

The Historical Dimension and Physical Characteristics of Al-Shanasheel Heritage Buildings in the Old City of Basra (Iraq)

Lecturer Dr. Firas Sami Abdulaziz Alqatrani

Dept. of Geography and Geographical information systems
, College of Arts, University of Basra

Abstract:

Al-Shanasheel buildings are a unique and important cultural and social physical heritage landmark of the city of Basra. This style of construction has historical roots that simulate the ancient Iraqi civilization. However, they are now threatened to become extinct as a result of several reasons, including the immigration of their original owners because of the wars and economic problems witnessed by the city. Nevertheless, Basra still has residential neighborhoods that retain their original Al-Shanasheel that date back to the Ottoman age, as well as Al-Shanasheel houses that belong to subsequent eras, which are an extension of the architectural and decorative styles of the past eras. From this perspective, this study is conducted to shed light on this physical style that reflects the clear understanding of the habitants of the city and the parameters of their geographical environment in its various elements that are reflected on the physical form of Al-Shanasheel buildings, passing through etymology and the buildings' styles over various periods of the history of the city. The study relied on several resources and journals, perhaps the most important of which are the excavations, drawings, and the shapes included in them.

Keywords: Heritage buildings, old city, Historical Dimension, Al-Shanasheel, Basra.

البعد التاريخي والخصائص العمرانية لمباني الشناشيل التراثية في مدينة البصرة القديمة (العراق)
المدرس الدكتور فراس سامي عبد العزيز القطراني
قسم الجغرافيا ونظم المعلومات الجغرافية /كلية الآداب/جامعة البصرة

المخلص:

تعد مباني الشناشيل معلما تراثيا عمرانيا ثقافيا واجتماعيا مهما كانت تمتاز به مدينة البصرة، ولهذا النمط من البناء امتداد تاريخي يحاكي الحضارة العراقية القديمة الا انها باتت مهددة بالزوال نتيجة لاسباب عدة منها هجرة ملاكها الاصليين بسبب الحروب والمشاكل الاقتصادية فضلا عن الالهال المتعمد له من الحكومتين المركزية والمحلية فضلا عن الحروب والمشكلات الاقتصادية التي مرت بها المدينة، وعلى الرغم من ذلك فمازالت البصرة تضم محلات سكنية تحتفظ بشناشيلها الاصلية من العهد العثماني، فضلاً عن البيوت ذات الشناشيل التي تعود الى حقبة زمنية لاحقة والتي تعد امتداد للطرز العمرانية والزخرفية للحقب الزمنية السابقة. ومن هذا المنطلق جاءت هذه الدراسة لتسلط الضوء على هذا النمط العمراني الذي يعكس الفهم الواضح لسكان المدينة ولمعطيات ظروف بيئتهم الجغرافية بعناصرها المختلفة التي انعكست على الشكل العمراني لمباني وقد اعتمدت الدراسة الشناشيل مروراً بتحليل اصل التسمية وانماطها خلال فترات مختلفة من تاريخ المدينة على العديد من المصادر والدوريات، ولعل من أهمها تقارير التنقيبات والمخططات والأشكال التي ضمتها .

الكلمات المفتاحية: المباني التراثية، المدينة القديمة، البعد التاريخي، الشناشيل، البصرة .

Introduction

This research gets attention from the importance of heritage buildings, which raise questions to learn about the culture and the peoples that produced such creativity, taking place in the architectural, aesthetic, historic and social building values, in addition to the symbolic, spiritual and political values, as a heritage building is a symbol of cultural identity, and a building that lives more than one hundred years is called a heritage building (Hussam Al-Barambli et al, 2010-2011). Al-Shanasheel buildings are among the most important heritage landmarks in Iraq. Basra is the capital of Al-Shanasheel buildings in southern Iraq in particular and in all Iraq in general, due to the many Shanasheel buildings in it so that Basra became called “the city of Al-Shanasheel”. Due to the big damage sustained by Al-Shanasheel heritage building, light is being shed on studying such buildings in terms of their historic dimension, etymology, and physical characteristics, as a basic target that reflects the extent of physical and architectural consistency with the nature of the local environment that is characterized of high temperatures and long summers that extend to more than nine months. Based on the foregoing, the hypothesis of the study is worded as follows: Al-Shanasheel buildings are an attempt by a human being to understand the circumstances of his natural surrounding environment.

In order to achieve the objectives of the study, the researcher followed the analytic descriptive approach, as well as the adoption of the historic approach in tracing the historic depth of A-Shanasheel heritage buildings by deduction from ancient manuscripts, as well as the inspection of the archeological excavations related to such heritage landmark that is threatened to become extinct.

1. The General Geographical Characteristics of the City of Old Basra

The city of old Basra is located 4 km away from the western bank of the stream of Shatt Al-Arab, at the intersection of latitude $30^{\circ} 30' - 9''$ north and longitude $47^{\circ} 40' - 45''$ (Fig. 1). Old Basra is the city's center and the nucleus from which all physical activities and events have emerged. It currently contains an important cultural heritage that still represents the city's identity and beautiful past from its remaining heritage Shanasheel structures that expand to cover various areas and neighborhoods of big Sabkha, small Sabkha, Nadhran, Otbah Bin Ghazwan, and Al-Sumood.

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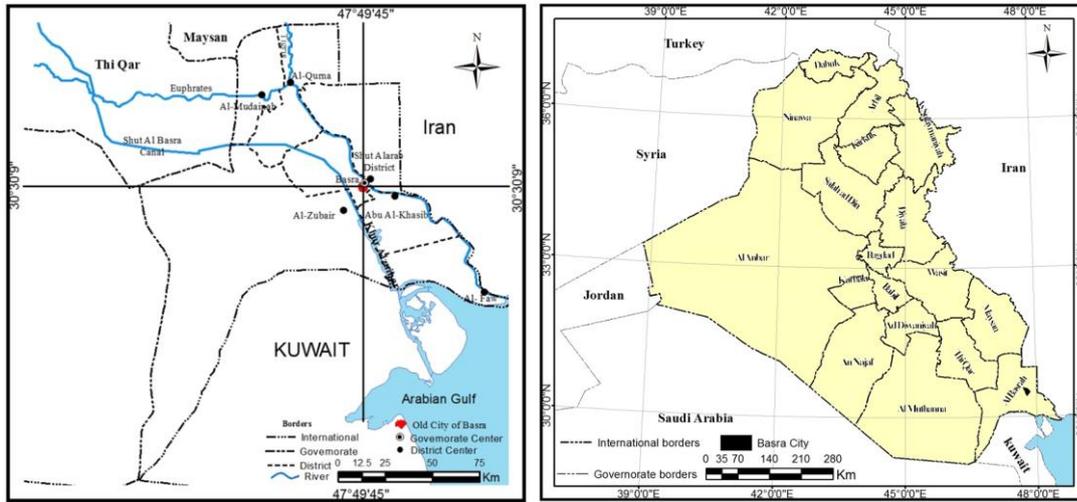


Fig. 1: The geographical location of the city of old Basra as in relation to the Republic of Iraq and Basra Governorate, 2018

Source: The work of the researcher depending on: Firas Sami Abdulaziz Alqatrani, Geographical Analysis of the Residential Function in Al Zubair City (Iraq), PhD Dissertation, University of Szczecin, Poland, p. 31.

The city of Basra was built on a ground that consists of mud sediments that were created as a result of sedimentation processes through the rivers of Tigris, Euphrates, and Shatt Al-Arab. It is a part of the southern sediment plain in Iraq. The impact of geological structure appears clearly on the nature of physical structures in the city of Basra, whether in its traditional heritage building in the past or its current building style; the city's land of soft components cannot withstand heavy weights. In spite of the nature of the building materials used by builders in the past in the construction of buildings, especially Al-Shanasheel heritage buildings that used bricks and wood in the construction of their second floor in order to reduce weight on the land on which they are erected, cracks have appeared, however, on the walls of some floors (Salah Hashim Sagir, 2005:47). With the development that took place in building materials and the number of floors, several remedies had to be taken to overcome the nature of such structures, as the studies have proven that the appropriate depth for the high loading arising from heavy physical units varies from 20 to 21 meters below the sea level (Raed Aziz Mahmoud, 1997:107).

The original level of the city's ground varies from 1 to 1.8 meters above the sea level. In relatively small areas alongside Ashar gondola in the city of old Basra, ground levels increase to 6 meters above the sea level (Abdul Hussein Al-Sarih, 1988: 197).

Groundwater is near to the ground level in a distance varying from 0.5 to 1.5 meters upon river shoulder areas. The salinity level of groundwater in the sediment plain area on which the city of Basra is located varies from 8000 to 64000 mmhos/cm. This is a problem that affected the nature of physical construction inside the city and the level of buildings' heights. This water is not good for any use, whether for human beings, animals, or even for the irrigation of agricultural crops, and it causes

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problems in discharging heavy water in addition to that it causes damage to the foundations of various civil buildings and facilities (Abdul-Ala Razoki Karbal, 1988:91-92).

The climate of the city of Basra is characterized of being hot and dry. The annual average temperature is 25.4⁰, and Temperature increases in summer months to 36.6⁰, whereas average temperature decreases in the winter to 15.2⁰ (The Iraqi Meteorology Organization: 2005). Summer is dry while rain falls in autumn, winter and spring with an annual average total of around 127 mm.

2. The emergence of the city of Basra

The city of Basra was founded in the time of Caliph Umar Ibn Al-Khattab, by the Arab Commander Utbah Ibn Ghazwan in 14 AH (635 AD) (May Hussein, 1989: 34). It was the first city built by the Arabs in Iraq during the Islamic era and the first State in the Islamic era established by the Arabs outside the borders of the Arabian Peninsula (Abdulrazzaq Hussein, 1973: 25). It is located near the present city of Zubair about 14 km from the current city of Basra (fig. 2).

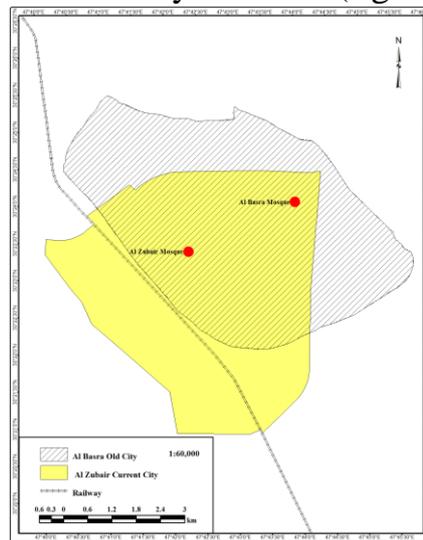


Fig. 2: Site of Basrah Old City to Al Zubair Current City

Source: Firas Sami Abdulaziz Alqatrani, Geographical Analysis of Residential Function in Al Zubair City (Iraq), Ph.D. dissertation, University of Szczecin, Poland, 2016, p 60.

The houses of the city in that period (14 AH) were still built of reeds, but a fire broke out in the city between the years 16 AH - 17 AH that devoured its houses, prompting the governor Abu Musa al - Ashari to rebuild the city with adobe⁽¹⁾ (Mohammed Al-Jarrah, 2009:16), the city's location provided all the construction materials of reed and papyrus due to its proximity to the marshes, as well as adobe, clay and bricks.

But because of the deterioration of health conditions in Basra and the spread of the plague and the cutting of water from the city, especially after the exposure the rivers of Al Maqal in the north and Abbala in the south to the landfill and neglect, which were providing the city with water and various uses.

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The majority of the groups that migrated from old Basra in search for water sources and agricultural land in the new Basra, These groups have settled in neighborhoods such as Al-Mishraq, Al-Haddadah, Al-Simmer, Al-Safat and others in the new Basra. the new city (the old Basra now) has witnessed the influx of economically active Christian groups that came from Iran⁽²⁾ and settled in Al-Simmer neighborhood at the beginning of the 17th century AD (Abdul-Razzaq Al-Sanea, 1985: 46), as well as the arrival of numbers of Jews⁽³⁾ who were engaged in economic activities related to trade, (Mohammed Al-Jarrah, 2009: 16). The Jews were distributed in Al-Basha, Al-Saif, Al-Belush, Al-Qattanah, Al-Hayderawiya, Al-Mishraq and Al-Qibla neighborhoods; all are important neighborhoods in the city and close to the market, which is the hub of commercial activity in Basra.

The city of Basra in that period was administratively divided into two townships / boroughs, the first is Al- Basra in its present location, which represents the old Basra, and Al-Ashar, which was only a hamlet then that comprised a number of palm groves and houses of peasants built of reeds and mud, and a few shops, as well as the shrine of Ali (peace be upon him), and a small berth for ships (**Fig. 3**).

The township of Basra comprised sixteen residential neighborhoods during the first decade of the 20th century. Nine were distributed on the southern bank of Al-Ashar Creek and seven on the north bank.

The traditional Shanasheel houses are concentrated on both sides of Al-Ashar creek (**Fig. 4**), also the creek turns towards the north-west. They are characterized by a magnificent building and a beautiful style, and were occupied by the high-class families and the notables of Basra.

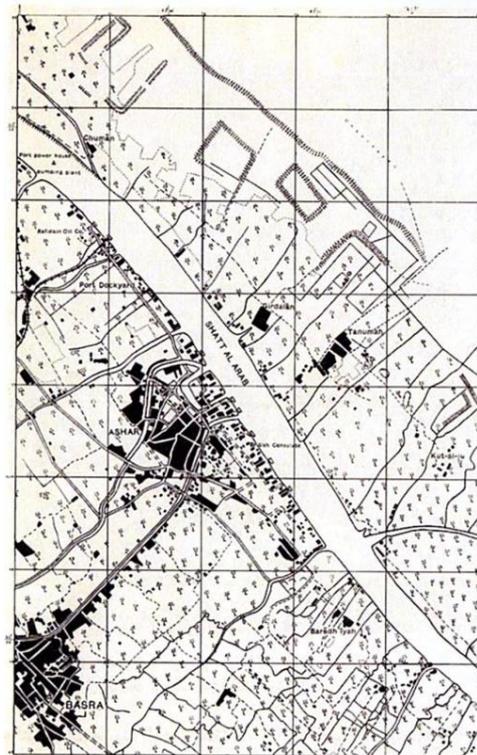


Fig. 3: Townships of Basra and Al-Ashar in 1940

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Source: United Nations Human Settlements Program in Iraq, Old Basra Conservation and Development Plan, Local Area Development Programme-EU, Copyright, UN-Habitat, 2018, p. 9

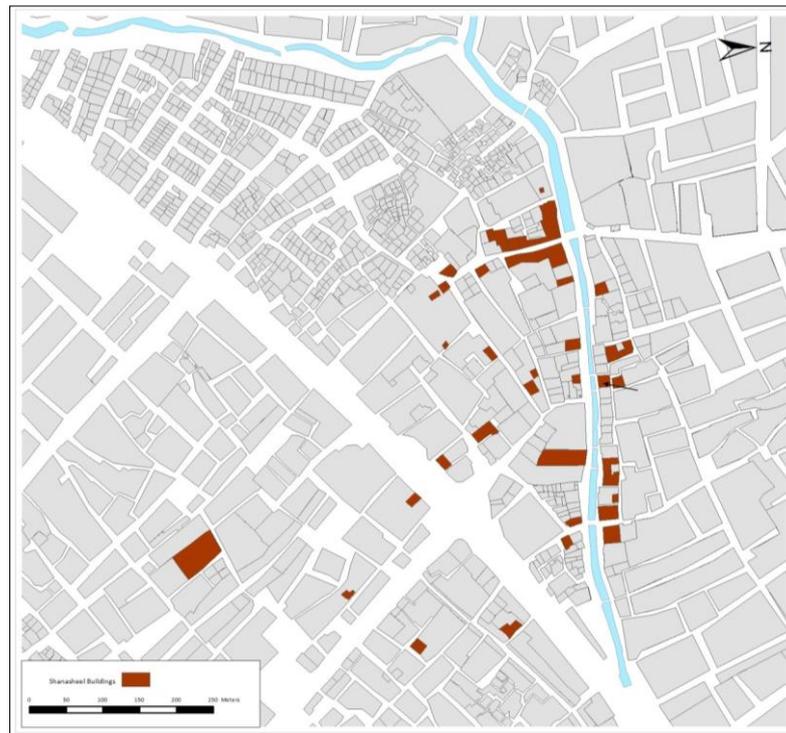


Fig. 4: The heritage Shanaseel Buildings in the Old city of Basra 2017

Source: The work by the researcher depend on the satellite image 2017 getting from the UN-Habitat Arbil Office (Iraq).

3. The appellation of Al-Shanasheel

Al-Shanasheel ⁽⁴⁾ is a word commonly used locally in the city of Basra and also in the rest of Iraqi cities to denote one of the elements of traditional architecture in Iraq and Arab countries. It represents the exterior facade of the building, which projects towards the street from the rooms upstairs for about 50-70 cm in a series of sliding windows decorated with tinted glass, mostly made of wood and iron with floral and geometrical ornamentations, adding artistic and aesthetic value to the building. These elements rest on a wooden base or wooden stands; while in newer or later built building ⁽⁵⁾, they stand on a jack arch structure of brick and iron beams that protrude onto the alley for the same distance as the Shanaseel (Fig.5).

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Fig. 5: Examples of Shanaseel base, one resting on wooden stands and the other on jack arch structure of iron and wood beams (newer) in the old city of Basra
Source: Photos captured in the old city of Basra by the researcher on 1/9/2017.

According to some views, the word "Shanasheel" is of Persian origin, composed of two syllables (shah) meaning "king" and (shin) meaning "sitting", thus it means "the sitting of the king" (Hamid Al-Darraji, 2013: 60), others believe that the word "Shanasheel" is Mongul that came to the city of Basra after the fall of the Abbasid Caliphate, and consists of two syllables (Shah), which means "King" and (Shin) means "the seat" and thus it means "the seat of the King" (Hamid Al-Darraji, 2013: 60).

Some scholars believe that the word "Shanasheel" is of Iraqi origin derived from the word "Samas-il", through the similarity between the word (Samas) and the word (Sanas). It is possible to say "šamaš-il" as "šanaš-il", both words have signs related to the sun's light and means of controlling it, which is one of the most important functions of the Shanaseel (Nabil Rahi, 2006:6-7), others believe that the name Shanaseel can be traced back to Greek origins, where it comes in the form (Sanasil) in modern Greek and was transferred to Turkish and then to the Iraqi dialect (Nabil Rahi, 2006: 6-7).

Through the extensive study of books and references that addressed the subject, the researcher believes that it is likely that the origin of the name Shanaseel stems from the ancient Iraqi civilizations, as many of its vocabulary terms have been conveyed to other languages within Iraq's regional surroundings. The issue of the transfer of terms from one language to another, especially from ancient languages to living languages is one of the main features for intellectual, cultural and heritage exchanges among the various nations. Many of the ancient Iraqi Sumerian and Akadian vocabulary terms are currently used within the Iraqi dialect and have no basis in the Arabic language. Some names and vocabulary terms that have been transferred to foreign languages, such as Persian and Greek have ancient Iraqi roots, and perhaps the word "(Sanasil)" in modern Greek can be listed within this category, considering that it does not differ from the afore mentioned word "šanaš-il".

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Many factors have contributed to the emergence of such buildings of great heritage value in the city of Basra and on Al-Ashar River in particular, summarized as follows (Abbas Dawood, 1988: 372):

1. The city of Basra is a port and a storage city for imported wood and timber, from which it is exported to other destinations.
2. The availability of professional carpenters from the Indians, Chinese and others who had taken Basra as a place for their livelihood and work and some of them had even settled there on a permanent basis.
3. Basra territory has soft clay soil, which makes it difficult to build a two-story house. The means for reinforcing foundations such as steel and concrete were not available, and because the wood was light it could be used for the upper floor without affecting the lower floor.
4. The abundance of cheap labor coupled with the richness of Basri citizens and their tastes encouraged the increased building of Shanasheel, hence Basra was named the city of Shanasheel.

4. The historical perspective of the Shanasheel buildings.

The search for the beginnings of the use of each architectural element in the formation of buildings may be surrounded by some ambiguity, so to embark upon the study of the first roots for the emergence of any given element, is much related to the available information through what was revealed by excavations in various archaeological sites in Iraq or indicated in some historical events and narratives of different eras.

Historical sources indicate that the beginnings of the architectural element of Shanasheel in Iraq goes back to long periods of time, as indicated by some of the archaeological evidences discovered in the northern palace of the city of Nimrud, namely a carved ivory sculpture dating back to 700 BC , depicting a woman at a window looking outward. The lower part of the window is covered with a shield made up of architectural elements in the form of columns (Fig. 6), the window sill is set within a recessed frame of different levels. It is most likely that these images were inspired by ancient architecture and the window is on the upper floor. For social considerations, windows were covered with different types of screens (Stone Lloyd, 1992-1993: 200; Stone Lloyd, 1980: 256; Nabil Rahi, 2006: 10), to become in the current architectural form of Shanasheel.

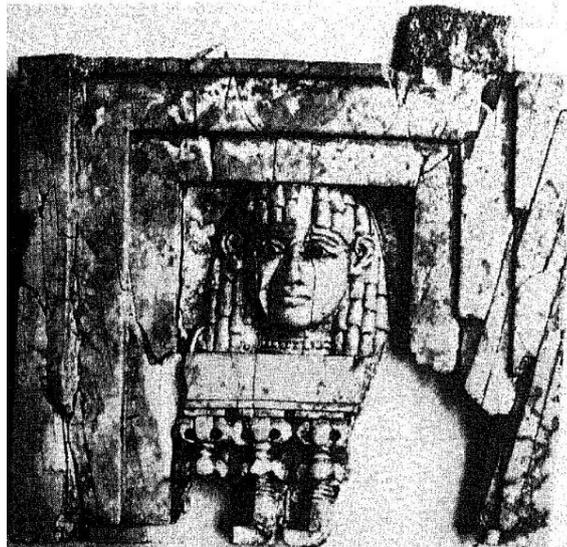


Fig. 6: A carved ivory sculpture depicting a woman in a window dating back to 700 BC

Source: Stone Lloyd, *The Archaeology of Mesopotamia: From the Old Stone Age to the Persian Conquest*, translated by Mohammed Talb, revised edition, first edition, Damascus Publishing House, 1992-1993, p. 200.

The word "Rūshan " is mentioned in many historical narratives and incidents of the Umayyad and Abbasid caliphate (Abu Abdullah Yaqout al-Hamawi, without date: 426; Abu Jaafar al-Tabari, 1407 AH: 406-566; Abu al-Fadl Muhammad al-Hamadani, 1985: 78; Abu al-Faraj Ibn al-Jawzi, 1958:149; Abu Al-Faraj Al-Asfahani, without date: 92; Abu al-Fadl Muhammad al-Hamadani, 1958:78; Muhammad al-Thahabi, 1984:214), according to some evidence in the Islamic narratives, Shanashil was also associated with other terms found in the speeches of Imam Ali (PBUH) to the people of Basra in the first half of the first century AH.

The use of this architectural element continued after the Abbasid period in Iraq and other Arab countries, as well as during the era of the Ottoman rule of Iraq (1534-1917). Some evidence of this period is still present in the mansion of the Ottoman ruler and the mansion of Sheikh Khazaal (the Palace of Culture nowadays). It is noteworthy that the last of the Shanasheel buildings built in the city of Basra was in the middle of the last century, specifically in 1945 (Ihsan al-Samarrai, 2002:51; Stone Lloyd, 1980: 256).

5. The main components of the housing unit

The heritage Al-Shanasheel buildings are one of the architectural arts mastered by builders in the city of Basra. They are characterized by architectural elements that have developed successful solutions to the hot and humid environment problems in the city of Basra. These architectural elements can be identified as follows:

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1. The inner courtyard:

The courtyard, locally called "Al-Hosh" in Iraq, is an uncovered area deducted from the mass of the building and is usually square in shape. It is the main architectural element of Al-Shanasheel houses. All the other units and components of the dwelling are structured around it and it is the only part of the house that is open towards the sky. It may be enclosed (the common pattern in the old city of Basra) when surrounded by units from its four sides or open when surrounded by units from three sides only. It is often square in shape and sometimes rectangular, its area is directly proportional to the area of the housing unit, the bigger the housing unit, the bigger the courtyard area is also, and its floor is somewhat lower than the surrounding sections to prevent the flow of falling rainwater into the adjacent rooms. Its floor is usually paved with square bricks, known locally as "Farshi bricks" ⁽⁶⁾. In a few cases, some of the wealthy people in the old city of Basra tend to pave their courtyards with tiles imported mostly from Pakistan, most of which contain some beautiful geometric patterns such as in the Greek consulate building (Fig. 7).



Fig. 7: An open courtyard surrounded by units on three sides with a floor paved with Pakistani tiles in the Greek Consulate building (currently the Basra Provincial Antiquities Inspectorate Building).

Source: Photo captured by the researcher in Basra Provincial Antiquities Inspectorate Building on 26-07-2017.

The inner courtyard has been used in the architecture of religious and residential buildings since the beginning of the historic civilizations of Mesopotamia as well as in the Egyptian, Greek, Roman and Persian architecture (Sayed Ali, 2007: 441).

The courtyard is one of the important elements of architecture that addressed the problems of hot environment successfully. Its concept is based on pulling the cool air in the evening from above. Then the hot air rises up and the temperature drops. In the morning, the courtyard remains cool and pleasant until noon when the sun rays reach the ground. The air rises up and convection currents keep the building cool for a long time in the afternoon. When the evening comes, the warm air gradually begins to rise up and is replaced by cool night air. Cool air gathers in layers and flows through the rooms overlooking the courtyard as shown in fig. 8. Houses that are structured around an inner courtyard enjoy the presence of an internal air draft that flows out of the house from the various outlets overlooking the street or the surrounding streets and

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not the opposite, which gives the house a higher proportion of air purity free from dust and other pollutants found in the air outside, this in itself helps to circulate the air in the surrounding alleys and streets and refreshes it constantly and thus the courtyards function indirectly as a lung or vent to the streets and alleys providing them with cool fresh air (Mohammed Abdul Sattar Othman, 2000: 416-421), as well as reducing noise pollution. Furthermore, the inner courtyard provides social functions, as it plays a significant role in achieving complete isolation from the surrounding houses or streets, allowing the family to practice their domestic activities in complete privacy (Waleed K. Al-Hemaidi, 2001: 179), as well as providing children with a safe place to play and be with their friends away from the hustle and bustle of streets and narrow alleyways.

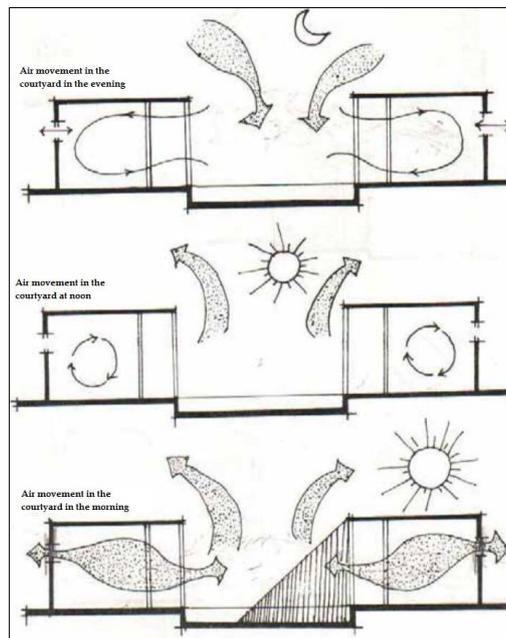


Fig. 8: Air movement in the courtyard during the day

Source: Shafiq Al-Awadhi and Mohammed Abdullah Siraj, *Climate and Warm areas Architecture*, World of Books, Cairo, Egypt, 1989, p. 159.

2. The Doorway

The doorway is one of the most important architectural elements of Al-Shanasheel building. It is the main link between the exterior and interior, which is connected from the outside to one or more thresholds and from the inside to the corridor that connects the entrance of the house with the inner courtyard. The size of the doorway is usually proportional to the size of the house, and sometimes the luxuriousness of the interior is expressed through the door, especially in terms of size, type of wood and the ornamentations it contains.

The doorway in A-Shanasheel buildings consists of a frame in the entrance to the house that holds the door, this frame consists of a number of wooden panels, the upper panel is called the "lintel", the side panels are called "jambs" placed on either sides of the doorway, and sometimes there is a lower wooden panel called "threshold", which is either of wood or another building materials that is water-proof

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such as bricks. The purpose of this is to seal the door tightly to moderate the effect of natural elements on the residents of the house. The door typically consists of two movable sections (leaves).

Most of the doors were made of teak (Saj in Arabic) wood, the best kind of wood. Some were made of jawi wood, decorated with geometric and floral motifs and are always enclosed in arches (fig. 9), with a revolving ring used as a door knocker (resembling the function of doorbell now). Door knockers come in different shapes, such as the palm of a small hand which is the predominant pattern in the old city of Basra and others are in the shape of a flying bird spreading its wings (fig. 10)



Fig. 9: Arched doors of Shanaseel buildings with floral and geometric motifs

Source: photos captured by the researcher for the doors of Basra Provincial Antiquities Inspectorate and Al-Manasir mansion in the old city of Basra on 26-07-2017.



Fig. 10: Examples of door knockers in some of the Shanaseel buildings of the old city of Basra

Source: photos captured by the researcher on 26-07-2017.

3. Winding doorway /passageway/corridor

It is a corridor that is often winding or zigzag shaped leading to the courtyard (sahn) and often has a door that opens to the main hall (Iwan or reception room). The main objective of the winding passageway is to preserve the privacy of the household. In such a case, the outer door has no direct access to the rooms. A person entering the house is not able to see the inside of the house until entering the hall.

The length of the corridor is 1-3 meters, paved with farshi bricks, the ceiling is jack arched in a simple style or with some decorations that resulted from the various

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methods adopted for the laying and bonding of bricks. Some houses have arched or vaulted corridors with geometric decoration shaped as a dome (Fig. 11).

4. The Iwan⁽⁷⁾:

It is a room that is opened onto the courtyard. The location of the Iwan may be close to the doorway or the corridor, because in such case, it provides privacy to the household as in Sheikh Khazaal mansion or it may be located at some distance from the corridor. In either case, it is adjacent to one or two rooms. Because the Iwan represents a place to sit (reception or guest hall), the floor is slightly elevated by one step from the floor of the courtyard. Inside the Iwan, sometimes there is a furnished bench for sitting and recreation. The Iwan is often located towards the south where it is not exposed to direct sunlight, or in the west so as to receive Western winds (Haider Kamouneh, 1984-1985: 73)



Fig. 11: Winding doorway of the Sheikh Khazaal mansion, in which the vaulted ceiling appears

Source: Photo captured by researcher on 26-7-2017

The ceiling of the Iwan stands on three walls built of bricks and gypsum and sometimes supported by wooden pillars (mostly two columns), as is the case in Sheikh Khazaal's mansion. In old Basra, the Iwan ceiling is usually built of gypsum and bricks in the shape of an arch with inscriptions and Arabesque motifs; sometimes the ceiling is decorated with jawi wood and contains geometric or floral motifs and decorations. The walls of the Iwan are built of bricks and gypsum and often contain arches, engravings and geometric motifs (Fig. 12). The area of the Iwan differs in the houses of the old city of Basra, depending on the size of the dwelling. In most cases, the area of the Iwan is 6–15 square meters, while the height of the ceiling is not less than an average of three meters. The floor of the Iwan, similar to the floor of the other parts of the dwelling, is paved with Farshi bricks.

5. Rooms:

Rooms are essential dwelling components, located around the courtyard, some directly overlooking it from two or more sides, and some of them having a gallery or porch that opens onto the courtyard. In the old city of Basra, the number of rooms

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and their sizes varies according to the different sizes of heritage buildings and the economic level of its owners.



Fig. 12: The Iwan in one of the buildings in the old city of Basra (Sheikh Khazaal Mansion)

Source: photo captured by the researcher on 26-07-2016

Rooms are characterized by their high ceilings ranging from 4 - 4.25 meters in height, often the ceiling is higher on the top floor with up to 4.5 meters, this also includes the galleries and the kitchen. The ceilings in the old Shanasheel buildings are built of jandal wood, which is often imported from abroad and arranged in parallel at equal distances on both sides of the walls of the rooms. After that, two reed mats (Bariyah in Arabic) are placed in reverse and a plastic or nylon cover is placed, followed by the placement of fine soil sprayed with water, then sprinkled with a mixture of hay and red clay with a thickness of (2 - 3 inches) (Fig. 13), taking into account rainwater drainage by means of tin gutters made for this purpose, or sloping into the courtyard of the house and into the cesspool, or discharged through sewers outside the house to the low ground in the adjacent alleys (Ezzeddine Al—Sanduk, 1986-1987: 186-191; Azhar Jaafar, 26-9-2017), to prevent their accumulation in one place to avoid the adverse impacts on the ceiling.



Gallery ceiling

Room ceiling

Fig. 13: Jandal wood ceiling in one of the Shanasheel buildings of the old city of Basra, located behind the governor's mansion

Source: photo of an old Shanasheel building captured by the researcher on 05-08-2017.

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Other roofs are built of jawi wood and sometimes some families of good economic standard use perfumed teak wood that is also brought from outside Iraq, where they are arranged in parallel over the walls and then lined with contrasting panels of jawi or jam wood, followed by the subsequent above mentioned construction stages (Fig. 14).



Fig. 14: A decayed roof showing the structural composition of the Jawi wooden ceiling of a Shanaseel building

Source: Photo captured by the researcher on 23-07-2017.

Ceilings are usually covered with a false ceiling of jawi wood, which is often colored and has geometric patterns (Fig. 15). The walls of the rooms are built of bricks and gypsum on the foundations of the house, which is built with lime mortar, ash and bricks, until the building rises for about one meter above the ground in order to avoid the moisture that may leak into the walls from the neighboring houses. After completion of the foundations, the lime and ash are replaced with gypsum, so bricks and gypsum are used for the construction of the walls until the completion of the construction of the house; walls are usually wide (80-120 cm). Previously, they were built in the form of double brick cavity walls consisting of two parallel layers of masonry brick, with a cavity in between filled with a layer of broken bricks or occasionally soil in order to achieve thermal insulation due to the high temperatures prevailing in the area for almost nine months per year. In later periods, especially by the end of the 1920s and the beginning of the 1930s, the aforementioned concept of building was abandoned, and replaced with the construction of solid brick and gypsum walls with almost the same width, without leaving a cavity between the two walls. This pattern continued in practice until the construction of the last wall of the last Shanaseel building built in the old city of Basra in the mid-1940s.

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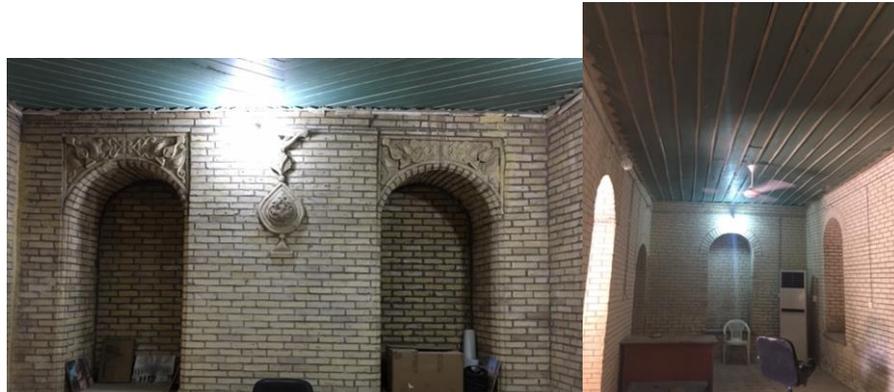


Fig. 15: A false ceiling covered with jawi wood in one of the Shanasheel buildings of the old city of Basra

Source: photo of the Greek consulate building (currently Basra Provincial Antiquities Inspectorate) captured by the researcher on 20-5-2017

The guest room is the most important room on the ground floor, which has a wooden façade consisting of several wooden movable windows made of wood and tinted glass. The guest room is often one or two steps higher than the floor of the courtyard or the gallery overlooking it. In some of the Shanasheel buildings of the influential families in the old city of Basra, the study ranks second in terms of importance after the guest room. It is characterized by engravings and geometric and floral motifs. This is evident in the study room of Sheikh Khazaal mansion (the Palace of Culture), where we find outstanding architectural elements in this room in all its details starting from the 8- meter high ceiling, as well as the unique geometric engravings that adorn it along with the original Arabesque inscriptions found in the niches or recesses in its walls, which stand out in the form of two orthogonal frames separated by a distance of slightly more than one meter (Fig. 16).



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Fig. 16: The study room in the mansion of Sheikh Khazal Al-Kaabi in the old city of Basra

Source: Photo captured by the researcher on 06-09-2017

6. Kitchen:

The kitchen is one of the facilities of the house where food is cooked. This facility is located in one of the house corners and usually built in a place far from the source of wind in order to prevent the smoke from rising to the other facilities and residential components of the house.

The kitchen is not different from the other rooms in its structural composition in terms of the walls or the ceiling. In some heritage houses there is a board or bench in the kitchen to put pots and cooking utensils, while in other heritage houses there is no kitchen at all as is the case in Sheikh Khazaal's mansion because it has an adjoining annex building allocated to the residence of servants and for cooking.

In some heritage houses inhabited by rich and prominent people, there is a special place in the kitchen known as "Qahwa Jaghi" (Azhar Jaafar, 26-9-2017), a Turkish term called on the place where the original Arabic coffee is prepared, as in the mansion of Basha'ayan in the old area of Basra, where its Qahwa Jaghi has walls and ceiling adorned with very distinctive Arabesque motifs that still exist to this day.

7. Stairs/ staircase

The stairs is the device used to travel from the bottom to the top and is one of the basic architectural components in the construction of the heritage buildings in the old city of Basra. It seems that the concept of stairs emerged when the ancient Iraqi architect realized its importance after the construction of terraces, in which the top could not be accessed only by the establishment of steps or stairs. Reference is made to stairs in the Akadian language by the term (Simillu) to indicate the stairs (Ari Al-Minmi, 2005: 109)

Bricks and gypsum are mostly used in the construction of the stairs of Shanasheel buildings in the old city of Basra, in addition to wood, which is usually used to adorn the edges of the staircase or sometimes for casing. Three types of stairs are common in the heritage Shanasheel buildings. The most common of which is the semi-circular staircase which has a half-turn (not a full 360 degrees turn) and is always used for connecting two floors or the upper floor with the roof (Fig. 17).



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Fig. 17: A semi-circular staircase in one of the Shanasheel buildings of the old city of Basra

Source: photos of the staircase in the Basra Provincial Antiquities Inspectorate building, the former Greek consulate and the building of the Palace of Culture, former Sheikh Khazaal mansion, captured by the researcher on 6 September 2017.

The second type is the straight staircase, which is one-way and connects two floors or goes from the ground to the surface of a terrace and does not have a landing (Fig. 18). It is used on a small scale.

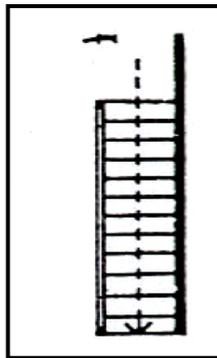


Fig. 18: a straight one-way staircase.

Source: Ari Khalil Kamel Al-Minmi, *The Most Significant Elements of Architecture in Old Buildings of Iraq*, Master Thesis, University of Mosul, 2005, p. 195

A third type of stairs in the heritage buildings of Basra is the semi-straight staircase, where the landing is in the middle, connecting the two sides of the stairs (Fig. 19) and this is always used to connect two floors or the ground floor with the roof. This type was found in the mansion of Basha'ayan.

All these stair models are of distant historical roots dating back to the ancient Iraqi architecture (Ari Al-Minmi, 2005: 109).

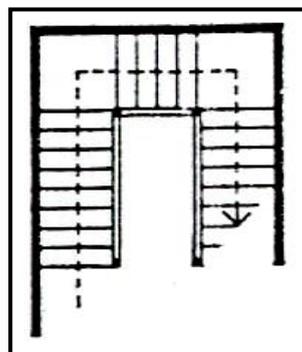


Fig. 19: semi –straight staircase

Source: Ari Khalil Kamel Al-Minmi, *The Most Significant Elements of Architecture in Old Buildings of Iraq*, Master Thesis, University of Mosul, 2005, p. 195

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8. Sanitation Facilities

A. Bathroom

Most of the old houses in the old city of Basra did not comprise a bathroom because they were dependent on the public baths usually located in the markets, however, the traditional Shanasheel houses of the rich and wealthy had their own bathrooms and thus dispensed with the need for public baths.

Traditionally, bathrooms in the heritage buildings in the old city of Basra consist of two interconnected rooms, the first being used as a dressing room and the second is a shower room. In some of the buildings, the first room is connected to the bedroom through a vaulted corridor with a ceiling of varying height starting from two meters at the entrance to the bedroom (Fig.20 A)⁽⁸⁾ and then decreases in height to almost a meter and a half (Fig. 20 B) at the dressing room as in the Greek Consulate building where the vaulted corridor connects to the room at the bottom of the staircase leading to the top floor, which is about four meters long. The ceiling of the bathroom is a jack arched dome-shaped structure decorated with inscriptions and motifs and the drying and dressing section is located behind the bathroom wall (Fig. 20 C).

The bathroom does not have a water faucet as the water is usually heated in the kitchen.

B. Toilet / latrine

It occupies one of the corners of the house and has several names in Arabic, including “Beit Al-Khalaa” and “Beit Al-Taharah” as called by the people of Basra. In Iraq it is also called “Al-Mutawadha’a or Al-Musterah” (Abu Al-Faraj Al-Asfahani, without date: 326)



Fig. 20: The dressing room connected to the bathroom and the vaulted corridor that connects the bedroom to the dressing room of the Basra Provincial Antiquities Inspectorate (formerly the Greek consulate).

Source: Photo captured at the Greek Consulate building by the researcher on 6 September 2017.

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9. Galleries and porches: in progress

Porches are usually erected on the introduction of rectangular halls (Iwans) and stones in the ground floor, and in front of rooms in the upper floor in the form of a corridor of exposed sides, with a ceiling knotted on the top with a collection of knots. Porches used to face a single side, as it is the case in the building of the Greek Consulate (fig. 21), or face two sides or surround all the sides of the house, as it is the case in the house of Sheikh Khazal Al-Kaabi (The Culture Palace, currently) (fig. 22). Porches were used for the first time in the house of governance in Kufa in the reign of first Islam. Porches appeared in the houses and palaces of Abbasids in Samarra, the Abbasid Palace in Baghdad, and in mosques. Porches are used in order to provide shaded areas surrounding the house to reduce the heat of sunshine in the summer, to facilitate walking and movement inside the house, and to provide protection against rains in winter (Al-Faraj, without a date:).

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Fig. 21: Gallery of the Greek consulate building in the old city of Basra

Source: Photo captured at the Greek Consulate building by the researcher on 6 September 2017.



Fig. 22: Models of galleries in the house of Sheikh Khazil and the house of Mr. Abdul Salam Manasir in the old city of Basra

Source: Photo captured by the researcher on 06-09-2017

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10. Columns

The wooden columns are one of the main elements that characterize the Shanasheel buildings of the old city of Basra. It is called locally “Al-Dalag”, and is usually brought from outside Iraq, specifically from East Asia. The wooden columns differ in their numbers, lengths and the nature of the inscriptions which distinguish their capitals from one building to another according to the owner’s economic standard and the size of the building. It is taken into consideration in the construction of columns to place an underground stone mold with a diameter that enables to insert the bottom part of the column to an appropriate distance in order to protect the lower part of the column from corrosion and provide strength and rigidity. These stone molds are usually brought from northern Iraq. This method has proved its success in maintaining the bottom (underground) part of the column from corrosion for long periods extending to more than 150 years (Azhar Jaafar, 26-9-2017).

The most important feature of the wooden columns in the traditional Shanasheel buildings of old Basra is the capitals that are characterized by their floral and geometric ornamentations. The Ottoman-style geometric ornamentation is commonly used in the Shanasheel buildings of old Basra. The capitals were decorated with protruding and sunken triangular and rhombic shaped geometric motifs of smooth surfaces (Fig.23).

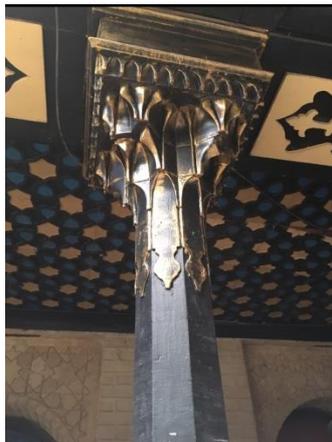


Fig. 23: a wooden column in a heritage Shanasheel building in the old city of Basra
Source: Photo of Sheikh Khazaal Mansion, currently Palace of Culture, captured by the researcher on 6 September 2017.

11. Shanasheel:

The Shanasheel represent the front façade of the wooden windows that protrude from one or several rooms on the top floor, which is often the biggest and most beautiful room in the house. The old city of Basra has been familiar with Shanasheel as an important architectural element in the design of houses due to the hot and humid climatic conditions witnessed by the city, especially in the long summers, which lead to the occurrence of unhealthy stifling atmosphere inside the house, where the presence of Shanashil helps to cool and refresh the air, through its wide windows that contribute to accelerating the movement of air drafts to ensure the air exchange. Since the Arab-Islamic architect until very recently did not favor the opening of large

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windows on the ground floors of the building, as well as not to have them opened in the upper floors also if this will lead to overlooking on the neighbors. Therefore, the concept of Al-Shanasheel also came to reflect the customs and traditions of the conservative society that prevailed at the time, windows were covered with a layer of lattice wood, locally called "Qeem", which enables the occupants to have a good view of the street without being seen, in addition to its function in protecting the windows from being broken, the windows are usually decorated with beautiful and carefully made wooden motifs and ornamentations, engraved, carved or embossed (Hamid Al-Darraji , 2013:60). The building of Shanasheel aims at two objectives, the first is structural, which is to reduce the weight placed on the walls in the ground floor and the second is aesthetic (Hamid Al-Darraji, 2013:61) Builders have excelled in this artistic architectural work of the Shanasheel, the accuracy of the work and cooperation between the builder and the carpenter in the construction of this architectural work is quite evident, which gave the work a special aesthetic value. Despite the multiple types of windows and their diversity, the prevailing pattern is the vertical sliding window, which is opened and closed by lifting and lowering, on both sides iron joints locally called "Nirmada" were used to prevent their fall when lifted.

By employing the element of Shanasheel, the Iraqi architect through this smart treatment managed to increase the space of the house on the second floor, adding a beautiful aesthetic element intended to provide full privacy to the house occupants and at the same time connect the interior with the exterior by being able to see the outside without losing the factor of privacy, thus giving a sense of security.

Teak is the most widely used type of wood in the making of old Basra's Shanasheel for its ability to resist the high humidity that characterize the climate of Basra, other types of wood are also used in Shanasheel such as apple, sandal and nabk wood. it should be noted that the Shanasheel of Basra were characterized by their fragrance, as their woods were coated with a distinctive rose fragrance, that became familiar to the residents and visitors of old Basra.

Shanasheel differ in their external form in old Basra heritage houses from one dwelling to another. This may be due to the construction period or the size of the house, the economic capacity of its owners, the general design of the house and the width of the street, accordingly, we can distinguish five types according to the names commonly used by builders and carpenters as follows:

1. The Enclosed Shanasheel

This type of design is common in most of the houses of Basra as well as the prevailing pattern in most of Shanasheel heritage houses in Iraq in general, it is popular among the people and preferred by carpenters because it is easy to make

(Fig. 24).

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Fig. 24: An Enclosed Shanasheel house in one of the old neighborhoods of Basra
Source: photo captured by the researcher on 29-10-2016

2. Balcony/Veranda Shanasheel

This type of Shanasheel is known by this name because there is a balcony in front of Al-Shanasheel extending along its length and overlooking the alley (Fig. 25).



Fig.

25: examples of Balcony Shanasheel houses in the old city of Basra
Source: photo captured by the researcher on 22-12-2017

3. Zigzag /serrated (saw-shaped) Shanasheel

The Basri architect is very careful to maintain the layout of the alley when using the Shanasheel. In view of the winding roads and alleys, the ground floor of the house is constrained by the alignment of the street. On the upper floor, the architect sometimes tends to make the building protrude towards the outside, cantilevered on wooden beams. This projection allows correcting the shapes of the rooms on the upper floors as an architectural treatment designed to make the Shanasheel cascade gradually but connectedly in a manner that resembles a ladder, which is known locally as the saw shaped Shanasheel as it looks like the teeth of the saw (fig. 26).

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Fig. 26: Zigzag /serrated (saw-shaped) Shanasheel in some of the alleys of old Basra
Source: photo captured by the researcher on 22-12-2017

4. Awning / Canopy Shanasheel

In Basrah, there is a pattern of Shanasheel, which is locally called Abu Al-Shamsiya (awning shanasheel). It is topped by a wooden awning that protects the motifs and wood carvings from the impacts of sun rays during the hot and long summers and also from the rainfall during the winter season (Fig. 27).



Fig. 27: Awning Shanasheel House (Abu al-Shamsiya) in the ancient city of Basra, where wooden awnings in the upper part of Al-Shanasheel are used to protect the fine wood decorations from sun rays in summer and from the winter rain

Source: Amer Badr Hassoun, Book of Iraq, 1200 photographs, special edition of the Department of Cultural Relations in the Ministry of Culture, Baghdad 2011, p. 182.

-The photo was captured by the researcher on 5-7-2017.

5. Mixed Shanasheel

This type of Shanasheel combines the two design patterns of the enclosed and balcony Shanasheel, along with the awning /canopy type sometimes. The most common of these is the Shanasheel with a middle balcony that is usually semi-circular in shape (Fig. 28).

Through the space they occupied in the old city of Basra, Shanasheel houses reflected the spiritual connection with their inhabitants of the prominent bourgeois and social classes, who tried, through their own architectural view, to express an illusion that was difficult to define as a high emotional feature. There are no connections or similarities with the Baghdadi Shanasheel either in the general perspective or in terms of composition, architectural building style and the exterior form that was common in Adhamiya and Baghdad's old neighborhoods; the contrast is made even more evident in the presence of basements that are not familiar in Shanasheel houses in the city of

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Basra, or the presence of the “Takhtbosh” (an outdoor ground floor area used for sitting) and the use of iron bars heavily in Baghdad (Ihsan al-Samarrai, 2013: 212).



Fig. 28: examples of Mixed type Shanasheel houses, which combine the enclosed and balcony Shanasheel, as well as the awning /canopy in some neighborhoods of the old city of Basra

Source: photo captured by the researcher on 22-12-2017

Notes:

1. Adobe: bricks made of mud, sun-dried and not kiln-fired.
2. In the city of Basra, there were three groups of Christians: the Jacobites, the Nestorians, the Christians of the order of St. John, and also the house of the Italian Carmelites mission and the Augustinians or Austin Friars. St. John's Christians were many and lived in Basra and the surrounding villages. In the old days they lived near the Jordan River and then migrated to Persia and the Arab countries and came to Basra (**Jean Tavernier, without date: 73-74**).
3. In this regard, Buckingham recalled when he visited Basra in 1816 that there are 100 Jewish families , 50 Armenian families, 20 Christian families in the city of Basra, indicating the tolerance and broadmindedness of the people of the city (**Buckingham, 1967: 136**).
4. There are many names for this architectural element; in Iraq, especially in the time of the Abbasid Caliphate, it was called Rūshan, which is a Persian word (meaning the alcove or balcony), this term is also commonly used so far in western Arabian Peninsula as in the old city of Najd, it is also called the Mashrabiya or Mashrafiya in Egypt, Libya and many other Arab countries (Reem al Haddad, 2013: 37; Suleiman Hachani, 2013: 54), There are other names for this architectural element that have been used in Iraq, such as Rūshan, especially in the time of the Abbasid Caliphate, Rūshan has also been used in western Arabian Peninsula, as in the old city of Jeddah, it is also called Mashrabiya or Shurfa in Egypt , Arabian Peninsula and other Arab countries.
5. Newer buildings are those that were built at the end of the 1930s and until the end of the 1940s (Sherif Youssef, 1982: 585; Rana Al-Yaseer, 2010: 175; Raya Abdul Razzaq, 1984: 167;).

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6. Farshi bricks: These are brick made of sun dried clay that are distinguished by their firmness. They are yellow and square shaped. Their dimension varies between 20 by 20 cm and 30 by 30 cm. (Firas Alqatrani, 2015:17–32).
 7. An architectural element known in Iraq since long ago in the houses, temples and palaces, and there are many examples of Iwans in the ancient city of Hatra (Al-Hadhar), and it seems that the Sasanians have taken this architectural element of the ancient civilization of Iraq, specifically from the ancient city of Hatra (Hamid Mohammed Hassan Al-Darraji, 2013: 56).
- Due to the successive maintenance works, the vaulted passageway has been altered, where it has been closed at the middle and used as a storehouse to place surplus items on both sides as shown in Figure 18 (A- B).

Conclusions

1. Shanasheel is a word of pure Iraqi origins, attributed to the ancient Iraqi civilizations, and that was also used in subsequent periods in the neighboring countries to Iraq.
2. Environmental and economic factors have contributed to the emergence of this style of construction.
3. Shanasheel in the houses and buildings of old Basra have a climate-based function through the design components of which they have been provided, as they help improve the ventilation and lighting system and condition the weather inside the heritage building.
4. Shanasheel have an engineering function in heritage houses and buildings, as they have contributed, through the prominent Shanasheel base to outside in the space in the modification of the unorganized shape of heritage buildings and in giving them a form of regular dimensions within the upper floors of the building. They also give the building an additional area that is of great importance for the inhabitants of the house. Furthermore, the light weight of Shanasheel, as they are made of wood, contribute to the reduction of building mass on the walls of the ground floor and on the foundations.
5. The building style of Shanasheel is a reflection of the teachings of Islamic religion and the customs and traditions of the conservative society of Basra, thanks to the privacy it gives to family members in a residential unit, as the wooden meshes conceal vision from outside and permit vision from inside.
6. Shanasheel façades in heritage houses have given the building an elegant and a unique aesthetic element through the various decorations of geometric and planting shapes or the colors that have decorated the glass of their windows.

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