

Intervention in July 9th:

*A New Plan for Misurata City, Libya*

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"My Lord Increase Me in Knowledge" (Qur'an 20:114)

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## **Abstract**

Libya's urban form has changed radically since the second half of the 19th century. Prolonged exposure to non-traditional and non-regional cultural, sociopolitical, economic, and design influences has caused certain developed areas to be plagued with many of the same problems the western world is facing in cities built within a similar framework. These blights include: high energy consumption, contaminated water, air quality, and traffic. This thesis explores the affect of the cultural crisis manifesting within the urban form. In order to design a contextually relevant building typology it is imperative to assess the architectural language of the culture. The portion of this project will include a historical evaluation of building typology in North African cities throughout time and in conjunction with population levels. Based on established patterns, and with the goal of driving future development in the right direction, a regionally responsive urban typology is to be developed. The chosen site for the building typology is one based purely on necessity of intervention. Due to recent revolutionary undertakings, the July 9th neighborhood in Misurata city, Libya, is used as an example to show how a new vision of a hybridized architectural intervention can prove to redefine how a city and its people relate to one another. This project looks to confront the problems of a region left destitute in the wake of war and destruction.

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## Introduction

“Learning from the existing landscape is a way of being revolutionary for an architect. Not the obvious way, which is to tear down Paris and begin again, as Le Corbusier suggested in the 1920s, but another, more tolerant way; that is, to question how we look at things.”<sup>1</sup> In the spirit of this quote from Robert Venturi, the success of the project that follows lies in the readers willingness to adhere to the inherent importance of understanding and learning from the current set and setting of the city of Misurata, Libya. Oddly enough, the condition of the city is one that is, at least partly, torn down and ready to be rebuilt. A problem presents itself in the way in which the people of the city go about developing the urban fabric. The solution to this problem rests solely on the design decisions made, which are based on the available information set. The crux of this issue rests upon the vastness of information provided via the digital age superset. When developing a localized typology it is imperative to use localized historical design methodologies so as to remain unaffected by outside elements and the potential detriments posed therein. The goal of this project is to stay true to traditional urban heritage, culture, and climate in an effort to maintain an ecologically sustainable model for future development. Therefore, the aforementioned success of the project extends to its efficacy in relation to the architects of Misurata adherence to the typology as presented herein.

Proper analyses of the existing conditions of North African cities require an historical interpretation of contemporary elements of structures and interstices making up the urban fabric. These elements include: height, form, and materiality of buildings, street width and materiality, layout, location, and size of open spaces, building and street use by local inhabitants and their community interactions. By analyzing these factors, this project will work to identify which morphological elements need to remain and which can be evaluated for change as development progresses toward a master plan.

Through the varied history of Misurata, a costal port town located in Northern Libya on the southern shore of the Mediterranean Sea, influences of outside rule have played

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<sup>1</sup> Robert Venturi, *Learning from Las Vegas: The Forgotten Symbolism of Architectural form* (Massachusetts: The Massachusetts Institute of Technology, 1977), 3.

part to urban development patterns. Turkish and Italian occupiers often sought control of the port so as to control trade routes, but due to recent economic stability provided by oil exportation, Libya was able to secure its independence. While these specific outside forces explicitly influenced said development patterns up until the 1950's, the influence of various non-specific 'Western' forces were allowed to overlay the urban framework due to the ease with which indiscrete and unquestioned information began to flow into the country post-independence.

One example of this occurred in 1974 when the government built housing projects using western building typology blatantly ignoring the more deeply ingrained architecture of the Arab culture. Government run projects opened the proverbial floodgates for a multitude of countrywide application and replication of similar methods, which not only ignored cultural consideration but also climatic consideration. The cascading effects of these design decisions changed the traditional urban heritage by imposing edits to local social patterning concerning: privacy of residential units, human to building scale, physical and social integration, interaction between buildings, enclosed open spaces, and linkages between housing, markets and social facilities, which were previously considered essential cultural assets of the historic cityscape.

It is to be understood that the changes in the development pattern in Misurata required the people to adapt to the new model rather than fitting the model to the people's established way of life. Suddenly, it became necessary for people to drive automobiles just to survive. In this one example it is apparent that there became an inherent lack of social and cultural consideration, which correlates to a multitude of crisis acting to disturb the very core of the community's quality of life. It shows how one seemingly insignificant change can lead to overcrowding, air pollution, lack of proper infrastructure and public space, and poor planning policies that do not consider previous urban settlement practices. In hindsight, it is easy to see the detriment of relentless and unfettered non-local overlays create, or at least play a major role in unsustainable city planning. What to do then once this realization is made? Would it be foolish to believe that designing a contemporary reapplication of traditional modes and methodologies

could reverse the damage to a city's cultural identity? What is to be done in considering the inherent/insidious violence of the architectural movement?

To answer this question, simply return to the opening quote of this introduction and reconsider the set and setting. The condition of the city of Misurata is greatly deteriorated due to the 2011 revolution. The opportunity exists to consider historical influences and apply the necessary changes required to develop a culturally and environmentally sustainable building typology. There is a need presented in the storied past of this city and the post-revolution people are looking for an appropriate way to improve their quality of life based on knowledge of past design decisions.

The two elements for a successful implementation of the ideas put forth in this project become: a learning from the existing landscape and a questioning of how we look at things. The project will assess necessary changes to the current patterning of the area so as to accommodate social and cultural needs as well as future growth projections. This assessment is to be built on planning policies and long-term consideration of infrastructure spending from a national perspective. After the assessment, a successful project will culminate in a large-scale housing typology. The study is to explore urban design with its main emphasis on urban design/landscape and how this affects the city structure.

Design research for this project is based on interpretative historical research, supported by a number of maps showing North African cities including Old Tripoli, Gahadmes, Tunis, Fes and Marrakesh. General information on the cities' design and urban planning will help to gain an understanding of Arabic city structure and building morphology. Qualitative research is intended to study the physical condition and pattern of Misurata city in order to understand the idea of urban design/landscape and how it involves the urban fabric. However, the goal in this study is to integrate a new housing typology with the idea of urban design of architecture and landscape. Through this process, the goal is to find a way to connect these elements within the contemporary urban neighborhood of Misurata. The analysis is to help design a new plan of the housing morphology for July 9th neighborhood in Misurata city, Libya.

# 1 Challenges of the Arab City

## 1.1 Introduction

Population increase in urban areas presupposes the need for development of the built environment. Rather than using western models for this development, it is imperative to stay true to Arab urban morphology so as to limit the impact of potential problems that exist in said western models. Due to exponential growth patterns and a changing job market, affordable housing gains importance. Furthermore, urban planning needs to take its cues from the overlying social structure, which includes building form and circulation patterns.

## 1.2 Urbanization

The Arab population from the 16<sup>th</sup> to 19<sup>th</sup> centuries in cities declined overall.<sup>2</sup> This is because of colonization and poverty; however, after independence the Arab population began growing within a new healthy environment. According to UN Habitat 2010, “Home to the oldest urban civilizations in the world, the Arab region is also one of the most urbanized. As of 2010, the Arab countries are home to 357 million residents, 56 percent of whom live in cities; by 2050, these countries will be home to 646 million people, 68 per cent of whom will live in cities. The urban population in Arab countries grew by more than four times from 1970 to 2010 and will more than double again from 2010 to 2050. Most of the growth to date has taken place on the peripheries of each country’s primary cities although, today, secondary cities are experiencing the fastest rate of growth.”<sup>3</sup>

Most countries in the region are placing an emphasis on secondary cities and areas outside of the main agglomerations to alleviate the pressure on primary coastal locations. “More than any other defining element of civilization is the heritage of specific and unique regional traditions achieved by earlier generations and creatively integrated into

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<sup>2</sup> Masashi Haneda and Toru Miura, *Islamic Urban Studies* (London, Kegan Paul international, 1994), 12.

<sup>3</sup> UN Habitat, *The State of Arab Cities 2012 , Challenges of Urban Transition* (Canada: Monitoring and Research division, 2010), 89.

new articulations. Tradition in this sense is of great significance for contemporary architecture in the Arab state, whether it is manifested in buildings by Arab architects or in buildings by foreign architects. In both cases the client and the conditions of new challenges determine how the constructed environment will be meaningfully defined.”<sup>4</sup> This stresses the importance of remembering and maintaining a linkage to Arab heritage and traditional values. Thusly, it becomes the difficult task of architects to translate the values accumulated over centuries to create contemporary architecture. However, it is not only architects, but also clients and the public who are responsible for architectural culture.

### 1.3 Urban Morphology

The Arab urban form is challenging the compact city fabric and interaction between buildings and open spaces. The building connections must create and adhere to the idea of protection from foreigners and harsh environments. “The Arab Muslim believe in Qur’an verses and saying of the Prophet, ‘A neighbor should not forbid his neighbor to insert wooden beams in his wall,’” according to Abu Hararirah.<sup>5</sup> This leads to the creation of the narrow urban street network. The basic urban form qualities are a natural outcome of distinct human attitudes, culture, and interrelations between man, society, and the universe. However, modern western architecture has a deliberate inability to meet the needs of the Arab culture, as it is no longer guided by holistic concept relating to man, society, and the universe. The fragmentation of urban form into isolated structures results in the confusion of the city’s function; which, in turn, results in the creation of the necessary transportation system. The use of alternate (western) urban form in the Arab world can have serious effects on the culture and religion.

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<sup>4</sup> Udo Kultermann, *Contemporary Architecture in The Arab States* (New York: McGraw-Hill, 1999), 3.

<sup>5</sup> Imam Shawkan, trans. *Theology of Hadith: Concise Fiqh Manual* (Pakistan: Fiqh-ul-Hadith, 2002), 341.

## 1.4 Economic Development

The Arabic economy and society is undergoing change. The process in each country differs in detail, including the process of transitioning from partial to predominant<sup>6</sup>. The close links between the latter can be seen due to the fact that industrialization is part of a process of specialization of human activity. In this process, the economic activities of individuals or groups become complementary to each other through time.<sup>7</sup> According to UN Habitat, “Many of the Arab region’s economic activities and employment opportunities are concentrated in its primary cities. Across the region, poverty has declined slightly and has been concentrated in particular parts of the region, especially in urban areas. Unemployment has been higher in rural areas; in urban areas, it disproportionately affects youth and women.”<sup>8</sup>

“The challenge is to reshape social and urban policies towards sustained economic growth and adequate living conditions for rapidly expanding numbers of young and poor urbanites. But the confrontation with urbanity and modernity can only be resolved by the region itself, while the outcomes of policies to better integrate North Africa in the global economy will determine its future.”<sup>9</sup>

Securing affordable housing in the region continues to be a challenge and many residents obtain housing in informal markets. To address this challenge, governments have upgraded existing informal and slum areas, and constructed new units to provide more affordable options, which is critical given that housing affordability has been one of the contributing factors to the uprisings in the Arab world.

According to the UN, the high demand for housing, infrastructure and urban management systems in key cities has stressed the ability of governments to provide serviced land. In spite of significant progress in regularizing the informal settlements that had proliferated in the closing decades of the 20th century, there is still a significant shortage of affordable housing in most countries. While the private sector has taken an

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<sup>6</sup> M. Hugh P. Roberts, *An Urban Profile of The Middle East* (New York: St. Martin’s Press, 1979), 47.

<sup>7</sup> Roberts, *Urban Profile*, 54.

<sup>8</sup> UN Habitat, *The State of Arab Cities 2012, Challenges of Urban Transition* (Canada: Monitoring and Research division, 2010), 92.

<sup>9</sup> UN Habitat, *The State of African Cities 2008* (Kenya: Nairobi, 2008), 42.

increasingly active role in providing housing for households in the upper-income tiers, there is still a shortage of affordable units for lower income households due to the high rate of family formation.

“Starting in the 1990s, when faced with many unforeseen impacts of the Modernist city such as depopulated city centers, debilitating traffic congestion, urban air pollution and undesirably fragmented cities, Western planners and urban theorists ‘discovered’ the compact city as a viable alternative to the seemingly unstoppable trend towards ever more sprawling, regimented, suburban, amorphous and ultimately dysfunctional metropolises. There has even been talk of compactness as ‘the new urban paradigm’ since the concept dovetails well with notions of low-carbon, sustainable urban development and the inclusive/equitable city.” According to the UN, 2010.

### 1.5 Urban Planning Land Use

The purpose of urban planning in the Arabic city is to share social values with the community and to make decisions in a natural and flexible way. It is planned based on the rights of the neighbors and their privacy. “Master plans are mostly too abstract to be understood by the population concerned and thus do not generate the necessary personal commitment and identification.”<sup>10</sup> If planners and architects are unfamiliar with the cultural values of the people they may be more likely to implement inappropriate designs and destroy the essential aspects of the community. “Town and country planning is not simply a matter of building roads, designing parks, or seeing that the drains are right; it is part of the political process. Effective urban planning is possible only in a society which has clear objectives derived from particular social theory.”<sup>11</sup> Consideration of these challenges needs to be seen as opportunities for the planner to respect the urban structure. “The city was conceived as a closed universe, and man was enveloped by multiple architecture shells embodying and reflecting his cultural values.”<sup>12</sup> In this approach to planning and land use, challenges can be related to religious and social institution, giving

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<sup>10</sup> Stefano Bianca, *Urban Form in The Arab World: Past and Present* (Thames&Hudson, 2000), 198.

<sup>11</sup> V. F. Costello, *Urbanization in the Middle East* (Cambridge University Press, 1977), 86.

<sup>12</sup> Bianca, *Urban Form*, 202.

particular concept to sacred space. The main land use patterns of the historic Arab-Muslim city are usually focused on a multifunctional core structure enveloping, or at least partially surrounding, the central mosque by different layers of interconnected souqs.<sup>13</sup> The religious building is called a mosque, which is fully integrated with the social life and architectural fabric of the town. It is responsible for the challenge in civic function.

## 1.6 Circulation

Circulation is the backbone of the system connecting all major Arab cities. The cities were built on a pedestrian scale and provide an extraordinarily dense townscape. The open space were allocated to, and often integrated with, specific architectural units. The streets are integrated with the buildings and the size depends on the function of the place. The circulation is united in the city fabric as one component. There is a hierarchy and pattern in the street circulation that help to increase the social behavior and ensure privacy.<sup>14</sup>

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<sup>13</sup> Bianca, *Urban Form*, 143.

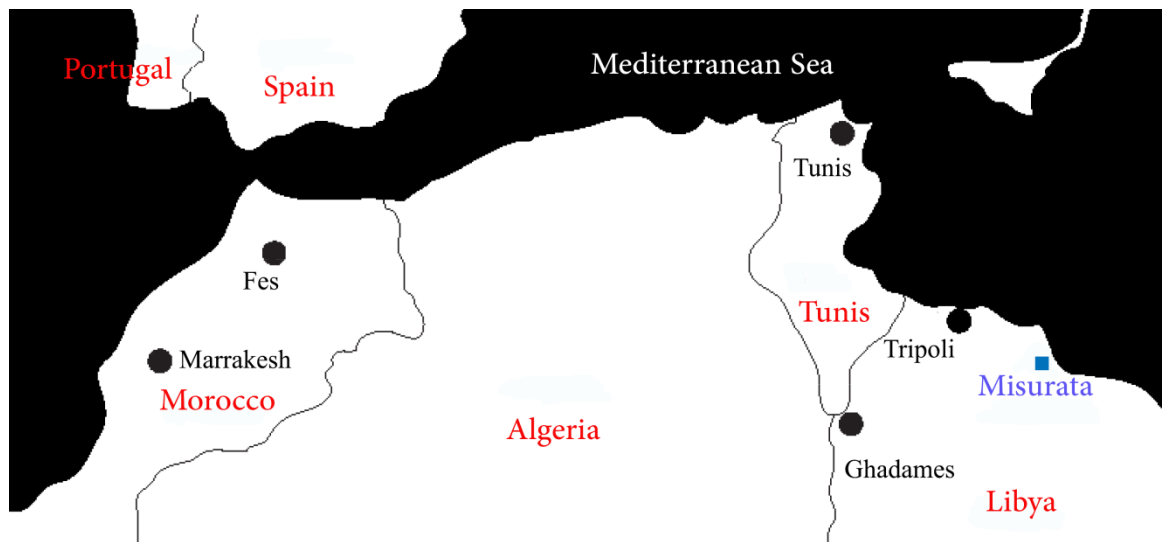
<sup>14</sup> Bianca, *Urban Form*, 202.



## 2 A Typological Study

### 2.1 Introduction

The following is an analysis of North African cities, which are part of the Arab world. This will show similarities in architectural settlement patterns with regards to the urban form of development (See Figure 1). Each of the demarcated North African cities were influenced by the Andalusian-Spanish and are considered part of the Arab world. This study will help to identify and isolate the architectural elements that belong to the Arab community.



**Fig. 1: North Africa cities**

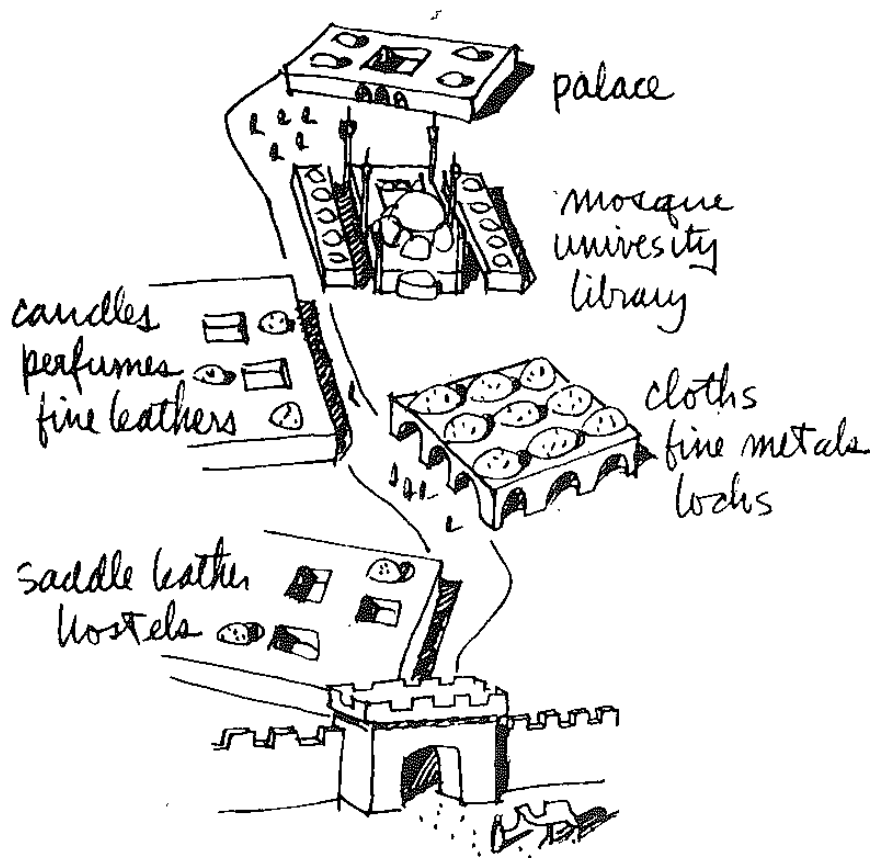
(Source: Aymen Elmagalfta)

“The original locations of Arab settlements depended on availability of natural resources such as water supply, locations of existing trade routes, and sometimes on the religious significance of certain places.”<sup>15</sup> The Arab cities of North Africa illustrate this idea (See Figure 2).

In the center stands a mosque, the spiritual and intellectual center of the city - its brain and heart. Nearby is the palace of the ruler, near the mosque, one finds candle and perfume makers. As the center of learning, the mosque borders the university and library.

<sup>15</sup> Anthony Kiet, "Arab Culture and Urban Form." *Focus: Journal of the City and Regional Planning Department* 8, no. 1 (2011): 10.

Clothes materials can also be found in the area, steps away are hostels for travelers, then the gate. These parts of an Arab city are logically organized in similar fashion to the organs of the human's body. Also, the walkways determine the pedestrian circulation.<sup>16</sup> The study will help to understand the prototype of building typology and how it's interwoven into the city's fabric. It is impossible to identify the urban settlement pattern without understanding the traditional urban forms.<sup>17</sup> Selections shown are those based on the traditional urban qualities and climate conditions which still exist in the region. The precise forms that the Medina (Medina is a City in North Africa Language) took in response to these powerful forces are also examined and illustrated.



**Fig. 2: Structure of Arab City**

(Source: *Urban Design: The Architecture of Towns and Cities*)

<sup>16</sup> Pauld Spreiregen, *Urban Desing: The Architecture of Towns and Cities* (New York, McGraw-Hill, 1965), 21.

<sup>17</sup> Mahmoud Hassan Daza, "Understanding The Traditional Built Environment: Crisis, Change, and The Issue of Human needs in The Context of Habitations and Settlements in Libya" (PhD diss., University of Pennsylvania, 1982).

## 2.2 Old Tripoli Medina (Libya)

The old Tripoli Medina is located along the coasts of the city's nearby seaports. It is considered that the Phoenicians sailed the coastal waters as early as 1000 BCE and founded the city as a trading center around 500 BCE. After the fall of Punic Carthage in 146 BCE, the city became a Roman protectorate. This Roman coast became known as Tripolitania.<sup>18</sup>

The Arab conquest of Libya began in 642 ADE and included Tripoli by 643. Under Muslim control, the city again became a wealthy and powerful center of commerce and one of the principle centers for trade with sub-Saharan Africa. A second Arab conquest, by the Bani Hilal tribe of 200,000 migrating families, took place in 1046 ADE. This conquest led to much of the old city being rebuilt. The rebuilding process utilized many of the Roman remains, which can still be found throughout the old city.<sup>19</sup>

In 1460 ADE, Tripoli declared itself an independent city-state and remained so until the Spanish captured the city in 1510 and occupied it until 1530. The Ottoman Turks took control of Tripoli in 1551 ADE, and built most of the mosques, bathhouses (hammams), and markets (souqs) that are still visible today. Under waning Turkish control, Ahmed Karamanli seized power and declared himself Pasha and established the Karamanli Dynasty. The Ottomans reoccupied the city in 1835.<sup>20</sup>

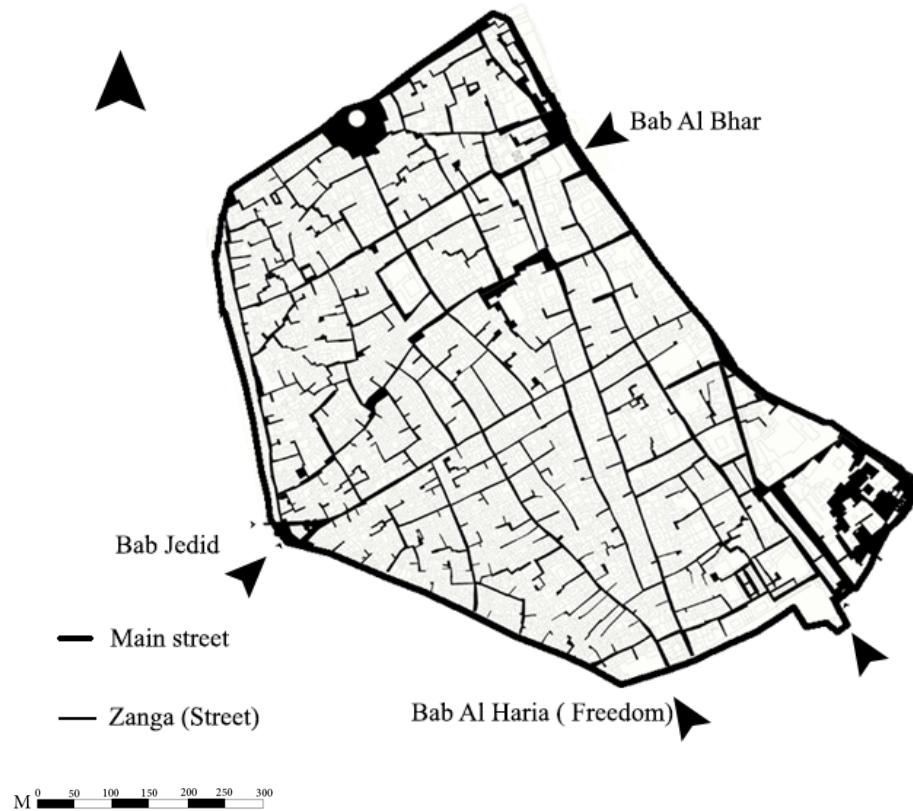
The whole town is a pedestrian zone. The urban network is set in an organic street pattern in dens and narrow. There is a hierarchy of streets and each has different functions based on location and size (See Figure 3).

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<sup>18</sup> Wander Wege, accessed November 20, 2013, <http://wander-wege.blogspot.com/2010/07/old-city-medina-of-tripoli.html#comment-form>

<sup>19</sup> "mirathlibya", Jamal Allafi, accessed November 20, 2013 <http://mirathlibya.blogspot.com/search/label>

<sup>20</sup> "Wege."



**Fig. 3: Urban Network, Old Tripoli**

(Source: Aymen Elmagalfta)

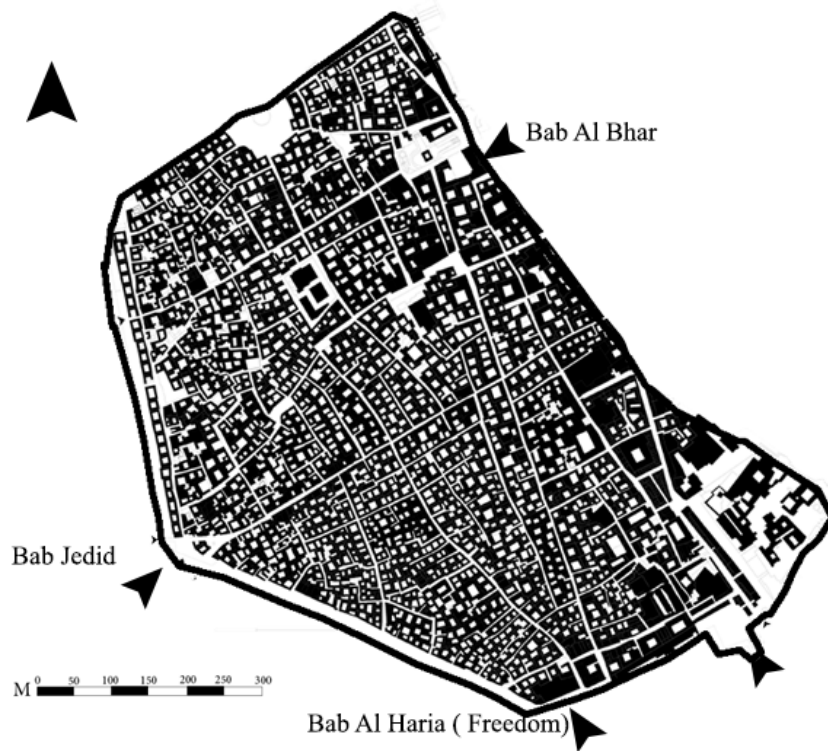
The use of the urban morphology of the old Medina presents the form of human settlements and the process of their formation and transformation. Also, it helps to understand the spatial structure and character of a metropolitan area by looking at the patterns of its component parts and the process of its development. The courtyard building type with a compacted layout is also presented (See Figure 4). The correlation of these elements to one another includes physical structures at different scales as well as patterns of movement, land use, ownership or control, and occupation. The irregular shape of houses determines the haphazard pattern of interstitial lanes (See Figure 5). Infill dwellings are built around a rectangular courtyard and the surrounding rooms absorb the irregularities.<sup>21</sup>

<sup>21</sup> Friedrich Ragette, *Traditional Domestic Architecture of The Arab Region* (American University of Sharjah, 2003), 51.



**Fig. 4: Urban Morphology, Old Tripoli**

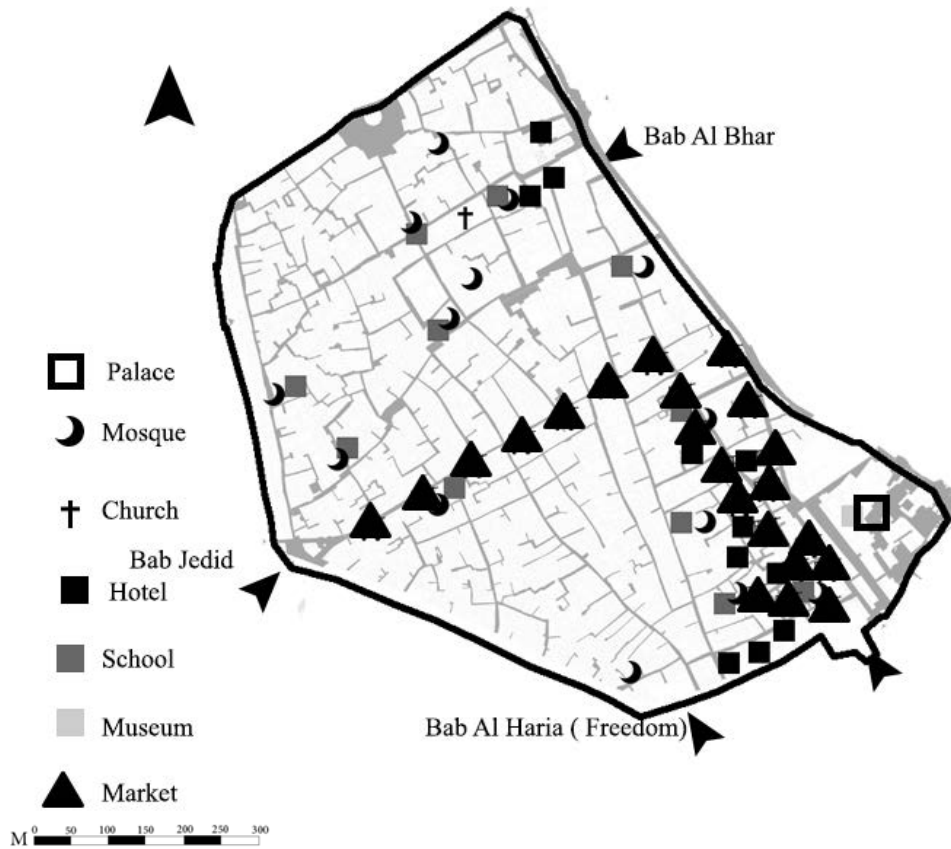
(Source: Aymen Elmagalfta)



**Fig. 5: Open Space versus Building, Old Tripoli**

(Source: Aymen Elmagalfta)

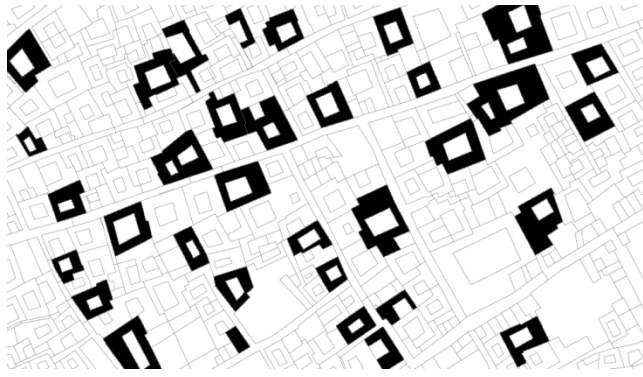
The old Tripoli Medina integrated many activities that exhibit the function of the city. There is a specifically designed hierarchy in accordance with location and how the elements are connected to the building fabric (See Figure 6).



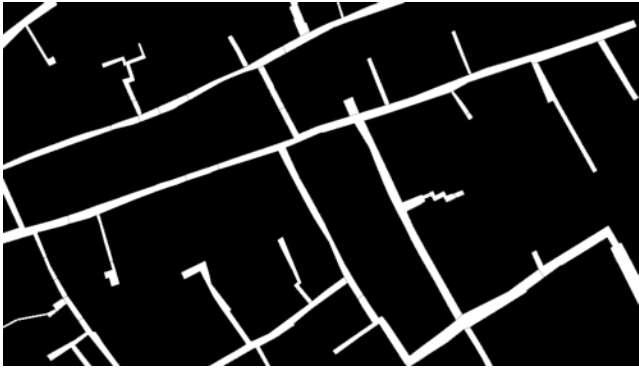
**Fig. 6: Location of Institution, Old Tripoli**

(Source: Aymen Elmagalfta)

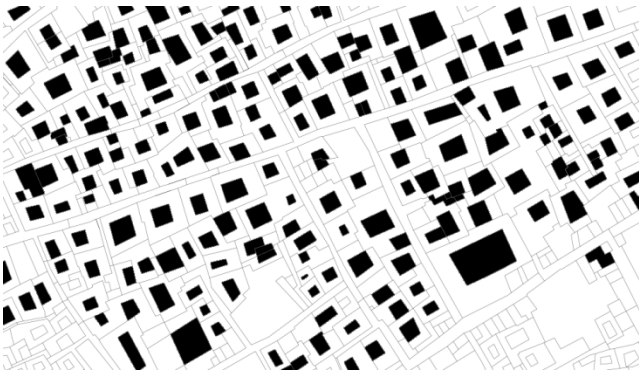
Open spaces and their interplay between buildings are an integral part of the city structure. The city follows an extremely compact model in order to accommodate the culture of the people and become a walkable distance area (See Figure 7).



Building Typology



Street Type



Courtyard Pattern



Open space versus building

M 0 10 20 30 40 50 60

**Fig. 7: Analytique of Urban Form, Old Tripoli**

(Source: Aymen Elmagalfta)





**Fig. 8: Street Arch Type, Old Tripoli**

(Source: Aymen Elmagalfta)



**Fig. 9: City Gate, Old Tripoli**

(Source: Aymen Elmagalfta)



**Fig. 10: Marcus Aurelius, Old Tripoli**

(Source: Aymen Elmagalfta)

## 2.4 Ghadames (Libya)

Ghadames is located between the sandy desert of southern Tunisia and Algeria and the stony desert of al-Hamada al-Hamra of Libya. In 19 B.C. Cornelius Balbus camped in this Libyan oasis, which was to become Cydamus.<sup>22</sup> In Byzantine times, a church was built. The city was held briefly in 609/1212-13 by Abu al-'Ula Idris of the Idrisid dynasty and then in 809/1406-07 by Abu al-Faris of the Hafsids. The Turks of Tunis also tried to extend their authority over the city in 1592 through Derwish Bey and in 1609 through Ramadan Bey, but neither effort was successful. Later, in 1880, Ghadames came under the rule of the Turks of Tripoli. The city was seized by the Italians in 1913, but the period of their most complete authority was between 1924 and 1943 at which time Ghadames fell to the French who retained control until 1956.

The architecture of the city known as the 'pearl of the desert' stands in an oasis. It is one of the oldest pre-Saharan cities and is an outstanding example of a traditional settlement. A vertical division of functions with covered routes and a compact plan characterize its domestic architecture.

It has three or four levels. One might encounter such covered routes and house forms in other desert oases in Tunisia and Algeria, but in Ghadames their designs and spatial arrangements are unique and ingenious. There is a hierarchy of routes through the town. The Ghadames arch is a pointed arch flattened from the top.

The urban network of the Ghadames is a complex web structure that exists primarily in the space between buildings. Each building interlocks each other to cover the street. There is a hierarchy in the function of street pattern based on the age of human inhabitants (See Figure 11).

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<sup>22</sup> "Ghadames" UNESCO, accessed November 21, 2013 <http://whc.unesco.org/en/list/362/>.



**Fig. 11: Urban Network, Ghadames**

(Source: Aymen Elmagalfta)

The use of the urban morphology of the Ghadames presents the form of human settlements and the process of their formation and transformation, also to understand the spatial structure and character of a metropolitan area by looking at the patterns of its component parts and the process of its development. It also helps to understand the

building clutter and how it is protected by palm tree according to the wind (See Figure 12).



**Fig. 12: Urban Morphology, Ghadames**

(Source: Modified by Aymen Elmagalfta)<sup>23</sup>

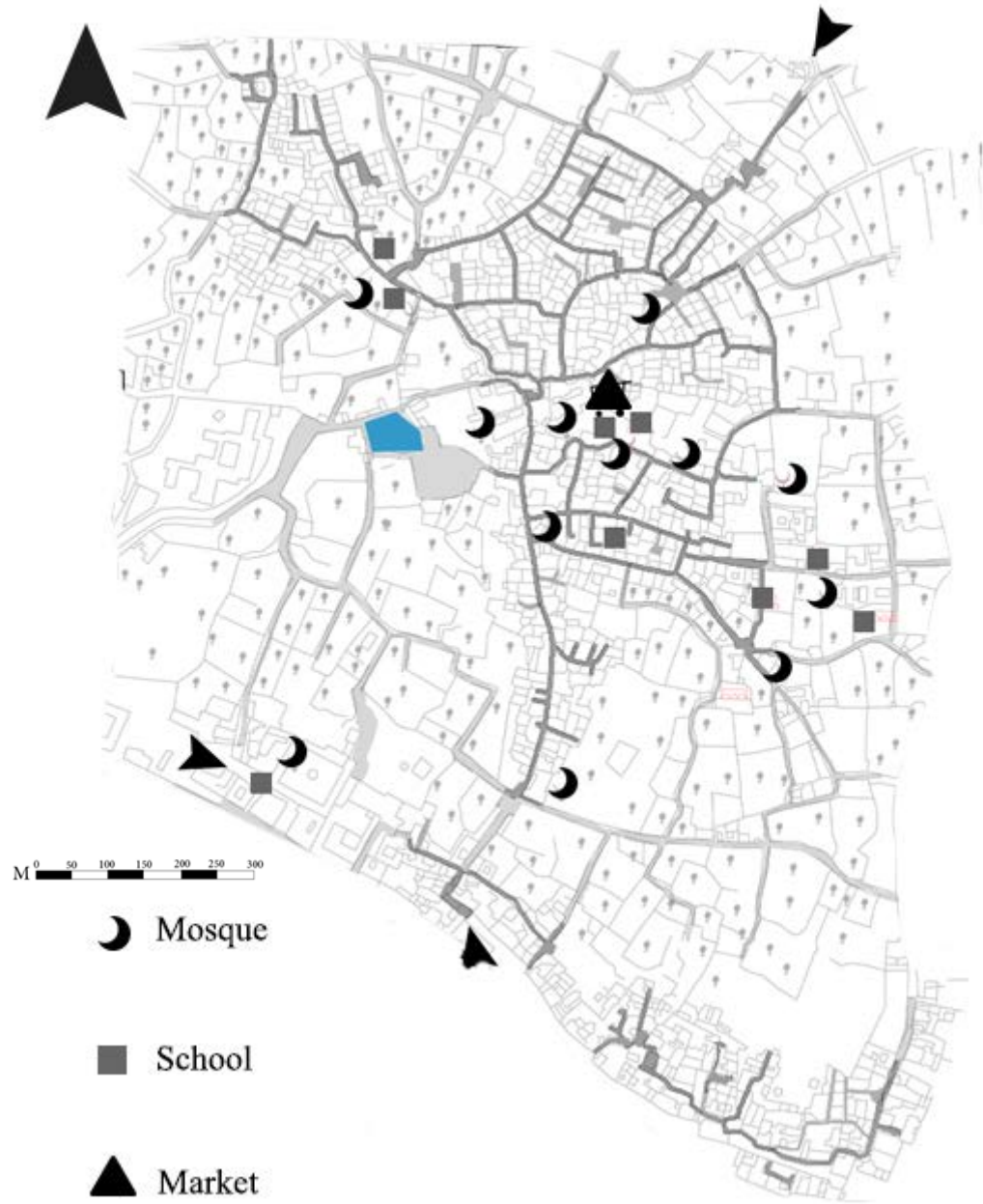
<sup>23</sup> “Bing,” Ghadames, accessed October 10, 2013, <http://www.bing.com/maps/#Y3A9MjEuMzE5NDExNTcuODA5NjAxJmx2bD00JnN0eT1yJnE9R2hhZCVDNCU4MW1pcyUyQyUyMExpYnlh>.

This can involve the analysis of physical structures at different scales, as well as patterns of movement, land use, ownership or control, and occupation. (See Figure 13) the map shows the open spaces and their interplay with buildings. This exhibits the quality and location of the space.



**Fig. 13: Open Space versus Building, Ghadames**

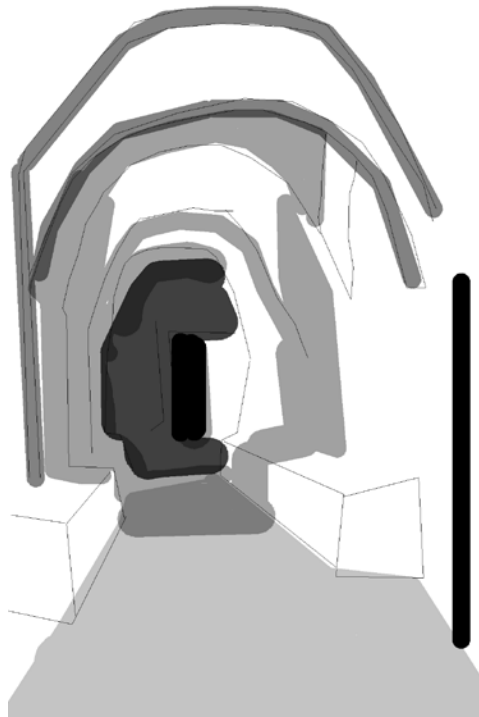
(Source: Aymen Elmagalfta)



**Fig. 14: Location of Institution, Ghadames**

(Source: Aymen Elmagalfta)

The city is involved in the trade economy, so there are trade institutions implemented in the city fabric (See Figure 14). These are located in the middle of the city and surrounded by residential areas. At the center is a space where people from different tribes gather.



**Fig. 15: Covered Walkway, Ghadames**

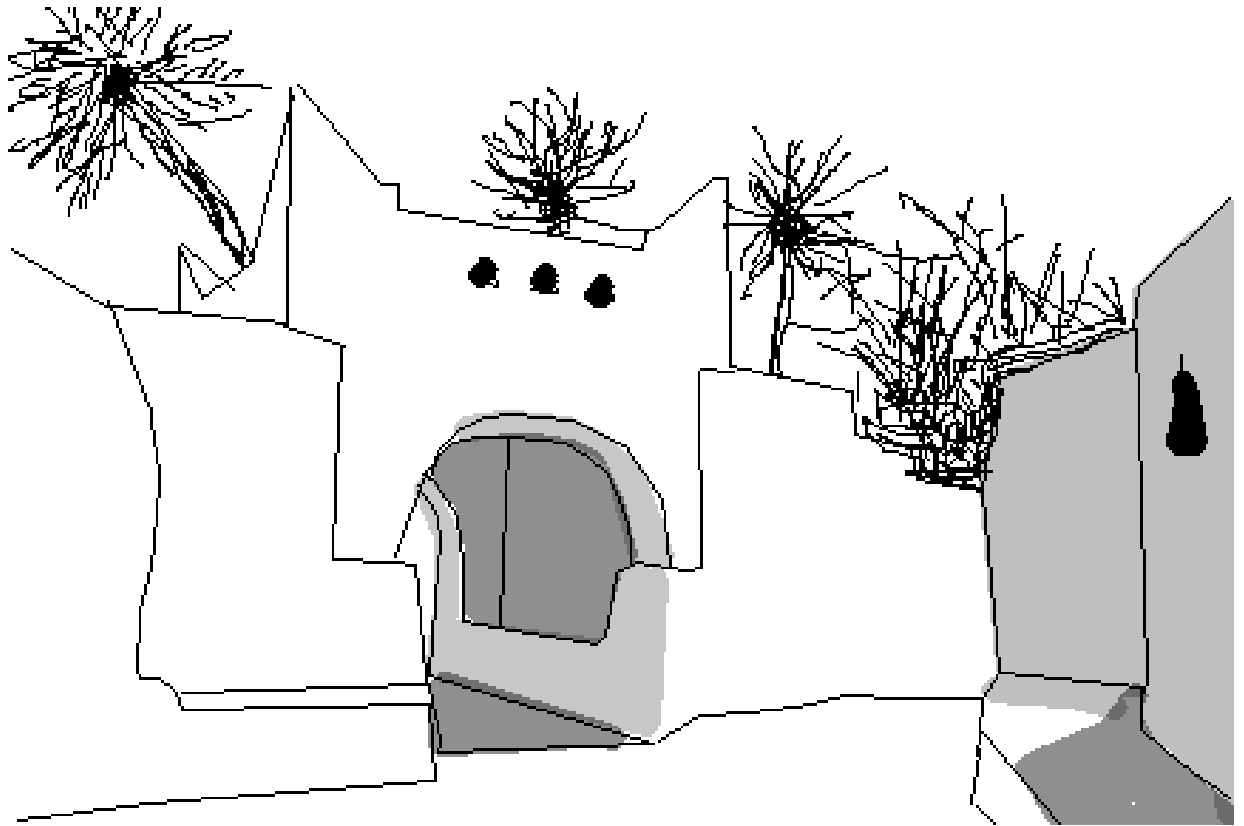
(Source: Aymen Elmagalfta)



**Fig. 16: View through a Mosque from street, Ghadames**

(Source: Aymen Elmagalfta)





**Fig. 17: Gate South side**

(Source: Aymen Elmagalfta)

## 2.4 Tunis

Founded during the 12th to the 16th century, Tunis was considered one of the greatest and wealthiest cities in the Islamic world. It is one of the largest Medina in the Maghrib region.<sup>24</sup> Some 700 monuments, including palaces, mosques, mausoleums, madrasas, and fountains, testify to this remarkable past. The Medina of Tunis is one of the first Arab-Muslim towns of the Maghreb (698 A.D.).<sup>25</sup> It represents a human settlement that bears witness to the interaction between architecture, urbanism, and the effects of socio-cultural and economic changes of earlier cultures.<sup>26</sup> “The town is characterized by its dense network of streets, alleys and cul-de-sacs leading to closely-knit patio houses. The architectural contribution of the 1850-1950 period is felt particularly in added apartment structures and official buildings that are situated on boulevards built on the site of the ancient city walls and in the suburbs.”<sup>27</sup> The city’s urban network is an organic street pattern of dens and narrows. There is a hierarchy of streets that have different functions based on location and size (See Figure 18).

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<sup>24</sup> Besim S. Hakim, *Arabic-Islamic Cities* (New York: Kegan Paul International, 1986), 114.

<sup>25</sup> “commune-tunis”, accessed November 21, 2013 <http://www.commune-tunis.gov.tn/publish/content/article.asp?id=18244>.

<sup>26</sup> “Tunis”, UNESCO, accessed November 21, 2013, <http://whc.unesco.org/en/list/36>

<sup>27</sup> Akrouf, Semia, “New Life for the Medina of Tunis,” in *Iran: Architecture for Changing Societies*, ed. Philip Jodidio et al. (Tunisia: Aga Khan Award for Architecture, 2004), 65.

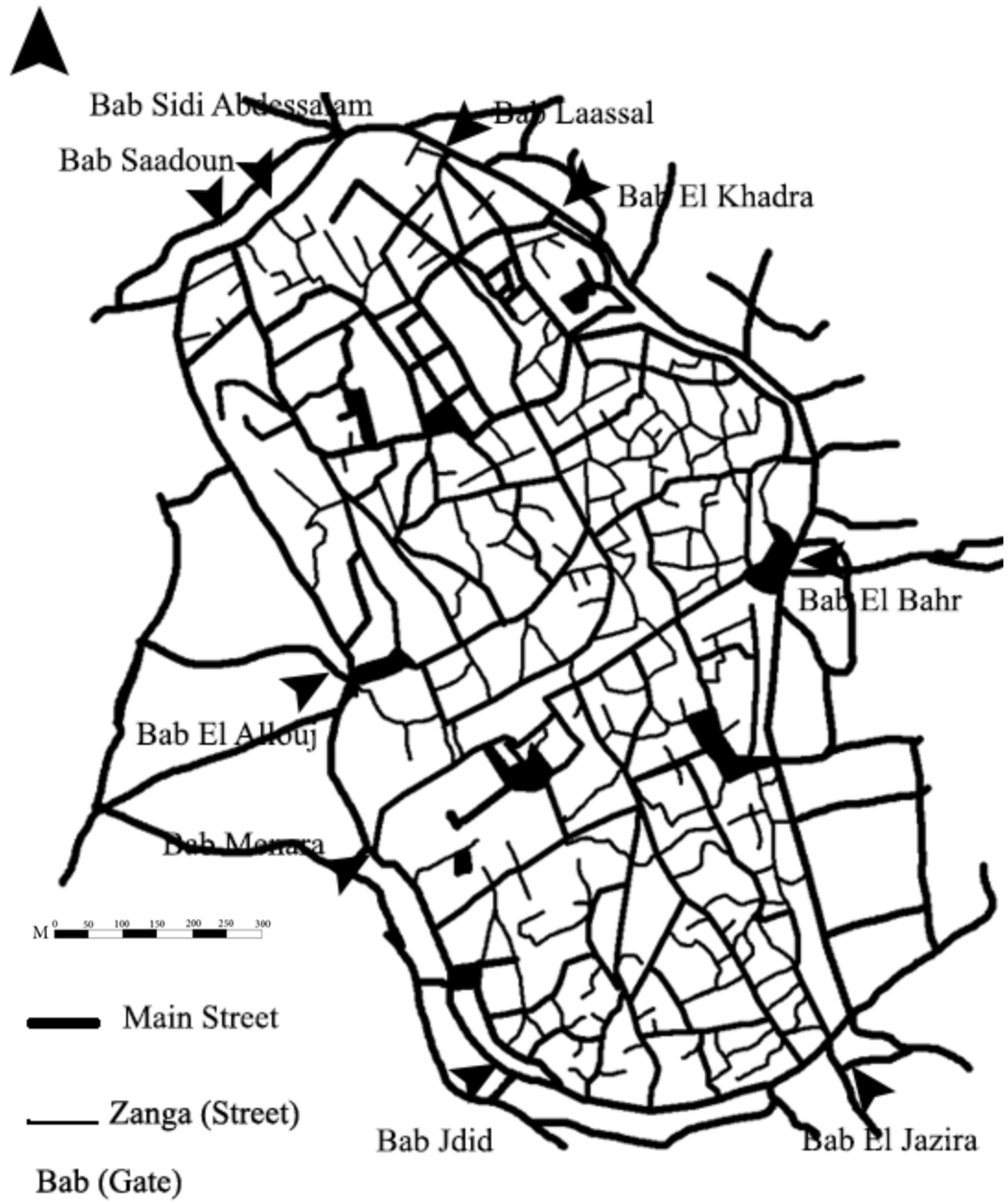
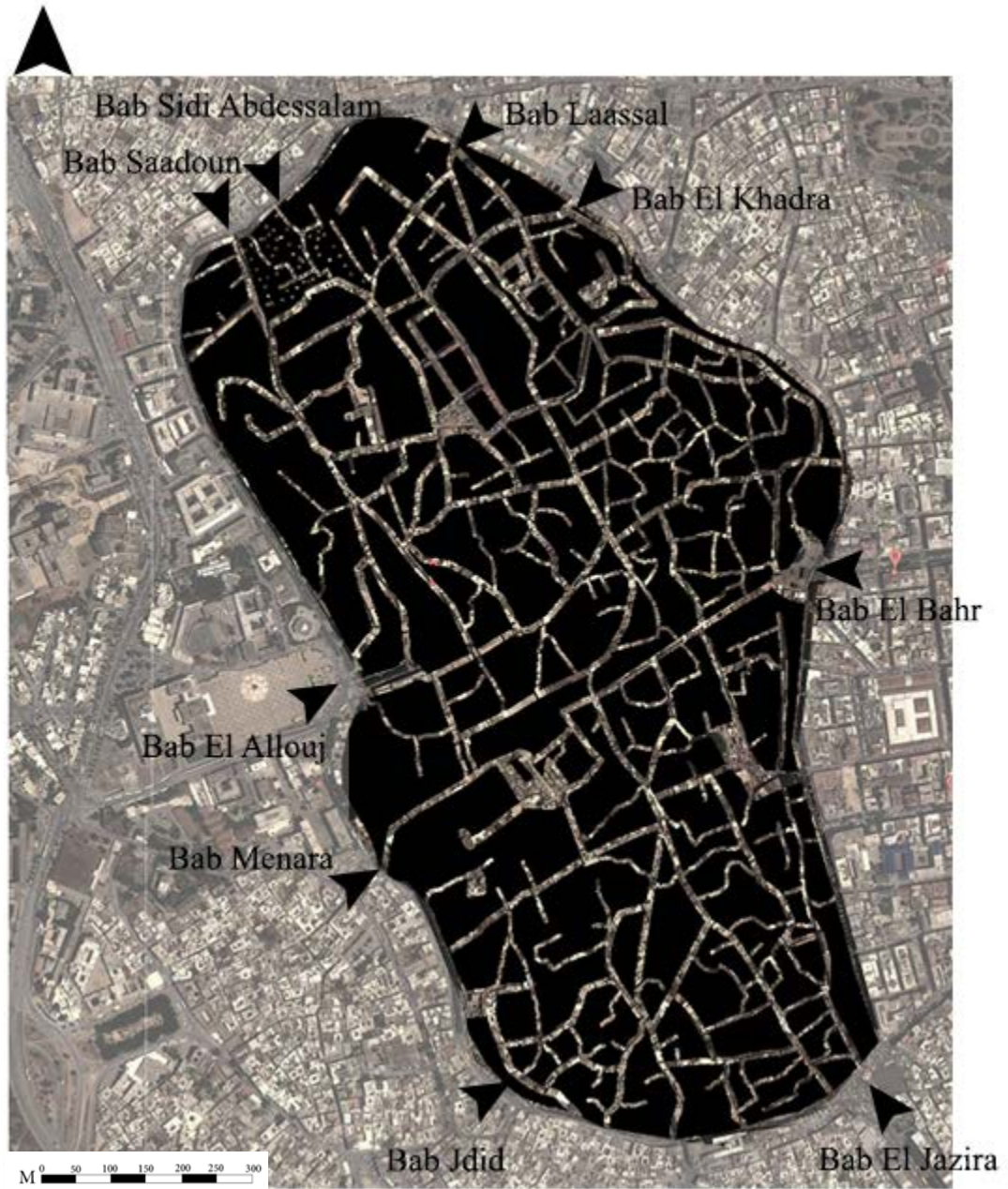


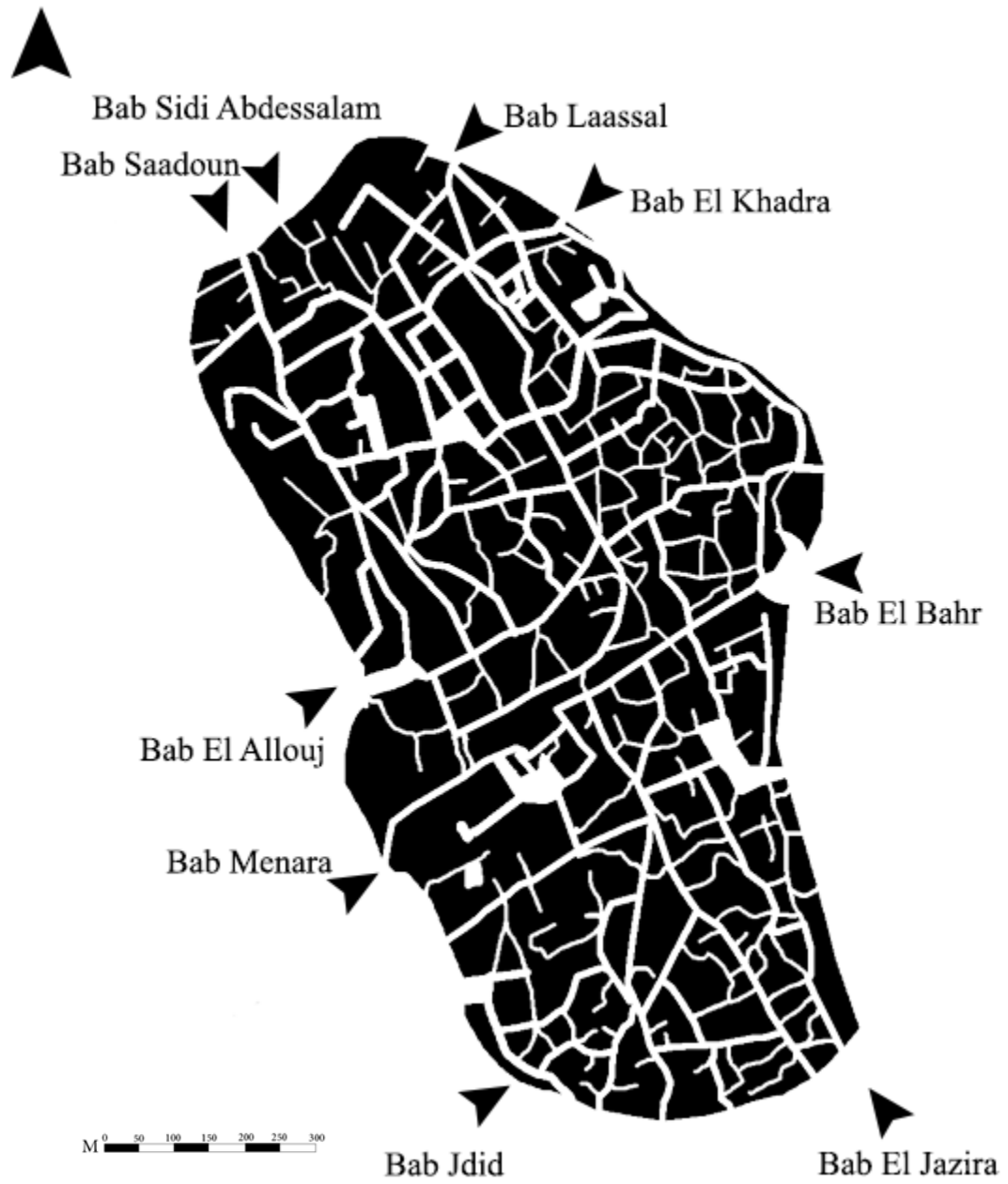
Fig. 18: Urban Network, Tunis

(Source: Aymen Elmagalfta)



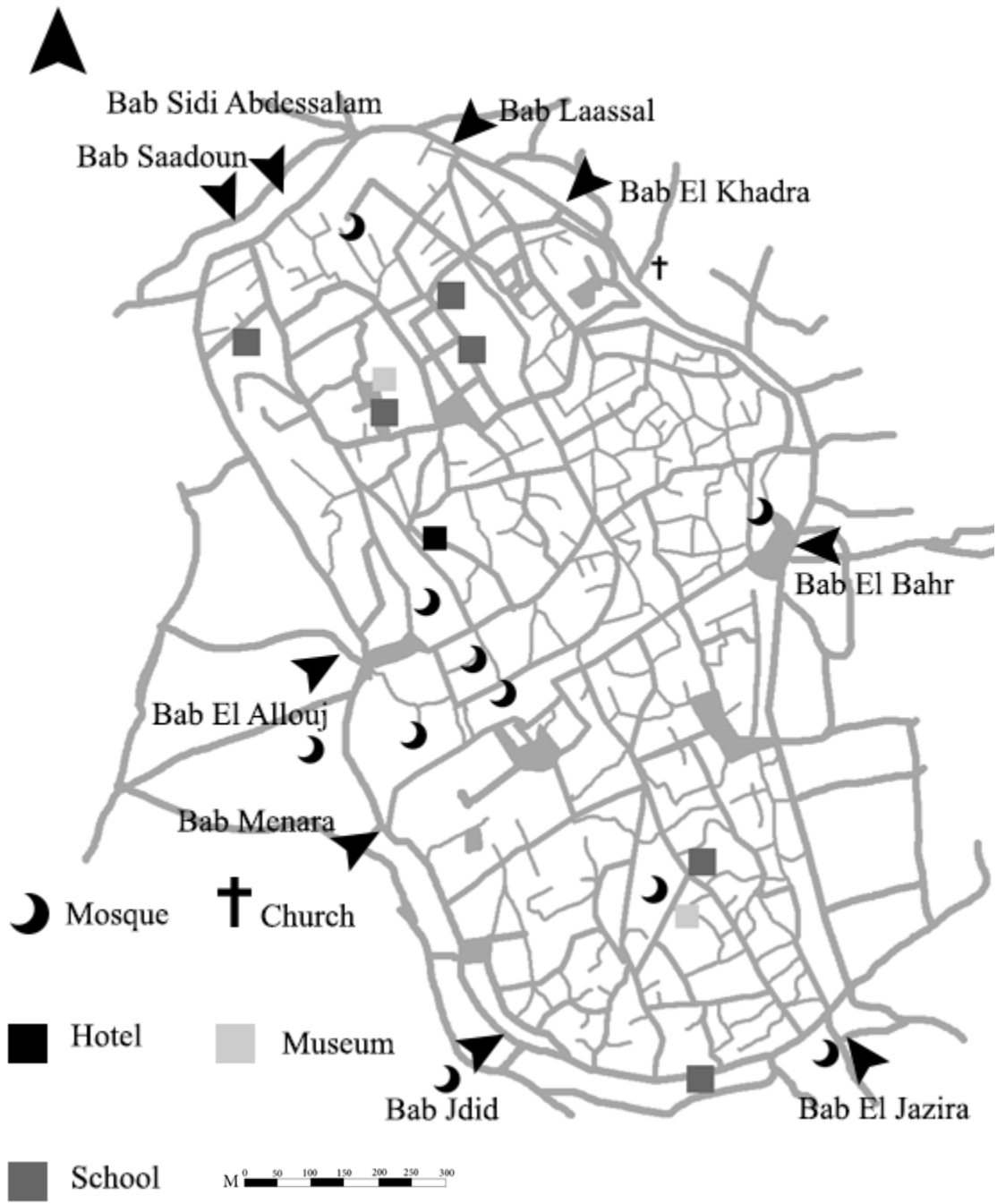
**Fig. 19: Urban Morphology, Tunis**

(Source: Aymen Elmagalfta)



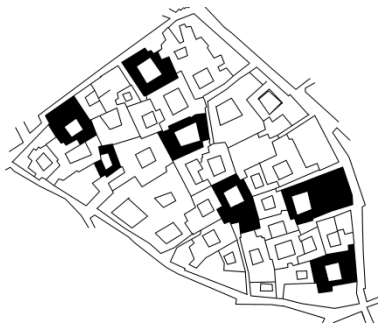
**Fig. 20: Open Space versus Building**

(Source: Aymen Elmagalfta)

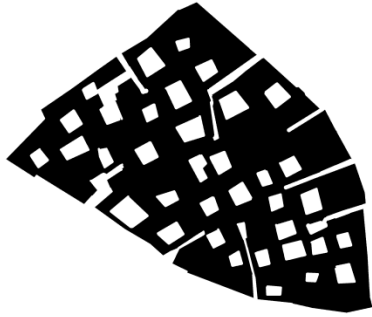


**Fig. 21: Location of Institution, Tunis**

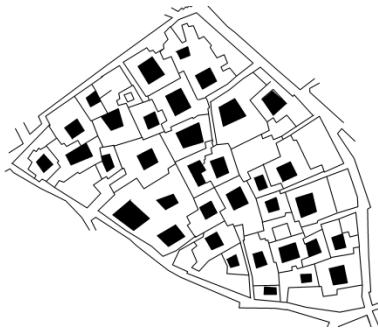
(Source: Aymen Elmagalfta)



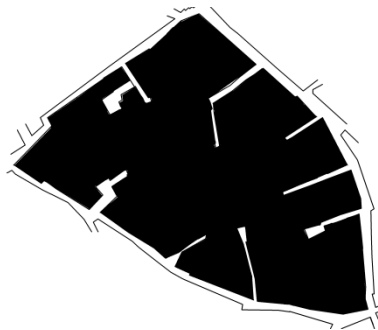
Building Typology



Open Space versus Building



Courtyard Pattern

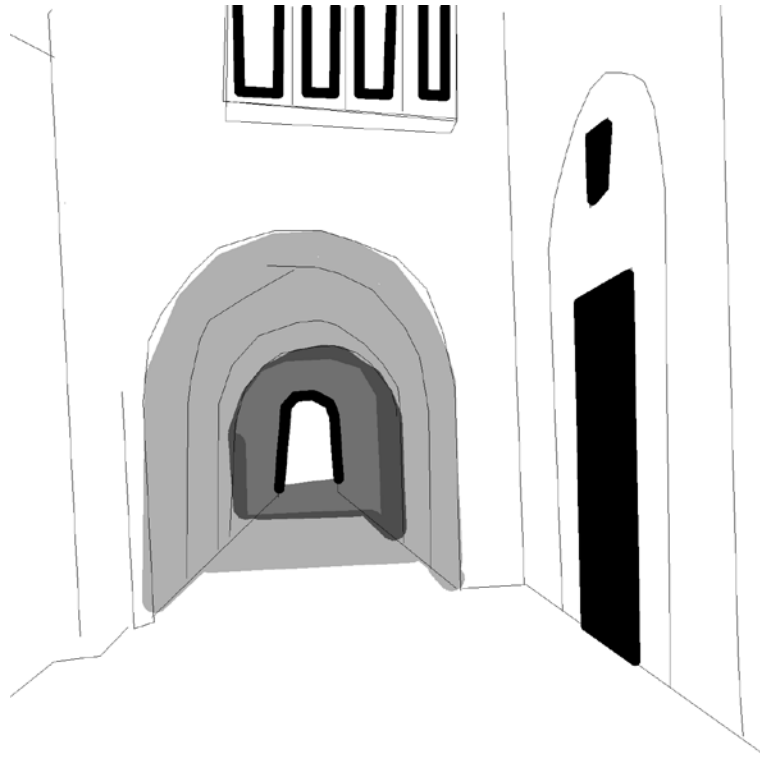


Street Type



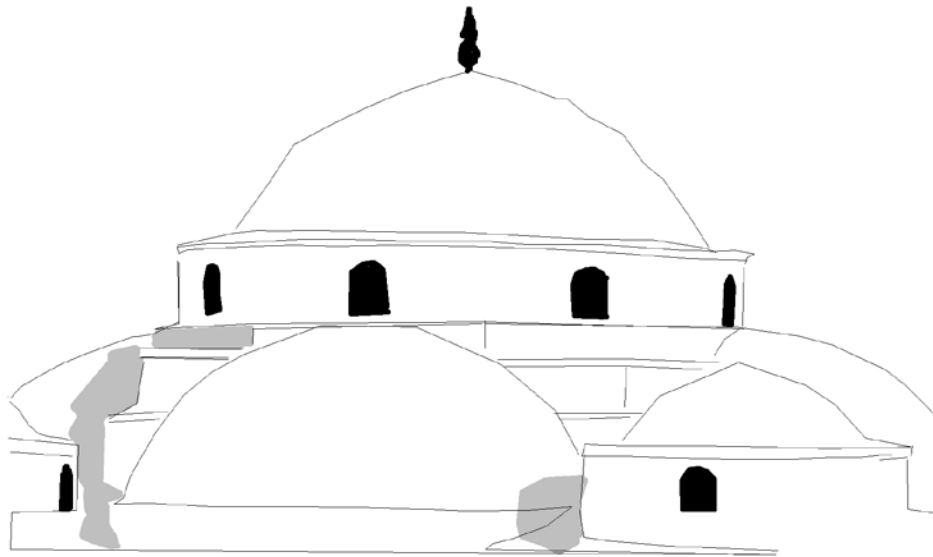
**Fig. 22: Analytique of Urban Form, Tunis City**

(Source: Aymen Elmagalfta)



**Fig. 23: Street Arch Type**

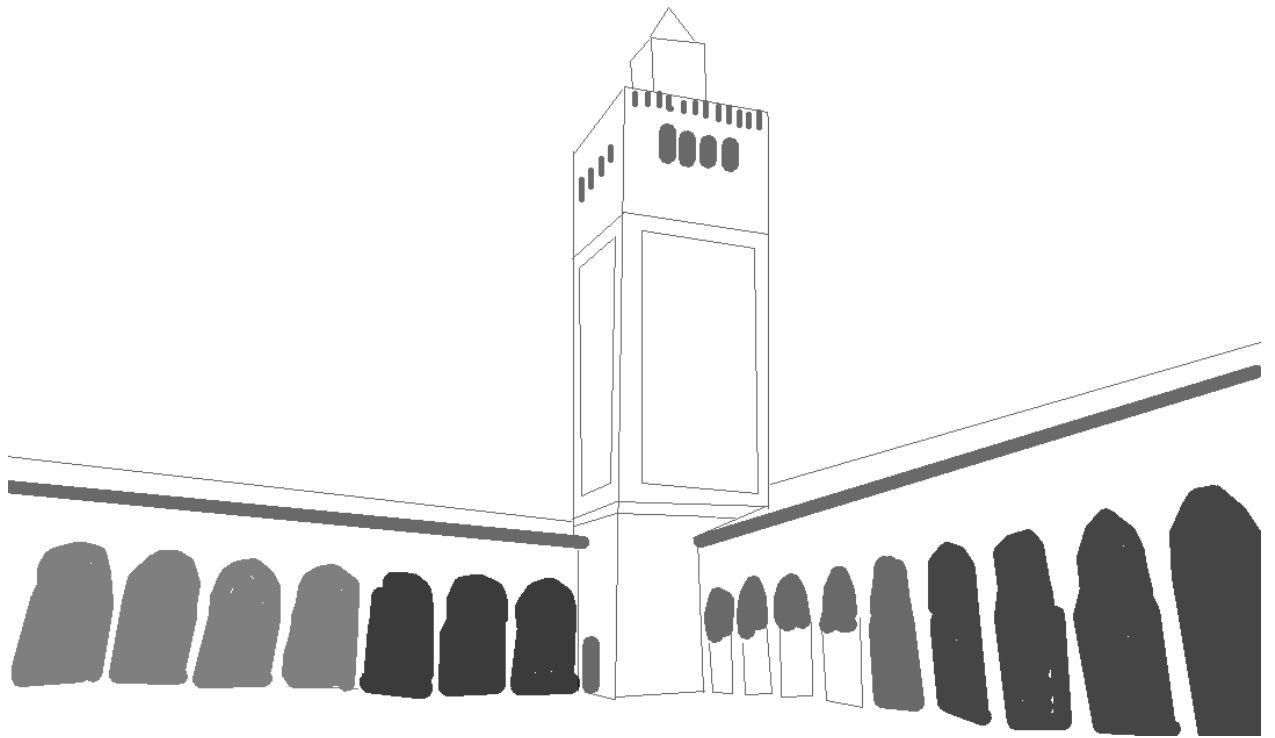
(Source: Aymen Elmagalfta)



**Fig. 24: Church**

(Source: Aymen Elmagalfta)





**Fig. 25: Zitouna Mosque**

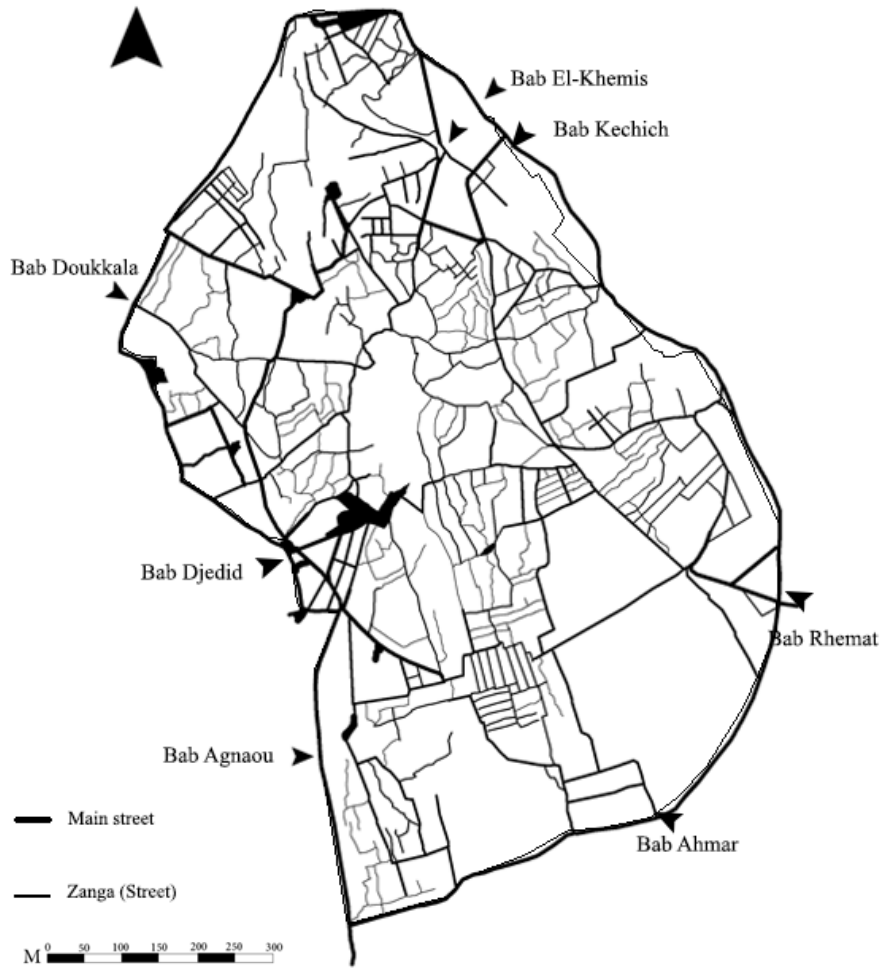
(Source: Aymen Elmagalfta)

## 2.5 Marrakesh (Morocco)

Marrakesh Morocco was founded in 1062 by Abu Bakr ibn Umar, chieftain and cousin of Almoravid king Yusuf ibn Tashfin. In the 12th century, many madrasas (Koranic schools) and mosques were influenced by Andalusian. The red walls of the city, built by Ali ibn Yusuf in 1122-1123, and various buildings constructed in red sandstone during this period, have given the city the nickname of the “Red City” or “Ochre City”. The chieftain created the water system in the city, known as the rhattara, to irrigate his new garden. Marrakesh is one of the great citadels of the Islamic world that created a unique style of architecture which was fully adapted to the Marrakesh environment (See Figure 26-29).<sup>28</sup> The images in (See Figure 31-33) are the architectural elements of the city as landmark component.

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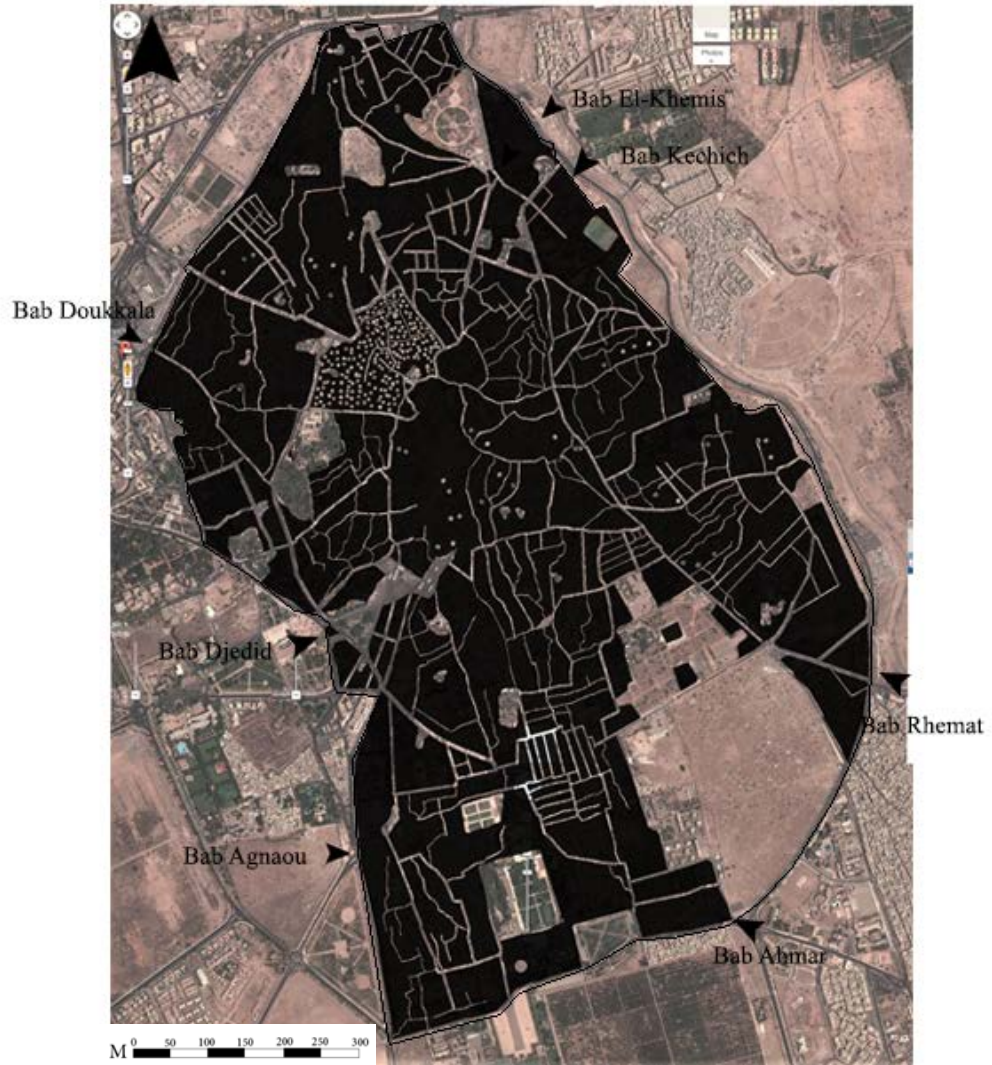
<sup>28</sup> Phillip C. Naylor, *North Africa: A History From Antiquity to The Present* (Texas: University of Texas Press, 2009), 90.



**Fig. 26: Urban Network, Marrakesh**

(Source: Aymen Elmagalfta)

The city morphology present the compact city structure (See Figure 27).



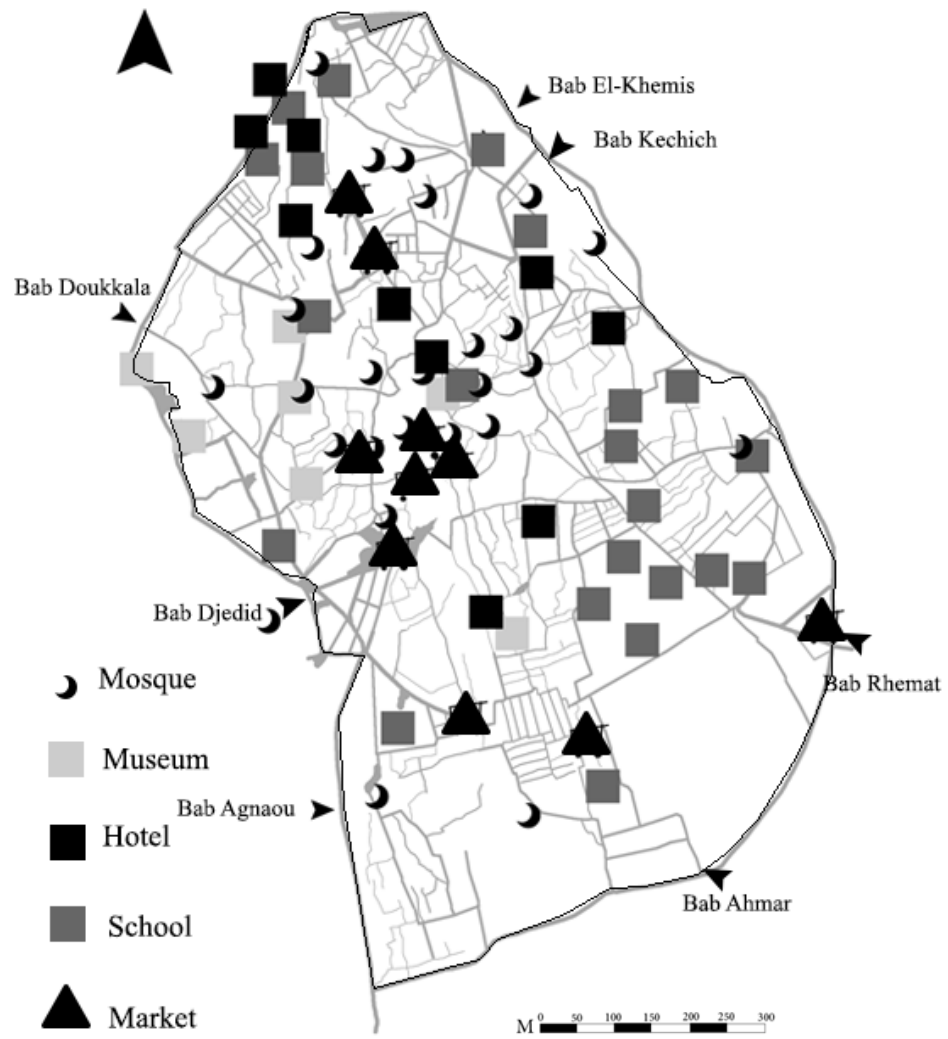
**Fig. 27: Urban Morphology, Marrakesh**

(Source: Aymen Elmagalfta)



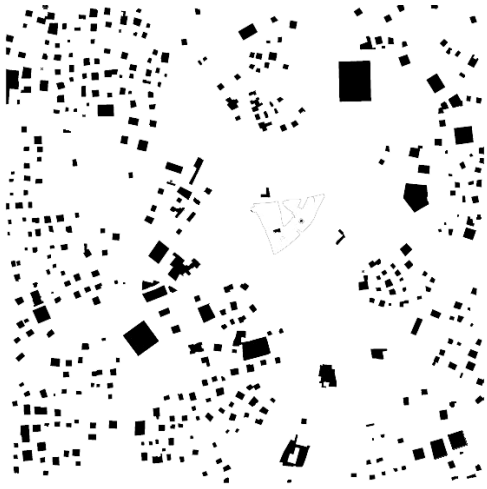
**Fig. 28: Open Space versus Building, Marrakesh**

(Source: Aymen Elmagalfta)



**Fig. 29: Location of Institution, Marrakesh**

(Source: Aymen Elmagalfta)



Courtyard Pattern



Open Space versus Building



Street Type

M 0 30 60 120 150 180 210

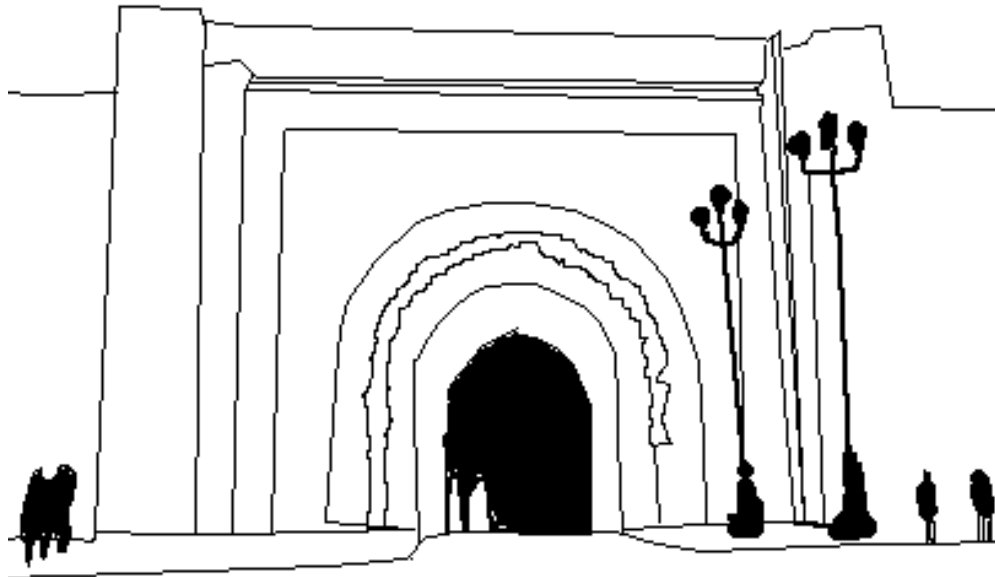
**Fig. 30: Analytique of Urban Form, Marrakesh**

(Source: Aymen Elmagalfta)



**Fig. 31: Street Arch Type, Marrakesh**

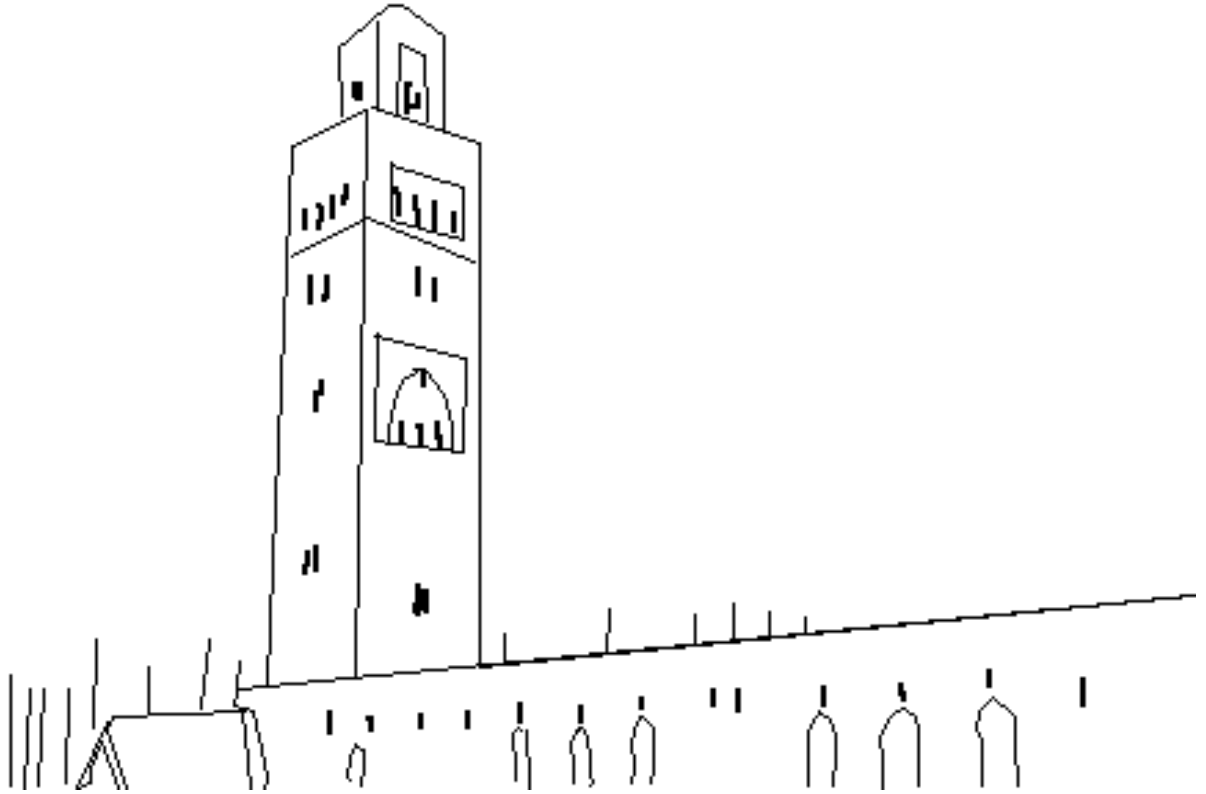
(Source: Aymen Elmagalfta)



**Fig. 32: City Gate, Marrakesh**

(Source: Aymen Elmagalfta)





**Fig. 33: Koutoubia Mosque**

(Source: Aymen Elmagalfta)

## 2.6 Fes (Morocco)

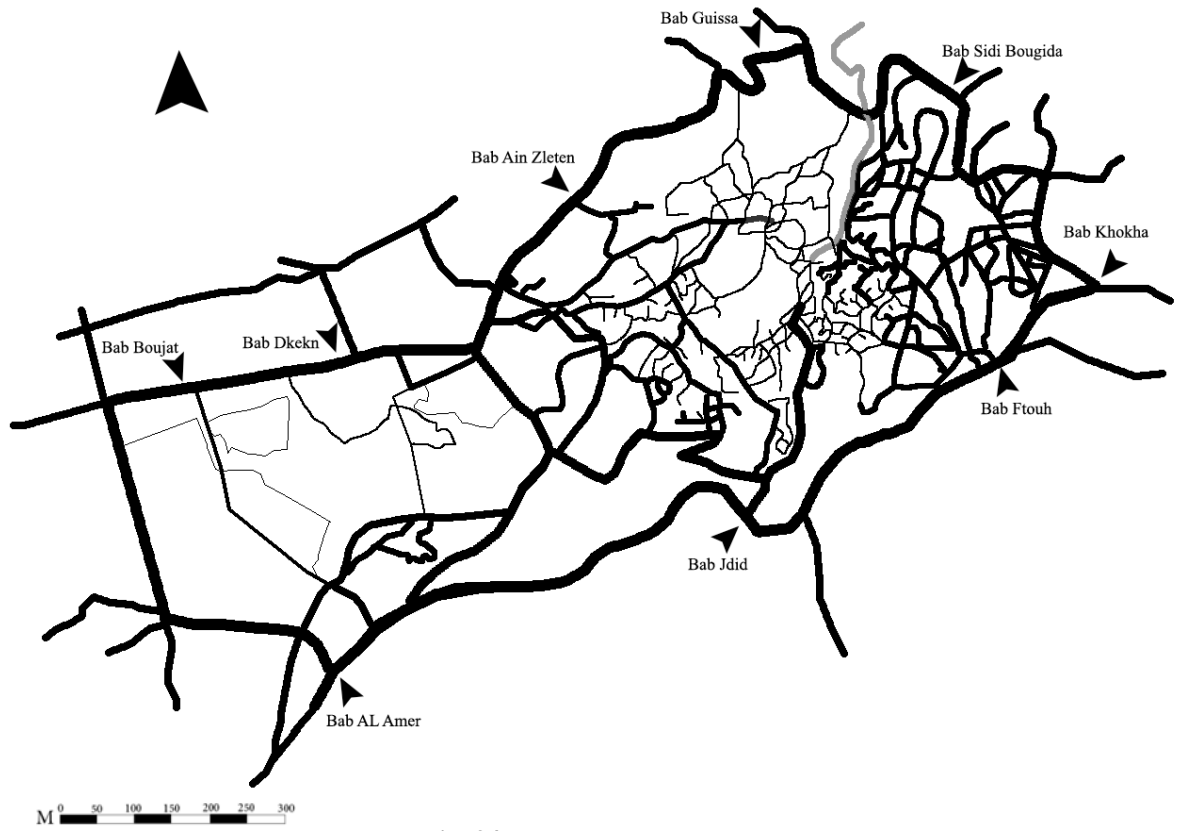
Founded in the 8<sup>th</sup> century A.D by Idris ibn Abd Allha, Fes was the main city of Morocco, not only in terms of culture, but also in economic terms.<sup>29</sup> It is located on the east side of the Fes River. The other side of the river was built by his son in 808. It contains two important mosques: one is Al-Qarawiyyin and the other is Al-Andalus, each surrounded by bazaars. A new development that took place during the period of the Marinid, in 1276, was the founding of royal and administrative town just to the west of Fes. It was called Fes al-Djadid (New Fes). It was surrounded by a double wall that contained the royal palace, administrative building, a great mosque, barracks, residences, and a quarter for the Jewish communities.<sup>30</sup>

The Al-Qarawiyyin is the oldest continuously functioning madrasa in the world. Fes is believed to be the world's largest contiguous car-free urban area. The city of Fes is filled with rich history, heritage, and beautiful sites that echo and epitomize the ancient times. The residential quarter is located between the commercial and industrial zones. It is grouped by ethnicity and is characterized by their inward orientation around an interior court. The street system is consisted of narrow and zigzagging passages and a few large arteries that connect the city centers on the two banks (See Figure 34).

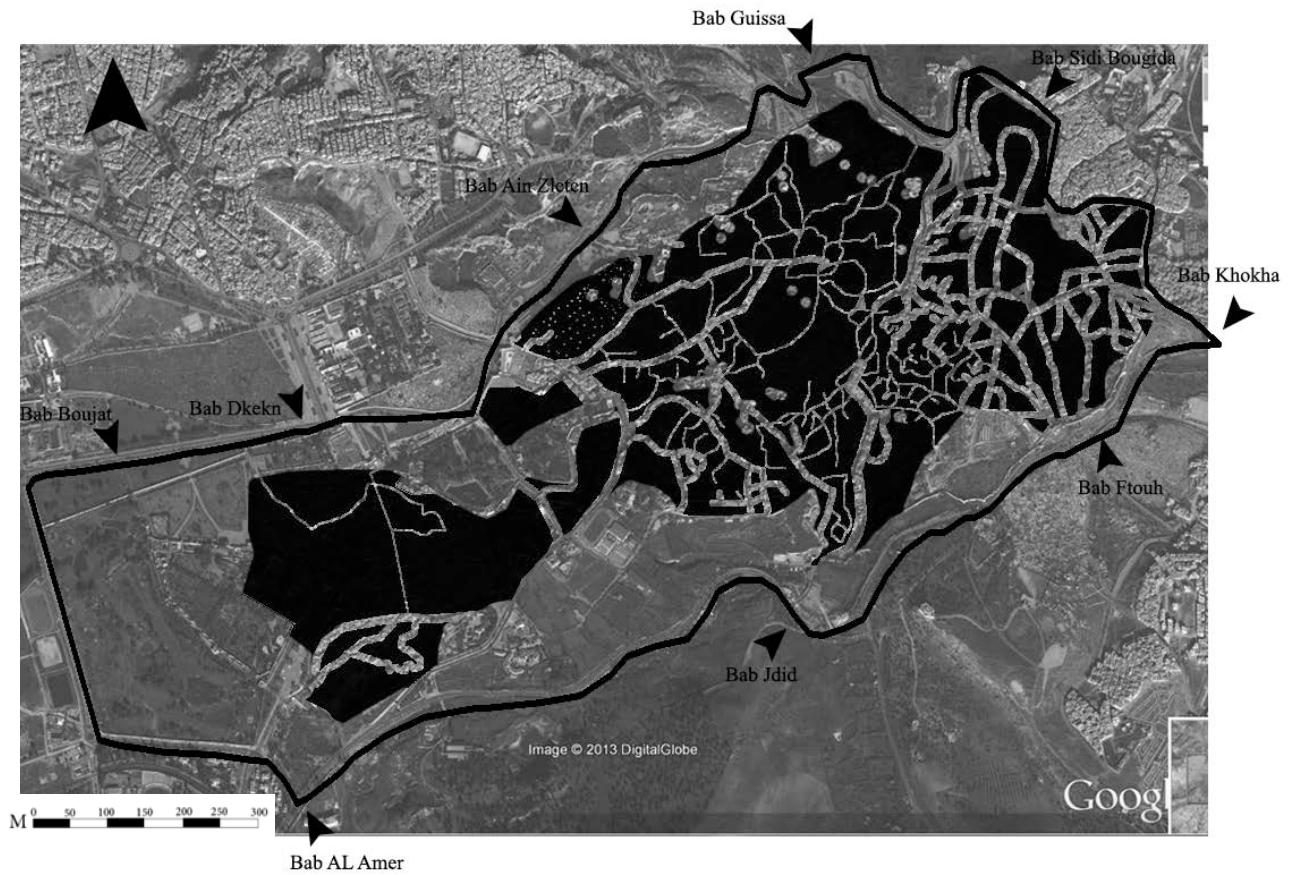
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<sup>29</sup> Masashi Haneda and Toru Miura, *Islamic Urban Studies* (London, Kegan Paul international, 1994), 17.

<sup>30</sup> Michael Dumper and Bruce E. Stanley, *Cities of The Middle East and North Africa: A Historical Encyclopedia* (ABC-CLIO, 2007)83.



**Fig. 34: Urban network, Fes**  
(Source: Aymen Elmagalfta)

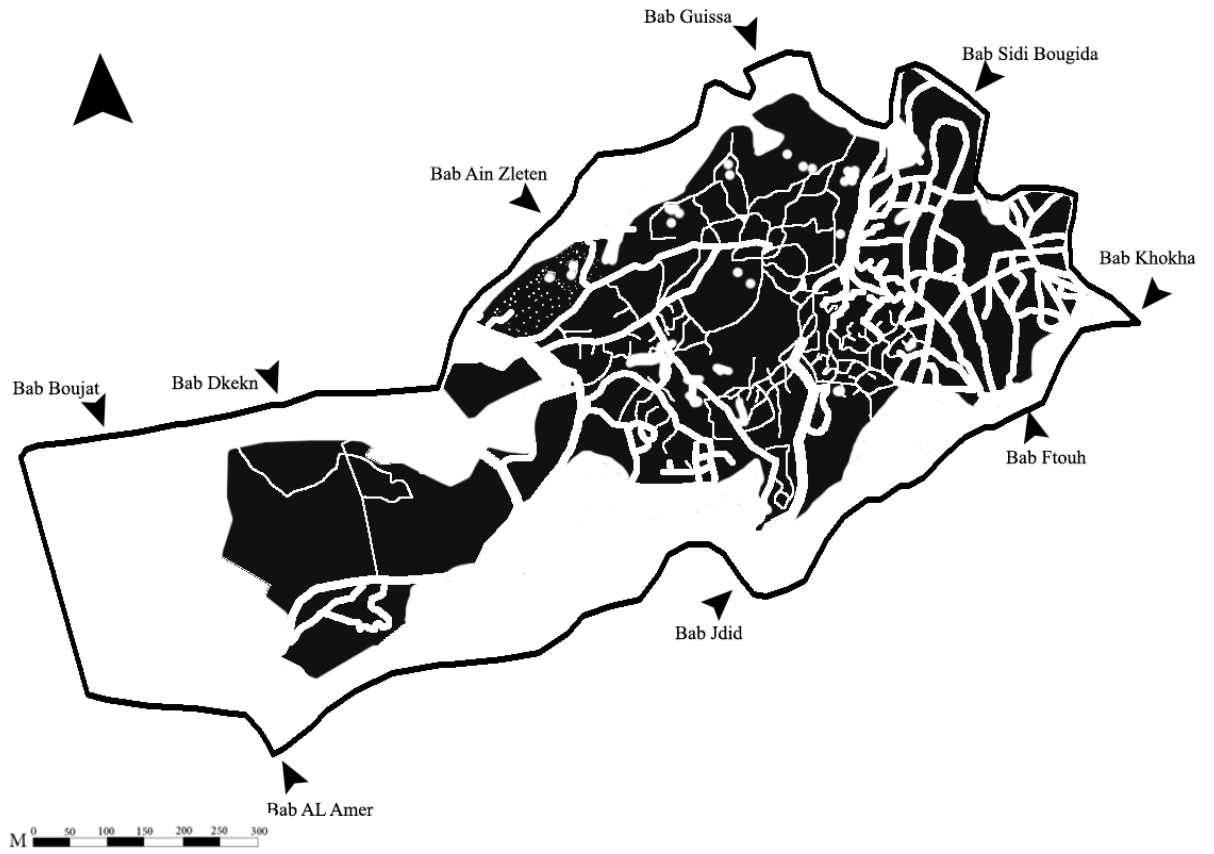


**Fig. 35: Urban morphology, Marrakesh**

(Source: Aymen Elmagalfta)

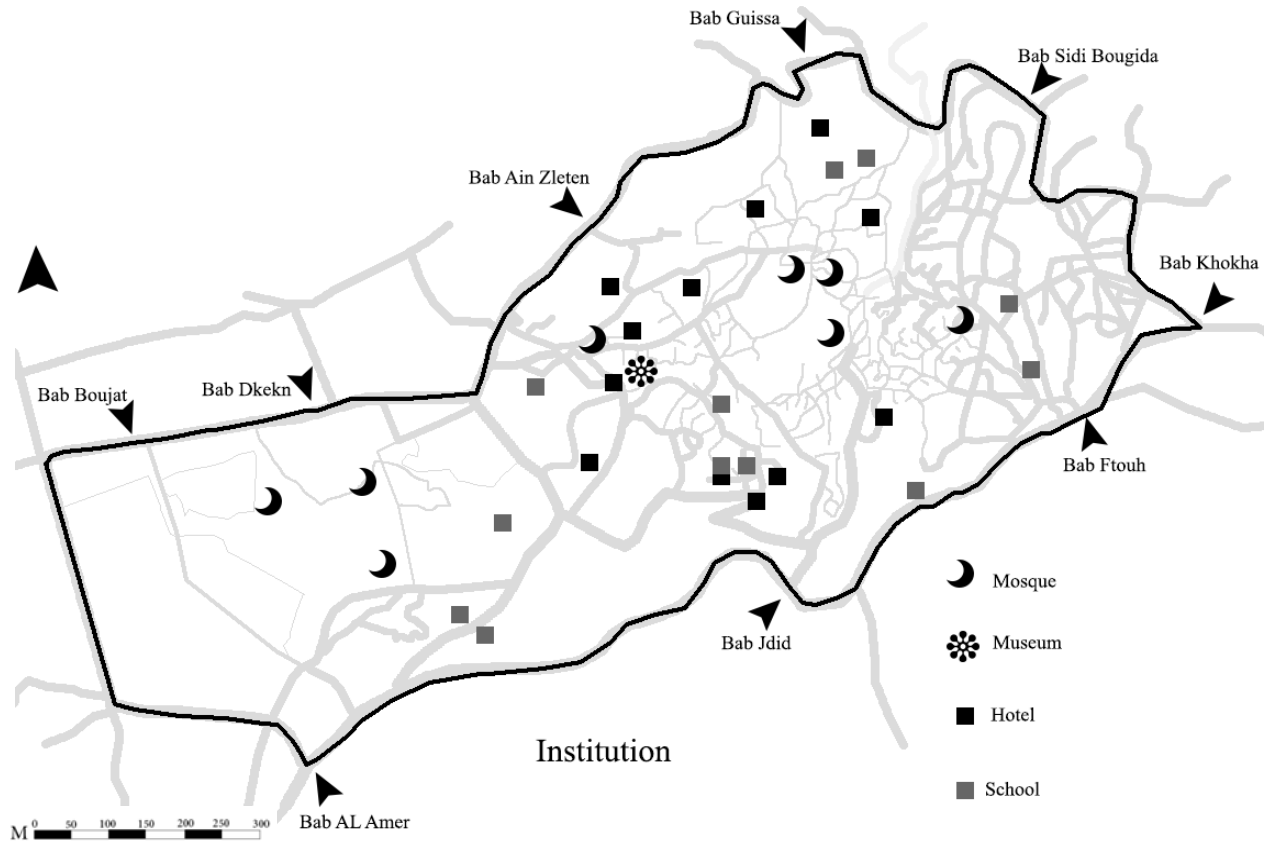
Traditional open-courtyard styled houses. “This building has a rare spatial richness and incorporates all the qualities of variation and surprise characteristic of the sophisticated townhouse.”<sup>31</sup>

<sup>31</sup> Ragette, *Traditional Domestic*, 115.



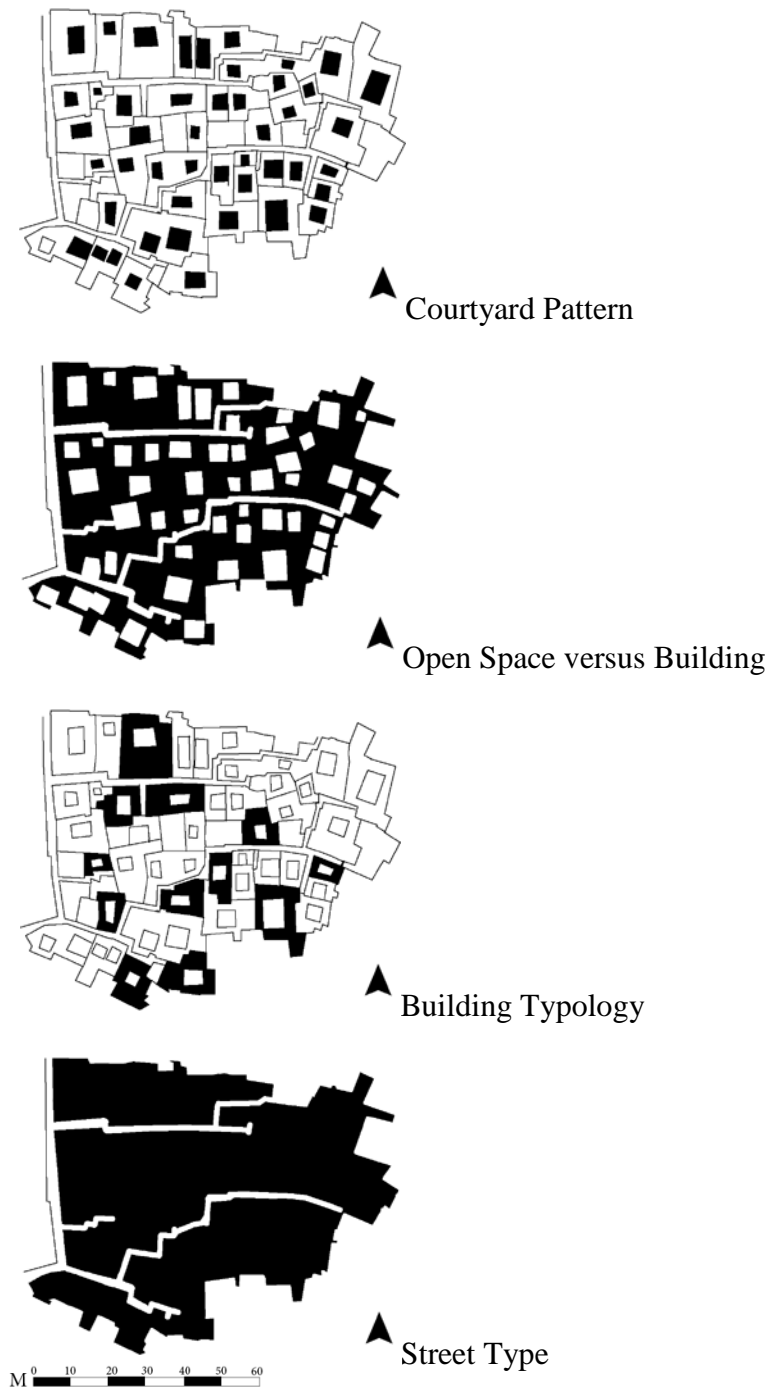
**Fig. 36: Open space versus building, Fes**

(Source: Aymen Elmagalfta)



**Fig. 37: Location of institution, Marrakesh**

(Source: Aymen Elmagalfta)



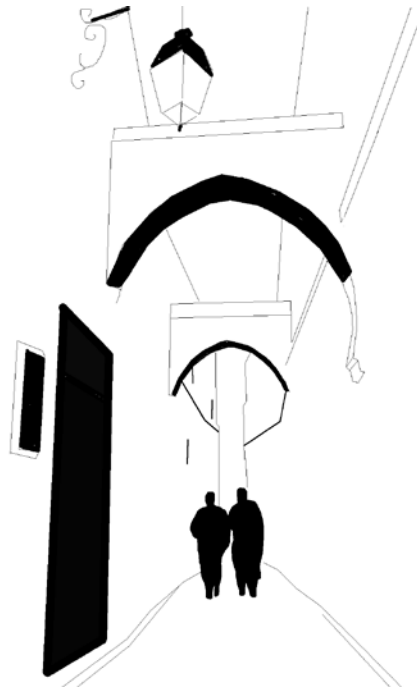
**Fig. 38: Analytique of urban form, Marrakesh**

(Source: Aymen Elmagalfta)



**Fig. 39: Gate**

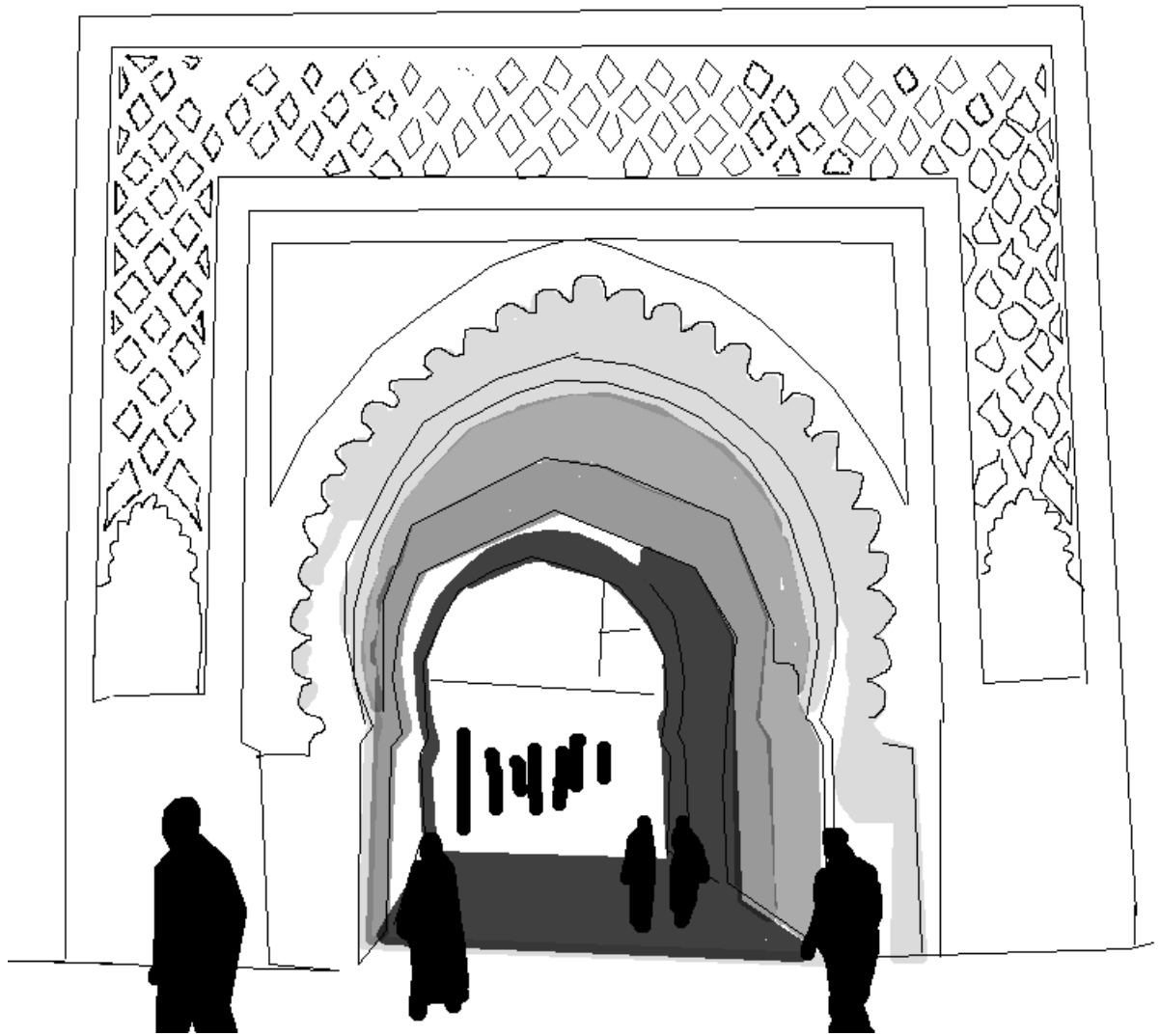
(Source: Aymen Elmagalfta)



**Fig. 40: Street Arch Type**

(Source: Aymen Elmagalfta)





**Fig. 41: Gate**

(Source: Aymen Elmagalfta)

## 2.8 Conclusion

This analysis went through North African cities that have certain similarities in architectural settlement pattern with regards to urban form. Being part of the Arab world, they were all influenced by the Andalusian. They all share the relationship between mosques and residential quarters, the relationship between mosques and markets, the separation between public and private, the house type called courtyard house, the restriction on building heights, and the landscape of the city form as compact and dense for optimal human comfort. This eliminates wasted space between buildings, external heat gain or loss, preserves the privacy of each family, and discourages disputes with neighbors. The town grows in an organic fashion by way of agglutination.<sup>32</sup> Also, there is a hierarchy in the street pattern and walk able corridor. The most of the cities are considered walk able cities, where Fes city is the first walk able city in the urban world. There are architectural elements that have similar purpose but with different ornamentation based on local handcrafts and materials. Most of the design elements within these cities rely on low energy, environmentally friendly, systems and provide protection from climate and intruders. These cities all place relationship to the community in high regard. This reflects the Arab beliefs in their ideas and implementations of settlements. There are relations between the building and the user of place and how they function together in symbiosis.

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<sup>32</sup> Ragette, *Traditional Domestic*, 50.

### 3 Misurata as a Site of New Urban Investigation

#### 3.1 History

Reconciliation between the two theories is that the city was initially founded by the Romans who referred to the settlement as "Tubartis" or "Thubactis" and it was later reestablished following the Muslim conquests and named "Thubaqt." In any case, in the 7th-century, it served as a caravan supply center and as an important port<sup>33</sup>. In the year 1860, the Turks colonized the city. They built a number of administrative buildings and the market in the second half of the second century decade, which have been retained as well. This is the interpretation of the settlement of the old city under the Turks' colonization (See Figure 42)<sup>34</sup>.

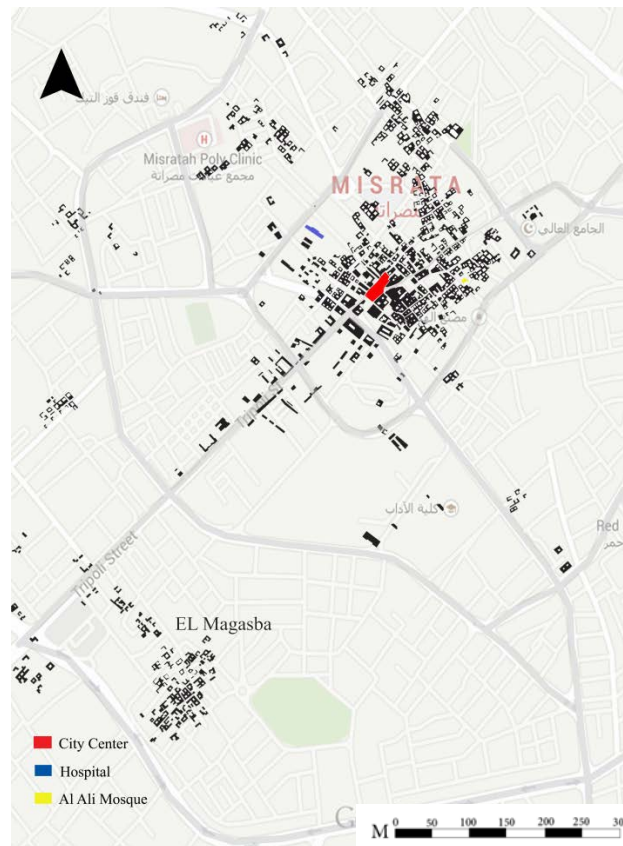


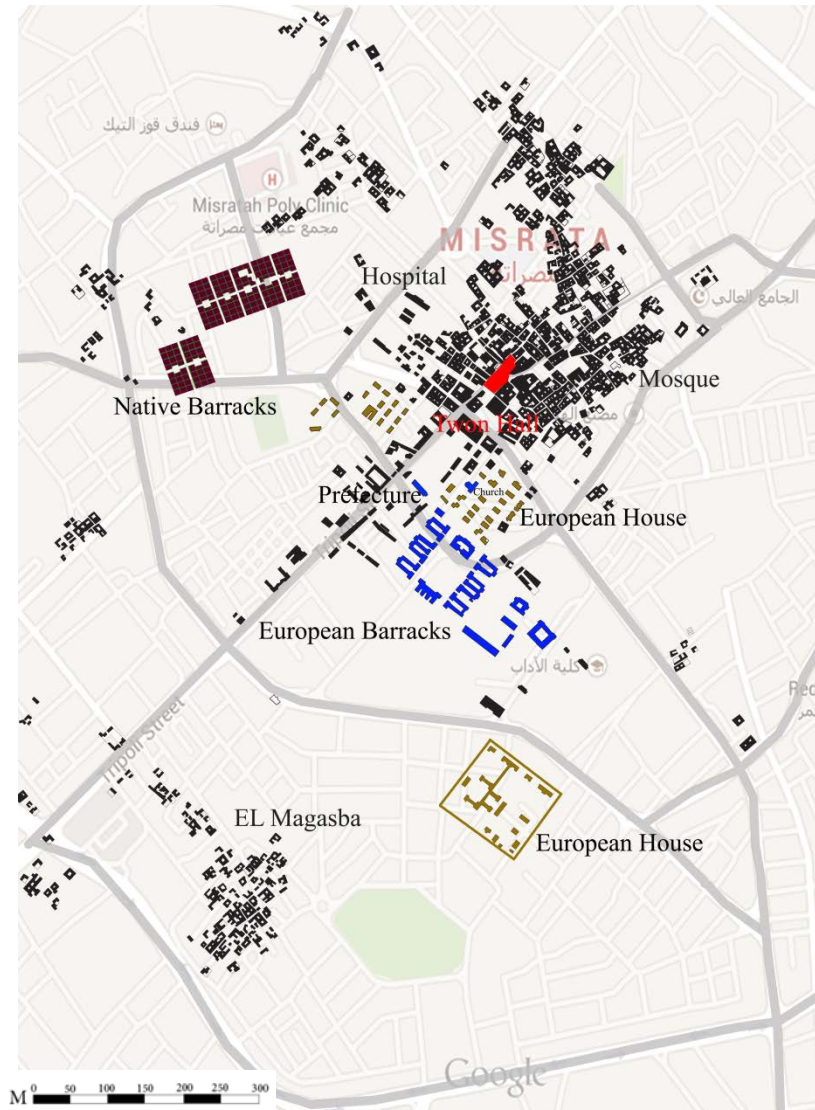
Fig. 42: Misurata City in 1860

(Source: Aymen Elmagalfta)

<sup>33</sup> David J. Mattingly, *Tripolitania* (Michigan: University of Michigan Press, 1994), 132.

<sup>34</sup> Ministry of Housing, Utilities, *Misurata 2000* (Libya: Libya, 1980), 5.

The Turks were driven out of the city at the hands of the Italians and the city of Misurata remained under Italian occupation during the period of 1912- 1915 and 1922- 1943. In those years they developed residential areas near the church, and also built military barracks (See Figure 43).



**Fig. 43: Misurata City in 1943**

(Source: Aymen Elmagalfta)

After obtaining independence, development in Misurata increased dramatically after the discovery of oil wells. In the past, around 1960-1970, the city had developed along the road that stretches towards Tripoli and Benghazi, in addition to development in the north-east direction (See Figure 44)<sup>35</sup>. It seemed to be an effective growth pattern for the city after their independence. Since then, the city has set up several schools, including secondary, public and professional schools, and new facilities for health services such as general hospitals, grouped clinics, and health centers, as well as new factories.

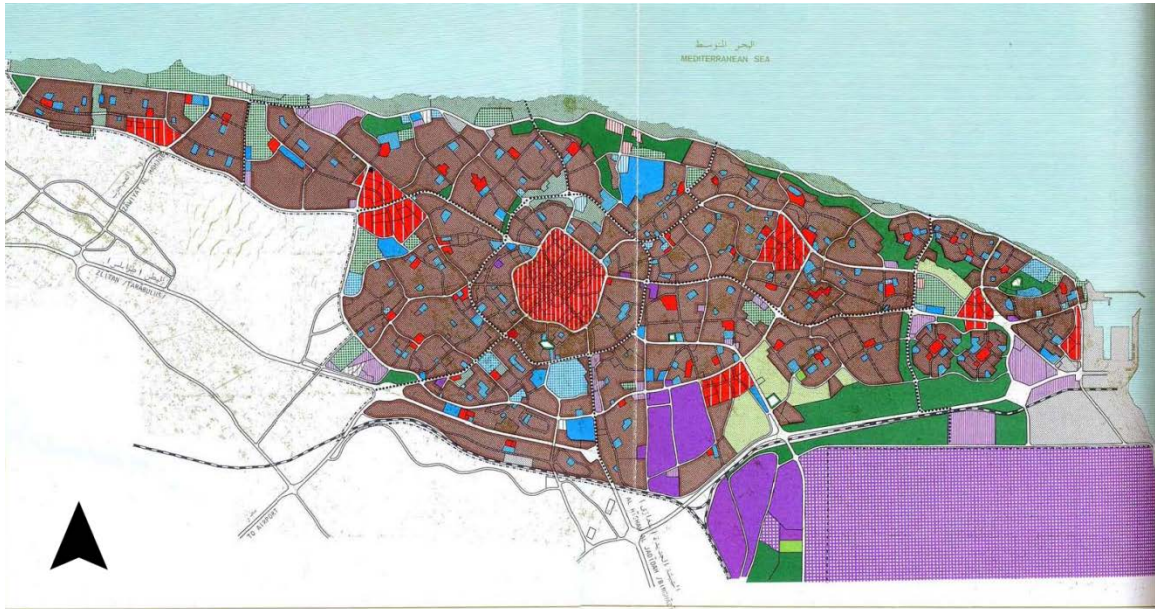


**Fig. 44: Misurata City in 1980**

(Source: Ministry of Housing, Utilities, Misurata 2000)

<sup>35</sup> Ministry of Housing, *Misurata 2000*, 6.

The construction of the city center's inner ring road, which was small, began at the seaport and the fishing port (See Figure 45-46). The population of the city was 33,000 people in 1964, 70,000 people in 1980, and 272,453 people in 2013<sup>36</sup>.



**Fig. 45: Misurata City Proposal 1980-2000**

(Source: Ministry of Housing, Utilities, Misurata 2000)

<sup>36</sup> “Bureau of Statistics and Census Libya”, accessed November 13, 2013, <http://bsc.ly/?P=0>.



**Fig. 46: Land Use Proposal 1980-2000**

(Source: Ministry of Housing, Utilities, Misurata 2000)

### 3.2 Geographic Location and Climate

The city of Misurata is located in the northeastern part of the province of Tripoli and west side of Benghazi on the Mediterranean coast. It is about 210 km from the east side of Tripoli (See Figure 47). The city is located in a relatively flat area at an altitude of about 15 meters above sea level<sup>37</sup>. The shoreline of the sea is in the north and east and is about 130 Km long. Misurata area is located between latitudes 33° 31', and 23° 32' in the north, and between longitudes 36° 14' and 15°22'<sup>38</sup>. The location of the city creates a dualism of sea and sand, bounded by the sea to the north and east and to the south by golden sands dotted with palm and olive trees.

<sup>37</sup> Source: Ministry of Housing, Utilities, *Misurata 2000* (Libya: Libya, 1980), 21.

<sup>38</sup> Omar M Aniba, "Natural geographic" in *Geographical Misrata*, ed. Winec Abdelkader Sherikse and Hassan Massoad Abu medina, (Libya: Dar and Library People's Publishing and Distribution, 2010),3.



**Fig. 47: Location of Misurata**

(Source: Dishman)<sup>39</sup>

The climate of Misurata is moderate and is influenced by the geography of the Mediterranean coast. In the south, there are no high mountains that can limit the effects of the desert, but there is a green belt that works to reduce the sand storm from the South. The climate is generally characterized as moderate throughout most months of the year.

<sup>39</sup> Simon Dishman, “Libya” Accessed December 10, 2013, <http://sdishman-triple-espresso.blogspot.com/2011/03/24-hours-after-unsct-voted-for-no-fly.html>.



### 3.3 Economic

A historic aspect of the local economy is the cloth and textile industry. Situated near the city's central square are souks ("open-air markets"), merchants continue to sell luxury carpets, furniture cloth and traditional clothing, including abayas (cloaks worn by males for celebratory occasions).

Misurata seaport was known since ancient times as a natural harbor, which was used by the Phoenicians in the west coast of Libya at the beginning of the tenth century B.C because of its natural features. It has since played an active role in the commercial trade movement<sup>40</sup>. The city's steel mill industry (which is dominated by the government-owned Libyan Iron and Steel Company) is one of its principal income generators and sources of employment. Due to the 1970s-80s renovation of Misurata's marina, to better supply the industrial plants with raw material, the industry has been able to expand and the steel mill authorities hold considerable influence in the city<sup>41</sup>. The city is proposing a free market zone, which is a bigger investment in the country. Al-Naseem Dairy, one of the largest private companies in Libya, is also located in Misurata and employs around 750 workers<sup>42</sup>.

"Foreign firms seeking a way into Libya often look to Misurata first. The city sends delegations abroad to lure investors." "Politics, what politics?" says Mr al-Sahli when asked about the current situation, "It's 100% about business here."<sup>43</sup>

### 3.4 Landscape

The Misurata site is an actual location of a settlement and is comprised of physical characteristics of the landscape specific to the area. Misurata contains landforms, vegetation types, water sources, soil quality, and wildlife. Misurata is a flat land and has a

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<sup>40</sup> "Misurata Free Zone," The Port, accessed November 25, 2013, <http://www.mfzly.com/en/index.php/2012-10-25-11-16-31>.

<sup>41</sup> "Misurata," Traveltill, accessed November 24, 2013, <http://www.traveltill.com/destination/Libya/Misratah/history.php>.

<sup>42</sup> Young, Rob, "Libya's commercial hub recovers slowly," *BBC World*, January 3, 2012, accessed December 10, 2013, <http://www.bbc.com/news/business-16366285>.

<sup>43</sup> "The can-do city," *The Economist*, October 5, 2013, accessed November 25 2013, <http://www.economist.com/news/business/21587264-entrepreneurs-libyas-commercial-hub-are-undeterred-post-war-chaos-can-do-city>.

light-aliasing landscape that includes marshy areas, beaches, huge internal parts of the wooded part of the dunes, (spare land planted), and green belt surrounding the city.

Marshy areas are flat, rising only about 8-10 meters above sea level, with the presence of water-filled depressions. It includes 0.1 to 1.5 km of rocky cliffs towering sand beaches with natural rock walls that constitute against the waves. There are also beaches mostly in the western part of the coast, and there are many places offering great views of the sea, which sings of the local landscape.

### 3.5 Urban Form

Misurata is divided into two distinct sections. Older Misurata consists of small stone houses and narrow arched streets. The architecture of the city is divided in four elements (1) the relation of town and state, (2) the market (souk), (3) the relation of religious institutions to the town, (4) the relation of residential and domestic space<sup>44</sup>. The large mosque is the center of the city, both symbolically and physically. This is the only building remaining from the old city, while the rest were demolished. To the people, this is a sign that the hub of the city is based on the spirituality of religion in the Islamic culture. On the other hand, the newer part of the city, which began to develop in the 20th-century, consists of modern buildings inspired by western countries module, homes, factories, and industrial areas. Misurata has a modern infrastructure, including paved roads, electricity, and communications.

The modern city is influenced by other countries' architecture, which leads to the idea of mixed element in the building morphology. "Contemporary architecture, shaped by advanced industrial technology, has been introduced directly to many countries in which it had not been developed. This type of architecture, designed through the development of objectivist ideas, has ignored or has not been able to take into consideration the subjective needs of a particular culture."<sup>45</sup> There was a lack of local architects, so foreign architects brought their knowledge and applied it to the built

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<sup>44</sup> Haneda, and Miura, *Islamic Urban Studies*, 20.

<sup>45</sup> Daza, "*Traditional Built Environment*."

environment. This affects the culture of the city fabric by introducing the international style. “In Libya, for example, conflict first arose as a result of an architectural system that was developed during the colonial period. After independence, the images preferred by modern architects were considered desirable by the rulers, who imported foreign architects, planners, and consultants to carry out the modernization. The local reality and the local environment were ignored.”<sup>46</sup> This situation still exists in the region and some architects are inspired by their ideas, but are not educated about the local culture.

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<sup>46</sup> Daza, “*Traditional Built Environment.*”

### 3.7 Analytique

The analytic will study the city overall and describe the changes that did not follow the design proposal done by the western firm. The city structures will be organized by organic functions and modified based on what people need. The urban network system was likely imbedded into the city to help the development of infrastructure; however, land use has been totally changed and people have implemented their own requirements.

#### 3.7.1 Urban network

The city was designed in 1980 by a western architecture firms who created a new planning proposal. The subsequent urban network was applied and led the city into a more modern infrastructure. The idea started from the linkage of the main street with a ringed pattern. The city became like growing rings ( See Figure 48). The government imbedded this urban network, it affected the city's culture by introducing the transportation industries. Also, it helped develop the city to grow in different directions and created new areas for development.



**Fig. 48: Urban Network**

(Source: Aymen Elmagalfta)

### 3.7.2 Urban morphology

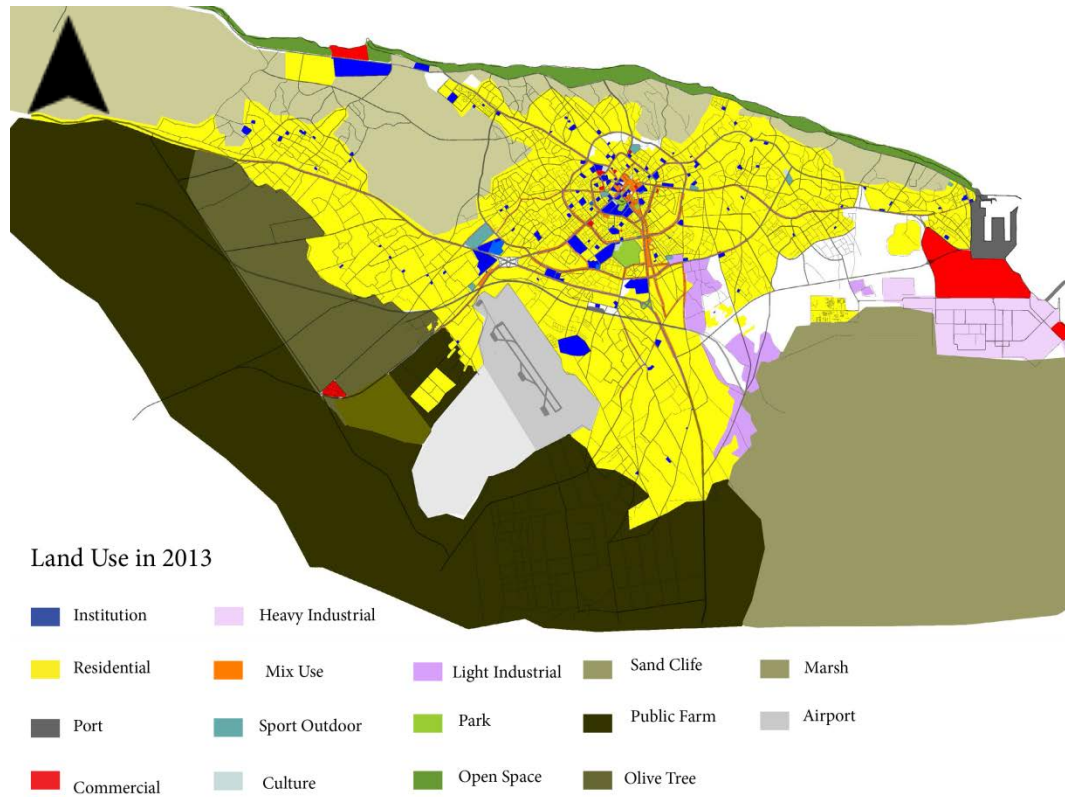
The urban morphology in the city fabric is compact. It presents the form of human settlement and transformation. It helps understand the spatial structure and people's interest of settlement (See Figure 49). There are many areas that need to be filled in in order to solve the problem with housing development. The idea of people's settlement has change after the revolution. This affected the transformation of the urban morphology and led to a new area of development.



**Fig. 49: Urban Morphology**

(Source: Aymen Elmagalfta)

### 3.7.3 Land use

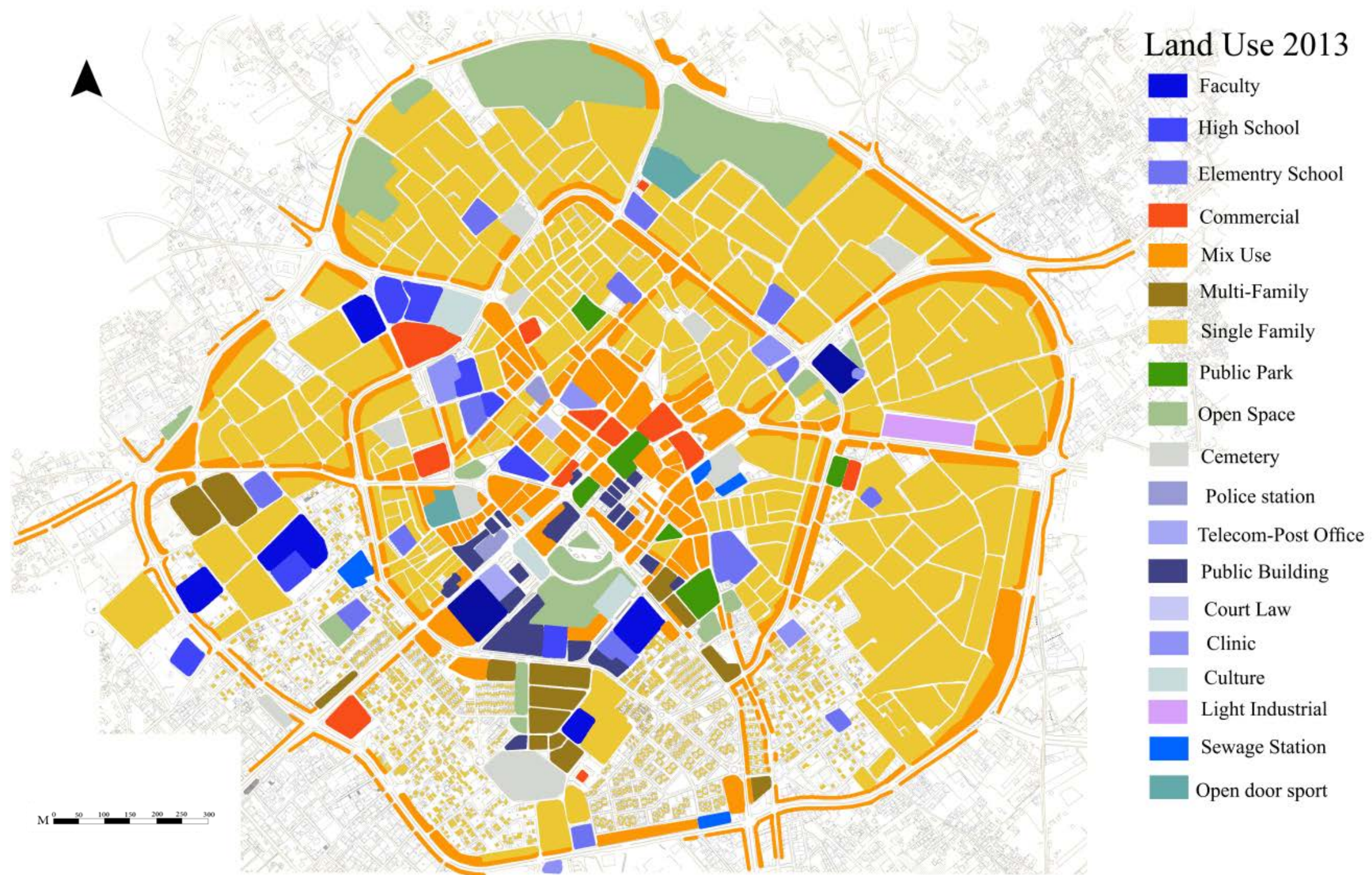


**Fig. 50: Land Use**

(Source: Aymen Elmagalfta)

### 3.7.4 Related Neighborhood

The section will look at the neighborhoods of the site study in terms of land use and the relationship between the buildings (See Figure 51). This study explains the building use and how it can affect the rest.



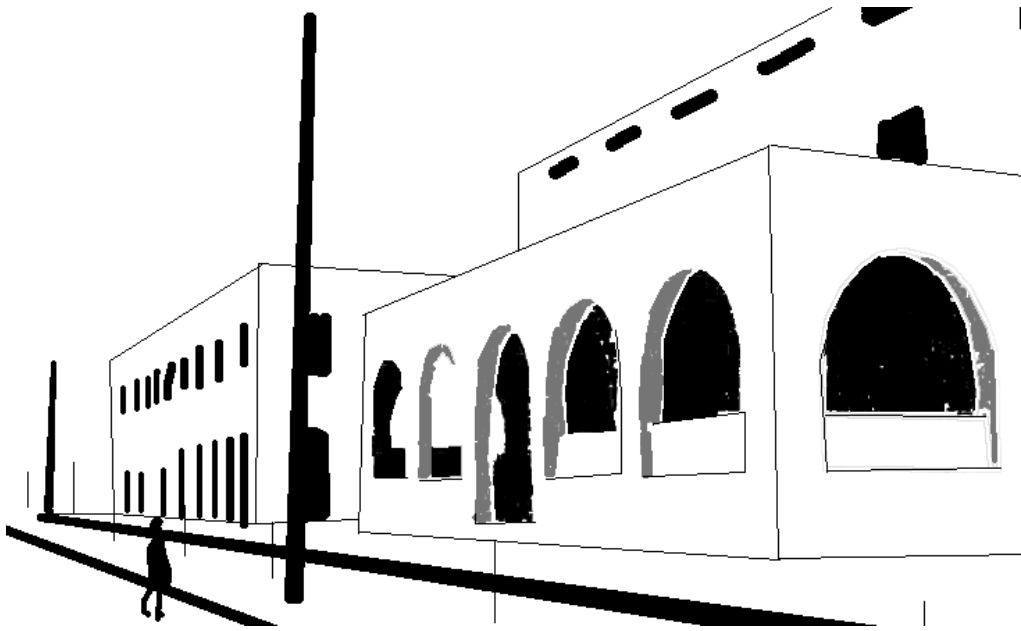
**Fig. 51: Neighborhood Relationship, Misurata**

(Source: Aymen Elmagalfta)



**Fig. 52: City center 1950**

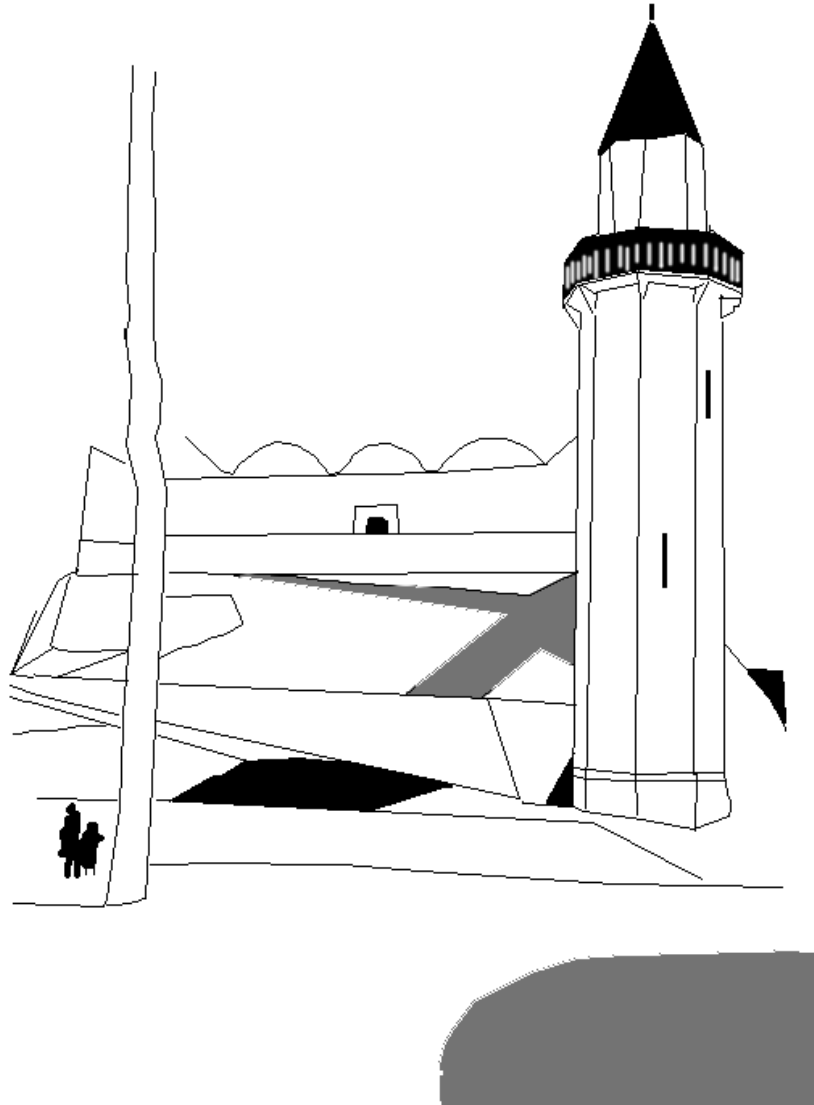
(Source: Aymen Elmagalfta)



**Fig. 53: Turkish influenced building**

(Source: Aymen Elmagalfta)





**Fig. 54: Al-Ali Mosque**

(Source: Aymen Elmagalfta)

### 3.8 Conclusion

Looking at the city overall and studies it through different times. It looks at the history of the city and how it was influenced during various periods of colonization. After Misurata's independence, the city was inspired by the industrious European countries during which was applied a new urban network, urban morphology, and land use on a large scale. This helped to find out the side effects of the application of the western modules on the city fabric. This leads to understanding the city's direction and continued interest within the framework of the people's settlement. This study helps to select the site for further development in order to implement the new plan of urban design.

## **4 Urban Design Intervention for July 9<sup>th</sup> Neighborhood in Misurata**

### 4.1 Introduction

The following section will focus on how to incorporate the site into design implementation and how it is to become a module for a new housing typology. The site under consideration is left in ruins after an attack during the revolution on February 17<sup>th</sup>, 2011. The selection of this site is based on the analysis of the whole city because it is the most damaged area and needs to be redeveloped. It will look at the site's neighborhood and how it can be changed to become a model for a more resilient urban design typology.

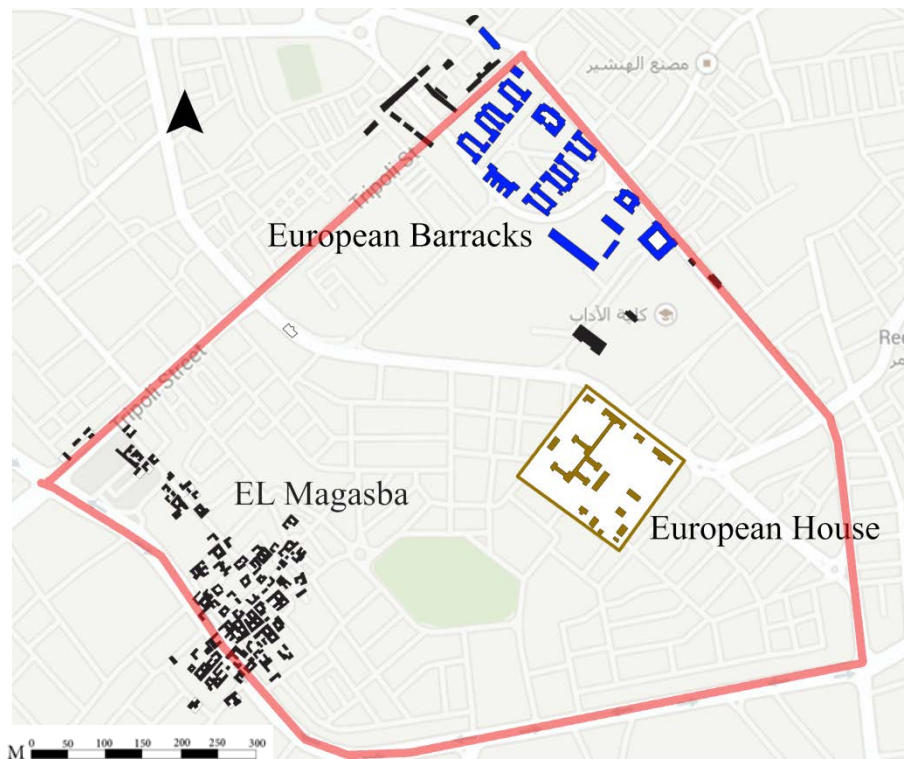
### 4.1 Site Analysis

The site is located in downtown Misurata between Ramadan Shahly Street and Begizhi Street (See Figure 55). Originally developed in 1943 by the Italian Military mixed with a small part of the old traditional housing area named El Magasba Figure 36. Therefore, it has two existing building typologies. One is an older, more traditional, building typology and the second consists of a more western building typology. Currently, the government has a vision, which includes a sustainable design approach to the expansion of the downtown area. The area of the site is about 426.5 acres (172.6 hectares). It is already quite dense. Due to the fact that there exist institutional buildings for public use, this area is considered to be the heart of the city.



**Fig. 55: Site Location**

(Source: Aymen Elmagalfta)



**Fig. 56: Site Background**

(Source: Aymen Elmagalfta)



**Fig. 57: Site Context- City Landmarks**

(Source: Aymen Elmagalfta)

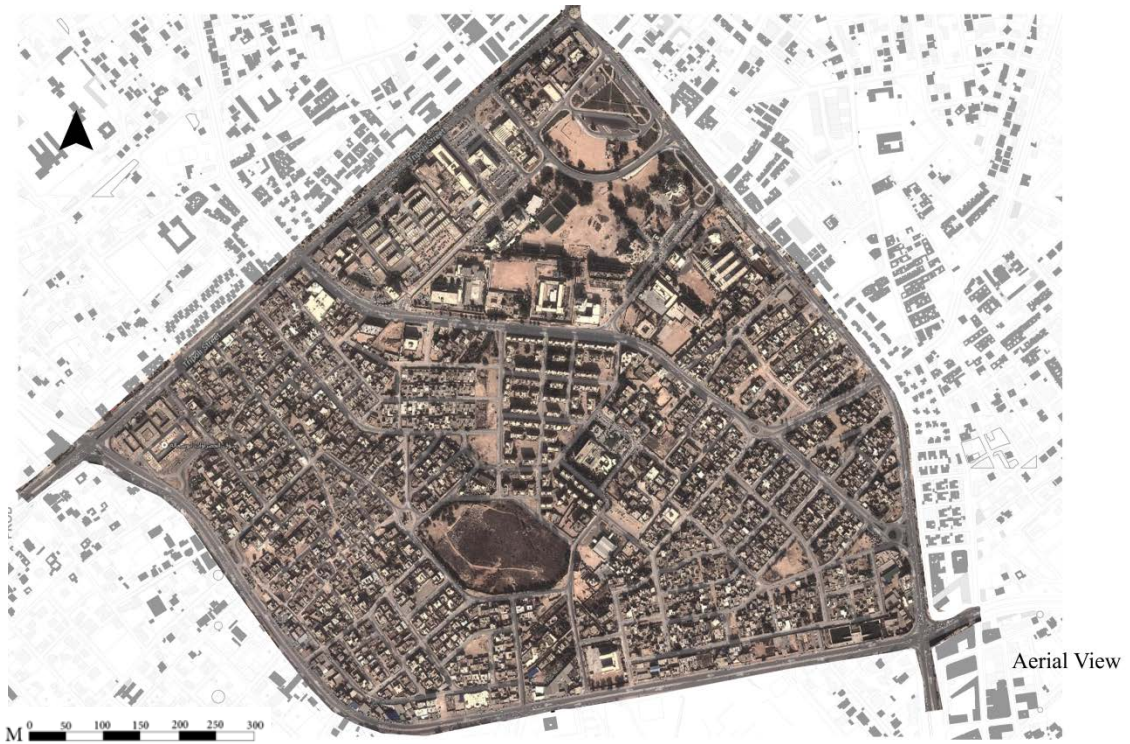
#### 4.2 Site Proposal 1980-2000

In 1974, the city was designed by a western architecture firm to develop a new housing area and promote growth as an urbanized city. The western firm ignored the Arab culture, proposing an international building style. The international style incorporates isolated function criteria, which singles out areas for housing, recreation, industrial, government, and commercial. In essence, this approach separates everything into individualized components (See Figure 58-59). This does not fit with traditional Arab cultural needs and desires for optimal living environment. (See Figure 60) shows the land use of the design as proposed for the city.



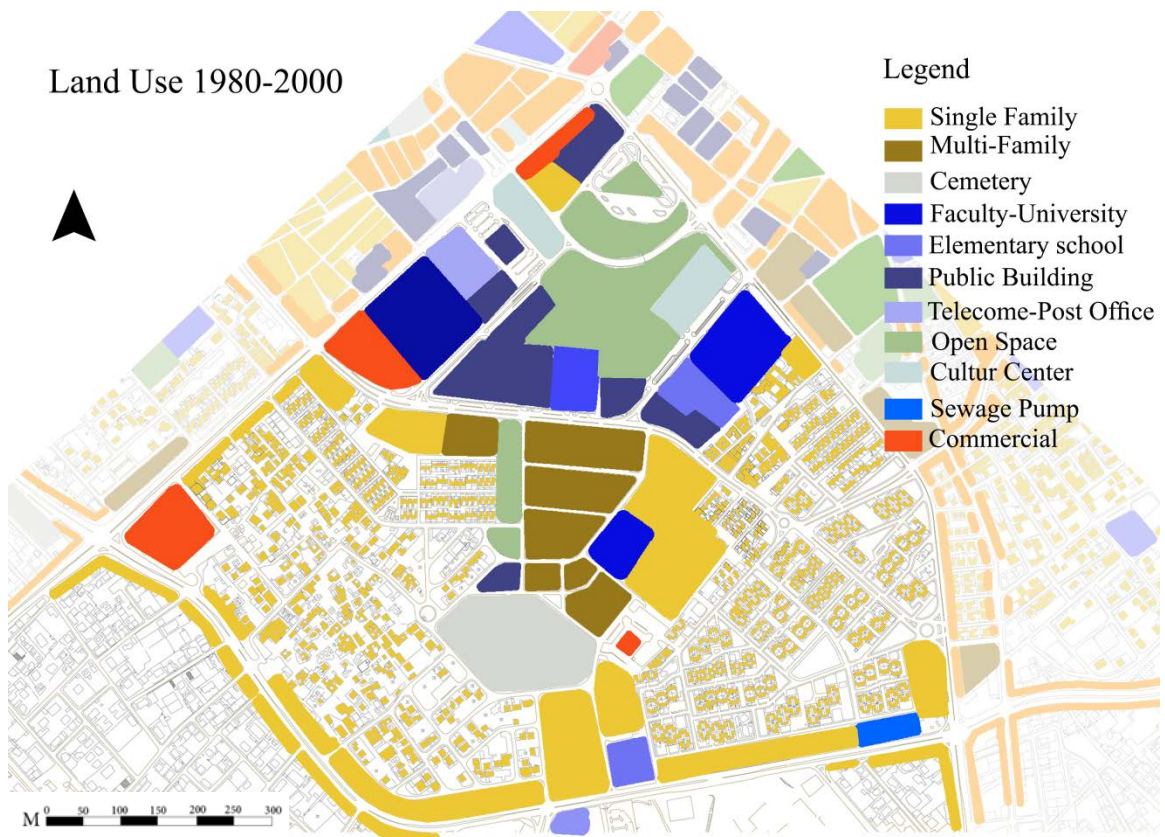
**Fig. 58: Building Typology**

(Source: Aymen Elmagalfta)



**Fig. 59: Aerial View of July 9<sup>th</sup>**

(Source: Google map)



**Fig. 60: Land Use Proposal 1980-2000**

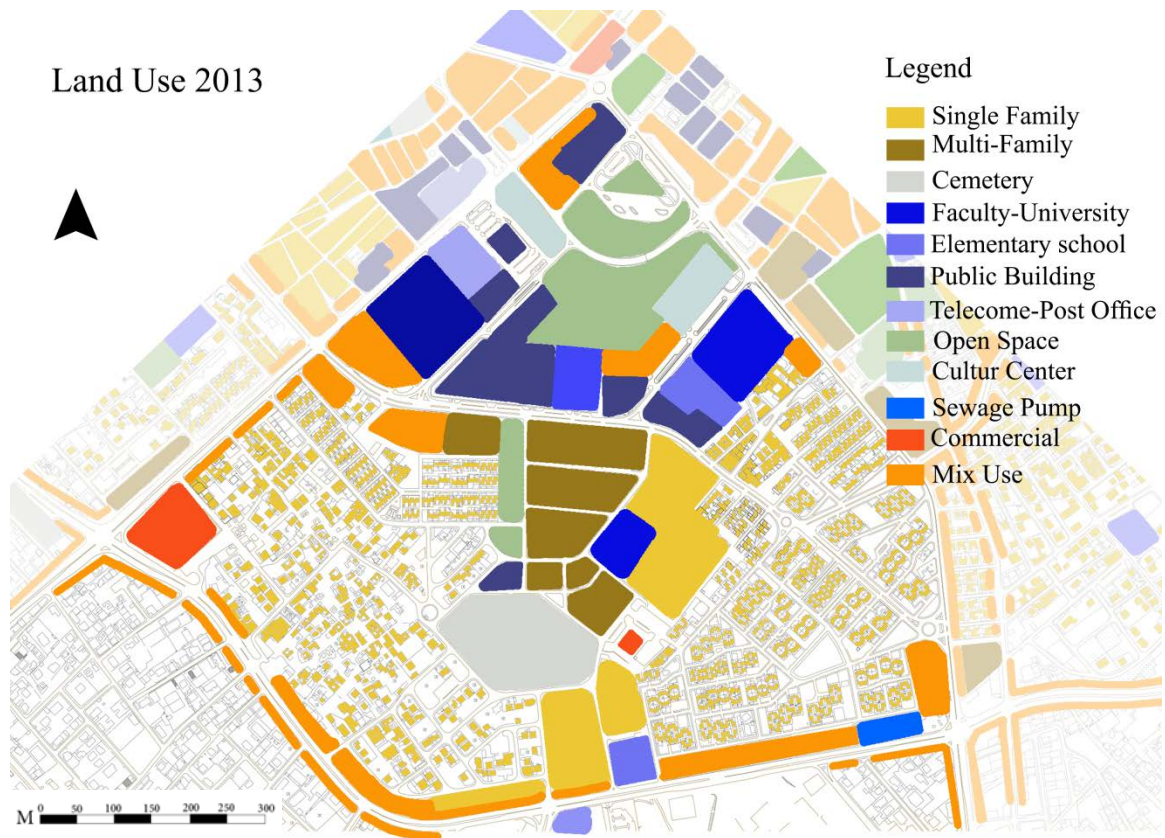
(Source: Aymen Elmagalfta)



### 4.3 Existing Site Analytic 2013

#### 4.3.1 Land Use

The culture impeded their needs and made the change based on human and environmental qualities (See Figure 61).



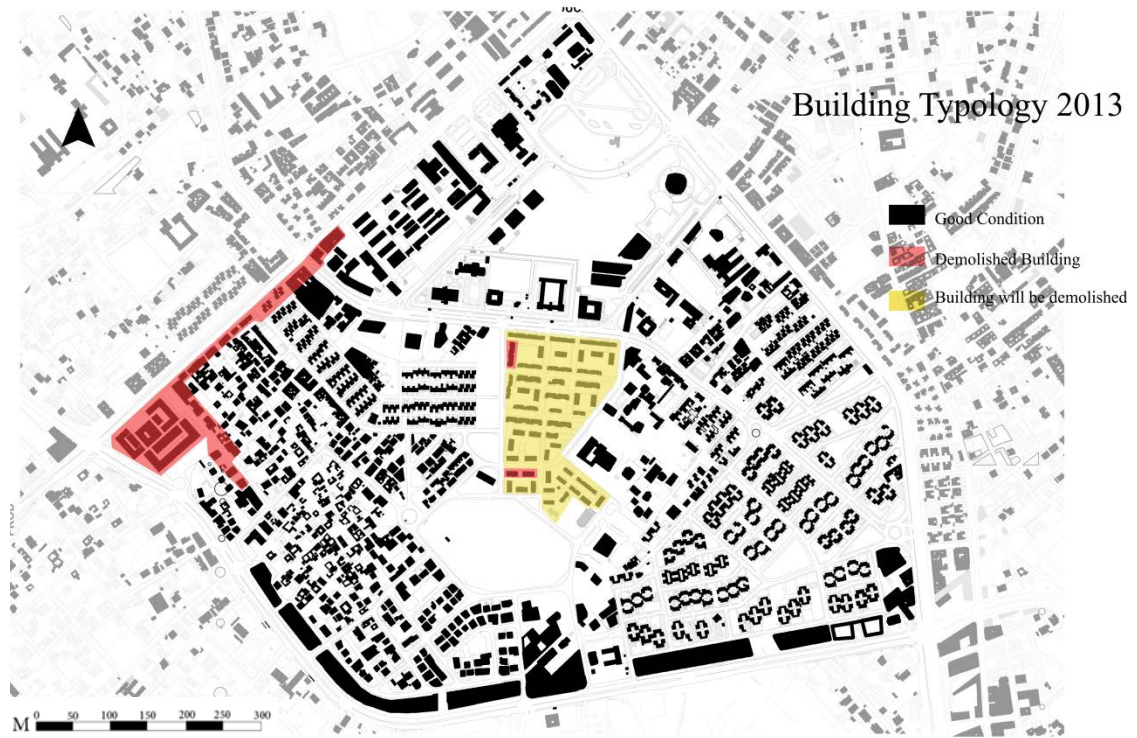
**Fig. 61: Land Use in 2013**

(Source: Aymen Elmagalfta)

#### 4.3.2 Building Condition

The area was damaged during the February 17<sup>th</sup> revolution (See Figure 62). Many buildings have subsequently been demolished with more planned for demolition due to poor structural integrity. Now the government is looking ahead and accepting proposals for future teardown sites. The vision for the area is to provide housing to allow workers, who are currently living outside the city, space to live. However, there is no mention of providing low-income housing. This portion of the study looks at the site and provides

locational data of buildings that fit into three categories: good condition, demolished, or planned for demolition.



**Fig. 62: Building Typology in 2013**

(Source: Aymen Elmagalfta)



**Fig. 63: Vegetable market (2011) ravaged by war**

(Source: Aymen Elmagalfta)



**Fig. 64: Low income house of July 9<sup>th</sup> (2011)**

(Source: Aymen Elmagalfta)



**Fig. 65: Multi-Family House (2011)**

(Source: Aymen Elmagalfta)

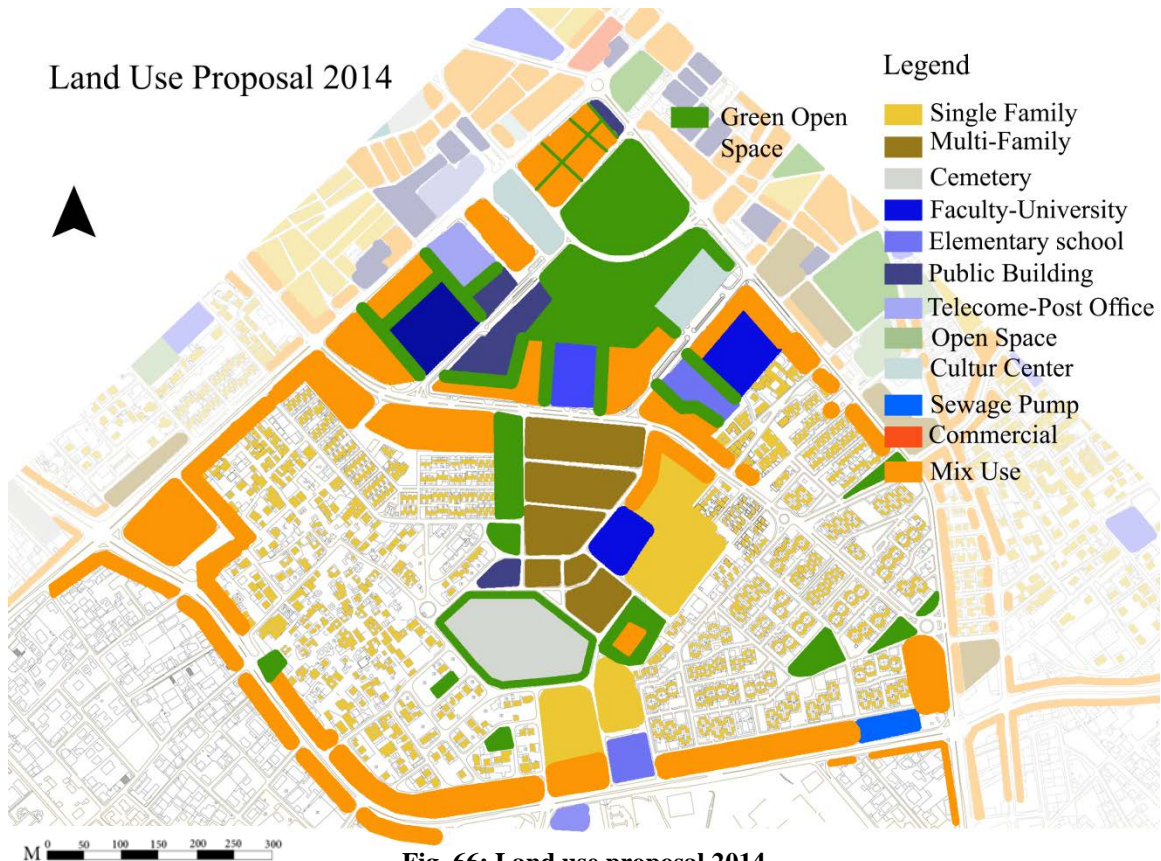
#### 4.4 Conclusion

This study analyzes the site and how it is influenced through time and by the introduction of the international style. The site is divided in two parts and each has a different building typology. Traditional buildings and modern buildings conflict on the site. The exploration includes the buildings' relationships to one another and how they successfully or unsuccessfully interact. The area of study is a mixed-use zone that is prone to an excess of pollution and traffic jams and culture crisis. There are many public buildings in north side, in compact block areas that are effectively isolated from the other neighborhoods. Due to these limitations, the design proposal intends to create a walkable neighborhood that proves valuable as a sustainable model for future city development.

## 5 Urban Design Proposal

### 5.1 Land Use for 2014

In order to provide a successful vision of land use, It must first understand the environmental and cultural needs of future inhabitants. This particular site requires the combination of open spaces and mixed-use plan with a focus on walkability of the neighborhood (See Figure 66). The open green street will function as mixed-use area and act to encourage people to walk and interact with the buildings with emphasis on public use. Through presented and the follow through of the plan, many of these benefits are realized in this example of urban fabric.

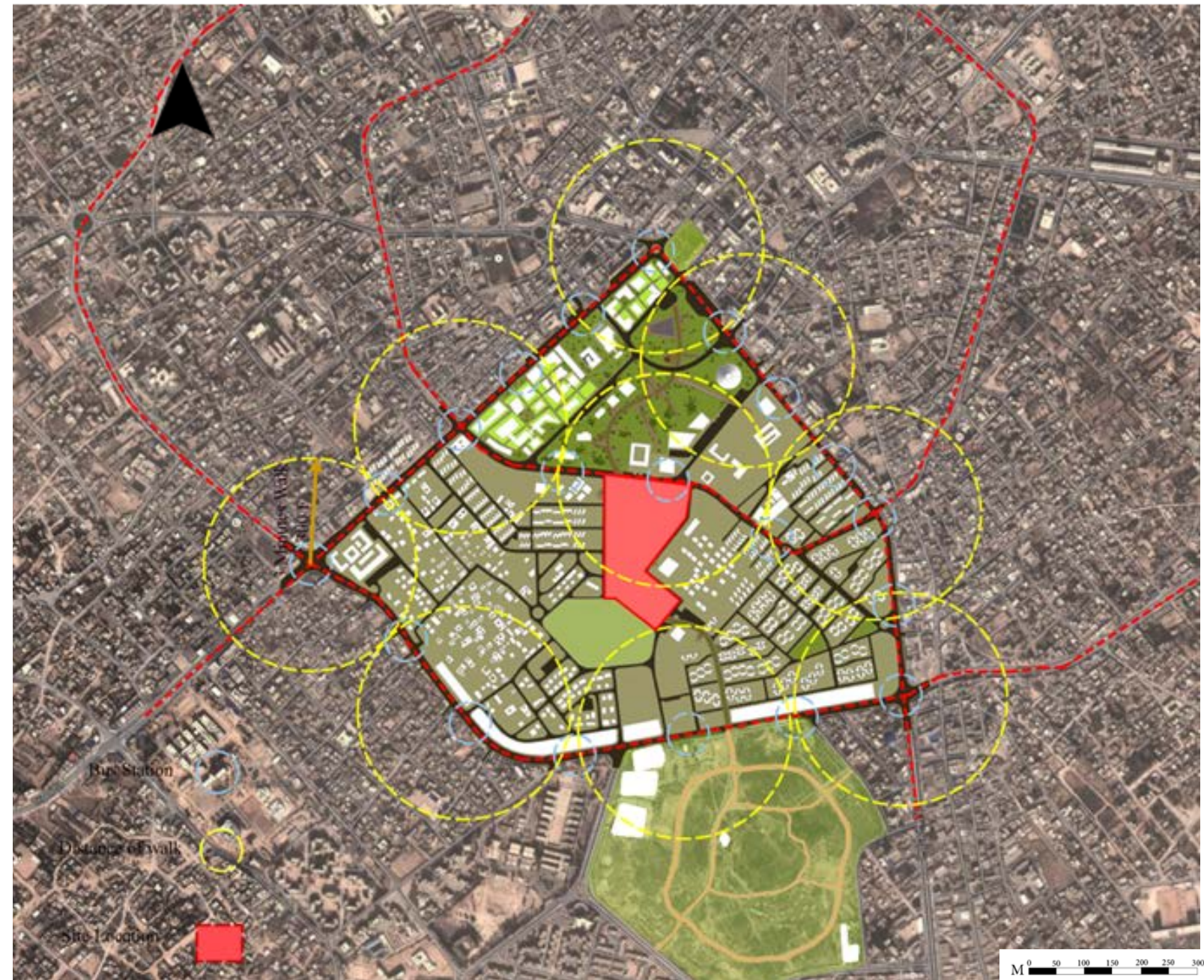


**Fig. 66: Land use proposal 2014**

(Source: Aymen Elmagalfta)

## 5.2 Transportation system proposal

Because the site is located in the existing city center it is necessary to include a vision of how transportation is to within the context of the site. This public transportation is to help to increase the value and accessibility to July 9<sup>th</sup> district. The system can be integrated in other district neighborhoods as well. The transportation system reinforces the idea of a linkage between various areas so as to reduce energy use by limiting private car use (See Figure 67). It limits the distance between structures and includes a proposed bus station.

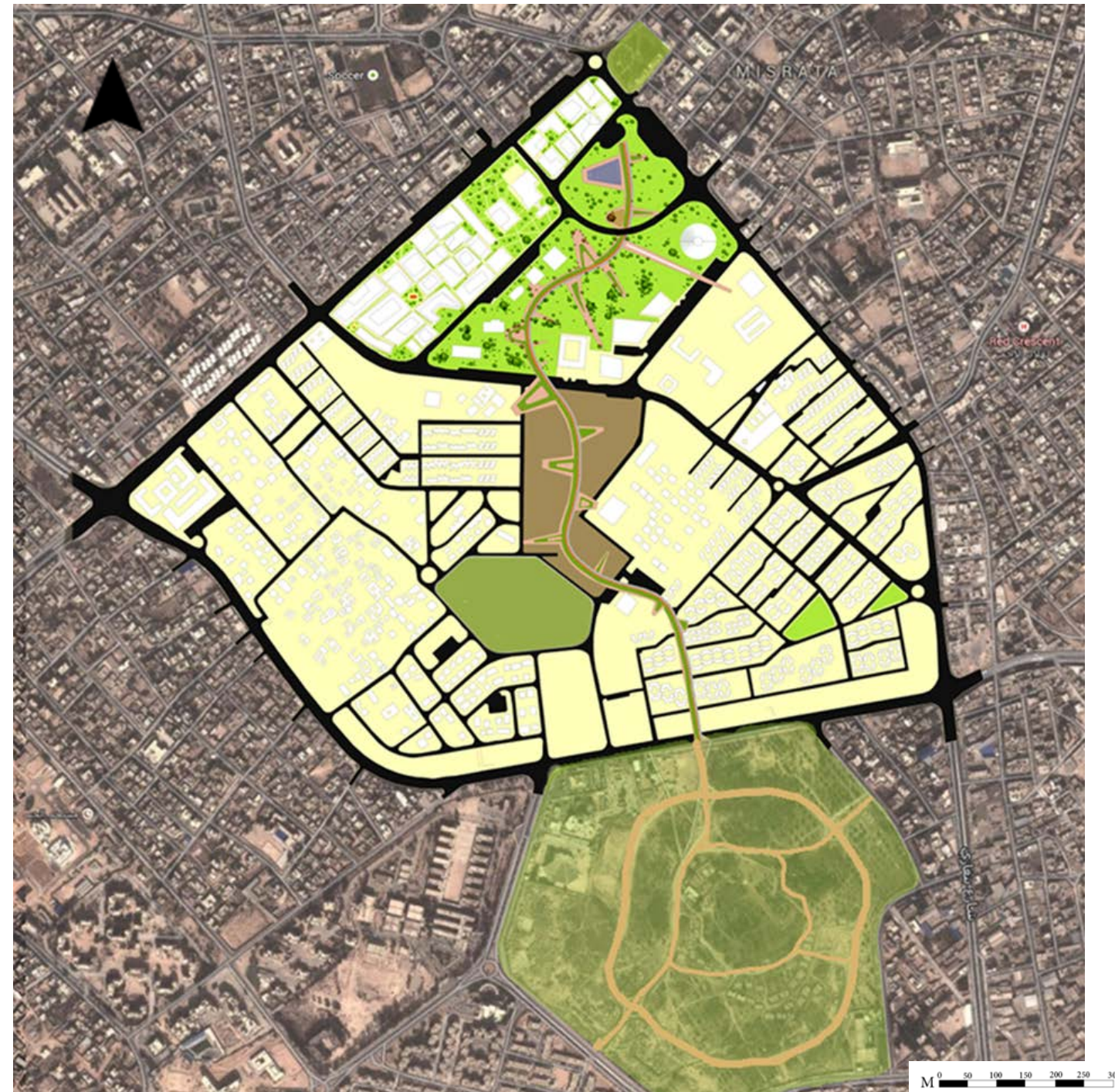


**Fig. 67: Transportation system**

(Source: Aymen Elmagalfta)

### 5.3 Green Spine Landscape

The design project is using a green belt for site intervention. The idea is to introduce a green belt into the city fabric and show how it can help to implant new architectural elements to the site. There is a big park surrounding the site but it is not connected to the city. This segregation affects the social life of the neighborhoods. Green belts can function both as a garden space for reflection as well as a network connection enhancing the experience of the downtown area (See Figure 68). This acts to engage the entire city because it becomes a place for locals and visitors to effortlessly come together. This offers a 'front porch' to the city on the doorstep of the downtown neighborhood. It builds a network of public spaces that connect the green spine pathway to important destinations, nearby neighborhoods, and the city.



**Fig. 67: Green spine**  
(Source: Aymen Elmagalfta)





Waterfront

(source:ASLA,  
<http://www.asla.org/2013awards/501.html>)



Playground

(Source: Crochet,  
<http://www.crochetconcupiscence.com/2012/01/playground-crochet-artist-toshiko-horiuchi-macadam/>)



Canopy

(Source:Inhabitat,<http://inhabitat.com/waxing-architectural-on-columbias-orquideorama/>)



Public Library

(Source: Misurata,  
[http://stad.com/index.php?city\\_id=2214846](http://stad.com/index.php?city_id=2214846))



Memorial Wall of February 17

(Source: Aymen Elmagalfta)

**Fig. 68: Landscape elements**

(Source: Aymen Elmagalfta)

#### 5.4 Urban design

After extensive analysis of the site and integration of the green spine landscape into the site, this approach produces a vision, which acts as an intervention that can be used as a module for urban design within Misurata. In this way, the interpretation of the design proposal is meant to create a sustainable model for the city pattern. The inspiration comes from the traditional Arabic urban fabric and can be implemented using four key principles:

- i- Create high density
- ii- Integrate Green system
- iii- Promote mix use
- iv- Encourage development cluster

Shows the overarching elements of the proposal formed through the study and how it can be develop the urban setting of the city center (See Figure 70). It becomes a reimagining of the current city center typology. This counts as a tremendous opportunity to turn vision into reality through the creation of a vibrant public realm reconnecting the people to City Park.



**Fig. 69: Urban Form of integrated with green spine**

(Source: Aymen Elmagalfta)



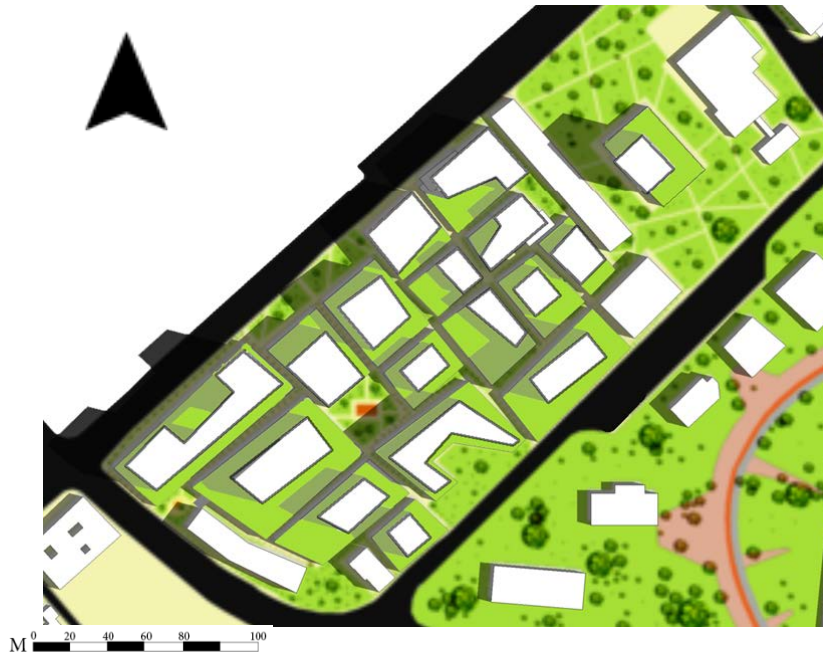
M 0 30 60 120 150 180 210

**Fig. 70: Urban form pattern**  
(Source: Aymen Elmagalfta)



**Fig. 71: Upper urban figure**

(Source: Aymen Elmagalfta)



**Fig. 72: Lower Urban Figure**

(Source: Aymen Elmagalfta)

Existing Condition



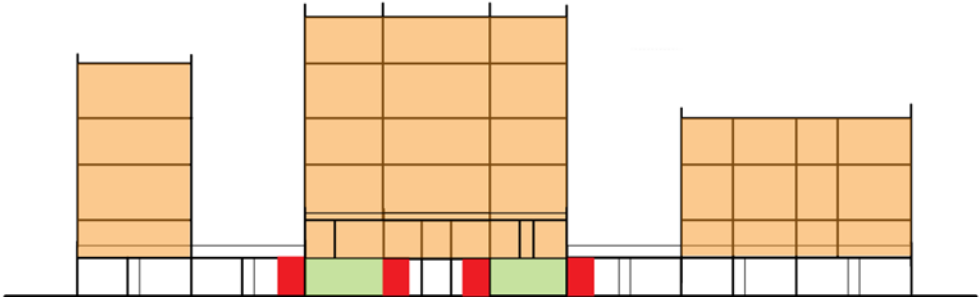
Proposal Condition



**Fig. 73: Section Proposal 1**

(Source: Aymen Elmagalfta)

Proposal Condition



**Fig. 74: Section Proposal 2**

(Source: Aymen Elmagalfta)

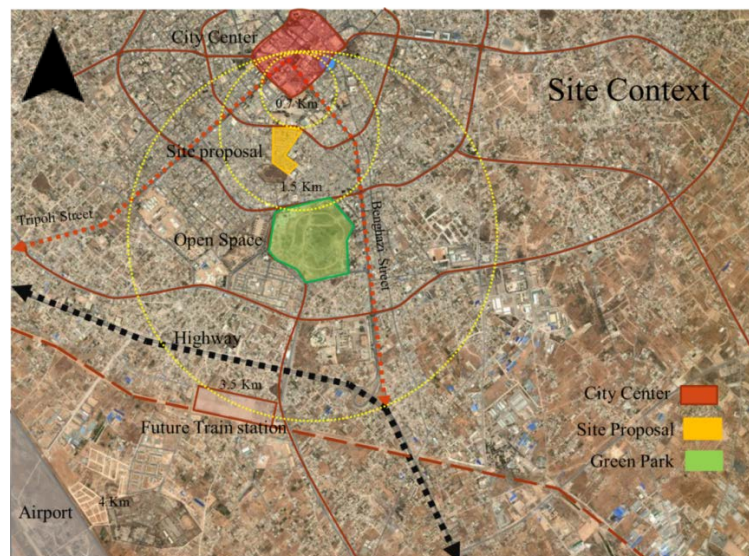
## 5.5 Urban Housing Design

### 5.5.1 Site Analysis

Through the study of the area of July 9 and its contextual setting, the study selects the specific site for a housing development as intervention in the existing fabric. The local city council plans to demolish the existing housing and proposes a new function for the site. After analysis, the site and proposed mixed-use housing development must include diversity and provide an intervention within the city context. The project points to a development of the site so as to provide a better plan of Misurata through the creation of a sustainable, people-oriented, design. Learning from other North African cities, the urban design of the site can meet the requirements for high density, integrated natural systems, and encourage other development clusters.

### 5.5.2 Location

The site is located close to urban city center and other famed destinations in downtown. It is about 0.7 Km from city center. The 8.3 hectare site has great connection to existing and future primary meter and bus route. People can easily access the site and traverse the city on foot.

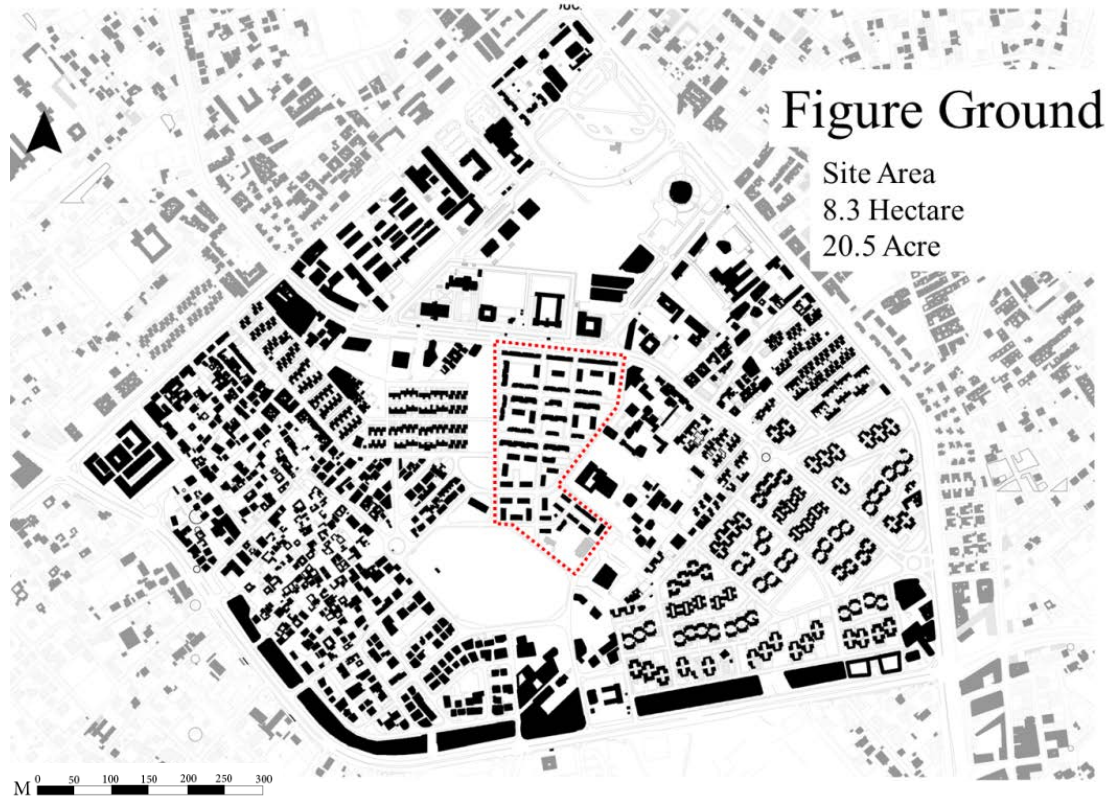


**Fig. 75: Location of urban housing**

(Source: Aymen Elmagalfta)

### 5.5.3 Existing site condition

The site is to be torn down further, and three buildings have already been demolished. The existing housing was built in 1970 for middle income, but now the economic situation is worse and will be aimed at low-income residents. The infrastructure of the site is destroyed and there is no water or sewer service. Due to high costs, individuals are currently unable to maintain the poor infrastructure on their own. Therefore, the situation is getting worse in the specific and surrounding area (See Figure 77-78).



**Fig. 76: Existing figure ground**

(Source: Aymen Elmagalfta)





**Fig. 77: Area view of housing July 9th**

(Source: Aymen Elmagalfta)



**Fig. 78: View of site study**

(Source: Aymen Elmagalfta)



**Fig. 79: Back view of multi- family house in July 9<sup>th</sup>**

(Source: Aymen Elmagalfta)



**Fig. 80: Side view of multi-family house in July 9<sup>th</sup>**

(Source: Aymen Elmagalfta)



**Fig. 81: Street view of district**

(Source: Aymen Elmagalfta)



**Fig. 82: Front view of multi-family house in July 9<sup>th</sup>**

(Source: Aymen Elmagalfta)



**Fig. 83: Side walk view of district**

(Source: Aymen Elmagalfta)



**Fig. 84: North view of multi-family house in July 9<sup>th</sup>**

(Source: Aymen Elmagalfta)

## 5.6 Urban Housing design concept

### 5.6.1 Urban design scheme options

#### Scheme 1: Forest in the Housing

The Housing development cluster takes a linear edge of the site and creates the large opening of a courtyard to act as a forest within the housing layout. Open spaces link each neighborhood, providing access to open space while also promoting natural airflow and exposure to sunlight (See Figure 85). Large open spaces connect and extend to a regionally inspired green spine corridor.



**Fig. 85: Forest in the housing**

(Source: Aymen Elmagalfta)

## Scheme 2: Green Spine within Housing (Preferred)

The outcome of this process is an exciting master plan that allows for diversity of program and built-form, creating unique urban outcomes. The design process is an example of an iterative process, which allows for considerations of site constraints and opportunities presented by the North African city structure. The final outcome includes courtyards for environmental adaption as well as a culturally sensitive contextual identity.



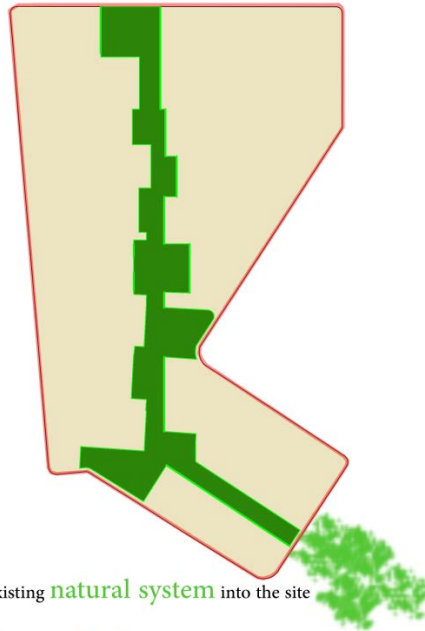
**Fig. 86: Green spine within housing**

(Source: Aymen Elmagalfta)

The preferred master plan embodies the strongest urban design and landscape elements. Urban plazas provide walkable centers for each neighborhood. The geometric component, located in the north of the site allows for high-density mixed-use, office towers, and a hotel. These reiterate the connection to the site with the city center and effectively increase the valuable site activities.



## 5.6.2 Urban design Principle

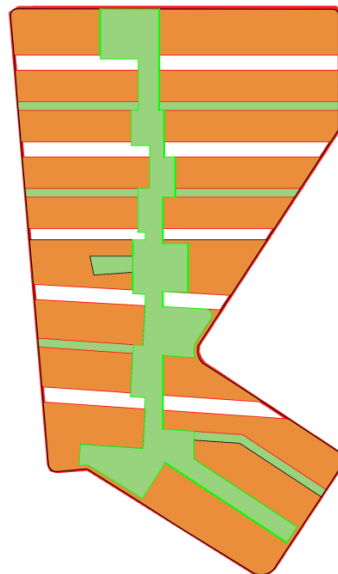


Bring the existing **natural system** into the site

through **Green Spine**

**Fig. 87: Green spine**

(Source: Aymen Elmagalfta)

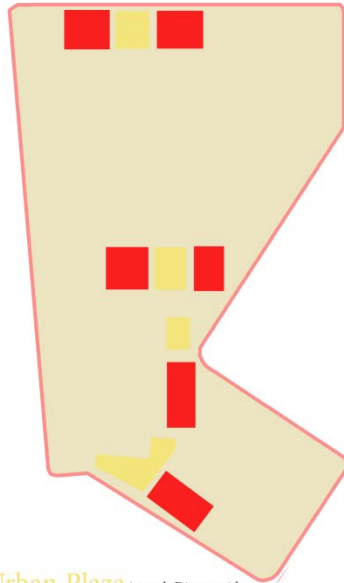


Provide **Development Clusters** nestled in

Green, with easy access to **Open Space**

**Fig. 88: Development cluster**

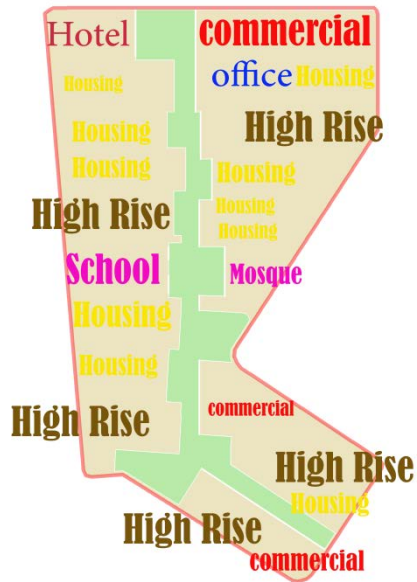
(Source: Aymen Elmagalfta)



Propose an **Urban Plaza** in each District with **Culture Context** around it.

**Fig. 89: Culture context**

(Source: Aymen Elmagalfta)

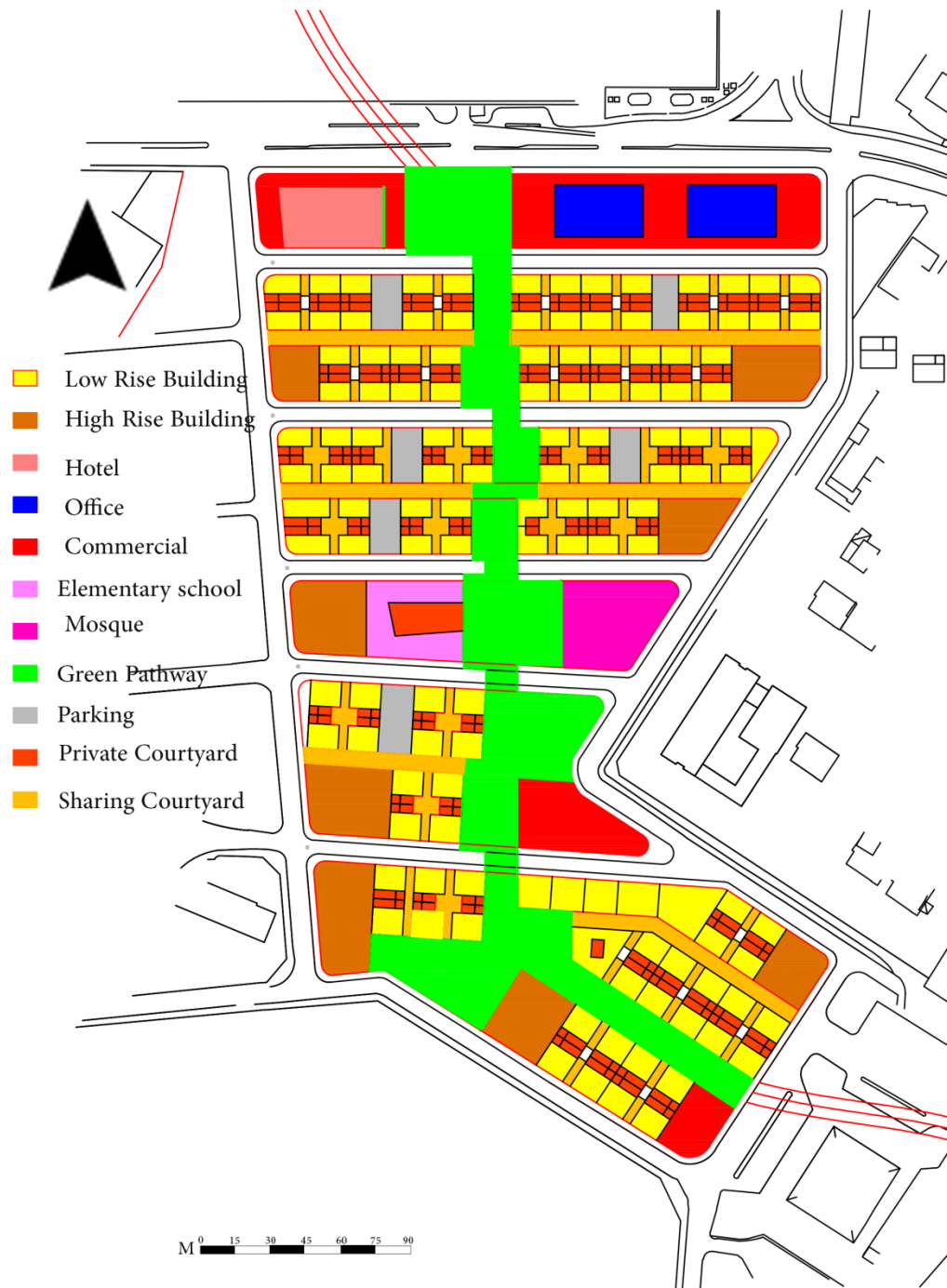


Provide a **24X7 Mixed Use** with **Identity**

**Fig. 90: Mix used**

(Source: Aymen Elmagalfta)

### 5.6.3 Land Use



**Fig. 91: Land use**

(Source: Aymen Elmagalfta)

#### 5.6.4 Block Structure

The plan provides a landscape framework of diverse scale and function, incorporating a citywide green spine with a new urban plaza streetscape within the district.



**Fig. 92: Block structure**

(Source: Aymen Elmagalfta)

### 5.6.5 Courtyard concept for lower building

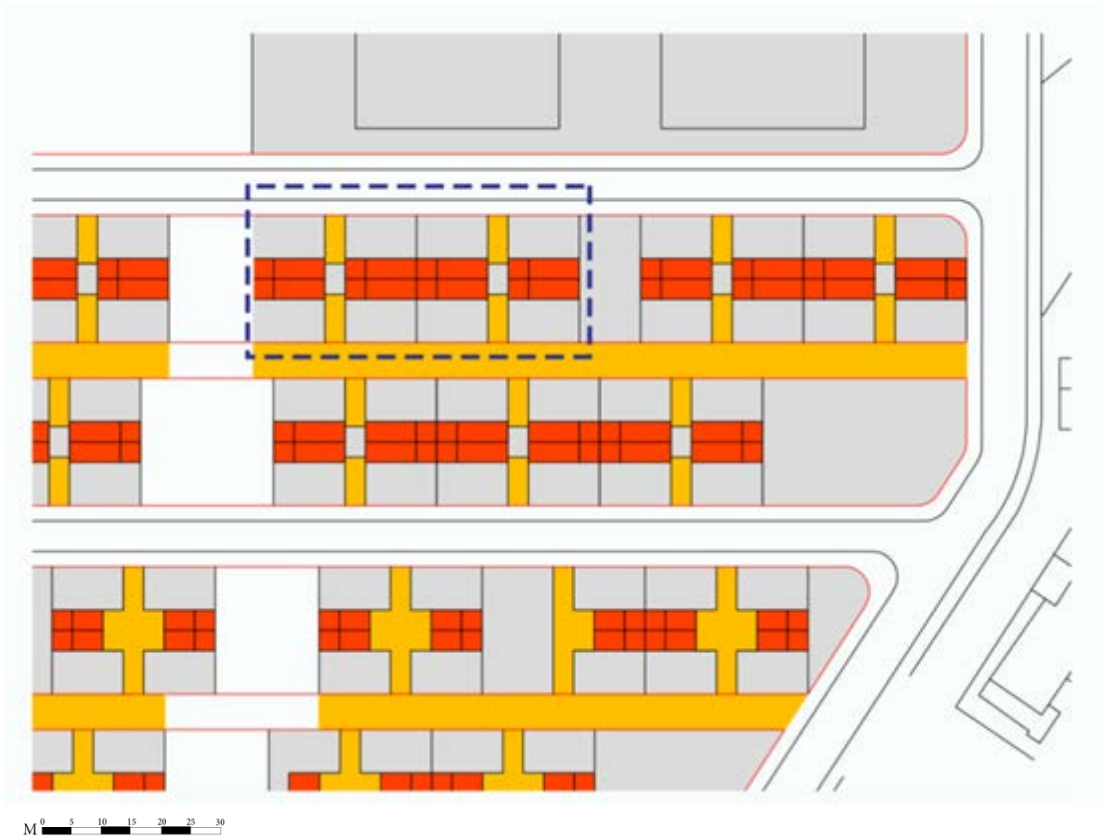
The main principle of the master plan layout is to maintain the essence of the courtyard house. Based on the previous research of North African cities, the courtyard house is the best fit for the region.



**Fig. 93: Courtyard concept**

(Source: Aymen Elmagalfta)

This is a precedent for the housing development. The courtyard is an optimal blend of geometry and nature, blossoming from the functional protection from the climatic condition of the region. Also, the outdoor space provides a secure and usable space for all times of day in accordance with the needs of Islamic culture.

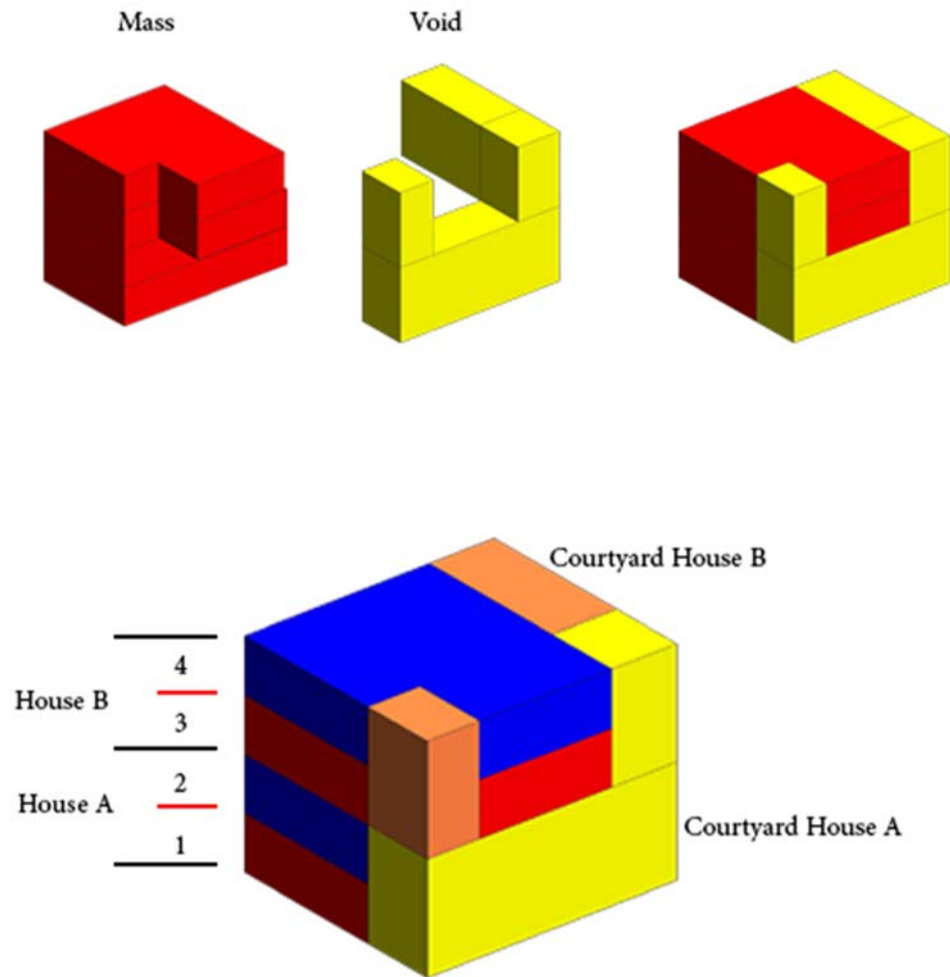


**Fig. 94: Unit morphology**

(Source: Aymen Elmagalfta)

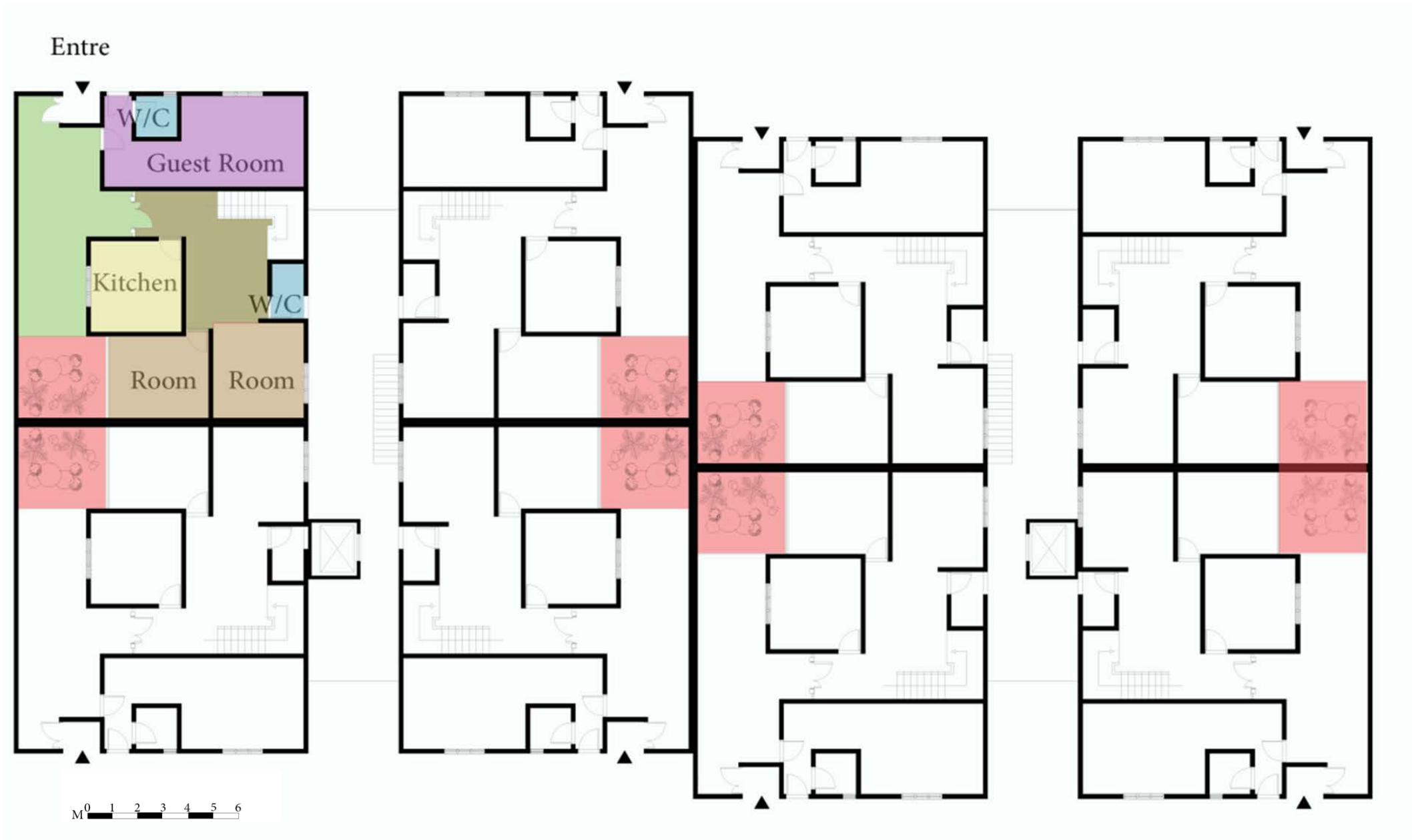
### 5.6.6 Unit Types

The courtyard layout has been used in North Africa throughout time, only recently, due to the appearance of the international style, has been neglected. The unit type presented here shows how the courtyard can be reimagined as a functional element in terms of privacy and climate control. The courtyard is an important space for user interaction and is aesthetically pleasing on visual level as well as an ambient level due to increased airflow.



**Fig. 95: Unit spatial arrangement**

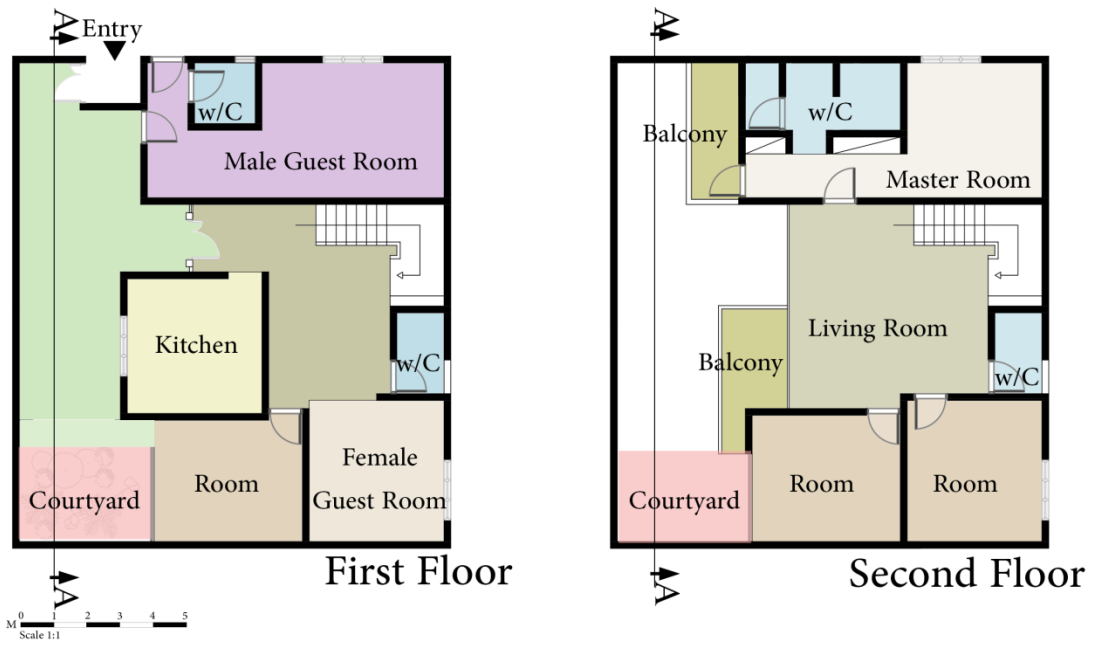
(Source: Aymen Elmagalfta)



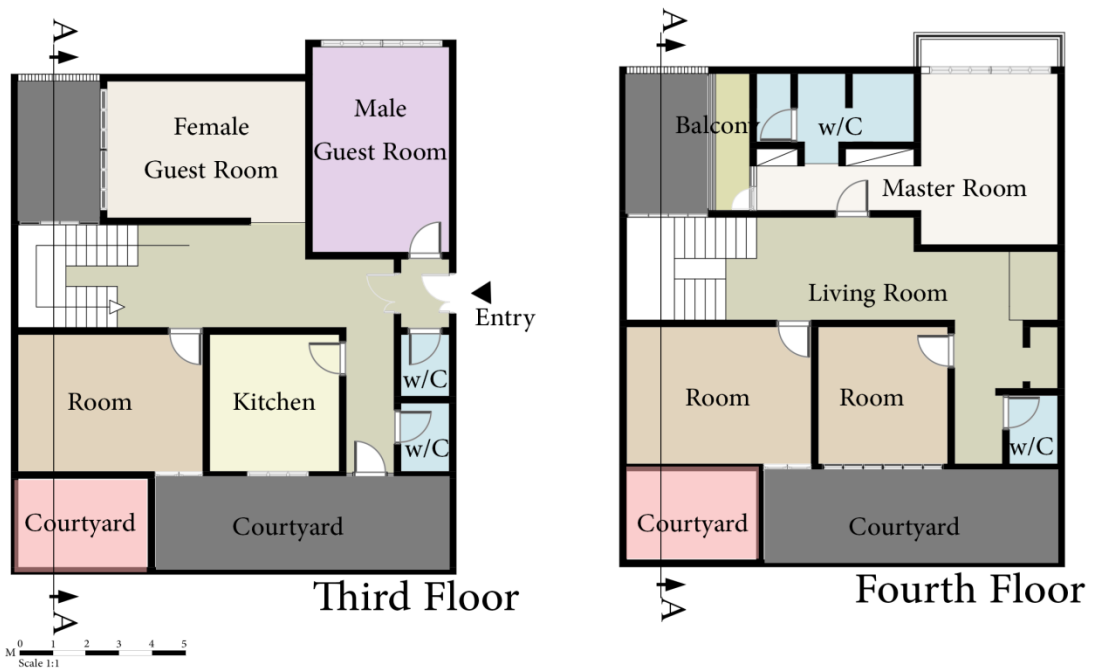
**Fig. 96: First floor layout of residential unit**

(Source: Aymen Elmagalfta)





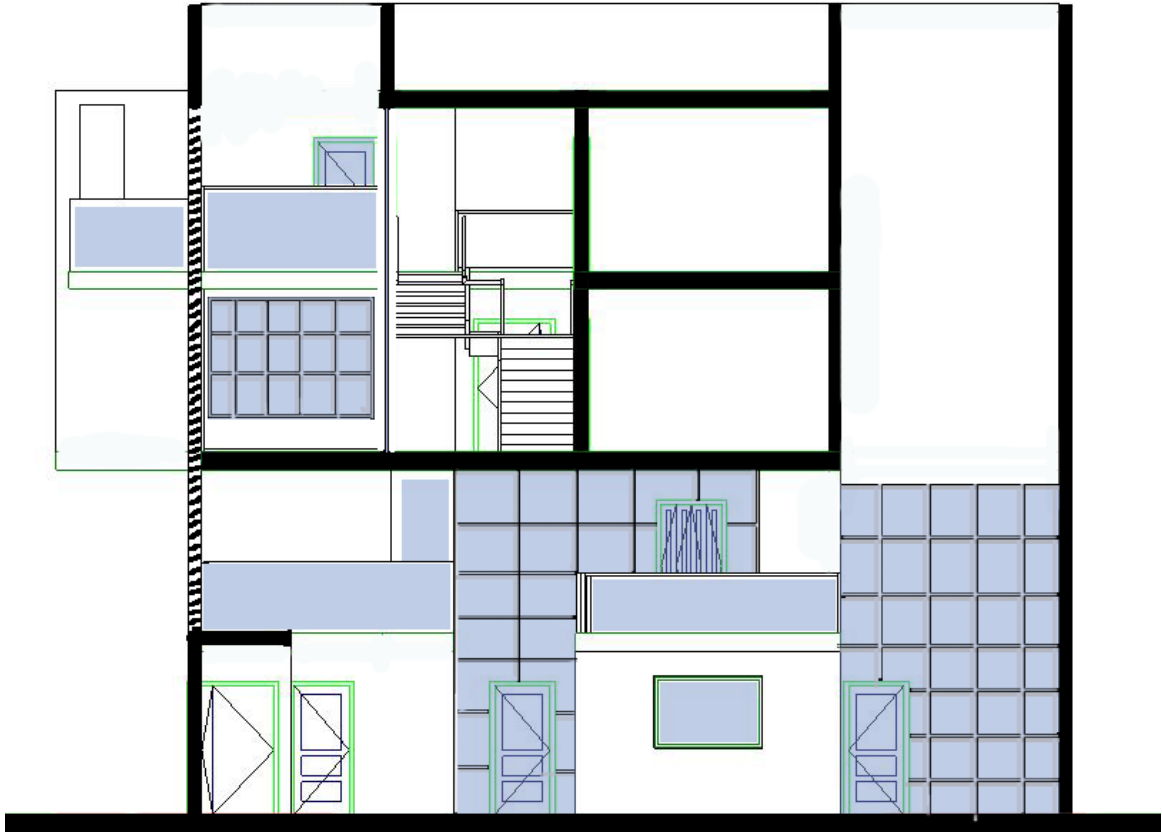
House Type A



House Type B

Fig. 97: Floor plan of residential unit

(Source: Aymen Elmagalfta)



M 0 1 2 3 4 5 6

**Fig. 98: Section A-A through residential unit**

(Source: Aymen Elmagalfta)



**Fig. 99: Front Elevation of residential unit**

(Source: Aymen Elmagalfta)



**Fig. 100: Pedestrian movement through neighborhood**

(Source: Aymen Elmagalfta)



**Fig. 101: Street view in residential neighborhood**

(Source: Aymen Elmagalfta)



**Fig. 102: Street view**

(Source: Aymen Elmagalfta)



**Fig. 103: Courtyard view**

(Source: Aymen ELMagalfta)



**Fig 104: Natural light through courtyard in residential unit**

(Source: Aymen Elmagalfta)



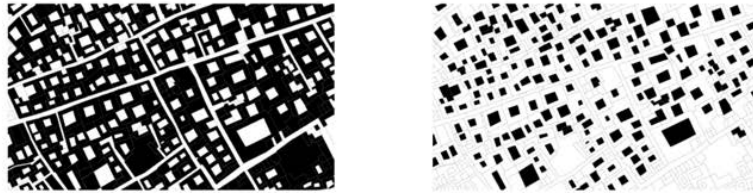


**Fig. 105: View from balcony to outside**

(Source: Aymen Elmagalfta)

### 5.6.7 Form Structure for Tall building

Courtyard function in horizontal structure provides protection from the harsh climate. Visually, this also allows for a variety of openings to break up the monotony in the vertical structure (See Figure 98-99).



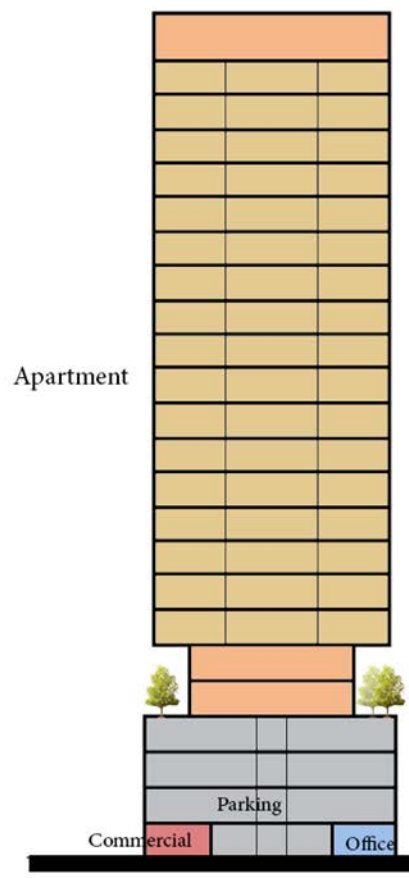
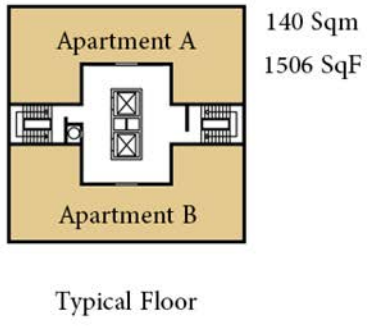
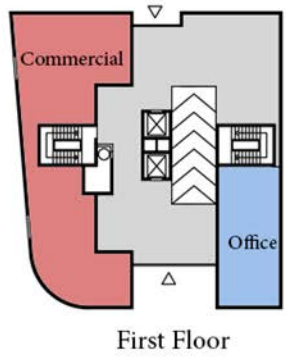
Mass

Void



**Fig. 106: Tall building concept**

(Source: Aymen Elmagalfta)



**Fig. 107: Tall building design**

(Source: Aymen Elmagalfta)

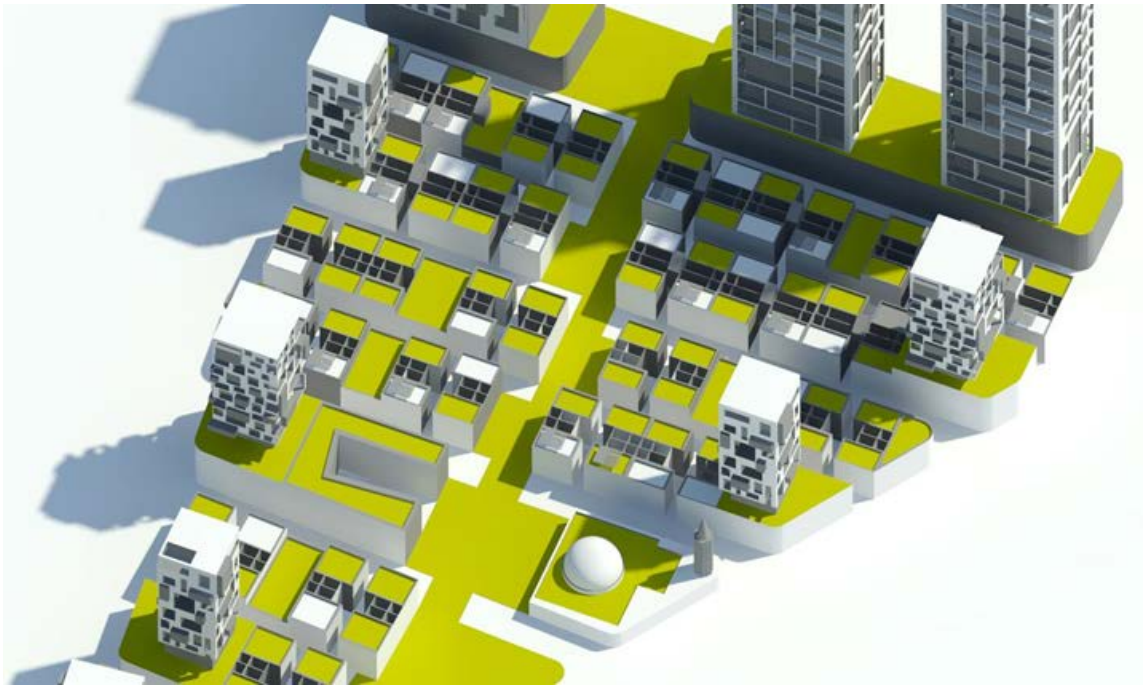


**Fig. 108: View of tall building**

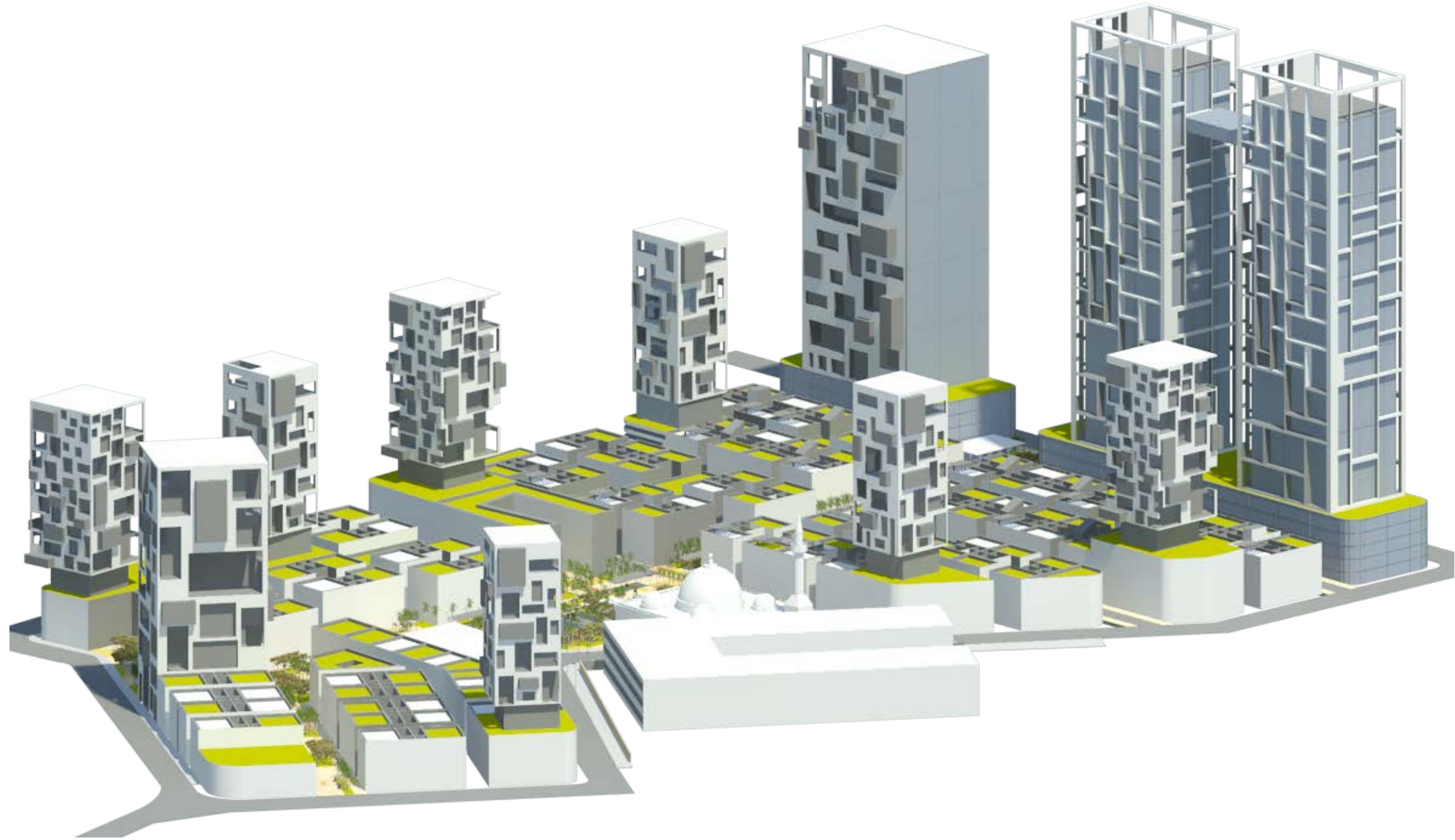
(Source: Aymen Elmagalfta)



**Fig. 109: View from East side**  
(Source: Aymen Elmagalfta)



**Fig. 110: Bird's eye view of southern area**  
(Source: Aymen Elmagalfta)



**Fig. 111: Bird's eye view of July 9th**

(Source: Aymen Elmagalfta)

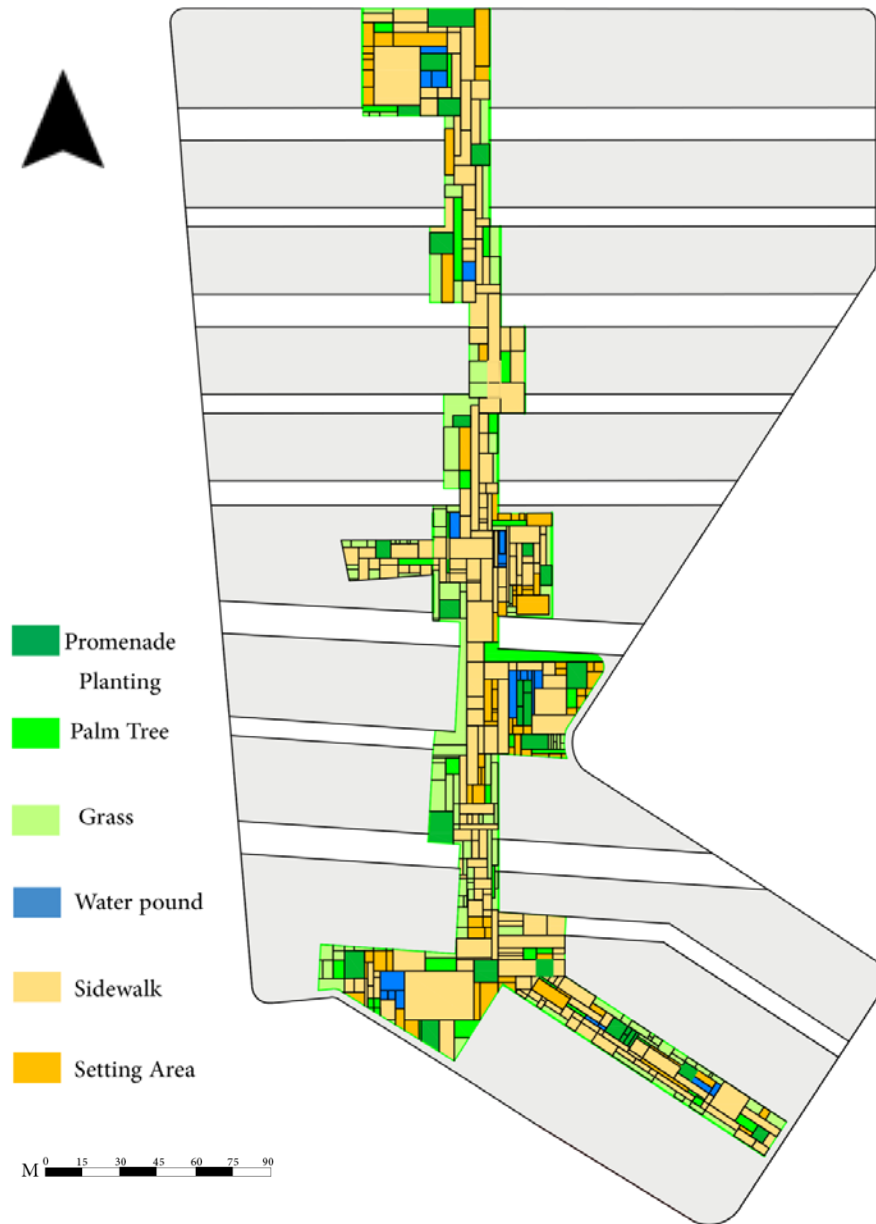
### 5.6.8 Open Space Structure



**Fig. 112: Open space structure**

(Source: Aymen Elmagalfta)

Land used for the green spine is designed based on current human needs, which are inspired by other North Africa cities. There is tremendous interest in creating open spaces, including a desire for flexibility and ability to provide a variety of places to gather and be active (See Figure 106). These enlivening elements allow people to gather in the plaza area and promote interaction with the mosque, school, and shops. They also provide children safe passage between neighborhoods.



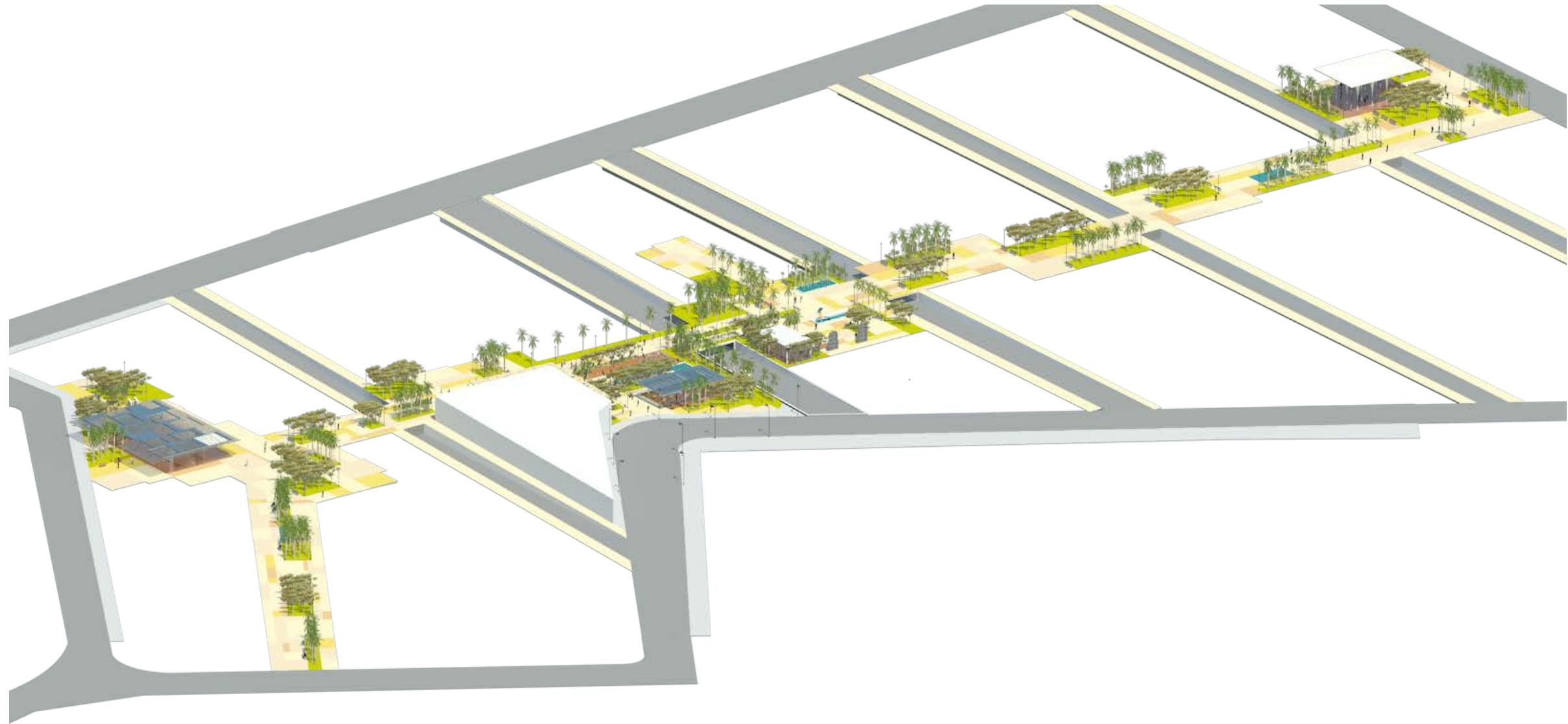
**Fig. 113: Land use of open space**

(Source: Aymen Elmagalfta)





**Fig. 114: Landscape plan**  
(Source: Aymen Elmagalfta)



**Fig. 115: View of green spine through July 9<sup>th</sup> area**

(Source: Aymen Elmagalfta)



**Fig. 116: Street view of Plaza A**

(Source: Aymen Elmagalfta)



**Fig. 117: Bird's eye view of Plaza B**

(Source: Aymen Elmagalfta)



**Fig. 118: Street view of Plaza B**

(Source: Aymen Elmagalfta)



**Fig. 119: Street view of walkway**

(Source: Aymen Elmagalfta)



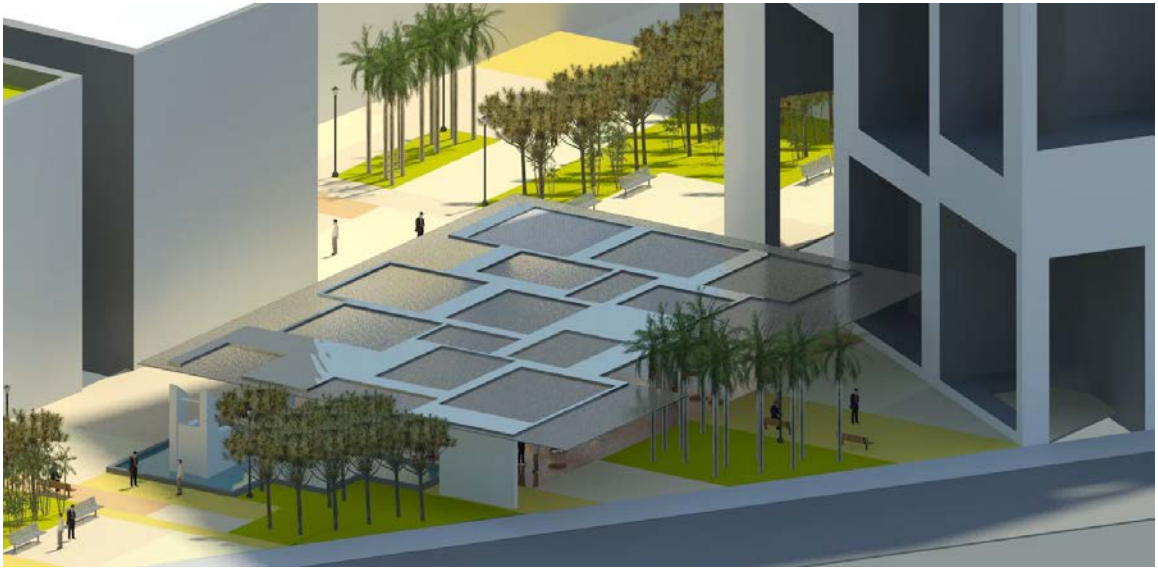
**Fig. 120: View of Plaza D**

(Source: Aymen Elmagalfta)



**Fig. 121: View of Plaza A**

(Source: Aymen Elmagalfta)



**Fig. 122: View of Plaza C**

(Source: Aymen Elmagalfta)



**Fig. 123: View of main street through July 9<sup>th</sup>**

(Source: Aymen Elmagalfta)



**Fig 124: Prospective view of proposal in the context of July 9<sup>th</sup>**

(Source: Aymen Elmagalfta)





**Fig. 125: Connecting communities and spaces**

(Source: Aymen Elmagalfta)

## 6 Conclusion

Urban formation is the process of shaping the city to become functional, aesthetically pleasing, and sustainable. The intention of this project is to learn from a long period of urban formation, which defines the structural nature in North African cities. This analysis will help to understand how the international style created a cultural crisis that has negatively affected the city of Misurata, Libya. Through historical research of North African cities, it is evident that there has always been, and continues to be strong connection between building morphology and its architectural and cultural identity. While physical colonization happened throughout the history of Misurata, it does not constitute a yielding of cultural and environmental conditions. Local, culturally and environmentally sensitive architecture, when applied, can, and should, act to influence a net positive effect, especially on a disaster-laden community.

The existing architectural condition in Misurata is threefold. There are elements of the international style, traditional style, and recent ruins. The project, designed with these elements in mind, shows a distinct tendency toward adapting design to the needs of the people. In 1974, the Libyan government decided the international approach would best serve the people, but the resulting designs were weighted too heavily on aesthetic concerns and ignored the cultural and environmental concerns. This research calls for a different approach.

The resulting urban form is one that works with nature to enhance the overall identity of the July 9th neighborhood. Creating the green spine connection between open spaces represents the need of the people to coalesce more intimately within the city fabric. It is in this way that the everyday life of the inhabitants is enhanced and also, symbiotically enhance the development of an enlivened downtown area of Misurata. This will provide tangible benefits for encouraging various development projects along the edge of the site.

Based on the design research, the project successfully generates a modularized pattern of building typology not only for the July 9th neighborhood but also the city of Misurata as a whole. This patterning of the area works to accommodate social and cultural needs as well as future growth projections. This model is developed from existing definition of North African city fabric, which still holds the identity of cultural heritage in terms of urban form.

The green spine line frames the building morphology, helping to form clusters of settlements between the edges of the pedestrian pathway. The mosque and commercial spaces are centrally located as they are landmarks of the community gathering elements within the city fabric. This design decision exemplifies a respectful adherence to the social and cultural context of the city and how it successfully integrates those ideals as part of urban formation. In this way, the overall building typology generation is characterized by the support of the specific community as it pertains to the special organizational interplay that ensures close proximity of social and cultural needs. Additionally, it provides an attractive focal point to everyday urban and civic life. The street can then be seen as a major component and important agonistic resource to the built form. It is designed to highlight the pedestrian scale, as the circulation system follows the character of space defined, first and foremost, by social needs.

The courtyard is implemented in the house design based on the research gathered. Courtyards are an architectural element with the potential to embody cultural values. Its use in the inner community of Misurata speaks to the intimate nature of the cultural identity and how those values can be maintained through their use in the local architecture. The design is carried out with contemporary architectural style and vocabulary, which references the typical courtyard house in North Africa, an element, which has evolved throughout the century. Its final iteration is a two-story house; with the layout design based on the culture needs to reflect the identity of the people.

The users of the residential housing are: existing residents, as well as new tenants who sustained injury during the attacks on February 17, 2011. The new tenants are people who are not able to reach more distant city facilities, but, by living in this district, can easily connect to the necessary elements of the city fabric. The green spine allows the

user to integrate into the city with ease. Also, since this location is close to the entrance of educational facilities, the families can walk through an aesthetically pleasing, natural setting and reach their destination in safe manner. The main circulation paths of the July 9th community are pedestrian friendly thoroughfares. It is in this way that the sense of place is facilitated and maintained. It is of utmost importance to provide this experiential benefit to the users of this space as the new government instills a new hope through the advent of democracy in the region.

The tall building design concept is to fit the scale of population growth patterns while staying true to the cultural identity. The structure of the building, and the space therein, intends to offer proper public access, which reinforces the opportunity for adherence to cultural guidelines. In this way, the architectural space is impacted, and informed, by the user rather than the user being impacted by the architecture. These advancements in design thinking inform are important because the cultural influence is reinforced without losing the identity of the user, in terms of thinking and behavior. The goal of this thesis is to increase the growing influence of the cultural community. This phenomenon will develop most spontaneously around the most used facilities and public spaces within the building.

The underlying idea of this thesis is to fill the gap between traditional and modern values so as to integrate what has become a fragmented aspect of the urban fabric. This is achieved through a coherent structure that is founded on, and embedded in the existing neighborhood. Through this process, a flexible urban node is generated based on the identity of the inhabitants. This is the idea behind a new pattern of building typology in the Libyan cities.

Because the climate and culture are relatively similar throughout Libya the same pattern can be applied nationwide. Therefore, this module can be introduced as a way to protect the city from cultural crisis so as to integrate the residential structures within urban fabric via the urban form. This culturally responsive design initiative also provides growth opportunity for new city developments. The pattern offers better development potential for the survival of the city.

Through the development of this thesis it becomes clear that urban form holds great potential to be the design language for repairing prospective damage from cultural crisis. The design provided herein works both physically and historically by mitigating potential negative impacts on the rest of the country in terms of development and interventions of future building typologies.

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