

AFFORDABLE HOUSING FOR MIDDLE INCOME EXPATS IN QATAR: STRATEGIES FOR IMPLEMENTING LIVABILITY AND BUILT FORM

Raffaello Furlan and Attilio Petruccioli

*Department of Architecture and Urban Planning,
Qatar University,
Doha, State of Qatar*

**Corresponding Authors email addresses: petruccioli@yahoo.com -- raffur@gmail.com*

Abstract

Qatar is making large investments for the development of the urban fabric and public transport systems of Doha (i.e. the Msheireb downtown Doha, the Doha metro, and the Lusail light rail transit). It has also already been publicly announced that the population has undergone markedly faster growth over the past few years. According to data from the Ministry of Development Planning and Statistics (MDPS), the population grew over 5% each year, between 2008 and 2013 and then 12.5% between December 2012 and November 2013 (2.05 m). This large increase in the population growth is the result of expatriate workers arriving to Qatar for the construction of new infrastructure and buildings underway in advance of the 2022 World Cup. A massive influx of foreign labor, namely another half-million blue-collar workers, technicians, and managers, is expected to be recruited. Also, due to the fast growth of the population, real estate agencies highlighted the need to build more affordable housing in Doha. This paper argues that, for the construction of residential complexes in the Islamic city of Doha, livability and integration of new developments within the existing urban fabric are criteria to be evaluated and considered. A method centered on the interpretation of the pre-existent context is proposed: the old urban fabric is a source of generative ideas and design principles, which are embedded into the historical layering of design concepts.

Keywords: Social sustainability; urban fabric; history; cultural traditions; contemporary Arab cities; Shariah; a-priori type

BACKGROUND

It is acknowledged that the demand for affordable housing in Qatar is caused by the combination of economic progress and population growth. In 2014, MDPS published a report called “*Qatar Economic Outlook 2013-14*” stressing the recent rising rent and housing services. According to the data shown in the report, between July and October 2013, average housing inflation was just over 6.3% year-on-year and furnished apartments attracted higher prices. In addition, Doha-based Al Asmakh Real Estate Development stated that these units increased 12% in 2013 (2014). Concurrently, as stated by the real estate firm, Colliers International, the average expat household living in Qatar is spending more than a third of its annual income on rent (Kovessy, 2014). This highlights the unaffordability of housing for many residents (Walker, 2015b); many residents declared that they are facing unreasonable rent increases as their leases turn over (Kovessy, 2015). In addition, as Gulf Times has reported, the sudden demolition of old buildings in heavily populated areas such as Najma, Al Mansoura, and Doha Jadeed, has added to the crisis because many long-time residents of these areas have been forced to find alternative housing (2013).

In reaction, members of the Central Municipal Council (CMC) have stated the need for introducing and/ or reinforcing appropriate regulations and laws to regulate the national ongoing

rent increase, which in turn is causing the illegal sub-division of villas and apartments into small units, illegally rented. As stated, partitioning single houses in order to sub-let them on a multiple-occupancy basis is considered illegal in Qatar under Law No. 4-1985 (Walker, 2015a). Additionally, this phenomenon has a negative impact on utilities and neighbourhood amenities such as parking and garbage collection.

Real estate agencies highlighted the need and priority (1) to develop projects similar to the one called 'Barwa City' (see Figures 1, 2, 3, 4, and 5), and (2) to incentivize the private sector to build affordable housing (Sharif, 2013). The lack of affordable accommodation for middle income expats is a growing problem that some property companies have tried to address. In order to prevent overcrowding in districts and residential neighborhoods in Doha's center, the current tendency is to relocate medium-income groups from central areas to dormitory settlements in the outskirts and peripheries of the city (OBG, 2012).



Figure 1-2-3. Map, Aerial view (drawing) and Street view of Barwa City, Doha, Qatar (Source: Authors).



Figure 4. Panoramic View of Barwa City (Source: Authors).

Governmental authorities, such as the Ministry of Municipality and Urban Planning (MMUP) and Ashghal-Public Works Authority, have also highlighted that the key factor for the long-term success for these developments is the understanding of the extent to which new transport systems are integrated within the urban fabric of Doha, how the land along transport systems is used with the aim to reduce traffic congestion.

Recently MMUP declared their awareness of the problem; from the beginning of 2015, a national housing strategy was introduced to address and hopefully solve the problem. In addition to governmental and real estate agencies' proposed strategies for intervention, scholars are critically arguing that urban interventions and renewals within the urban fabric should not only be guided by pure investments or marketing factors. Researchers pointed out that the emerging emphasis on proposing just global real estate developments has a negative effect on the authenticity and sustainability of Doha's cultural identity (Salama, 2013). It is pointed out that practitioners and officers from governmental agencies are lacking in the appreciation of the value and significance of the city's cultural heritage. Conservation of cultural heritage is the strategy, which should lead any intervention into implementation of the built fabric in contrast to the current strategy led by the dominance of the 'dollar' on people value systems.

Scholars pointed out that contemporary urban developments in the Islamic world are often the result of a deep crisis of architecture (Benninson & Gascoigne, 2007; Falahat, 2014; Furlan, 2016; Hakim, 2013). First and foremost, this crisis is derived from the outcome of a long-lived cultural emergency of the Western world. In the attempt to give order to fast growing cities, local authorities have adopted master plans and building regulations from the British and American practice, without giving importance to the cultural identity of the city with its spaces and existing urban fabric. Recently, the physical and economic models were the City with its abnormal vertical development and the compound with mono-familiar houses, where services and commercial activities were separated and concentrated in anonymous containers. In both models, more than the architecture, it is the urban fabric that has lost the organic character of the traditional city. The uneasiness facing a city with low identity and too similar to imported alien models has determined a research for new extravagant images (Furlan, 2015; Petruccioli, 2007).

Therefore, the authors argue that the construction of new affordable housing or the implementation of existing ones cannot be simplified to a strategy aiming only at increasing density, heights, and/ or locating new urban development within areas connected to the city (Besser and Dannenberg, 2005; Brown, Dixon, and Gillham, 2014; Burke and Brown, 2007; Cao, Handy, and Mokhtarian, 2006; Cervero, 2000; Givoni, 1989; Hamilton-Baillie, 2004; Kaspurin, 2011; Kent, 1984, 1990, 1997; Lucas, 2012; Zyscovich and Porter, 2008). Matters such as spatial, architectural, and urban form, or related to integration within the inherited urban fabric of Doha, must be addressed. The adopted strategy should not contribute to the destruction or disfiguration of the valuable heritage, but, on the other hand, should contribute to evaluating and prioritizing the cultural identity of the city (Carmona, Tiesdell, Heath, and Oc, 2010; Cervero and Kockelman, 1997; Leyden, 2003; Salama, 2014).

Qatar National Vision 2030: Sustainable Urbanism and Urban Growth

The past decades have witnessed the international debate about eco-city theory, which has contributed to the development of concerns related to the future of urbanism and its product: the city. In turn, this has prompted practitioners to develop a greater understanding of the strategies for the development of sustainable urbanism. Qatar National Vision (or QNV2030) has embraced this view, with the aim of connecting the past and the future, preserving its society's cultural and traditional values (as an Arab and Islamic nation). This is also one of the cardinal purposes of QNV 2030; the vision envisages sustainable urban development with emphasis on a growth marked by a balance between tradition or culture identity and modernization (Planning, 2008).

Scholars define sustainability as the enhancement of economic productivity by protecting and restoring the ecological systems, while improving livability of all peoples (Aasen, 2002; Brown et al, 2014; Carmona et al, 2010; Day, 2003; Elsheshtawy, 2004; Furlan, 2015). In relation to sustainable urbanism, researchers argue the need to enhance the built environment, limit the use of non-renewable energy sources, and control pollution, which affects climate change and ecological health and/ or livability (Farr, 2008; Givoni, 1989). The built environment plays a dominant role towards the achievement of sustainable urbanism; the enhancement of walkability and a transit-served communities integrated with high-performance buildings capable to provide the arena for various daily activities are cardinal strategies of the movement (Kaspurin, 2011; Lang, 2005). The proximity of public modes of transportation, services, amenities, workplaces, and schools has a severe impact on the livability of the users.

Despite principles of sustainable urbanism, comprising smart growth, new urbanism, green building, being discussed and developed in the late 20th Century, its philosophy has been implicitly embedded into vernacular buildings. Thus, the biggest misconception of contemporaneity is the abuse of the term sustainability; along the obsessive search for certifications, the sight of sustainability as a philosophy of life, and/ or a way of life, which has

enabled the inhabitants of the Arabian Peninsula to cope with extreme environmental condition, has been neglected and even lost. For example, the oasis, which is a built expression rather than a geographical location, is the place where this connection is embedded. Within the so-called vernacular architecture, which implements natural defence processes involving the survival of the inhabitants, sustainability is implicit in the compositional and construction practices. Until sustainability will be considered and offered as a product, it will be difficult to combine it with liveability (Haider, 2008; Petruccioli and Pirani, 2003).

The Affordable Housing Crisis in GCC

“Barwa city is short ride city from the centre of Doha and Doha’s international Airport, a development designed to provide modern homes in a contemporary setting. The development comprises around 6,000 apartments in 128 buildings, spread across 1.35 million square meters. It offers unique housing solutions that meet various needs and lifestyles, consisting of studios, and two and three-bedroom family apartments. When complete, the development will also feature international schools, nurseries, retail outlets, a bank, health club, mosques, restaurants and a variety of recreational facilities” (Sharif, 2013).

Barwa City has been launched by Barwa Real Estate Company (Barwa), incorporated in the State of Qatar in January 2006, as an initiative aimed at providing less dense affordable (or low-cost) housing to immigrant workers and their families along with amenities in an area which was once a toxic waste dump only accessible by the highway and, therefore, a better quality of life than in the city centre (Fez-Barrington, 2012). It consists of a large scale mixed used residential development located between the Mesaimmer district and the Industrial area of Doha. It is approximately located with distance of 10 km from the main business center, leading to travel times of at least thirty minutes by car. “The self-contained community is composed of 5968 residential units, two amenities areas, mosques, schools, clinic, health and fitness club, shopping center, commercial center, multipurpose Hall, and a bank among other facilities that would serve a community of over 25,000 people ... Barwa City residential units are located in 128 buildings of three types A, B and C each type consists of 48, 48 and 32 buildings respectively. Type A provides 1056 two-bedroom and 1584 three bedroom units. Type B provides 2304 three bedroom units. Type C provides 1024 studio units totaling 5968 units” (Wassef, 2012). Due to the scarcity of affordable housing in Qatar, the developer, which is also considered one of the largest publicly listed real estate developers in the region, has been able to increase rental rates in recent months up by 30 per cent within the mixed use residential development (Salama and Wiedman, 2013).

Scholars stress that in Gulf cities, new urban developments, namely affordable housing, are led by real estate speculations and macro-scale infrastructure projects. This emerging trend has resulted in the planning of large scale mass affordable housing for medium income migrants and their families in areas not integrated within the fringes of old downtown areas of cities, because these areas were established in the periphery and conceived as new dormitory settlements. In turn, it is stressed that the periphery can easily transform into mono-typological and mono-functional settlements with the potential of housing future low income groups once the housing market has adapted to the needs of medium income groups in more central and accessible locations. In addition, the link to public transportation on its own is not sufficient to guarantee no future downgrading and the emergence of ghettos (Salama, 2011; Remali, Salama, Wiedmann, and Ibrahim, 2016). Therefore the attempt of providing affordable housing to specific social groups, as pursued with the development of Barwa city within the context of Qatar, raises the major urban planning challenge of finding an original and innovative urban form, enhancing relevant sustainability parameters and concurrently not neglecting the impact on the environment, economy and society, as envisioned by Remali et al: “Housing transformations worldwide are the

result of major demographic and socio-economic changes in addition to technological advancements and socio-political” (Remali et al, 2016, p. 1).

METHODOLOGY

“Urban designing is an argumentative process in which participants in it learn as they go along. They learn about goals and means as perceived by different stakeholders, they learn from the evidence that each provides for its views” (Coleman, 1988, p. 127).

The case study of Barwa was selected cause of its size, location and dominant role in the contemporary dynamic of affordable housing development in Qatar. Local newspaper articles, property websites, and official reports were assessed to revising related urban development dynamics in Qatar. In October 2015, three one-to-one conversations meetings were conducted with leading designers and managers from (A) the Ministry of Municipality and Urban Planning (MMUP), (B) Ashghal-Public Works Authority, and (C) Qatar Real Estate Development to review and assess the planning stages of Barwa city. The authors conducted the interviews by evaluating official planning reports inclusive of demographic and socio-economic studies, reviewing the urban design and planning’s stages of the development, forwarding unstructured, exploratory questions, in order to attempt to build a qualitative, in-depth understanding of the multi-faceted relationship between urban form, sustainability, and livability for affordable housing in Qatar. The aim of this exploratory analysis was to identify patterns that characterize the planning of affordable housing in the GCC and connect these latter to the existing literature to expand our knowledge of Gulf urbanism and affordable housing projects in the GCC.

Additionally, to understand how livability can be implemented in Barwa city, visual and oral data were collected through structured interviews with residents. Visual data was collected using (A) photographs and (B) site observation. In November 2015, oral data was collected through structured interviews conducted onsite with forty households to discuss perspectives and experiences of householders (Creswell, 1994, 2003; Denzin and Lincoln, 2005; Dunn, 2005; Marshall and Rossman, 2006; Mason, 2001; Zeisel, 1984). The findings have been revealed and explained below (1) to facilitate the identification of common trends patterns, which characterize the urban development of Barwa city, and (2) to understand the extent to which livability can be enhanced in new housing built forms.

FINDINGS

As anticipated, in order to overcome the problem of shortage of affordable housing in Doha, public authorities, real estate companies, and practitioners are advocating the construction of new complexes similar to Barwa City as a model to be followed. After the analysis of the visual data collected through site-visits, it is revealed how Barwa city was designed and planned not in full accordance with the intertwined principles for achieving sustainable urbanism and/ or to create a sustainable community. Therefore, the findings, structured into five categories, are here revealed.

Site accessibility: Public Transportation Network

Transportation planners highlight the need to study not movement of vehicles, but namely people and accessibility to new urban development and its facilities through public transit. Consideration should be given to the extent to which daily varied trips made by users (i.e to school, work, shopping, the library, sport facilities, etc.) are pleasant, economical, safe, comfortable, simple, and autonomous. These insights have been leading transportation planners and urban planners to adhere to the principles of sustainable urbanism.

In addition, urban and transportation planners argue the need to attribute more emphasis to the trips people make rather than the movement of vehicles. This practice, also defined as

'balanced transportation planning', aims at reducing the movement of private vehicles and at enhancing more ecological modes of transportation and/ or trips made by foot, by bicycle, and by public transportation. In turn, this means that the use of the automobile can be reduced only (1) when sustainable alternatives exist (i.e. pedestrian networks) and (2) a traditional compact, mixed-use urban fabric is maintained.

As mentioned, Qatar is currently investing large funds into the transformation of Doha's built environment and the development of new major urban public transit networks. The currently under construction Doha Metro, which is expected to be operational before the 2022 FIFA World Cup competition, will have a train station relatively close to Barwa city. In turn, this will contribute to implementing accessibility to the new residential complex, namely from Doha.

Public Realm: Open spaces and Streetscapes

Lewis Mumford stated that the city's multifunctional public realm (its streets and squares) are the "ultimate expression of life in the city" (Mumford, 1952). These spaces, utilized by citizens for frequent meetings, encounters, or exchanges of ideas, are recognized as a fundamental requirement for citizen's well-being (Lennard, 2002, 2005, 2008). Such public spaces contribute to building social capital by encouraging social relations through repeated interactions among citizens and therefore contribute to the implementation of way of life, humanization of the built environment, and implementation of its livability.

In the case of Barwa city, the lesson from tradition cities inhabited by strong communities, characterized by the specific design of streets and squares encouraging a rich public life and where the built form and its relationship to the streets supports human interactions, is missed. There are no public places inside and around the residential buildings, due to the continuous prevalence of excessive areas for roads and car parks. The spaces to be used for social interaction and/ or activities act as detached and isolated buildings or areas not even connected by pedestrian or cycling paths to the residential buildings (see Figures 8, 9, 10, and 11). Traffic free public spaces around the building, where children can safely play without the constant supervision of parents, have been replaced by shaded car parks.



Figure 8-9-10. Open Public Realm and one of the Mosques in Barwa City (Source: Authors).

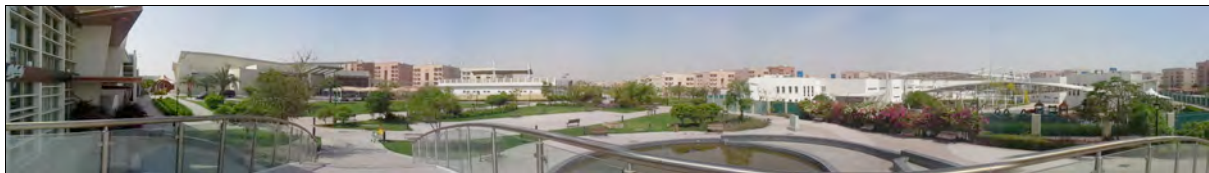


Figure 11. Panoramic view of the open public realm in Barwa city (Source: Authors).

Barwa City settlement, served by a network of wide dual carriageway roads, consists of two symmetrical and symmetrical parts, whose center of gravity are arranged amenities (two malls,

two sports centers, and two Newton Academy schools). The six mosques are spread in the residential fabric. The center of the whole composition is dominated by a park. A pedestrian path crosses the three public quadrants from east to west. The residential part consists of 280 buildings, ranging from G+4 to G+6 height apartments, and forty-eight townhouses (G+1) aligned on the south side. The tall blocks are grouped in smaller units of 8 to 12 buildings, arranged so as to comprise an elongated residential area between each block, which is a sort of a compromise between a street and a square. The pedestrian connections with the other units are in fact prevented by a thick band of parking slots. The wide vehicular roads are too large, do not have trees and shading devices, and are therefore not inviting to socialize. In fact, they divide the whole settlement in large urban blocks not communicating or interconnected.

The main problem of the settlement is within its open spaces, where pedestrianized public spaces are provided, albeit with significant defects of connectivity and low availability of equipment (seating benches, sun-shading devices). The commercial services are oversized, due to the foreseen planning for upcoming adjacent settlements, which in turn might cause overload of vehicular traffic in the future.

The orientalist theory on the Islamic city denies the presence of the square since the social hub function is played by the Friday Mosque (Coulson, 1964; Schacht, 2002). There are two squares (Meydan): Isfahan with its incredible off-scale and the Meydan at the foot of the Citadel of Cairo, which must be referred to. Across the Dar al Islam in Morocco, we note the squares of the imperial city, hierarchically arranged in progression from the small square to the geometrically proportioned square in front of the royal palace: the Mashwar, until the immense irregular multifunctional Jama al Fna Square in Marrakesh. In opposition to the limited number of squares, open spaces, including the productive gardens embedded in the compact urban fabric of Sana'a, (the Spanish Huertas) are diffused. A significant role is covered by casual spaces, usually architecturally not planned, but perhaps representing the real social magnets (Krie, 2009; Rossi, Eisenmann, Ghirardo, and Ockman, 1994)

Along the traditional Islamic city, the open spaces for the stations of the caravans, located outside the walls, but also the many leftover spaces that the renewal of the historic city often hastily left behind (i.e. the garden Baraka said in Doha and Nasser Square in Dubai) are utilized by people to exchange information (Elsheshtawy, 2004). Finally, looking at the grain of the urban fabric we have to pin our attention to the nearly infinite variety 'semi-public and/ or semi-private spaces consisting of small squares, open common courts, as a result of division and raised platforms, porches. These are the real places of gathering for the community, which the modern city modern in its anxiety for rationalism has deleted from the repertoire of the urban possibilities.

Mixed-Use Neighborhood

Historically, the marketplace is considered to be the heart of the city, being the center of economic, civic, social, and cultural life. It provides opportunities for people to work together and/ or coordinate activities. Along the apartment blocks in Barwa city, the retail shops usually located at the ground floor have been replaced by residential apartments, which are then surrounded by car-parks areas (see Figures 12, 13, 14, and 15). Scholars stress that the often proposed modern planning's concept of 'single function zoning', where the varied functions and activities are separated, has caused undesired consequences for both social and ecological sustainability. On the other hand, livability is enhanced when shops, workshops, or restaurants are located at street level and residential dwellings are located on the floors above. It is the proximity of multi-functional areas and/ or facilities (living, working, and socializing) to private dwellings, which contribute to enhance the livability of the public realm. This setting makes the traditional city not only socially healthy, but also ecologically sound, eliminating unnecessary travel (Young, 1996).



Figure 12-13-14. Absence of Mixed-use apartment blocks in Barwa city (Source: Authors).



Figure 15. Panoramic view (Source: Authors).

Both eastern and western planners have oversimplified the framework of the traditional Islamic city, providing a very rigid zoning model based on the golden rule of the separation of commercial and industrial areas from residential neighborhoods. In reality, large Islamic cities of the past, such as Cairo, Aleppo, and Damascus, have implemented exceptions to their built environment. During the Mamluk era in Al Cairo, the high population pressure and the complexity 'of new activities' semi-industrial produced the 'rab', a building-container, which houses retail-sales functions and craft workshops within the two lower floors, and apartments within the upper floors. The medieval 'rab' is a successful example of building, which comes from Cairo's secular transformation process and from the courthouse to its transformation into in late-Roman tower, to the subsequent aggregation of the towers in a row or around a large common courtyard - almost a closed square - square with the retail function within the lower floors. This brief typological tour provide an understanding of how poor and dull the alternatives offered by the contemporary city are, designed between the detached cottage and the tower and in opposition how much wealthy solutions are offered by local history when he puts at stake diversity of functions, orientation, linked with urban routes and housing distribution.

Compact Urban Fabric and Human-Scale Architecture

This section highlights how the typical city on the Persian Gulf with its sequence of suburbia, indistinct and un-planned spaces without visible edges, nested structure of private domestic houses, and compact and porous traditional urban fabric, is opposed to the contemporary built environment made of cluster of skyscrapers or of juxtaposed apartment blocks facing each other, as visible in Barwa city (see Figures 16, 17, and 18). The traditional city is characterized by a high urban density and small grain route from continuous veins, streets of different sections. We will not dwell on the implicit compliance of the traditional city to the arid and torrid climate of the Gulf nor on its implicit sustainability substantiated by a large literature (Haider, 2008).

This is 'the city of donkeys', as defined by Le Corbusier. It is known for its shortened and compact structure, which encourages walkability and proximity to all major amenities. This quality, being lost along the recent development of the oil-city within the Gulf, attempts to be

recovered as a partial walkability strategy within some mega-project. For example, the new development of Msheireb in Doha provides particular attention to the internal pedestrian network and areas, where at least at a conceptual level is realized for the joyful gathering of the community. On the other hand, most mega-projects show an 'insularity defect'; for example, urban districts are surrounded by fast roads, which create a marked splintering urban effect. The Msheireb district is the historical extension of Souk Waqif, but the pedestrian connection between the two is not achievable through a tunnel, since the two districts are separated by a large road and a clear difference of level. This confirms the extent to which, with the contemporary city's dissection by wide urban road, the pedestrian connectivity is nearly ignored.

On the contrary, we propose to follow up with a virtual walk on the aerial photo of 1963 the route, which from Wakra penetrates the heart of the old city up to the Souk Wakif; the "path of the donkeys", envisioning a total connectivity, extends without solution of continuity throughout the city, marked with small episodes of human scale open spaces. This is a human scale retained within the Islamic city, with the exceptions of Sana'a, Shibam, and Asir, where high residential towers, different from West Bay in Doha, contribute to keeping the network of services and routes at the road's altitude. This human scale, yet to be appreciated in all sikka of the Souk Wakif, has been erased within the contemporary city, in the speculative attempt to consistently monetize the surplus of the central areas.

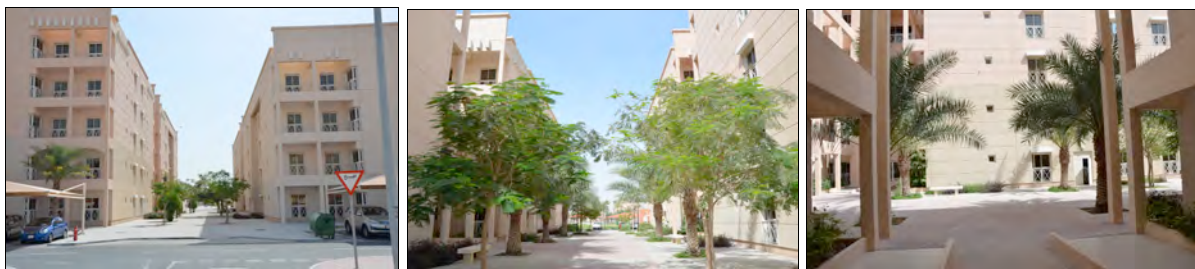


Figure 16-17-18. Apartment blocks facing each other (Source: Authors).

CONCLUSIONS

Since the seventies, Doha has grown frantic according to an urban development planning based on automotive mobility, on the dissolution of the ancient city, the functional zoning, the spread of residential areas organized in gated communities, designed by British engineers and based on a mechanical transfer of extraneous rules. Continuous urban fabrics of the past made of courtyard houses, built side by side, and connective paths of limited and still human dimension have been replaced by large urban blocks, arranged in modular grids and regular plots, segregated by oversized roads, and mostly following the rules of detached setback for residential construction. The sequence of corrugated fences and barricades defending the privacy of the villas in Doha is the image of a paradoxical situation that has been created, a dichotomy between a code of behaviour and long-established customs based on the Koranic Code, opposed to the urban planning codes of the Municipalities, derived from Western cultures (Hathloul, 1996, p. 97-102).

The urban codes inspired by the Western codes, adopted in modern times by the Municipalities of Islamic countries, contributed to design and plan expansion quarters very similar to the suburbs of American cities and peripheries of European conurbations, generating building fabrics and houses in clear contrast to the customs, beliefs, and sensibilities of Muslim communities. Increasingly strong are the voices of the local scholars who rise up against operations of retro fixing codes and procedures, designed in the United States, implemented in Singapore and applied with few changes in the Gulf (Hakim, 2008, 2013, 2014) in favor of cities and neighborhoods more consistent with the spirit of the place and of the Islamic society.

Paradoxically, the global city advertised as the realm of complexity reduces the complexity of housing building types to basically three types: the detached or semi-detached villa (the latter includes row houses), the 4 to 5 floors condo apartments with a central staircase, and finally the high-rise tower, which in hindsight is not more than an higher extension of the previous type.

The typological complexity of the pre-industrial city, enriched by an almost infinite number of variations, able to respond to every need of the family is lost. Similarly, the courtyard house type, guarantor of the environmental sustainability of a building in countries with hot climate arid or humid heat, has been neglected and hastily removed from the list of possible solutions, not for functional, technological, or representation inefficiency, but psychological reasons, since it was identified with the poor world of the pre-oil era (Petruccioli, 2007; Petruccioli and Pirani, 2003). It is mainly the urban fabric that is majorly affected: in gated compounds of Doha the complex articulation of the city earlier distributed into public, semi-public (common short and/or widening streets) and real meeting places, and the private space of the house has diminished; the most common organization has become the street-parking-house. The solution is not to develop Hong Kong's Housing height style since financial savings would be paid off with huge social costs, as an integrated policy of attention to the findings: accessibility, location, open spaces, mixed use, compact urban fabric, and walkability.

In conclusion, the problem of the design of the residence cannot be thought of as a typological and technological retro-fixing of standard settlements based on alien built environments, who come from a remote elsewhere, such as the analysis of Barwa City has amply demonstrated, but as a profound rethinking, which requires careful attention to the voices coming from the place. It requires a revolutionary turnaround that includes adjustments of town planning regulations, building types, building systems, and materials up to the economic relations between the various stakeholders.

The traditional way of building cities has been damaged by "modernist" planning principles, real estate trends, and an oil-based economy. After this failure, instances of environmental and social sustainability took enormous importance. Missing in the vast literature on sustainability is the moral dimension, aimed to use the city, while in traditional societies all good sustainable practices were implicit in the idea of such a-priori type, shared by all the members of the community. In the instant city, the idea of a-priori type has been dissolved into small fragments. The idea of a-priori type cannot be replaced by a prescriptive code, mechanically derived from the Shariah. Islamic Law aims at establishing a high moral code not a technical code. Nevertheless, we should not ignore its ethical imperative.

The alternative is represented by the historic fabric of the Islamic city with its layers, which have preserved the memory of the building structures of each subsequent historic period. The traditional city contains those principles and laws, which classified and interpreted, could be a code, useful for a contemporary designer. It will be a distillate of the sedimentation of the city, interpreted in the light of the typological process, which gives a logical sense to the typical behavior of physical structures in their responses to climate data, site and social issues. From a given urban fabric, it is possible to extrapolate those typical behaviors in front of an obstacle, a slope, a pre-existing structure, but also a narrow passage; by an aggregate, it is possible to extrapolate the mechanisms of building growth and behaviour of the type, the mechanisms of separation between the house and the public space and all the elements that constitute a generalizable body of a future code. The project should be an expression of a choral society, sharing the product of history, almost the last stage of a long natural typological process; this should be the obligatory path.

LIMITATIONS AND FUTURE RESEARCH OPPORTUNITIES

The State of Qatar has been urbanized since the mid-seventies due to the increased income caused by the oil industry. With rural settlements being a product of tribal structures and a limited socio-economic context, it cannot simply be expected that contemporary new residential or mixed-use developments are conceived and planned according to vernacular typologies. Thus, affordable housing represents the key challenges of urban planning along the formation and/ or development of sustainable Gulf cities.

The current paper is limited to initiate a debate about the extent to which the vernacular urban fabric is a source of generative design principles such as accessibility, location, open spaces, mixed-use, compact urban fabric, and walkability, which are often neglected in the contemporary design and planning of new urban developments of contemporary cities and which consequently contribute to diminish their liveability. Therefore, further studies can be conducted into an exploration of the various challenges, which vernacular building typologies such as the courtyard houses, would face in the GCC's contemporary urban setting. Additionally, further studies might focus on the extent to which the development of affordable housing threatens economic development, ecological and social balance, as well as liveability in major urban areas of Gulf cities.

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AUTHORS

Dr Raffaello Furlan

Assistant Professor, College of Engineering,
Department of Architecture and Urban Planning,
Qatar University, Doha, State of Qatar
raffur@gmail.com

Prof. Attilio Petruccioli

Professor, College of Engineering,
Department of Architecture and Urban Planning,
Qatar University, Doha, State of Qatar
petruccioli@yahoo.com