

Sustainable Neighborhoods in the State of Qatar: Msheireb Downtown Doha**Eman Saleh AL Fadala, Raffaello Furlan***

College of Engineering, Department of Architecture and Urban Planning, Qatar University, State of Qatar

Original Research Article***Corresponding author***Raffaello Furlan***Article History***Received: 20.06.2018**Accepted: 07.07.2018**Published: 30.07.2018***DOI:**

10.21276/sjeat.2018.3.7.2



Abstract: Over the past three decades, rapid urban sprawl, a changing economy, and shifting demographics have caused rapid developments, which included the urban regeneration of existing neighborhoods. In the 1940s, after oil and natural gas discoveries in the State of Qatar, Doha experienced massive transformations on social, economic, cultural and environmental levels. These transformations have created (A) the need for creating sustainable neighborhoods and (B) raised questions related to how existing neighborhoods can be more sustainable in the future. This study investigates the neighborhood of Msheireb Downtown Doha and the reasons which have caused its urban regeneration. The study investigates (1) practical forms of sustainable urbanism principles by analyzing the Msheireb project and (2) how this urban project can be enhanced according to these principles. The research design encompasses a summary of the literature, the site analysis, structured interviews and a resultant vision of a sustainable concept for Msheireb to define the actions needed to implement the sustainable neighborhood concept. The findings reveal that, comparing the image of old Msheireb with the current regenerated one, the later neighborhood is compact, pedestrian-friendly and mixed use, which in turn encourage people to engage and promote a higher level of social interaction and therefore, contribute to enhancing the urban livability of the neighborhood.

Keywords: New Urbanism, Sustainable Urbanism, Urban Regeneration, Built Heritage, Msheireb Downtown Doha.

INTRODUCTION

According to New Urbanism's theories, livability is enhanced within compact, pedestrian-friendly and mixed-use neighborhoods where the public realm provides the arena for social interactions. Also, people want to live in neighborhoods that reflect a cultural identity. In the Arab Gulf urbanization context, Fereej is a cardinal physical component of the neighborhoods, reflecting a cultural connotation. The design of Fereej plays a significant role in promoting social interactions [1-3].

Nevertheless, the modern form of urban development based on speculation and globalization has a remarkable impact on the livability and identity of neighborhoods of Doha, the capital city of the State of

Qatar. Specifically, in the mid-20th century, the State of Qatar adopted urban planning policies and strategies to address sustainable national urban developments [4-7].

The need for sustainable national urban developments primarily emerged due to the recent growth of the population in urban areas, changes of social and economic factors, and the needs of upcoming generations. Nowadays, the State of Qatar is facing this challenge by enacting a strategy called Qatar National Vision 2030. The vision is founded on four main pillars: human, social, economic and environmental developments. The objective of this vision is to develop a modern country focusing on the four pillars to ensure the benefit of living in the present and future generations (Figure-1).



Fig-1: (Left) Qatar National Vision 2030 Four Pillars

(Source: QNV2030) and (right) Qatar National Development Framework Hierarchy (Source: MME).

One of these neighborhoods is Msheireb, located at the center of Doha, a traditional neighbourhood in the heart of old Doha that is characterized by the availability of heritage houses, complex structures and roads networks. These features must be revived and conserved for future needs by perpetuating Msheireb as an equitable, resilient and livable neighborhood to encourage social interactions within it [8, 9].

This research explores the transformation of Msheireb into a sustainable neighborhood. This will contribute Msheireb to be more sustainable, more livable, and more accommodating to preserve the neighborhood’s principles—complete, connected and compact mixed use, pedestrian friendly, bicycle routes, open spaces, an integrated street network, and preservation of cultural heritage. Therefore, this research study builds on the basis of urbanism. It examines the urban structure of Msheireb, its social and cultural connotations. Msheireb is one of the historical areas in Doha that has traditional houses along with the Souq Waqif area that are inclusive of Msheireb’s historic background and evolution. This research study will develop a comprehensive view of Msheireb focusing on the three essential aspects of sustainable urbanism: the social, the economic, and the environment aspects; site, accessibility, architectural and land use. Accordingly, four main disciplines of literature were reviewed to achieve the main purpose of this study: new urbanism, sustainable urbanism, urban regeneration and built heritage.

The empirical investigation used previous archived research and books. Also, walking tours of the existing Msheireb project in the neighborhood were used. The research focuses on three main objectives. The first is the investigation and evaluation of the conditions of Msheireb from various aspect, including spatial and architectural form, urban heritage and identity and social interactions. The second is related to assessing the current urban regeneration project of

Msheireb from a sustainable development viewpoint. The third objective is about the recommendations to make future neighborhoods more sustainable.

BACKGROUND
New Urbanism

The New Urbanism movement was founded in the US in 1980 to address issues related to urban design practices and place making and to promote users’ quality of life. The issues that have influenced New Urbanism were noticeable until the invention of the automobile before World War II. The movement has produced theories that were framed to reshape the built environment of cities and to introduce several activities to be performed by people within walking distance. It concentrated on formulating mixed-use neighborhoods, integrated networks of street design, and other features like connected pedestrian networks and accessible public spaces. This movement began as a result of a reaction to urban sprawl, which is caused by (i) increased use of private cars and (ii) the shortage of public transportation. Accordingly, this leads to loss of the mixed-use urban fabric and traditional compact area. Therefore, the aim of the New Urbanism movement is to minimize urban sprawl by encouraging traditional urbanism based on specific principles such as connectivity, walkability, mixed use, urban design, smart transportation, traditional neighborhood structure, sustainability and quality of life to make the urban setting more livable (Figure 2) [10-13].

The New Urbanism (CNU) focuses on a planning and development approach based on the principles of how cities and towns had been built during several centuries: walkable blocks, streets, housing, shopping in close proximity and accessible public spaces. In other words, New Urbanism focuses on human-scaled urban design. The Congress of New Urbanism (CNU) is a group of planners, developers, architects, scholars and citizens who have developed principles that serve as solutions for reflecting positive economic, health, and environmental impacts on

communities. After three years of work, they delivered a list with twenty-seven urban design principles in 1996. These principles are sub-divided into three categories, and each category includes nine principles: (a) the region, metropolis and town, (b) the neighborhood, district and corridor; and (c) the block, street and building. These principles can be used for all scales of development, including urban neighborhood, provincial main streets and suburban areas. Also, these principles can be used for developing new areas, preserving existing areas, and revitalization of valuable areas [14-17].

Scholars argue that in the case of Qatar, most of the neighborhoods are affected by urban sprawl, lack of provision of the transportation system and increased use of private cars, which lead to loss of the traditional compact and mixed-use neighborhood. Neighborhoods are becoming less walkable: people depend on private cars as the main means of transportation, and public buses are utilized by labourers. As a result, drivers are suffering from serious traffic congestion. In spite of greater development in the road network, other infrastructure is being developed in the past ten years while the construction of good road networks has been neglected.

Furthermore, in Qatar, the concept of compact, walkable, mixed-use neighborhood is not well established. Some neighborhoods, for instance, Msheireb and Al-Sadd, that are distinguished by the concept of mixed-use, connected, walkable neighborhoods, still experience traffic congestion. This can be minimized by facilitating walkability in the neighborhoods. In general, traditional compact neighborhoods have been neglected. Furthermore, recently the local cultural identity has been taken into consideration: this is evident through the endeavors of making an image for Doha by constructing new buildings, the Mosque of the Faculty of Islamic Studies, the Islamic Art Museum, the Fanar, traditional design elements in high buildings (West Bay) and the Souq Waqif [18-20, 7].

Therefore, the purpose of this research study is to examine the principles driving regeneration and evolution of a typical 'neighborhood' visualized by New Urbanism's theorists, aiming at creating a new lifestyle through assorted activities implemented within a short walking space in a mixed-use urban setting, with the preservation of cultural values.

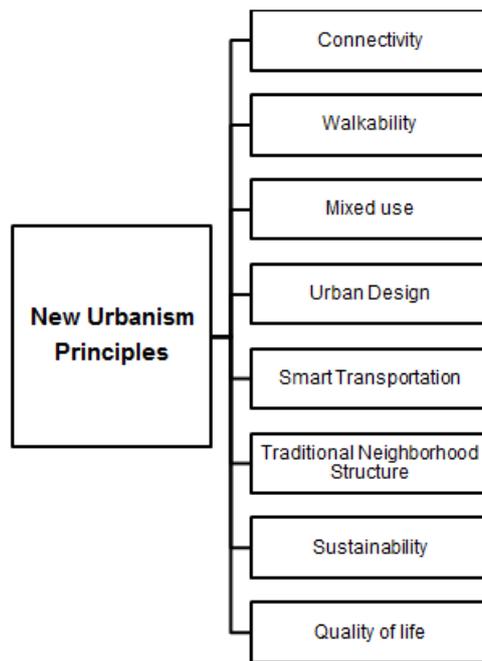


Fig-2: The main principles of the New Urbanism movement
(Source: the authors)

Sustainable Urbanism

Sustainable Urbanism has developed gradually in the past two decades. Previously, sustainability was not the pivotal role of urbanism. Architects like Malcolm Wells has viewed urbanism as a destroyer of natural resources. Also, Girardet was one of the first who admits the significance of an incorporated approach to evolving cities in a sustainable trend [21].

He studied issues such as viewing cities as ecosystems, urban heat islands, the footprint of cities and others with urban design schools-an example is the garden city movement [22]. These were responding to the needs of a diverse range of community groups to improve the livability of their urban areas and enhance the intergenerational equity of urban development [23]. Presently, sustainable urbanism is a universal issue for

the planners and designers around the world. Numerous scholars and researchers have addressed the issue of sustainable urbanism from both theoretical and practice point of view. Researchers argued that the practical form of sustainable urbanism need to improve as it serves as an approach to the environment, sense of community, and economic prosperity in a built form.

Sustainable urbanism is “the application of sustainability and resilient principles to the design, planning, and administration/operation of cities” [24]. Sustainable urbanism is involved mainly in planning and smart design to connect neighborhoods to promote walkability. It aims at fostering livability through (1) providing a variety of healthy living choices for individuals, (2) creating a sense of community to enhance engagement and integration, (3) sustaining chances, (4) enhancing equality to establish a neighborhood for a walkable environment, and (5) promoting sustainability to a create friendly environmental society [25-27].

The three basic aspects of sustainable urbanism are social, environmental and economic

(Figure 3). Social aspects of the urban environment have a substantial importance in sustainable development because social interactions depend on the urban buildings and public spaces. Furthermore, social sustainability may indicate equal access to facilities and housing, sophisticated community networks that support respect and trust, and peacemaking that promotes a sense of identity [28-30]. Environmental aspects of developing urban environments focus on reducing traffic, adding pedestrian paths to enable people to walk to retail, residential and commercial amenities, and enhancing the neighborhood's livability. Economically, sustainable urbanism entails offering job opportunities and activities for the community that lead to continuous economic growth [31-33].

In this context, urban design requires applying special features to ensure achieving valuable gains to inclusive mixed land use, density, better walkability, comfortable and attractive public areas. These changes are envisioned by sustainable urbanism. Therefore, it is important to understand and enhance the distinctive cultural and social characteristics of the place.

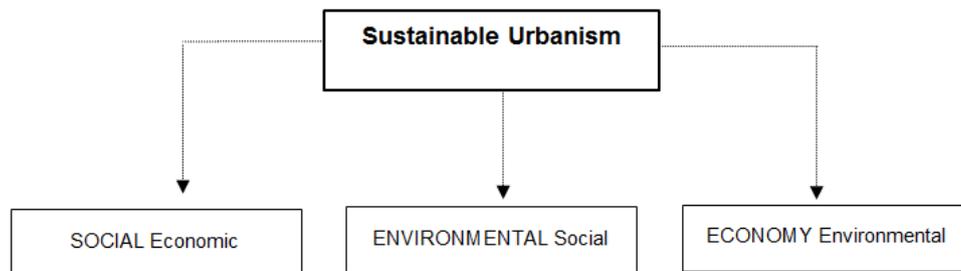


Fig-3: Illustrate aspects of Sustainable Urbanism
(Source: the authors).

Urban Regeneration

Urban regeneration is defined as “A comprehensive and integrated vision and action which leads to the resolution of urban problems and which seeks to bring about a lasting improvement in the economic, physical, social and environmental condition of an area that has been subject to change” [34]. From other scholars’ perspective, urban regeneration is an integrated process that includes three aims (the three es: equity, economy and environment), decreasing inequality, preserving continued economic competitiveness, and conserving and protecting the environment [35, 34].

Urban regeneration encompasses procedures and methods for redesigning spaces in an area that needs to comply with it (Figure-4). In this chain of procedures, urban regeneration works to evolve the physical situations of the area, raising economic prosperity and considering environmental sustainability. Roberts [34] states that it is important to understand the

difference between urban redevelopment, urban rehabilitation and urban renewal. The first term, "urban redevelopment," has a comprehensive mission and lacks some well-defined goals. "Urban rehabilitation" does not address the actions and terms of "urban renewal." Essentially, "urban regeneration" is used for comprehensive improvements such as improving neighborhoods’ infrastructure, regenerating poor buildings, and increasing economic growth.

"Regeneration" means the rebirth of the city. It involves methods of social, economic improvement and transformation. These methods allow the city to preserve all valuable urban assets [36, 37]. In this context, regenerating urban heritage is about conserving the heritage value of an urban area, which is reflected in the traditional buildings and/or urban fabric of the city. Msheireb is the historic urban center of Qatar. The neighborhood has been troubled by the collapse of physical structures and absence of facilities, which has led to the ruin of the historic area.

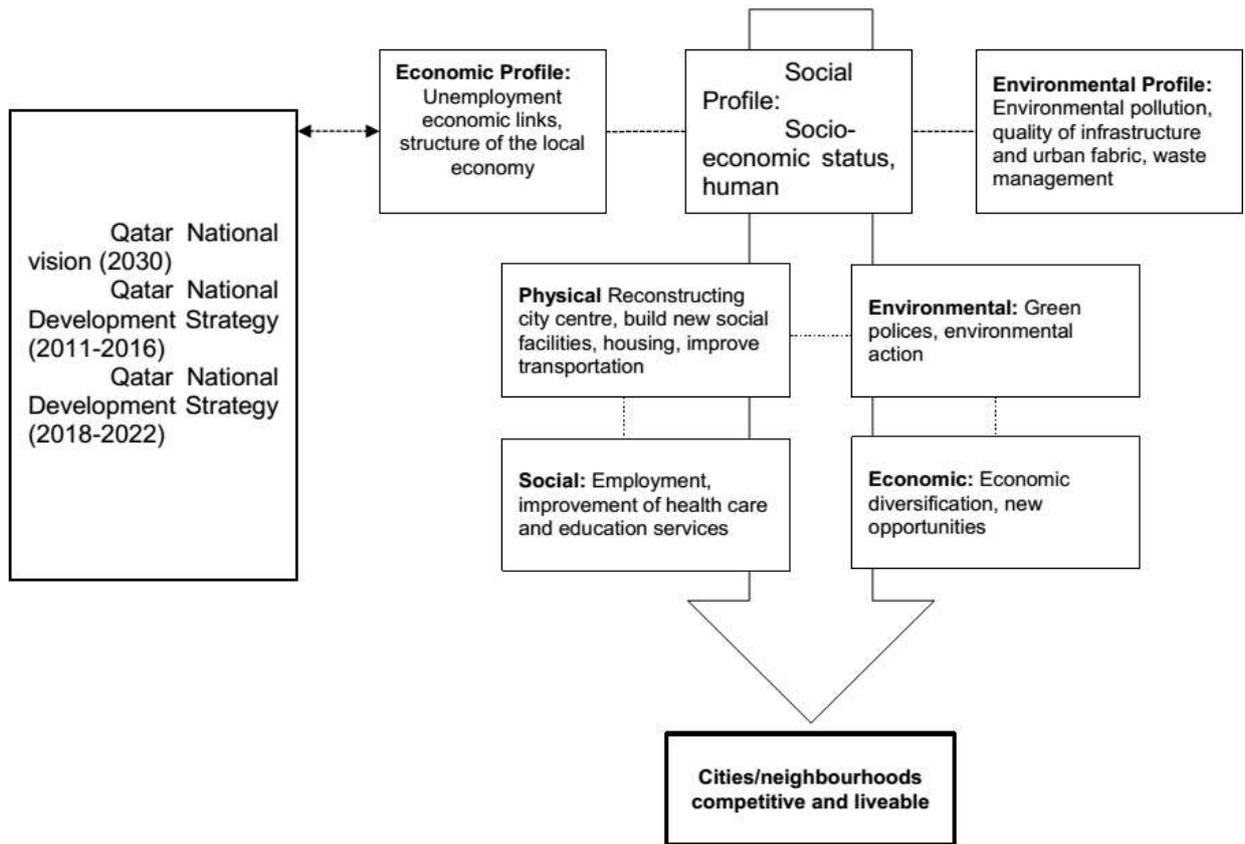


Fig-4: The process of urban regeneration
(Source: Author)

Globalization and Built Heritage

Cultural heritage is a non-renewable resource. Identity, artistry, local traditions, architecture and memory are society’s cultural values, which are embedded in the urban built heritage of cities (Figure-5). It is about conserving the asset’s value by creating new style according to existing values.

Nowadays, the built heritage of cities is facing threats from the process of globalization, which is causing the loss of identity and character of the built environment. Cities around the world are becoming shapeless entities designed and planned with uniformity [38, 39].

Qatar’s National Vision determines the framework within which national strategies for urban planning and regeneration must be addressed until 2030. The act envisions the construction of a modern

state while conserving culture, heritage and traditional values. The program is based on four pillars: human development, social development, economic development, and environmental development [40].

Over the past two decades, the impact of globalization was considered in the urban development and preservation of the national built cultural heritage and identity. This can be noticed on landmark buildings such as the Grand Mosque, Islamic Art Museum, Souq Waqif, the traditional design features of high-rise buildings (West Bay), the reconstruction of Msheireb, and the historic heritage neighborhood of Doha. Challenges related to cultural identity and modernization were considered in the urban regeneration project of Msheireb. Therefore, this research study aims to explore the principles leading to the urban regeneration of Msheireb.

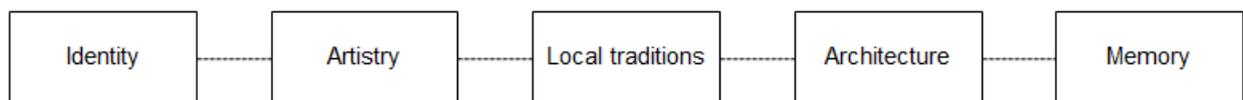


Fig-5: The cultural values of society
(source: authors).

THE RESEARCH DESIGN

Methods for the collection of data

“Urban designing is an argumentative process in which participants 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” [41].

Msheireb was selected because of its historical importance. In April 2018, face-to-face interviews were conducted with managers, cultural and planning pioneers from (A) Qatar Museum (QM) and (B) Msheireb Properties to explore the history of the area, the related urban problems of the neighborhood and the stages of the Msheireb project. The methods of gathering data are the following (Figure-6).

Theoretical study

Investigating the disciplinary context (New Urbanism, sustainable Urbanism, urban regeneration, urban heritage and identity) contributed to developing a conceptual framework for the exploration of Msheireb [42, 43].

Visual Data

Site visits, photographs, historic maps and field notes were collected as qualitative data that led to understanding the visual appraisal of physical attributes of the area [44, 45].

Oral data

Interviews with planners, architects and users contributed to understanding the physical form of Msheireb (morphological aspect) and reviewing the key-design principles behind the urban regeneration of the site [46, 47].

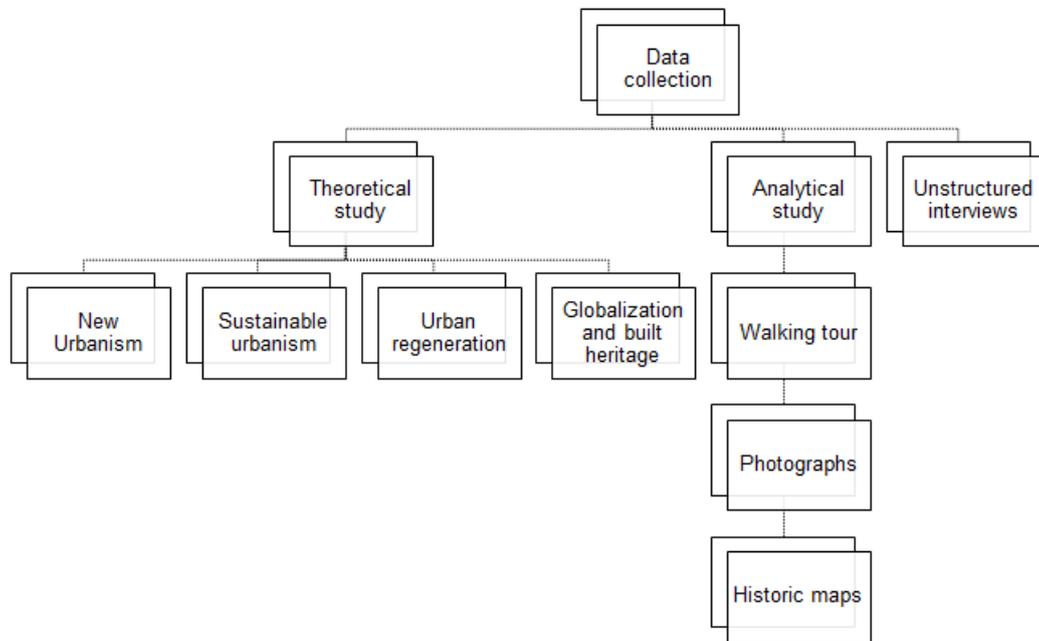


Fig-6: The framework for the research methodology
(Source: authors)

FINDINGS

Site analysis

Msheireb neighborhood encompasses 310,000 square of land located in the center of Doha. The study

area is bordered by Msheireb Street to the south; Al Rayan Street to the north; Jassim bin Mohamed Street to the east; and Al Diwan Road to west (Figures-7 and 8).



Fig-7: Existing area
(Source: authors)



Fig-8: Location of Msheireb neighborhood, known as Msheireb Downtown
(Source: Google maps)

The Context

History of Msheireb Neighborhood

Doha's origin is rooted in the resettlement of the Al Thani tribe on the eastern coast of the Qatari Peninsula in 1847, where its clans founded the settlement of Al Bidaa at the location of an old fishing village [48]. The water source of Wadi Sail and the shape of the coastline were the main reasons for the selection of the area. Al Bidaa had developed along the shoreline into eight settlements that were home for Qatari tribes and groups of Persian immigrants. Each social group lived in their own areas, and the main centers of social interaction were the harbor, market and mosque [49]. Later, Al Bidaa was renamed Doha.

Msheireb is one of these settlements, representing the old historic city center of Doha. The

old Msheireb neighborhood was the center of the Doha, connected to the waterfront through the building of the Corniche. At the turn of the century, the population was around 12,000 and 350 pearling dhows. People always retained a close relationship with the coastline. Souq Waqif, the traditional local market, was adjacent to the neighborhood, where the route of the old wadi running between them to the sea allowed access to vehicular movement. From this old wadi, the name 'Msheireb' was born, meaning in Arabic "a place to drink water." The site is also known for Al Kahraba Street, which means in Arabic "Electricity Street," one of the oldest streets in old Doha and the first street supplied with electricity in Qatar, reflecting Msheireb's commercial importance.

For 20 centuries, Msheireb buildings were constructed using local materials from tree trunks, coral, palm fronds, mud and stones. Residential buildings ranged from simple buildings with one space and an entrance to courtyard houses with two floors [50]. The design of Islamic tradition was applied for family privacy in separating female and male spaces, which allow winding alleys between building complexes within neighborhoods, known as Freej. Freej served as corridors to access homes. The homes of these neighborhoods are close to each other. The high density of the built area was influenced by the hot climate and the necessity to shade walkways and exposed walls [51]. Souq Waqif was situated at the edge of Wadi Msheireb and was partially roofed. Doha's market extended in main road on the side from the port area to the inland area, like other Islamic port cities. The center of Doha's pre-oil settlement was formed by the traditional market, the palace and the Friday mosque.

Over the last few decades, with the detection and development of oil and gas in the 1950s, Doha gradually faced transformation, changes and growth. It was transformed from a small fishing and trading center to a modern metropolis. This development resulted in New Urbanism, which has driven to a massive transformation of Doha's skyline, the identity of the city, residents' way of life and the landscape. Msheireb had included many residential buildings that contained houses, hotels, apartments, and hostels. The population of Msheireb consists of different cultures and nationalities. This variety is not reversed in the architecture of Msheireb, but it reflects an absence of unique character for distinguishing Msheireb from others. Most of the buildings were of similar height and color. The essential problem related to the morphology of Msheireb was the collapse of buildings, because most were in poor condition due to negligence of the old urban fabric of Msheireb and a lack of open spaces.

Presently, Msheireb neighborhood is the site of the downtown regeneration project, "Msheireb Downtown Doha," which was set up to redefine the route of the city's development and restore the cultural heritage roots on which Doha was founded.

Msheireb Downtown project: The Heart of Doha

Msheireb Downtown Doha is a shining example of Qatar's determination to innovate, not just for innovation's sake, but to improve quality of life and ensure that Qatar's heritage and culture evolve as the country grows. Msheireb is the first sustainable regeneration project of a downtown in Qatar. It will regenerate the traditional commercial center with approximately QAR 20 billion developments. Msheireb Downtown is being developed by Msheireb Properties, known previously as Doha Land's Heart of Doha and carried out by a subsidiary of Qatar Foundation.

The project focuses on reviving the old commercial district and combining it with a modern architectural language inspired by traditional Qatari architecture and cultural heritage values. Furthermore, the project considers the response to climate change by complying with the highest standards in green building and applying the latest sustainable technologies to the site. The strategic objective is to reverse the model of development based on reliance on car transportation, isolated land use, and energy-hungry structures.

This section analyzes the factors in the regenerated urban form of Msheireb neighborhood related to sustainable neighborhood principles and objectives such as pedestrian paths/walkability, transportation network systems, parking strategy, traditional local architecture, open spaces, way findings and signage systems. Oral and visual data were collected from interviews with participants and maps, photographs and site tours.

The Master plan

The neighborhood is bordered by several major streets: Msheireb Street; Jassim Bin Mohamed Street; Al Rayan; and Al Diwan Street. These streets serve as a highway to and from the neighborhood. The Msheireb Downtown project was designed to separate the neighborhood into five quarters that contain a substantial mix of retail, hospitality, commercial and civic areas (Figure -9). Each quarter is designed to be close to the others and convenient enough to walk to through the shaded corridors. The five quarters encompass offices, luxurious residential units, the extended government area, green spaces, community mosques, an international academy, state-of-the-art retail spaces, cultural offerings, café culture and hotels. The five quarters are (Figure-10):

Diwan Amiri Quarter

An extension of Doha's administrative and civic areas located at the northeast corner of the project and adjacent to the Amiri Diwan and the Al Koot Fort. It also includes the Amiri Guard Building, the iconic Qatar National Archive and Diwan Annex. The National Archive building is where Qatar's heritage is stored. On the other hand, the Emiri Diwan Quarter of the larger Msheireb urban regeneration project, as conceived by Allies and Morrison, attempts to create an intervention that is not just glass or a metal greenhouse, but ostensibly rooted in a perceived, if not actual, Qatari culture [9].

Heritage Quarter

A historic part comprised of historical riches represents on the Msheireb Prayer Ground and traditional courtyard houses dating from the first decade of the last century. Specialized teams have restored and preserved the Prayer Ground, created space for new cultural activities and converted four heritage houses into museums: The Company House, Bin Jelmoor

House, the Radwani House, and the Mohammed Bin Jassim House. The restoration has created a cultural destination within the neighborhood.

Retail Quarter

This is the largest public square with features. Barahat Msheireb is considered the main feature of the Msheireb development project with a broad range of café and dining options. Barahat Msheireb was fitted with a retractable roof so that it can be adapted to the cold temperatures of winter and the heat of summer. The Mandarin Oriental Hotel is in this active square, which is vibrant year-round with live performances and displays and community events. Also, the Cultural Forum in this quarter houses exhibition halls, art house cinemas, beautiful galleries, social gatherings and receptions.

Mixed-use and Residential Quarter

This quarter includes offices, retail spaces and leisure opportunities. Its features a combination of retail, commercial and residential properties interspersed with community parks. Also, a wide range

of elegant apartments and townhouses is near the northern end of Al Kahraba Street. Modern apartments are equipped with world-class fittings and finishes for a society from a different culture in a secure neighborhood. The mixture of apartments, office buildings, and a school form the western edges of the quarter, while the center includes a mosque and residences with a cluster of services and shops.

Business Gateway

A professional realm surrounded by a retailer and a multitude of dining and business amenities. It also contains office buildings at Al Diwan Street spread over 193,000 square meters and incorporated into the upscale living and urban apartment areas, schools, mosques, banks and the metro station on Sahat Al Nakheel. This district is close to the retail quarter via a short walk from the Galleria. In addition, it offers many hotel options, from small boutique hotels to the five-star Mandarin Oriental Hotel. The five quarters offer public transportation services along with planned tram routes to connect the community.



Fig-9: Map of the proposed land use
(Source: Msheireb properties)

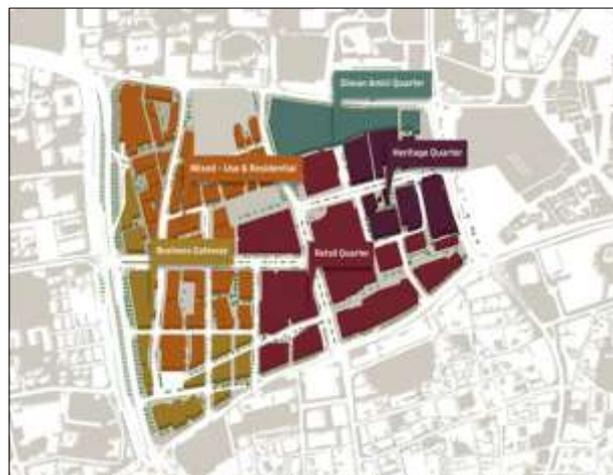


Fig-10: Map of the five quarters
(Source: Msheireb properties)

Msheireb Downtown and Sustainable Neighborhood Principles

The analysis of the Msheireb Downtown project shows that the neighborhood will become more sustainable by solving urban problems and applying several New Urbanism principles that are addressed in this study. Significant observations from the existing study area created to achieve a sustainable neighborhood include the following.

Connectivity (Pedestrian paths/walkability)

These paths were described as the channels that connect the area for easier movement. Streets within the Msheireb neighborhood like Abdulla bin

Thani Street could be effective paths with visual character that lets people sense the old downtown structure and recognize the direction through project elements (Figure-11). Structures, materials, systems and lighting can reflect this sense. In addition, to ensure smooth pedestrian movement throughout the Msheireb neighborhood, the pavement and sidewalks were developed into a network of shaded Sikas with four- to seven-meter wide lanes. However, the proximity between buildings is a key characteristic in providing a shaded area because of increases in building height. This creates an unpolluted environment and encourages people to walk from the dense heat and noise produced by automobiles (Figure-12).



Fig-11: Abdulla bin Thani Street
(Source: authors)

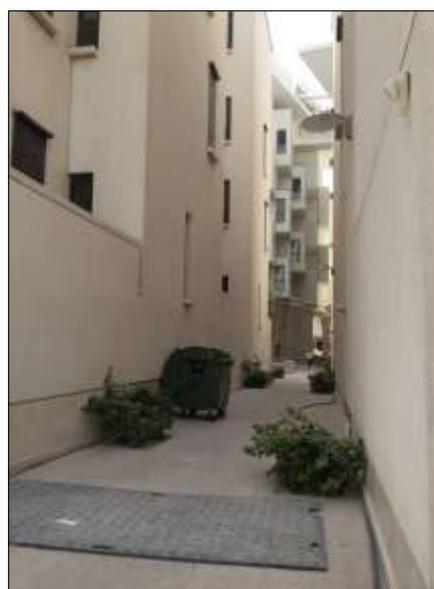


Fig-12: A Network of shaded Sikas
(Source: authors)

Mixed Use

This is comprised of more than 100 buildings, with tracts of cultural offerings, residential and commercial properties, entertainment and retail areas (Figure-13). Msheireb is designed to merge the courtyard principle by converting it to new parameter

blocks. To re-establish Msheireb as a sustainable neighborhood in the center of Doha, the biggest share of commercial use converts the old residential neighborhood into the main business space. Kahraba Street has been restored as the major commercial street (Figure-14).



Fig-13: Mixed-use buildings
(Source: authors)



Fig-14: Kahraba Street
(Source: authors)

Combination of Modern and Traditional Neighborhood Architecture: Msheireb is a regeneration project that reflects a unique architecture in the historic core center of Doha. This project discovers the remaining Qatari history, memory and cultural heritage

through the dilapidated buildings (Figure 15). The building system consists of unified facades made of marble that reflects simple architectural beauty (Figure 16), including the gates that characterize the area and building exteriors. In Msheireb neighborhood,

traditional strategies have been applied to restore the historic traditional buildings and maintain them versus external factors that seek to destroy them and their value. Also, the traditional patterns introduced into the

additional new buildings reflect the sense of identity. Therefore, the architectural aspect of the Msheireb is expected to encourage residents and tourists to socialize and interact.



Fig-15: Remaining memory of Qatari history
(Source: authors)



Fig-16: The unified form of facades
(Source: authors)

Open Spaces and Plazas: Public areas are important to ensure that people interact with the surrounding locality and sustainable cultural heritage. The Msheireb project includes various open spaces distributed throughout the area. Al Baraha, one of the biggest open spaces in the project, was planned to host

occasional events (Figures-17 and 18). The Msheireb project is targeted to be one of the most attractive destinations for tourists and residents. Interviewers highlighted some elements that distinguish the open spaces: the presence of landscape features, adequate

shaded areas, cafes and outdoor furniture. This is to fulfill people's needs and enhance social engagement.



Fig-17: Al Baraha
(Source: authors)



Fig-18: Other open spaces in the area
(Source: authors)

Smart Transportation and Parking Strategy

The Msheireb Downtown project focuses on generating smart transportation within the neighborhood. The tram system will serve as boundaries to move between the districts of Msheireb. Furthermore, the main metro station will be located in Msheireb to support the decrease of traffic. In addition, more bus stops were planned throughout Msheireb. Also, the Msheireb project will introduce several modes of transportation, inclusive cycle routes and buses. The

underground car park, one of the world's largest car parks, provides over 10,000 car parking spaces in addition to over six basements for visitors and residents of Msheireb Downtown Doha. To enable Msheireb to be a smart city, the car parks will not be static facilities, but part of the mobility chain and digitally integrated. Museums and retail spaces are expected to attract a large number of people, so car parking is needed. Furthermore, the rail train station at Msheireb is the

major rail station to be used by residents, employees, commuters and shoppers.

Signage and Way Finding

The signage and way finding systems are significant elements that need to be considered for the purpose of social involvement. The Msheireb project has taken into consideration signage and way finding. What characterizes the area is the unique signage in buildings and the way findings. The interviewers highlighted that the traditional houses that were converted into museums and opened for visitors currently were issues related to way findings. According to visitors' comments, it is difficult to reach the museums due to limited directional signs that make the visitors misinterpret the area. Visitors recommend adding more signs to map the way to the Msheireb museums.

Based on this analysis, the findings of this research could be divided into two main categories: a) urban problems related to the older form of the Msheireb neighborhood and its impacts on losing urban identity; and b) specific features of the Msheireb regeneration project such as pedestrian paths/walkability, way finding, signage systems and open spaces.

Urban Problems of the old Urban Fabric of Msheireb Neighborhood and its Impacts on Losing Urban Identity

Globalization, social and environmental problems and the lack of the identification of Doha City were primary reasons for many projects initiated by the government and planning sector. A group of projects was commenced for developing the neighborhoods by the authorities, includes local planning that concentrates in regenerating a Qatari architecture with a unique cultural design. Msheireb was one of those projects that fostered the rebirth of old downtown Doha to connect different generations.

Msheireb neighborhood was suffering from many urban problems that led to loss of its important position as the old center, as well as the urban identity that reflected the way a place informs the identity of people and characteristic features. The government has been taking action to deal with these urban problems by focusing on the urban regeneration of the Msheireb Downtown project to make it a sustainable neighborhood and continue to preserve the cultural heritage and urban identity. In this part, I will describe and explore those issues from the interviews of the Msheireb developers since the site had already been demolished.

Modernization

After the discovery of oil and gas in the 1950s, Doha has faced transformations in many neighborhoods as a result of globalization. Modernization is one issue

in the Msheireb neighborhood, which represents the historic city center of Doha. The modern and new interventions are disconnected and disrupted the traditional spaces that are located within the neighborhood and that reflect the culture of Qatari heritage. Modern urban planning principles have been developed without considering the importance of the implementation of New Urbanism principles and the need for sustainable neighborhoods with attention to cultural heritage. In the Msheireb Downtown project, these buildings have been demolished because they do not fit into the older fabric. In this context, the urban planning principles followed by the government should be working for both old and modern fabrics and consider the New Urbanism principles. To conserve an important layer of the past for the present and future generations, the restoration of buildings of the modern era is necessarily to maintain the urban identity.

Structure of buildings

Msheireb neighborhood structures were built in the period between 1950 and 1970. In 2005, prior to the demolition of the area, the buildings were at risk of collapse and the rest were in poor condition due to negligence. This can be clearly observed in many buildings in the neighborhood. As a result, the original inhabitants have left the neighborhood. Therefore, part of the project is reallocation of the local community in the Msheireb neighborhood as part of the idea to introduce a sustainable neighborhood combined with new urban lifestyles. This is to encourage inhabitants and meet their expectations. The overall population density within the Msheireb was around 500 inhabitants per hectare but can be anticipated to decline to 200 inhabitants per hectare.

Environment issues

Natural features including air and water quality, parks, recreation and public open spaces are part of the urban natural environment. The Msheireb neighborhood lacks these environmental features as well as other neighborhood amenities that bring a pristine condition to the city. Therefore, part of the Msheireb project is to improve the environmental quality of life. Parks and open spaces were created in the neighborhood to help reinforce neighborhood boundaries and promote pedestrian sidewalks.

Transportation

Transportation elements—especially the streets—play a role in structuring a community. The Msheireb neighborhood was suffering from the absence of smart transportation, an inefficient public transportation network and other elements like pedestrian paths. Consequently, this leads to traffic congestion. In addition, the Msheireb Downtown project designed the streets to be shared spaces that balance the needs of pedestrians, bicycles and vehicles to reduce car use within the neighborhood by

introducing a varied public transportation network to improve connectivity across the broad city.

Pedestrians, Bikes and Public Realm

One important part of the neighborhood is incorporating space for pedestrians, bikes and the public realm. These features enable people to easily walk to all destinations. The Msheireb neighborhood also lacks these features. Therefore, the project aims to restore all streets within the neighborhood to make it distinctly pedestrian- and bicycle-friendly. In addition, several pedestrian-oriented streets connect the area's open spaces and were designed with distinctive benches, lighting, plantings and public amenities that promote the quality of

The specific features of Msheireb Urban Regeneration Project

According to the analysis of the master plan in terms of walkability, pedestrian access, traditional neighborhood architecture, open spaces, smart transportation and connectivity, the development of Msheireb was based on the following principles:

- Providing different public transportation options connected with the surrounding context. This option is associated with transit stops located in different areas within the neighborhoods. For instance, there are nine stations for the tram. Further, retail stores were designed to be on the ground level of the project, promoting connectivity. Cyclist routes and pedestrian are also connected, limiting the use of cars inside neighborhood;
- Underground parking is well designed;
- The traditional and modern architectural language is applied to preserve the memory of the place, which is a vital part of accommodating the neighborhood identity;
- The environmental systems of the project were managed and controlled using LEED guidelines, which include criteria and measurements to support assessment of sustainability measurements within the project. Furthermore, the architectural drawings were addressed by environmental traditional systems;
- In terms of signage and wayfinding, well established unique signage was added in the buildings. Since there is a partial opening for some buildings like the museums, it will be important to ensure ease of finding the;
- The project creates mixed-use facilities where various activities take place;
- At this stage, the notion of the daily uses of the various spaces within the project were identified like the uses of Barahat except for schooling, retail and residential uses;
- the social memory of the place is expected to be reborn, but it is not clear if the sense of belonging and engagement will be generated in the social spaces; and

- The management procedures for the project are not clear. For instance, the Msheireb museums will be managed by the Msheireb properties or will belong to Qatar museums.

In sum, the aims of the project could be viewed thus: Msheireb development has a higher desire for projected services and high real estate values, it assists in re-building the center of Qatar, provides for residents' essential facilities, improves connectivity, walkability and reduces car use, and offers high quality environmental aspects.

CONCLUSION AND DISCUSSION

During the last 40 years, Qatar's economy has grown from pearling and fishing to a diverse economy due to the discovery of oil. Therefore, the capital city, Doha, has witnessed radical cultural, demographic, economic and urban changes.

Doha was one single core neighborhood that has grown along major routes to continue generating neighborhoods. This leaves Doha's downtown suffering from congestion because of the noticeable increase in population in Qatar. Therefore, it was important to rebuild these neighborhoods to absorb the urban expansion in the heart of Doha.

The Msheireb area is one of the oldest neighborhoods in the heart of Doha and is known as a historic old downtown that has cultural and historic value. Over the past decade, the Msheireb neighborhood has witnessed a fast change in its demographics and a huge change in its inhabitants' behavior and culture. Redeveloping the old downtown has emerged as essential to reviving the Msheireb neighborhoods.

The redevelopment of the Msheireb neighborhood aims at rebuilding the neighborhood center of Doha city, improving the quality of life and assuring that culture and heritage are preserved along with the country's development strategies. It is expected that the Msheireb development project will result in a sustainable neighborhood, promote a sense of community, and create inspiring living spaces through an integrated approach in which sustainability, heritage, economic, social enrichment, and environment enable locals and expatriates to communicate and interact.

“The Heart of Doha” urban regeneration project was selected for a research study. The old downtown where the Msheireb neighborhood located was demolished, and the project is currently under construction. It aims to evolve a modern language combined with a signal taken from Qatari New Urbanism and to focus on a sustainable approach to connect the history of Doha with the present.

The findings of this research study support the reviewed theory's relevance to the concept of sustainable urbanism and New Urbanism, which compare the image of the old neighborhood with the new one. According to the analysis, the project of Msheireb achieved many of the principles and aspects listed in both concepts. In this context, conducting large-scale rebuilding of existing neighborhoods is required to create sustainable neighborhoods as well as new neighborhoods. Therefore, the next section does not give definitive guidelines, but it does give an overview of the future of neighborhood details required for achieving sustainable neighborhoods.

- Focus on connectivity between pedestrian and bicycle paths in the neighborhood to enhance walkability on the buildings' ground levels.
- Provide smart public transportation options connected with the surrounding context.
- Respect the local traditional form and integrate it with modern architecture with respect to neighboring buildings.
- Create mixed-use facilities.
- Apply environmental systems criteria to manage and control the area, for instance, LEED criteria.
- Establish social spaces that reflect a sense of belonging and engagement.

However, the local response to the Msheireb project is still unpredictable. There are some expectations that even if Msheireb is well designed, the citizens might not live in villas or apartments. In conclusion, Msheireb is a sustainable neighborhood project at the center of Doha that identified the guidelines for sustainable neighborhoods, but, since the project is still not complete, it is not clear if it will meet the people's cultural, heritage, and social needs. Therefore, in the future, occupancy assessment will be needed to assess if the project met the sustainable neighborhood needs and expectations of the public.

CONTRIBUTION TO KNOWLEDGE

This research study helps in understanding the urban fabric of the site and urban regeneration project of neighborhoods in Qatar. The research can be added to the literature regarding planning and urban regeneration practices for neighborhoods in Qatar. Furthermore, this research can be a learning tool for the future of the Qatari neighborhoods, which has not been investigated previously. The site is surrounded by many neighborhoods that have important cultural elements of the state. This knowledge should help shape urban regeneration of upcoming neighborhoods.

Implications for Practice and Advancement of Research

The creation of sustainable neighborhoods with the integration New Urbanism principles and preservation of heritage values is crucial in transforming Doha and creating livable neighborhoods.

It is relevant to research opportunities for future. In this research study, an exciting issue was raised concerning the way in which New Urbanism principles can contribute to the achievement of sustainable neighborhoods. As highlighted in this research, Msheireb is a regeneration project that covers all the sustainable neighborhood aspects and contributes to the preservation of cultural heritage and identity in the globalization era.

Thus, further studies could be engaged to analyze the Msheireb neighborhood after it has been opened and occupied (1) to evaluate the Msheireb regeneration project in terms of how efficient the New Urbanism principles were, (2) to have more understanding of how in Qatar the heritage culture can affect urban planning of neighborhoods, and (3) to recommend a sustainable neighborhood as a comprehensive framework for the future. In turn, establishing a sustainable neighborhood within Doha city as its cultural urban identity can assist in creating an integrated urban planning strategy for constructing Doha neighborhoods that meet sustainable neighborhood requirements, following Qatar National Vision 2030.

ACKNOWLEDGEMENTS

Eman Saleh AL Fadala holds a Bachelor's Degree in Geographic and Urban planning from Qatar University, State of Qatar and currently, she is undertaking a Master's Degree in Urban Design and Planning, Qatar University. She has five years' work experience in Facilities Management field at Qatar Museums particularly in project planning.

Raffaello Furlan holds Bachelors and Master's Degrees from IUAV University in Venice (Italy), and a PhD in Architecture from Griffith University in Brisbane (Australia). He has held visiting and permanent positions in Australia (University of Queensland and Griffith University in Brisbane), UAE (Canadian University of Dubai) and Qatar (Qatar University). He has been teaching Art History, History of Architecture, Project Management, Urban Design, Architecture Design and Interior Design. His areas of interest include Vernacular Architecture, Architecture and Urban Sociology, Project management, Art History. Member of the Board of Architects in Italy and Australia, he has 20 years professional experience, split between design management, project management and supervision roles, with some highly respected companies, 6 years of which were in Italy, 10 years in Australia, and 4 years in Middle East.

This research study, initiated as an assignment at the core-course '*Research and Statistical Analysis in Planning*' (MUPD601, Spring-2018) taught by Dr. Raffaello Furlan at Qatar University, College of Engineering, Department of Architecture and Urban Planning (DAUP), for the Master in Urban Planning

and Design Program (MUPD), was developed as part of two research project schemes: (1) QUST-2-CENG-2018-20 titled “Post-2022 FIFA World Cup: Urban Regeneration Strategies for the Sustainable Master Planning of Doha”, awarded and funded by Qatar University; (2) UREP-21-036-5-006 titled “The Dawn of Doha’s Renaissance in Qatar: Urban Design Strategies for Achieving Social Sustainability in Msheireb Downtown Doha”, awarded and funded from Qatar National Research Fund (QNRF, a member of Qatar Foundation). The authors would like to acknowledge the research-oriented vision of Qatar University as an academic institute supporting sustainable development in the State of Qatar.

The authors would like to express their gratitude to the leading planners and architects of Qatar’s Government Agencies and Ministries, namely the Ministry of Municipality and Environment (MME), Msheireb Properties, Qatar Museums Authority, Ashghal Public Works Authority and Qatar Rail for their collaboration, for participating in the meetings, sharing visual data and cardinal documents relevant to the research aims, and for discussing the results and conclusion of this investigation. Finally, the authors thank the anonymous reviewers for their comments, which contributed to an improvement of this paper. The authors are solely responsible for the statements made herein.

REFERENCES

1. Alattar, D. A., & Furlan, R. (2017). Urban regeneration in Qatar: A comprehensive planning strategy for the transport oriented development of Al-Waab. *Journal of Urban Regeneration & Renewal*, 11(2), 168-193.
2. Furlan, R., & Faggion, L. (2015). The Development of Vital Precincts in Doha: Urban Regeneration and Socio-Cultural Factors. *American Journal of Environmental Engineering*, 5(4), 120-129.
3. Furlan, R., & Sipe, N. (2017). Light Rail Transit (LRT) and Transit Villages in Qatar: A Planning-Strategy to Revitalize the Built Environment of Doha. *Journal of Urban Regeneration and Renewal*, 10(4), 1-20.
4. Furlan, R. (2015). Liveability and Social Capital in West Bay, the New Business Precinct of Doha. *Arts and Social Sciences Journal*, 6(3), 1-11.
5. Furlan, R. (2016). Modern and Vernacular Settlements in Doha: An Urban Planning Strategy to Pursue Modernity and Consolidate Cultural identity. *Arts and Social Sciences Journal*, 7(2), 171-176.
6. Furlan, R. (2016). Urban Design and Livability: The Regeneration of the Corniche in Doha. *American Journal of Environmental Engineering*, 6(3), 73-87.
7. Furlan, R., Nafi, S., & Alattar, D. (2015). Urban Built Form of the Souq Waqif in Doha and User’s Social Engagement. *American Journal of Sociological Research*, 5(3), 73-88.
8. Furlan, R., & ElGahani, H. (2018). Post 2022 FIFA World Cup in the State Qatar: Urban Regeneration Strategies for Doha’. *Journal of Urban Regeneration and Renewal*, 11(4), 1-16.
9. Salama, A., & Wiedman, F. (2013). *Demystifying Doha*. Uk: Ashgate Publishing Limited.
10. Farr, D. (2008). *Sustainable Urbanism - Urban Design with Nature*. United States: Wiley.
11. Furlan, R., & Petruccioli, A. (2016). Affordable Housing for Middle Income Expats in Qatar: Strategies for Implementing Livability and Urban Form. *International Journal of Architectural Research-ArchNet-IJAR*, 10(3), 138-151.
12. Zaina, S., Zaina, S., & Furlan, R. (2016). Urban planning in Qatar: strategies and vision for the development of transit villages in Doha. *Australian Planner*, 53(4), 286-301.
13. Montgomery, C. (2013). *Happy city: transforming our lives through urban design*. Macmillan.
14. Corner, J. (Ed.) (2006). *The landscape Urbanism Reader* New York: Princeton Architectural Press.
15. Day, K. (2003). New urbanism and the challenges of designing for diversity. *Journal of Planning Education and Research*, 23(1), 83-95.
16. Leccese, M., & McCormick, K. (2000). *Charter of the new urbanism*: McGraw-Hill Professional.
17. Wey, W. M., & Hsu, J. (2014). New urbanism and smart growth: Toward achieving a smart National Taipei University District. *Habitat International*, 42, 164-174.
18. Furlan, R., & Almohannadi, M. (2016). Light Rail Transit and Land Use: An Integrated Planning Strategy for Al-Qassar’s TOD in Qatar. *International Journal of Architectural Research-ArchNet-IJAR*, 10(3), 170-192.
19. Furlan, R., & Faggion, L. (2015). The Souq Waqif Heritage Site in Doha: Spatial Form and Livability. *American Journal of Environmental Engineering*, 5(5), 146-160.
20. Furlan, R., & Faggion, L. (2017). Urban Regeneration of GCC Cities: Preserving the Urban Fabric’s Cultural Heritage and Social Complexity. *Journal of Historical Archaeology & Anthropological Sciences*, 1(1), 1-16.
21. Girardet, H. (1996). *The GAIA atlas of cities*. London, UK: Gaia Books Limited.
22. Howard, E. (1902). *Garden cities of tomorrow*. London, UK: Swan Sonnenschein & Co. LTD.
23. Eiraiibe, N., Al-Malki, A., & Furlan, R. (2015). Exploration of Sustainable Urban Qualities of Al Saad in Doha. *American Journal of Sociological Research*, 5(4), 101-118.
24. Sharifi, A. (2016). From Garden City to Eco-urbanism: The quest for sustainable neighborhood development. *Sustainable Cities and Society*, 20, 1-16.
25. Jacobs, J. (1961). *The Death and Life of Great American Cities*. New York: Random House.

26. Juppenlatz, M. (1970). *Cities in Transformation: The Urban Squatter Problem of the Developing World*. Brisbane: St. Lucia; University of Queensland Press.
27. Lehmann, S. (2011). *What is Green Urbanism? Holistic Principles to Transform Cities for Sustainability*: INTECH Open Access Publisher.
28. Furlan, R., & Alfaraidy, M. (2017). *Urban Form and Sense of Community: Exploring the Catalyst for Community Sustainability for Alwakrah Neighbourhood*. *Architecture Research*, 7(4), 123-145.
29. Gilchrist, A. (2000). *Sustainable Communities*. London, UK: Earthscan Publications Ltd.
30. Stevenson, D. (2013). *The city*. John Wiley & Sons.
31. Brown, L. J., & Dixon, D. (2014). *Urban design for an urban century: Shaping more livable, equitable, and resilient cities*. John Wiley & Sons.
32. Furlan, R., & Alfaraidy, M. (2017). *Sense of Community in Al-Wakrah City: Strategies for the Development of Sustainable Communities in Qatar*. *Saudi Journal of Engineering and Technology*, 2(10), 390-402.
33. Ibrahim, I. (2016). *Livable eco-architecture Masdar City, Arabian sustainable city*. *Procedia-Social and Behavioral Sciences*, 216, 46-55.
34. Roberts, P., & sykes, H. (2000). *The Evolution, Definition and Purpose of Urban Regeneration*. London, UK: British Urban regeneration association.
35. Furlan, R., & Saeed, M. A. (2017). *The Urban Regeneration of Al Nasser street in Doha (Qatar): Enhancing the Spatial Form and Users' Social Interactions*. *International Journal of Arts and Humanities*, 1(7), 567-575.
36. Furlan, R., Eissa, B., Awwad, R., & Awwaad, R. (2015). *Neighborhoods and Social Interactions: The Case of Al-Najada Area in Doha*. *American Journal of Sociological Research*, 5(4), 119-133.
37. Furlan, R., & Saeed, M. A. (2017). *Strategies for the Enhancement of Users' Social Interactions in Al Mirqab Al Jadeed Street in Doha, State of Qatar*. *Architecture Research*, 7(3), 69-83.
38. Furlan, R., Muneerudeen, A., & Khani, F. A. (2016). *Urban Revitalization of Public Spaces in the Pearl in Qatar*. *American Journal of Sociological Research*, 6(1), 1-9.
39. Furlan, R., N.Eiraibe, & AL-Malki, A. (2015). *Exploration of Sustainable Urban Qualities of Al Saad Area in Doha*. *American Journal of Sociological Research*, 5(4), 101-118.
40. Jodidio, P., & Halbe, R. (2015). *The New Architecture of Qatar*. New York: Skira Rizzoli.
41. Coleman, S. J. (1988). *Social capital in the creation of human capital*. *American Journal of Sociology*, 94, 95-120.
42. Ragin, C. C. (1994). *Constructing Social Research*. Thousand Oaks, California: Pine Forge Press.
43. Denzin, N. K., & Lincoln, Y. S. (1994). *Handbook of qualitative research*. Sage publications, inc.
44. Denzin, N. K., & Lincoln, Y. S. (2005). *Handbook of Qualitative Research*. London: Sage Publications.
45. Marshall, C., & Rossman, G. B. (2010). *Designing Qualitative Research (3 ed.)*. California: Sage Publication.
46. Denzin, N. K. (1978). *The Research Act: A Theoretical Introduction to Sociological Methods*. New York: McGraw-Hill.
47. Zeisel, J. (1984). *Inquiry by Design: Tools for Environment-Behaviour Research*. Cambridge: Cambridge University Press.
48. Adham, K. (2008). *Rediscovering the Island: Doha's Urbanity from Pearls to Spectacle*. London: Routledge.
49. Buainain, F. A. (1999). *Urbanisation in Qatar: a Study of the Residential and Commercial Land Development in Doha City, 1970 – 1997*. Salford: University of Salford.
50. Jaidah, I., & Bourennane, M. (2009). *The History of Qatari Architecture 1800-1950*. Milan: Skira.
51. Wiedmann, F., Mirincheva, V., & Salama, A. M. (2013). *Urban reconfiguration and revitalisation: public mega projects in Doha's historic centre*. *Open house international*, 38(4), 27-36.