Indicative Architectural Elements and Organization of Plan in Ancient Iran Schools

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ABSTRACT: One of the important factors in analyzing ancient Iran educational spaces is recognizing the architecture and organization of the plan of such architecture. Plan organization has a special importance in studying the quality of ancient Iran schools considering its role in displaying the spatial relationships and layout and arrangement of the architecture physical elements. This study represents an analysis on cultural and educational changes and their effect on shape changes of ancient Iran schools, including changes in philosophical beliefs, purposes, motivations and educational programs in each era. Beyond such theoretical studies, the shape changes of the schools, including indicative architectural elements and organization of such elements in the set of plan have been studied and interpreted. The study method is interpretive-historical, together with comparative analysis of architectural spaces. In this study, through studying and analyzing the plans and spaces of ancient Iran palaces and aristocratic mansions and recognizing the indicative architectural elements of the same, we have achieved certain theories and hypotheses on architecture of buildings similar to such spaces (ancient Iran schools), inter alia, separation of buildings into internal and external spaces, role and performance of porches and corridors, organizing of building in official and unofficial sectors and spatial variability and existence of various spaces for different educational functionalities, and eventually we have presented likely diagrams of ancient Iran schools plans.

Keywords: Schools, Iran, Ancient, Organize, Plan.

INTRODUCTION

Iran has a rich and significant culture and art since the ages ago. One of the most considerable items of such cultural values is the Iranian architecture. Like any other artworks having originality from the past, Iranian architectural works require to be recognized and introduced. From amongst the architectural subjects, schools are exactly those having the highest links with the most elegant manner with the environmental and cultural heritage and enjoy a special importance (Pouremad, 2000: 10). The important point in studying Iranian architecture and specially the schools architecture in Islamic era of Iran is recognizing the deep link between this architecture with the relevant survival trend of the same since the ancient times. Therefore, the best initiative point to study Islamic era schools architecture includes recognizing the background and roots of such type of architecture in pre-Islamic era. One of the important factors in analyzing ancient Iran educational areas architecture is recognizing the architectural elements and organizing the plan of such architecture. Considering the role in displaying spatial relationships and layout and arrangement of architecture physical elements, plan organization has a special importance in studying the quality of ancient Iran schools. It seems that through recognizing the elements and spatial organization of ancient Iran schools architecture, the likely model(s) of schools architecture of the same era may be achieved and therefore, the trend of evolution and continuance of Iran educational spaces architecture during pre-Islamic era could be guessed to some extent and therefore, a more correct analysis closer to the reality on the manner of emergence and evolution of architecture elements and spatial organization of these elements in further eras may also be achieved. Thus, recognizing the elements and organization of plan of educational areas in pre-Islamic Iran is the main context and purpose of this study. Hence, the following questions may be posed:
What types of buildings are more aligned with the ancient Iranian educational spaces in terms of architecture? What are the main elements forming the plan organization of these centers? And how is it possible to assume the spatial diagram and their potential organization?

The study methodology here is in proportion to the time era and studied subject and of interpretive and historical nature together with comparative analysis of architecture areas. The generality of the study includes an analysis on cultural and educational changes and their effects on changing the shapes of the schools and academic buildings in ancient Iran. These analyses include changes in philosophical beliefs, motives and educational plans of this era. Beyond such theoretical studies, the shape changes of schools including main architectural elements and organization of the same are studied and interpreted in the set of plan. Considering lack of remnants of ancient Iranian academies, the best path for exploration on the physical form and architecture of the same is through studying the ruins and remnants of the same era, i.e. mainly palaces and aristocratic mansions, and therefore, a certain type of similarity may be emphasized on their architecture with those of big schools and academies.

In this study we analyze the plans and spaces of palace and aristocratic mansions of Ancient Iran in terms of architecture and strive to learn about the ancient Iran architecture and therefore achieve certain theories and assumptions on architecture of schools and academic spaces of that era. Conclusion of this discussion shall be conducted by taking benefit from written references and the opinions of other scholars.

**An Overview on History and Art in Ancient Iran**

The history of ancient Iran commences with the entrance of Arian tribes into the western areas of Iranian plateau during 8th and 9th centuries BC. "For years, the Iranian political system was composed of local reigns ruled by the big tribes heads, until 564 BC, when Cyrus the Great overcame Medes, Babylon and other civilizations and conquered several lands and therefore established the brilliant Achaemenid Empire" (Sami Azar, 1997: 11). "After Cyrus the Great, Darius is the most reliable Achaemenid king" (Ghirshman, 1976: 2010). In terms of art of this era, it may be said that in all these ancient remnants related to era the manifestations of glory and brilliance of a worldwide and victorious empire is obvious. Such feature is especially oriented from the variability of Achaemenid art, which to a highly extent reflect its international nature (Sami Azar, 1997: 12).

After the fall of Achaemenid Empire by Alexander the Great of Macedon, and notwithstanding the political efforts made by Alexander the Great and his successors, the Achaemenid art and architecture still survived and evolved in their states and territory event after the end of their authority... the most important feature of 75-year Seleucid Empire (successors of Alexander the Great) was the duality of culture and organization in Persia. These conditions were the natural result of conflict between Achaemenid and Greek civilizations, while eventually leaded to the influence of Hellenic culture on Persian culture. From amongst the Hellenic traditions influenced Persians included their religious and educational activities methods, which used to be conducted as religious manifestations in urban gatherings. This tradition used to be a one of the most common religious-teaching traditions in Iran (Sami Azar, 1997: 13). Seleucid Empire fell by the invasion of central Asian tribes in 256 BC and therefore, the Parthians took the power (Sami Azar 1997: 13). The written and official documents from Parthians are quite scarce which has two reasons: first, their organization features and tribal lifestyle and the other one is related to the enmity between Sassanid and Parthians (Colledge, 1978: 56).

The artworks and objects remained from Parthian era indicate their Greek-orientation at the beginning of this era. The coins used be minted in Greek and some of the Parthian aristocrats and rulers knew Greek language (Diakonov 1972: 116). However, gradually since 1st century AD, using Greek language was abandoned and replaced by Parthian language and the position of local language was strengthened in all fields (Soltanzadeh, 1985: 22). Departing from glorious tendencies of Achaemenid nature and simplicity orientation is the important Parthian artistic feature (Sami Azar, 1997: 13). In 226 BC, Ardashir I, the ruler of Pars, defeated Parthian rulers and established the glorious Sassanid Empire. Notwithstanding frequent wars, Iranian culture, literature and art during Sassanid era had incomparable flourishing. Sassanid regained the focus on the ancient Persian religion, i.e. Zoroastrian and even used it as mean for beliefs for their political and social dominance. The Sassanid art enjoys relatively higher referential features in comparison to those of Achaemenid era in terms of political, social class and religious complexities and most of their art and architectural models as well as symbolic deployment of the same enjoy Roman symbols besides Hellenic ones (Sami Azar, 1997: 13-14). Sassanid Empire had two important features: the first was its religious nature and the second was the totalitarian governance of the central reign in the country, while the same required existence of a concentrated and strong administrative body. Before Sassanid era, the state administrative system was not really big to establish requiring many secretaries. However, during
Sassanid era, development of administrative organization resulted in the importance of secretaries and in turn made requirements for the existence of educational bodies (Soltanzadeh 1985: 24-26).

**Educational Viewpoints in Ancient Iran**

Some materials are found in Greek references on the method of education in this era. Regarding the princes education, Plato explains that upon the birth, the child used to be handed over to a competent person to supervise his mental and physical growth. After the age of 7, he was entrusted to horse riders to learn riding and hunting, and as the age of 14, four people, known as the royal trainers, used to chosen to train the prince to teach him wisdom, justice, self-control and bravery (Plato, 1978: 657- 658). Xenophon in the book title Cyrus Book says: “the Persian children are sent to school to learn justice and fairness, like us who send our children to learn literature” (Xenophon, 1914, 9). Also he mentions the four stages of education in ancient Iran, of which the last stage used to be exclusively for those who successfully passed through all the previous stages and were entrusted. These people were often in administrative titles such as important judgments. The teachers for the next programs were also chosen from these people (Sedigh 1974, 87).

The historical evidences indicate the link among three major factors in formation of scientific and cultural manifestation in pre-Islamic centuries. These three factors are in turn seemed to be as the best basis to understand scientific and educational traditions in pre-Islamic era. (1) The first and most important element forming the ancient Iran culture is Zoroastrian religion which used to be the basis and core of education in ancient Iran. (2) The second element is the influence of Greek culture and civilization. Since 3rd century BC, the ancient Greek scientific and educational achievements were deeply considered by the Persians, and this experience has an organized manner during Sassanid era and through translation and instruction of Greek works in Persian educational centers and therefore, the Greek element became as a fundamental principle in academic and educational activities of Iranians. (3) The third element is the emergence and influence of Christianity in Persia during Sassanid era and immigration of Christians and Nestorian clerics to the Iranian Empire Territory (Sami Azar, 1997: 17 -19). By virtue of historical references, the Nestorian Christians affected the pre-Islamic Iran in three axes of education: (a) transferring and translating Greek works and thoughts in Iran, and through which to the Muslims academic centers, (b) establishment of Nasibin School, while concentration of academic forces in this school made its academic program as unique at its era, (c) presentation of a well-designed academic plan which was further became the model of academic system for the other Iranian schools at that era (Sami Azar, 1997: 21).

**The Schools and Academic Centers of Ancient Iran**

Generally speaking, in pre-Islamic Iran there was mainly two types of academic centers (public and exclusive), each were acting in a certain field of education with a certain definition (Sami Azar 1997: 31). The first type includes the public educational centers which are in turn classified into three sub groups: first, the vocational centers mainly included homes and workshops; the second group was dedicated for moral teachings located besides fire temples and the last one included physical and martial exercises conducted in open areas looking the city and in vicinity to the fire temples. The second type of educational centers was dedicated to specialty education and senior scientific levels, concentrated in high academic centers and schools. Therefore, regarding educational spaces in Ancient Iran, except for homes and workshops, two types of spaces, i.e. agoras (fire temple and its surrounding areas) and high schools may be mentioned (Sami Azar, 1997: 25- 26).

**Agoras**

The more integrated and public form of education used to be made in agoras, belonged to various classes and age groups (Sami Azar, 1997: 31). Usually agoras were situated on the hills and heights of suburban areas and besides fire temples, as like other religions’ religious centers, fire temples were multifunctional at that era. This point may be based on this theory that the ruins of fire temples may be used to interpret agoras in terms of architecture. Two features in these fire temples fortify the hypothesis of agoras neighborhood. First that mainly fire temples used to be built on hills and heights looking the city; several ruins of many penthouses, such Ghasr-e Shirin (Figures 1,2) and fire temples remained in Firouzabad, Baku, Natanz, Kazeroun and Neisser represent this issue (Figures 3,4). The most important feature of the same is that upon competitions and important contests in agoras, existence of certain spaces, preferably indoor, and looking towards the sports fields for the presence of Zoroastrian Mobeds, military commanders and even the king was quite likely and even necessary. The penthouses indicate the logical shape of such areas dominating agoras (Sami Azar 1997: 37- 38).
Figure 1. Ghasr-e Shirin, penthouse building, Represented Plan and Section of Domed space. Source: Reuther, 1938: 553-554

Figure 2. Ghasr-e Shirin, penthouse building, diagram for Spatial Organization of Plan. Source: authors.

Figure 3. Neisser penthouse, Details of Dome cover and Represented Plan. Source: Pirnia, 2010: 116.

Figure 4. Neisser penthouse, diagram for Spatial Organization of Plan. Source: authors.
**Schools and Academic Centers**

The other group of ancient Iran academic centers included schools and big academic centers. The activities of these centers were not of public nature at all and merely dedicated to the certain social classes, aristocrats and the people of court. Therefore, these centers are principally not seen as the premises to offer public education. From amongst the most important ones included Nasibin School opened in 457 AD. Primarily this school was the religious and philosophical study center of Nestorians working under the supports of Pirouz, the Persian king. The Nasibin School educational method was then taken as model for many schools in other Iranian cities, inter alia, Beyt-e Ardeshir, which was still administered under supervision of the Persians and less influence of Nestorians. In this school, interpretation of Aristotle’s works as well as some discussion on medicine and astronomy were included in the agenda. Further on, it was converted into one of the biggest centers for merging in Syriac, Hellenic and Zoroastrian works and scientific studies (Sami Azar, 1997: 32).

The biggest academic and educational foundation of Sassanid and the most important educational center in pre-Islamic Iran was Gondi Shapour which was active for centuries at the northwestern Khuzestan between Shoushtar and Susa as the scientific and cultural center of Iran. This city was considered since Shapour era (Soltanzadeh, 1985: 30). Following its increasing creditability, the Greeks used to bring Greek scientific and philosophical books there and the same used to be translated into Persian. Therefore, at that city certain sciences such as medicine and philosophy were common prior to establishment of Gondi Shapour School. During Khosrow I (Anoushiravan) era, the medical center and hospital of this city enjoyed a significant importance and fame (Eghbal Ashiyani, 1971; 131). From amongst the important activities of this academic center included researches and educational work in the field of medicine, which used to be conducted in the hospital enclosed to the same (Sami Azar 1997: 33). Gondi Shapour School and hospital had a big library with thousands of books to be used by the students and scholars (Hekmat 1971: 386).

**Architectural Features of Schools and Academic Centers in Ancient Iran**

Considering lack of remnants of ancient Iranian academies, the best path for exploration on the physical form and architecture of the same is through studying the ruins and remnants of the same era, i.e. mainly palaces and aristocratic mansions, and therefore, a certain type of similarity may be emphasized on their architecture with those of big schools and academies. In proving this theory, three major features for such schools and academies could be counted: (a) they were under the supervision and support of the king and totally relevant to his court (b) were highly exposed to cultural, scientific and architectural influence of other simultaneous civilizations (c) used to be exclusively for the higher class of the society, nobles, aristocrats and the royal family and in terms of work schedule were focused on high level studies and scientific researches. Therefore, certain hypotheses may be made concerning their architectural features:

First of all, that during various exchanges and relations with the Greeks and Romans, they were totally exposed to be influenced by their architecture traditions. Second, that also their architecture had several similarities with the governmental buildings and palaces of the same era both in terms of method and technique (Sami Azar, 1997: 41- 42). The palaces were dedicated either for the residential purposes of the kings and rulers, in which case they were quite big and detailed complexes, or there had been some palaces for formalities, situated in royal capitals (Tahmāsbi 2013: 157). In the following, we study some of the most important palaces and aristocratic mansions of Ancient Iran and try to find out their main elements and spatial organization and therefore, reach a relative knowledge on their similar buildings, i.e. schools and academic centers. In this study, the extensiveness and scale of the palaces shall be considered in comparison to the schools buildings. Therefore, studying some certain palaces, such as Persepolis, was avoided due to the quite huge scale and lack of time and location proportion to the same era schools.

**Achaemenid and Parthian Palaces**

**Susa Palace**

Susa Palace is one of the most important Achaemenid palaces, which is a complex smaller than Persepolis but with more royal importance. Here, the public court hall used to be both independent and connected to the private area. After passing through the entrance gate, we enter into an area, where as the north side there is the public court hall or Apadana and at the south side of the same there are the other parts of the palace with separate entrance. The interior part is composed of four big courtyards placed consecutively on a single axis together with tens of rooms surrounding the same which connect to the back of Apadana hall through two entrances (Pirmia 2010: 86). Here, the principle of architectural arrangement is similar to Persepolis to some extent.
which includes the complex entrance system, exterior part (public court) and private area with independent entrance which are connected to each other while being independent (Tahmāsbi 2013; 157) (Figures 5,6).

**Neypour Palace**

Neypour Palace may well indicate the features of a royal mansion, situated at the south side of Mesopotamia region, which is most likely date back to early Parthian era. This relatively squared shape complex has a significant gate which directs one entering the same in two different directions. At one side we see the exterior part of the mansion (a) whose most important areas include a courtyard with porch and a room with four columns and also some smaller rooms are placed beside it. On the other hand, there is the interior part which is connected to the entrance with a corridor and has smaller courtyard, kitchen, bathroom and some other rooms (Azarnoush, 1994: 78). Connection of the interior and exterior parts in this palace was established with a corridor accessible to two courts (Tahmāsbi 2013; 157) (Figures 7,8).
Figure 7. Neypour Palace in Mesopotamia region. Source: Azarnoush, 1994: 78.

Figure 8. Neypour Palace in Mesopotamia region. diagram for Spatial Organization of Plan. source: authors.

Figure 9. Ashour Parthian Palace. Source: Reuther, 1938: 435.

**Ashour Parthian Palace**

The Parthian palace of Ashour which was built in first century AD, is the earliest known model well manifesting in the composition of four porches (Figures 9,10). This model has been used in Iranian architecture for hundreds of years. However, its four porches were not built simultaneously and two porches of the same were added to the same in further times of Parthian era and potentially in 2nd century AD. The palace has three courtyards that one of them is surrounded with a porch (Pirnia 2010: 103). Such arrangement manner of the plan was further used as the common combination in Sassanid architecture including the academic centers and after that the same was converted into a lasting tradition in Islamic architecture (Sami Azar 1997: 42-43). The building
use to have two gates at the eastern and western sides, which have access to the porch courtyard and main courtyard, respectively. From amongst the other areas of this complex include columned room, bathroom and kitchen (Tahmāsbi 2013: 159). The remained rooms are arranged in single rows around all the four porches and separated from the same with a vaulted corridor surrounding the three sides of the porch. Such separating corridors, which make impossible direct passing from a room to another, are again manifested in the architecture of Sassanid era and palaces of early Islamic era such as Ghasr-e Shirin and Okhizar (Reuther 1938: 435).

Palaces and Aristocratic Mansions of Sassanid Era
Al Maryd Mansion
In Sassanid mansions explored in Ctesiphon, we also find the separated nature between the interior and exterior sectors and asymmetry of the building. For instance, in a mansion in AlMaryd, the exterior part (a) has a T shaped and columned porch and the interior part has a big courtyard with four porches and certain areas surrounding it (Figures 11,12). This part has access both to the exterior part and directly to the exterior area and the relevant special court porch and residential areas are situated at the southwestern side of the same. The religious part of the mansion was probably at the (c) part and has access to both interior and exterior of the mansion (Azarnoush 1994: 91). In this mansion as well as the Parthian mansions, usually three types of rooms are seen: (1) with four columns and almost squared shaped, (2) long rectangular which is often accessed to a square room at the axis of the building (3) rectangular or square shaped which has one or more niches (Reuther, 1938: 549)
Bishapur Palace

This palace was built by Shapur the Sassanid king (Pirnia 2010: 117-118). This building may be a model closer to the educational architecture of Sassanid era, especially as Bishapour school was built within a short while after constructing this palace at the same city (Sami Azar 1997: 45-46) (Figures 13, 14). The squared shape central area of the building used to be covered with the dome. Some consider this dome as the most indicative domed area of early Sassanid era (Sarfaraz 1987: 50). This area is surrounded from four corners with set of porches (Sami Azar, 1997: 45-46). At the right side of the same there is a hall with mosaic paving and at the left side there is a courtyard with surrounding porch. Anahita Temple used to be at the top of the same (Pirnia 2010: 117-118).

Roman Ghirshman who was the first to explore and study this building, considers its structure as abnormal in comparison to Firouzabad and Sarvestan palaces and said that: “there is a quite weak relationship between the hall and the porch. In all the important known Sassanid palaces or buildings, porch makes one physical body at the axis of the complex... instead of being built at the important axis of the palace, the porch of Bishapour has been placed in parallel to the cruciform big hall” (Ghirshman, 1996:27). Azarnoush suggests that the cruciform hall could not be the public court hall, as it is quite closed and been surrounded with a corridor. He called this room as the private praying room of the palace (Azarnoush 1994: 85). Also Lionel Bier considered this suggestion as logical and saw the existence of such areas in Sassanid palaces as likely (Bier, 1993: 58). Therefore, logically Bishapour Palace had several different courtier, religious and private areas, of which the residential areas either have still not been explored or are demolished (Tahmâbsbî 2013: 162).
Figure 14. Bishapur Palace Complex. diagram for Spatial Organization of Plan. source: authors.

**Taq Kasra**

Taq Kasra or Khosrow Porch is the most famous building of the Sassanid kings and manifest the glory of their courts. A small part of this building, of which the building is attributed to Shapur I and Khosrow I and Khosrow II has remained (Tahmāsbi 2013: 163) (Figures 15,16), from which the glory, power and cultural and architectural wealth of the Sassanid people may be learned. According to Sami Azar, architecture of academic centers in this ear has manifested such glory in the more limited manner (Sami Azar 1997: 44). The most important area of the same is its famous porch placed in the center. The exterior façade of this porch with a huge span of 22m and height of 27m is connected to a corridor of 45m depth and from there to the central area (Sami Azar 1997: 44). The porch is surrounded with a corridor like the prior samples and access both to the porch and the two rooms at its side and also from the exterior area it is directly accessible. At the end of the porch there is a portal which primarily reaches to the said corridor and then a small room and eventually a big area whose width is equal to the porch while the length is less and its surrounding area are almost like those of the main porch but we do not know whether it was roofed or was like a outdoor yard (Tahmāsbi 2013: 163). Oscar Reuther, who is one of the first explorers studied this building, was surprised about its architectural arrangement and said that: Taq Kasra arrangement, which has the biggest scale among the royal residences of Sassanid, complies with a certain design which is totally against the common rule, seen for instance in Firuzabad, Sartvestan and Damghan palaces and also is distinguished from the balcony-included palaces of Ghasr-e Shirin and Havesh koori (Reuther, 1938: 543). However, such arrangement is quite along with the public court hall of Sassanid royal palaces and mansions. More recent explorations suggest that this building used to be opened into a courtyard and another porch was in front of it (Yarshater, 2011: 564). Therefore, it may be concluded that the totally symmetric remained work used to be Sassanid king public hall and the other parts of the palace were demolished (Tahmāsbi, 2013: 164).

Figure 15. Taq Kasra (Khosrow Porch) in Ctesiphon. Source: Reuther, 1938: 544.
Figure 16. Taq Kasra (Khosrow Porch) in Ctesiphon. diagram for Spatial Organization of Plan. source: authors.

Khosrow Palace in Ghasr-e Shirin

Khosrow Palace is a building in Ghasr-e Shirin, which is also known as Khosrow Mansion or Khosro Parviz Palace (Reuther, 1938: 540). This place was not a permanent residence. Its entrance stairs are similar to those of Persepolis and of double side nature. At the back of its big porch there was the domed area and pavilion (Pirnia, 2010: 126). The entire complex is quite huge (372m length and 190m width). A platform is seen in the eastern side (Reuther, 1938: 540) (Figures 17, 18).

Besides platform there used to be a set of courtyards together with rooms and porches, of which some had service functions. Also in the southwest side of the complex an entrance and a big square courtyard are seen which reaches into a quite long yard (Tahmāsbi 2013: 1654). The combination of porch and domed area continued until the late Sassanid era, of which some indicative samples may be seen in this building. Also here there are the axis and central core of complex including a porch and big domed area (Herrman,1994: 147; Reuther 2008: 680-683).

Figure 17. Khosrow Palace in Ghasr-e Shirin. Source: Reuther, 1938: 541.
Firouzabad Palace

This is one of the oldest important Sassanid buildings, built in early 3rd century AD by Ardeshir I (Sami Azar, 1997: 42-43) (Figures 19, 20). The building complex includes two separable parts of entrance area and internal antechamber. These two parts have been separated into small domes by three similar and roofed areas. It is said that these domes are the oldest known domes in Iran (Sami Azar, 1997: 42-43). According to Estakhri, the three domed areas have been the place of holy fire (Pirnia 2010: 113). The middle domed room placed on the main axis of the building and beyond the porch, is the most important area of the palace. This design includes a porch and a domed room at the back, which was manifested for the first time in Firouzabad and acquired an important position in Islamic architecture of Iran. In this building the porch played the role of an entering hall in public ceremonies (Reuter, 2008: 675-677). The entrance complex is composed of central long porch with its embracing rectangular spaces. This complex ends to a big antechamber along the central porch axis. This space is embraced with two front porches and totally eight surrounding spaces. The combination of a big porch which gives a high attraction to the palace entrance is the main concept in this architectural tradition, while the combination of the complex central area with the collection of porches and spaces surrounding the same is the final concept of the said architectural practice (Sami Azar, 1997: 42-43).

Figure 18. Khosrow Palace in Ghasr-e Shirin. diagram for Spatial Organization of Plan. source: authors.

Figure 19. Firouzabad Palace, Plan and Section of Domed Rooms. Source: Reuther, 1938: 535; Huff. 1987: 86.
**Sarvestan Palace**

Sarvestan Palace which was constructed by Bahram, the Sassanid king in 5th century AD, is a significant sample of change and evolution of Sassanid architecture, while preserving the relevant past foundation. The most important element forming the plan is its eastern-western axis, so that while connecting the entrance porch to the central domed area and then to the courtyard beyond that, it has gifted identity regularly to the arrangement of the side spaces. The entrance porch is besides and fixed on sides with two smaller porches. Beyond that, there is the central domed space (Sami Azar, 1997: 46-47) (Figures 21, 22). This space is a foursquare room with a dome at the top, which is connected to the courtyard from one side and the garden surrounding the building from the other side. This domed area connects to a long hall at the right side, known as the Sofrexāne (dining room). At the end of the Sofrexāne (dining room), there is the Bazmgāh (party room), which has a mezzanine, where the musicians used to sit. Also in the left side there is a counter besides the pool area. In front of that, there is a big porch. At the back of the counter, there is a double bedroom and further a single bedroom, both have view to courtyard. In the north side, there are toilet, bathroom and warehouse (Pirnia, 2010: 122).

In two corners of northwest and southeast of the building, there are squared spaces with similar domes. The several entrances all ending to the central area of the domed space provide the connection of the internal and external area and shape the internalization concept. Meanwhile, more freedom and flexibility in variable arrangement of the spaces while keeping the external façade symmetry represent the relative evolution in complex design in comparison to Firouzabad Palace. This is the most important model of combination of spaces and classification of the same into main and side, or public and private, areas, which is also represents the senior importance of a superior space for the presence of the king in comparison to the prior introduced works. Exactly due to such area variability, Sarvestan Palace may have the highest closeness with the architectural combination of the educational centers of its era (Sami Azar, 1997: 47)
**Kish Palaces**

A set of works have been discovered at the southern side of Mesopotamia, namely Kish, known as “Kish Palaces”, among which the two most important ones are known as palaces I and II (Bier, 1993: 57) (Figures 23, 24, 25). In palace I, the entrance is identified and the central room is not accessible directly (Tahmāsbi, 2013: 165). According to the system of the doors and narrow passages it may be concluded that the building had been designed in a way that the circulation could be directed and monitored (Watelin, 1938, 584). Palace II has had a different, and perhaps more important, plan. There is a likely outdoor area at the northern side, of which the western and eastern walls have certain short columns and niches. In the central room two rows of columns and two pools are seen with the same situation as palace I. The difference between the plans of these two buildings may refer to the difference of their functionalities and perhaps palace II had a religious role (Watelin, 1938: 586).
Figure 24. Kish Palaces I. diagram for Spatial Organization of Plan. source: authors.

Figure 25. Kish Palaces II. diagram for Spatial Organization of Plan. source: authors.

Figure 26. Suggested diagram for Spatial Organization of Plan in Ancient Iran Schools. source: authors.
Table 1. Comparative analysis of palaces and aristocratic mansions of ancient Iran. Source: Authors based on Tahmāsbi, 2013.

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<th>Palaces</th>
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<td>√</td>
<td>√</td>
<td>√</td>
<td>maybe</td>
</tr>
<tr>
<td>Khorow</td>
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<td>x</td>
<td>√</td>
<td>√</td>
<td>x</td>
<td>maybe</td>
</tr>
<tr>
<td>Firozabad</td>
<td>Residential</td>
<td>√</td>
<td>√</td>
<td>x</td>
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<tr>
<td>Sarvestan</td>
<td>Ceremonial</td>
<td>√</td>
<td>√</td>
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</tr>
<tr>
<td>Kish</td>
<td>Ceremonial</td>
<td>√</td>
<td>√</td>
<td>Unknown</td>
<td>√</td>
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</tr>
</tbody>
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Table 2: Extraction of indicative features of architecture of ancient Iranian schools. Source: Authors.

| Indicative features of architecture of ancient Iranian schools | Separation of building into internal and external parts, while each having independent entrances | More asymmetric arrangement in unofficial areas, and more symmetric arrangement in more official areas | Role of porch in architectural arrangement, both in relation with the outdoor of the building as well as the courtyard with its surrounding elements | Corridors as important connection element surrounding the courtyard as well as connecting different parts of the building | Spatial variability and existence of different shapes of square and rectangular spaces for different performances | Existence of praying room and library in most buildings |

Finally, based on the foregoing conclusions, the generality of architecture and potential organization of the internal and external sections of the schools of this era, to a highly extent, may be suggested as per the following diagrams.

**CONCLUSION**

Ancient Iran buildings, especially palaces and consequently schools and academic centers, have always had certain continuity notwithstanding variability, high time span and variable climates, as well as techniques and materials used for the same. In fact, there has been a conceptual unity governing deep in geographical unity of Iranian plateau, which gifted unity and integrity to the generality of culture of this era, notwithstanding all the historical tensions and entrance of foreign cultures, and manifests a certain type of architecture beyond such variability and multi-cultural nature, which belongs to and resulted from this culture and land. This trend occurred in the architecture of this era in two methods. First, emergence and continuance of some of the architectural elements which were repeated and evolved during such era and second the organization of the same elements in architectural plans, which enjoyed progress and evolution through time and by gaining experience. Therefore, in studying the architecture of this era, the role of indicative elements and manner of their organization in the plan set (building planimetry) shall be considered.

variability, there are some common key elements in these buildings which represent the architectural features of such era. From amongst the most important items of such elements one is porch, which as both a symbolic and connecting element, established the connection between the outdoor of the building with the domed space and the connection between indoor area with the middle area of the mansion. Domed space is another element which reaches its peak gradually and through evolution of vaulted architecture during the Sassanid era.
and is manifested as the central core of the architectural set. This space has well been able to meet the educational functionalities and therefore, could be used, whether exclusively for the instructors or publicly for a group of students. The other important feature is the courtyard or the middle area of the house which acts as the major element arranging the plan set. In small building one courtyard is seen, while in bigger ones several courtyards may be seen, so that at least one of them is dedicated to the external and the other to the internal areas. Often these courtyards are connected to the surrounding areas in combination with porches and also sometimes such connection is established through the corridors surrounding the courtyard and without any need for porch. The other point is represented by the rooms around the courtyard. In terms of shape, these rooms are classified into two samples of square and rectangle. In schools, the squared and rectangular rooms may rather be attributed to more private areas such as cells and more public areas such as dining rooms and meetings rooms, library, etc, respectively. From amongst the other indicative space of this era are the praying rooms which may expect the existence of the same in the building of the schools with a more detailed plan of this era, while considering the highly strong relationship between religion and education in ancient Iran, this issue is quite likely and logical. The entire foregoing conclusions may be briefed in the following table.

REFERENCES