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ESSENTIALS AND FEATURES OF TRADITIONAL IRANIAN BAZAARS  
(COMPARISON OF HAMEDAN BAZAAR AND ISTANBUL GRAND BAZAAR)

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### ABSTRACT

Traditional Iranian bazaars have been the backbone of cities, though few literature has addressed their architecture and buildings. The Iranian bazaar has been well-known around the world for the features and the word *bazaar* has entered all languages of the world. As an advantage, this study reviewed the essentials and features of traditional Iranian markets. Looking at the architectural past of these spaces will help designers to help the originalism of new and modern buildings.

Hamedan Bazaar has long been an economic, commercial and trade center since the city of Hamedan is situated on the western communication routes to the center of Iran. Hamedan Bazaar has played a significant role in the development and prosperity of the city. This paper inspected the architectural features of Hamedan and Istanbul bazaars and compared them. This was done in order to realize the salient and unique features of this architectural masterpiece and its significance all over the world.

The data was collected through a descriptive-analytical approach, library and field research, frequent presence in the architectural place, photography and conversation with architects.

### INTRODUCTION

Art and architecture enjoys an ancient history in Iran. At any time, the capable hands, creative minds, and art-loving people's taste of the land have created wonderful phenomena the principles of which have become the root of the world's architectural art over and over. Some of the works in the corners of the vast country of Iran narrate the story of the magnificent architecture of hundreds and thousands years through the buildings' stable stature (Zumrashidi, 2010)

The Iranian bazaar has become so well-known that it evokes mighty and impressive scenes in legends and stories so that if any author wanted to describe Iran and Iranians in his work, he would have named it Iranian Bazaar. The Iranian's avoidance of lies, hypocrisy and deception, and

especially the usury of the Iranian merchant prevented cruelly profiteering and exploiting. Perhaps for this reason, the Iranians did not pay much attention to trade, and the merchant class in the society of ancient Iran was inferior to other classes (Pirnia, 2005)

The history of developing a bazaar in Iran dates back to ancient times. According to historical documents, bazaar has been one of the most important elements of many pre-Islamic cities. After Islam, the expansion of Islamic cities and increasing social connections through caravan routes, development of inns, and economic exchanges led to the formation of the so-called bazaar as the place of trade and production. Bazaar is a salient public building in various cities, which was primarily formed to offer production, exchange, and sale and purchase of goods. Later, however, it took on various cultural and social functions. Economic growth and prosperity led to the emergence of various bazaars like the periodic, rural, fixed, roadside and urban bazaars (Kiani, 2000). In fact, gathering of religious, social, economic, and main cultural centers of the city under the umbrella of bazaar is a phenomenon specific to the cities of Iran (Falamaki, 2004).

### **METHODOLOGY**

This is basically a kind of comparative study. The scope of the research is a comprehensive and complete study of the essentials of traditional Iranian bazaars, inspection of two traditional indoor bazaars of Hamedan (in Iran) and Istanbul (in Turkey) in terms of architectural features, and running a comparison between them. The results and conclusions are displayed in a table. To study Hamedan Traditional Bazaar, the author collected information through the library data as well as frequent presence and photography in the site. The information about the Istanbul Grand Bazaar was gathered through the printed or online articles and magazines.

#### **1- Elements of a bazaar**

Elements of a bazaar includes street (row), class, entrance, caravanserai, depot, Timche, Qeysarie, shop and elements that are part of a bazaar like coffee house, restaurant, mosque, bathroom, etc. (Parseh Architecture Group, 2013)

1. Streets (rows) are the main routes that are either parallel or intersecting. When two main rows intersect, a chaharsoo (a four-side structure) is formed and usually chamfered at the beginning (Pirnia, 2008)

2. There are classes located in different parts of the main street; e.g. the class of shoe makers and coppersmiths. Typically, the classes are not facing each other and are not made in a four-way to avoid crowds. There are well-known classes like in Kerman, Isfahan and other cities (Pirnia, 2005)

3. Entrance differs with a class since there are similar goods besides the different ones in the entrance (Pirnia, 2008)

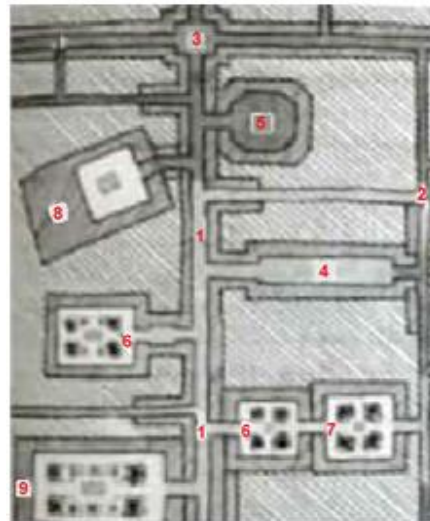
4. Sara or Khan (Caravanserai): This element was the same as a trading house. The sample of goods was taken from there and spread in different places. They were places located along the bazaars and in depths. They were also called dock (Parseh Architecture Group, 2013)

5. Depot was the place of storage and work on goods. The goods that was transported by cattle were not allowed to enter the bazaar, so the goods were emptied in the depot through a route parallel with the bazaar (called as alleyway or by-lane). A depot was a big space where there were several small handicraft workshops as well as warehouses (Pirnia, 2005).

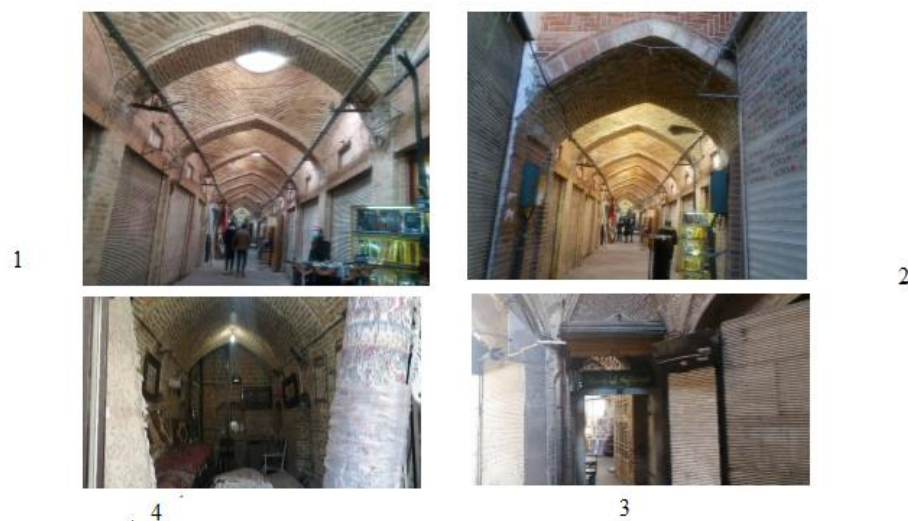
6. Timche (arcade) is an indoor space (rarely outdoor) dedicated to the sale of a type of product.

7. Qeysarie means a long house and the place of craftsmen such as goldsmith, drapery and those dealing with needle-crafts. It was found more than depots and caravanserais joined together through the streets. In the past, the Qeysarie had a door and its solitude allowed artistic works to be done there. Qazvin and Isfahan Qeysarie are to samples of picturesque Qeysarie.

8. Shops had special shapes and dimensions in proportion to the goods they offered. Sometimes they had two floors (Pirnia, 2005).



**Figure 1-** Elements of a bazaar: 1. Main street 2. Secondary street 3. chaharsoo 4. Entrance 5. Arcade 6. Sara 7. Depot 8. Mosque 9. School (source: Pirnia, 2008)



**Figure 2.** Images from Hamedan Bazaar: 1 and 2: Streets, 3: Tiles arcade, 4. Shop in Mirzakazem Sara (source: the author)

## **2- Review of bazaars in terms of climate**

**2-1. Architectural features in hot and dry climates:** In such a climate, just like mountainous and high areas, most of the streets have arches with building materials. However, since heat and sunshine is more problematic than the cold, the arches are taller, the streets are wider and the holes above the arches are larger. In addition to the holes on roof, in some bazaars, especially in the southern areas, such as Vakil Bazaar in Shiraz and Ebrahim Khan Qeysariye in Kerman, there are openings under the arch that help provide light and ventilation and reduce heat in the streets. The arch prevents the hot sunlight in summer, helps to balance the temperature in winter, stabilizes the temperature and living conditions as a thermal capacitor during the day and night, and prevents the entry of dust and desert winds into the bazaar. In recent years, the arches have largely prevented disturbing noises such as the sound of urban traffic and industrial workshops. The width and height of a street increases a little in areas where it reaches a specific location, such as entrances, arcade, mosques, schools, bath room, four-way, and entrances. The arch in these parts are often covered with high dome and the bottom of the dome is covered with rhythmic and well-made muqarnas and karbandi. The same is true for cold climates. The opening of the cells and the free length between the two bases of the streets arches does not exceed 3 to 4 meters. In hot and cold areas, some cells have basement that is used to store goods (Ghobadian, 2015).

**2-2 Bazaars architectural features in cold and mountainous climates:** The cold and storm are important and determining factors in the shape of buildings in these areas, especially in the north and northwest of the country. Therefore, streets of the big cities' bazaars generally have brick arches, but the height between the floor and the arch is less than bazaars in hot and dry areas. An arch prevents excessive heat exchange between inside and outside the streets and relatively small width and height of the streets make the temperature nice and acceptable for humans. The heat from people's activity, the lights inside the bazaar and the heaters inside the cells are enough to provide the desired temperature in the cold winters so that cell owners can open the entrance of the rooms as in other seasons, and in the whole market area, with the usual winter clothes buyers and sellers can exchange goods and do other market-related activities without feeling uncomfortable. Typically, here are relatively small holes above the arches to provide light and ventilation in streets. Although the holes let the heat goes from the area, due to the very high thermal mass of the street, which is made entirely of building materials, and also because the walls are load-bearing and their thickness is relatively high for the heavy weight of the arches, the holes above the arches do not have much influence on disturbing the balanced temperature of the market. Also, natural light from the top of the arches, in addition to providing light, creates a proper harmony in the entire space of the streets. Examples of such bazaars can be seen in the cities of Hamadan, Zanjan and Tabriz (Iranian bazaar, an experience in documenting Iranian markets).

**2-3 Architectural features of bazaar in temperate and humid climate on the Caspian sea coast:** In terms of high humidity and rainfall,

the streets often do not have arches and only the sloping roof of the cells on both sides cover the market space to some extent and prevents rain from falling on the heads of pedestrians. Also, the rows floors are typically sloping from the west to the middle of the streets so that rainwater is directed to a narrow canal that passes through the middle of the street and finally flows into a stream or river. In addition, if the streets are arched, the natural flow of wind in the city will not be able to move the humid and heavy air in the market space. In ancient times, sloping roofs of market cells, like other buildings, were covered with plant fibers such as galls or rice stalks. After the arrival of pottery in Iran, new and durable materials were used to cover the roof of bazaar. In recent years, most of the cell roofs have been covered with pottery or gable or both. The walls were built like other traditional buildings, and in order to prevent moisture from penetrating the cells' floor, there was a tall porcelain chair or catnip under the cells. Such bazaars, like other buildings on this side, have no basement. Rasht Bazaar is one of the famous bazaars in the region (Poorahmad, 1997)

#### **2-4 Architectural features of bazaar in hot and humid climate:**

Providing comfort in the market requires preventing direct sunlight and heat and also facilitating air flow in the market. It can be seen that there are canopies in streets of bazaars in the southern coasts of the country. They are high and with various arrangements to use the maximum air flow for ventilation and the movement of wet and heavy air. The streets of bazaars in these areas are designed to allow wind to flow inside the streets and are often located perpendicular to the beach. The canopy above the rows (streets) is typically made of mat or fabric. In some markets, such as the old bazaar of Bushehr, there are canopies made of wooden beams and building materials. Wicker canopies, while providing shadow, are not an obstacle to ventilation and air movement in the streets. In rows whose roofs are covered with more durable materials, there is a opening between the arch and the roof of the cells, and the vertical movement of air takes place naturally. In addition, the rows in this region, such as the Caspian coast and other regions of the country, are short. Bazaars of the area also have no basement. Bushehr bazaar is an example (Ghobadian, 2015).

### **3. Types of bazaar in terms of plan**

**3-1 Linear bazaar:** Most of Iranian bazaars, especially permanent ones are often linear because they are formed along roads and passages. Linear bazaars are classified into two types, organic and designed. Organic bazaars are those markets that are gradually created along the organic and unplanned urban passages and with the development of the city, little by little new spaces have been built along them. Tehran Bazaar, major parts of Isfahan Bazaar, a part of Yazd Bazaar and parts of Kerman Bazaar have developed organically and in an unplanned way. There are a small number of Iranian bazaars, or more precisely, parts of them, have been designed as a direct road. These types of bazaars arose when a ruler or one of the elders of the city decided to build a row; e.g. parts of Shiraz, Kerman, and Semnan Bazaar (Iranian bazaar, an experience in documenting Iranian bazaars)

**3-2 Parallel or crossover multi-axial bazaar:** This group includes caravanserais and palaces. Comparison shows that the mobility and attractiveness of these bazaars is more than other types.

**3-3 Systemic bazaar:** *This* is a large collection of covered rows and entrances that are located adjacent to each other and the trading houses surround them as a belt. The new retail market complex in the main entrance of Tehran Bazaar is of this type, which is surrounded by Khan (caravanserai) on several sides, as well as Rasht and Qazvin bazaars.

**3-4 Cross bazaar:** This type of bazaar with two main intersecting axes is a combination of two perpendicular linear intersecting markets that are packed at the intersection as multi axes. Lar and Shiraz Vakil Bazaar are the examples. Other examples can be seen in Arak and the central neighborhood of Kerman Bazaar. Such markets are usually built with a previous plan and design (Iranian bazaar, an experience in documenting Iranian bazaars)

The appearance of some bazaars today is not clear and it is not easy to show what they were like at beginning and how they came into being. Each of the large complexes of important cities' markets may be a combination of the four mentioned types, for example, Isfahan Bazaar is linear in central areas, and multi-axis in the areas near important urban centers. Hamedan Bazaar is a linear and multi-axis.



**Figure 3.** From right to left: Qazvin systematic Bazaar, Isfahan multi-axis Bazaar, Semnan linear Bazaar, Lar cross Bazaar (Source: Ganjnameh, Vol. 10)

#### 4- The role and function of bazaar in previous societies

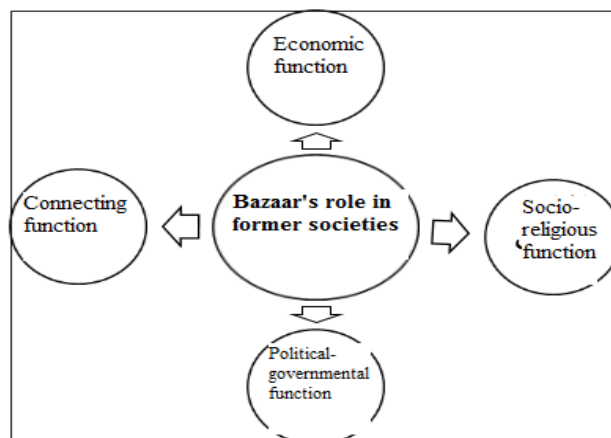
**Economic function:** Economic exchanges in wholesale or retail meet the local needs of the people in the city and surrounding villages. Therefore, it has been a constant function of markets, especially small towns and non-commercial markets, but the main function of markets, especially in big cities exchange of goods between caravan traders and local traders.

**Social-religious function:** In the past, the bazaar as the foundation of every company, entailed all the public activities of the city and was considered the center of the city from a social and cultural point of view (Flamaki, 2004). In bazaars, people contributed in city-related economic and executives decisions. Social groups formed a homogeneous and rational whole, and the place of each class was quite clear in terms of hierarchy.



**Political-Governmental Function:** The relationship between the market and the government and the market with the ruling power has always been contradictory. In fact, the constant need and conflict drives this contradictory relationship. The socio-political security and stability that is necessary for the prosperity of trade and economy forced the market to find a way to be independent of the government and to reduce the risks of political instability and the unintentional policies of governments on trade (Iranian bazaar, an experience in documenting Iranian bazaars).

**Connecting function:** The connecting function of the market is very important. Due to the access of passers-by, markets were developed along the connecting paths. The prosperity of the markets and the importance of their urban and social role, while at the same time being of economic value, depended on the connecting function and social spaces located along them. The residential section roads eventually ended in the bazaar, and the bazaar served as a public thoroughfare for the city. The bazaar also provided access to out-of-town areas, and the lines often ended in the city gates. In fact, the main markets are the first public passages that pass through the city and connect to the city gates, forming the most prestigious and busiest part of the city and facilitating access to the alleys and passages that pass through the residential areas (Iranian bazaar, an experience in documenting Iranian bazaars).

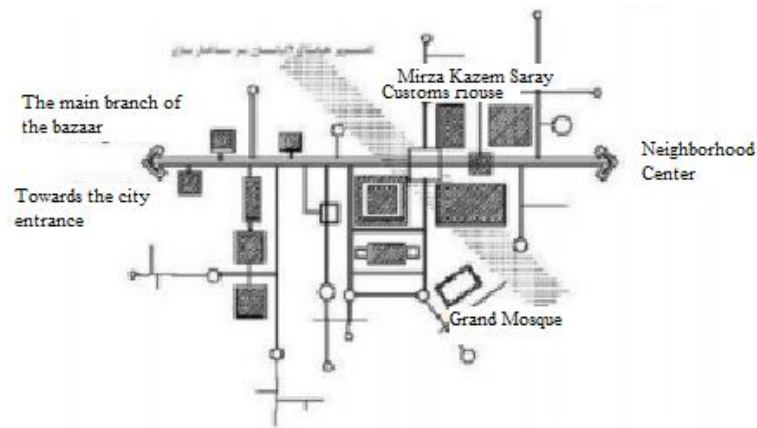


**Figure 4 -** The role and function of the bazaar in former societies (Drawn by the author)

**5- Hierarchy in bazaar's body**

Architects' creativity in using a single structure and identifying spatial values such as integrity, coordination, balance, mobility and readability, lighting, rows expansion, delimitation and hierarchy show the strength and flexibility of the structure and capability and creativity of Iranian architects in the use of the structure (Hosseinzadeh, 2008) In the formation of an architectural building it is the principle of hierarchy that causes the formation of spatial domains with different functions and shapes the spatial privacy. The important point is that applying the principle of hierarchy in urban space systems and architecture has played a significant role in strengthening privacy in the spatial structure by separating public and private spaces and ranking accesses (Naghizadeh, 2000). Hierarchy is one of the important principles in the physical system of the bazaar so that

it is reflected both in generalities and in its details. In the body of Hamedan Bazaar, it can be said that the Grand Mosque is the starting point of the hierarchy, which is connected to the arteries of the bazaar that is streets. They then reach the shops and caravanserais. The shape and dimensions of a single row help the hierarchy in the bazaar and allow the person to cross various routes on foot and reach the destination.



**Figure 5.** Hierarchy in the body of Hamedan Bazaar (Farzaneh, 1999)

### **An introduction to Hamedan Bazaar**

Hamedan is situated in the northern slope of Alvand Mountains, with the longitude and latitude of 48 degrees and 43 minutes east and 35 degrees and 2 minutes north, respectively. The general slope is from south to north (Zarei, 2011)

Hamedan Bazaar is located in the area of Babataher Ekbatan and Shohada streets. Due to its special geographical location and being situated on the roads connecting the western cities, Hamedan Bazaar has flourished since the past. Williams Jackson, one of the famous American researchers, writes during his trip to Hamedan: Hamedan Bazaar is roofed and there are more than five hundred popular shops there. Merchants refer to the city as Iran's depot. Leather goods should be mentioned among the commercial goods (Ebrahim and Williams Jackson, 1978). The traditional Hamedan Bazaar is built around the oldest and most prestigious mosque and belongs to the Qajar period. The traditional texture of Hamedan Bazaar was developed as a network (multi-axis) and a linear form along the trade routes leading to it. At present, Hamedan Bazaar complex includes 38 streets and about 26 caravansaries with architectural value, including Mirza Kazem Sara, Golshan Palace, Sharifieh Palace, Sharif Al-Molk Palace, Sabzevari Palace, Nahavandiha Palace, Eftekhari Palace, Mazouchi Palace, Mullah Yousef Palace, Yaqub Yari Palace, Qibla House, Bank Palace, Dr. Motab Palace, Ghalmadani Palace, New House and Haj Safar Khan House.

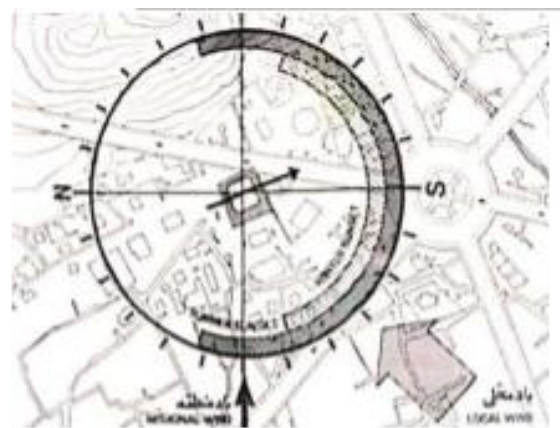




**Figure 6.** Arial view of Hamedan Bazaar (Source: Zarei, 2011)

**Durability and good performance of Hamadan Bazaar building due to the proper orientation**

In order to achieve the best orientation in the buildings and the paths connecting pedestrian routes and carriage ways of the bazaar, wind, solar and weather diagrams were carefully examined and it was found that the orientation of most of the old buildings of the bazaar such as Golshan, Sharifieh, and other palaces was precise. The correct placing of the buildings, done by the architects of that time through experience over many years, is another reasons for durability and good performance. The main axis of the buildings orientation makes an angle of 160 degrees with the true north (Biglary, 2536)

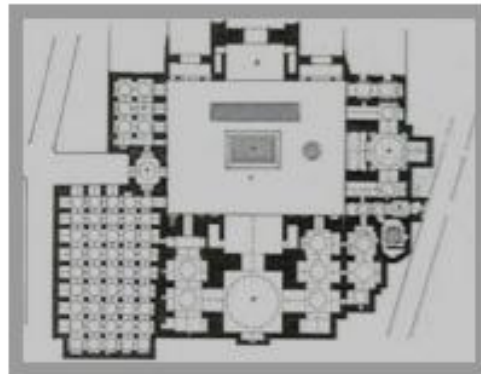


**Figure 7.** Solar radiation and wind direction of Hamedan Bazaar (Source: Biglari, 2536)

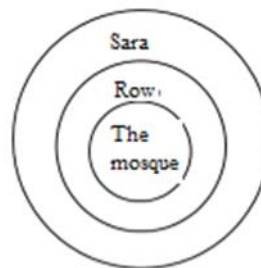
**Hamedan Bazaar on the axis of the Grand Mosque**

According to the map of Hamedan, all the bazaars of the city are built around the axis of the Grand Mosque. The mosque has a four-porch design. The porches are not equal in terms of shape, dimensions and size. The mosque is connected to the bazaar through three entrances. (Zarei, 2011). Except for the Grand Mosque, there are smaller mosques everywhere in the bazaar where the merchants who are farther away from the Grand Mosque performed their noon and evening prayers there; e.g. the Prophet Mosque in the prophet street, Sarnamaz at the beginning of the Ghandomiha street, and Aghaye-Akhund Mosque at the end of the Ghandomiha street. In addition to mosques, there were several public bath

houses for the merchants and travelers, which were open only during the day. Bakery, dining and grocery stores and coffee and tea shops were also working throughout the day at the intersection of the rows (Gholami, 2008).



**Figure 8.** The Grand Mosque's plan in Hamadan Bazaar (Zarei, 2011)



**Figure 9-** The Grand Mosque location in Hamadan Bazaar (Drawn by the author)

**Mirza Kazem Sara as the largest surviving caravanserai from the Qajar era in Hamedan**

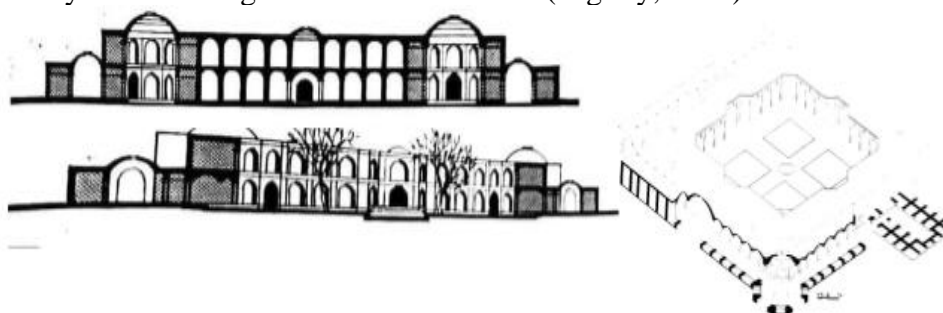
Mirza Kazem Caravanserai belongs to the Qajar period and is located in the east of Ekbatan Street. It was registered as one of the national monuments of Iran on March 24, 1998 with the registration number 2224 (Encyclopedia of the History of Architecture and Urban Planning of Iranshahr, Ministry of Roads and Urban Development).





**Figure 10** - Courtyard of Mirzakazem Sara (Source: the author)

Mirza Kazem Caravanserai has a square plan with four porches and an area of about 3000 square meters with forty rooms upstairs and 45 rooms downstairs. The brick facade of the caravanserai, the nesting corridors and the small and beautiful rooms in this spectacular place are so charming and beautiful that every visitor can't miss them. The typical architecture of trading caravanserais includes a central courtyard and shops around it on two floors. The shops on the lower floors were dedicated to the supply of goods and the rooms on the upper floors were for resting and sleeping. The caravanserai traders were to buy, sell, and embroider beautiful hand-woven carpets. Mirza Kazem Sara was rebuilt in 1965 and the shops of the old caravanserai were located underground and used as warehouses for the shops. Haj Mirza Kazem Sara is surrounded by Qeysariye mall on the north, Hallajkhane Qeysariye on the east, Sarghozar Alley on the south, and the alleys connected to Ekbatan Street. Since the map of the caravanserai and the surrounding malls are surrounded by a square and the geometry of the complete plan and its external environment is regular, the caravanserai and the bazaar seem to be designed together. The caravanserai has a square courtyard and two-story walls. The middle of each side of the courtyard is intended as a half-hexagon and hence the simple square shape of the courtyard has changed to two middle axes (Biglary, 2536).

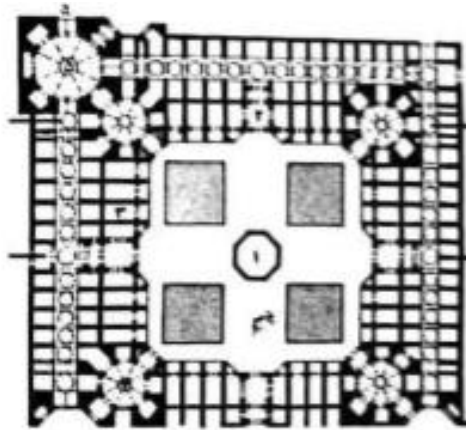


**Figure 11-** Three-dimensional view and sections of the courtyard of Mirzakazem Sara (Source: Biglari, 2536)

### **Iranian bazaar and the striking role of Chaharsoo**

Chaharsoo (four corridors or four ways) is formed by the intersection of the two main streets. The space formed by this intersection creates a valuable commercial position. Two main intersected rows approach the concept of chaharsoo if they are significant in terms of urban and economic situations; otherwise, undoubtedly, the intersection cannot lead to the formation of chaharsoo. In Iranian bazaars' chaharsoo, the

essential goods can be accessed which is the most important function and feature of it (Figure 10)



**Figure 12-** The chaharsoo in the northwest corner of Mirza Kazem Sara (Source: Bigleri, 2536)

**Original technical karbandi in Iranian architecture**

Geometry is the language of Iranian architecture and has illuminated the Iranian art. Precise geometric designs have a simple but complex esoteric appearance, embodying tact and wisdom in each part and as a whole (Poor Abdullah, 2013).

Karbandi is a special technique for covering a space in traditional Iranian architecture. It is a combination of arches beams from the intersection of which a skeleton is made for hard covering. The main function of karbandi deals with structure, but it not only plays a structural role, but also defines the function and architectural space, and interior decoration also depends on it (Tehrani, 2012). During the Ilkhanid period, when the need for construction increased, architects came up with the same techniques to initiate karbandi. The new art gradually developed and soared. Since then, in the time of Timur, some of the great architects of Shiraz took it to Samarkand and Khorasan, and gently it became popular throughout Iran (Rafiei Sarshaki, 2003).



**Figure 13-** Karbandi in Hamadand Bazaar’s chaharsoo (Source: the author)



Karbandi is a set of intersected diagonal arch beams so that the joints cover the arch (Bozorgmehri, 1992). One of the most important technical values of karbandi is to make large openings with the help of crossed beams and to create small arches that are easier to cover than arches. In karbandi, using the cracks and dowels, the incoming loads are lead in specific directions to reach the bearing bases. In this way, the thrust forces are controlled and in the same points, the stretched pillars are restrained. Karbandi is superior to most arches in terms of seismic stability during lateral and asymmetric movements (Aeinechi, 2013). Karbandi coatings are mostly used in public buildings, and the best examples of this technique can be seen in buildings of bazaars, like arcades and Chaharsoo. Karbandi coatings are divided into two main groups: a) Traditional karbandi (Shaghooli): The formwork of this type of karbandi is placed perpendicular to the ground in space. Therefore, they are mostly capable of carrying load and in the case that the karbandi is the main cover, such as chaharsoo and bazaar, shaghooli is definitely used (Bozorgmehri, 1992).

Non-traditional type karbandi: The second type, known as non-traditional Karbandi or Sarseft, features main ribs which are positioned along nonparallel surfaces. This type of positioning adversely affects structural functioning and strength, but is nevertheless used where certain shapes or ornamental forms are in the planning. In other words, two ribs do not fit in a standing position and are taller and more elongated than the ribs of Shaghooli. This type of karbandi is not of load bearing type and is used to create a dropped ceiling (Rafiei, 2008). Adornment covertures (Rasmibandi) which are implemented under the main covertures, fall into this group. Karbandies have worked effectively in most buildings. Also in buildings where windows and walls are not possible to use, such as markets and other public buildings, architects have built openings in the solar part or a central circle of the karbandi that provide proper light and ventilation which is called Roshandan. The highest example of karbandi is located at the intersection of Qeysarie with the western bazaar on the northwest corner of Mirza Kazem Sara that is a chaharsoo. The chaharsoo, which is considered a part of the complex, is located at the intersection of two malls, with a base of 8.5\*8.5 and a simple rasmibandi that ends in 12 embroidery and then the dome and the middle skylight (Ganjnameh, Vol.10) (Figure 14).

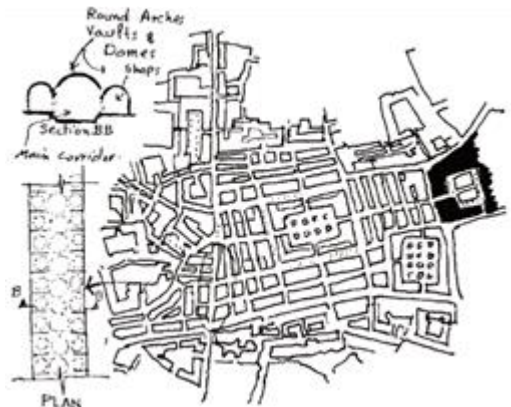


**Figure 14** - Karbandi and skylight on the chaharsoo in the northwest corner of Mirza Kazem Sara (Source: the author)

### Istanbul Grand Bazaar

Istanbul Grand Bazaar is one of the oldest and largest indoor markets in the world. This market is known in Turkey as Kapali Charshi, which means covered. After Constantinople (today's modern Istanbul) was conquered by the Ottomans, Sultan Muhammad II allowed its construction, which was dedicated to the textile trade (Poorjafar & et al 2012).

Grand Bazaar is composed of 61 streets and more than 4000 shops. It reminds us of Iranian historic bazaars. The Grand Bazaar has been on historic commercial center of the historic peninsula for over 500 years (Yusufi Far & Mohammadi, 2010) (Figure15)



**Figure 15-** Istanbul Grand Bazaar Plan (Poorjafar & et al 2012)

One of the things that makes this market attractive is the large windows that are placed on the ceiling through which the lighting of the bazaar is provided during the day (Figure 16).



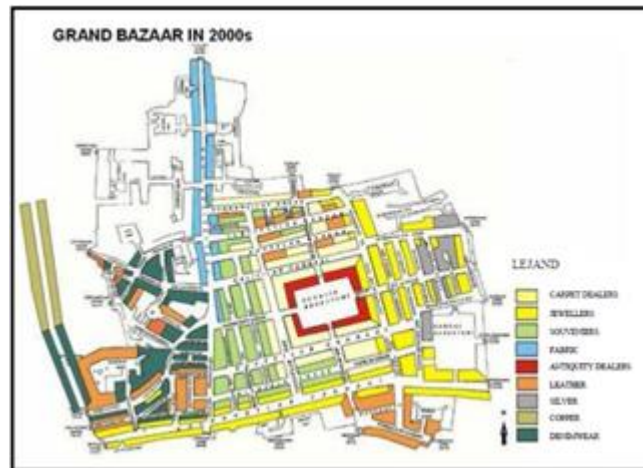
**Figure 16.** Lighting of Istanbul Grand Bazaar

The bazaar building can be accessed from four main gates:

- 1- Shahaflar kاپisi in the north,
- 2- Takkeçiler kاپisi in the south,
- 3- Kuyumcular kاپisi in the East,
- 4- Zenneciler kاپisi in the west.

The central part of Istanbul Grand Bazaar is a multi-axis market and the alleys connecting to the central area of the bazaar are linear markets (Wikipedia [30]) (Figure 17).

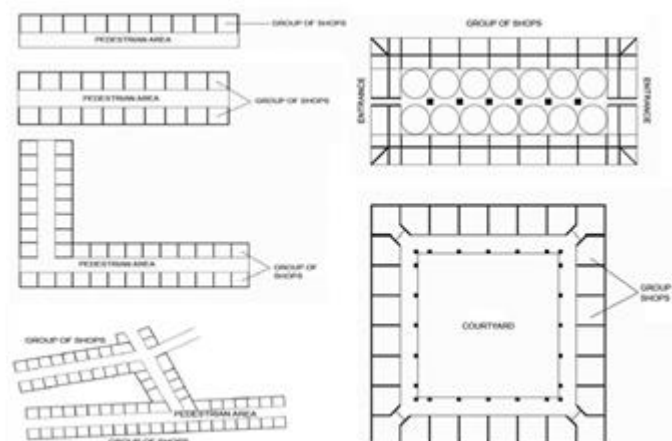




**Figure 17.** Grand Bazaar in Transformation Period (2000)

Due to the rainy and Mediterranean climate of the region, streets' roofs are arched. They are of sloping and gabled roof types. The height of the roofs is about 6 meters, which is reasonable considering the relative cold weather compared to Iran.

Lighting and ventilation of the bedestan were provided through vents in the dome, and in streets through windows in the roofs or walls of vaults (Figure 18).



**Figure 18-** An example of streets and chaharsoo consisting of rows on the left and an example of an enclosed space with a bedestan, two entrances or a courtyard on the right) (Source: Küçükkömürcü, 2005)

### CONCLUSION

In Hamedan Bazaar and Istanbul Grand Bazaar, the market space was illuminated without any artificial light. In Hamedan Bazaar, the lighting inside the bazaar is provided by holes (roshandan) that are installed in the middle of the roof or in the ceiling body. It also made the air of the bazaar flow. The Grand Bazaar was illuminated through the ceiling windows. Street and chaharsoo are the essential architectural elements of the both bazaars. It is not exactly known how the both bazaars have been developed, but they both are a combination of multi-axis and linear bazaars. A comparison of the two bazaars are presented in the table below:

**Table 1-** Comparison of Hamedan-Iran traditional bazaar and Istanbul-Turkey Grand Bazaar (Drawn by the author)

Bazaar name	Hamadan Bazaar-Iran	Istanbul Grand Bazaar- Turkey
Climate	Cold and mountainous	Rainy and Mediterranean
Ceiling	covered	Covered
The type of plan	A combination of linear and multiaxial plan	A combination of linear and multiaxial plan
Economic spaces	Street-depot-Palace-Entrance-Shop	Shops - Street- Palace- Yard
Social and cultural spaces	Mosque - school - tea house - barber shop - bathroom - restaurant- bakery	Mosque-cafe-restaurant-drinking place-kiosk-square-bathroom-porch
The main factors of formation	Street-Chaharsoo	Street-Chaharsoo
Usage and function	Carpet - leather - glass - gold - drapery	Carpet - leather - glass and mirror - copper - silver and gold - drapery
Lightening	Holes in the solar part of the karbandi (called as Roshandan)	Large windows on the dome roof
Materials	Brick and clay	Stone-brick and clay
The role of the mosque	Situated on the axis of Hamedan Grand Mosque	Situated on the axis of Hagia Sophia

Market is the highest and most scientific center for trade and business that man has ever invented. It is the core of every city. In the study of market architecture, what usually occupies the mind of every interested and analytical person, on the one hand, is the repetition and continuity in the form of the bazaar building and the common shapes used; e.g. nested corridors, circular shapes and forms, dome-shaped arches, skylights and openings, and on the other hand, the establishment of social relations inside bazaars and open spaces such as cells, squares, mosques, etc. Iranian architects have identified these components and used them in their works. Karbandi is one of the original and ancient patterns in Iranian architecture as well as the result of Iranian architects' knowledge of advanced geometry and mathematics. These forms, while responding appropriately to static and technical problems, also helped to create balance and protect the building from heat and cold outside. By doing so, they reduced the need for extra energy and made the most use of suitable renewable energy (wind, water, and water). The light inside the bazaar is provided by holes in the middle of the roof or in the ceiling body. In addition to lightening, the holes constantly purify and allow air flow in the bazaar. Now it is the time to consider bazaars architecture not only as ancient historic monuments but also as intellectual works in which the living soul is enduring. The Iran's nature and climate, customs, spirit and thoughts of the people are reflected in bazaar building. We need to have a conscious and wise understanding and use the traditional architectural experiences to design modern buildings such as shopping centers.

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