

Contemporary Residential Areas as an Example of Tradition-led Urban Design in Islamic Cities. Case study of Jazan in Saudi Arabia

Abstract:

This article focuses on how modern housing environment is shaped via the specifics of construction in extremely challenging weather conditions in the cities of Saudi Arabia. With the overall goal that modern housing must be eco- and human-friendly in mind, the authors have attempted to identify the characteristic features of the Islamic cities and traditional local methods of construction. The article presents typical solutions of local architecture and urban plans, expecting that they might render significant guidelines for the spatial organisation of modern cities. A case study of Jazan city and its neighbourhood has been intended to analyse not only the spatial design of the city but also a recently worked out Masterplan. Both the architecture and the urban planning of Jazan city might serve as a good example of modern interpretation of heritage that underlies high quality housing environment.

Keywords: Saudi Arabia, Jazan, masterplan for residential area, tradition-led design

Introduction

From the onset of mankind, cities have represented housing environment that is conducive to social integration (Gyurkovich, 2018, p.513). Urban dwellers have always aspired to live in the housing environment provided with functional and spatial solutions that are friendly to people and natural environment as only such features could ensure healthy, comfortable and safe living and relaxation conditions. Appropriate housing environment means that such human needs as safe shelter, comfort of use and identification with place are respected (Schneider-Skalska, 2004, p. 65). In this context, protection of local traditions and unique features of a given spatial area is particularly important. Modern housing design shall meet all the ecological and human-friendly criteria. This may be understood as an imperative to preserve local traditions in construction and architectural design that have developed in response to the specifics of a given place and individual needs of communities living therein. Only such an approach can ensure the fulfilment of the aforementioned criteria. Modern interpretation of heritage may lay the foundations for the creation of high quality housing environment today. The studies conducted by the authors hereof aimed to identify features of traditional architectural and urban planning solutions characteristic of the cities in Saudi Arabia and local construction practices typical of the area that should be used in design of modern residential areas.

Jazan city and its neighbourhood has been selected by the authors as a case study because it represents a model example of designing houses in-line with

nature and local traditions in construction. Its urban plan and architectural design is unique. The city offers many examples of how old housing development can be re-interpreted to suit modern tastes. The urban plan also aptly incorporates an attractive range of commercial services. In effect, the city makes a perfect example of new trends in designing modern residential complexes in Saudi Arabia and promotes the application of traditional solutions and local materials combined with green areas. Such an approach to residential space design ensures relaxation options to the inhabitants and facilitates space cooling. It is a representative of the tradition-led design - modern design based on traditional methods, implemented in a particular location/district, i.e. in Jazan, on the Red Sea coastline.

1. Theoretical background

It can be observed that many historical Arab cities follow similar organisational concepts and construction methods. Their urban tissue has developed as a result of social and historical processes and is demonstrated via specific, characteristic features of the urban plan and spatial layout (Jasim, 2016, Shehata, 2022). Residential quarters were usually shaped with narrow curved streets and located not far from the minarets. Depending of the city scale and number of inhabitants, there were smaller mosques located in separate quarters, in addition to the main city mosque. The traditional city compositional layout provided for the main mosque placement outside the residential area, in a central square and not far from a bazaar. What is important to be underlined, is that many historical Muslim cities

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arose as medieval fortresses, that had a great impact on the particular shape of the very compact urban development (Ivashko, Kouider, 2019, p.113).

Islamic architecture always used to be very conservative, due to the climatic conditions and local cultural and religious traditions. Moreover, not only these factors have also contributed to the urban landscape of Arabic cities: it was also the economy of construction and technology (Mandeli, 1993). As Yuliia Ivashko and Rega Kouider claim: 'The use of Islamic design schemes went in two ways - on the one hand, continuity with pre-Islamic construction was maintained between different periods, and on the other hand, there was an exploration of new design schemes' (Ivashko, Kouider, 2019, p.123). It is also the natural environment of the surrounding that plays crucial role in urban composition and modern residential areas planning. Natural environment is important in functional and aesthetic layer for it influences the comfort of city users and creates desirable image of the city space. As some researchers highlight, 'The successful urban planning of housing environment is the creation of beautiful views from various streets, as well as picturesque nature, which plays the role of a kind of theatre backstage to represent architectural objects' (Ivashko, Kuzmenko, Shuan, Chang Peng, p.98).

2. Historical background of Jazan

Jazan is the capital of the Jazan Region, situated in the southwest of Saudi Arabia, north of Yemen. It has a population of about 1.67 million¹, and covers an area of 40,000 square kilometres, which includes over 5,000 villages and cities. The city of Jazan is home to the Port of Jazan, Saudi Arabia's third most important port on the Red Sea coastline of almost 300 km. Located in the southern part of the Red Sea coastline, it makes a convenient hub for the main east and west sea trade routes to Europe, the Far East and the Arabian Gulf.

The city of Jazan traditionally featured two types of architectural designs: the Usha (singular) and Ushashash

Fig. 1. View of the Jazan Fort in 1832, a watercolour painting by Rupert Kirk from the Royal Geographic Society, source: Jazan Masterplan Report, Tarik Alireza Consulting Engineers office archive, London 2008, p.3.

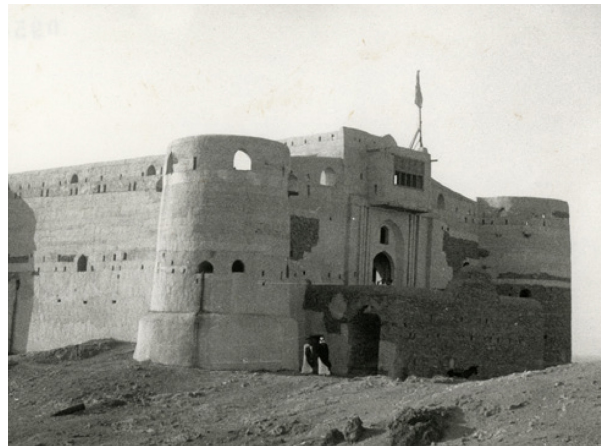
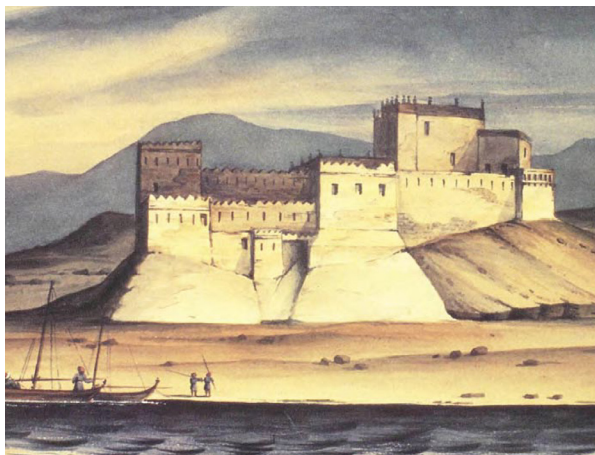


Fig. 2. An old photograph of the historical fort in Jazan, Jazan Characterization Study, private research, source: Jazan Characterization Study, private research by Tarik Alireza Consulting Engineer, office archive, London 2007, p.4.

(plural), and the less common Murabba. In the entire history of Jazan, the fort was the only structure built from solid materials.² Located below the fort, residential structures were constructed as mainly round grass-made huts and sometimes as square stone huts. There was a small bazaar around the fort, too (King, 1998, p.10). At the beginning its population size was approximately 400 people, the inhabitants mostly engaged in pearl fishing. Water was scarce in the city.³

Ushashash are a testament to the hidden talent and potential of a traditional builder. There are also quite a few conical shaped shelters along the western coast of the Tihamaa plains. These dwellings are usually owned and occupied by seasonal workers. In Saudi Arabia huts are not to be found in any other region, instead temporary type shelters like tents have been the principal habitat for the nomads. Usha's construction begins with vertical trunks arranged in a circular plan, then logs and heavy branches are knitted in between to form an entrance, leaving a small but necessary opening. The supporting and secondary members are tied tightly together with ropes, twines, and knitting branches in both directions to make it a solid envelope. Shelters like these have no windows, but their enveloping materials allow them to breathe easily and retain a liveable environment.

Fig. 3. Old photographs of Jazan and the citadel in Jazan, source: Jazan Masterplan Report, Tarik Alireza Consulting Engineers office archive, London 2008, p.3.





Fig. 4. A cluster of ushshash in the town of Shuqaya, about 120 km north of Jazan, source: Jazan Masterplan Report, Tarik Alireza Consulting Engineers office archive, London 2008, p.3.

The exterior is left unfinished in reeds, straw or similar material. Ushshash will have a variety of niches for storing utensils and other prize items, and are decorated in bright colours (Ishteaque, Al-Said, p.200).

Unfortunately, both the Usha and the Murabba structures have disappeared in the last couple of decades due to the reconstruction of Jazan by means of a completely different method of development and construction. The traditional way of life in Saudi Arabia as well as the appearance of the living environment are changing as a result of increasing exposure to new trends in development, free contact with developed countries, advent of the Internet, improved communication with other parts of the world, fast rising income, legacy of industrialization and dependence on oil.

The Figures (1-4) below present early paintings and photographs of the fort and traditional huts "Ushshash" in the Jazan region.

3. Identification of the problem - Urban Trends after the Oil Discovery and Residential Problems in the Gulf Region

Urbanization and economic development are closely related. A society's economic structure changes as it moves from rural to urban. The kinship and primary relationships in a rural society are different from those in an urban one. Saudi Arabia has evolved rapidly from a pastoral society to a modernizing, urbanized one. Wealth from oil exploitation was a principal impetus for this shift (Costa, Noble, 1986, p.160).

In 1938, when the Standard Oil Company California discovered oil at Dammam well No.7, the kingdom of Saudi Arabia faced rapid modernisation. International construction companies-built infrastructure on the Eastern coast of the country on an unprecedented scale. As oil revenues increased, modernisation projects moved to urban centres. Companies like Bechtel and Michael Baker monopolised the construction industry as part of their 'Public Works' contracts. These included the construction of roads, hospitals, airports, royal residences, and among other things modernisation of the urban centres and villages (Gazzaz, Gazzaz, 2021, p. 18).

New mobility opportunities underlay a new way of living and brought about economic and social transformations. Essentially, the car largely changed the prevailing lifestyle as it enabled people to move quickly in air-conditioned environment. When oil companies built the first settlements for their employees, they offered new mobility and housing opportunities. Typically, these

were one- or two-storey detached houses developed on a square lot within an orthogonal grid of streets to ensure that each house was accessible by car (Reichert, 1978). Soon, supermarkets and other public buildings, e.g., schools appeared along the main streets. The settlements built by oil companies developed separately from traditional settlements and thus, there was almost no economic and personal interconnections between them. In many cases new settlements developed by oil companies never reached the town centres and later, formed the suburban areas. After the Second World War and the oil boom, just in a few decades, new types of mobility and housing opportunities started to dictate new standards of living. In the 50s and 60s, most of the Gulf countries built major infrastructure, i.e., roads and harbours. During this period, planning instruments were limited to guide plans previously mentioned, which were in fact simplified land-use plans (defining the manner of space use, number of storeys or density of development). Moreover, they were difficult to be implemented due to the lack of an effective legal framework for their enforcement.

When oil urbanisation began, traditional oasis towns tended to grow beyond their former borders, outlined by walls. The walls got pulled down as they were no longer needed for protection. In many cases old settlements were replaced with an orthogonal street grid and square lots. In some towns, however, such replacements were less radical, for example, Manama, Riyadh or Dubai have retained parts of their old street structures. Even though the old buildings were replaced with the new ones, the street layout remained unchanged. New wider and straighter streets modernised the old road system. They changed the traditional built environment from compact and dense development into the street-block-based urban environment, featuring a grid of main roads and major streets enabling the accessibility of each block by car. Consequently, the traditional system of main roads and the labyrinths of their side-streets with densely-populated housing areas, characterised with traditional courtyard houses, has been destroyed as a result of modern building techniques and lack of any renovation and maintenance works (Fig. 5).⁴ With the influx of guest workers and the exodus of local residents to the outskirts, the old centres became densely developed areas of mixed-use. Modern buildings often replaced the old marketsquares as well as main roads. Large apartment blocks were constructed on the edges of the towns by private companies to house their workers. Apart from urban and peripheral areas, guest workers were also accommodated in large camps near industrial areas on the town outskirts. Due to widespread migration from rural areas, many families had to live on temporary basis, on the outskirts of large cities, in shanty towns built from cement blocks, cardboard and corrugated metal, often surrounded with livestock buildings such as sheep, goat or and camel barns or sheds. While the poor (mainly migrants) moved into the old centres and their edges, the middle and upper classes moved into the newly developed

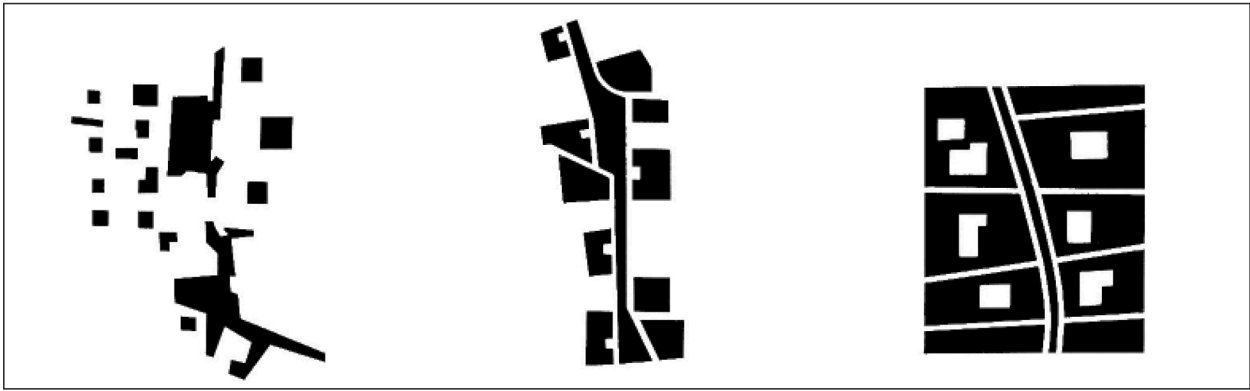


Fig.5. Transformation of traditional districts into modern suburbs, source: Wiedmann, 2010, p. 36.

suburbs. New development was often defined with the directions of urban growth adopted in view of topographical factors and certain infrastructure projects. Central Business Districts (CBDs) were often constructed linearly along major roads for easy access by car and future expansion options. Buildings like administrative and office buildings, shopping malls and banks were often located along major roads connecting the city centres with airports or large highways with business centres.

Despite such modernisation trends, the old traditional markets in the centres continued to play the role of business life for the lower classes. Middle and upper-class housing areas were often situated several kilometres away from the old centres (Wiedmann, 2010, p. 36).

4. Analysis of Traditional Islamic Urban Tissue and Identification of the Main Design Principles

4.1. Traditional Urban Structure

The development of building and urban design principles centred on access and housing. They developed parallel to Islamic law, and soon became semi-legislative. Building and developing communities are continuous processes, so related rules and guidelines were always needed. The multitude of cases due to conflicts between neighbours had to be resolved expeditiously and fairly. The resulting cases attracted the attention of judges, master masons, and others, and were soon used as precedents. Thus, Islamic law helped respond

to the need for architectural or urban design guidelines and a framework for adjudicating related disputes. According to research, the development of these guidelines coincided with the development of Islamic law. Islam spread a great deal of intellectual activity and knowledge, particularly related to the conduct of life according to its principles and codes (Hakim, 1986, p. 15). Islamic settlements follow a distinctive pattern defined by a central core, connected with a densely built-up network of streets. The structure contains further subdivisions into urban blocks, such as residential neighbourhoods. A traditional neighbourhood is determined by such factors as:

- A close-knit community in a minimum number of households,
- The distance a person can walk in a given time.

While the governing principles remain unchanged, the settlement forms show sufficient flexibility to meet the regional needs. Streets, open spaces and built environment form a close-knit urban structure, clearly divided into public and private areas. The built environment unambiguously defines the public realm. Below, an example of the courtyard houses from Fez⁵ is presented. Having an internal courtyard, the houses share three walls with each other. A section of a traditional settlement is depicted via an array of courtyard houses connected by a meandering street. Occasionally, the street branches off to form cul-de-sacs which provide access to a cluster of 3-5 houses⁶. A second example of Riyadh urban

Fig.6. Left: Plan of the residential district of Mokhfiya in Fez, composed of several housing clusters extending around internal dead-end alleys or cul-de-sacs, source: Bianca, 2000, p.150. Centre: Plan of two residential clusters in Fez with a variety of self-contained courtyard houses, source: Bianca, 2000, p.83. Right: Part layout of Al-Adl section in Riyadh depicts the layout of an urban block, source: Talib, 1984, p.13.



block is characterized by connections with the central space by radiating streets. Primary streets are linked to the secondary streets (Fig.6).⁷

4.2. Importance of the mosques in the Islamic Cities

A mosque is a unique type of multifunctional building, playing a spiritual, educational, social and cultural role (Michell, Grube, 2006, Vayssettes, 2002, Islamic Encyclopedic Dictionary, 2007). In history, the greatest mosques built by the ruler acted as symbols of his power and devotion to Islam religion. The Muslim dynasties were closely associated with Islam, so at the same time, 'Islam was an upbringing and legal factor for the population of these countries' (Ivashko, Kouider, 2019, p.143). Mosques are the places of worship for Muslims. Throughout Islamic history, the mosque was the centre of the community, and towns emerged around it. Nowadays, especially in Muslim countries, mosques can be found on nearly every street corner, making it easy for Muslims to attend the daily prayers. In the Western countries mosques are integral parts of Islamic centres that also contain teaching and community facilities⁸. Mosques vary in size, shape, and design depending on the local density of the Muslim population in a given area. In the past and even today, Muslims have made use of local artisans and architects in order to construct beautiful, magnificent mosques⁹. The mosque performs religious, social, and political functions within an Islamic settlement. As well as its main purpose, which is to serve as a place of worship, a mosque may also serve the following purposes:

- Mixed-use buildings,
- Meeting place,
- Place for rest,
- Source of water supply,
- Place of learning,
- Place for social gatherings,
- Public Space in the City and the Community.

The building itself is not sacred nor does it contain any sacred objects. The building's significance lies in its role as a place of prayer.

4.3. Climate as a Determinant of Urban Form

Despite the fact that the basic urban structure of an Islamic settlement shows some consistency, clear regional differences stem from the climate conditions. In hot and humid regions near the coast, the urban form is intended to be more permeable, allowing sea breezes to cool down the streets and buildings. Traditionally, the urban layout of the towns located of the Red Sea coastline is so oriented to facilitate the circulation of air blown from the sea into buildings and open spaces. Here, as an example we can refer to Jeddah (located on Red Sea coastline) or Doha (located on coastline of Arabian Gulf) situated on the coast and featuring the streets in an array along the bay to catch and funnel cooler wind breezes towards the city.¹⁰ However, in towns exposed to heat from the desert, e.g., in Riyadh, the traditional urban layout is enclosed to protect the

town against desert winds and heat. "The building is affected by its environment. The climate of the locality and the buildings around it mould the building, so that, even though social, cultural, and economic aspects are important, it owes much of its shape to these factors" (Fathy Hasan, 1986, p.3).

4.3.1. Passive Methods of Climate Control

In the Red Sea region, buildings can be cooled via modern technology, i.e., air conditioning, however, the streets and public places rely on passive methods of ensuring thermal comfort to their users. Passive cooling can be ensured by:

Orientation:

- Street orientation in line with the direction of predominantly blowing winds. In the Jazan region, the predominant winds are mainly the northern winds (in summer time) and the southern winds (in winter),
- Use of built structures to catch and funnel the wind flow.

Shading:

Shade in the streets creates comfortable environment for pedestrians. There are several ways of shading the streets:

- Appropriate frontage along the narrow streets,
- At midday when the sun is at its highest position, any overhanging structures or arcades ensure maximum shading,
- Arcades designed in front of buildings shade the pedestrian walkways,
- Any forms of landscape can be used shade the streets.

4.4. Residential Layout and Residential Units in Traditional Islamic Settlements

The organization of Islamic settlements is neither accidental or amorphous, but reveals a consistent hierarchy of access and enclosure that responds to patterns of social interaction and allegiance that are characteristic of Islamic societies. Islam's urban organization is the physical manifestation of balance between homogeneity and heterogeneity, in a social system that requires segregated domestic life and economic and religious participation. The city characteristically comprises tripartite system of public, semi-public and private spaces, varying in degree of accessibility and enclosure (Shokry, 2012, p. 4).

Any residential quarter, viewed as the private realm within the Islamic settlement, can be accessed through a variety of tertiary streets. Private units are strictly protected under the Islamic concept of privacy, and as such they are visually separated from the sections of the settlement intended for the public use. Social and climatic requirements directly influence the house layout and form. Two primary requirements that govern the principles of the house layout are the privacy and segregation of the male and female members. Typically, the houses are oriented inward and shall ensure as little direct contact with the outside world as possible. Any elements leading outside

are envisaged to face the central courtyard or terrace. An atrium or courtyard can act as a buffer between the public and private areas of a house and create an open space area which the house rooms can overlook. Upper sections of the house are also accessible from the courtyard or atrium. Public rooms can be accessed through the main entrance. The reception room is the place from which respective doorways extend, this way any direct visual contact between the house interior and the street can be prevented. Public and private areas of the house are always clearly delimited, with the front rooms intended for the public use and the back rooms reserved for women. Some houses can also have a side entrance for the female household members.¹¹

4.5. General Design Principles for Residential Units in the Red Sea Region - example of a Courtyard House in Jeddah

It is possible to see many distinctive examples of traditional architecture in many parts of the Islamic-Arab world, primarily houses. In spite of the fact that there were differences in the socio-cultural aspects of each region, the design of the houses maintained a common architectural language that responded to both the common climatic conditions of the arid zones as well as the common religious beliefs of the people (El-Shorbagy, 2010). As the family is considered the nucleus of society, Islamic residential architecture is closely related to its teachings on family and living styles. The privacy of the home is highly respected in Islam, and no one is allowed to peek inside the house interior or at its inhabitants. According

to Islam, the structure of a home is inextricably tied to its inhabitants. In Islam, the design of a house was influenced by family needs. The house was built from inside out and not the other way around. The family defined its housing needs with the help of the builder and according to its financial means. The house owner and architect worked together in a participatory manner (Azab, 2008). In order to provide a better insight into general principles governing the architectural designs of residential development in the Red Sea region, we have studied an exemplary courtyard house in Jeddah. The unit features certain traditional elements of architecture that are characteristic not only of Jeddah, but also of other cities along the Red Sea coast due to similar climate conditions, habits and traditions:

- There is a simple arrangement of rooms around a courtyard or ventilation shaft that clearly divide public and private areas for female and male members of the household (Fig.7),
- Public rooms are located at the front of the house and private rooms at the back,
- There is a public entrance from the street to the public rooms, and a private entrance from the courtyard,
- Long facades face the north and the south,
- Upper floors of the house with ventilation shafts have terraces for private open space,
- Respective doorways prevent any visual connectivity between public and private areas in the house.

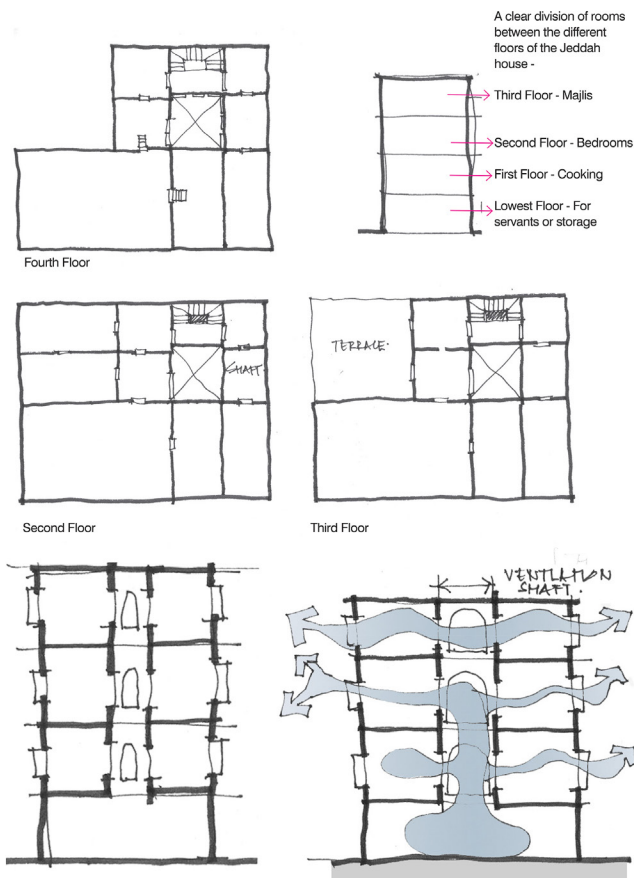
5. Learning from Traditions - Planning a Contemporary Neighbourhood in Jazan

Cultures build in their own way, borrowing from the past, then developing a distinctive style, passing on the best achievements to a new age. Art, a major component in architecture. It has been described as a manifestation of collective consciousness and a vivid reflection of creativity and innovation, expressed (consciously or unconsciously) in the physical environment. Therefore, the state of art and architecture is a measure of any culture's achievements. Meanwhile, change is a natural metamorphic ongoing process, and its impact appears continuously in all aspects of life, including its built form (Kadri Elaraby, 1996, p.138).

Architectural heritage, with its physical presence, provides a vital link with world history and with regional identities. Traditional architecture and landscape are being destroyed and distorted today: historical cities are being buried beneath new construction. Those who own, live in, and use the architectural heritage must be persuaded of the benefits derived from its conservation in order to combat this problem. The beauty of a traditional built environment which both residents and visitors appreciate and recognize as what distinguishes a place (Giovannetti, 2010, p. 1153).

Prince's Foundation for the Built Environment has significant experience in promoting sustainable solutions and creating outstanding places. The foundation has extensively studied examples of successful implementations of innovative projects around the world as well

Fig.7. House with a ventilation shaft in Jeddah, Plans and Section sketch, source: Jazan Characterization Study, private research by Tarik Alireza Consulting Engineer, office archive, London 2007, p.51.



as carried out in-depth analyses of features evolving in response to local conditions, such as climate, ecology, architecture, traditional construction styles and customs and strongly believes that in order to create sustainable towns and neighbourhoods, balance between universal designing, placemaking and preservation of local heritage must be observed. This mixed approach to designing shall also incorporate contemporary knowledge and state of the art technology to combine ecology, business and traditions into one living entity".¹² Accordingly, the proposed vision for the Jazan development complies with all these principles, in this knowledge about our ancestors and their practices, traditional building styles, techniques and materials, it, moreover, takes into account the prevailing social roles and responsibilities.¹³

5.1. Tradition-led Urban Design in the Masterplan of JazanNeighbourhood

The project site is located to the south-east of Jazan city. The project aimed to promote and design a modern representative neighbourhood development in Jazan, Saudi Arabia. This area can serve as an example of mixed-use space, populated with mixed-income community, provided with access to related facilities, which can also accommodate a mix of affordable, social housing, designed to reflect traditional values, traditional architectural style and urban plan, and to incorporate the use of local materials and craft skills, with the account for the contemporary needs of the residents.

Accordingly, the Prince's Foundation for the Built Environment examined the potential of the neighbourhood to be connected to the surrounding sites and delimited a particular part that offered a potential for full integration with the surrounding area. As the neighbourhood spreads towards the centre, it becomes an increasingly organic entity, reflecting the traditional street patterns of the Red Sea towns. Four neighbourhood centres are

located at the main routes extending through the site. The Friday Mosque, situated in the centre of the area, had a potential to serve as the hub of the new neighbourhood as it contained schools and a wedding hall. Neighbourhood areas are intended to meet the daily needs of the community and to conveniently locate respective social facilities within the walking distance of 150 meters.

5.1.1. Hierarchy of Connectivity and Movement

The investment project site has access to key strategic transport routes. A major route connecting the city with Yemen in the south runs along the west edge of the site, the developed Masterplan clearly benefits from this transport route. Sustainable movement is fundamental to the vision of the site as a key urban neighbourhood, that can play the dominant role for the surrounding suburban development. A respective network of roads was constructed to ensure smooth circulation within the site and between the surrounding suburbs as part of the Enquiry by Design.

Primary, secondary and tertiary streets are typical circulation routes in traditional settlements. Pedestrians can enjoy pleasant environment and reach a variety of destinations on foot walking along the streets envisaged in the Masterplan. The network of streets is also to be linked to the adjacent network of streets to maximise connectivity between the areas. Passive cooling envisaged to provide comfort in the public realm, includes:

- a. orientation of streets and spaces in-line with the prevailing winds to reduce daytime temperatures,
- b. shade maximisation in the public realm, implemented by:
 - appropriate building frontage along narrow streets,
 - overhanging parts of the building frontage,
 - arcades in front of the buildings,
 - proper use of suitable landscape elements.

Fig.8.Landscape layout, source: Jazan Masterplan Report, Tarik Alireza Consulting Engineers office archive, London 2008, p.21.



Developing the Masterplan, the Prince's Foundation for the Built Environment focused on the pedestrian movement patterns. Streets were designed to benefit from the natural self-cooling and to catch and funnel the prevailing winds, and provide shade to daily activities over a major part of the day. According to the plan, they are to link the facilities within the walking distance. The Friday Mosque was envisaged to serve as the hub, being the junction of the pedestrian traffic.¹⁴

5.1.2. Landscape Principles

The proposed layout of the public utility space is shown in the landscape strategy plan (Fig.8). It envisages:

- A main public square with major public buildings, the Friday Mosque and the Wedding Hall, with commercial buildings for flexible use on the ground floor. The main public square designed as a place suitable for important community events (a street market or religious celebrations).
- Four key neighbourhood squares with the main community centres clearly distinguished. Mosques are intended to serve as landmarks and community focal points therein. Moreover, parking space for mosque goers shall be flexible enough to be used for outdoor dining as well.
- An urban network of well-connected small public squares. The flexible use of space will generally offer limited opportunities for trees. Studies of traditional public squares have revealed that they

typically contained a single wide-spreading tree. Yet, such squares offer shade and rest and relaxation options on the main routes and increase the legibility of the urban layout.

- An important public green area for recreation and social gathering. A key social hub for the development (taller buildings) extending around it.
- Greenery along the major traffic routes to provide a recreation space or walking avenues.
- A new pedestrian route connecting the site and the *corniche* (a road built along a coast).¹⁵

5.2. Residential Area of the District

A neighbourhood centre will serve as a focal point provided with the retail options to satisfy the daily needs of the new community. The new open space will surround a small mosque, providing flexible space for parking as well as for social gatherings. The mosque, a key landmark building, will be attracting pedestrians to visit the neighbourhood (Fig.9). A flexible building typology, envisaging adaptation options, will allow small businesses to grow with the community, and as a result will underlie the formation of a vibrant social hub.¹⁶

5.3. Mixed-use development

The Masterplan envisages that this urban neighbourhood will cater for the needs of a variety of users, starting from residential housing through shopping, working, entertainment and ending on access to major community facilities. Retail and commercial areas are to play an active role in boosting vibrant urban life and attracting investors to the planned development project. Taller buildings at the development outline are designed as flexible space of mixed use (commercial and residential use). The plan was governed with the following assumptions:

- Primarily residential buildings to delimit the neighbourhood centre.
- Retail and commercial spaces envisaged along the major routes extending to the south and west of the site.
- Public utility facilities such as the Friday Mosque, a multipurpose community hall and a school to be situated in the neighbourhood centre and the main square.

Fig.9. Neighbourhood centre and the Mosque sketch, source: Jazan Masterplan Report, Tarik Alireza Consulting Engineers office archive, London 2008, p.31.

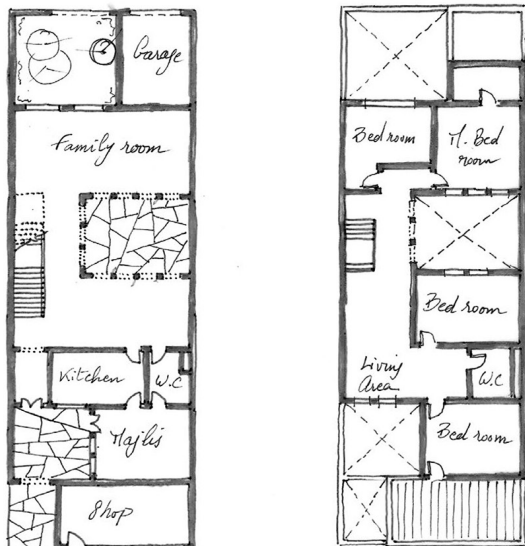


Fig.10. Mixed-use courtyard house, plot size (10 x 27 M). Left: proposed ground floor plan. Centre: proposed first floor plan. Right: 3d model, source: Jazan Masterplan Report, Tarik Alireza Consulting Engineers office archive, London 2008, p.33.

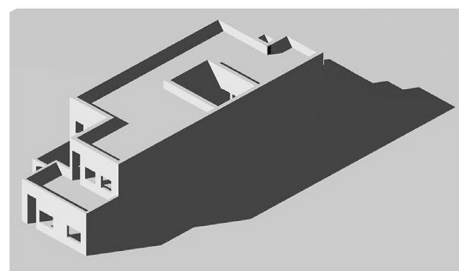




Fig.11.Elevation presenting the Mosque and different types of proposed houses, source: Jazan Masterplan Report, Tarik Alireza Consulting Engineers office archive, London 2008, p.33.

5.4. Proposed House Types

The Masterplan envisaged a wide range of house types depending on the cultural and climatic conditions. Prior to Enquiry by Design, extensive studies of housing and urban typologies on the Red Sea coast had been made to draw up relevant characteristics of typical development (Fig.10, 11).

Throughout the region, the above-described courtyard houses are the dominant house types. The Enquiry by Design attempted to adapt these historical structures to modern conditions and to ensure privacy in accordance with modern social expectations. It, further, investigated the options for the mixed-use buildings with the intention to accommodate retail and commercial services on the ground floor and the residential functions on the upper floors in order to ensure a more intensive use of the buildings. Taking privacy into account, the height of such mixed-use buildings was envisaged to be respectively adapted to prevent overlooking into the residential quarters.¹⁷

ENDNOTES

- ¹ Jazan Total Population, 1974-202, knoema.com (access 18.03.22).
- ² The Prince's Foundation for the Built Environment and Tarik Alireza Consulting Engineers and Dr. Khalid Azzam, *Jazan Masterplan Report*, London 2008, p. 02.
- ³ *Jazan Characterization Study*, private research by Tarik Alireza Consulting Engineer, Jeddah 2014, p. 04.
- ⁴ Wiedmann F., *Post-oil urbanism in the Gulf, case study - Kingdom of Bahrain*, Institute of Urban Planning, FG SIAAL of the University of Stuttgart, 2010, p. 36.
- ⁵ Bianca S., *Urban Form in the Arab World*, Zürich: vdfHochschulverlag AG, 2000, p. 150.
- ⁶ Bianca S., *Urban Form in the Arab World*, Zürich: vdfHochschulverlag AG, 2000, p. 83.
- ⁷ Talib, K., *Shelter in Saudi Arabia*, London: Academy Editions, 1984, p. 13.
- ⁸ Bianca S., *Urban Form in the Arab World*, Zürich: vdfHochschulverlag AG, 2000, p. 100.
- ⁹ Bianca S., *Urban Form in the Arab World*, Zürich: vdfHochschulverlag AG, 2000, p. 101.
- ¹⁰ *Jazan Characterization Study*, Alan Baxter & Associates and Tarik Alireza Consulting Engineers, "Micro" research, Jazan 2007, p.25.
- ¹¹ *Jazan Characterization Study*, Alan Baxter & Associates and Tarik Alireza Consulting Engineers, "Micro" research, Jazan 2007, p.49.
- ¹² Statement by Hank Dittmar, CEO, The Prince's Foundation for the Built Environment state, Jazan. Masterplan Report, 2008, The Prince's Foundation for the Built Environment, Tarik Alireza Consulting Engineers, Dr. Khalid Azzam, London, p.04.
- ¹³ Jazan.Masterplan Report, The Prince's Foundation for the Built Environment, Tarik Alireza Consulting Engineers, Dr. Khalid Azzam, London 2008, p.04.
- ¹⁴ Jazan Masterplan Report, The Prince's Foundation for the Built Environment, Tarik Alireza Consulting Engineers, Dr. Khalid Azzam, London 2008, p.18.
- ¹⁵ Jazan. Masterplan Report, The Prince's Foundation for the Built Environment, Tarik Alireza Consulting Engineers, Dr. Khalid Azzam, London 2008, p.20.

Conclusions

Finding proper balance between modern and traditional styles in designing housing environment is particularly important in those countries where good engineering practice in construction and urban planning is strongly predetermined with extreme weather conditions. There is no doubt that we shall undertake all measures possible to comply with the postulates of man-centred modern residential architecture and those pertaining to optimisation of green areas, even if the possibilities are limited. Nonetheless, because the local values and culture also need to be protected, tradition-led design makes a perfect option. Ensuring proper balance between modern and historical construction is indispensable for the protection of historical urban layouts and traditional construction techniques. An apt incorporation of such values in modern architecture can only facilitate the creation of highly attractive and top quality residential areas in compliance with the expected standards of living and with the genius loci of the place preserved.

¹⁶ Jazan.Masterplan Report, The Prince's Foundation for the Built Environment, Tarik Alireza Consulting Engineers, Dr. Khalid Azzam, London 2008, p.30.

¹⁷ Jazan. Masterplan Report, The Prince's Foundation for the Built Environment, Tarik Alireza Consulting Engineers, Dr. Khalid Azzam, London 2008, p.33.

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