Bulletin of Geography. Socio–economic Series No. 27 (2015): 17–32

ISSN 1732–4254 quarterly

BULLETIN OF GEOGRAPHY. SOCIO–ECONOMIC SERIES
journal homepages:
http://www.bulletinofgeography.umk.pl/
http://wydawnictwoumk.pl/czasopisma/index.php/BGSS/index
http://www.degruyter.com/view/j/bog

The Old City of Al Zubair. The emergence and physical reality (1571–1882 Iraq)

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How to cite:
Alqatrani, F.S.A., 2015: The Old City of Al Zubair. The emergence and physical reality (1571–1882 Iraq). In: Szymańska, D. and Rogatka, K. editors, *Bulletin of Geography. Socio-economic Series,* No. 27, Toruń: Nicolaus Copernicus University, pp. 17–32. DOI: http://dx.doi.org/10.1515/bog-2015-0002

Abstract. The natural advantages of the site of the city of Al Zubair contributed to its becoming a stable settlement for the tribes migrating from Najd and Hejaz during the last four centuries. These features gave the city a fundamental stability and constant growth, turning it, later, into one of the main cities in the region and an important commercial centre.

This research study aims to examine the historical dimensions of Al Zubair's emergence, as well as the physical housing reality within the boundaries of the walled city (which represents the first phase of the city's development), and to identify the role of people adapting the local conditions of the place in ways that made it a suitable environment for human habitation.

The morphological method has been used in this study of the physical reality of the city. This sequential historical method grants geography an important third dimension: time. Al Zubair is, in terms of its architecture, a history written in the form of buildings, streets, and various other facilities; it is an historic compound that cannot be comprehended without an understanding of and insight into its historical development.

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Article details:
Received: 12 December 2013
Revised: 16 June 2014
Accepted: 11 December 2014

Key words:
physical reality,
old city,
traditional housing,
Al Zubair,
Iraq.

Contents:

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1. Introduction

Al Zubair at the earliest stage of its growth–the stage of emergence–can still be viewed through the historic structures that still exist. This phase of the city, represented in the many surviving buildings and private houses, includes elements of the residential structure of traditional Arabian housing, incorporating the old 'Zubair-like' style which was inspired by the designs in the cities of Najd, original home of the population of the city of Al Zubair. The emergence stage was a time when growth was slow: not spontaneous or organic, but coming in response to the natural advantages of the place.

This research study aims to explore the historical dimension of the emergence of the city of Al Zubair, and its physical and residential reality within the boundaries of the city wall, which outlines and defines the city's first incarnation. The role of people in adapting the local conditions of the place in a way that made it a suitable environment for human settlement is also examined.

The hypothesis of the study is that the natural advantages of the city of Al Zubair and its geographical location contributed to its being a stable settlement for the tribes migrating from Najd and Hijaz during the past four centuries. These advantages provided Al Zubair with consistent stability and growth to become, later, one of the major cities in the region and an important commercial centre.

As for the geographical situation and the study area boundaries Al Zubair is located (approximately) in the central-eastern part of the Governorate of Basra (1), southern Iraq at the intersection of latitude 30°22'Nand longitude 47°43'E (Fig. 1). The boundaries of the study area encompass the space within the city wall (the 'walled city') with a focus on this space as it was during the period 1571––1882.

The descriptive analytical approach, along with the historical method, has been used in the preparation of this study. The morphological method has also been used as one of the means of the applied approach that grants geography a third and important dimension, that of time. The city, in terms of its urban reality, represents history inscribed in the form of buildings, streets and other facilities. It is an historic compound that cannot be understood without knowledge of and insight into its historical development.

2. Appellation

Historical scripts point out that the site of the city of Al Zubair was formerly called *Arisenoi*, a name that was found in one of the writings discovered in Al Zubair at the archaeological sites of Al Lujat. Some, including Ali A. Aba Hussein, believe that the name was Arisa, referring to the specific site at Al Zubair where the writing was found (Aba Hussein, 2009). Al Nabhani (1980), on the other hand, associates the name of Al Zubair city's site to a legend he relates. Al Nabhani(1980)says that Al Zubair is located in a valley that used to be called *Wadi Al Nissaa*' (Women's Valley) because women used to go there to gather truffles. Later it was named *Wadi Al Sibaa*' (Beasts' Valley) as it is said that a woman

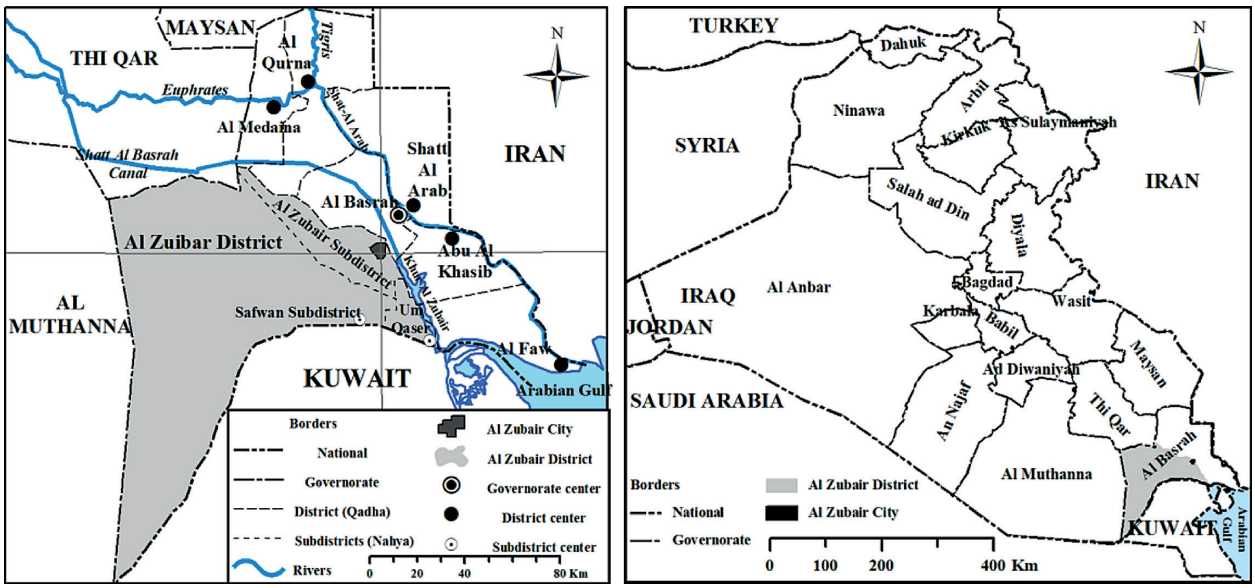

Fig. 1. The Relative Geographical Situation of Al Zubair City

Source: Ministry of Water Resources, 2007

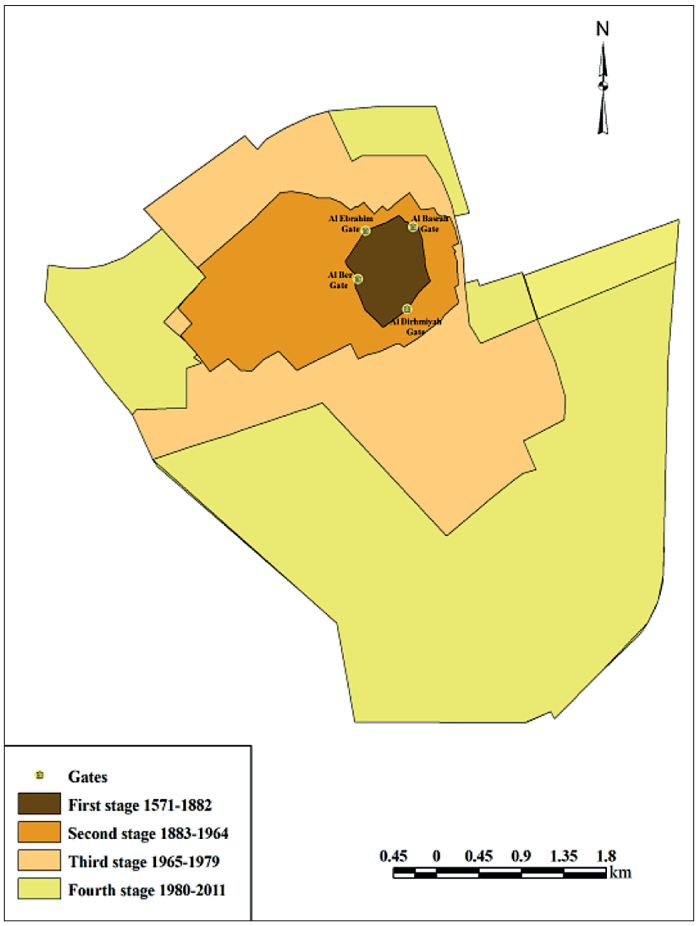

Fig. 2. The ancient walled city of Al Zubair within the current municipal boundaries of 2013

Source: Prepared by the researcher based on Al Nasir, 2010: 65-66; Municipality of Al Zubair city, 1974; Field study

called Asmaa' bint Maryam was alone in her tent when a man named Wa'il bin Qasid passed by. Seeing that she was alone, he intended to rape her. She said 'By God! If you approach me, I will cry out for my beasts.' But he said 'I see none but you in the valley!' So she called her sons by their names saying, 'Hey Kalb (dog), hey Fahad (leopard), hey Dub (bear), hey Sarhaan (wolf), hey 'Asad (lion), hey Dhabi' (hyena), hey Nimir (tiger)', and they all came charging with swords in hands. So Wa'il said 'Verily, this is none but the valley of beasts', and so the name was attached to it (Al Nabhani,1980: 122; Al Bassaam, 1971: 33).

When Al Zubair bin Al 'Awam (2) – the dignified Companion of the Prophet–was buried there in 36 AH (…. AD), the site took his name: Al Zubair (Al Bassaam, 1971: 123).

3. Emergence of the city

Most historians date the rise of the city of Al Zubair to the tenth century AH (in the Islamic calendar), or the late-sixteenth century AD. Iraq had fallen under the control of the Ottoman state in 953 AH (1546 AD). The Ottomans were famous for their interest in building domes on shrines; therefore, Sultan Saleem II gave the order to the Ottoman ruler to build a mosque with a dome over Al Zubair bin Al Awam's shrine in 979 AH (1571 AD). This date was taken as the date for the appearance of the city because the existence of the mosque encouraged tribal people to settle around the shrine and build houses soon afterwards, and a market emerged in the place. For this reason, religion is taken as an important and fundamental factor in the emergence of Al Zubair city (Al Nabhani,1980: 123).

Conversely, some historical references indicate that Al Zubair city at its current site was only a suburb of the old Basra city (Fig. 3),which was founded by the Arabic leader 'Otba bin Ghazwan in 14 AH (635 AD) on the outskirts of the desert not far from the present Al Zubair. One of its remaining monuments that falls within the borders of its master plan is the Grand Basra Mosque, which is considered the first mosque to be built outside Al Madeena Al Munawara and Mecca. When the old Basra City was ruined (3) and moved to its current location, the importance of the 'Al Zubair' suburb increased, becoming the focal point of the are a rather than sharing importance with the old Basra.

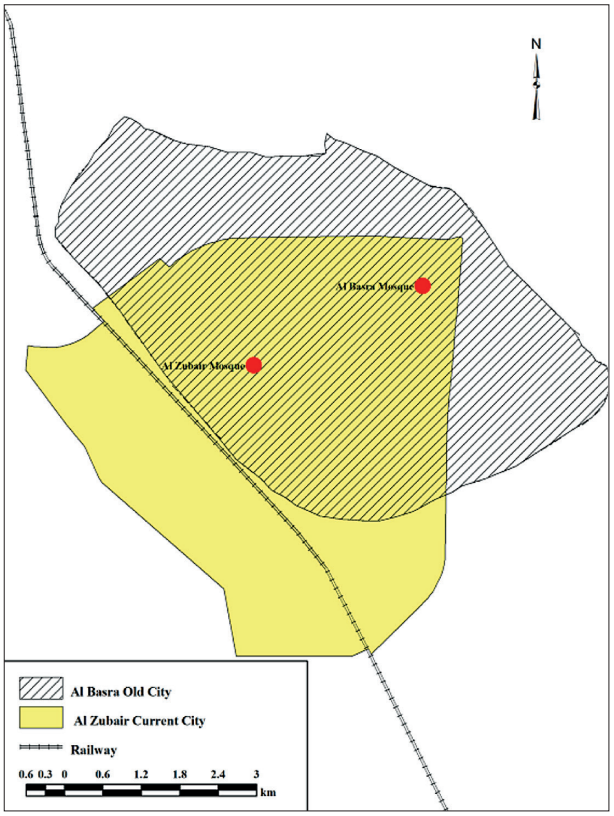

Fig. 3. Site of Basra old city compared with Al Zubair current city

Source: The work of the researcher based on: Mohammed T. Al Katib 1972; Salman M. Abood, 1988: 37

In addition to its religious importance, Al Zubair city gained commercial significance for its location at the edge of the desert, which made it one of the inner commercial cities known as caravan cities (Atawi, 2001: 19).Caravan cities constitute dinner terrestrial ports, and include the cities of Palmyra, Aleppo and Damascus, which were havens for caravans to rest, sell goods and exchange merchandise.

The city of Al Zubair's location in the southern part of Iraq made it a commercial gateway and an important intersection that linked Basra, Kuwait, all Arabian Gulf countries, Yemen, the Levant, Turkey and India. Moreover, the merchants of the city had economic ties with many European and coastal African countries, as well as China. This meant that the Al Zubair merchants became commercial

agents for several of these countries, and the city became an economic centre and a trade passage for caravans where offices for collecting customs were opened. It is worth mentioning that the most notable commodities exported to the Levant were spices from India and Asian countries, namely cardamom, cloves, ginger and musk. These were in addition to cotton clothes, shawls, English wool, textiles, carpets, dates, glue, some medical herbs, camphor, indigo, tobacco, iron, lead, tin and pearls. Caravans used to return to Al Zubair from the Levant loaded with Levantine and European goods. The city was also a transit destination for pilgrims coming from countries north and east of Iraq and heading to Mecca.

Al Zubair city was a popular destination for new residents coming from the Arabic Peninsula, who emigrated from their homes (particularly from the Najd area) in regular waves starting from the emergence of the city during the late sixteenth century AD and continuing until the nineteenth century AD. The residents of Harma, Huraimila', Sadeer, Al 'Aridh, and Al Washim emigrated from the area of Najd and the surrounding provinces during the years 1682 AD, 1715 AD, 1836 AD and 1874 AD as the tribes of those areas moved in succession towards Al Zubair city(Al Jasim, 2010: 38; Abood, 1988: 38).

There were many factors considered important for the movements of the people described above and for the emergence of the city of Al Zubair. There were natural, political, economic and security factors that drove the tribes to emigrate. For example, their wells dried up, drought spread, food prices increased and many animals grazing desert lands perished. Meanwhile, in Al Zubair, fresh underground water, easily accessed from many areas, was a critical element in providing a source of life for the city. Additionally, each of the areas from which the tribes emigrated, at a certain periods, was attacked by large swarms of locusts that wiped out all plants. The people also dealt with the spread of epidemics such as plague, smallpox and cholera (Al Jasim, 2010: 38; Abood, 1988: 38). Furthermore, wars between the Sauds and Ibin Rasheed and the Wahhabi wars against the Ottoman state contributed to paralysing economic activity, leading to depression of the market in the region, and pushing residents to seek their livelihood in other places (Al Rubaiay, 1978: 73-74).

Choosing the city of Al Zubair was the emigrants' best alternative for reasons beyond the natural advantages as well. The foremost one was the shrine of the companion of the Prophet, Zubair bin Al Awam, where people went to seek its blessing. In addition, Al Zubair was a market for commercial exchange, particularly because most residents of Al Zubair city were transportation contractors and commercial middlemen. There were also a number of people from Najd in Al Zubair city who used to provide the service of supplying the commercial caravans. This created an incentive for those emigrating groups to head towards Al Zubair due to the great affinity for the traditions and habits that they practised. Furthermore, the political factor played a large role in encouraging the residents of emigrating tribes from Najd to head towards, and settle in, Al Zubair city. The Ottoman state had exempted its residents from mandatory military service, and it had dedicated salaries for every family based on the number of its members who aided the Ottoman forces in fighting the Persian attacks on Basra City. These factors attracted groups to settle in Basra City(Al-Qatrani, 1988: 89)while also providing the city with a new role; namely, a military one, in addition to its religious and commercial functions. However, the military activity was mostly intermittent, increasing in the presence of danger and decreasing when security prevailed (Abood, 1988: 39).

4. Physical and residential reality

The study of the historical development of the old city of Al Zubair reflects the nature of the complex temporal and spatial interactions in which people were engaged during a period of more than three centuries and which contributed to forming the physical and residential structure of the city.

The researcher has studied two aspects of the physical and residential reality of the city: the first examines the architectural style of the housing units, including the building materials, the land plot area, and the compositional elements of the housing units. The second aspect deals with the pattern of the city streets.

The period 1571–1882 has great historical significance for the city as it represents the basis for

the city's cultural heritage and for the architectural and construction styles used in subsequent time periods. The walled city contains three residential quarters, namely Al Kut, which represents the city centre at the present time and includes the shrine of Al Zubair bin Al Awam, and the Al Shimal (4) and Al Darwazeh quarters, which occupy an area of 67.4 hectare sand encompass 2.5% of the total area of the residential quarters of the city (5) (see Fig. 2). The period 1571–1882 is characterized by the creation of some monuments that can be explored today, including the following:

4.1. The Wall

For more than two centuries, the city remained without a wall (6), as there was no need for constructing one until the Wahhabi attacks increased in the eighteenth and nineteenth centuries after they had seized most areas of the Arabian Peninsula. The Wahhabi raided the eastern outskirts of the Arabian Peninsula and threatened the security of Basra and Al Zubair cities. Since the city was the first line of defence for the new Basra City, the Ottoman state was compelled to build a wall around Al Zubair enclosing all sides in 1213AH (1797 AD). It was built during the reign of Sheikh Yahya bin Sulaiman Al Zuhair (Al Saani' et al., 1985:158). The wall was oval-shaped with a circumference of three kilometres, a thickness of three metres, and was four metres high, and the wall included four main gates (Al Nasir, 2010: 65-67) (see Fig. 2 and Fig. 4). Cylinder-shaped structures with 30-metre circumferences were attached to it for the purpose of observation, locally named 'Al Tawaabi' (Abood, 1988: 45; Al Nasir, 2010: 65). Renovations and repairs were made to the wall-in 1718 AD.

The remains of the wall were removed during the last years of the nineteenth century as a consequence of new construction, except for some of the major gates. These were, however, completely demolished in later times.

Fig. 4. Al Bar Western Gate (*Al Hazim*), one of the gates of the old city's wall

Source: Al Nasir, 2010:740

4.2. The market

Al Zubair's market was distinguished by its simplicity (Fig. 5). It was made up of small specialized commercial streets, some of which had roofs and some which didnot. The streets were located to the north of Al Zubair bin Al Awam Shrine, in the Kut Quarter. The city dwellers named these commercial streets according to the commodity or service available; for example, the 'plant market', 'demolishing market', 'food market', 'clover market', 'pigeon market' and 'date market'. However, the commer-

cial trading between caravans took place outside the city walls, where goods were put on display in an open area larger than that at the Basra markets (Al Nasir, 2010: 45).

Fig. 5. Part of the old city's market
Source: Al Nasir, 2010:710

4.3. Mosques

The old walled city had twelve mosques distributed at different places in the three quarters of the city. The oldest was Al Zubair bin Al Awam Mosque (built 1571 AD) and al Najaada Mosque (7) (built 1607 AD). The large number of mosques indicates the religious function performed by the city and the type of people who resided there (Al Bassaam, 1971: 63-70).

4.4. Housing

The building style of the housing units in Al Zubair city during that phase was no different from the traditional Arabian house style, with aninner open courtyard (8).The housing units were characterized by their contiguousness, leaving no spaces within the structure. This design was as a reaction to the climatic, religious and social influences dominant at the time.

These architectural-style and structural elements influenced the housing unit patterns seen in the city during that period.

4.4.1. Architectural style of the housing units

The type and design of the housing units as manifested in the building materials, space and structural elements reflect the characteristics and features of construction during the formative period of the city of Al Zubair (Ali, 2004: 45).The type and design of the housing units were influenced by the circumstances of their natural and human environments.

The social circumstances (namely the teachings of religion and the conservative system of tradition and customs), in addition to the climate of high temperature and dryness, moulded the interior design of the eastern style of housing units in Al Zubair city during the phase in question. This style was characterized by great efficiency that suited the residents' desires and requirements in the face of a harsh climatic environment.

Most housing units in the city were one-storey constructions characterized by simplicity of design and with almost equal heights so as to prevent houses from overlooking each other. The sizes of these units varied according to the economic situation of their respective owners. Homes were, on average, less than 100m^2 for those of low and middle income,

while some exceeded 1500 m^2 for the wealthy families and rulers of the city. Rectangular and square housing units were predominant, and the building material was extracted from the natural resources in the city and the surrounding areas, where clay constituted the basic component. This material was characterized by flexibility and ease of formation, and was used to make sun-dried bricks. The dry climate in Mesopotamia helped in their hardening (la Blache, 1984: 170). The sun-dried bricks were efficient in thermal and light insulation, and easy to use for construction. They were also an economic, low-cost building material (Al Faqeer, 2009: 325-380). Palm and tamarisk trees were rich sources of timber, which was widely used in the construction of ceilings and other elements of home décor (Fig. 6).

Fig. 6. A ceiling constructed with wood and mud at one of the houses of the old city

Source: This photo was taken by the researcher of one of the old houses in Al Zubair city 10/5/2011

The design of the housing unit was influenced by the nature of the conservative social behaviour prevailing amongst the population; it was almost isolated from the outside and open to the inside (the courtyard). The housing units were contiguous, with no spaces between them, and the walls were high in order to reduce unwanted contact with neighbours and to ensure privacy. External walls had no windows so as to achieve family privacy, as well as to prevent the dust which accumulated in the alleys from being carried into the housing units by the wind. These structural features proved efficient in reducing the severity of the hot summers and cold winters. The interconnectedness of the housing units, the thickness of their walls, their crowding together, their horizontal extension contiguously, and the creation of zigzags and twists in the inner spaces and alleys, all helped to solve the problems of the hot climate successfully (Kamona, 1990: 294), especially because the alleys helped to protect the housing units from heat and sandstorms–the natural weather that prevailed in the city–while also providing areas of shade during the day.

4.4.2. The structural elements of the housing unit

The construction of a Zubairi housing unit consisted of a number of distinctive architectural elements that expressed the structural identity of housing during the1571–1882 time period (Fig. 7). This came as a reaction to the circumstances of the natural and human environments of the city. The most important elements were as follows:

The courtyard: called'*al hoosh*' in Iraq: It constituted the major architectural element of the Zubairi housing unit and followed the traditional Arabian style(cf. El-Shorbagy, 2010: 15-20), around which the other components and elements of the housing unit were arranged. It was the only part of the unit that was open to the sky. It was often

square-shaped and sometimes rectangular. Its area was in direct proportion with the area of the housing unit. Its floor was relatively lower than the surrounding parts to prevent rain water from leaking into the adjacent rooms, and it was usually paved by square shaped mud bricks locally called '*farshi*' bricks (9) (Fig. 8).Furthermore, courtyards in Al Zubair city often had wells, the water from which was used in building the housing unit and later for other household uses. Moreover, in spacious courtyards, some fruit trees such as dates and vines were usually planted. Courtyards helped natural light and air to reach the surrounding rooms through doors and windows. They also helped in cooling the rooms by drawing cold air into the rooms at night, working as wind-catchers, which kept these rooms cool until late in the day during the summer. In winter, courtyards allowed sunlight to reach the rooms and moderate the temperature (Al Shimmery, 2006: 143). The courtyard also minimized noise and environmental pollution, especially dust. In addition, it ensured complete isolation from the neighbouring housing units and streets, and allowed the family to practise their household activities in total privacy (Al-Hemaidi, 2001: 179-201).

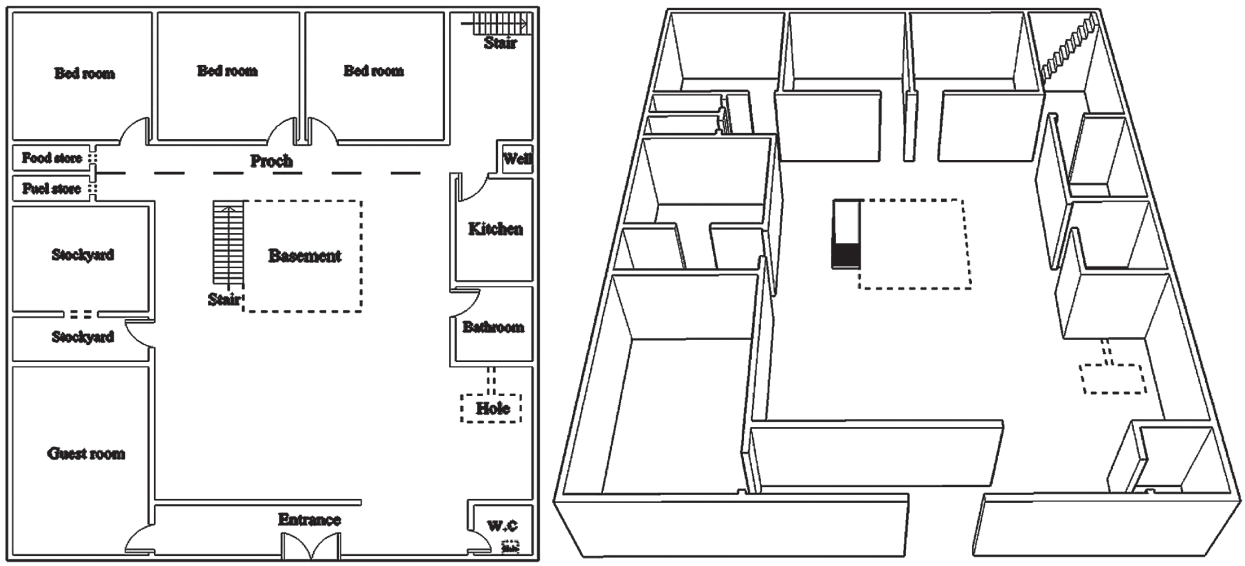

Fig. 7. Structural elements of the housing unit

Source: Prepared by the researcher based on a design plan of one of the old houses in the walled city. Taken from:Al Rubaiay, 1978: 160

Fig. 8. Farshi Bricks Used in Flooring Courtyards of the First Phase Houses

Source: These photos were taken by the researcher at one of the old houses in Al Zubair City, 20/2/2011

The effect of the surrounding environment on the design of the housing units in the city of Al Zubair is clearly evident in the idea of the courtyard. Courtyards, as mentioned above, allow sunlight into the structures and keep the interior of the housing unit shielded from the sand and dust arising from the nearby desert. In addition, they provide residents with feelings of peace and tranquility that can hardly be provided by any other architectural element.

The doorway: The entrance of the housing unit was made of a doorway with one or more thresholds on the outside and a corridor from the inside that led to the courtyard. The size of the doorway was usually in proportion with the size of the housing unit and it sometimes reflected the grandeur of the house interior, especially in terms of its size, the type of wood used and the ornamentation. During this period, the people of Al Zubair used to record the date of construction at the base of the door. The social conventions did not allow doorways of different housing units to face each other. The entrance played the role of protecting individuals and helped maintain their psychological and social stability.

The corridor (the passageway): The corridor, locally called '*almajaz*', came directly behind the doorway and led to the courtyard. The corridor was usually 'L' shaped, which meant that it was divided into two passages. The first was connected to the entrance that was often left open all day to allow air to enter the house. This passage also had a door that opened into the guest room inside the home. The second passage was connected to the courtyard and was separated from the first passage by a door to maintain social privacy for the family. The size of the corridor varied according to the size of the housing unit. Thus, in large housing units, the corridor was large and sometimes had a room where '*hibaab*'(10)were kept. The entering air went through the *hibaab*, which cooled the water inside them and reduced the heat of the air going inside. Moreover, placing the *hibaab* in this location allowed the water carrier to enter the house and fill the *hibaab* without violating the privacy of the residents inside.

The *iwan* (porch): This was a raised platform with a roof that ran along the inner side of the housing unit surrounding the courtyard. The *iwan* was of great importance to the family since it protected them from rain in the winter and the heat of the sun during the summer. In addition, it allowed sunlight to reach the rooms and heat them during the winter, while also (due to the changing position of the sun as the seasons changed) blocking sunlight and offering shade to the rooms in the summer. The roof of the *iwan* was supported by a row of pillars made of solid wood, the top of which was commonly known as the crown. The crown often had beautiful cornices. *Iwan*s were paved with Farshi clay bricks and offereda place for having meals and drinking tea, particularly in the summer.

Rooms: Rooms in the Zubairi housing unit differed in size in accordance with their importance, purpose and the size of the housing unit. They were usually of a square or rectangular shape that stretched along the *iwan*. Each room had a single entrance and usually one window (but sometimes more). They overlooked the courtyard of the house and their floors were paved with Farshi bricks. It is worth mentioning that most houses in Al Zubair city during this period had a relatively large room that was used as an animal barn and was often divided into two parts: one for cattle and one for poultry.

The kitchen and bathroom: The kitchen was located at one of the corners of the old Zubairi housing unit. It was known for its small size (about 9 to15 square metres). Bathrooms and toilets were close to the kitchen at the same corner. Sewage water was drained from these facilities to a large pit near the units that functioned as an underground tank for collecting waste. Usually accumulating water and tank over flows were not issues due to the high penetration of the sandy soil that the site of Al Zubair city is characterized by. However, serious environmental pollution of the underground water sometimes occurred due to the leaking of sewage into the sandy soil.

The basement: This was considered one of the basic elements in the construction of the Zubairi housing unit a sit was one of the important protections from the high temperature of the desert, particularly in the summer. Moreover, the basements sustaining a moderate temperature all year long made it ideal for storing supplies and household necessities. The floor of the basement was several metres lower than the house floor, with small windows at the top of its walls that overlooked the courtyard, the level of which was the same as that of

the courtyard floor. The basement had an entrance that consisted of a doorway and stairs leading to it. It was usually paved with Farshi bricks and was often connected with the wind-catcher at the roof through vertical openings inside the wall that carried air to a lower level at the basement floor. This helped water which was sprinkled on the basement floor to moisten the air and cool the basement; thus, it became the best place for resting and taking a nap during the day.

The roof: The roof was considered an important component of the housing unit and an essential functional space in this period, particularly during the summer, as families used roofs as a place for sleeping during the warm nights. Therefore, maintaining the roofs was a necessity imposed by the climatic conditions. They were coated by a mixture of mud and hay every year or two to avoid the leaking of rainfall and to prevent the occurrence of cracks which would reduce the safety of the house and its inhabitants.

Wind-catchers (11) (***badgir***): The housing unitin this period was characterized by having a wind-catcher, locally called '*badgir*' (Fig. 9), a word of Persian origin meaning 'catching air'(A'zami, 2005: 1021-1026). The *badger* was one of the distinctive architectural elements in the Zubairi house. Its function was to moderate the atmosphere and reduce the temperature in different units of the house. It was a tower-like square-shaped construction that usually consisted of four pillars, each over three metres high, and was built of mud-bricks with four openings containing wooden shutters that allowed air to pass into the house through channels (narrow, hollow spaces between two walls surrounding the units of the house). These channels distributed the air coming from the *badger* to the units of the house, particularly the living room, the guest room and the basement. The wind-catcher has a top that looks like a crown in design, made of wood and mud, which also helped to protect the air vents from rain during the winter.

The mechanism of the *badger* is based on differential air pressure. When the tower openings caught the relatively cold air and directed it through the air channels towards the house, the channel walls absorbed part of the passing air'sheat and cooled it, pushing away the stagnant air and ensuring the air refreshed the rooms during the hot summer season. This air was also moistened by causing it to pass over a jar or a concave container filled with water which was sometimes left suspended in the top openings. The wind-catcher also fulfils a secondary function, particularly in the basement, where the air helps cool the water in the jars, and also the fruit and food, to help keep them fresh.

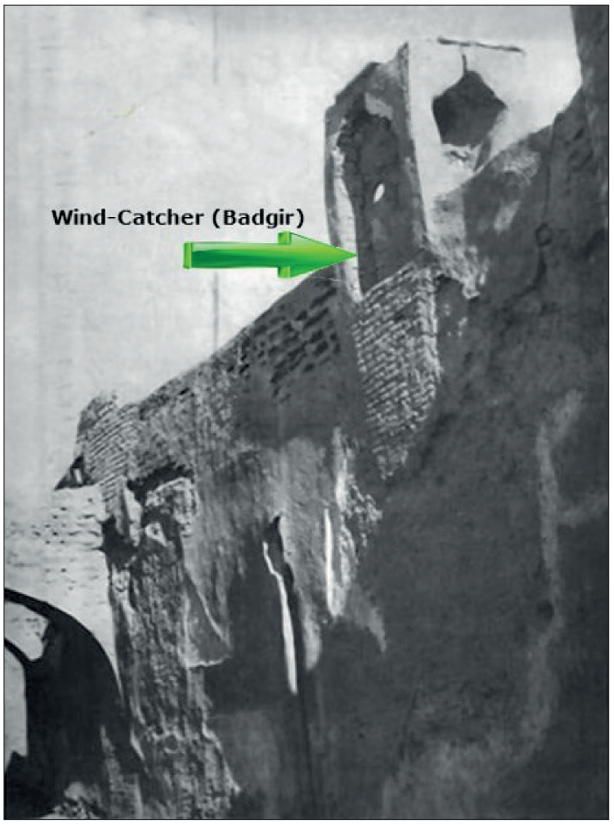

Fig. 9. Wind-Catcher (badgir) in the one of old houses in Al Zubair city

Source: Al Mullah, 2011

4.5. Street pattern

The street pattern in the city of Al Zubair during the 1571–1882 time period was not different from that of the traditional Arabian city–an organic pattern that was essentially formed according to the architectural formations of buildings. The streets and alleys of the city were in great harmony with the means of transportation used at that stage, namely wagons, camels and horses. The substance making up the streets was basically dirt.

The alleys in Al Zubair city can be classified in terms of their size: the first type was the dead-end road that was 1-2 metres wide (Fig. 10-A).This type served a limited number of housing units. The second was the 'primary' road, which was 2 or more metres wide, from which the first type of alleys branched. This type marked the residential block and served a larger number of houses depending on the size of the residential block (Fig. 10-B). The latter ended at the 'secondary' road, which was sometimes more than three metres wide and served a number of residential blocks. It usually extended to and ended at the main street, which was over four metres wide and connected the quarters of the city. The main street passed through the market and city centre, and reached the gates of the city (Fig. 11).

Fig. 10. Dead-end alley (A) and a primary alley (B) in the walled city

Source: (Firas Alqatrani, 25/4/2011; Al Mullah, 2011)

The streets of Al Zubair city were characterized by their bends, twists and narrowness in different degrees. This pattern did not come by chance; it was a design that the Arab constructors resorted to so as to achieve certain objectives. First, all housing units and public buildings had inner courtyards that were open to the sky as a source of light and air; therefore, these buildings and houses dispensed with spacious extended streets. This resulted in the limited width of streets that only allowed smooth movement for pedestrians. Secondly, the bends and narrowness provided shaded areas that helped save cool air at night and spread it out during the hot hours of the day, which made the temperature in the alleys cooler than the courtyard that was exposed to sunlight, causing differential pressure that created air currents among streets and alleys, and thus refreshing the atmosphere in the city and creating relatively comfortable circumstances for the city dwellers and pedestrians. This process reversed at night, as the courtyard discharged the heat emitted from the constructional structure faster than the alleys due to its spatial volume in comparison with the alley (Al Sharjabi, 2009).

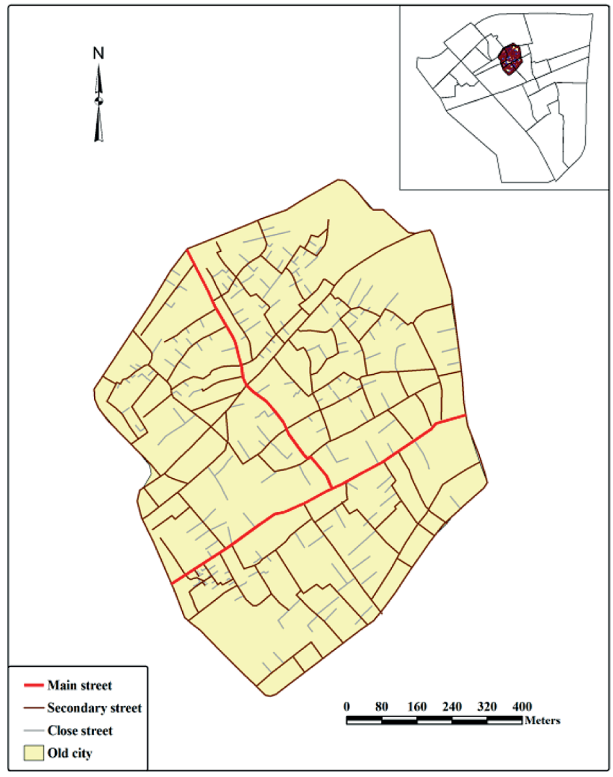

Fig. 11. Patterns of alleys in the old city of Al Zubair

Source: The work of the researcher based on: Al Nassir, 2010, 65-66; Field study

In addition to its environmental assistance, the alley pattern described above fulfilled a social function within the residential quarter as well. It provided a social space for families that shared the same values and needs. It also guaranteed close observation of strange passersby and provided closed and safe places for children to play. What helped increase the vitality of this social function of alleys in Al Zubair city was the '*muyabeb*' (Fig. 12). It was a dome-like structure built of bricks and with arched fronts. It connected two opposing houses in the alley that were related or belonging to the same extended family. It was commonly three metres high, and sometimes higher, even reaching 12 metres (Hassan Al-Enazy, 2012: 540). It provided a shaded area for passersby to retreat to from the heat of the sun during the summer and from rain in the winter. Young people sat underneath to talk and enjoy each other's company. Also, it provided a safe space for children to play. The *muyabeb* usually carried the name of the families it connected. Despite their importance at the time, however, most of them were demolished due to negligence and lack of maintenance.

Fig. 12. Al Mandeel *muyabeb (12)* which is located in one of the alleys in the old Al Zubair city

Source: Al Mullah, 2011

5. Conclusions

The religious factor represented in the existence of the shrine of Al Zubair bin Awam is a key element in the emergence of the city of Al Zubair, along with the natural advantages enjoyed by the site and situation of the city, namely the accessibility of underground fresh water and arable soil, in addition to local building materials and multiple transportation routes.

The design elements of the traditional Arabian housing unit in the city of Al Zubair reflect the idea of physical unity that appears in the coherent arrangement of these units through compiling and connecting them in adense and cohesive fabric and special sequence ranked from the private (housing units), to semi-private (spaces among these units), to the public (public squares and streets). The architectural reality of the old city is also reflected in the interaction of the construction pattern and the environment in the process of forming the material structure to achieve spatial appropriateness for people through interaction with the climatic conditions and other considerations, and through dealing with the available local resources for construction.

The feature of organic cohesion between housing units that appeared in the traditional environment emphasized the social intimacy and closeness that characterized the social community in the city during the 1571–1882 time frame.

The constructor during this period was considerably interested in sunlight as a kind of energy that had to be harvested to ensure the comfort of people and to add an aesthetic element in the distribution of light and shade.

The architecture of this era managed to optimize the natural environment's construction materials to a great extent. It also gave buildings an architectural form derived from the surrounding environment in material and colour, in addition to the high efficiency of thermal insulation.

6. Recommendations

There is a need to reconsider what the traditional architecture provided in support of sensory, aesthetic and social functions, taking advantage today of the many solutions it created to urban issues, along with considering the possibility of using, modifying or developing these solutions for current cities with the help of modern technology. In addition it is necessary to enrich the architectural curriculum in universities in order to establish a professional and scientific architectural movement that can create a national architectural personality interested in urban heritage and traditional architecture. Also there is a need to create a creative climate for innovative architectural work that combines steady traditions and trendy variables.Lastly it is necessary to watch over and maintain the heritage sites in the old city of Al Zubair.

Notes

(1) Basra Governorate is divided into seven administrative districts, namely Basra, Zubair, Faw, Abe Al Khasib, Shatt al-Arab, Al Medaina and Al Qurna. The city of Al Zubair represents the administrative centre for the Al Zubair district.

(2) Al Zubair bin Al 'Awam bin Khuwailid bin Assad was born in the year 28 B. H. (before Hijra) and converted to Islam by the age of fifteen. He married Asmaa' bint abi Bakir and was one of the first seven who entered Islam. His mother is Safiya bint Abdul Muttalib bin Abd Manaaf. His uncle is a Prophet of Islam and his aunt is Khadija—Mother of the Believers (the Prophet's wife) (Habeeb, 1985: 9).

(3) At the turn of the eighth Hijri century, many of the old Basra City residents moved away to the current Basra because the former was ruined as a consequence of the following:

(a) Negligence of dams, be it those on the Euphrates River and Al Hammar marsh or dams situated at the coast. This led to them being ruined and the flood water submerged agricultural lands and destroyed the crops. When the water went away it left the land capped by mud which was covered with a saline layer that was not arable.

(b) Dryness of rivers and canals because they were not maintained.

(c) The rise in the land level geologically and as a consequence the Euphrates river changed its course to the inner areas (Al Saani' et al, 1985: 38).

(4) Al Shimal Neighbourhood was formerly called Al Aziziya Neighbourhood(Al-Bassam, 1971: 64).

(5) The total area of the city including the archeological area is 317,307 hectares and the total area of the residential quarters is 2,711.2 hectares.

(6) People recall that Al Kut Neighbourhood, the first nucleus of Al Zubair City, was surrounded by a wall that looked like a castle with low doors.

(7) It was named Al Najada Mosque because it was the first mosque designed by the Najdi people, who emigrated to Al Zubair from the Najd area in the Arab Peninsula at that period.

(8) This style goes back in history to the second century BC but it crystallized in the Abbasid Period. A minor change took place in its design and plan during the Ottoman Period. Furthermore, existing houses of that era remained tightly connected with the dominant pattern during the Abbasid Period (Al- Ghazaali, 2007: 50).

(9) *Farshi bricks*: These are bricks made of sun-dried clay that are distinguished by their firmness. They are yellow and square shaped. Their dimension varies from 20 by 20 cm to 30 by 30 cm, and this type of bricks contributed to a de-

crease in the temperatures in the summer season (Abdul Razak, 2012: 93-111).

(10) *Hibaab* is the plural of a *hib*, which is a large pottery jar where water is kept.

(11) The early beginnings of this architectural element go back to the Egyptian and Iraqi Civilizations where the archeological studies indicate that wind-catchers were used by the old Egyptians in some of their buildings and this is what was discovered in the tombs of the old Egyptian state before 2100 BC. There is enough evidence for its existence in Old Iraq in Babylon and Nimrod found in the cavities of the Throne Hall that date back to 600 BC.(cf.Al Na'eem: 2002; Ali Thuwaini, 2008).

(12) It was named after the Al Mandeel family who owns it and it is three metres high.

Acknowledgements

I extend my thanks to Prof. Dr hab. Marek Dutkowski for his scientific assistance in completing this research.

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