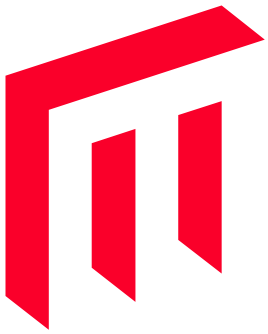

MALMÖ UNIVERSITY

An Attempt to Set a Design Base for Post-Conflict Housing in the Historic Core of Homs, Syria

Ett försök att sätta en designbas för bostäder efter konflikten i den historiska stadskärnan i Homs, Syrien

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BcS Thesis in Built Enviroment Studies
Architecture, Visualisation and Communication
20.0 Credits, Spring 2021

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Dedication

For my parents, Saosan Dalati and Osama Aldaher.

For Homs, my homeland, the land of the Sun.

For Sweden, my second home, the land of the Vikings.

Abstract

The built environment in the old city of Homs has been brutally destroyed by the conflict in Syria. The research gap in post-conflict planning and architectural design in the old city of Homs is alarming as it indicates that there are no clear roadmaps on how to deal with post-conflict housing units in such a historic area. This study aims to investigate the possible design basis of housing typologies and plans for the housing units in the old city after the conflict.

This study is primarily based on a literature review and extensive discussions with a specialist architect from the city of Homs, who helped to gain a deeper understanding of how to approach such a topic. The literature review deals with the historical Arab cities' components and the elements of courtyard houses in general and in the old city of Homs in particular. Likewise, it looks at the city's urban plans and building code and their shortcomings and highlights the current conditions there. It also highlights proposed strategies for post-conflict construction and discusses them.

The findings of the study propose a design ideology for reconstruction strategies and translate these ideologies and findings from the literature into a practical design of typologies placed on a proposed plot of land in the old city, along with a proposal of what the plans of these houses will look like.

Sammanfattning

Den byggda miljön i den historiska staden Homs har brutalt förstörts av konflikten i Syrien. Forskarna är oense om hur Homs historiska stadskärna bör bevaras och planeringen för hur den historiska arkitekturen ska tas omhand i efterkonfliktstiden är alarmerande. Det finns inte heller några tydliga planer för hur man ska hantera bostadsfrågan i relation till kulturarvsfrågor. Den här studie syftar till att undersöka hur den historiska bostadstypen, och planer för bostäderna i Homs historiska stadskärna, skulle kunna designas när konflikten är över.

Studien startar i en litteraturöversikt samt i omfattande diskussioner med en särskilt kunnig arkitekt från staden Homs som kunnat bidra till en djupare förståelse för hur studien skulle kunna närma sig ämnet. Litteraturöversikten behandlar de historiska arabiska städerna och fokuserar på traditionellt använda byggnadselementen i gårdshus i allmänhet och i den gamla staden Homs i synnerhet. Fokus läggs även på stadens stadsplaner och byggnadsregler, och deras brister, för att belysa stadens nuvarande planeringssammanhang. Studien lyfter också fram, och diskuterar, förslag på strategier för samtida byggnationer i en kulturarvsmiljö som förstörts av en konflikt.

Resultaten av studien leder fram till en designideologi för återuppbyggnadsstrategier och översätter ideologier och resultat från litteraturen till en praktisk design av byggnadselementstypologier placerade på en föreslagen tomt i Homs historiska stadskärna. Slutligen visas ett förslag på hur ett hus skulle kunna se ut.

Acknowledgment

I do not believe that this work would have been accomplished without the help of many people, without whom I would not have been able to finish it. There is no order to my gratitude, you are all in my heart. First, I would like to thank my great professors who supported the original idea and paved the way for me to realize it: Jonas Alwall and Marwa Dabaieh.

To Jonas Alwall, the director of the program and my professor, thank you for your sincere understanding and for supporting me with the extra resources I needed to complete this project. For that, I will be forever grateful.

To Marwa Dabaieh, director of the program, professor in vernacular architecture, and my primary supervisor, your guidance was invaluable and your support throughout the project extremely helpful. Our conversations and zoom meetings have been very insightful and so informative. Your guidance of how to write my first thesis is invaluable through every little detail in the project, thank you.

To Nawar Al-Atassi, associate professor in architecture and urban planning, and local architect from the city of Homs and my co-supervisor, your insights have enriched my knowledge of local vernacular architecture in the city of Homs and its development. I also thank you for providing me with the necessary resources such as maps and drawings of houses from Homs. The discussions with you gave me a deeper understanding of both the components of historic cities and the elements of traditional Arabic house from the perspective of an experienced architect, thank you.

I would also like to thank Dr. Jacqueline Taktak, Dean of the Faculty of Architecture at Al-Baath University, Homs, who helped me wholeheartedly and gave me the information I needed, regardless of the devastating situation the city is currently in and the recurring power outages.

I would like to thank my mentor, Sabina Jallow. Your help and mentorship have enriched me as a person and allowed me to keep going even in my darkest hours. Your help during the initial phases of the study and before was invaluable.I thank you and look up to you.

My deepest gratitude goes to my beloved mother who gave me the strength to finish this project with her love and constant words of encouragement and wisdom. Without her urging that we, my siblings and I, read books in English when we were children, I would not have had this solid command of the English language. Your comments on my drafts were invaluable in making them more consistent and direct to the point for the reader's better understanding, I owe that part of the project only to you.

Not to forget my amazing blood siblings, although you annoy me at times, your love shines without words and your caring cannot be put into words. Though war has torn us apart, may God reunite us one day in our homeland so we can rebuild it and make it thrive as it once was, and better, but for now we work hard!

Thanks to my friend and neighbor, Ashraf Saade from the old city of Homs, who explained the old city to me with all the grace as if he were reading it out of a book. Your local insight, though not documented here, was invaluable in helping me understand the composition of the old city from the perspective of one of its residents.

I would also like to thank Saida Laarouchi Engström, Hans Olsson, Stefan Mäkelä, Madeleine Levine, Jimmy Andersson. You are my family in exile. I am forever grateful to have you in my life Also thanks to everyone whom I couldnt mention but are a a vaital part in my life that make my world go around.

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Preface

The built environment in the old city of Homs was brutally destroyed during the conflict in Syria. The historic city dates back to 2700 BC, though which it has witnessed many civilizations, the most recent being the Arabic Islamic civilization. Being from the city of Homs, this motivated me and was the main reason why I decided to study architecture; to help rebuild my hometown and give hope to thousands of Syrians who see no light at the end of the tunnel. I felt it was my duty towards my hometown and my people to research the basis for revitalization in the Old City, as it is of great importance to Homsians, as they are a part of it and it is a part of them. This would hopefully be the beginning of a roadmap that would lead to the revitalization of post-conflict housing units in the old city of Homs, while preserving the traditional image of the city.

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1. Introduction

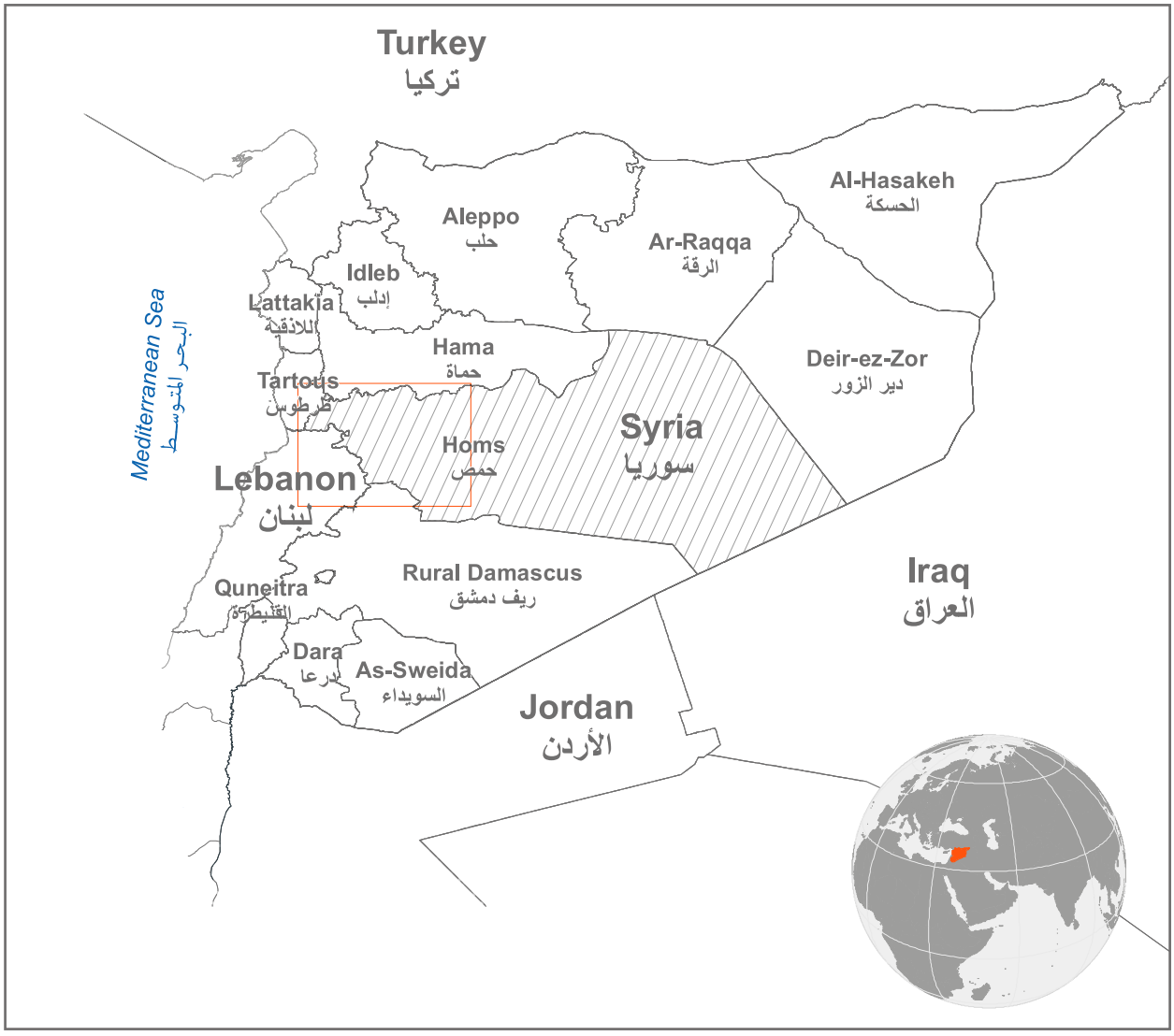

Figure. 1: *Homs city location in Syria and the world. (Source: Humanitarian Atlas: Syrian Arab Republic, Edited by author).*

1.1 Location Background

Homs is an inland city in Syria, a country on the eastern Mediterranean Sea. The city was built on a volcanic hill. It is considered the third largest city in Syria in terms of population (Al-Zehrawi and Al-Sibaii, 1992) and the largest province in Syria, occupying 22% of the country's total area (Al-Masri and Alsaqqa, 2011). The city enjoys an excellent geographic and strategic location, linking Palmyra and the Euphrates basin to the east, with the Syrian Mediterranean coast to the west. IT Borders the city of Hama to the north and Damascus to the south, in addition to its proximity to Mount Lebanon and the city of Baalbek to the southeast (Al Khoury Assad, 1984). The geographical location of Homs, which connects the Mediterranean ports with the East, made it an important stop on the Silk Road for travelers, leading to its prosperity as a commercial city (Al-Zehrawi and Al-Sibaii, 1992). The river Orontes flows through the city of Homs, and one of its characteristic environmental conditions is that it is exposed to the wind blowing from the Mediterranean Sea, which makes the climate in the city milder than in most inland cities (Al-Sabouni, 2015).

According to Al-Zehrawi and Al-Sibaii (1992), Homs was treated with the greatest care when the family of Severus came to the throne of the Roman Empire. The family of Severus descends to the grandson Septimius Severus and his grandfather Luke Septimius Severus. The grandson, Septimius Severus, was sent to *Emesa*, ancient name of the city of Homs, in 146 AD at the age of 18 to fight the conspiracy of outlaws who wanted to wrest the city from Roman rule. Around 179 AD, he met Julius Bassianus, High Priest of the Temple of the Sun, and fell in love with his daughter Julia Domna, and eventually gotr married in 193 AD. From then on, during the reign of the Severus family over the Roman Empire, all the emperors from the side of The Empress Julia Domna, were of Homsian descent.

1.2 Research Problem

Due to the ongoing conflict in Syria, since 2011, which has dealt havoc on the built environment of all cities, historic or otherwise. There is a collective national sentiment calling for the preservation of historical heritage. Archeologist Nida Al-Dandashi (2013) encourages locals from all walks of life and educational levels to use their efforts and tools to shed light on the significance of the Old City of Homs. She highlights the Old City of Homs due to the fact that it has not been adequately researched and studied as a place with unprecedented unique features.

The old city of Homs has subsequently been subjected to a series of attacks on its historical heritage (Nida Al-Dandashi, 2013). It has been blatantly robbed of its unique architectural components and elements that once made it unique in its own way. These cruel attacks on the city not only included the demolition of the walls and the citadel, but also affected the historic houses that had lived there until the advent of modernity's concrete blocks (Al-Sabouni, 2015).

When some owners in the old city chose to ride on the train of modernity and replace their historic houses with concrete blocks for financial gain, they destroyed the identity of the city and contributed even more to its collapse (Al-Sabouni, 2015). That unfortunately happened due to the lack of municipal regulations of which protects historical buildings in Syria until they finally came about in 1990, and by that time it was already very late (Al-Masri & Alsaqqa, 2011).

During this current ongoing conflict, the conflict reached the historical city of Homs and brutally wounded most of its remaining historical architecture. forgetting that this history does not belong to any of the conflicting parties, but to the people who lost their social identity along with their beloved historical city. Today, most of the historic city stands empty and bleeding from its wounds. Most of the structures are badly damaged, some completely destroyed. Concrete blocks have replaced most of the traditional historic houses even before the conflict, and now they are the most damaged by the bombing because they were the highest targets there. (Al-Sabouni, 2015) Most of the concrete houses are now so badly damaged that they are piled up into rubble that calls to be removed and replaced with houses that fit into the historic image of the city.

1.3 Research Purpose

The purpose of this research is to find a contemporary basis for the design and revitalize the concept of the courtyard house while considering the urban fabric of the old city and define the typology that can be added to the old city. This is a response to the concrete blocks that defiled the old city's vernacular architecture and destroyed its image. In this way, this research seeks to help restore the identity of the old city and traditional architecture.

The purpose of this research is *NOT* to address the restoration of the Old City nor to suggest a way in which that might be done. For that would be the subject of another, more comprehensive, study that would require plenty of time and resources.

The significance of my research, hopefully, would add value to the restoration of historic monuments and historic houses that could be saved from rubble done by experts in the future by proposing a post-conflict design basis for the residential housing units to be placed in the old city.

1.4 Research Objectives

This research focuses particularly on the historical core of the city of Homs because of its cultural and historical significance and its importance to the people of the city. The following objectives are set to guide the design of the proposal:

- Developing a theoretical understanding of the Arab city and its components in general and in Homs in particular. Also, an objective was set to map out the elements on a map.
- Developing a theoretical understanding of the Arab house in general and in Homs in particular.
- Developing a theoretical understanding of the reasons for the deterioration of the Old City and the shortcomings in the organizational plans and the Building code system set for it.
- Highlighting the recent deterioration of the old city in the conflict extracted from UN-HABITAT, AND SDC (2014) Report.
- Reflecting on the proposed construction strategies for the city of Homs after the conflict proposed by Kassouha (2014).
- Attempt to find a design basis and revitalize the concept of the courtyard house, taking strong account of the urban fabric of the old city and defining the typology that can be added to the old city after the conflict.

1.5 Research Questions

Since the purpose of this study is to propose a modernized design for the courtyard house in the old city, the main question of the research would be:

- **What and how can post-conflict contemporary residential units(s) in the old city of Homs look like ?**

However, in order to fully understand the situation and the city, further research on my part was required, which includes the following sub-questions to enable me to proceed with the design:

- What are the components of a historical Arab city and what are the components of the city of Homs?
- What are the elements of courtyard houses in general and the courtyard houses in Homs in particular?
- What are the problems with the organizational plans and building code system established for the old city?

1.6 Literature Study

A literature study was conducted for the following purposes:

- To understand the history of the city and its urban fabric, the problems that led to the severe deterioration of the old city before the outbreak of the conflict, and the current state of the city after the conflict has taken its toll on the built environment and the people.
- To understand the defining principles that would enable the construction of housing that is in keeping with the image and identity of the old city and that fits into the historic urban fabric.

The findings from the literature that would lead the design proposal for the construction of post-conflict houses in the old city.The literature review was an essential part of this thesis as it served to increase my knowledge of the complexity of reconstruction in the urban fabric of a historic city such as Homs.

The literature study begins with a general understanding of Arabic Islamic cities and the definitions attributed to the various elements of the Arab city under Arab-Muslim rule. What were the functions of these structures and what is the urban fabric of such cities? For this part, I have studied the book "*Arabic Islamic cities: Building and Planning Principles"* by Basim Selim Hakim as a main source.

Later in the chapter, I try to apply these terms to the historical city of Homs by using different books to try to identify the components of the historic city as described by both (Nida Al-Dandashi, 2013) and (Al-Zehrawi and Al-Sibaii, 1992), and create a map showing these elements. This was done due to the fact that according to archeologist Nida Al-Dandashi (2013), the historical city of Homs has not received the proper studies that it deserves as a unique city, thus shedding light on the most important components of the old city seemed as an integral part of this research.

Next, the literature study highlights the Arab house through different sources and explains the terms used for the different elements in the Arab house and their functions. For this part, I have mainly used El-Shorbagy (2010), Shamayleh (2016), Al-Sabouni (2021) and Drake (2020) to explain the different elements and their functions. Later in the same chapter, I examine the results of a PhD research conducted by Jaklin Taktak and Al-Masri (1993) on the Arab house in Homs. I translated and paraphrased their results to present to the world the information about the value of these houses in the city of Homs and their distinguished elements.

Then, the literature study continues to explain the reasons that led the historic city of Homs to fall into the pit of decay when a great enlightenment was underway around the world about the importance of preserving ancient cities. For this, I rely mainly on a journal article by Imad Al-Masri, associate professor in Architecture and Urban Planning at Damascus University; and a report by two architects and a civil engineer from Al-Baath university in Homs on the building code for the old city.

The first, is a journal article by Al-Masri and Alsaqqa (2011), in which they explain how the historic core of the city of Homs kept receiving blows to its built environment by all the previous planners for the city. The second, is a report by Harshouf et al. (2007), which is an analysis of the problems with the building code established for the old city. After that, the chapter highlights the post-conflict situation in Homs as documented by un-habitat and sdc (2014) where they explain about the built environment at the time of documentation and the extent of destruction in the old city.

The last section is dedicated to the possible reconstruction strategies proposed by Kassouha (2014) in her master thesis. I briefly summarize her findings, along with a personal reflection on the strategies she proposed as part of my personal ethnographic reflection, as I am from the city myself and therefore this topic touches me personally.

1.7 Scope and Limitations

The scope of this thesis is mainly based on the literature that has been written about the city of Homs, whether in the form of books, articles, journals, and reports from world organizations.

The reasons are the following:

- The conflict is still ongoing for ten years after its initial outbreak, which has made it impossible for security reasons to be on the ground and visit the old city to measure the destruction. For the sake of onsite documentation of the current circumstance.
- The lack of access to any studies on the *exact* extent of destruction in the old city made it even more difficult to make concrete design proposals for the aftermath of the conflict.
- It was not possible to conduct a wide range of interviews with people from Homs due to the unreliability of the internet in Syria and the recurring electrical blackouts, along with the difficulty in reaching and locating people who are willing to participate in interviews.
- The scope of the research revolves mainly around the housing unit in the old city and the necessary information in order to understand the larger context. This is because components in such old cities cannot be studied in isolation, as each component in the city is part of the larger urban fabric which makes the body of the old city.

1.8 Methodology

The methodological approach consists of several steps following a qualitative approach following a couple of phases:

1.8.1 Phase (1) Literature Overview and Review

The purpose of the literature review is to have a foundation of all the information available on historic Arab houses with a focus on the Syrian context and even more a concentration on the historic city of Homs. The literature overview is used to assign all relevant information on the topic and to select the literature needed for the thesis.

A literature review of the selected literature was conducted in order to examine and present the available information about the context of Arab cities in general and the city of Homs in particular, as well as the Arab house in general and the Arab house in the city of Homs in particular through an analysis of a PhD thesis conducted on Arab houses in Homs by Taktak & Al-Masri (1993)

In the rest of the review, I clarify the reasons that led to the deterioration of the old city from the organizational plans and building regulations before the conflict. I then highlight the destruction that occurred in the old city after the conflict and its current situation. I highlight and reflect on the post-conflict reconstruction strategies proposed in a master's thesis and reflect on them as part of an ethnographic reflection As I am from the city and I have my own knowledge about the city and its past and present.

The literature review is an extensive literature search from English and Arabic sources. The literature includes books, conference papers, journal articles, technical reports, authorities reports and report from world organizations (UN).

1.8.2 Phase (2) Open-ended Interviews and Discussions

The second phase was an extensive series of open-ended, unstructured interviews with a specialist associate professor Nawar Al-Atassi in the field of Architecture and Urban Planning who is a native of Homs. This was a dialogical conversation between us in which we discussed various topics in depth: the historical Arab cities, the historical city of Homs, the development of the area, and the current conflict and post-conflict urban development and construction. He also provided me with DWG maps for the old city and the plans for the various neighborhoods in the city. He also provided me with a "Comprehensive Study Investigating the Organizational Plans of Homs City" issued 2016 by the municipality of Homs.

1.8.3 Phase (3) Design Proposal

I gathered all the information from the literature and the extensive interviews with Professor Atassi to set a design basis for the housing units in the old city of Homs. This is tackled in order to provide housing that align with the identity of the old city in order to restore its traditional image.

At an earlier stage, the methodological approach included interviews (empirical data); however, I had to reconsider the methodological approach due to the impossibility of reaching a large number of participants; therefore, I decided to exclude this method from the research.

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2. Literature Review

2.1 Arabic Islamic City

To gain a deeper understanding of the composite components of an Arab city and house, the book Arabic-Islamic Cities by Besim Hakim (2010) provides great insights into the subject and the various planning principles and composite components and elements of the Arab city that can be generalized across the region.

According to Hakim (2010) the Arab-Islamic city is an urban settlement that followed a framework of building and planning principles and produced structural solutions and regulations for these settlements. These planning principles were derived from the moral compass inspired by the Qur'an and the Prophet's life teachings. Hakim (2010) proceeds to explain that the first two principles are those of harm and interdependence. The former means that a person may exercise his full rights to what is rightfully his, while not causing harm to any other individual. This can be understood in the context of architecture as not building in such a way that it obstructs the streets or invades the privacy of other occupants, i.e., building a house that towers over other houses and invades their privacy. The second principle is that of interdependence, which means that we should respect the environment and use local and sustainable building forms and materials based on ecological knowledge and the values that emanate from it. The third principle is that of privacy, as the Quran promotes the right to privacy for people and residents, and therefore architecture became one that respects and protects the privacy of residents and the city. However, this ideology came after the rise of Islam and it is spread in the region. That does not mean those cities did not have some of these systems already applied before the advent of Islam. As Liveranti, 2016 puts it, we cannot think of the cities that became under Muslim rule as empty cities that had no form of architecture or urban settlement.

According to Behsh B. (1988), Arab Muslims conquered the Syrian region around 600 AD and moved their caliphate to Damascus, where urbanization and high architectural standards were already prevalent. Arab Muslims thereafter felt the need to develop their own architectural style that would satisfy both physical and spiritual demands. Therefore, the caliphate and their entourage decided to build Islamic monuments as the Christians had done before them, using the help of local skills that the people of Syria possessed with their varying degrees of professionalism, such as local masons, carpenters, and builders. The gradual blending of the broad spiritual realm that had already been established during this period soon resulted in the distinctive architectural style of the region. In addition, local building materials continued to be used because of their apparent availability and suitability for the climatic conditions of the region. These two factors gave the local architectural heritage the opportunity to reemerge in a new universal dimension through Islam, which lasted from that time until the beginning of the 20th century. Behsh B. (1988) further argues that an important achievement of the Islamic period was the recognition of the interior space of the courtyard house, firstly as a response to the new Islamic culture and secondly as an attempt to be more functional in terms of thermal performance.

2.1.1 Madina and Rabad: Components and Terminology

During the development of Islamic civilization and culture, Arabic-Islamic City, as Hakim (2010) puts it, was assimilated, and shaped by the regional cultural characteristics of the various parts of the entire region. The name of these different elements denoted both the function of the structure, and the physical structure itself. Although most of the following terms referred to all Arab Islamic cities, some terms differed slightly and used other Arabic words to denote the same form and function, e.g., Jneinah in Tunisia and Syria, which denotes a private garden, is synonymous with Rawda in Morocco and Algeria.

On Roads Connectivity and the Urban Fabric:

Roads in historic Arab cities had more than one function. They played a social and functional role and also an environmental role in terms of thermal comfort for the residents. The activities on the streets were simply those of traffic and commerce, however outdoor seating was not so common at the time as it was considered impolite to sit on the pavement and stare at passers-by. The road system, together with the organic distribution of houses and alleys, forms the unique urban fabric of these ancient cities.

Roads can be divided into three categories:

- **Main road(s):** This road is characterized by being the largest and widest road in the city. This road was and still is considered a public space. It is often the street where commercial activities take place, as the Suq is primarily a complex of roads and sub and side roads with shops facing it, forming the market district.
- **Sub-road(s):** Roads that branch off from the main road to the various districts of the city. These streets are also considered public space.
- **Side road(s):** Are roads that branch off from sub-roads. These are characterized by their cul-de-sacs. These side streets are usually considered private space and often lead to residences.

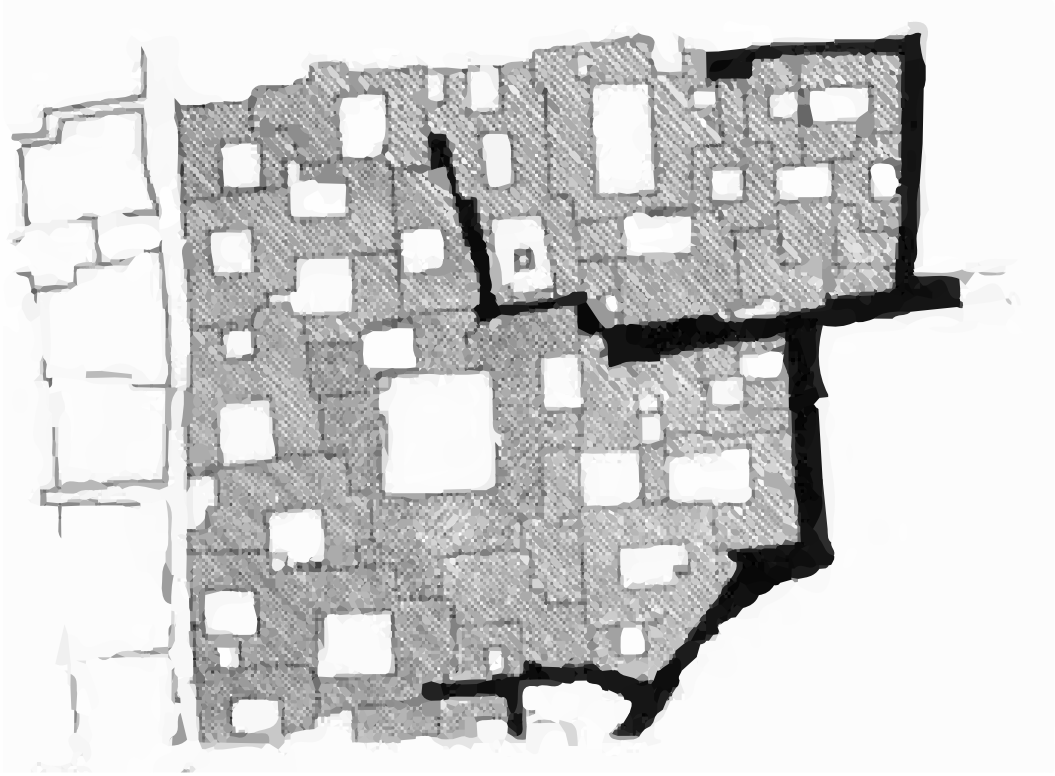


Figure. 2: *Urban Fabric of a typical Arabic quarter in Old Damascus (Behsh B., 1988). The houses and the streets are interwoven and form something like a fabric, the urban fabric.*

2.1.2 Urban Components of Overall Madina and Rabad

Table. 1: *Information is extracted from Hakim (2010)*

Madina (plural. Mudun) = city	This is the Arabic term for an urban settlement complex and its surrounding fortifications, i.e., a city. According to Hakim, a Madina is "a large city, or city, or a large town where one finds a Masjid al-Jami-a Khutbah mosque-and a Suq (Jami wa Aswaq)." It is therefore a place where there is a high economic power and a religious center. It usually contains a Qadi or a Wali representing the political power in the city.
Kasabah or Qal'a = Citadel	The former is the name given to a citadel attached to the wall of Madina with the latter can mean both attached and detached citadel.
Rabad or R'bat = Suburb	This term refers to the land that extends outside Medina Walls and within the immediate vicinity of the walls, i.e., the suburb. A Rabad has its own name and has its own protective wall.
Sur = City Wall	The fortification wall surrounding the Madina for defensive purposes.
Bab = Gate/Door	Term refers to a gate or door.
Burj or Burdj = Tower	Defensive towers located along the Madina wall in the inner part and act as part of the defense system. They are also located around the Qa'la (Qasabah).
Shar'i or Tarik Nafid = road	Denotes road or thoroughfare, throughway. These form the street system and are an essential part of a city for all purposes of movement and circulation. They form a street network system that connects the main gates with the city core.
Bat'ha or Saha = Square	This term refers to a public square or public place usually formed at the Y-junction of three primary streets. It is also found in the Hara, i.e., neighborhood, where there is a bakery, a mesjid and a grocery store. Also, to be found in front of Masjid Al Jami in connection with the Suq.
Musalla	Is a place where salat, i.e., prayer, is performed. It can be inside a building or outside. On the city scale it refers to an open space where the Eid prayer is usually performed.
Maqbara = cemetery	A public cemetery surrounded by a fence.
Khazzan = water tank	Term for a water storage facility. At the city level, it refers to a large water storage tank; at the individual level, it refers to the private water storage tanks in residential houses.
Khandaq = Trench or Moat	A moat dug around the city wall. Served as a defensive measure and as a sewage system, diverting sewage away from the city through canals.
Hara or Mahalla or Khitta or Homa = Neighborhood	Residential areas housing people from different ethnic, socio-cultural/tribal backgrounds at the time.

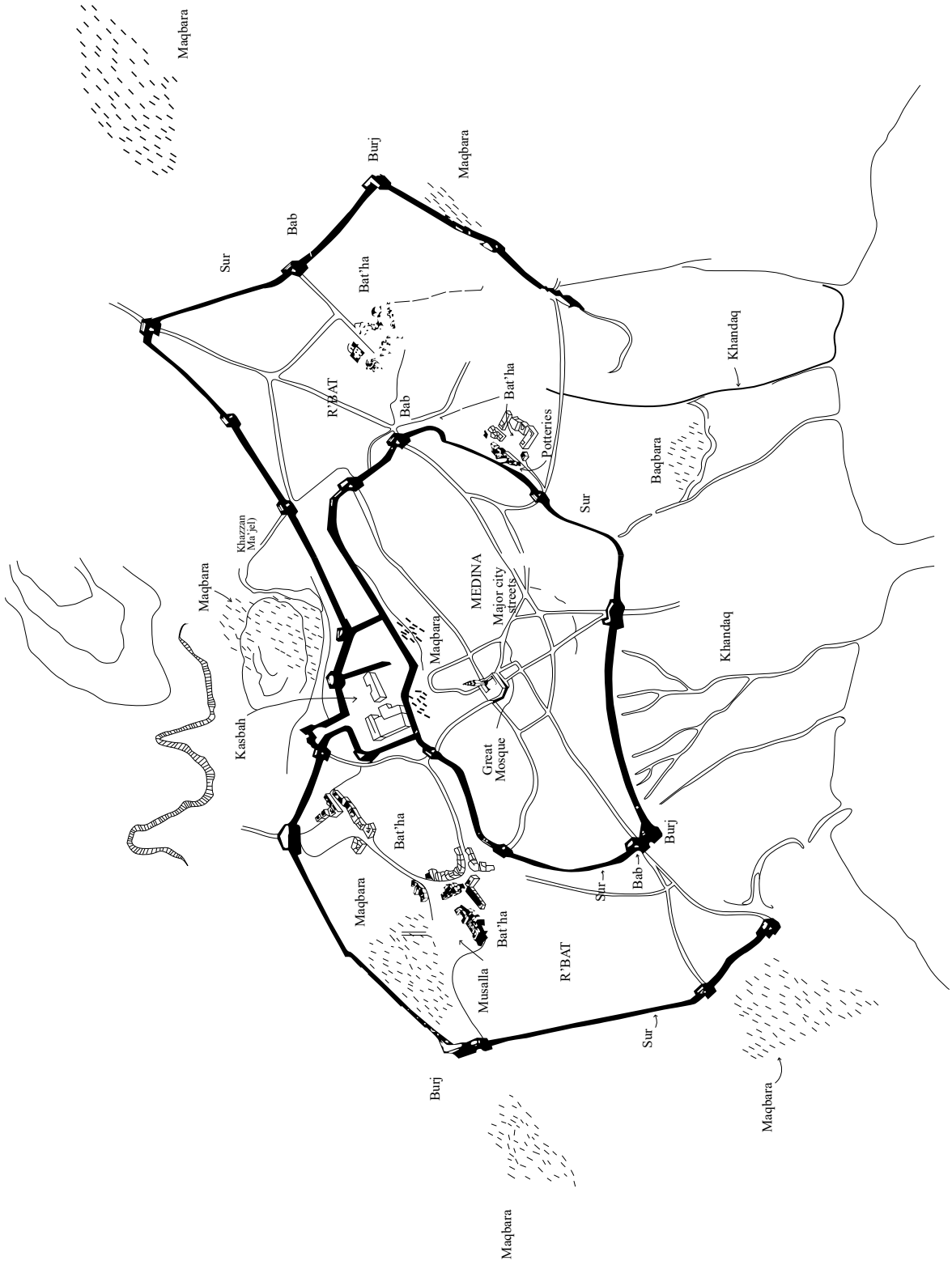


Figure. 3: *Map Showing Urban Elements of Tunis Madina and Rabad, Illustrated (Image Source: Hakim (XXXX)*

2.1.3 Urban Components of Madina Core

The following are the main elements present in the majority of Arab cities. For an urban settlement to be classified as an Arabic Islamic city, it must have these two elements: The Major city Mosque and a Suq.

Table. 2: *Information extracted from Hakim (2010)*

Major city Mosque (Masjid Al-Jami)	This is the main mosque of the city and it is the most important element of an Arabic Islamic city. It is the place where the Friday sermon is held, and it serves all the residents of the city and its Rabad. The plan of this mosque is based on the Prophet's mosque in Medina with its inner courtyard and a covered part called the Riwak.
Khutba Mosque (Jami)	It is a mosque that was built mainly due to the increase in population and also held in it.
Local Masjids	These are smaller mosques found in every Hara -neighborhood- where all prayers are held except the Friday sermon, which was held in the previous two mosques.
Madrasas	This term translates as a school where Islamic science and law are studied.
Zawiya or Tkiya or Deir	This term is used to describe a building or group of buildings of a religious character for worship and the study of religious science
Marabout or Maqam = Mausoleum	The burial place or tomb of a morabit, saint or Wali. It had a different appearance depending on the importance of the person buried in it.
Turba = Graveyard	The graveyard in general is part of complexes of buildings such as mosques, jawami or Castles had their own turbas where prominent persons were buried.
Maqbara or Jabbanah = Cemetery	This term refers to the public cemetery and is always walled and irregular in shape. It has a detached marabout inside it.
Suq = Market	This term refers to the place for goods, i.e., the market. It is one of the three prerequisites for an Arab Islamic city. The Suq is usually located in close proximity to the main mosque of the city and contains covered areas.
Kaysariyya or Wekala = Hostel for locals	Rooms for accommodation, usually connected to other buildings such as shops, workshops and warehouses. There are two types: the merchants Kaysariyya and the workers Kaysariyya. Khan or funduk or caravanserai = Hostel for foreigners A hostel for strangers where they stayed overnight to display and sell their products, such as merchants travelling along the Silk Road.
Sur and bab = City Wall and Gate	These two terms refer to the city wall and the gate and door, respectively
Qishla = Military Barracks	This term refers to barracks, usually scattered throughout Madina and outside in the Rabad, which provide security for the city, especially in the Suq district.
Hammam = Public Bath	This term refers to a public or private bath, but at the city level it means public baths. Usually, there are numerous hammams in every city where people went for hygienic reasons as well as for relaxation.
Mida'at = Ablution facility	The term refers to the ablution facility outside mosques.
Maristan or Bimaristan or Muristan = Hospital	This term is originally Persian and refers to a hospital. It is usually located in close proximity to a madrasa as it contained a medical school.
Qasr or Palace = Palace	This term refers to very large houses that were occupied by wealthy residents, Royals, and commanders of high rank. Palaces usually occupied a very large area and contained more than one courtyard. Palaces often had walled, ornate gardens. Considering the wealth of the people who inhabited them, they were richly decorated, setting trends in architectural design and decoration.
Dar[1] (courtyard house) = Dwelling/ house	This term refers to a dwelling or house. However, there is another term that is also commonly used to refer to a dwelling, namely Bayt. Hakim sees that there is a major difference between the two. Dar comes from dara (to surround in Arabic) and thus refers to rooms that surround an inner courtyard. Bayt, on the other hand, refers to a covered shelter where one can spend the night.
Sabat or Sibat = Rooms spanning street	A space above a street, which connects two structures belonging to the same family or relating families; these aerial structures are called sabat

1 This part is explained in detail in a later section as it relates directly to this research

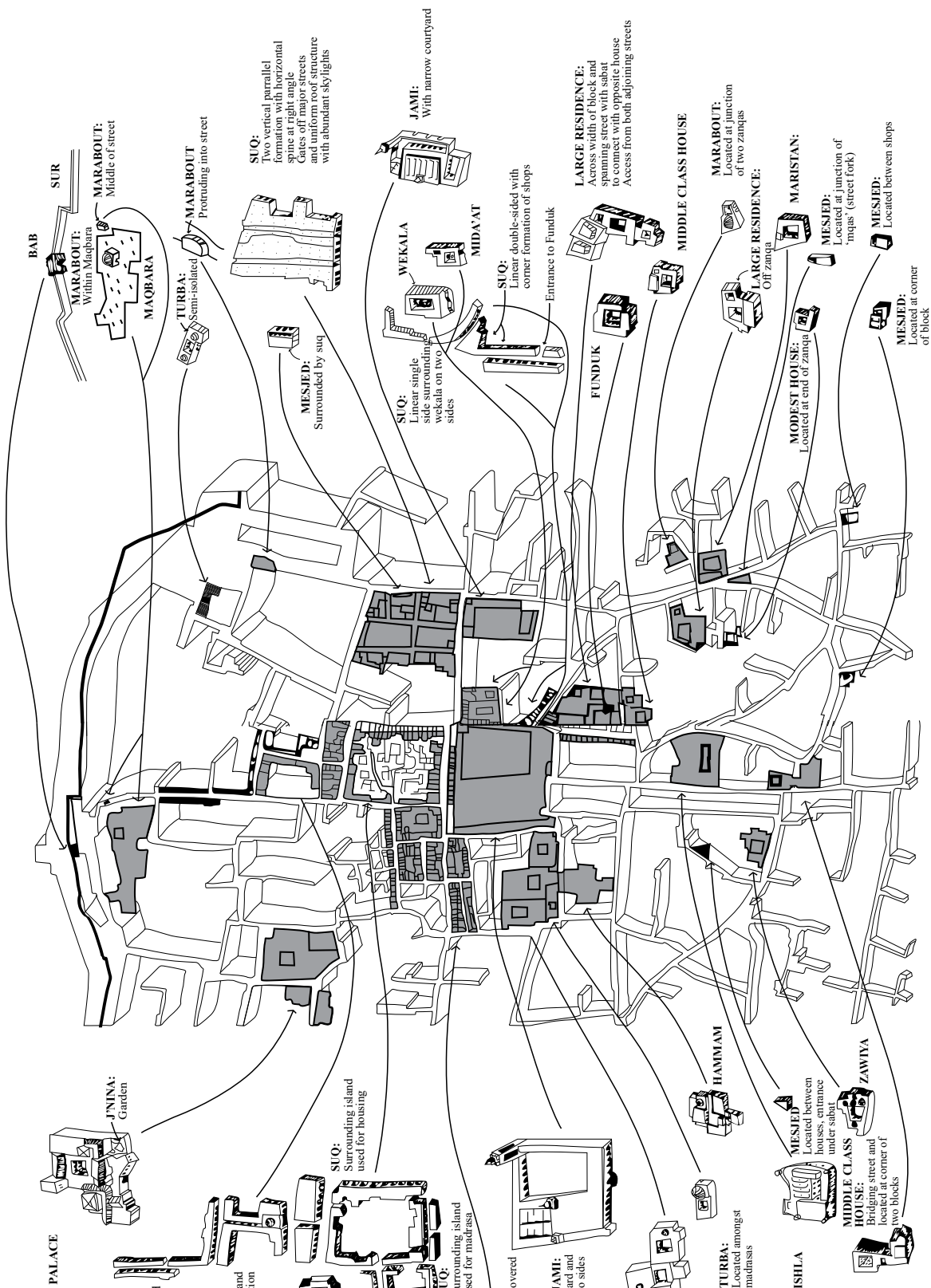


Figure. 4: *Morphological analysis of Tunis Madina core urban elements in relation to the street system, Illustrated (Image Source: Hakim (XXXX)*

2.2 Old Homs City

The city of Homs has experienced so many cultural and religious influences that have resulted in a mixture of different components that shape the city of Homs. from the pre-classical period to the classical and Hellenistic periods to the Islamic period and more recently to the modernity and post-modernity of the present. According to Nida Al-Dandashi (2013), the city of Homs reached its peak at the end of the 19th century. At that time, it had its wall and all the gates still standing. it had its monumental and religious buildings, and it had mausoleums of prominent people buried in the city.

The city started from the citadel, surrounded by a moat, surrounded by a road that connects the two gates' Turkmen and Sabaa. To the south of the road come vineyards, almond and fruit trees. The Bab al-Turkmen cemetery is located to the west of the citadel. The sheep market is located south of the citadel. The green square borders the citadel to the west and north (Al-Zehrawi & Al-Sibaii, 1992).

The city was walled and had defensive towers and gates; to provide protection and immunity for the city. The city walls ran north of the mastaba and the city did not extend outside the wallsuntill the end of the 19th century (Al-Zehrawi & Al-Sibaii, 1992).

2.2.1 City Gates

Bab Tadmur = Palmyra Gate	Leads to Palmyra, the capital of the desert, and the road is of commercial importance.	*Destroyed 1925*
Bab Al-Suq = Market Gate	Leads to Hama, Aleppo, northern cities, Istanbul and all the markets of the city, and is considered the most prominent trade route in the city because of its proximity to its markets.	*Destroyed 1920*
Bab Hood[2] = Prophet Hood Gate	The prominent trade road located near the markets of the city, leading towards the western coast and the port	*Destroyed 1869*
Bab Al- Masdud = Blocked Gate[3]	Leads to Al-Midan Square, which leads to the orchards and connects to Tripoli, Tal-Kalakh, Al-Hosn and the coastal cities.	*Closed 1516, Destroyed 1925*
Bab al-Turkman[4] = Turkman Gate	leads to the orchards and connects to the road leading to Damascus and also connects to Tripoli Road, Tal-Kalakh, Al-Hosn and the coastal cities and is considered a military road.	*Destroyed 1925*
Bab Al-Sebaa = Lions Gate[5]	leads to Hassia and Damascus and is considered a commercial road for the city. And from which the pilgrim caravan starts, and is the main military road adjacent to the citadel	*Destroyed 1920*
Bab Al-Dreib	leads via several dirt roads to the eastern and southeastern villages of the city and adjacent agricultural lands. Because they are not important trade routes in the city.	*Destroyed 1925*

2 Previously called Bab Al-Jabal = Mountain Gate
3 The tradition of the Ottoman Sultans is to block the door they left they city from forever as a tribute to themselves
4 As it was bordering the neighborhood of the ethnic Turkmen who lived in the city due to the Ottoman influence.
5 As the doors of this gate had Two lions inscribed in the door

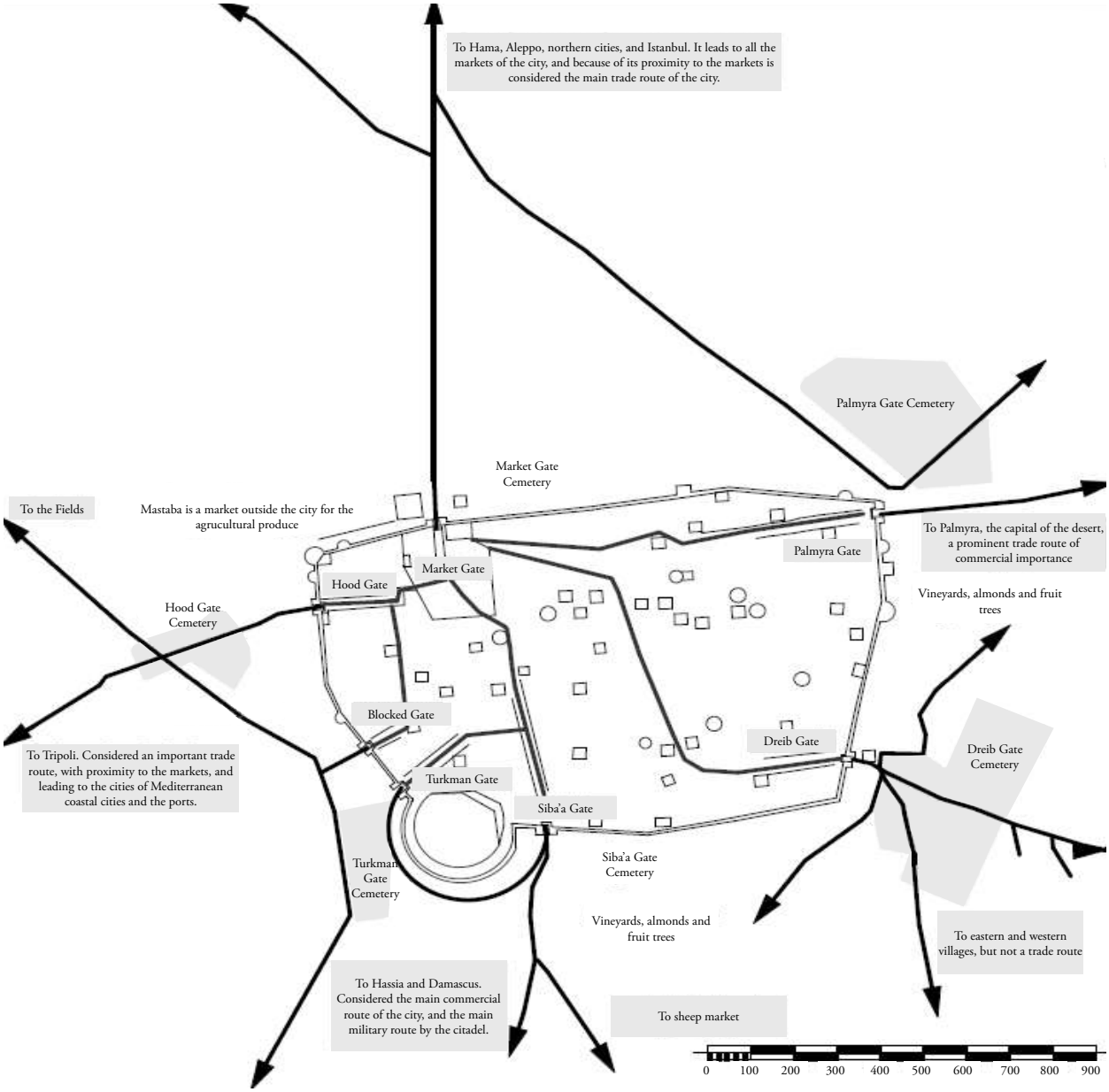


Figure. 5: *Homs City and Surroundingd by the End of the 1800s (Al-Masri and Alsaqqa, 2011) Edited by Author.*

2.2.2 Urban Components of Homs

Figure. 6: *Great Mosque of al-Nuri, Masjid Al Jamii of Homs (Source: Google)*

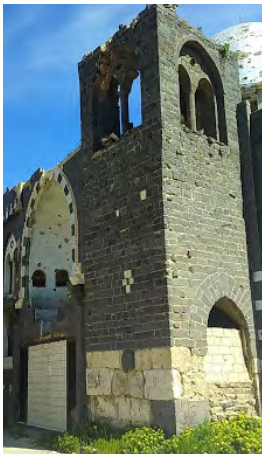


Figure. 7: *Al-Zawiya Mosque (Source: Google)*

Figure. 8: *Al-Arbaeen Mosque (Source: Google)*

Figure. 9: *Dahia al-Kalbi Mosque (Source: Google)*

Figure. 10: *Abu Lubada Masjid (Source: Google)*

Figure. 11: *Bazerbashi Mosque (Source: Google)*

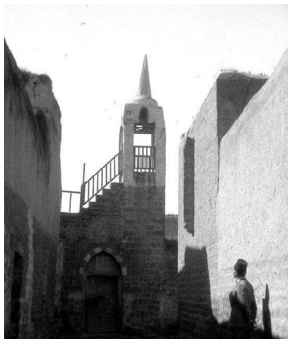


Figure. 12: *Al-Annaba Masjid (Source: Google)*

Figure. 13: *Al-Nakhleh Mosque (Source: Google)*

Figure. 14: *Al- Sheikh Kamel Mosque (Source: Google)*

Figure. 15: *Thee'l Kalaa Al-Hamiri Mosque (Source: Google)*

Figure. 16: *Al-Fadayel Mosque (Source: Google)*

Figure. 17: *The mausoleum of Dames Abu Al Howl (Souce: AH+, Flickr)*

Figure. 18: *Kaniset Um Al Zennar(6) = Saint Mary of the Holy Belt Cathedral Syriac Orthodox Church and holds the Holy Girdle of the belt of Virgin Mary. It is the seat of the Syriac Orthodox Archbishop Patriarchate of Homs and Hama. (Source: Google, AlArabi)*

Figure. 19: *Kanisat Marlian = Church of Saint Elian (Source: Wikipedia)*

Figure. 20: *Kaniset Al Rum Al Katolik – Syriac Catholic Church (Source: Google)*

Figure. 21: *Kanisat Mar Geaoges = Church of Saint Geaoges (Source: Google)*

Figure. 22: *Kanisat Al-Arbaeen = Forty Martyrs Cathedral (Source: Google)*

Figure. 23: *Kaniset Al syrian Al Katolik – Syriac Catholic Church (Source: Google)*

Figure. 24: *Deir Al Ab'a Al Yaso'eeyen / Jesuit Fathers Monastry (1881), Christian monastery. Source: (AH+, Flickr)*

6 First built: 59 AD

Figure. 25: *Suq (Source: AH+, Flickr)*

Figure. 26: *Ottoman Hammam (Source: AH+, Flickr)*

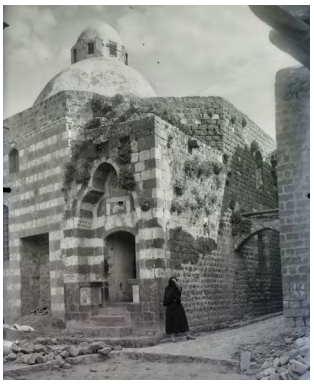


Figure. 27: *Al Pasha Hammam (Source: Facebook)*

Figure. 28: *Al Saghir Hammam (After destruction) (Source: Facebook)*

Figure. 29: *Al Siraj Hammam (After destruction) (Source: Yazan Homsy, Flickr)*

Figure. 30: *Qayysariya (Source: AH+, Flickr)*

Figure. 31: *Sabat Al Atassi (Source: AH+, Flickr)*

Figure. 32: *Sabat Al Qadi (Source: AH+, Flickr)*

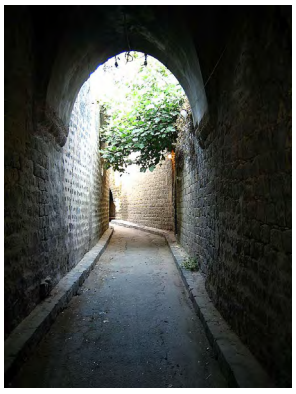


Figure. 33: *Sabat Shams Al Deen (Source: AH+, Flickr)*

Figure. 34: *Sabat Al Jandali (Source: AH+, Flickr)*

Figure. 35: *Sabat Aljundi (Source: AH+, Flickr)*

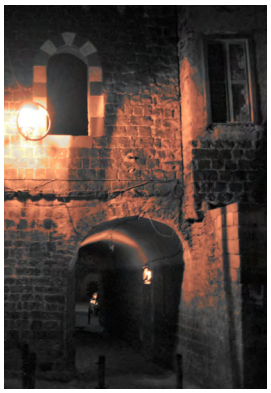


Figure. 36: *Sabat Al Asiyyati (Source: AH+, Flickr)*

Figure. 37: *Sabat Aldroubi (Source: AH+, Flickr)*

Figure. 38: *Citadel of Homs, Château et portion de la ville de Hemss, jadis Émèse by Louis-François Cassas. (Source: Wikipedia)*

Figure. 39: *Last standing burj from the fortification towers that used to be connected to the wall. (Source: Syrian History, Flickr)*

2.2.3 Mapping the Urban Components

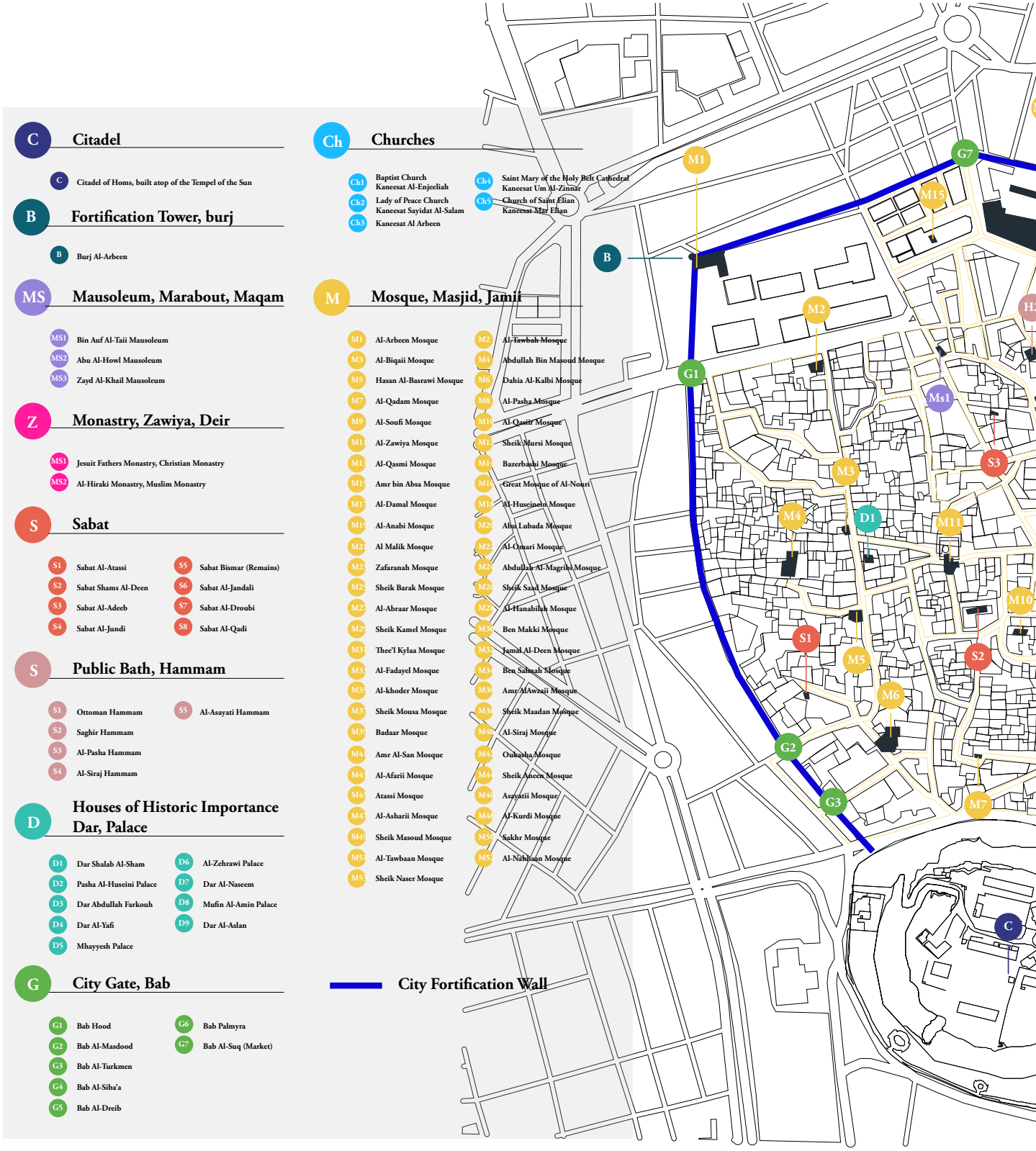
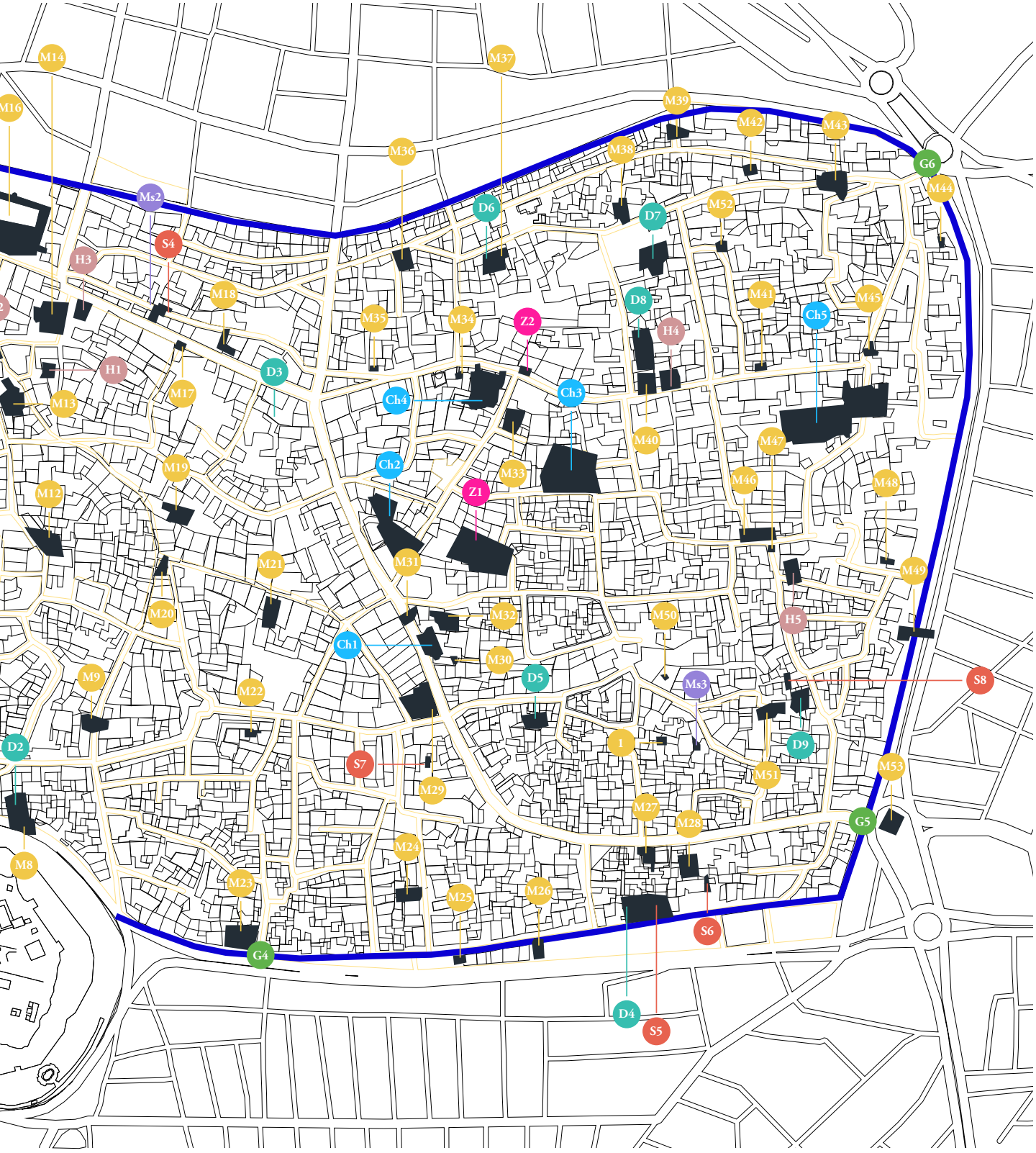


Figure. 60: *The main components of Homs City. This map was created using Autocad and Adobe Illustrator. The houses are drawn approximately f like in the old city. (Illustrated by author).*



from a satellite image, so this map is not 100% accurate as there are no maps showing the individual houses, which shows what the urban fabric is

2.3 Arabic Courtyard House

The concept of a courtyard house appears in the Middle East as early as 2000 BC in the city of Ur in southern Iraq. However, since the advent of Islam, the Arab house became more and more accepted as the standard housing solution in all Islamic provinces due to the similar climatic conditions (Hakim, 2010)

According to Hakim (2010) the courtyard house and its structural features made it possible to meet the following Islamic, social, and ethical requirements:

- Privacy. The layout of the house, with all rooms facing the courtyard, ensured privacy while still allowing residents to be in contact with nature through the courtyard.
- Interdependence. The organizational outcomes of grouping courtyard houses required a degree of interdependence between neighbors in order to have the right to use adjacent walls and maintain cul-de-sacs in terms of stormwater and wastewater management.
- Batin vs. Zahir. The word Batin means the inner aspect of the self or thing, while Zahir means the outer aspect of the same thing. In Islamic teachings, eternal goodness is always measured by the inner aspects of things. Therefore, the exterior of the houses was usually very simple and modest, while the courtyard, as the most important inner space and center of the house, was usually elaborately decorated.

However, despite socio-cultural differences in the various regions of Arabic-Islamic world, the Arab house has retained a high degree of common architectural language due to climatic and religious needs (El-Shorbagy, 2010). Therefore, the following is an excerpt from various sources that explain the characteristic elements of the Arab house. The following is an integral and important part of this research to acquire the knowledge of the characteristic elements and their use and application in the Arab house in order to find the right architectural program for the design proposal attempt.

2.3.1 Architectural Elements

The following are the most typical elements of courtyard houses:

Al Majaz = Entrance	This term refers to the main entrance of the house. The door is usually lavishly decorated with arabesque motifs. (El-Shorbagy, 2010)
Al Dihleez =Vestibule, Corridor	A long corridor or vestibule that follows the entrance and leads to the courtyard. It has a curved shape to block the direct view of passers-by into the courtyard of the house. This curved shape of the corridor helps to maintain the privacy of the residents. It also has a temperature balancing function as it is covered to maintain a moderate temperature and minimize the difference between outside and inside (Shamayleh, 2016).
Al Riwak = Colonnade Hallway	A colonnaded corridor. It is described as a ground-level space under a protruding roof, or as a corridor space between a wall and a colonnade (Shamayleh, 2016).
Al Sahn = Courtyard[7]	This term usually refers to the inner courtyard of the house. The word Sahn in Arabic literally translates to plate. It is described as occupying 1/3 or 1/4 of the total floor plan of the house and is usually surrounded by a wall that reaches the same height as the house itself (El-Shorbagy, 2010).
Fesqueyah or Bahrah = Fountain with basin	A term denoting the basin of water with fountains. It was always an integral part of the Arab house and served for ablution and as an aesthetic element. Hence it is usually elaborately decorated with motifs. A Fesqueyah is also found in the main reception hall-Qa'ah-, which serves as an aesthetic element as well as a humidifier (Shamayleh, 2016).
Al Qa'ah = Guest Hall	This term refers to the main reception hall for guests, as Arabs are renowned for their exclusive hospitality and generosity (Hakim, 2010). The reception hall usually has a high central room flanked by two rooms at a slightly higher level. El-Shorbagy (2010) explains that the Qa'ah consists of a Durqa'ah and two Iwans. The Durqa'ah is the central part of the Qa'ah with a high ceiling topped by a Shukhshakhah, a wooden lantern at the top. The shukhshakhah may be square, octagonal, or hexagonal in shape. Later, the Malqaf was introduced for better ventilation.
Al Malqaf = Wind Catcher	The Malqaf is a shaft that rises high above the building of the Qa'ah, with an opening facing the prevailing wind, built on the northern Iwan of the Qa'ah (El-Shorbagy, 2010). It captures the cool air and directs it inside the building to cool the space and increase the humidity.
Al Takhtaboush = Outdoor Seating with a Mashrabiya	This term refers to a covered outdoor seating area at ground level (El-Shorbagy, 2010). It is located between the shaded courtyard and the backyard and opens completely to the courtyard and through a Mashrabiya to the backyard, ensuring a steady flow of air by convection.
Iwan = room elcosed from there sides and open to the outside on the 4th side.	Iwan is a term for a rectangular, usually vaulted room that is walled on three sides and completely open at one end (Shamayleh, 2016). It often contains holes in the wall for displaying ornaments or pottery, or for storing utensils. Usually, all Arab houses contain a large Iwan facing the courtyard.
Mashrabiya = Oriel Window	The Mashrabiya is a type of projecting oriel window surrounded by carved wooden lattices and usually located on the upper floors of a building, sometimes decorated with stained glass. It was traditionally used to catch the wind and provide passive cooling; pitchers and basins of water were placed inside to provide evaporative cooling (Shamayleh, 2016).
Construction and decorative elements	Qaws = Arch, Arc/ Al-Ablaq
Building materials	Local stone/ Clay bricks, baked or sun-dried.

7 The courtyard is where all circulation to and from all rooms of the house takes place. Since it is an open space, it allows good air circulation to all the rooms of the house. There is usually a fountain with a basin in its center and one or two Iwans on opposite sides of the courtyard (El-Shorbagy, 2010). It is the nucleus of the Arab house and all the windows and doors of the rooms face it. It may be either rectangular or square in shape and is usually lushly planted with native fruit trees and flowers.

2.4 Courtyard House in Homs

In order to know more about the Arab house in Homs city, I have studied the thesis conducted by Jacklin Taktak and Imad Al Masri (1993) in which they documented a sample of Arab houses in the Old City of Homs. Their selection of houses was based on two categories:

- The first category of houses contains a concentration of architectural periods, beginning with the Byzantine period through the Mamluk and Ottoman periods, and this knowledge, according to the authors, was based on historical documents that confirm this rare category. Houses in this category can be assumed to have had functions other than that of a living space. There is ample evidence that these houses had political and social functions in addition to providing housing for their owners. Houses in this category include Al-Zehrawi Palace, Beit Mufid Al-Amin.

- The second category is a sample of houses in old houses and is characterized by the fact that there are many similar houses of this type in the city. This sample can be categorized as the result of the development of the Arab house in Homs over long periods of time, however, the houses in this sample date back to the late Ottoman period.

The following couple of pages are a summary of the findings in Jacklin Taktak and Imad Al Masri (1993) thesis.

2.4.1 Courtyard Form:

The form of courtyard in the studied houses varied, the identified variations of the courtyard in Homs are:

- **Rectangular courtyard:** It has two forms: (a) the rectangular one which lies on its long sides in the north-south direction, like Al-Zehrawi Palace. (b) the rectangular one which lies on its long sides in the east-west direction, like Pasha Al-Husseini B and Al Droubi.
- **Trapezoidal courtyard:** its form is very similar to the irregular courtyard, while its long sides lies on east-west direction, and is found in Pasha al-Husseini (a) and in Mhayyesh Palace and Abdullah Farkouh House and Beit Dawamah house.
- **External courtyard:** this was the case in the house Mufid Al-Amin, which did not contain an internal courtyard and was instead replaced by an external courtyard with an irregular shape. There was also an external courtyard in the house Abdullah Farkouh, which surrounded the south and west facades.

2.4.2 Covered Space vs. Open Space

This diagram shows the covered spaces (rooms, reception hall, Iwans, service rooms) as a darkened area and the common finding of the analysis indicates that the darkened area does not have a regular shape due to the irregularity of the neighboring properties, which reflects the urban fabric of such ancient cities and is a designation for a property and the history of its owners and the growth or shrinkage of the family due to the financial situation of the household. Beit Al Droubi, on the other hand, is the only one that has a regular in shape. It is also noticeable that the lines of the covered area are reasonably parallel to the lines of the courtyard.

Residence	Total area	Covered space area	Open space area	Percentage of the open space from the total area
Al-Zehrawi	811 m^2	612,4 m^2	118,3 m^2 Mamluk 81 m^2 Ottoman	24 %
Pasha Al-Husseini A	670 m^2	494 m^2	182 m^2	26,9 %
Pasha Al-Husseini B	704 m^2	583 m^2	121 m^2	17 %
Mhayyesh	826 m^2	407 m^2	356 m^2	43,5 %
Farkouh	970 m^2	585 m^2	385 m^2	40,1 %
Droubi	638 m^2	503 m^2	231 m^2	36 %
Dawamah	405 m^2	297 m^2	108 m^2	26,6 %
Mufid Al Amin	816 m^2	276,5 m^2	539,5 m^2	66,1 %

Table 3: The percentage ratio of the covered area to the open area Source:(Taktak and Al-Masri, 1993)

From this table, Taktak and Al-Masri (1993) conclude that the percentage of covered areas is proportional to the open space making an average percentage of 30.5%, except for Mufid Al Amin house. Also from this table, Taktak and Al-Masri classify the studied houses into three classifications according to the size as follows:

- **Small houses**: Dawamah.
- **Medium houses**: Aldroubi, Pasha Al-Husseini A and B.
- **Large houses**: Al-Zehrawi Palace, Mhayyesh Palace, Beit Abdullah Farkouh.

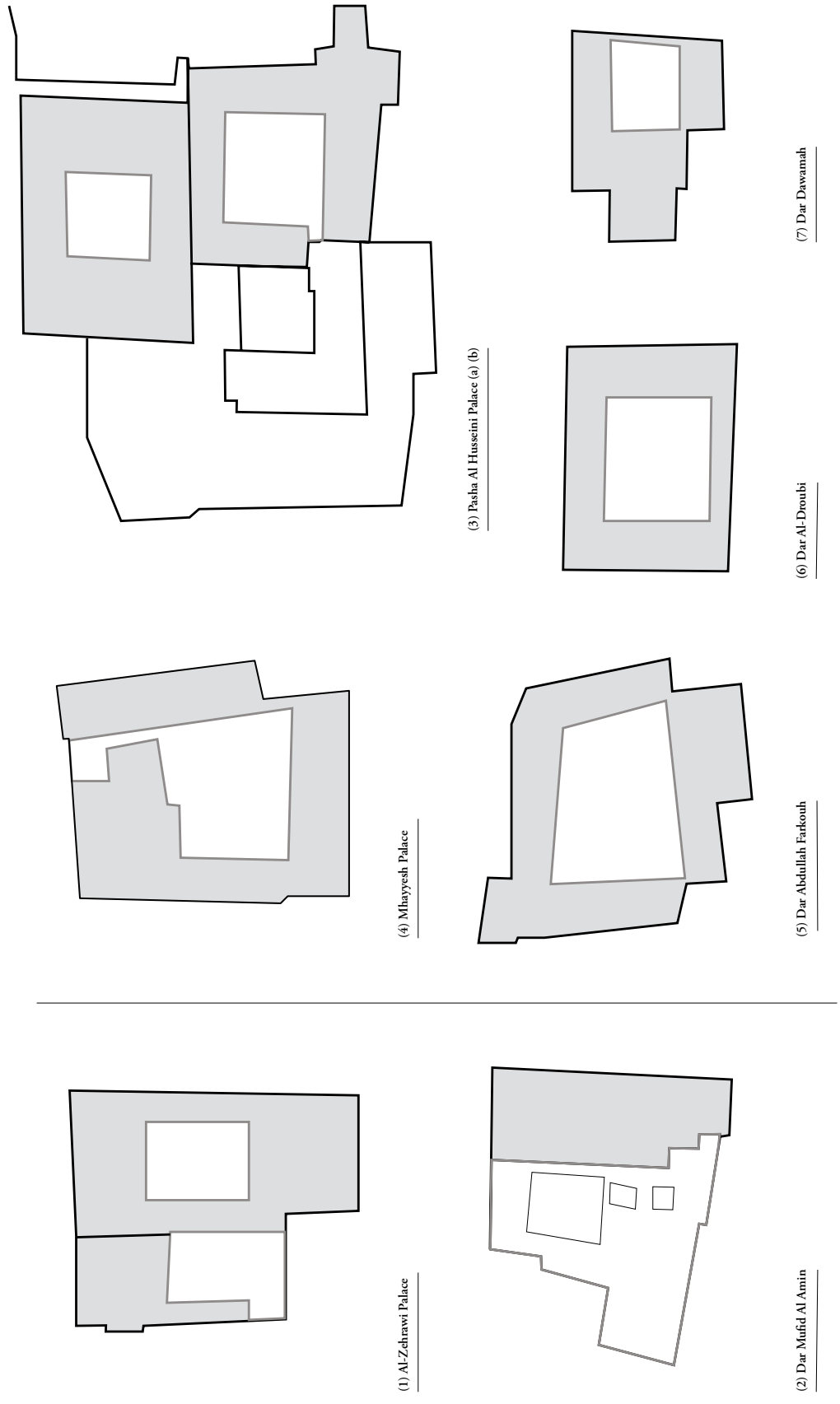


Figure. 40: *Covered space to open space ratio. (Source: and copyright: Jacklin Taktak and Imad Al Masri (1993)*

2.4.3 Entrances

Entrances are the connecting portal between the interior of the house and the exterior. The entrances of the houses reflect the lifestyle, social life as well as religious life of the time. **Figure 44** shows the positioning of the entrances of the houses. From the diagram, the following observations have been documented by Taktak and Al-Masri (1993):

- Entrances positioned at the corner of the courtyard give more visual perception to the interior of the houses.
- Entrances that either have a curved shape to block direct view, such as (Mhayyesh, Al-Zehrawi, Dawamah, and Mufid Al-Amin) or lead to an entrance hall, such as (Al-Droubi, Pasha Al Husseini, Farkouh).

All houses are characterized by having a single entrance that starts from the street and leads to a corner of the courtyard, with the exception of Abdullah Farkouh, which has two entrances due to the political and social importance of the owner.

2.4.4 Rooms and Halls

Rooms and halls form the greater part of the covered area and surround the courtyard from which they receive both light and ventilation through doors and windows and Qamariyat (skylights) elaborately decorated with an alternation of black and white stones. These interiors give the houses studied a unique character that distinguishes them from other Arab houses in other cities. The noticeable difference between the rooms in the different categories can be summarized as follows:

In the First Category:

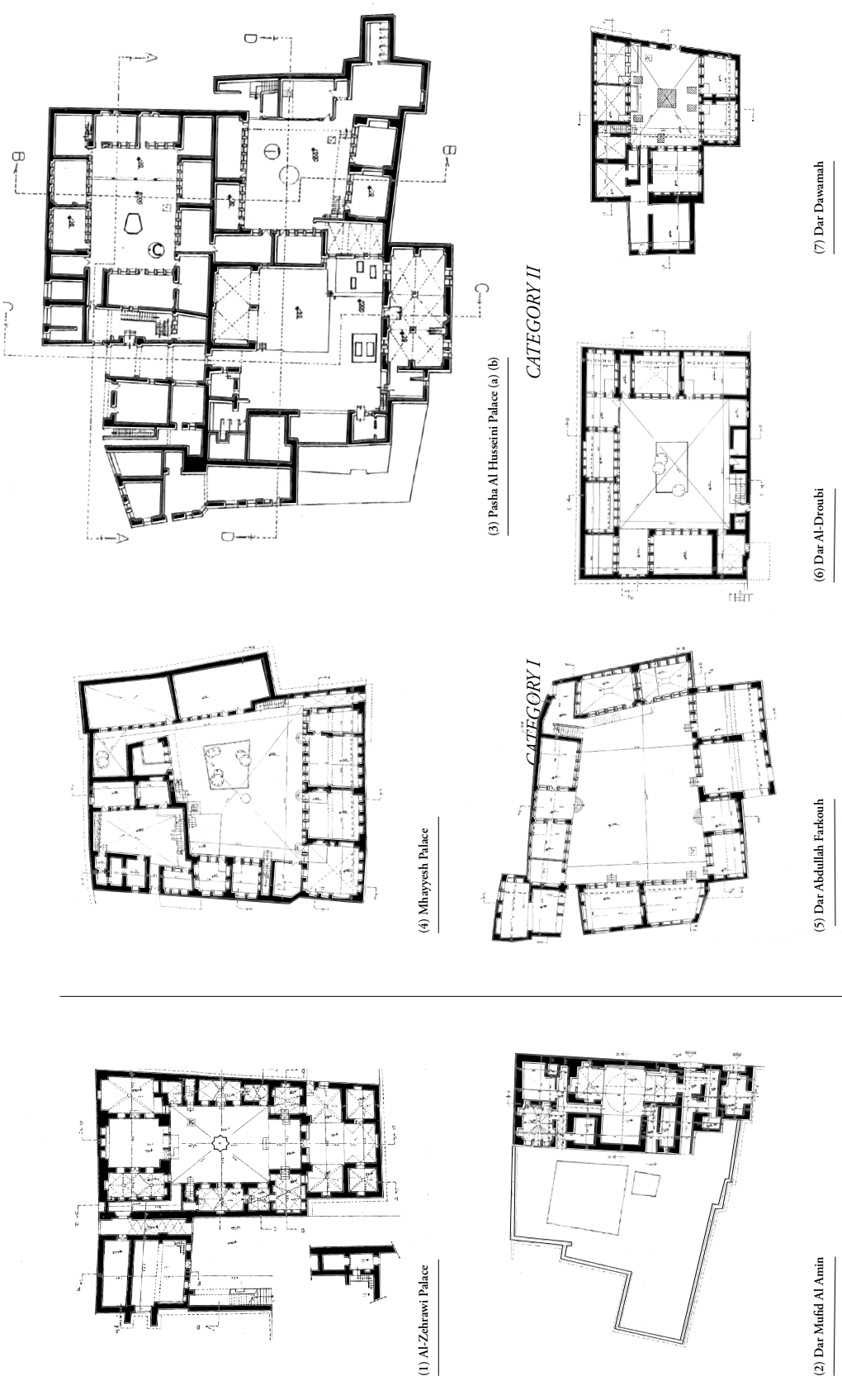
- The presence of a unique building unit and a special division that is rare, where the trinity special division can be identified and described as a main room surrounded by three secondary rooms and usually connected as one unit. There is usually a dome above the main room.
- The relationship between the rooms, from special division and distribution, point of view, allows a passage between the rooms as in Al-Zehrawi, which means that the function for which it was made was different from that of housing and more probably that of a political or social function.
- The construction is unique with the recurring use of vaults and domes and thick walls.
- The gigantic dimensions of the main rooms both in height and area.

In the Second Category:

- Most of these houses have two types of rooms, those used as reception halls and those used for living purposes (sleeping, living, etc.), and it is noticeable that the size of the rooms is usually proportional to their function.
- The rooms usually have an entrance either directly from the courtyard or through the Iwan adjacent to them except in the case of (Mhayyesh, Dawamah) which have side entrances to the rooms.
- The rooms are distinguished by their interior atmosphere in which the use of marble and wooden decorations together with tinted glass is very common. The roofs of these rooms are either stone vaults or wooden bridges supporting the weight of the roof, which is tiled or covered with mud and clay. The flooring of these houses often consists of colored marble tiles with geometric motifs. In addition, the rooms are characterized by their thick walls, which act as a good insulator against the cold of winter and the heat of summer.

First Floor Plans

Figure. 41: *First Floor Plans. (Source and copyright: Taktak, J and AlMasri I. (1993)*



Ground Floor Plans

Figure. 42: *Second Floor Plans. (Source and copyright: Taktak, J and AlMasri I. (1993)*

2.4.5 Iwans:

Is a place to sit and relax, and its depth provides shelter from the sun during the day and allows for protected outdoor relaxation during the night and has a rooted relationship with the courtyard. From the **figures 43 and 44** we can see the distribution of Iwans in the houses studied.

On Iwans of the first category:

- The Iwan in Al-Zehrawi Palace is a significant architectural element and persons entering from the north can clearly see the Iwan. The particular connection between the Iwan and the spaces adjacent to it is noticable. Also, the centrality of the positioning of the Iwan and the fountain with water basin. In general, the Iwan dominates the northern facade with its unique shell-shaped dome, which extends over two floors. The floor of the Iwan is raised by 3 steps from the level of the courtyard. This Iwan can also be considered as a distributor to the adjacent rooms and the back room, which form a trinity.

On Iwans of the second category:

- The presence of several Iwans in the houses, either on the ground floor or on the upper floor.
- The Iwans are not oriented in a particular direction, sometimes they occupy the northern direction of the courtyard as in Farkouh, Droubi and sometimes the southern direction of the courtyard as in Farkouh Droubi. Or they take the western direction of the court as in Droubi and Mhayyesh.
- The Iwans in this category do not occupy any obvious centrality in the house in relation to the courtyard or the well and are sometimes placed in the corner of the courtyard façade as in Droubi and the western Iwan in Mhayyesh or may be central to the façade as in the Iwans in Abdullah Farkouh.
- The relationship to the Iwan and the courtyard, both of which are connected by an opening with an arch, usually lavishly decorated with alternating black and white stones, which may sometimes spill over to the entire façade, as in Iwan Abdullah Farkouh, or the decorations may be confined to the arch, as in the case of the Iwan Mhayyesh palace.
- The Iwans is directly related to the adjoining rooms by providing passage to the adjoining rooms and the rear room. The walls separating the Iwan from the adjoining rooms usually have windows looking out onto the Iwan. The ceiling of the Iwan is usually made of wooden beams supporting the roof and is topped by a gable tile roof or a flat tile roof with clay roofing. The floor is usually tiled with decorative marble tiles with simple geometric motifs.
- The presence of Iwans on the upper floor can be noted in most houses as they serve as an entrance to the adjoining rooms on the upper floor, such as in (Pasha al Husseini A) and provide a sheltered sitting area overlooking the courtyard. The position of Iwans on upper floors usually depends on the position of the upper floor itself in relation to the ground floor.

2.4.6 Stairs

Stairs are the connecting elements between the first and the second floor and from the studied houses the following different types of stairs were identified:

- Internal covered staircase
- External exposed staircase
- Internal continuing to external staircase

2.4.7 Fountains and Wells

Fountians with Basin:

It was noted that all the studied houses in Homs had a fountain with basin which varied in shape, circular or octagonal, and its position in the courtyard was mainly central. It's also noted that little care was given to the fountains due to the scarcity of water in Homs city, where most of the water came from the wells in the houses and the water canal that used to run in the city.

Wells:

All of the studied houses contained wells which are usually placed in a certain corner of the courtyard. The importance of wells in houses is due to the scarcity of water in Homs in general. The form of these well can either be circular or square in form. The water from the wells was mainly for daily use and the drinking water was brought from the water canal.

2.4.8 Courtyard

The courtyard is considered the main element in the arab house and was a solution to provide thermal comfort in dry hot climate as it humidifies the air and cools down the atmosphere through the shadow casted from the facades onto the courtyard; and the evaporation of the water in in the central fountain with basin.

The courtyard also offers good air ventilation through the creation of an air current between the inside and outside and offers a social space which the inhabitants can sit in and enjoy the outdoors space. The interior facades with their varyaing heights create the boundaries of the courtyard. The cladding of alternating black basalt stone and white limestone gives the courtyard a special atmosphere. In addition, all of the rooms faces and look onto the courtyard making the house open towards the inside.

The courtyards in the studied houses share the following elements:

- Flooring
- Fountain with basin and well
- Internal fasades
- Flooring

There was no significant way of tiling special for houses in Homs as opposed to houses in Damascus. This could be reflective of the economic conditions specific to a certain area. The tiling in the Arab houses of Homs was mainly of black basalt stone tiles due to its availability in a large scale in the city. The exception was Abdullah Farkouh and Dawamah and Pasha Al Husseini as the tiling was in both black and white stone and marble pieces in the shape of simple geometrical motifs.

Figure. 43: *First Floor Iwans. (Source and copyright: Taktak, J and AlMasri I. (1993)*

Figure. 44: *Ground Floor Iwans, Service rooms, Entrances, Wells, Fountains. (Source and copyright: Taktak, J and AlMasri I. (1993)*

2.4.9 Openings

Windows:

Windows can be classified into two types depending on the form of the arch:

- Windows with a pointed arch (Dawamah - Pasha Al Husseini A and B – Farkouh – Mhayyesh – Droubi
- Windows with rounded arch (Pasha Al Husseini A – Droubi – Mhayyesh – Farkouh)

Doors:

Doors can be classified into two types depending on the form of the arch:

- Doors with a pointed arch (Pasha Al Husseini – Mhayyesh – Dawamah – Farkouh)
- Doors with a rounded arch (Mhayyesh – Farkouh – Pasha Al Husseini – Droubi – Dawamah)

Qamariyat (Skylights):

The variations of the skylight in the studied houses were observed in both form and size. However, some forms were recurring in most houses.

2.4.10 Decorative motifs

Decorative motifs can be seen as shields or ornaments in the facades in which they alternate between black and white stone.

The identified motifs are:

- Chess shield
- Cross Shield
- Geometric decorative shields (A) and (B)

2.4.11 Utility Rooms

These rooms occupy the remainder of the covered area and are functional rooms used either as: Storehouses, firewood stores, stables, kitchens, and water closets (WC). It is noticeable that the utility rooms occupy the insignificant corners of the house and the rooms facing the smaller courtyard, if there are more than one. It is also noticeable that there are two or three rooms for food supplies, small rooms used as kitchens containing the tools and supplies for cooking, water closets are present in different forms, even in the same house when there are several. Another observation is that utility rooms are found only on the ground floor of the houses and none on the upper floors. It is also worth noting that there are no Hammams in any of the houses studied, which is a common feature of historical Arab houses, as the existence of several public hammams in the ancient cities fulfilled this function.

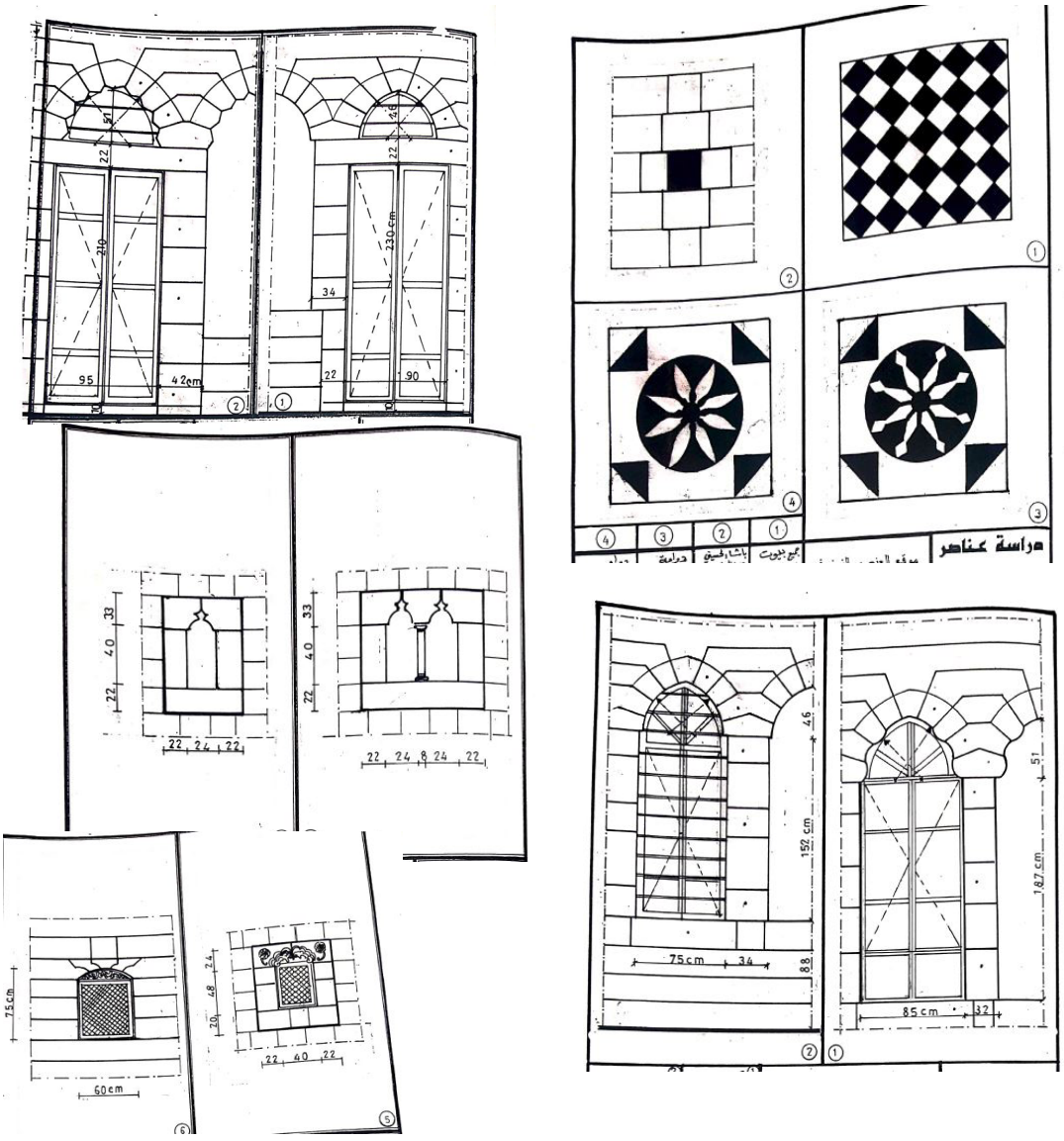


Figure. 45: *Example of doors, windows and decorative shields. (Source and copyright: Taktak, J and AlMasri I. (1993). for more details and pictures please refer to the full study by Jaklin Taktak and Imad Al-Masri*

2.5 Pre-Conflict Planning Problems

On the Organizational plans for the city of Homs	Discussing the shortcomings in the organizational plans with regard to the historic city of homs.	Published 2011
On the Building code for the Historic city of Homs	Discussing the shortcomings in the building code for the historic city	Published 2007
Current Conditions	Discusses the distruction volum in the old city	Published 2014
Post-Conflict Strategies	Discusses the proposed stratigies and my own ethnographic reflection on them	Published 2016
Considerations for post conflict strategies	Discusses the considerations to be taken into account when making a post conflict strategy	

2.5.1 On the organizational plans for the city of Homs

The role of planners in all societies is usually to plan for the future of the city as well as to preserve its local identity and shape its expansion to suit the city and its inhabitants. The plans should consider environmental as well as social and historical considerations so as not to create excessive chaos in the urban fabric and to maintain healthy growth of the city without exploiting farmland for construction, which has detrimental effects on the climatic and environmental as well as agricultural aspects of the city. These considerations are not general to all cities, as each city should be treated as a specific case, depending on all the different considerations that are considered in the preparation of city plans.

(Al-Masri and Alsaqqa, 2011) reports that in the 1800s, the city of Homs consisted of the fortified city with its citadel and with lush orchards surrounding the city on all sides. In the earliest expansion, namely under the French Protectorate, no consideration was given to this farmland surrounding the city and it was completely removed in favor of the expansion of the old city. The French Protectorate even destroyed the remains of the fortification walls that surrounded the city and all the gates, most remaining gates being destroyed in 1925 in favor of expansion. They also destroyed many of the houses in the old town in favor of wider streets with the advent of motorized traffic, which also destroyed an integral part of the old city, its urban fabric, specifically its narrow alleys that provided shade in the hot summer months.

After the end of the French protectorate over the Syrian state and the announcement of independence, several plans for the city of Homs were presented, but all of them were seriously flawed when it came to historical considerations and other important factors that should determine such plans.

The plans can be summarized from Al-Masri and Alsaqqa (2011) report as follows:

1946 Plan	An urban plan for the city of Homs was recorded in 1946, the Independence year, but was not more than maintenance of the status quo, with some marginal changes, with a primary focus on economic, political, and military considerations.
Doxydos Plan (1959-1962)	 **Figure. 46:** *Doxydos Plan (Source: Al-Masri and Alsaqqa (2011)* Doxydos Homs city plan, a French planner, was put to serve the city over 30 years till 1990 and used statistics to draw out the plan. The plan was to accommodate 1,000,000 people on a 4230-hectare land. The plan considered the building use, size, and the individual's share in square meters.
Kogenski's Plan	 **Figure. 47:** *Kogenski Plan (Source: Al-Masri and Alsaqqa (2011)* After Doxydos' plan lost its validity and credibility, The Polish Kogenski modified Doxydos' plan. He used the statistics used in Doxydos and proposed a new plan that would house the city over 10 years (1966-1975) and accommodate 290,000 people on a 1380-hectare land with a population density of 119 people per hectare.
Syrian Public Company for Studies Plan	Homs remained unplanned since 1985, and its boundaries remained as they were in Kogenski plan until 1969, when the Public Company for studies established an organizational plan through a contract with the municipality; the plan was delivered in 1999, with a time span until 2020.
Western expansion areas Plan	The expansions continued, and according to Public Company the expansion went to the northeast of the western region of the city, and the company laid out organizational studies with details that had not been approved until the time of the submission of the research.

2.5.2 Historical and Cultural Shortcomings

As reported in the journal that none of the plans were adequate in considerations usually made in urban plans, these shortcomings of the plans as described in the report can be summarized as follows:

Historical Build Considerations shortcomings:

All plans for the city ignored the old markets, the historical souks, which are still considered as the commercial center of the city today. The old markets fell victim to the three plans altogether, with some of their parts giving way to the works of a widening main road network. Ironically, the Public Company for Studies did not include any recommendations related to the preservation of the city's historic heritage. Moreover, the Public Company for studies used a general building regulation from 1969 that treated the historical city core like all other districts in Homs, and this situation continued until the birth of the building regulation code that restricted the destruction of historic sites in the old city.

Traditional and Cultural Building Considerations shortcomings:

The public company for studies did not include building regulations to protect the traditional identity of Homs; thus, endangering its unique architectural and cultural features and distinctiveness. The building regulations set by the planners did not provide a strategy to preserve the city's architectural symbolism that defines its traditional and unique identity.

2.5.3 Organizational Plans Considerations Report Findings

All the plans failed to consider the historical and cultural value of the city and systematically omitted the historical aspects in exchange for the fast-paced modernity. The report's findings can be summarized as such:

Homs City new organizational plans should consider all the unique features that make the city unique. These unique features are those that have shaped architectural development along trade routes in the past, and these trade activities have been the springboard for development. Therefore, the historic element should be the foundation in future organizational plans. Similarly, the historical aspect should inform other areas of study, such as identifying the main activities that were prevalent in the city in the past and on which the city depended over time, making the historical consideration of Homs a top priority in planning. Unfortunately, there was no city plan for Homs before 1946, before that year the city expanded without a record of a plan that traced its status or planned for its future, so spontaneous expansion took its course through local considerations on economic, geographic, commercial, security, political, and social levels, but ignored the historical one.

The plans of Doxydos, Kogenski, the Public Company for studies and extensions of the Western Quarter undermined the urban planning considerations that made the city unique, and when these plans were carried out, they contributed to the destruction of the cultural heritage of the city, due to the lack of insight in the legislation, which for the most part turned a blind eye to the cultural, civilizational, and ideological systems of the city.

Doxydos and Kogenski, both foreigners and not natives, had few considerations in their plans, such as population density, population size, city size, land use, and the individual's share of the land. Both plans lacked a street distribution network and a clear and progressive development plan for architectural centers, and they completely ignored the city's historic cultural heritage.

The Public Company for Studies were composed of a national cadre that lacked proper training in the urban planning sector. Thus, they did not consider the nuanced architectural features that the city of Homs had in their planning. Their role was merely to fix the problems created by the plans of Doxydos and Kogenski, and that was the only contribution of the Public Company for Studies, which also ignored the historical cultural heritage of the city.

However, in 1990 the prime minister at the time issued a decree that a commission for the protection of the old city of Homs was to be put in place along with a building code to regulate the old city and preserve its historical identity.

Table. 3: *Analysis of the considerations in the organizational plans of Homs city (Source: Al-Masri and Alsaqqa (2011).*

	1946 Plan	Doxydos Plan	Kogenski Plan	PCR[1] Plan	WEA[2] Plan
Geographic	X	X	X	X	X
Economic	X	X	X	X	X
Political	X	X	X	X	X
Social	X	X	X	X	√
Enviromental	X	√	X	X	√
Regional	X	X	X	X	X
Historical	X	X	X	X	X
Cultural	X	X	X	X	X
Ownership rights	X	X	√	√	√
Theoratical	X	X	X	X	X
Legislative	√	√	√	√	√
Adnimstrative	X	X	X	X	X

1 Public Company for Research
2 Western Expansion Area

2.5.4 On the Building Code and Its Shortcomings

In an analysis report on the building code[8] for the old city of Homs, Harshouf et al. (2007) identified many problems in the building code that was supposed to protect the old city.

In their report, the architects describe the circumstances that led to the deterioration of the old city. They say that with the end of the French protectorate and the advent of westernization and modernity, which blindly copied the West, and the introduction of reinforced concrete and reliance on the car as the main means of transportation, many of the residents of the city of Homs looked at the old city with despairing eyes and saw it as a symbol of ignorance and backwardness, which increased the decay of the old city.

The introduction of reinforced concrete in alarming quantities in the old city further contributed to the destruction and pollution of its urban fabric. Moreover, the organizational plans that have widened the streets of the old city have not taken into consideration its historical character and uniqueness and its heritage and culture and have only focused on highlighting the heritage buildings without setting actual physical plans to restore and preserve these sites according to the architects.

Following the rise of interest in preserving historical heritage around the world, the prime minister issued a decree that a commission to protect the old city of Homs should be established along with a building code to regulate the old city and preserve its historical identity. The commission has stopped all construction in the old city in order to conduct a thorough study of the area located within the city walls.

The architects argue in the report that a prime example of the inadequacies of the building code and its weak potential to bring out and revitalize the heritage of the old city is clearly visible in the confusion of the Conservation Commission. The commission was unable to create a pedestrian tourist route that would pass through the historic sites of the old city to create a microcosm of the traditional heritage city of Homs. In addition, the commission noted the need for new legislation, such as the introduction of façade regulations to ensure harmony, homogeneity, and succession, and also saw the need to add more buildings to the heritage list. They also felt that they need to add sections to archeological and heritage properties, for employment and traditional use needs to show traditional heritage occupations, and the need for additional laws to reflect social, political, and eco-

8 A translated extract from the building code, version 1997, can be found in the Appendix.

nomic life. They recognized the need to reflect and highlight the Arab-Islamic city in all its meanings.

The report states that the building code in its current state is very weak and limited and does not achieve the desired goal of revitalizing the historic city of Homs in all its dimensions to reflect the life of heritage city in all its meanings, values, and past, present, and future connotations.

2.5.5 Building Code Report Recommendations

The report goes on to explain that if cultural heritage is to be treated with its exact definition according to the Islamic world concept and projected onto the reality of the city of Homs, we would have obtained a much broader component with a heritage character that expresses the meanings of the heritage city more accurately and comprehensively, where many houses with courtyard, properties that do not contain a courtyard, properties that differ and contrast from the character of the era in which they were built, houses that represent vernacular architecture, the architecture of the poor class, the middle class, the ruling class, the Muslim treasury, army camps and subsistence .. etc. and other important elements; The objects to be demolished and rebuilt will be much smaller than now, so that it is acceptable within the general percentage of a listed heritage city.

If the classification principles and criteria of architectural heritage and global Islamic planning were to fall on the reality of old Homs, then it would be possible to allow the restoration of the squares and its cafes and the various segments of the fabric that reflect Arab social and cultural life, and in turn - with a programmed projection of employment - increase the beautiful traditional heritage industries.

This allows the reconstruction of some discarded and important elements that ensure the continuity of the past, such as the water wheel, parts of the moat to protect the city and the irrigation system, and it allows the restoration of some lost Roman architectural elements such as the Silo, the Temple of the Sun and the Temple of the Mountain, and it also allows the restoration of all of the gates of the ancient city, such as Bab Al Masdood, Bab Tadmur, and Bab AlSibaa, and it allows to show the many interactions that took place with the wall through the houses that overlapped or penetrated it and formed the Al-Thagrah neighborhood from the north around 1890 AD,. And the historic protection system from floods that was transformed into a moat. In this way this restoration would reflect the socio-political life of the time and be an accurate version of itself.

Working with the comprehensive approach of the Islamic world heritage will create a city of heritage that ensures the historical continuity of its stages, existence, progress, and development, and ensures the process of civilized communication and interaction, whether with the past, present or succeeding generations, or with the most advanced and advanced civilizations.

2.6 Current Conditions

The UN -HABITAT and SDC (2014) published a report *"Neighbourhood Profile: Old City of Homs"* which analysed the humanitarian situation in the Old City of Homs and identified the humanitarian problems and priorities. The profile also included an analysis of built environment damage, shelter needs and an assessment of urban functionality in key areas. However, as this report is seven years old, it cannot be considered a definitive measure of the destruction today.

The report describes the physical conditions in Homs in 2014, as follows:

- Most neighborhoods are inaccessible due to accumulated rubble and debris.
- Electricity, water, and sewage networks are largely damaged, so returnees are unlikely to want to stay even if they find their own homes habitable.
- Debris and rubble have piled up on a significant scale. This currently presents a multi-faceted challenge to local authorities due to a lack of necessary equipment, technical complications due to the bad structural condition of hundreds of buildings, and a lack of available dumping locations.
- Street blocks around the entry points of the area have not been removed, especially those separating the old city from the eastern neighborhoods.
- Unexploded ordnance, such as landmines, in the old city is of great concern; many fatalities have been reported in the last week[9].

The report classifies the destruction in the Old City of Homs as follows:

- Damage as a result of the conflict, mainly from bombing and aerial drones.
- Wear and tear resulting from the building typology itself, especially in the traditional urban fabrics where buildings are attached, and focal point destruction affects a number of building blocks.
- Subsequent destruction of property, mainly by burning, motivated by personal revenge.

9 At time of report.

Un Habitat zoned the damage to the built environment in the city into 3 main zones:

- The Old City and Traditional Neighborhoods: damage in the Old City is the most severe of all, as it is associated with the highest degree of deterioration of services and infrastructure.
- The northeastern informal residential area
- Bab Amr area in the southwest

Old city profile[10] Key findings according to the report:

- The prolonged siege and extensive damage in this area has had a tremendous impact on the urban system of the city. The city is severely damaged and remains uninhabitable. The Old City consisted of very dense urban development, both residential and commercial.
- Before the crisis, 156,000 people lived in the city (2004 census), all of whom have been displaced since the 2012 clashes in the region. Since the ceasefire, 150 people have returned to their areas of origin. To date, 300 residents have returned since the ceasefire, most of them to the neighborhoods of Al-Hamidiyah, Bani Al-Siba'i and Bab Houd.
- A massive project in the city center, begun in 1985, has demolished the most ancient part of the old city and replaced it with a modern city center that includes high-rise commercial and administrative buildings. The remaining urban fabric is dominated by multi-story residential buildings with commercial shops on the ground floors.
- Of the total 151,000 residential and commercial units in the area, 37,700 units are severely damaged, and another 66,500 units are partially damaged, according to estimates from UN -Habitat.
- The predominant tenure type in Homs and the Old City is ownership, where 130,000 of the area's 151,000 residential and commercial units are officially recognized at Cadastral Record.
- Most residents were either displaced to Wadi Al Nasara (Christian's Valley) area, where this group of IDPs were mostly upper-middle income people, or they were relocated to surrounding neighborhoods of Homs. They were housed in collective shelters, residential buildings and apartments and host communities' apartments.
- Most neighborhoods in the area are completely inaccessible, even for pedestrians, due to the piled-up rubble and debris.

10 At time of report.

- Electricity, water, sanitation, and sewage networks are largely damaged, making it impossible for returnees to remain in their areas of origin, even if their homes are less damaged or structurally habitable.
- The risk of unexploded ordnance is extremely alarming; many deaths have been reported in the few days since the ceasefire.
- Over 70% of professionals and businesspeople in Homs worked in the Old City and markets, including retailers, shop and "souk" owners, engineers, doctors, pharmacists, and private health care providers.
- The Old City was a hub for most of the city's business and private sector activities, including specialty shops, clinics, hospitals, stores, and markets, while new formal or informal urban expansions did not open up new markets and were entirely dependent on these central neighborhoods. The loss of significant professional and private sector capacity will affect the current and future reconstruction process in the city. There is little to no professional capacity left compared to Aleppo, Latakia and Damascus.

2.7 Post-Conflict Strategies

2.7.1 Reconstruction Strategies Proposed by Sana Kassouha.

In her master's thesis *"Towards a Strategy for Regaining Cultural Identity in the Urban Post-Conflict Reconstruction of the War-Ravaged City Center of Homs"*, Kassouha examines possible scenarios for urban reconstruction strategies for the city center of Homs, including the Old City.

She proposes three reconstruction strategies based on theoretical studies, case studies of other cities that have been reconstructed after conflict, and interviews with 60 people. She explains that these proposals consider several factors, namely: culture, identity, economy, feasibility, financing, social conditions, stakeholders, and local participation. The scenarios she proposes are limited to the historic city of Homs and the business district in its immediate vicinity.

Table. 4: *Kassouha's strategies summary*

Strategy #1: Exact Reconstruction	This strategy, Kassouha explains, aims to rebuild the old city and the business district as exact replicas of themselves. However, she finds both positive and negative aspects in this strategy as follows: • One positive aspect of this strategy, she said, was that the old town, with all its unique architectural details, would regain and maintain its cultural identity. However, this could be difficult to achieve as the Old City has not been properly documented or registered by UNESCO, nor by local authorities. • A disadvantage of this strategy, according to Kassouha, would be that it would exacerbate the social isolation that the local population already suffers from. • Kassouha argues that this strategy is not feasible or achievable on an economic level, as the current financial situation of the state is at its lowest point and therefore most of the funding for such a project would have to come from external actors and investors, and international and archeological specialists would be needed to be properly implemented. • She also argues that this strategy would again bring problems with traffic management, which will resurface if the city is to be rebuilt as a replica of its old self. • Another negative aspect, she says, is that this strategy would not attract interest from international investors, as it would not bring an immediate return on the capital invested. • Kassouha explains that this plan can be implemented if the state would take a loan from the World Bank or other international players willing to lend to the state. However, this would be economically disastrous for the country as it would sink the country into even more debt with the international community.
Strategy #2: Renovation & Civic Participation	Kassouha explains that this strategy is similar to the one implemented in the city of Mostar. This strategy involves the short-term restoration of buildings so that citizens can return. At the same time, they are provided with building materials and government loans so that they can restore their houses themselves. Various positive and negative aspects, as Kassouha explains them, can be summarized as follows: • This strategy would have a negative impact on the urban environment as it would lead to architectural disorder in the city (including the style of reconstruction material used despite the restrictions on building materials and heights imposed by the authorities. This means that the city would lose its architectural features and standards as a result. • This strategy would promote social isolation from which the society already suffers. • On an economic level, this strategy would be positive as it would provide temporary housing solutions for people without crisis exploitation, which Kassouha believes could promote social and economic development. • A negative point for this strategy, according to Kassouha, would be that it could not create new jobs or generate long-term economic benefits. • Another negative point for this strategy, in her opinion, is that it is temporary and not sustainable in the long run. • On the other hand, a positive point would be the indulgence of the local community in reconstruction under the supervision of local authorities and international investment firms
Strategy #3: Demolishing & Rebuilding	This strategy, she explains, aims to completely demolish the entire city but preserve only the historically significant landmarks and rebuild the entire city from scratch, as in the case of Beirut after the civil war. Kassouha argues that this would allow the city to become a high value investment zone and generate great profit. The positive and negative aspects of this strategy are described as follows: • On an urban level, this strategy would be negative as it would misuse historical and archeological sites as an economic resource and would lead to the loss of urban characteristics that made the city unique in the first place. • On a social level, she argues that the strategy would increase social inequality between different classes in society as the new development would be more accessible to the wealthy upper class, thereby excluding the middle and lower classes from the city center. • She argues that this strategy could be positive on an economic level and would boost tourism, create jobs, and allow for better rezoning of the city. • Another negative aspect of the strategy would be the source of funding for such a project. This is because it would require loans from the World Bank or other international investors, which would bring the country to its knees and drown it in even more debt.
Kassouha's Reflection on the Best Strategy	Kassouha then goes on to compare the methods and reflect on them with the opinions she collected and conducted with 60 people from the city. She then concludes that the best strategy would be #2 with some adjustments, such as commissioning and asking for help from world organizations to restore the heritage sites listed in her thesis. She also insists that Replica City (Strategy #1) and completely demolishing and rebuilding a new city (Strategy #3) are NOT good plans. She believes the best option would be Strategy #2 with some adjustments, which can be described as follows: • Restoration and renovation of the historic sites she mentioned. • Creation of a pedestrian tourist route connecting all the historic sites. • She insists that the city's infrastructure needs to be renewed to avoid traffic problems in the future. • She points out that the unique architectural elements of the city must be implemented in the reconstruction of the new residential areas all around the city of Homs. These elements are those of traditional Arab house architecture. • She sees that this could be done under the supervision of the local authorities with the help of local investors who would provide financial benefits while creating jobs and stimulating the labor market. • Furthermore, she sees that this can be done by exploiting the oil industry in Homs and with the help of international and local stakeholders.

2.7.2 Reflection on Kassouha's Strategies

As part of the ethnographic part of this research, I have my own knowledge of the city, its past and present, thus the following is an evaluation, as an architecture student, on the proposed post-conflict construction strategies.

Table. 5: *Reflection on Kassouha's Strategy #1*

Points of Agreement	• A replica city would not bring back the picturesqueness of the old city, because it is detached from the experience of the people who created it, from their memories and feelings, especially when old building materials are replaced by new ones, as happened before the conflict. • Regarding social isolation, I would like to add that it is equally important to melt away the discrepancies within the social classes as much as possible by providing a variety of multi-budget housing units. • Regarding the World Bank loan, I agree, because World Bank loans have destroyed the economies of several countries, as in Greece. Syria, on the other hand, has huge debts to Russia, Iran, and China that will only collapse the economy more if we borrow more money from the World Bank.
Points of Disagreement	• On the economic aspect, Kassouha is right about the current financial situation in Syria, but she forgets that the plight of Syrians has become a driving national sentiment and people would push to help rebuild their city since it is their big home, so local fundraising and an appeal to international charities might come into play. But not with the help of international investors who have their own agenda with investments that don't necessarily align with the needs and desires of the locals, especially since we are a nation that has long been colonized by foreigners, be it the French or the Ottoman Empire or other former colonizers. • The other point is that we have many highly skilled professionals in Syria and the Arab world, so the external foreign experts would only harm the construction and renovation process even more, as they would bring their expertise that is detached from the local history of the region, and thus would not provide the people with what they really want, but rather what they think the people want, as the French and Polish planners did before in Syria. Local Syrian and Arab experts from the region are the best option as they know the culture best and as locals have the passion for it. This dependence on international stakeholders and investors is not acceptable in my opinion. • As for international investors, I don't think that is a solution either. We can still rebuild with local resources and use local sustainable materials that come from the country's natural resources such as stone, clay and wood. Possibly with the help of international charities and financial support without loans from other countries. Because international investors would only exploit the city's economy to their advantage.

Table. 6: *Reflection on Kassouha's Strategy #2*

Points of Agreement	• On the impact on the urban environment, giving people building materials, as Kassouha says, would lead to chaos in the urban environment, and that is something we have suffered from in the past. We don't want to repeat the mistakes of the past but move forward with a clearer goal of how we want to design our cities, with great consideration of sustainable elements, as the conflict has created a huge carbon footprint that we need to counteract through sustainable design. • As for social isolation, I would agree on this point, as the chaos created by diverse and informal building would only lead to further urban decay and thus social isolation. • In terms of job creation, I agree as a short-term strategy such as this does not consider the long-term effects and consequences and is only temporary, which could actually be harmful to the economy in the long term.
Points of Disagreement	• As for the economic aspect, I cannot understand the economic connection, even if the people of Syria are scattered all over the earth as of now. Because I think the people of Syria deserve to return to a clean environment and not to have to build temporary houses first and then rebuild them again and prolong their suffering many times over. We need to build properly from the start, because temporary housing would consume both resources and effort that can be better put into well-thought-out plans and well-organized execution of those plans. • As for civic indulgence, I tend to disagree with this point in particular, as it leads to urban chaos, like Kassouha's first point. However, indulgence should work not only by providing people with plans for the houses and the materials to build them, but also through workshops to explain how the physically abled can help build them as an organized community effort. The task of planning, organizing, and conducting workshops should be left to the local architects and urban planners and not to the people. International investment would have the lion's share, leading to a staggering increase in property prices suitable only for those who are financially able, leading to further social segregation between rich and poor and increasing social isolation.

Table. 7: *Reflection on Kassouha's Strategy #3*

Points of Agreement	• On the urban level, I agree that this strategy would abuse the historic sites as tourist attractions. Tourism should not come at the expense of the original population. • On the social level, the strategy would definitely increase social inequality. However, it is beneficial to integrate both rich and poor classes in the old city, as the rich would bring their capital and investments to the area and generally provide improvements to the area. However, there should never be gentrification of the old city where the original owners of the property are cut off from their original place. • On an economic level, I agree that this strategy would increase jobs and improve the zoning of the city, however, I disagree with this strategy in general as it erases and regentrifies the city based on economic value, cutting off many of the poorer classes from the central part of the city. • On the source of fund, I agree that World Bank loans would be a financial disaster for the country and drown it in debt, so this strategy is completely out of the question in my opinion.

Proposed Consideration for a Reconstruction Strategy for the Old City

These are points that, from an ethnographic point of view and as a citizen of the city, I believe any future reconstruction strategy for the Old City should take into account in order to truly restore the city's image

From an architectural standpoint:

- Restore all historically significant sites in the Old City, be they mosques, churches, mausoleums, as faithfully as possible, using the same materials from which they were built in the past, to ensure the continuity of the past into the present.
- Restore the city walls and gates as accurately as possible, as suggested by historical evidence.
- Restore the citadel as it was drawn by Louis-François Cassas in 1799, 40 years before its destruction by the army of Ibrahim Pasha in the 1830s. The restored citadel can serve as a museum for the city of Homs while restoring the original image of the city.
- Restore the Arab houses in the old city that can be saved from the rubble and only allow the construction of new houses there that meet certain criteria derived from the elements of the traditional Arab house and the houses that used to prevail in the city.
- The new houses would also have to be built in different varieties so that they are affordable and accessible to all social classes. Also, they should be built from materials that are indigenous to the region as this is more sustainable in the long run and provides thermal comfort in such hot and dry regions.
- Restore all sabats and even build new ones as they are a unique architectural element that is both beautiful and functional, providing shade for the streets and protection from the elements.

From a planning standpoint:

- Mapping the historic city using GIS or other programs and prepare an appropriate plan for the historic district that considers its character and urban fabric.
- The urban fabric in Old City should be protected and all new homes should adhere to the historic urban fabric as it is part of the heritage.
- All car roads should be moved outside the old city and the city should be accessible on foot, bicycles or beasts of burden, as it was in the past, because the introduction of cars in the old city has only done harm to the urban fabric there.

- The old city should contain more services like primary schools and nurseries, health centers to cater more efficiently to the population that will live there.
- The accessibility network for the old city should connect the old city with the surrounding areas using the original gates and roads leading from them.

From an economic/environmental standpoint:

- Most of the funds for the reconstruction of the old city should come from local capital, local fundraising and businesspeople who want to contribute to the reconstruction of the old city.
- International aid organizations are also welcomed to contribute to the reconstruction of the old city.
- Building materials in the old city should only be sourced locally to ensure authenticity and continuity of the past. This will also save the cost of outsourcing the material from an economic point of view.
- Reuse of wreckage and debris from demolition in the old city as building materials. Wreckage of stone or adobe can be used in the old city, concrete outside its vicinity.
- Consider that we should build for the long term and therefore build well from the beginning and not temporary only to be demolished and rebuilt afterwards. Because this makes no sense in the long run, neither economically nor environmentally.

3. Design Proposal

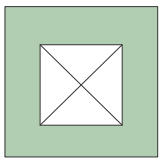
3.1 Designbase, Ideology and Considerations

Design base and ideology	• The work approach should follow the complex method, that is, planning on the scale of the old city, then taking parts as districts, and in the districts, working with the parts that are going to be changed. So, it is broken down into multiple scales. Because we cannot build one housing unit by itself, due of the urban fabric of the city. • The courtyard house is the basic building block for housing in the urban fabric of the old city. • Maintaining privacy is an essential part of the cultural aspect of this area. • Preserving the architectural character of the exterior facades, which are closed to the outside with very few openings. The exterior facades are very simple and do not have much ornamentation other than the alternation of black and white stone. • Maintain urban and architectural scale in both size and height. • Maintain permeability (solid and void) in the city while keeping the same proportions of the old. • Retaining the length of the exterior facades for the estates, even if divided into smaller estates, as this is part of the historic aspect of the city. • Using local materials that were previously used in construction in the area, be it clay or stone. • Upgrading infrastructure and installing power, phone and internet grids in a way that does not ruin the overall image of the city, as well as taking advantage of modern technological advances in infrastructure such as smart cities. • Creating an attractive revitalization plan that attracts investment. • Using technology while employing local material such as stone or clay because it preserves the authenticity of the historic area. Instead of using manual labor, we rely on modern technology to help the building process with the use of local indigenous material. Modern buildings with modern material should not be inserted into the old city because they are not authentic to the true spirit of the place (Genius loci)
Social considerations:	• In the past, the extended family lived in one house and each of the bedrooms was called a house, which was a result of traditional arab houses being very large in size. today, however, this concept is not so popular even in Syria as everyone moves out as soon as they go to university or get married and live separately from their parents. Thus, while keeping within the boundaries of the original estate, we may propose to divide the interior of the estate into smaller modular units, each containing its own small courtyard. • In traditional Arab houses, the qa'a (reception hall), was the largest room in the house. While accommodating guests is an important factor, this is not the most effective use of space for modern people in this fast-paced world as the living areas of the house such as the living room and kitchen should occupy most of the space.

Functional Considerations:	• The proportions of the traditional Arab houses allowed the courtyard to occupy not less than 30% of the total area of the estate, which will be the percentage taken into the designing consideration • In the past, all the rooms were arranged around the courtyard. This is not directly functional as people have to go outside to get to the other rooms in the house, even the bathroom was outside. That would be one of the aspects that would not make people want to live in a house like this if they had to go from their bedroom to the courtyard to get to the bathroom, for example. So as part of the modernization, we're moving the circulation to and from all the rooms from the courtyard to an interior hallway. (add a drawing) • In the past, the kitchen and living room were separate, but in modern construction, the relationship between the two rooms is more interconnected. Therefore, the need for them to be closer together is an important aspect in the modernization of the traditional Arab house. • The functional separation between the day and night zones of the house seems to be an important aspect in the modernization of the Arab house, which would mean that the occupants still have a high degree of privacy.
Economic and socio-economic considerations:	• The introduction of modular construction would make construction costs more economical as the modules would allow for a range of different designs with varying placement of the yard and compartments within the houses. The modular homes would also have a variety of room counts to accommodate different family sizes. • It would also be economically feasible as the development would be divided into smaller lots and this would make the price of the homes more affordable. • Also, the introduction of automation in construction, such as the mud brick machine, which would allow a large quantity of bricks to be produced in a shorter time, as opposed to the traditional methods of making mud bricks. The use of mud bricks would also be very sustainable as they would provide thermal comfort in the houses, and black stone would be used for the facades to protect the mud bricks and create continuity in the facade for the old city. • The old town has become desolate as most people with capital have moved away. The revitalization plan by introducing a modern, comfortable housing concept that merges with the traditional Arab house concept will allow attracting people with capital as it would allow people from all economic backgrounds to live together. This would also allow local people with capital to come and invest in the old city, and thus funding would come from local sources. This would allow economic capital to increase in Old Town and also increase cultural capital through revitalization. This would also lead to a decrease in the gap between the rich and the poor while attracting financial capital that would allow for the improvement of the cultural capital of the city, thus increasing the standard of living in these parts of the city.

3.2 Proposed Typologies:

Based on the previous considerations and literature review, the traditional typology (Type A) allowed the courtyard to be in the middle with all of the rooms surrounding it and the entrance was directly from the courtyard and from there to all the rooms.

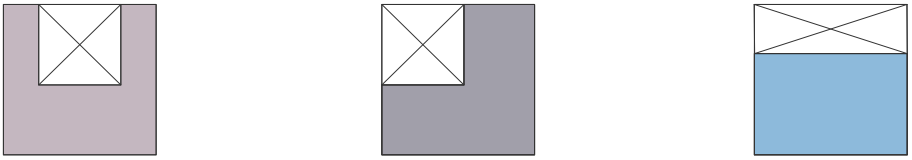


Type A

Figure. 48: *Type A (Source: Author)*

Entrance ----> Courtyard (main circulation channel) ----> Rooms

Thus in order to promote privacy in the proposed modules the circulation channel would have to be transferred into an inner hallway while the courtyard remains as an outdoors space for the family. thus, the position of the courtyard, being central and rooms surrounding it, can be changed into the proposed typologies as follows:



Type B **Type C** **Type D**

Figure. 49: *Type A vs Type B,C and D. (Source: Author)*

Entrance ----> Hallway (main circulation channel) ----> rooms and courtyard

The average living area per person in Syria is 30 square meters. Thus, a family of 4 would need a total living area of 120 square meters excluding the area of the courtyard. if we add the courtyard area which would be 30% added to the living area we would have a total house area of around 160 square meters for an average household of four people. If we have a plot in the urban fabric that is around 400m2 and we divide it into smaller 2 or there then each unit would have around 150 m2.

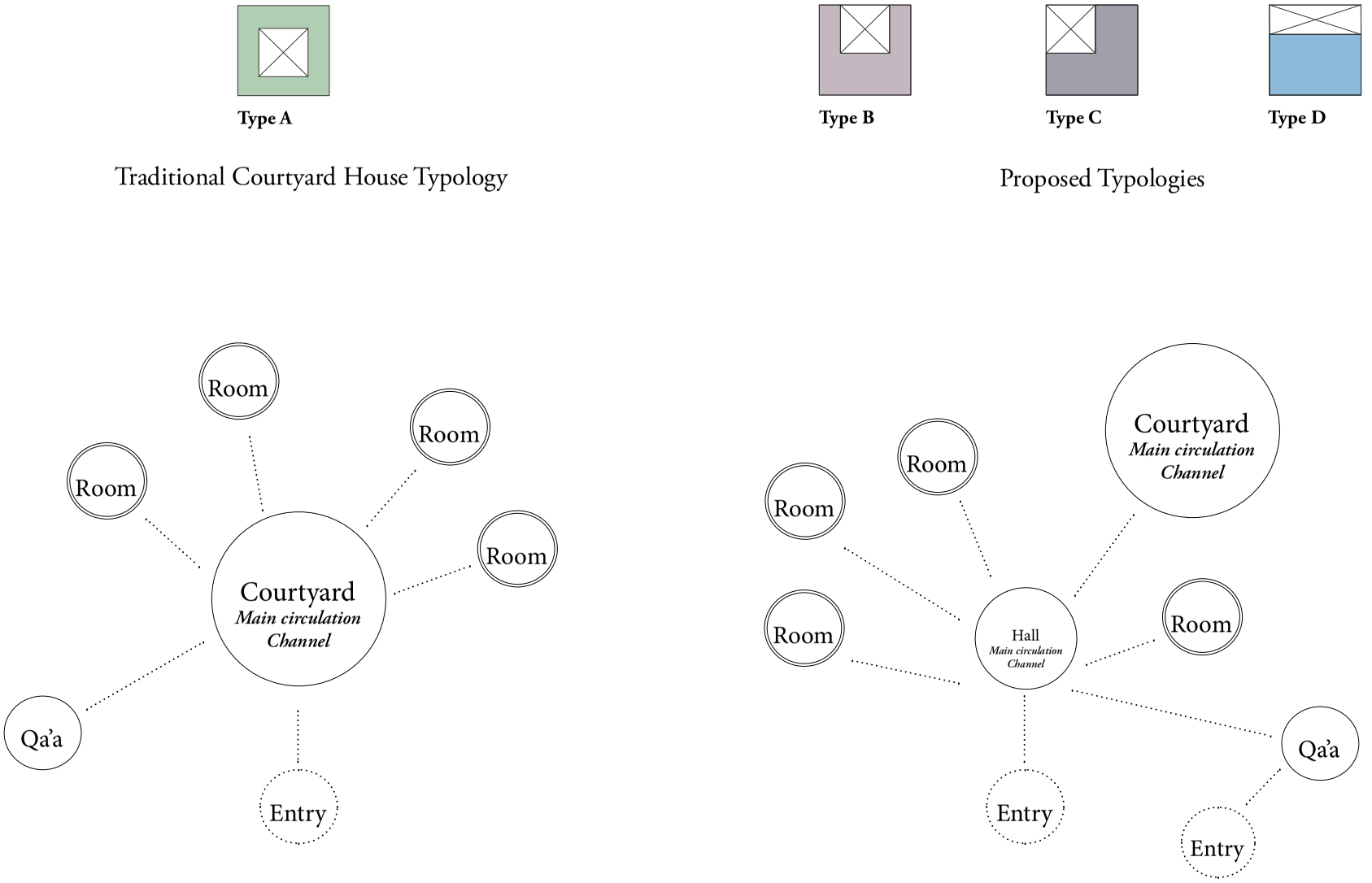


Figure. 50: *As a Response to functional considerations such as Circulation and Privacy*

3.3 Chosen Site

Al Warsha resiential quarter is Located in Bab Tadmur, *Palmyra Gate*, which has alot of heritage buildings such as Al-Zehrawi Palace, Mufid Al Amin Palace, Alsiraj Mosque and Al-Siraj Hammam. It also contains many houses of historic importance. It includes a couple of renovated courtyard houses that were merged together into a hotel/resturant complex named after the Empress-Julia Domna. The residential quarter has been savagely destoryed therefore was chosen as a possible location for the revitalization process. Alwarsha population density is 1583 per Hectare.

Figure. 51: *Al-Warsha Neighbourhood (Source: Facebook)*

Figure. 52: *Chosen Site (Source:Author)*

3.4 Grouping of Typologies

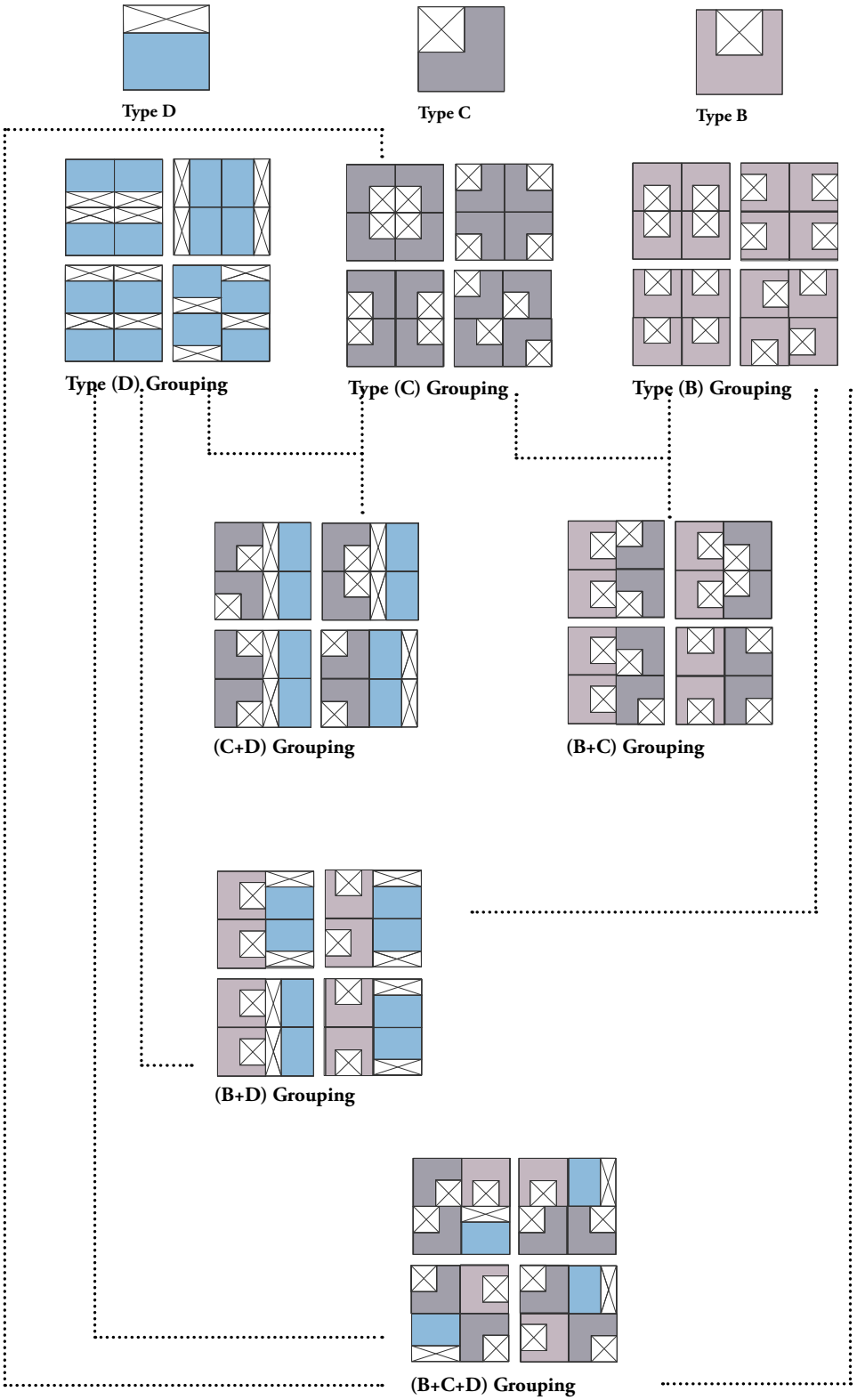


Figure. 53: *Typologies and their grouping (Source: Author)*

Reflection on the Grouping of Typologies:

The various groupings are intended to create a variation of housing in the urban fabric to interact with the traditional spontaneous urban fabric. For example, if we look at **grouping type (C)** where all the courtyards face each other, they create a larger gap in the urban fabric, but on a human level, this would not make much difference in how people experience the space or the thermal comfort. This is because the climatic conditions are the same throughout the city and the orientation of the houses would not create much difference in the climatic conditions within the houses. Therefore, the different grouping would be beneficial to create variations of houses that interact with the traditional urban fabric in a more authentic way. also the modules can be scaled to be bigger or smaller to accomodate to the various social classes in the city and be economically feasable for all classes.

The urban fabric of historic Arab cities is very spontaneous by nature, and when we put a lot of regulating lines, we change the character of the city. When I grouped them, I was concerned with preserving the character while combining tradition with modernity. When I set the modules, I tried to subdivide the lots. The use of modules happened to make it more feasible from both an economic and building perspective. Finally, I didn't want a very regular form because regularity clashes with the spontaneity of the traditional urban fabric.

The use of a modular design was also suggested to achieve feasible volumes for the houses and improve their functionality. It was simply not possible to group these modules in an organized manner, as seen in **Figure 54**, because of the spontaneous urban fabric of the old city. So the typology has both the organized and the spontaneous features. This is something that cannot be easily achieved to find the best solution for these areas.

3.5 Existing Site

Figure. 54: *Current Site (before destruction, as most of these buildings are severly damaged in the conflict)*

3.6 Proposed Site

Figure. 55: *Proposed Housing Units and Services*

3.7 Proposed Plans for the various Typologies

As I mentioned in my **design ideology and social considerations** how I brought the various elements into the new design, the most important component in the Arab house is the courtyard, which is open to the inside and closed to the outside. I placed the entrance for the guest rooms from the outside to maintain the privacy of the residents in the house, and added a mashrabiya to the guest rooms. I have also kept the twisted entrance (Dihleez) in all the designs to maintain the privacy of the residents. Thus, guests would enter through a separate entrance while the family would have their own entrance. As a typical observation of traditional Arab houses would also show, they are open on the inside and closed on the outside. This means that the houses have very few openings to the outside, apart from the mashrabiya and very small windows, but all larger windows and openings tend to face the courtyard, also to ensure privacy.

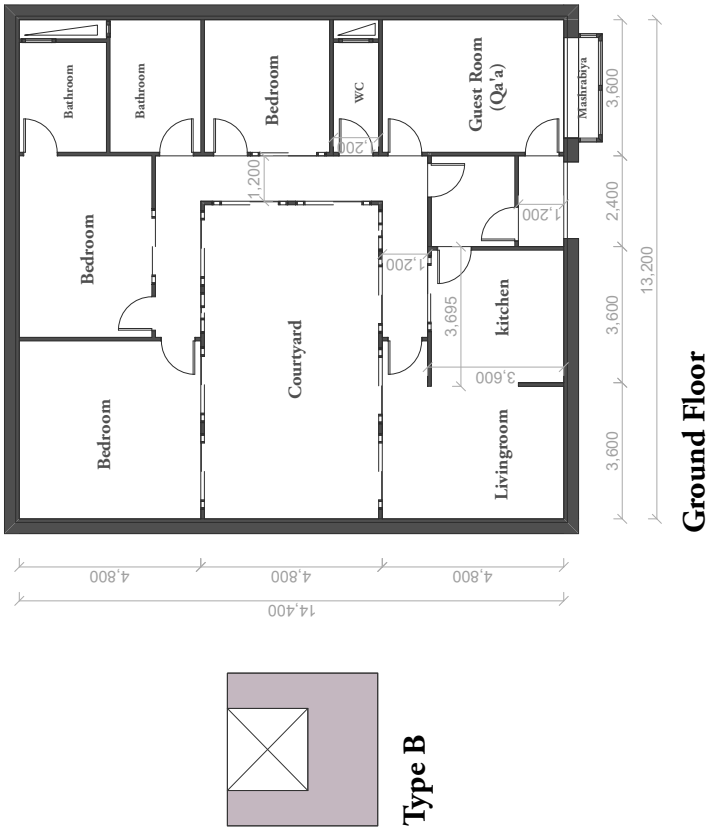


Figure. 56: *Type B (source: Author)*

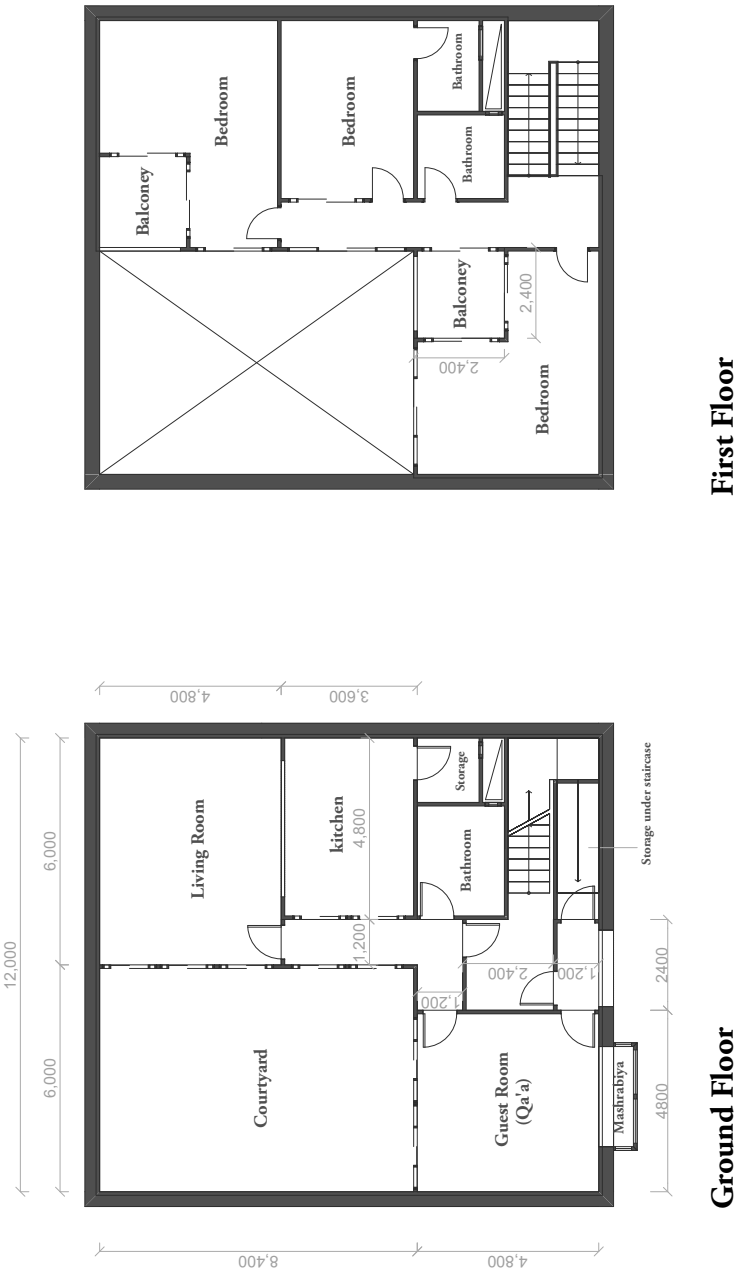


Figure. 57: *Type C (source: Author)*

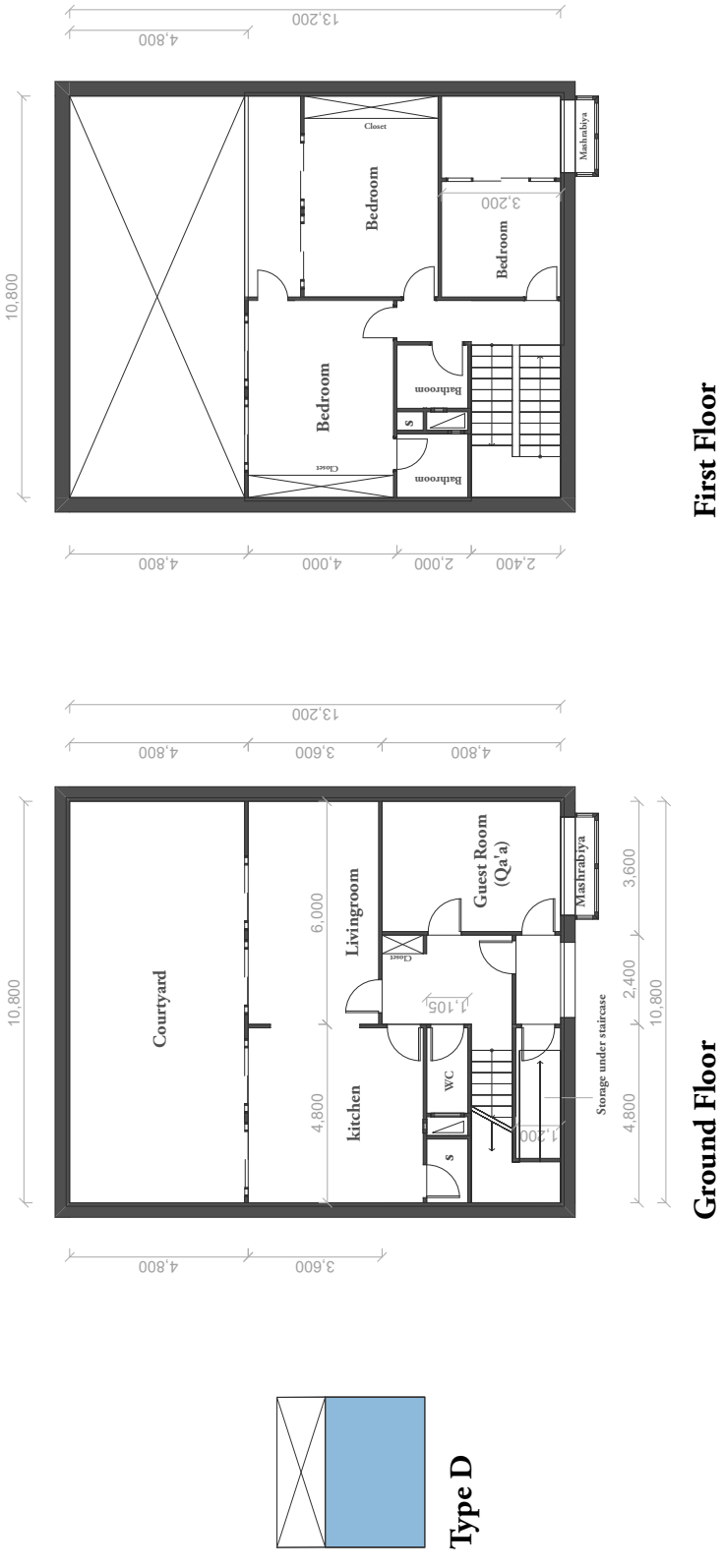


Figure. 58: *Type D (Source: Author)*

3.8 Sketches

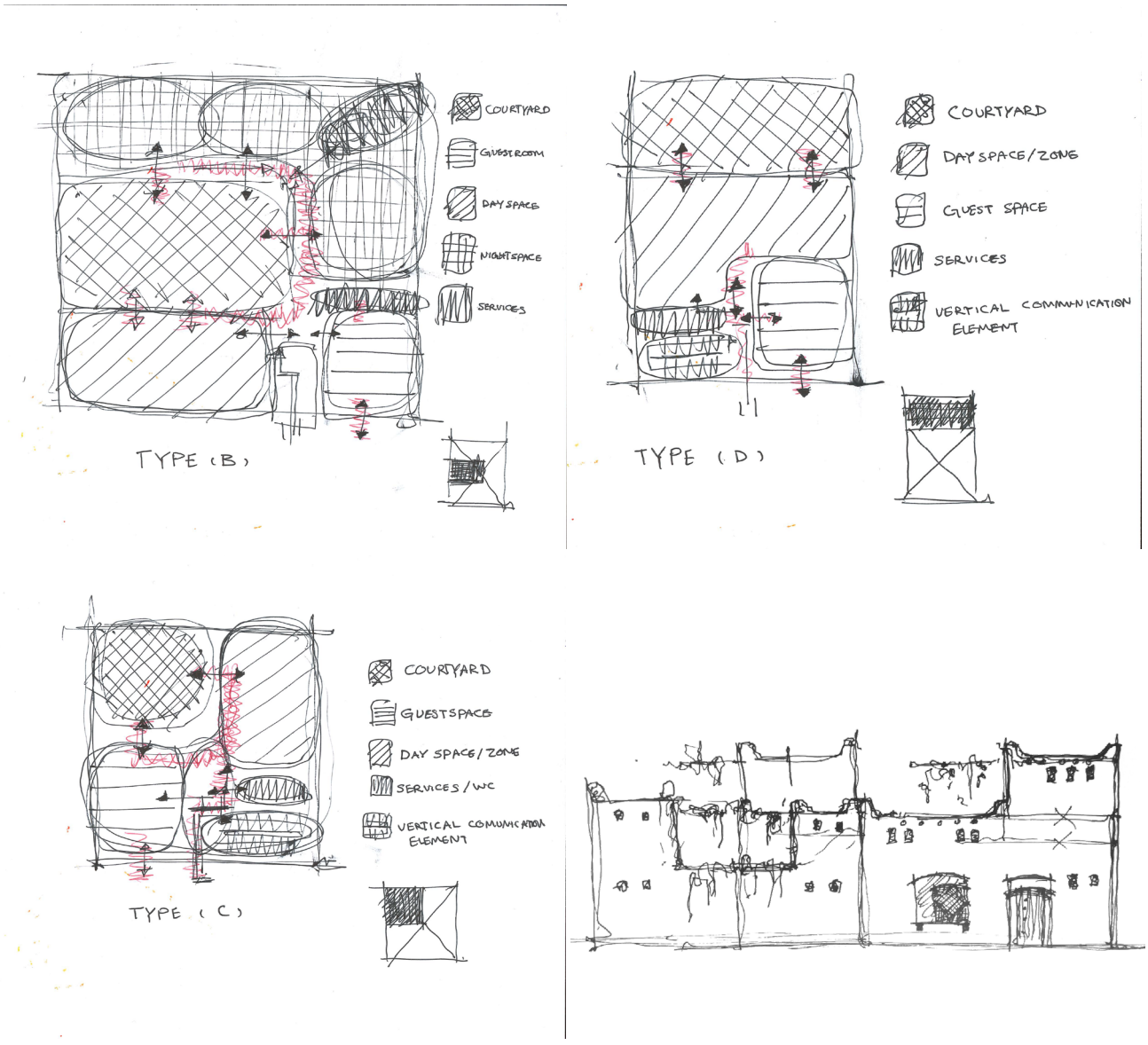


Figure. 59: *Sketches (Source:Author)*

3.9 Roles of Various Actors in the revitalisation process

At the individual level: there needs to be more awareness of the importance of the old city and its listed architecture.

At the Community level: the community should raise collective funds to help restore the city. Syrian businessmen/women should also help finance the revitalization process as they have the financial means that would enable and even speed up the revitalization process. People who are physically-abled can also volunteer to participate in the construction process to help restore the city with their own hands.

At the government level: the government needs to help raise people's awareness and set up workshops to educate residents about the importance of the old city. Also, the government should entrust the municipality with the task of creating new organisational plans and a new building code, as the old building code had so many problems that are not in line with international guidelines for the protection of historic cities and cities of heritage.

At the International organisations level: the international organisations can help with donations and funds to help restore the old city because of its historical significance. Also, conduct workshops to train volunteers on how to help rebuild the old city. Workshops can be conducted in collaboration with local architects and planners.

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5. Appendix

5.1 Building and Construction code for the Old Homs city. (V.1997)

Translated from Arabic. Source: (Harshouf et al., 2007)

Article (I)

Article I provides definitions of the following terms:

- **The Old City:** is the area bounded by the old walls of Homs according to the attached scheme.
- **The archaeological property:** is this property that holds the archaeological character under decisions issued by the authorities and according to the assets. Heritage buildings and sites are those which contain distinctive buildings which are certified by a resolution issued by the respective authorities.
- **The Courtyard:** is part of the property which provide ventilation and lighting for certain parts of that building.
- **An organization plan**: is a plan that shows the paths of streets, sidewalks, squares, parks and the boundaries of an authenticated organization.
- **The committee for the protection of the Old City**: is the committee formed by the decision of the Prime Minister No. 85 dated 25/6/1990
- **A map of urban objects:** is a chart in which the lines of certified regulation and urban requirements are defined.

Article (II)

- It is strictly forbidden to settle irregularities in the Old City of all kinds and subject to demolition and the limits of real estate according to real estate plans after the application of the regulation line are the limits of the property provided that the area of the property is not less than 75 square meters.
- A property with an area greater than 400 square meters may be divided into several subdivisions, with the area of one subdivision not less than 200 square meters.
- Adjacent properties may be merged to obtain a single property after indicating the reasons for the merger.
- Upon completion of an existing building and according to the licenses granted before the issuance of this system allows to complete the construction of the property and according to the foundations of the previous license with compliance with the number of floors and the construction rates specified in this system.
- Basalt black stone should be introduced in the construction of the facades of the Old area

of Homs, overlooking the main streets and the inner courtyards.

- The general provisions stipulated the prior approval granted by the Protection Committee on licenses of all kinds in the Old City, as well as its prior approval of the architectural façades to be built, and the system also gave the protection committee the right to preserve architectural or decorative parts or elements and the like, and As for the restoration of heritage properties, in reality, I was given the right to supervise with the competent authorities in the city council.

Article III

Article III of the Old City Building code divided the architectural objects into three categories.

- Archaeological areas and buildings where demolition and construction are prohibited Only Restoration is permitted upon prior approval by and under the supervision of the Directorate of antiquities and museums.
- Heritage areas and buildings to be preserved by preventing demolition and construction The use of these buildings is allowed for residential, cultural, educational, tourist, traditional crafts and commercial purposes only related to traditional products and the change of the construction function from one of the above functions is subject to prior approval by the Old City Protection Committee and other concerned parties.
- Areas where demolition and reconstruction are permitted
    - A: Residential areas are allowed to demolish and rebuild in these areas according to the following conditions:
        - The construction of these properties allows for 70% seventy per cent of the entire building area and leaves the rest of the area, which is 30% thirty per cent, as a single courtyard, which may not be divided into more than one courtyard, except in real estate with an area of more than 400 square meters, where the courtyard may be divided, provided that the area of a single courtyard is not less than 45 square meters.in any case, the smallest dimension of the courtyard must not be less than one third of the larger dimension. if a skylight is required to ventilate, these skylights are calculated from the origin of the building area and determined their dimensions, according to the general construction officer Certified System.
        - Two floors with a height of 8.5 M are allowed for properties with streets less

than 6 m wide and non-window entrances and three floors with a height of 12 m for properties with streets 6 m wide and above.

- Shops are allowed to open on the ground floor in properties overlooking streets 6 m wide and above.

- B: Commercial areas are allowed to demolish and rebuild and in accordance with the conditions stated in Paragraph (1), all floors are to be used for commercial purposes, and the internal shops are served by the internal courtyard on the ground floor and the shops on the first and second floors are served by a hallway surrounding the internal courtyard calculated from the total area of the property while it is not premitted to be less than 2.5m in width.
- C: Buildings adjacent or connected to archaeological and heritage buildings are allowed to be demolished and rebuilt under the following conditions:
  - 1: The building code applies to the area in which they are located.
  - 2: The interior and exterior facades and the height of the building are studied in harmony with the neighborhood archaeological heritage builldings.
  - 3: This study is subject to the approval of the committee for the protection of the Old City and is carried out under the supervision of the Directorate of antiquities and museums (if the property is adjacent to an archaeological heritage building).
- D: Public buildings such as schools, administrative, cultural, religious and similar public buildings are subject to detailed studies taking into account the nature of the area and its height and the adjacent archaeological buildings if found and are subject to the approval of the committee for the protection of the Old City and the concerned authorities of the city council.

- Crafts which can be exercised in shops must be authorized by the decision of the executive office as to make sure of its consistency with the regulations and laws in force in this regard.
- Residential floors may be used for services such as (doctors, engineers, lawyers, offices for tourist purposes, and professions of intellect) after approval by the committee for the protection of the Old City and the concerned authorities of the city council.