iranian traditional courtyard housing can be divided into two main types. Firstly an extended family that includes mother, father, children, grandparents, uncles and aunts and secondly workers who work for an owner. In both groups, there was a community in which people helped each other (e.g. Cooking, cleaning and looking after their children), as well as sharing tools and spaces (such as kitchen, garden, yard). In fact, there was collaboration, cooperation, and mutual support, with collective and shared activities between men (e.g. tending the garden, repairing the house) and women (e.g. sewing, and weaving or preparing ceremonial meals together). Sometimes everyone, men and women together, would prepare and decorate the house and yard for ceremonies such as religious/wedding celebrations. Also, the courtyard would be regularly used for communal entertainment. Such activities are consistent with contemporary understanding of sustainable lifestyles that entail communal activities and sharing of resources (Yazdanpanah and Walker, 2010).

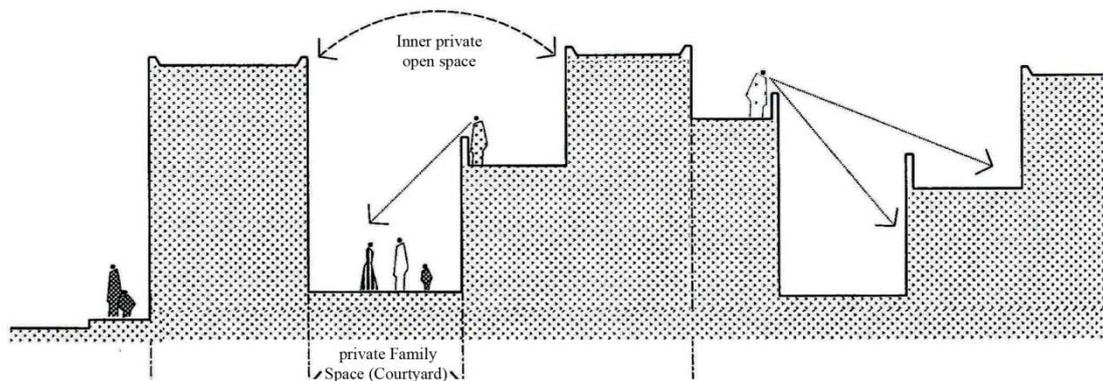
In fact, the influence and the strong role of the sociocultural patterns on the concept of these houses are obvious as their most important feature. Having a non-private and social function in ceremonies and the importance of the relationship between men and women and privacy against strangers are the main effects of sociocultural factors in the formation and configuration of spaces. Further, the hierarchy of social relationships of the inhabitants is reflected in spatial organization. In fact, the spatial organization of Iranian traditional courtyard housing does not permit the visitors/guests (*non-mahram* persons) to become closer to the private boundaries of the house (Kharazmi and Hajizadeh, 2012).

2.2 Spatial and visual privacy

Houses can be described as specific spaces where people come together in a familiar relationship, with privacy and comfort feeling. People, even in small families, organize an interpersonal forum which is less private than their own privacy, and form a combination of private and semiprivate spaces. Since the relationship between them has different levels of intimacy, the spaces they use have different degrees of privacy (Shabani et al, 2011).

In the traditional Persian architecture, mostly, courtyard houses have more than one floor. The high altitude of the building, without any opening on the external facades has blocked the outside views. Consequently it creates an introverted building with the acoustical and visual privacy. This method has caused a visual privacy in the interior spaces of the courtyard houses by raising the level of the living spaces and rooms from the courtyard level. As a result, setting the rooms in the upstairs, as individual spaces, has increased the amount of privacy. The acoustical privacy is as important as the visual privacy. The enclosure elements such as floors, walls and roofs prevent from the penetration of the voices of the inhabitants, especially female voices to the neighbors and streets (Figure 2) (Shabani et al, 2011).

Figure 2. **A section through adjoining houses showing how setbacks are used to maintain privacy between neighbours**



Source: Edwards (2006).

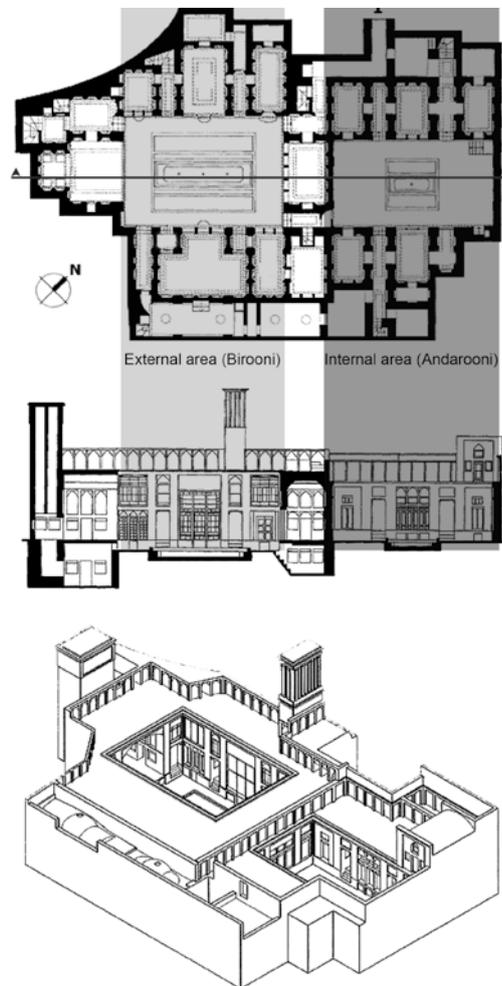
Visual privacy has an important position in the Iranian courtyard houses and similar to the Arab-Islamic courtyard houses great care is taken to protect female members from the eyes of male strangers. The courtyard house is divided into two different parts, the *birooni* and the *andarooni*. *Birooni*, which means the outside area in Persian, is that quarter situated close to the main entrance. *Birooni* is traditionally a male area, where visitors (outsiders) or men guests would be entertained by the lord of the household. *Andarooni*, which means 'inside' in Persian, allocated for family members especially female ones. Of course in some events female guests are entertained in the reception rooms within the *birooni*. In large houses, there were separate servants for the two areas; female servants for the *andarooni* and males for the *birooni*. (Figure 3) (Edwards, 2006).

2.3 Climate considerations

Since a large part of Iran is located in the arid and semi-arid region, therefore the traditional architects have used the courtyard as a solution to create comfort for the inhabitants. Shape (the overall geometry and design elements), direction and function have been considered in the structure of the courtyard housing from the viewpoint of climate. In general, the courtyard is the most effective part of the house to organize the essence of space in the desert architecture (Dehghan et al, 2011).

In fact, in the Iranian traditional house, to understand how the courtyard has become an important and appropriate architectural factor for living in a hot and dry climate, it is necessary to consider its functions based on the climate conditions of the region (Yazdanpanah and Walker, 2010).

Figure 3. Internal and external courtyard - Plan, section and perspective of *Gerami House, Yazd*

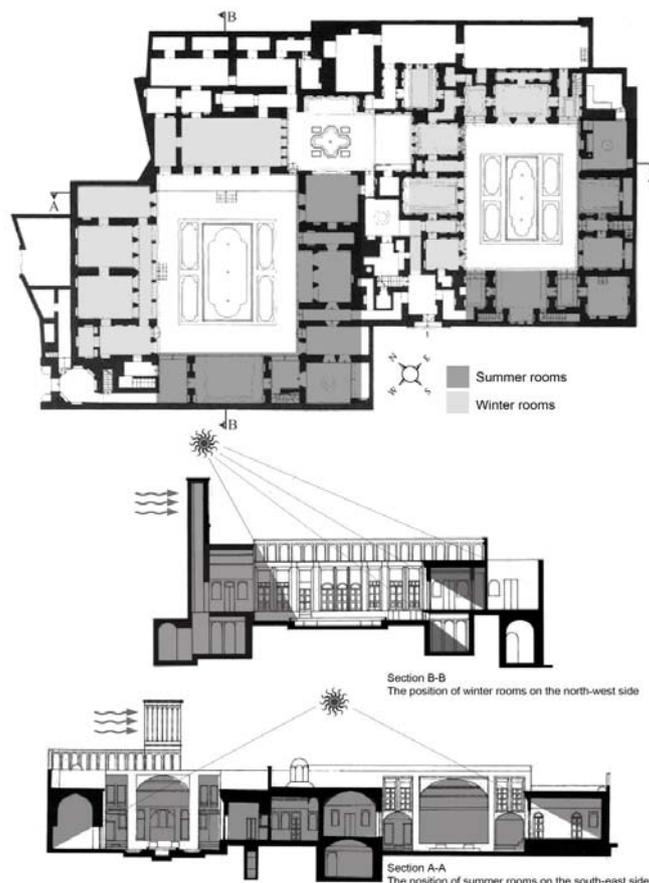


Source: Analyze by author from www.ghoolabad.com

Climate has a great impact on the spatial organization in Iranian courtyard housing as well as the overall form of the house. Further, it generates seasonal movement between different parts of the house. Seasonal movement in the in courtyard housing is one of the features of domestic life in Iran (Memarian and Sadoughi 2011).

This movement occurs between rooms, on different sides of the courtyard. In the cold seasons, the inhabitants would stay mostly in rooms with few openings or the rooms with small openings. In general, the dominant orientation of traditional houses in Iran is northeast and south-west. This direction permits winter quarters to be located where they would receive the maximum sunlight (on the northeast side) and summer quarters to be in the shade (on the southwest side). The main winter rooms might be on the northeast or northwest sides, and the summer rooms could be on the southwest or the southeast sides. As in many other places in the hot-arid regions, a general shift took place around the end of May from the winter rooms to the summer rooms on the south of the courtyard (Edwards, 2006). The movement around the courtyard according to the season's conditions is part of a simple and practical adjustment (Bekleyen and Dalkılıç, 2011) and alternatively it can benefit from an efficient use of energy, as a climatic response, to improve comfort for the inhabitants of the house in different seasons (Figure 4).

Figure 4. Seasonal movement, summer and winter spaces



Source: Analyze by author from <http://www.naghsh-negar.ir>

Generally, Iranian traditional courtyard housing shows an intimate connection with nature, responding to climate and occupant's needs. A great aspect of these homes is their adapting to the hot and arid climate, while, most of the modern homes have lost this link. In Iran, traditional courtyard housing is the most prominent house type in Hot- Arid area and physical feature of it reflects natural needs and environment responding (Nabavi et al, 2013).

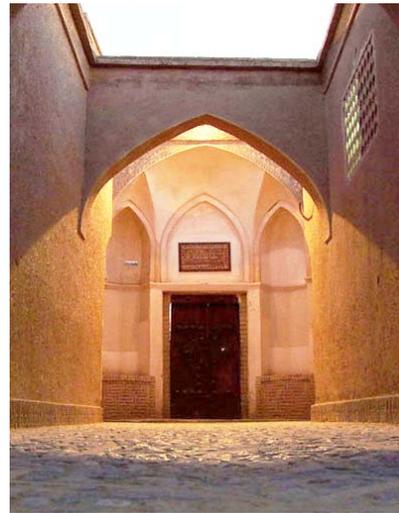
3. Discussion

The components of a courtyard house will be defined as well as the influence of the religion's beliefs and lifestyle in each space configuration will be discussed.

Platform (*pir-neshin*): Two steps located on two sides of the entrance door for sitting on while waiting, for entrance or talking with house members (Figure 5, right).

Entrance door (*voroodi*): In most courtyard houses, entrance doors are paired and made of wood. Each pair has a door knocker (Figure 5, left). Women use the door knocker with a thin voice and men use the hammer knocker which has the stronger voice which leads to the gender limits (Nosratpour, 2012).

Figure 5. Left: Door with male and female knock door / Right: Towardtoentrance



Source: www.panoramio.com (left) and <http://hamshahrionline.ir> (right)

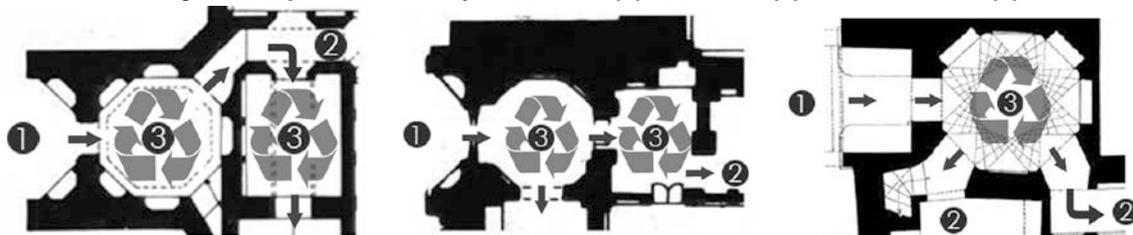
In fact, this is the first point that we can see the impact of cultural practices and religious beliefs. Access to the internal area of the courtyard house from outdoor is through an intermediate space (an entrance) which separates between the internal private and external public areas. At the same time, this area creates a filter which manages and controls the degree of penetration through changes in directions. It is designed to close any view of the interior parts; therefore it does not give quick access to the courtyard. These kinds of access and filters create different degrees of privacy as one goes forward from the external public areas to the interior private ones. This degree of access creates a hierarchical order in the plan which is a main

characteristic of the courtyard houses in Iran. The entrance arrangements had considerable importance in Iranian and Arabian courtyard housing. Iranian courtyard housing has been rarely more than single-floor and the surrounding walls were thick, high, and mostly blank. Openings, wherever it is necessary, were small and situated higher than eye-level to keep passersby from looking in. Often a single heavy door has been the only indicator of the habitation within. The location of the entrance is calculated precisely somehow under any angle of view. There is not any direct view to the privacy of the house quarters. Private quarters design is determined based on the shape of the passages between the entrance and the courtyard. This might be a straight line, an 'L-shape', or had some spiral forms. The main purpose is always to prevent direct look to the interior part. For instance, a linear corridor usually leads to a corner of the courtyard where there are no household activities (Edwards, 2006).

Vestibule (*hashti*): Just after entering the house, there is a lobby space in the polygon shape. The lobby has short ceiling so that privacy is sensed with passing the entrance and entering this space. The lobby is temporary waiting space and has a sitting platform (Nosratpour, 2012).

In Iranian traditional houses, the vestibule, which is termed *hashti* in Persian, is an important part of the entry sequence. This space is designed as a stopping point and also could be used as a temporary reception room for those guests did not need to enter the house. Usually *hashti* had octagonal shape, but also it could be rectangular, square or other polygonal shapes. It normally contains the main entrance, which has access to the house roof and the corridors that leading to the courtyards. In double courtyard houses, *hashti* would gain access to both courtyards and also there were usually some platforms provided a place for people to sit (Figure 6) (Edwards, 2006).

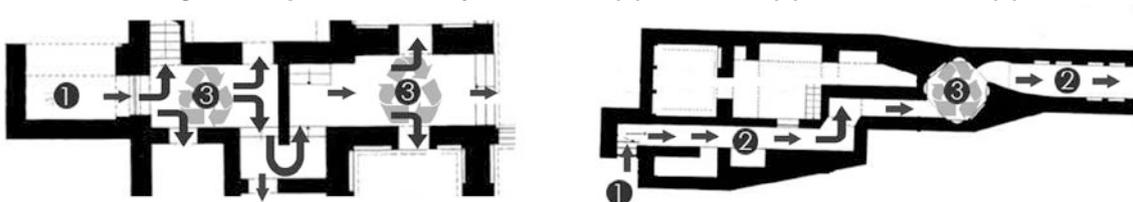
Figure 6. Space hierarchy: entrance (1), corridor (2) and vestibule (3)



Source: Eskandari (2011).

Corridor (*dalan*): This space has a helix form which connects the entrance to the yard (Figure 6). Its architecture form helps to increase the degree of privacy (Figure 7) (Nosratpour, 2012).

Figure 7. Space hierarchy: entrance (1), corridor (2) and vestibule (3)



Source: Nosratpour (2012).

Yard (*hayat*): Yard in the courtyard house acts as the heart of the house (Nosratpour, 2012).

Almost all the courtyard houses in Iran have one courtyard or more, and all the interior spaces of the house are taken place around the central yard while having openings to it. Actually the courtyard has a functional role to unite the internal spaces of the house. The courtyard is surrounded by the very high and thick walls; as a result they can make acoustical and visual privacy. The humidity which is caused by plants and water and also shading provided by the high walls, increase the air's relative humidity and cool the air, and hence a microclimate is created in the center of the house (Figure 8). In the other word, the idea of the courtyard and garden is complemented in the hot and semi arid climate of Iran which, can be remind us the paradise in the Islamic concepts (Nabavi et al, 2012). Central yard is the main core of family meeting in the Iranian culture. The family gets together in the evening and enjoys the small garden and beauties provided inside the house in a comfortable and private space. In the other word, the central yard gives soul to the house in this hot and arid climate. Pools in the courtyards fresh the air and create a beautiful perspective (Zand and Hosseini, 2012).

Figure 8. The main courtyard in Borujerdiha House - Kashan

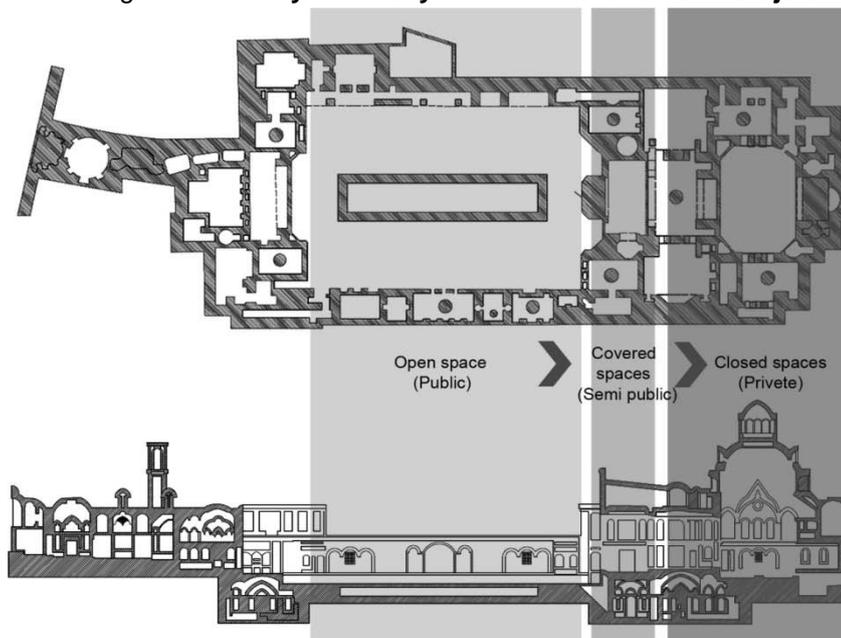


Source: Wikipedia (2013).

The courtyard is located in the center of the house to provide protection and freedom for the family members. It is designed as a general purpose space located between all spaces and is considered to be the focal point. It organizes various activities from the rooms in itself. The courtyard is an active place for eating, sitting, gathering, playing, celebrating, and even sleeping during hot summer nights. It plays the role of the living room in the western house. These

demands express the main sociocultural patterns which are behind the courtyard's concept. The main purpose is to design a multi-functional family space. It has the capability of organizing the family members from their privacies in the surrounding rooms to the courtyard. The courtyard keeps the whole family together, and provides the appropriate atmosphere for social interaction while the space is protected from the outside (Edwards, 2006). In fact, after passing the courtyard, there are usually semi-close/semi-open spaces (Figure 9). These spaces are also semi-private/semi-public which are suitable for a family meeting. These spaces have the capability to expand to each other. These spaces are accessible to the open spaces and block by closed ones. That is the reason why these areas are also called covered spaces (Arjmandi et al, 2010). In an overall view, the courtyard has a special position among architectural spaces in Iranian traditional housing. Priority and importance of this space is for its influence on spatial organization. One of the specific aspects of the courtyard is to make the notion of centrality, and coherence. The predominant and functional role of the courtyard in both objective and subjective point of view is geometry, reflection, evenness equilibrium, transparency, specifically centralization and introversion that can be considered as the most important features (Rahmatabady et al, 2014).

Figure 9. Privacy hierarchy - Plan and section of Borujerdiha House



Source: Eskandari (2011).

Porch (*eivan*): Porch is a semi-open space which is located in the most important place in the courtyard and acts as an intermediate space between the courtyard and building (Figure 10).

The porch has an effect on the spatial hierarchy of the house beside the climatic factors (Nosratpour, 2012). Normally the floor level of the porch is a little bit higher than the floor level of the courtyard. In some cases, there is a roofless space above the ground floor or other floors, which occasionally was used for resting and eating dinner in the summer evening, called moonlit porch (Rahmatabady et al, 2014).

Kitchen (matbakh): Kitchen is located in the most hidden part of the house. The kitchen is not designed in the direction of the main axes of the house or near the main spaces (Nosratpour, 2012). Usually the kitchen is in the internal yard (andarooni) or, in the other word, in the most private place of the house (Figure 11). In the traditional courtyard houses, kitchen is a place for cooking, baking bread and storing fuel.

Restroom: It is located in the lowest level of the house for two reasons: easy use of water and its drainage (Nosratpour, 2012).

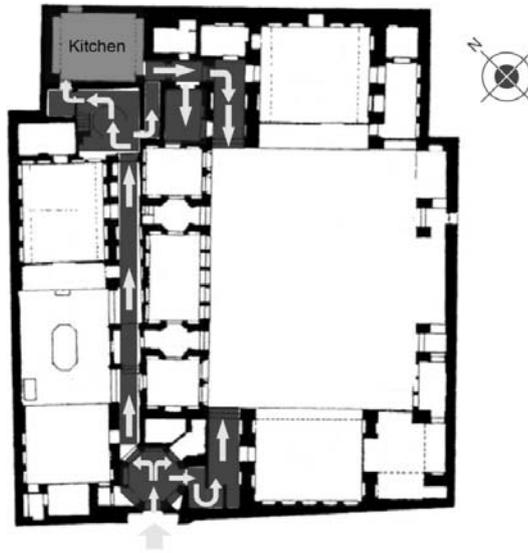
Bathroom (*garmabeh*): Bathroom is located in the basement and has two parts. One for changing clothes and another for bathing (Nosratpour, 2012).

Figure 10. **Porch (Eivan) in Aghazadeh House - Abarkooh**



Source: www.Panoramio.com

Figure 11. Position of kitchen in Rasoolian House – Yazd

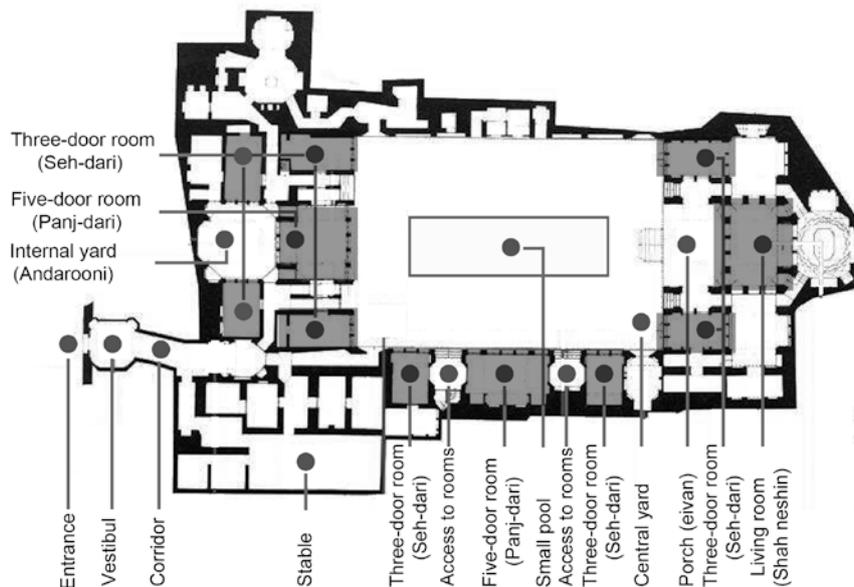


Source: Memarian and Sadoughi, 2011.

Rooms: These spaces include three-door room (*seh-dari*), five-door room (*panj-dari*) and reception hall (*shah-neshin*) (Nosratpour, 2012).

Each room has its own specification. One of the Iranian interests in housing is to create a visual relationship between rooms and external spaces.

Figure 12. Spatial arrangement in Sharifian House - Kashan



Source: Eskandari (2011).

Seh-dari and *panj-dari* are used as a bedroom and living room. These two spaces, almost always, are together and they connected to each other through the corridor that is placed at the end of the rooms. Another name of the reception hall is *shah-neshin* (King seat) which is a big living room with a luxury decoration that usually is used for special ceremonies like *Norooz* (Iranian New Year), bridal ceremonies or religious celebrations. In fact, *shah-neshin* is the biggest room of a traditional courtyard house which is a considerably important space (Figure 12).

4. Iranian courtyard housing: Spatial configuration and legibility

There is a spatial ordination in the Iranian courtyard housing. This spatial arrangement makes an invisible three dimensional mesh. It controls all interior spaces. Various types of customs and activities ranging from relaxing in the garden to big celebrations all occur between private and public spaces (Shabani et al, 2011).

The public sector includes spaces such as *shah-neshin*, *panj-dari* and courtyard with very large dimensions where people do their big celebrations. In the private sector of the house, there is a small yard, which is named *howz-khaneh* (Pool House). In this part of the house, some other activities occur such as private ceremonies or family gathering of close relatives.

Figure 13. Grid and Clustered organization in Akhavan House - Yazd



Source: Nosratpour (2012).

Additionally, these houses have spatial legibility. It means all spaces and components of the house can be recognized and linked in our mind as an interrelated concept. Such characteristic in Iranian courtyard house permits to go from one space to another space with a clear image of a house plan. When we enter the house physical realization of this idea can be observed and also spaces appear based on importance and priority (Figure 13). Spatial legibility in the courtyard house leads to some pre-defined roles which the family members potentially allocate to the spaces. Therefore, it leads to create a clear image in the mind of each observer. As a

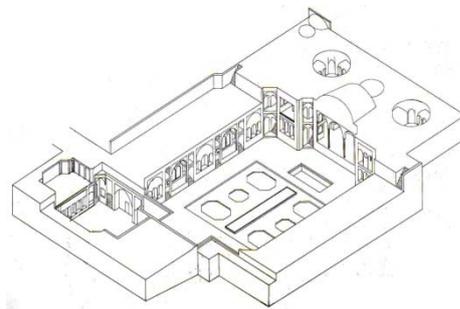
result, legibility helps people to be find themselves in the space, feeling safe and be guided in house spaces (Nosratpour, 2012). *Many scholars have suggested that a clear and identifiable division and delineation of spaces in the internal layout give a clear compartmentalization to space and make the building legible. It emphasizes on the ability or power of autonomy of an individual, as well as controlling social interaction in any particular space* (Abdul and Abu Hassan, 2012).

5. Case study: Tabatabaei house, Kashan

Tabatabaei House is one of the most magnificent homes, which is considered as one of the finest houses in Kashan. According to the inscription which is in the reception hall, the date of construction of the house backs to 1880 the Qajar era in Iran (Eskandari, 2011). The general form of the house obeys from the introversion architecture which means the house wants to achieve privacy (one of the most important aspects in traditional courtyard housing in Iran) (Figure 14).

The house contains three main parts: 1- external area (*biroon*), 2- internal area (*andaroon*) 3- services. Each of these parts contains various applications. The north side of the house is devoted to the internal part where the house owner and his family were living.

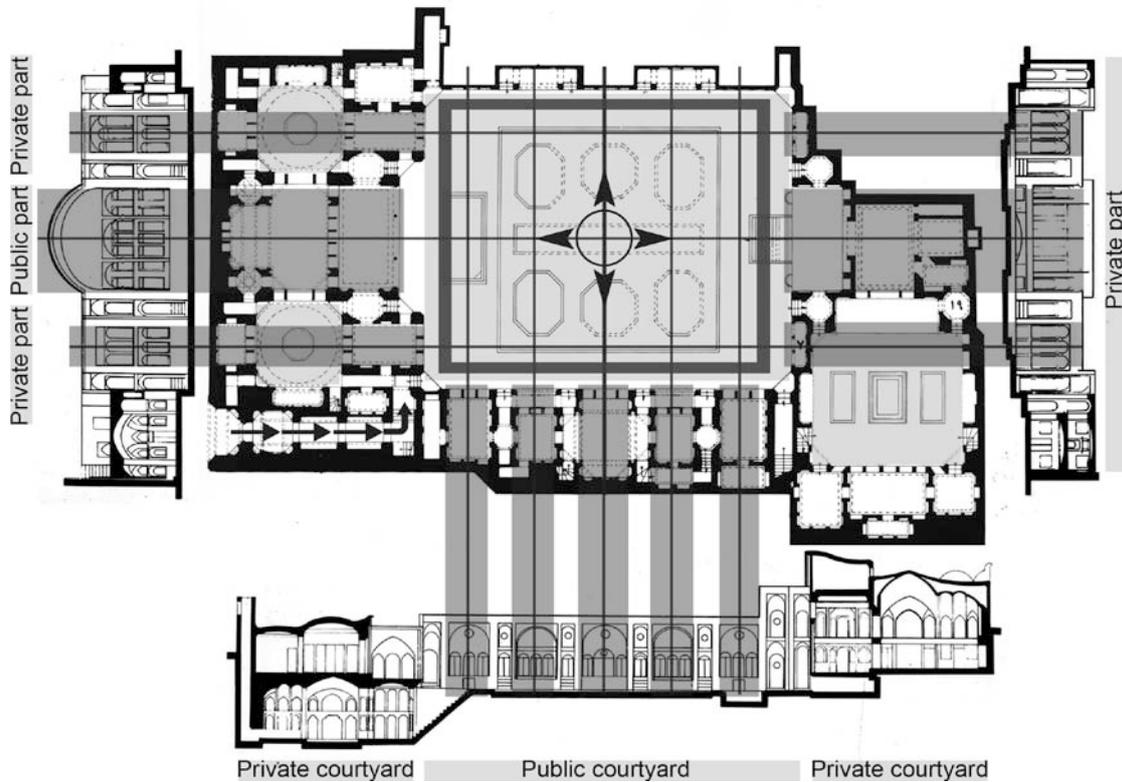
Figure 14. The main courtyard & perspective of Tabatabaei House – Kashan



Source: www.Panoramio.com (left) and www.iiiwe.com (right).

With respect to the family privacy, it has connections with other parts of the house. All of the private quarters are set up in this area. Actually, internal area is part of family's protection system that all courtyard houses try to achieve it. External area (*biroon*) which is located on the south side of the house is dedicated to entertaining the guests, religious ceremonies and celebrations.

Figure 15. Spatial organization and Privacy hierarchy in Tabatabaei House – Kashan



Source: www.liiwe.com

The services part is located on the west side of the house. This part is the simplest part of the house and includes a courtyard, kitchen, stable, food and fuel store and rooms for servants. The house has two separate entrances, one is dedicated to the reception hall and usually is used for the guests and another one is located in the eastern corner of the yard which is used as the main entrance to the courtyard. Actually the entrance space has a duty to control vision and light. In fact, in the Iranian courtyard housing architecture, nobody can enter into the house directly because there are two intermediary spaces (corridors and vestibules) which are hierarchically arranged to enhance the degree of privacy. The vestibule of the house is one of the most important parts of the interface between the internal area (*andarooni*) and external area (*birooni*). Its form is an octagon and is a reminder to stop and waiting space which plays the main role in developing the spatial privacy by separating the inner space from the outer space. In the north and south of each courtyard there are rooms that are called *seh-dari* which normally function as bedrooms. In the eastern part of the house is a living room (*panj-dari*) and four bedrooms (*seh-dari*) that all of them are aligned and connected to each other. Also on this side, we can see a composition of small and large arches, but general symmetry is visible in each façade and details of the house. The reception hall is located in the southern part of the house. Actually, this part is the most important space in the house. The existence of semi-circular form on its façade with special ornaments and the highest point of the building's skyline emphasizes on the degree of importance of this space. The house has four yards. The biggest

yard has occupied the main part of the lot. Most architectural spaces are around this courtyard. According to the dimension of the land, the geometry of the main courtyard is near to square. The built areas on its southern and eastern sides are deep and those on the other sides are shallow. In fact the courtyard has a duty to unite the architectural spaces and organize them by Introvert and extrovert architecture. Therefore, it has the main role to create various degrees of privacy. In fact, the yard provides an extensive space and permits the inhabitants to experience life in both close and open spaces.

In fact, the yard is a private open space inside of the house that makes the connection with the nature, sky, water and plants (Habibet al, 2013). The overall spatial organization in Tabatabaei house is a multilateral relationship of spaces to respond to the needs which are based on culture, lifestyle and religious beliefs while any space in this house is not blocked. In addition, each space has its own independence while has its ability to integrate with the surroundings (Figure 15).

6. Conclusion

Generally, throughout history, each society has created an architecture that meets its own specific requisites. The traditional courtyard houses have been built to respond to the inhabitants' needs based on religious beliefs and lifestyles. Persian life style focal point is placed upon interaction between kinship and relatives. In fact, social and cultural attributes are set by these factors in Iranian society. Traditional Iranian courtyard housing is a combination of various open and closed spaces designed to express the mixture of life space and nature together. The social and cultural patterns of the people are key factors for architecture to gain its identity. The interaction of religious values and sociocultural patterns in one hand and physical considerations on the other hand, have important influences to give a distinctive style to Iranian courtyard housing. In brief, in Iranian traditional courtyard housing one of the most important duties of spatial hierarchy is achieving privacy. Spatial organizations are formed for securing the family privacy, especially for the female members.

Privacy begins in the entrance layout and continues until positioning of all spaces. In fact, privacy is never supposed to limit the activities of the family members and each family member has the autonomy to engage in various activities in complete freedom. In brief, the Iranian traditional courtyard house is not just a physical shelter. In effect, it gets its meaning from social and cultural values. These values reform spatial hierarchy according to the residents' requirements and foster enhancement of privacy hierarchy and finally improve the quality of life. This subject can be considered as one of the most important key factors in housing design to achieve adaptability between domestic space and life. In an overall view, the environmental and sociocultural patterns are the most significant factors that have influence on spatial configuration and organization in developing and formation of Iranian courtyard housing. Additionally, courtyard housing is a useful and functional strategy to fulfill the inhabitant requirements according to geographical and environmental conditions.

Bibliography

ABDUL, A. and ABU, F. *Study on Space Configuration and Its Effect on Privacy Provision in Traditional Malay and Iranian Courtyard House*. In: International Proceedings of Economics Development & Research: 115-119. ISBN: 978-981-08-9921-9. 2012.

ARJMANDI, H.; TAHIR, M.M.; SHABANI, M.M; CHE-ANI, A.I.; ABDULLAH, N.A.G. and USMAN, I.M.S. *Application of Transparency to Increase Day-Lighting Level of Interior Spaces of Dwellings in Tehran - A Lesson from the Past*. Available in: www.academia.edu. 2010. Pp: 297-307.

BEKLEYEN, A. and DALKILIÇ, N. *The influence of climate and privacy on indigenous courtyard houses in Diyarbakır, Turkey*. In: Scientific Research and Essays, 6 (4): 908-922, 2011. DOI 10.5897/SRE10.958.

DEHGHAN, A.; NAGHIZADEH, M. and TAYEFI, A. *Central Courtyard: Iranian Strategy to achieve Local Sustainable Architecture*. In: Advances in Environmental Biology, 5 (9): 2.900-2905, 2010.

EDWARDS, B. *Courtyard housing: past, present and future*. Oxon, Taylor & Francis. ISBN 0415262720. 2006.

ESKANDARI, P. *Analysis of Traditional Iranian Houses of Kashan, Iran in Terms of Space Organization and Access Design*. North Cyprus, Eastern Mediterranean University, 2011.

HABIB, F.; ALBORZI, F. and ETEESAM, I. *Light Processing in Iranian Houses; Manifestation of Meanings and Concepts*. In: International Journal of Architecture and Urban Development, 3: 11-20. 2013.

HOSSEINI, B. and ZAND, A. *A BREIF SURVEY ON THE PRINCIPLES OF IRANIAN ISLAMIC ARCHITECTURE*. In: International Conference (2nd, Mukogawa Women's Univ., 2012). Mukogawa Women's Univ., 2013, pp: 318-323.

KHANSARI, M. and YAVARI, M. *Espace persan: architecture traditionnelle en Iran = traditional architecture in Iran*. Paris, Pierre Mardaga. ISBN 2870092490. 1986.

KHARAZMI, A. and HAJIZADEH, K. *Common sociospatial aspects of historic houses in ardebil, Iran*. In: International Space Syntax Symposium (8th, Santiago, 2012). Santiago, 2012, pp: 8012:1 - 8012:15.

MEMARIAN, G. and SADOUGHI, A. *Application of access graphs and home culture: Examining factors relative to climate and privacy in Iranian houses*. In: Scientific Research and Essays, 6 (30): 6.350-6.363. DOI 10.5897/SRE11.1620. 2011.

NABAVI, F.; AHMAD, Y. and GOH, A.T. *Daylight and Opening in Traditional Houses in Yazd, Iran*. In: PLEA2012 (28th, Conference, Opportunities, Limits & Needs Towards an environmentally responsible architecture, Lima), Lima, 2012.

NABAVI, F.; AHMAD, Y. and GOH, A.T. *Daylight Design Strategies: A Lesson from Iranian Traditional Houses*. In: Mediterranean Journal of Social Sciences, 4 (9): 97-103, 2013.

NOSRATPOUR, D. *Evaluation of Traditional Iranian Houses and Match it with Modern Housing*. In: Journal of Basic and Applied Scientific Research, 2 (3): 2.204-2.213, 2012.

RAHMATABADY, S.S.; AMJADIAN, K. and AMJADIAN, K. *Formation Process and Impacts of the Central Courtyard on Buildings of Central Part of Iran*. In: Switzerland Research Park Journal, 103 (2): 1.067-1.078, 2014.

SHABANI, M.M.; TAHIR, M.M.; ARJMANDI, H.; ABDULLAH, N.A.G. and USMAN, I.M.S. *Achieving Privacy in the Iranian Contemporary Compact Apartment Through Flexible Design*. In: Selected topics in power systems and remote sensing. ISSN: 1792-5088 ISBN: 978-960-474-233-2, 2010, pp: 285-296.

SHABANI, M.M.; TAHIR, M.M.; SHABANKAREH, H.; ARJMANDI, H. and MAZAHERI, F. *Relation of cultural and social attributes in dwelling, responding to privacy in iranian traditional house*. In: Journal of Social Sciences and Humanities, 6 (2): 273-287, 2011.

YAZDANPANA, P. and WALKER, S. *The Traditional Iranian Courtyard: an Enduring Example of Design for Sustainability*. In: TG59 & W112 - Special Track 18th CIB World Building Congress. Salford, United Kingdom. CIB Publication 359, 2010, pp: 261-269.

ZAND, A. and HOSSEINI, B. *The influence of iranian islamic architecture on traditional houses of kashan*. In: International Conference (2nd, Mukogawa Women's Univ., Nishinomiya). Mukogawa Women's Univ., 2012 pp: 81-86.

WIKIPEDIA, the free encyclopedia [online] Available in: <http://en.wikipedia.org/wiki/Borujerdis_House>. 2013.

