

A Review on Influences of Pre Islamic Architecture on Islamic Architecture in Early Centuries

Reyhaneh Esmaeili

Architecture Engineering, Shahre-rey Branch, Islamic Azad University, Shahre-rey, Iran
E-mail: esmaili2011@gmail.com

Abstract

A cursory glance at presented definitions about architectural design proves that scholars have mentioned varied definitions. According to historical documents such as books, itineraries, illustrations and inscriptions they can be divided into two major groups. Firstly, architectural designs were introduced as an artistic field and the designer was an artist. Apparently, buildings which are included in first group have diverse decorations or some unique shapes. Additionally, they are not specifically for human, and they could be considered as monuments, tombs and mausoleums. As a result, people had a connection with building indirectly. On the other hand, the second group consists of the buildings which are used as homes, mosques, schools (Madrasah), Sera (karvansara) and market (bazaar). Obviously, builders and architects accurately respected topography and structure and preference was given to technique rather than beauty. The aim of this article is to gather different definitions and argue which one was the dominant theme in early Islamic architecture in Iran.

Keywords: Aesthetic, Islamic Architecture, Structure, Design

Introduction

Defining the early Islamic Architecture of Iran is exclusive. This difficulty results from different factors, including lack of necessary information, transition of Iran from pre-Islamic to Islamic era and importantly Muslim's avoidance of destroying pre-Islamic monuments. For instance, square Dome and fire temples were converted into mosques in the early centuries of Islam. Therefore, there are undeniable similarities between a number of early building in terms of form, structure and decoration. Another reason might be lack of political and cultural cohesion in the period outlined. Judging from Iran's historical conditions, Sassanid Artists employed a new ideology; in other words, Islam; in their works. Perhaps, the most important reason for some of the similarities between Sassanid and Islamic works is that the works were created by the same artists who were active both pre-Islamic and Islamic eras.

Categorization of monuments of early centuries in Iran

During the initial four centuries, Iran covered a broad cultural and political area, including Syria, Palestine, Iraq, Parts of western India and Afghanistan (Moradchelleh, 2010). Apart from a number of Abbasid and Umayyad palaces (Kasmai, 1992; Moradchelleh, 2015) which are considered a major source of Islamic art and architecture, the majorities of monuments during this era are counted as religious buildings especially mosques and in one case a mausoleum (Gaube, 1981). A number of definitions which currently been provided are mostly based on historical definitions and classifications. Chronological categorization of styles of Iranian architecture into four periods of Khorasani, Razi, Azari and Isfahani is according to such approach (Nezar al-Sayyad, 2001). In Khorasani period, early monuments are more similar to the ones in Sassanid era. We can refer to some main characteristics such as:

-Mass dwelling construction in growing cities, simplified architectural form

- Stretched in plan rooms with cylindrical or domes ceilings
 - Importance of orientation in Islamic sacral buildings
 - High attention to the aspects of urban planning's
 - leveling of living conditions for different social strata according to canons of Islam
- Seljuk, one of the most powerful dynasties of all time came to power in Razi period.

Some features of Razi period are:

- Development of national architecture
 - Great attention paid to durability of buildings and their area and space composition
 - Building with one dome and four Iwans
 - Combined complexes (Caravan-Saray-Madrassa and mosque...)
 - Evolution of sanctuary, development of their plans and shapes.
 - Double-layered domes with the layer of air
- Interior and decorated with ornaments

With Mongol's invasion to Iran, Iran's architecture underwent considerable changes, Diversity in type, Plan, façade of buildings are some of these changes. Some changes will be discussed as below:

- Construction of huge buildings
- Development of radical and rectangular street nets in city planning
- Clear vertical and horizontal of evaluation
- Introduction of huge Iwans and symmetrical Minarets
- Wide use of mosaics and relieves in interior design

Finally, Isfahani style corresponds with Safavid dynasty and significant innovations in urbanism and decoration like Rococo in Europe.

We can see these vital features of Safavid architecture such as:

- Huge attention is paid to urban planning, city centers
- Develop around principal mosques with rectangular webs of streets in surrounding districts
- Large civil complexes including sacral buildings and bazzars
- Development of structural systems (Lambert, 1956; Nezar al-Sayyad, 2001)

During the early centuries of Islam, five buildings namely Fahraj great mosque, Tarikhane in Damghan, Naein Great mosque, Neiriz Great mosque and Ismail Samani mausoleum have played an important role in defining and classification of Iran architecture of Iran. A glance at these monuments shows that Sassanid traditions are very tangible and noticeable in them. This effect is due to their similar form and structure (Christensen, 1944).

Classification of architectural definition based on decoration of mosques at the emergence of Islam

Although some scholars believe that Islamic architecture is a decorative art, it seems that just superficial and basic architectures are considered decorative art. However the professional works convey another concept. To prove this claim, one can examine inscriptions on Islamic monuments. The calligraphy in mosques does not merely serve an aesthetic role, their main purpose is to get Muslims to think, reflect and feel obliged to say their prayers. The placement of special verses of Quran on different parts of mosques such as the altar, sanctuary stall of dome, Iwan are all done with educational purpose. Therefore, architectural definitions that include purposes in Islamic architecture are branch of art not engineering. In Islamic designs concepts beyond decoration can be seen. The abstract use of floral patterns and non-existence of figurative and animal patterns originates from Muslim artists and architects' dependence on getting inspiration from nature with a religious belief. In Islamic mosques two varied attitudes are clearly visible. In Sassanid period the most

magnificent and glamorous moldings and pargetings, the protruded type of molding, can be seen, this kind of art is also seen in the early mosques of the beginning of Islam. A good illustration of this is the Fahraj Great mosque with tendril decorations which bears a striking resemblance of Tag-I Kasra. (Fig 1 and 2)



Fig 1 : Ctesphon

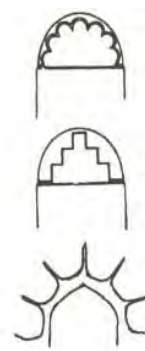


Fig 2: Decorations of the Fahraj Great mosque

What is interesting is that this similarity is the result of part by part imitation and the difference in form which is the fruit of an artist's enthusiasm is apparent (Al-Ansary and Qaryat al-Fau, 2012). However, decoration of Naein Great mosque is completely different from other kinds. These decorations might be expected to be one of the Seljuk period's art .Employment of the arabesque patterns and the kind of combination of these patterns is completely to Sassanid period's art (Fig 3 and 4).



Fig 3: Detail of a pillar in Naein's Jameh Mosque



Fig 4 :Sassanid molding

Classification of architectural definition based on form of mosques at the emergence of Islam

Form is one of the most controversial concepts in Islamic era .Examination and analysis of form is possible in two separate categories. One of them is square plan which is a common element of Iranian art before and after Islam (Pope, 1938). The importance of square plan is because of popularity of number four among Muslims who love four since Kaaba has four angles (Tavassoli, and Bonyadi, 1992). Two remarkable feature of Islamic period's architecture are symmetry in the form of square, monuments having four right angles and non-existence of unusable space (Arabia, 1982). In Sassanid period, the dome of the monuments was top of alter, and the room was open from four sides, this form changes in Islamic architecture. while in the past, fire was at the focal point of the monument, in Islamic architecture, this point is converted into alter and the dome is placed

above this altar, This reform is applied to almost three important mosques at this era, namely Trikhane, Neyriz and the great mosque of Isfahan., with 1300 years of constant changes, is like treasure of Iranian architecture since it has all the variety of style. Of course, this matter is not the subject of our discussion. One of the most fundamental principles of Islamic architecture is optimization. According to this principle, during different historical eras, ranging from Elamite, Mede and Achaemenid, historical monuments have never been demolished. An evidence to this claim is Islamic architecture in Iran during early centuries when fire temples have been converted to mosques, In Isfahan great mosque and Nyriz the southern Iwan of the foundation of a fire temple can be seen, and in Fahraj great mosque a sassanid doorway and the remain of a building is visible. In addition plan, the general form of the building can be compared to the definition of architecture during pre-Islamic era (Lambert, 1956).

For instance, in Naein great mosque, the stretch and hypostyle hall is the reminder of Seljuk and Achaemenid eras and specifically Ashkanid art. (Fig 5 and 6)



Fig 5: Ashkanid palace in Assur



Fig 6: Naein doorway

This important fact is crystal clear if one considers the proportion of entrance door of facade. On the other hand, the entrance of Damghan Tarikhaneh compared to two doorways on the sides' bears a resemblance to Achaemenid monuments. (Fig 7 and 8)

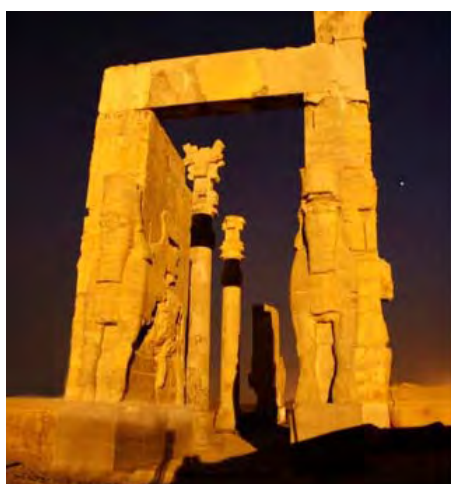


Fig 7: Achaemenid doorway, the gate of nations



Fig 8 :Tarikhane Damghan Doorway

Classification of architectural definition based on structure of mosques at the emergence of Islam

It appears that engineering principles have mainly paid attention to structure as the main factor in the development of definitions of Islamic architecture during early centuries. Although in the world at architecture, Rome and its predecessors are considered the pioneers of vault and arch in Etruscan architecture the conversion of square form into pendentive and circle, using squinich was done by Sassanids in Niyasar fire temple and sarvestan palace.(Fig9 and 10) Muslims can use this technology in the placement of domes on dome chamber (Godard et al, 1972). Thus, in late centuries, adding domes to the interior and external shells of buildings become one of the features of Islamic architecture (Gaube, 1981).

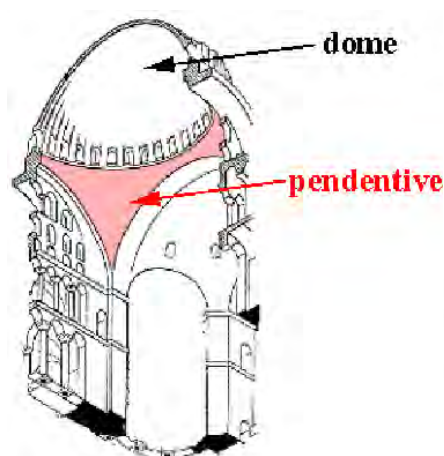


Fig 9: Pendentive

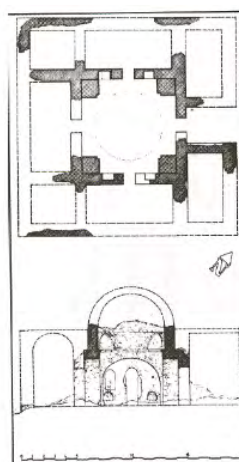


Fig 10: Square dome plan

Classification of architectural definition based on climate of mosques at the emergence of Islam

Although definition of architecture according to the climate and topographical features has not been priorities of Islamic architecture, and can use Varamin great mosque where water is led in because of the slope of the ground, in a number of monuments climate and topographical features are taken into consideration. For example, neyriz Great mosque which is located in a place with lot climate has wind towers apart from this. Additionally, The courtyard in mosque ventilates the interior of the mosques. Also, placing the portico around the courtyard is an evidence for Islamic architect's attention to climate (Hillenbrand, 2000).

These structural principles are practiced in buildings such as Amir Ismaeil samani's mausoleum. Although in some sources copula is considered a continuing Sassanid tradition in sarvestan, some believe that copula lacks a structural role, but has an effect on hindering dirt. So, all monuments have a gentle inward slope. This feature can only be seen in minarets in Islamic architecture (Fig 11 and 12)

Specific Features in Islamic Architecture Interior Space

The most striking feature of all, in Islamic architecture is the focus on interior space as opposed to the outside or facade. The most typical expression of this focus on inner space is in the Islamic house. Rectangular dwelling units typically are organized around an inner courtyard. The

facade of this house offers high windowless walls interrupted only by a single low door. Often these courtyard houses are clustered together into a walled complex to serve the needs of extended families and care them in arid regions. Entrance to the complex is through a single door that leads to a passageway from which the individual dwellings can be reached (Eco, 1986). It has been said that the traditional courtyard house is never a completed project. As family size increases, more rooms are built on the lot's unused land. Once the land around the courtyard has been covered, expansion takes place in a vertical direction.



Fig11:Amir Esmail Samani



Fig12: Sarvestan palace

Circulation System

The traditional need to entertain male guests, while at the same time bar them access to the females of the household, has given rise to additional complexities of design particular to Islamic domestic architecture, which therefore must accommodate a double circulation system, The men's reception (or guest) room tends to be located adjacent to, or directly accessible from, the entrance lobby of the house so that visitors do not meet or converse with the female household or violate the "Harim". The men's guest room is a symbol of the economic status of the household and is furnished with the precious possessions of the family; therefore it is generally the most decorated room of the house.

So, does the house, thereby reflecting the history, accumulated growth and family structure of a number of generations. The assertive nature of the individual Islamic dwelling can be clearly seen in the construction of modern houses. Many of the courtyard houses that give the Islamic city its unmistakable appearance, still exist. Often, however, they are being replaced today by structures influenced by the styles of Western architecture.

Courtyard

Yet the traditional courtyard house is an advanced structure. The open-air interior courtyard performs an important function as a modifier of climate in hot, arid areas. The courtyard allows for outdoor activities with protection from wind and sun. The courtyard also serves as an air-well into which the cool, night air can sink. And the plain, thick-walled street facade of the house, with few or no windows, is designed to withstand severe elements like hot winds and sand. The roof usually is flat with high parapets. The most decorative feature of the courtyard house is the ornate roof line.



Figure 13: "Tabatabai House" one of the historical places in Kashan, Iran

Architecture of Veil

The architecture of the courtyard house has been called the architecture of the veil. Enveloped by a plain facade, the house's innermost sanctum, the courtyard, is kept secret. The introverted courtyard house expresses the need to exclude the outside environment while protecting that, which is inside the family and the inner life. Because of the lack of emphasis on external appearance in Islamic architecture, a structure, a mosque for example, might be hidden from being viewed by secondary adjacent buildings. If the facade is visible, it is rare that the facade gives any indication of the structure's size, shape or function.

Hidden Architecture

Closely related to the idea of "Hidden architecture", is the absence of specific architectural forms for specific functions. Most forms in Iranian architecture can be adapted to a variety of purposes. In addition, structures for a specific function might assume a variety of forms. "Grube" uses the "Four- iwan" structures popular in Central Asia and Iran, as an example. The four-iwan design is a kind of structure used for some palaces, mosques, schools, caravanserais, and private houses.

Generally, Islamic architecture and Iranian architecture is given to hiding its principal features behind an unrevealing exterior; it is an architecture that does not change its forms easily, if at all, according to functional demands, it tends to adapt functions to preconceived forms which are basically contained by the inner spaces.

Unlike traditional European structures, Islamic and Iranian buildings rarely have displayed an inherent directional or axial quality. In fact, if the building does have an actual physical direction, this often differs from the functional direction. In addition, Islamic architecture and Iranian architecture typically does not strive for the same balance that European architecture does. Thus, it is easy to make additions to original plans of Iranian structures. For example, as families grow, it is simple to add new dwellings to the traditional courtyard-house complex. The complex can become an organic maze of structures accumulating around and totally engulfing the nucleus of the original design.

Enclosed space, defined by walls, arcades and vaults, is the most important element of Iranian architecture. With the exception of the dome and the entrance portal, decoration in Islamic and Iranian architecture is reserved for the articulation and embellishment of the interior.

Islamic decoration does not emphasize the actual mechanics of a building, the balance and counterbalance of loads and stresses instead; it is a part of the Islamic and Iranian architectural tradition that aims at a visual negation of the reality of weight and the necessity of support.

Feeling of Weightlessness

How is Islamic decoration used to project a feeling of weightlessness? Grube writes: “They range from the use of mosaic and painted decoration to tiles, especially luster and painted polychrome, and from molded and deeply cut stone or plaster to actual openwork and pierced walls, vaults and even supporting pillars.” The multitude of decorative treatments of surfaces in Islamic and Iranian architecture, the use of almost any conceivable technique and the development of a rich repertory of designs, from geometric to abstract shapes to full-scale floral patterns, from minutely executed inscriptions in a full variety of calligraphic styles to the monumental single words that serve as both religious images and decoration, is without parallel in the architecture of the non-Muslim world.

Its effect is extraordinary and its function is quite unmistakable. It goes hand in hand with the no directional plan, the tendency to an infinite repetition of individual units (bays, arches, columns, passages, courtyards, doorways, cupolas) and the continuous merging of spaces without any specific direction or any specific center or focus, and if a definite spatial limit is reached, such as a terminal wall, the surface that should stop the progress of anyone moving through the building will be decorated with patterns that repeat themselves, leading on visually, beyond the given limit of the wall, surface, vault or dome.

One of principal morphing factors in the architecture of any country is the historical tradition. To form a correct image of Iranian culture we should know the principal stages of evolution of architecture. This country is a direct descendant of rich cultural traditions of ancient Persia boundaries of which extended from Mediterranean to Indian Ocean. Scales of this state impressed the imagination-it included most of modern states whose title ends with-stan, states of modern Caucasus and many others. In studies of architecture of some country knowledge of periods of its historical development is important.

Despite this aspect has already been studied by both Iranian and foreign historians, there is no whole system of study of scientific and methodical factors of evolution of culture and architecture of Iran yet. As we show in the article, development of Iranian architecture is directly connected with emergence and evolution of Iran as a state.

However, studying the documents and evidences concerning the evolution of Iranian Islamic Architecture could be summarized in the following key notes:

- Despite the large quantity of publications concerning culture and architecture of Islamic countries and particularly Iran no whole picture of evolution of cultural traditions has been created yet.
- Architecture of Iran is ancient. It has passed a long path and was influenced by many cultures from Indian to Egyptian. Architectural traditions of many people created the unique styles of arts and architecture.
- For many centuries architecture of Iran developed as part of culture of various empires that included Iran indifferent times, also in the flow of transnational culture of Islam.
- Cities were the centers of medieval culture of Iran. Cities were planned concerning many factors including orientation along the axes north-south and east-west. Most of the cities had one of two types the street net: rectangular or radial. Since the age of Arab Caliphate cities were divided into districts, settled according inhabitants professions.
- Centers of cities and districts were the bazaars often with mosque and other sacred and civil buildings many of them have survived till present days preserving the traditions of Iranian architecture
- Traditional architecture is reach with the means of climate-control of interiors and courtyards, including:

- Compact shapes of housing, deep rooms with high domed ceilings.
- Shading the areas using the shapes of buildings.
- Aeration of the interiors including moistening and cooling the air using the wind catchers, subterranean channels and *hayats*.
- Use of different solar-protection devices like gratings and stained glass. Traditional means of climate-control belong to the most esthetically expressive features of national architecture of Iran.

Conclusion

A look at the structure, decorations and from the Iranian architecture in early century shows that although geometry and calculations have had a great role in classification at this period's era, decorative features between Khorasani style monuments and pre-historic architecture. That is why definition of scholars like Farabi which have been based on mathematics, regardless at a quick look at engineering technology, mainly considers geometrical features because Farabi regards architecture and skill at using geometric shapes, and considers the angle of a square on index for measurement.

References

- Al-Ansary, A. R. & Qaryat al-Fau (2012). A Portrait of Pre-Islamic Civilization in Saudi
 Allen, T. (2004). Islamic Art and the Argument from Academic Geometry, Solipsist Press. Occidental, California.
- Christensen, A. (1944). L'Iran sous les Sassanides, Copenhagen.
- Creswell, K. A. C. (1932). Early Muslim Architecture, Volume 2, Oxford.
- Diakonov, I. (2004). The history of Mede, translated by Karim Kishavarz. Tehran: Elme va Farhangi.
- Gaube, H. (1981). Arabs in Sixth-Century Syria: Some Observations, British Society for Middle Eastern Studies Bulletin, 8, 2.
- Godard, A., Godard, Y., & Siroux, M. (1992). Athar-e Iran. Vol1. Mashhad: Astan Quds Razavi.
- Grabar, O. (1959). The Umayyad Dome of the Rock in Jerusalem, Arts Orientals 3.
- Grabar, O. (1983). The Formation of Islamic Art, New Haven/London.
- Grabar, O. (1986). The Shape of the Holy, Princeton, N. J.
- Hillenbrand, R. (2000). Islamic Architecture. Edinburgh: Edinburgh University Press.
- Kasmai, M. (1992). Land and Architecture, by Home Builders of Iran.
- Lambert, E. (1956). Les origines de la mosquée et l'architecture religieuse des Omeyyades," in Studia Islamica 6.
- Moradchelleh, A. (2010). Principales periods of evolution Iranian Architecture, World Applied Sciences Journal, 9(11).
- Nezar al-Sayyad (2001). Cities and Caliphs: On the Genesis of Arab Muslim Urbanism
- Pirniea, MK. (1988). History of ancient Iran, Tehran, Farsi.
- Pirniea, MK. (2001). Architectural styles of Iran, Tehran, Farsi.
- Pope, A. U. (1938). A Survey of Persian Art, London.
- Rubin, U. (1999). The Kaabe: Aspects of its Ritual Functions and Position in Pre-Islamic and Early Islamic Times, In the Arabs and Arabia on the Eve of Islam, Edited by F. E. Peters, Aldershot.
- Schmidt, E. (1937). Excavations at TepeHissar, Damghan, Philadelphia.
- Tamari, S. (1996). Contextual Studies in the Muslim Ideology of Umayyad Architecture and Urbanism, Wiesbaden/Ramat-Gan.

Tavassoli, M. & Bonyadi, N. (1992). *Urban Space Design, Volumes 1 & 2*, Tehran: Urban Planning & Architecture Research Centre of Iran.