



AMERICAN UNIVERSITY OF BEIRUT

RE-CONCEPTUALIZATION OF PERI-URBAN  
AGRICULTURAL LANDSCAPES IN TRANSITION  
THE CASE OF BARADA RIVER AT THE EASTERN  
ENTRANCE OF DAMASCUS

by

MOHAMMED MAHER MAMOUN ALREZ

A thesis  
submitted in partial fulfillment of the requirements  
for the degree of Master in Urban Design  
to the Department of Architecture and Design  
of the Faculty of Engineering and Architecture  
at the American University of Beirut

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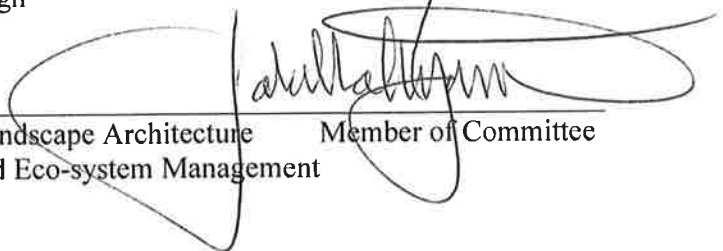
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# CHAPTER 1

## INTRODUCTION

### **Keywords:**

Ecological corridor, Landscape urbanism, Green network, Landscape ecology, Urban sustainability, Green corridor, Urban ecologies, Ecological landscape.

### **1.1. Problem Definition:**

During the modern period, most rivers in urban contexts have been tackled only from a technical perspective for different reasons: from ecological elements to a technical mode of flow which is usually used as a part of the water cycle or even the sewage system and rarely as a part of the transportation system. The physical configuration of the rivers is being dramatically affected by insensitive interventions which change, reconstruct or even pave the water beds of these rivers. These abrupt interventions shape the rivers as a source of water, air and scenery pollution.

Barada River in Damascus, the vibrant artery of the city and a vital reason behind its development, reflects these dramatic changes. It is not only the element around which Damascene people built their homes but also their daily life and memory. Its landscape scenery was deeply rooted in their culture through songs, poetry and literature. Moreover, Barada is the main source of irrigation water for Al Ghouta which is the rural context surrounding Damascus and the context of its food production.

However, the interventions which have taken place on the river's valley during the modern period have dramatically affected the way the river was used and perceived: the interventions turned the river from a water ecology integrated in the old city's urban fabric as a source of life for its residents, and a main element of identity and landscape heritage, into a water channel serving as a technical infrastructure. Moreover, the reduced water flow of Barada forced people in the countryside to minimize their agricultural activities and invest real estate. Al Ghouta started to shrink.

The latest planning study for Damascus master plan 2030 had addressed this problematic and proposed revitalizing Barada as an ecological corridor throughout the city. The thesis will build on this strategy while using Barada as a green corridor and as a catalyst for the creation of new ecologically sensitive urban forms on its eastern surroundings. This new form of urbanism would help to re-define the concept of Al-Ghouta in a way that serves the needs of the future.

Using design as a testing tool and exploring boundaries between disciplines, this thesis seeks to provide the needed tools and strategies for the creation of a balance between urbanity and nature. It seeks to investigate the role of Barada as a catalyst using Landscape Urbanism as a contemporary urban design approach. This approach needs first to be defined and then tested on our region's urban contexts placing the region hence on the map of contemporary urban design theories.



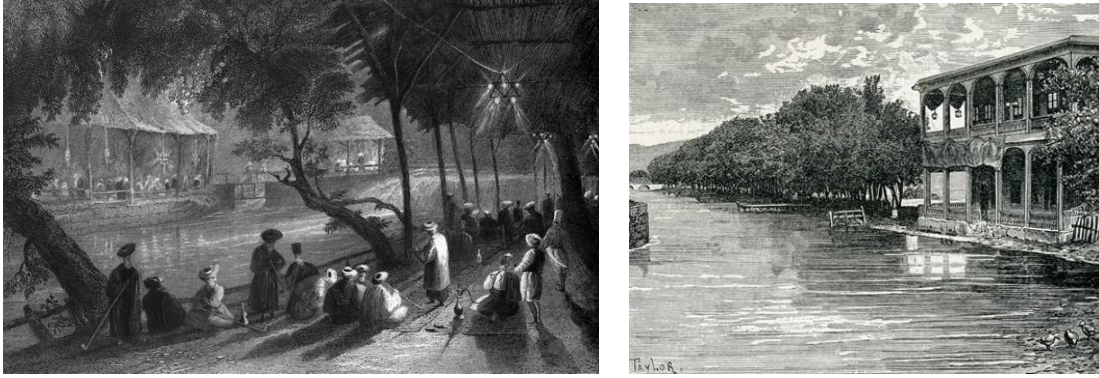


Figure 1.1: Old Photos showing Barada River (Anon, 2015)



Figure 1.2: Photos showing Barada River during the Ottoman and the Modern periods (Anon, 2015)

The latest planning study, Damascus master plan 2030 by Khatib & Alami (K&A), has tackled Barada from an ecological landscape perspective and re-conceptualized it as an ecological corridor and a connector for the proposed green network throughout the city and its natural context. In this study, three identities were

defined along Barada: the natural, the urban and the rural identity (Figure 1.3). First, the natural identity is clear in the western part of Barada, where the river turned into a recreational feature surrounded by a mountainous natural context with some light structures on its sides. Second, the urban identity starts when the river crosses the city's urban context where it turns into a green corridor. Third, the rural identity is read through Al Ghouta in the eastern zone of the city. The thesis will build on the proposed strategy to revitalize Barada as a green corridor throughout the city, focusing on its eastern side characterized by its rural identity.

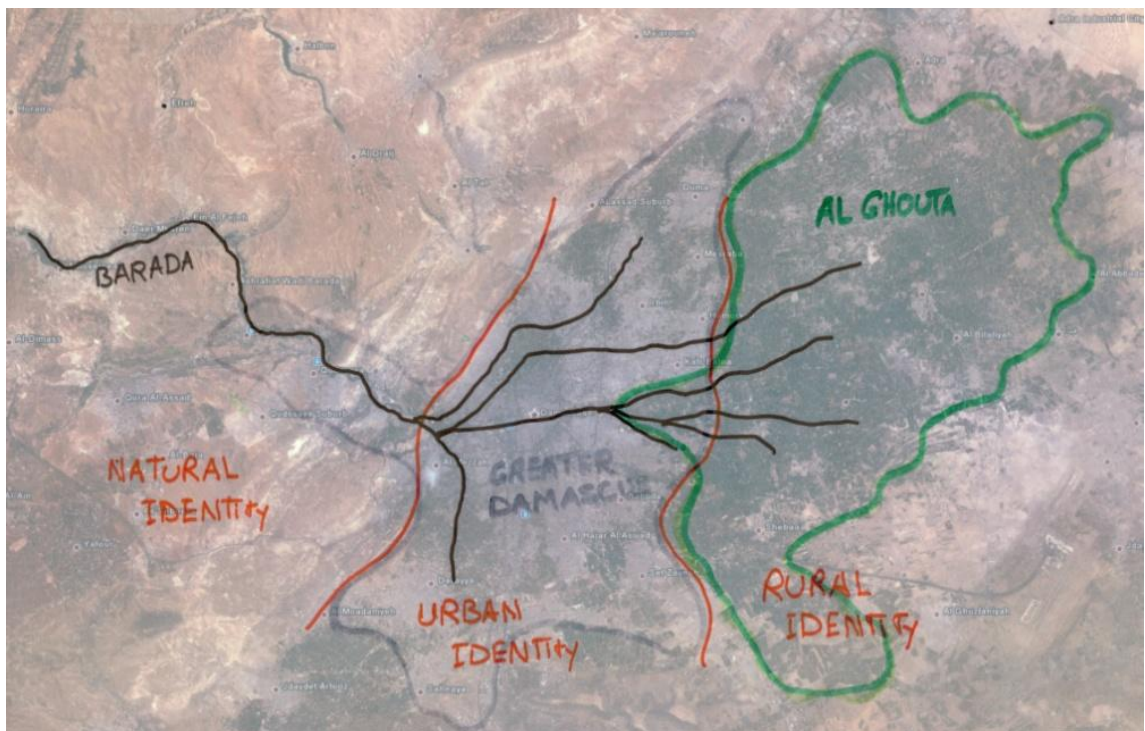


Figure 1.3: synthetic mapping for Barada's different identities (composed by author based on DM 2030)

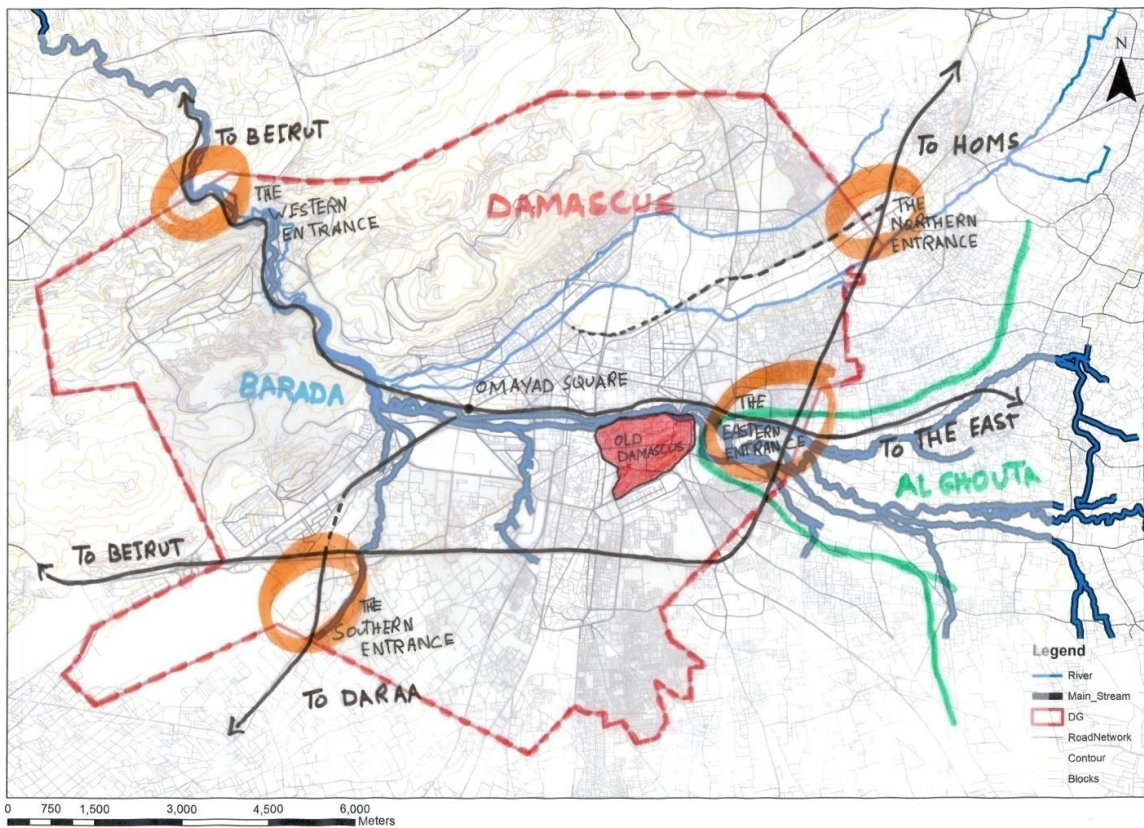


Figure 1.4: synthetic mapping shows the four entrances of Damascus (prepared by author)

The criteria behind choosing the river's eastern side are derived from the ecological, the physical and the political dimensions of the area. The first criterion is the intersection between the urban and the rural identities that were created by a polycentric urbanization pattern. Due to an administrative and political domination of the center, these distinct identities are being gradually lost. The second criterion is the fact that this site acts as an entrance amongst three other entrances for Damascus, the capital which extends beyond its geographical limit to act on national, regional and global scales (figure 1.4). The third criterion is the gentrification process invading Damascus's countryside and hence the site's rural lands. The fourth criterion is the physical break between the city and its surrounding natural context which materializes in the selected site acting as a peri-urban transitional zone (figure 1.5). The site is still considered as

suburban for the old city while it holds potentials to be part of new central Damascus. The fifth and last criterion is the physical, social and natural damages provoked by the current war.

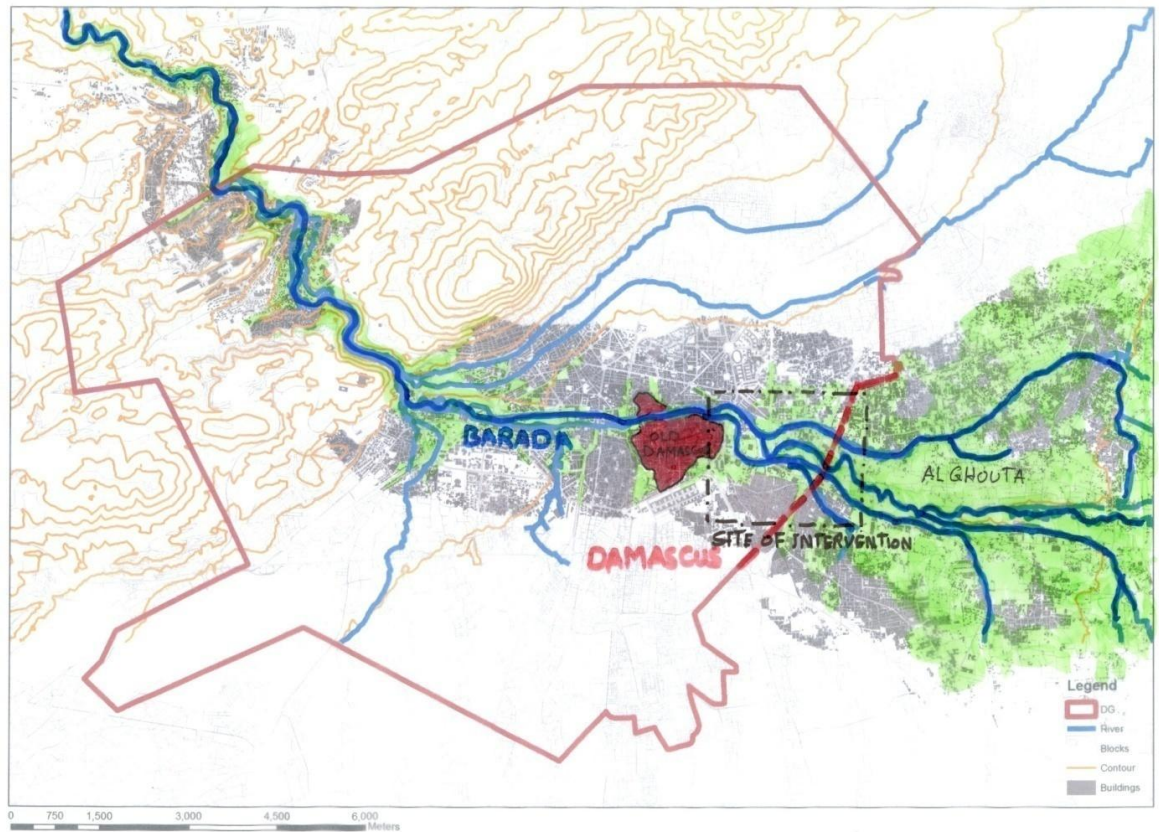


Figure 1.5: synthetic mapping shows the proposed site of intervention in relation to the city and its landscape features

(prepared by author)



Figure 1.6: An aerial photograph for the site of intervention

The thesis builds on the problematic defined by Damascus Master Plan 2030 at a city scale: Loss of identity, Lack of green open spaces, lack of connectivity between open spaces, and pollution.

The loss of identity materializes with the merging of the rural and urban contexts. Tracing the chronological expansion of Damascus's urbanity throughout the history, one deduces an atypical narrative for a city's growth. In fact, the city and its surrounding towns have grown separately while preserving each their identities until they merged as one entity; as opposed to other cities which usually grow while absorbing their surrounding towns (figure 1.7). It is the dilemma of Damascus as a city that grew from the center but at the same time the peripheries were also growing absorbing its countryside.

The lack of green spaces and their connectivity was accentuated with the gentrification of Damascus countryside, Al Ghouta. People lost the ability to gain their

income from agricultural activities and turned their interest into real-estate investments. This was due to administrative regulations i.e. forbidding farmers from using the river's water for irrigation, which had negative impacts on several economic sectors.

Consequently, and taking into consideration the current war, its physical, social and economic impacts, as well as the role that Damascus is going to play after the war; the city and its countryside need to be re-identified.

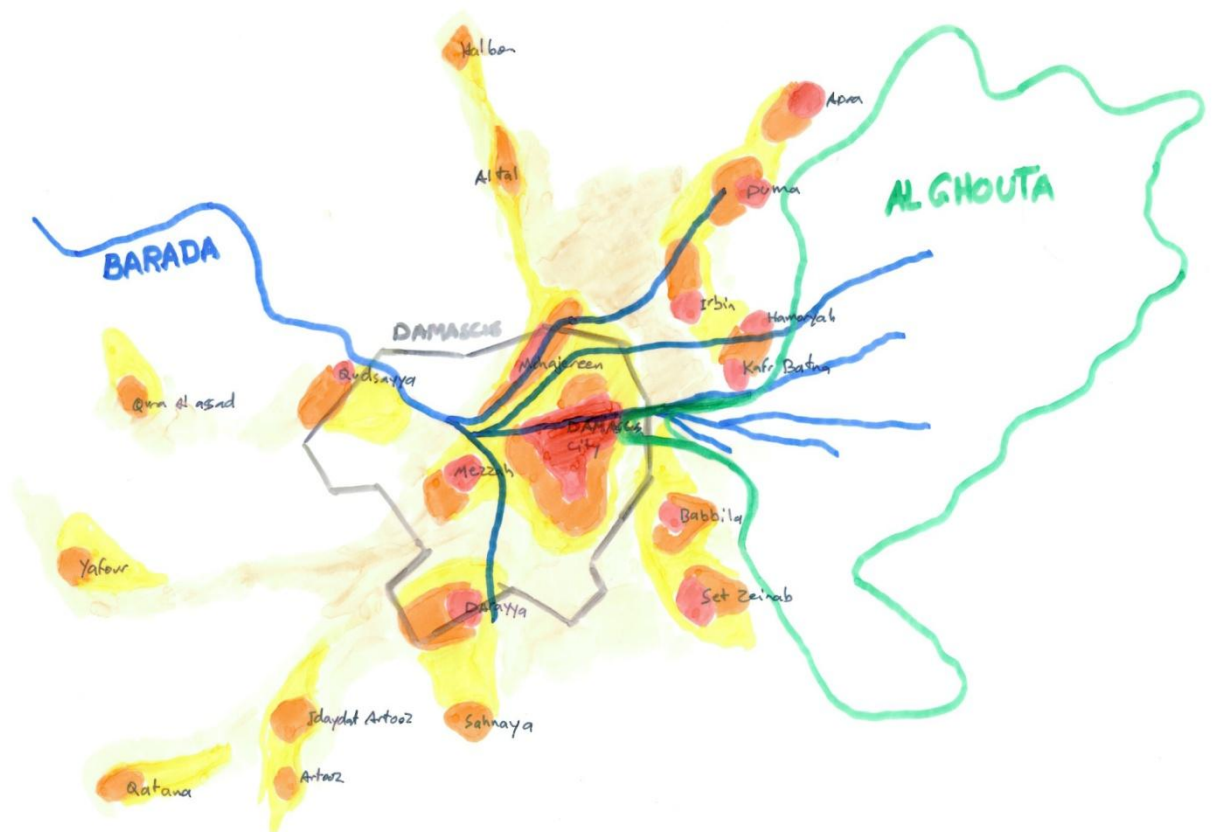


Figure 1.7: synthetic mapping shows the chronological urban sprawl of Damascus and its surrounding towns

(Prepared by author)

Learning from this and adding to it, this thesis defines three main issues. First, while the master plan has tackled Barada from a longitudinal perspective, I will be

tackling it from a transversal perspective that includes its surrounding urban context. Secondly, while the master plan dealt with the city from a regional planning perspective looking for implementable strategies to be applied, I will be dealing with the city from an urban design perspective. This approach will focus on a site of intervention to be developed as a conceptual model used for further study or replication all around Damascus in the future. Using design as a testing tool would open the door for an experimental process which may come up with creative concepts to be applied. Third, the approach seeks to add the peri-urban identity of Barada as a new form of identity, in order to integrate its urban and rural identities and solve the physical break issue.

In consequence, the problematic that the thesis aims to tackle is first the continuity of the revitalized Barada as a green corridor throughout the city, and second the proposed strategy for the preservation of Al Ghouta needs to be evaluated and developed. This will start by developing the concept of Al Ghouta that needs to be adapted to respond to current needs and then to be injected where there is an opportunity for its injection preserving the green within the city and creating more green open spaces. It would be achieved by using Barada as a catalyst for the creation of new ecologically sensitive urban forms that allow generating more green areas. These new urban forms are characterized by the balance they can achieve between urbanity and nature, and the new modes of productions and experiences they can induce within their settings. Learning from this site and replicating the flexible proposal in other sites, with the needed change for its parameters, would empower and even create different identities.

## **1.2. Research Question and Hypothesis:**

Taking into consideration the limited accessibility to the site, availability of information and time and uncertainty, the question that arises hence is how could I come up with a feasible conceptual model to guide possible development in the future in a way that protects the city's vital green space and responds to the growth pressure? Answering this question would be a reflection from an urban designer on the possibilities of the future in a site that is neglected throughout history and ravaged by war. I will be imagining a site for the future rather than reading a site for the past, doing plausibility design rather than a final design. The outcome would provide the needed conceptual model for intervening in two directions. The first focuses on the spatial continuity of Barada as a green corridor using the publicly owned lands along its sides to provide green open spaces that are connected to the green network proposed by Damascus master plan 2030. It analyzes the spatial possibilities of river ecology to work again. The second focuses on designing contexts that have the balance between urbanity and nature taking into consideration the political, cultural and the natural dimensions. The proposed urban forms should allow for the mitigation between different existing typologies with the river landscape creating parameters that could be changed to allow for replication in other sites. this could provide the needed flexible strategies and processes as a first step towards re-building the relationship between Damascus and its countryside after the war, and an example for urban regeneration of the rivers and its surrounding urban contexts of cities in our region which have a rich multilayered urban and landscape heritage. I will read the site as a border between two visions of the city; an urban central political vision, and the vision of the towns surrounding Damascus pretending their own identity and culture. What I will give is allowing the two visions to



come together and opening the door for negotiation of two political realities. It will open up a different way of negotiation at different layers within the city.

### **1.3. Thesis objectives and significance:**

The aim of this thesis is to explore solutions for the regeneration of Barada River and its surrounding urban context at the eastern entrance of Damascus in a way that fulfills the following goals:

#### ***1- To Revitalize***

The river needs to be revitalized first in terms of its water flow. I will be building on that the river's water flow could be revitalized taking into consideration the proposed strategies by Damascus master plan 2030 which covered the water bed of Barada. This revitalization process will boost the economy through the reactivation of its agricultural and recreational sectors. It will provide the tools to create the suitable economical setup that supports the following: preserving the urban and landscape heritage of the valley; Re-producing the landscape scenery of the river as a green corridor; providing more green open spaces for the residents of Damascus; enhancing the connectivity between the elements of the site and the green network proposed by Damascus master plan 2030; And finally providing healthier environment which filtrates the water and scenery pollution caused by the modern interventions.

#### ***2-To Reconfigure and Inject:***

The concept of Al Ghouta will be studied, adapted and injected in a way that serves the needs of the future. This concept will be analyzed throughout the history while highlighting its evolution in relation to the cultural, economic and natural contexts

of the urban and rural areas. Based on that, the selected eastern site will be studied, showing how the river could act as a catalyst for the injection of Al Ghouta concept throughout the surrounding urban contexts, as the main source of irrigation water for the proposed green areas. The injection will occur through creating new urban forms integrating the urban and the natural components and creating a balance between them. As opposed to the current rigid, static and unhealthy urban contexts perceived from an ecologically sensitive perspective, the new urban contexts must be interactive, flexible, complex and integrative.

Replicating proposal in other similar sites in around Damascus, changing its parameters to suite each case, will create new modes of production that could help to decentralize the power of the center and provide opportunities for the surrounding towns. This would encourage people in the countryside to return to their agricultural activities which would decrease the gentrification of Al Ghouta.

The significance of this research materializes with the following. First is to expose readers to the concept of landscape urbanism. Second is to test rivers as catalysts for the creation of new kinds of urbanism. Third is to explore boundaries between the disciplines of architecture, urban design, urban planning and landscape architecture. And forth is to promote a reconciliatory approach in a war torn city, to preserve its nature and to protect its ecological corridor.

#### **1.4. Methodology:**

I will start by a historical overview for the site's context. This will explain the relationship between Damascus, Barada and Al Ghouta. Then I will describe the current situation and explain the current war circumstances. Covering the proposed and ongoing

projects and criticizing them will help me to extract their general strategies and tools. I define two methods that structure the pre-design phase: library research and the site investigation. The library research will help me build a historical review of the city of Damascus mainly in relation to Barada and Al Ghouta during different periods i.e. the Islamic, the Ottoman and the French mandate periods. In addition, library research will expose the current legal status of the city's cultural and natural contexts. All planning attempts which affected the site of intervention will be covered including the last ongoing study of Damascus master plan 2030 and the project of Japan International Cooperation Agency (JICA) in Damascus. Since the data is confidential, I will base my research on some interviews beside a few published articles i.e. the study written by Martina Juvara, lead of urban design team of Damascus master plan 2030.

The second method of research is the fieldwork and site investigations, in order to define the main stakeholders and the role of other key participants. Conducting meetings, interviews with stakeholders and surveys will help learning more about their interests and visions. However, and due to the war hard circumstances in Syria, the interviews will be held in Beirut and/or by using Skype or other similar applications allowing contact with insiders. In addition, social networks such as facebook, twitter and diverse blogs would assist the 'fieldwork'.

Then I will be reading the site's features based on its ecological, social, physical and economic dimensions. In this phase, three different components will be highlighted. The first component tackles the socio-economic dimension of the site. The second component highlights the built up urban features like the exiting surrounding urban fabrics, the old city fabric and the existing structure of the site. The third component highlights the open landscape features which are the river channels and the Ghouta for a

perception and valuation of the landscape. Mapping the site area will be the next stage in order to visualize the collected data as intersected layers for analyzing the site. This will add a layer of spatial understanding for the river ecology and its surrounding. I will be using the GIS system as an effective tool to do the needed analysis and maps. Taking into consideration the shortage in information due to the current war, I will collect the needed data based on other students' previous works.

After reading the site and mapping its features, the next phase will be about writing the site. I move to the Design phase starting with the analysis of the obtained data, testing the selection criteria against data, developing a vision, design strategy and evaluating the final design strategy in relation to set objectives. Synthetic mapping will be essential at this phase in order to understand the physical, political, economic and environmental challenges that are facing the site of intervention. The analysis must guide to developing strategies and tools to be used. Hence, a new master plan that provides a flexible framework with its needed instruments and institutional framework will be developed.

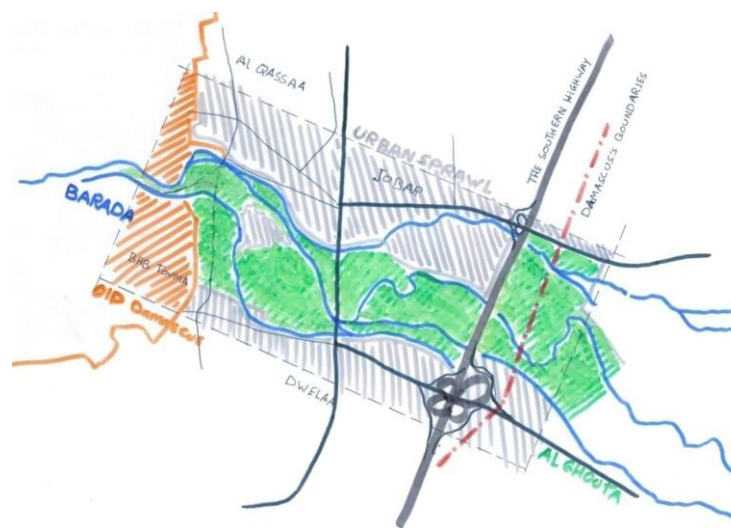


Figure 1.8: Synthetic mapping shows the site boundaries depending on its landscape and urban design features

## 1.5. Thesis Approach:

The thesis deals with all key issues of urban design but not equally in terms of importance. Starting from the **civic space** defined as the social space that is generally open and accessible to people; given that one of main objectives of this research is to provide more green open spaces for Damascus's residents. **Identity** defined as the meaning and significance of places for their inhabitants and users, is the second issue the thesis deals with given that it seeks to help in reshaping the identities of the city and its countryside. The thesis addresses **Infrastructure** given that the river is a part of an infrastructural system that shapes the city and its countryside and that it deals with infrastructural breaks within the site. The thesis addresses **private development** as an outcome of the urban regeneration process occurring mostly on privately owned lands. Finally, the thesis addresses **Ecology** since it deals with the spatial continuity of the proposed green corridor and seeks for the creation of ecologically sensitive urbanism.

Having defined the open landscape features of the selected site, which are Barada and Al Ghouta; and having defined the built up urban features, which are the old city's urban fabric, the crossing highway and the gentrification process of Al Ghouta; the need of using landscape urbanism as an approach is hence evident. Using it is an attempt to explore a design approach that integrates the organic process into a planning pre-design process. It allows for the needed spatial configuration of the river landscape looking for opportunities within the existing to enhance the quality of open spaces and landscapes and to build mitigation factors between the built form and the river landscape. It deals with the spatial framework in a way that opens the door for ecological recovery.

Using design as a testing tool, the thesis applies Landscape Urbanism as an approach. It is an approach that aims to create new urban forms that are sympathetic to the natural heritage, aware, sensitive and responsive to their surroundings. This approach will tackle the river and its surrounding urban context as one entity, providing the needed strategies to be tested on urban contexts in our region.

The theoretical understanding of landscape urbanism starts from understanding two key terms namely landscape and urbanism. The first term is more critical and needs to be defined. Landscapes are “the byproduct of human adaptation of natural settings for the purpose of securing shelter, food and /or for pleasure” (Makhzoumi 1999). They are the land mosaics that could be defined by three spatial attributes which are patches, corridors and matrix. In that sense, landscapes mean both “the product” which is the tangible physicality and “the production” which is the social and cultural perception of this physicality (Makhzoumi 2012).

The approach of Landscape Urbanism will be explained in terms of its origins, its meaning and its relation to the selected site. First, I aim to describe the concept behind the creation of the approach. Then I will be describing its ecological and infrastructural bias. For a deeper understanding of the approach, case studies are elaborated on i.e. OMA’s proposal for Drownview Park competition, Staten Island study, the Mississippi Studio, Peter Eisenman’s proposal for Rebstockpark project and Longgang city project.

I will also mention two studies that have a kind of a conceptual and/or visual link with the subject. The first is the study done by BIG for an urban design competition in France for the design of new sustainable urban forms (figures 1.11); and an urban design study elaborated in a workshop at the American University of Beirut, which

tackled the infrastructural breaks in dense urban fabrics and ways of re-envisioning them (figures 1.12).



Figure 1.9: Photos showing the urban design study done by BIG (Big.dk, 2015)

During the workshop, I re-conceptualized the infrastructural break as a catalyst for the creation of ecologically sensitive urbanism. Using the same line of thoughts, I was inspired to deploy the linear elements cutting the urban fabric as catalysts for the regeneration of their surroundings. These elements could be considered as opportunities for regenerating cities and creating more sustainable, integrative and interactive environments. From this perspective, I thought about rivers - one of the linear elements that traverse our cities, intersect with their urban fabrics and interact with their environments- as an engine for urban regeneration.

## Ecological Segregation

What are the elements of this new ecology? What are the components and the characteristics of this third element?

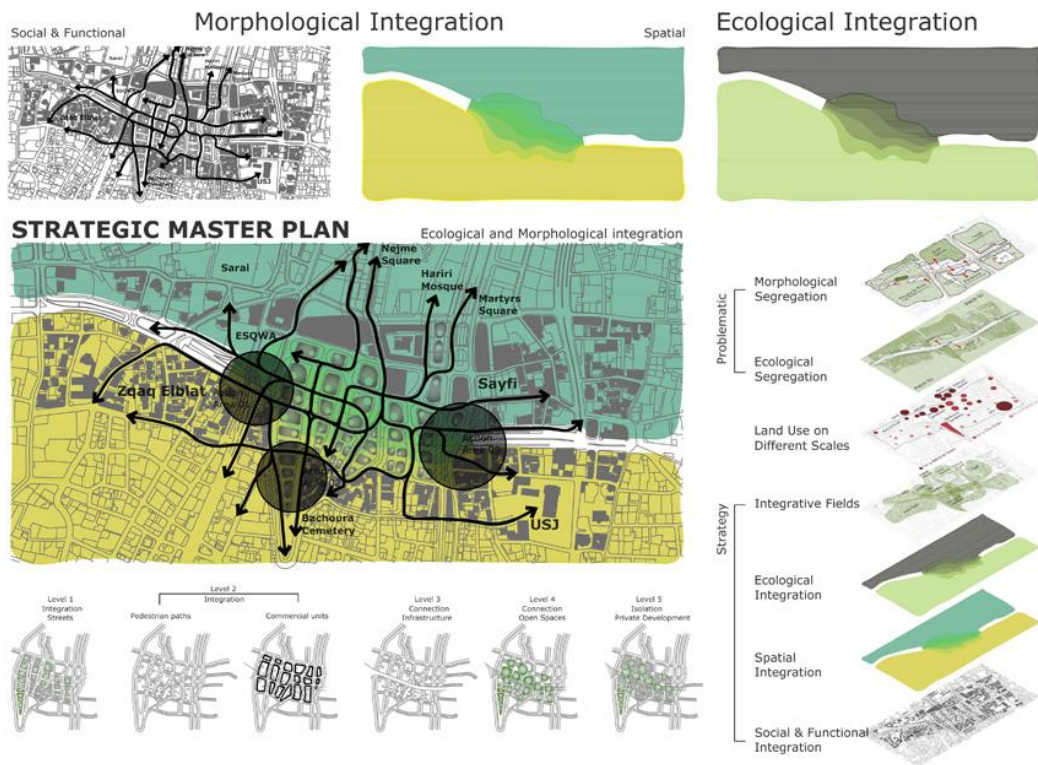
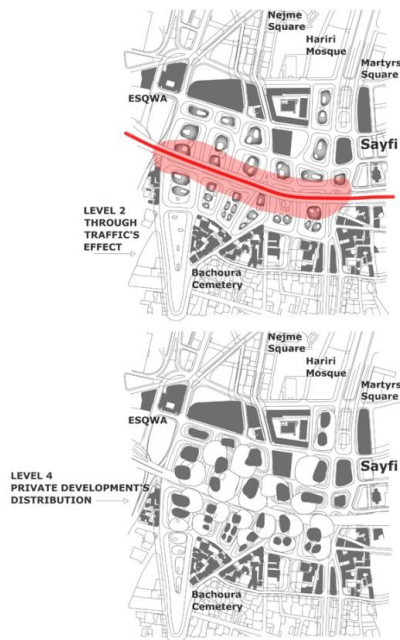
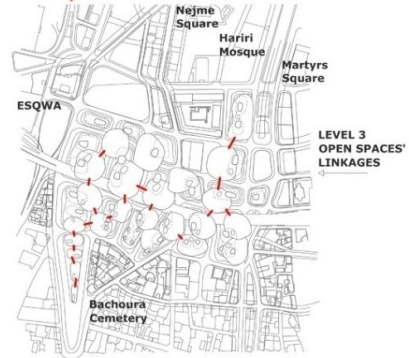
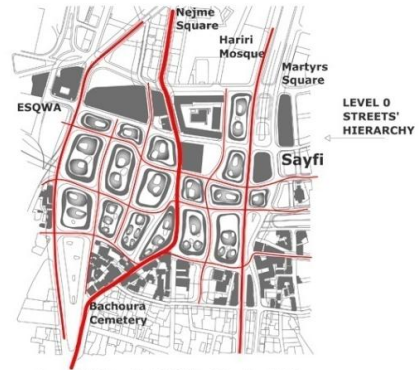


Figure 1.10: Photos showing illustrations of my proposal for the workshop (Prepared by author)



# DEVELOPMENT'S STRATEGY

Schismatic Design Strategies for the development of the five levels in relation to each others



## DESIGN DEVELOPMENT

How the typology differentiates in relation to orientation and position?



Figure 1.10: Photo showing illustrations of my proposal for the workshop (Prepared by author)



Figure 1.10: Photo showing illustrations of my proposal for the workshop (Prepared by author)

From my point of view, and as opposed to the Modern trends in urban design and architecture, recent interests allow for more understanding of locality VS globalization. For this reason, the recent urban design theories could be more successful and sustainable even when it is transferred globally. In that sense, this thesis aims at testing Landscape Urbanism as one of the most interesting contemporary urban design theories taking Barada River in Damascus and its surrounding urban context as a rich case study. The research itself could also be considered as a part of further research which compares rivers and highways as catalysts for urban regeneration. The dynamics created on the edges of these linear elements offer the needed space for the regeneration of cities.

## **1.6. Thesis Outline:**

The thesis contains of eight chapters. The first three chapters are informative; they introduce the subject, frame the approach and describe the site. The next three chapters express my reading of the site, vision and design strategies, and explain the proposed master plan. The last two chapters focus on instruments for implementation and lessons learnt. For better understanding of the thesis outline, I will focus more on each chapter on its own.

Chapter one forms the thesis introduction; it defines the problem, arises the research question and describes thesis objectives, significance, methodology and approach. Chapter two frames the concept of landscape urbanism as a contemporary urban design theory that is applied and tested by the thesis. It starts with an introduction that describes the roots of the approach, and then it focuses on the concept behind its creation, defines the approach and its ecological and infrastructural bias, and highlights case studies. Chapter three covers the historical overview of the site's context. It starts by describing the relationship between Damascus, Barada and Al Ghouta and its current situation, then it sets the criteria behind choosing the site and covers the proposed and ongoing projects, then the planning framework is defined at the end of this chapter.

Chapter four reads the sites features. It covers the site's socio-economic dimension, its built up urban form and open landscape features. Chapter five describes thesis vision and design strategy. It defines sites of intervention, categorizes them as character zones and describes the proposed structural plan and architectural typologies. Chapter six focuses on writing the site. It describes the proposed master plan, explains

its parts, layers and sections. At the end of this chapter, a three dimensional representation for the proposed master plan adds clearer visual understanding.

Chapter seven proposes instruments for implementation. It covers the proposed phasing strategy, guidelines and regulatory framework. At the end, chapter eight extracts lessons for other sites and concludes the whole research.

## CHAPTER 2

### FRAMING THE CONCEPT OF LANDSCAPE URBANISM

#### 2.1. Introduction

Landscape urbanism has two roots. First is the heritage of ancient civilizations in “creating settlement structures”. Secondly, is the history of landscape architecture and urbanism. In the past, “Man adapted to the environment, through patient, pragmatic adjustment to circumstances with sophisticated means and logics that worked with nature”. Considering its roots, strategies of landscape urbanism could become powerful tools for cities in the future. (De Meulder, Bruno & Shannon, Kelly 2010)

The split between architecture and planning in the late 1950s “entailed reducing the art of environmental planning to the value”(Frampton, Kenneth 1995). Planning failed in dealing with the growth of capital and mobility of the contemporary city. The crisis in planning and design became clear because of their obsession with density, ignoring decentralization. In the dialogue between city and nature, parks were an attempt to restore or re-establish nature throughout the city: the Post-modern organization came as a response in the 1990s. The spreading of gated enclaves, sprawling cities, megamalls, residential communities and theme parks made it obvious. The question facing postindustrial cities is the future of the abandoned factories and vacant workers’ housing “**How should once mighty cities shrink and die back into the landscape?**” (Shane, Grahame 2003). “As Kenneth Frampton has postured, the

tools of urbanism alone appear unable to resist the un-relentless homogenizing tendencies of built environments which, to a certain degree, flatten-out cultures and places” (De Meulder, Bruno & Shannon, Kelly 2010).

In 2005 there were more than 600,000 abandoned and contaminated sites within the U.S. How did this “waste landscape” come to be? And how it will affect urbanizing areas? “Drosscape” is the result of the deindustrialization the city core and the urbanization of the periphery. “Like a biological organism, the urbanized landscape is an open system, whose planned complexity always entails unplanned dross in accord with the dictates of thermodynamics”. In that sense, the designers’ challenge is not about achieving *drossless* urbanization. It’s more about integrating “inevitable dross into more flexible aesthetic and design strategies”. The mentioned sites can accommodate new design practices where reclamation is a part of the final design process and form (Berger, Alan 2002).

Accordingly, an ecological design that understands the ecological processes, forces and acting agents of nature is needed in order to shape the city. This new approach emerges out of the following reasons: first, the inability of architecture and urban design to offer coherent, competent and convincing explanation of the contemporary urban condition; second, the postmodern critiques of modernist architecture and planning which failed to produce a meaningful and liable public realm; third, the inability to communicate to various audiences, the response to decentralization and the emergence of drosscapes with the increase in the environmental and global ecological awareness.

## 2.2. Concept

“Planning [urbanism] is the correlating of human activities; architecture is the housing of these activities. Urbanism remains abstract until it generates architecture. The certain megalopolitan types such as parking lots, shopping malls and offices parks should be transformed into “landscaped built forms”. The priority now is to landscape rather than to “freestanding built form” (Frampton, Kenneth 1995).

In the past few decades, urbanism has been put back on the map by the practice of urban design. Strategic Urban design projects have become major instruments of urban development and urbanism. Urban design projects are focusing more on exploring the ecological dimension of development, “Landscape is the primary medium for such speculations” (De Meulder, Bruno & Shannon, Kelly 2010).

Environmental designers usually avoid the word *landscape*. They prefer to use the word *land* or *environment* or *terrain* or even *space* when they talk about a specific site. Landscape was used to describe the esthetic quality of the countryside. However, landscape is not a natural feature but a “*synthetic* space, a man-made system of spaces superimposed on the face of the land, functioning and evolving not according to natural laws but to serve a community”. On the other hand, all generations and all points of view have agreed upon the collective character of the landscape. It is a space that speeds up or slows down the process of nature. As Eliade expresses it, “it represents man taking upon himself the role of time”. A landscape thus is “a composition of man-made or man-modified spaces to serve as infrastructure or background for our collective existence”; keeping in mind that in our modern use of the word it means our identity, presence and history (Jackson, John Brinckerhoff 1984).

Over the twentieth century, there was a shift from landscape as “a negotiated condition between natural and artificial”, towards landscape as a term that embraces urbanism, strategic planning, infrastructure, architecture and speculative ideas. “Landscape discourse has shifted from landscape-as-picture to landscape-as-process” (Somol 2001:128). It was the shift from the pictorial to the instrumental. “Landscape must not be equated with “land” or “environment”, but understood as a complex product of a given culture in a given place at a given moment of time” (Shannon, Kelly 2004). Corner also draws on a Landscape Ecology tradition. It defines the landscape as “a mosaic of the total spatial and visual entity of human living space that integrates the environment, living systems, and the manmade” (Shane, Grahame 2003).

We now know that a landscape means more than beautiful scenery, we know that it can be “designed and created from scratch, that it can grow old and fall into decay”. Like a language, a landscape is “the field of perpetual conflict and compromise between what is established by authority and what the vernacular insists upon preferring”. The planner thus has to take a stand. The ‘ideal landscape’ could be defined “not as a static utopia dedicated to ecological or social or religious principles, but as an environment where permanence and change have struck a balance”. The ‘vernacular landscape’ is a scattering ‘clusters of fields’ or islands in a ‘sea of waste or wilderness’. They change from generation to generation, leaving no monuments, ‘only abandonment or signs of renewal’. It is precisely in the field of land use and community planning. “Environmental design is not simply a matter of protecting nature as it is, but of creating a new nature, a new beauty”. (Jackson, John Brinckerhoff 1984)

Landscape is able to bridge scale and scope with critical insight and imaginative depth. Landscape architects expanded their defined limits and integrated new skills



targeting urbanism, programmatic and infrastructures areas. Landscape practice responds to various economic, social and cultural shifts surrounding decentralization. It comes to replace architectural form as a major building block of the city making.

As a framework of imagination, landscape produces ‘new insights’ to respond to the contemporary urbanism. It describes territory in terms of a dialogue between buildings and landscapes. Taking into consideration that this dialogue does not deal with the traditional definition of the terms “building” and “landscape”; it rather “allows for the simultaneous presence of the one within the other, buildings as landscapes, landscapes as buildings” (Mostafvi, Mohsen 2003).

### **2.3. Defining the Approach**

The recent emergence of ‘landscape urbanism’ is a reaction to the frustration of many experts in the landscape, planning, and architectural design discourses. “As deindustrialization illustrates, analyzing cities can no longer be done by one source, or by one body of knowledge, nor by one bureaucracy” (Berger, Alan 2002). Landscape urbanism starts from the assumption that landscape “can be capitalized upon in order to deal with the aforementioned challenges of metropolitization, and by now, post-metropolitization”. “This is not only about constructing nature, but also about redefining the urban” (De Meulder, Bruno & Shannon, Kelly 2010). In the contest of the developed world, landscape urbanism has emerged as “a field at the juncture of landscape architecture, urban design/planning and civil engineering. As a whole, the field addresses sites in relation to the broader ecological/environmental, infrastructural and social/cultural processes and systems that constitute them” (Shannon, Kelly 2004).

Landscape urbanism integrates two unrelated terms to suggest a new ‘hybrid discipline’. Merging landscape with urbanism creates a ‘new field of possibilities’. Such possibilities range from a ‘new high-tech eco-metropolis’ – like ‘green cities’ with vegetated roofs, working gardens, solar panels, wind turbines and storm water wetlands – “to those of a more postindustrial ‘meta-urbanism’, with layers of concrete flying over packed houses and parking structures, collectively a “landscape by virtue of its flattened accumulation of programs, textures and flows”.

As a complex amalgam, “landscape urbanism is more than a singular image or style; it is an ethos, an attitude, a way of thinking and acting”. It offers “alternative approaches” to urbanism with its old dualities such as nature-culture. It dismantles the “classical notions of hierarchy, boundary and center”. Landscape urbanism views the “emergent metropolis as a thick, living mat of accumulated patches and layered systems, with no singular authority or control” (Corner, James 2003).

Landscape urbanism is about planning, design and ecology. It develops methods for “effectively synthesizing constraints from different disciplines and domains of production into an operative framework”, with knowledge from environmental engineering, landscape studies, urban strategy and the development industry. It is “holistic and therefore interdisciplinary. It is rooted in landscape processes but it is not naturalistic, nor is it utopian modernism, critical regionalism or new urbanism”. (Weller, Richard 2007)

Landscape urbanism holds the possibility to synthesize landscape, architectural and urbanistic fields into a hybrid form of practice that may allow for the invention of new built fabrics, new landscapes”. In that sense, the site becomes the “controlling

instrument of the interface between culture and nature”. (De Meulder, Bruno & Shannon, Kelly 2010)

***Main components of Landscape Urbanism:***

1- Horizontality:

It is about the shift of social structures from the vertical to the horizontal towards the end of the twentieth century. “From a landscape urbanism perspective, the emphasis now shifts from the one to the many, from objects to fields, from singularities to open ended networks”. Horizontality increases opportunities for roaming, interrelating, connecting and assembling of the horizontal surface. The surface is the “organizational substrate that collects, distributes and condenses all the forces operating upon it”.

2- Infrastructures:

Landscape urbanism ‘implants’ potential in a field through the “orchestration of infrastructural catalysts”. The attention to the ‘dynamic structures’ and ‘processes’ distinguishes landscape urbanism from more “object-based ideas such as ‘cityscape’, ‘infrascap’, ‘green city’ or any other such hybrid image that derives from an objectified notion of formal appearance”. In that sense, it becomes an art. This art is concerned with the spatial form and geometry “less for stylistic or semiotic modes of expression and more for the effects that those forms and materials produce”. (Corner, James 2003)

3- Forms of Process:

Landscape urbanism addresses the failure of ‘modernist formal determination’ and the need for new ‘organizing structures’. Moving from a ‘Utopia of form’ to a ‘Utopia of process’ and from what things look like to what they do and how. (Corner, James 2003)

4- Techniques:

The capacity to work with multidisciplinary teams and experts is essential, but so too is “a wily sense of dance, or play”. Techniques of landscape and urban planning may be combined “to help create a larger bag of tools than the traditional planner has had in the past”. (Corner, James 2003)

5- Ecology:

“Cities and infrastructures are just as ‘ecological’ as forests and rivers”. Hence, we might speak of ecology as “describing not a remote ‘nature’ but more integrative ‘soft systems’”. The soft system has the capacity to “absorb, transforms and exchange information with its surroundings”. “It also points to a revised activity in design practice; that is the active stirring of ecologies – eidetic and cultural as well as biological – in order to produce new combinatory mixes, new sets of effects, new transdisciplinary alliances and new kinds of public space”. (Corner, James 2003)

**Landscape urbanism characteristics:**

- 1- Align itself with contemporary scientific paradigms of nature as a complex self-organizing system, conceptualize, interpret and directly engage the city as hybrid ecology.
- 2- Emphasize the creative and time-developmental agency of ecology in the formation of urban life as opposed to envisaging an ideal equilibrium between culture and nature.
- 3- Include within the purview of design all that is in the landscape –infrastructure and buildings etc and do this at scales which bridge the divide between landscape design, landscape ecology and landscape planning.
- 4- Experiment creatively with computer driven methods of mapping social and ecological forces.
- 5- Aim for structural efficacy and instrumentality by design and apprehend both site and program as creative subjects and opportunities but generally privilege a rational understanding of site forces not the designer’s subjectivity.
- 6- Foreground the landscape as the ultimate system to which all goes and from which all comes, a template for urbanism. (Weller, Richard 2007)

Landscape Urbanism builds on the existing variables on the ground, from Social, financial, political, cultural to ecological, infrastructure, geography ... etc. It tries to work with the existing variables to produce solutions.

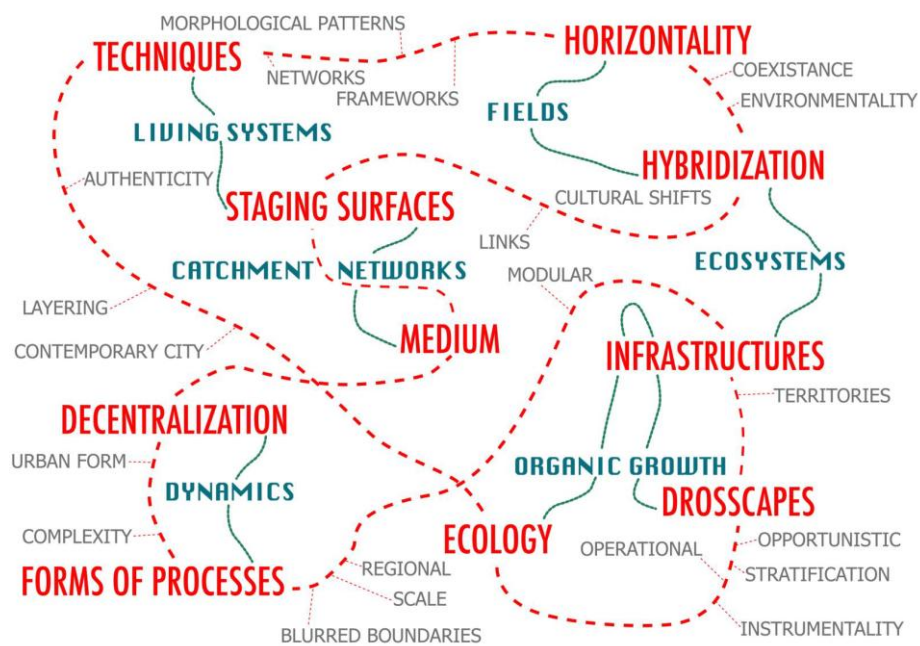


Figure 2.1: A conceptual diagram analyzes landscape urbanism (Design Studio 2013, AUB)

## *Landscape Urbanism Operational Scales*

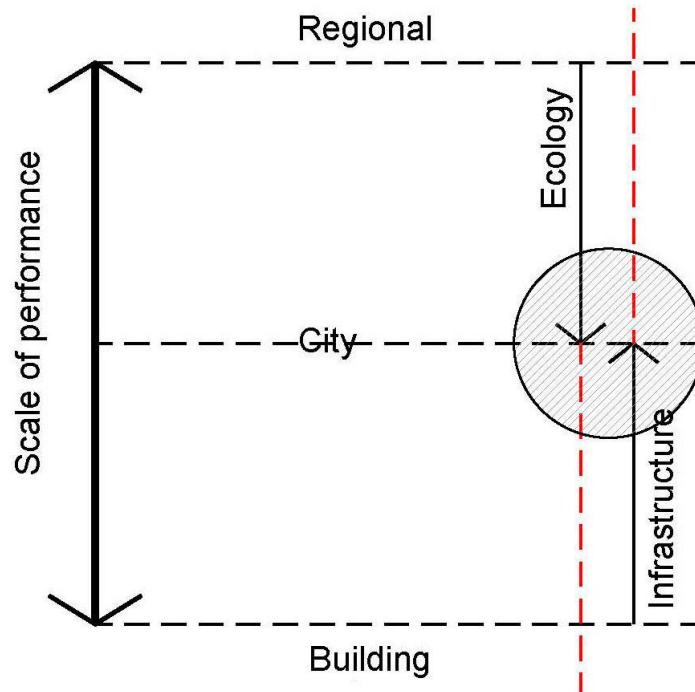


Figure 2.2: A conceptual diagram analyzes landscape urbanism's operational scales (Design Studio 2013, AUB)

When we work as landscape architects, design is a process of trial and error – who will fix the error? Designing should be understood as the invention of systems or overlapped layers with existing elements. We must design landscape with “both accepted and disturbing elements, both harmonious and interrupting ones” without destroying the existing features. Imagination can re-interpret the existing ones to be used in new ways. We have to accept what has been used up. Recycled building materials are better substrate for herbs and trees than “good soil”. “What is ‘useless’ acquires new value as an element and through its use. With the knowledge that even new things only come about by using up something else, the ambivalent world of destruction becomes apparent with new clarity”. (Latz, Peter 2002)

Landscape Urbanism always deals with “uncertainty” as a strategy. Smets defined four design approaches to “uncertainty” based on spatial concepts:

1. The grid:

It is “a man-made regularity that features an idea of order in opposition to the “organic” character of nature, or to the randomness of the “chaotic” environment around it”.

2. The casco:

It is “the ideal natural frame that adapts to site conditions”. Unlike the grid that is superimposed on the landscape, the “casco” is derived from it”. The “casco” tries to find a concept on “the inherent qualities of the site”.

3. The clearing:

The scenery in the forest, for example, creates openings where we can build with few contingencies without changing the character of the forest. “It starts from the void and leave the structures over to whatever outcome the realization will lead to”. (Smets, Marcel 2002)

4. The montage:

In film making the montage means the cutting and editing of the movie. From an urban approach it is the “assembling of a structure from pre-arranged components”. Contrary to other approaches, the montage “does not originate from a landscape model. It is based more in the architecture and painting of modernism than in landscape design”. (Smets, Marcel 2002)

## 2.4. Ecological Bias

The environment “provides materials, but also constrains the effort. This interplay between human aspiration and ecological integrity is an underlying theme of sustainable development”. (Forman, Richard 1990)

Landscape ecologists understand a landscape depending on their geological or biological backgrounds. An ecosystem is “all of the organisms in a given place in interaction with their nonliving environment”. On the other hand, landscape is “a part of the space on the earth’s surface, consisting of a complex of systems, formed by the activity of rock, water, air, plants, animals and man and that by its physiognomy forms a recognizable entity”. It can also be defined as “a heterogeneous land area composed of a cluster of interacting ecosystems that is repeated in similar form throughout”.

Landscape development results from “three mechanisms operating within a landscape’s boundary: specific geomorphological processes taking place over a long time, colonization patterns of organisms, and local disturbances of individual ecosystems over a shorter time”. (Forman, Richard TT & Gordon, Michel 1986)

Nature includes the ‘biological patterns’ and ‘physical processes’ entwined in species richness, aquatic communities, wind, water, wildlife populations, wetlands and vegetation. Culture, on the other hand, integrates the human dimensions of aesthetics, transportation, community social patterns, economics and recreation. Ecology and culture have recently been diverged relatively. Landscape ecology was the key to the new weaving. Ecology is generally defined as “the study of the interactions among organisms and their environment”. A landscape is a kilometers-wide “mosaic over which particular local ecosystems and land-uses recur”. These concepts are proven to be simple and useful. Thus, landscape ecology is “the ecology of landscapes and regional



ecology is the ecology of regions”. The structural pattern of a landscape or region is composed of three elements. These universal elements- patches, corridors and matrix- are “the handle for comparing highly dissimilar landscapes and for developing general principles”. (Dramstad, Wench & Olson, James D & Forman, Richard TT 1996)

The three characteristics of the landscape that Landscape ecology focuses on are:

- Structure
- Function
- Change

However, there are seven general principles of landscape ecology. These involve “structure and function, biotic diversity, species flow, nutrient redistribution, energy flow, landscape change, and landscape stability”. (Forman, Richard TT & Gordon, Michel 1986)

Forman also defined four basic Landscape Types:

- Scattered patch landscapes:  
*This landscape has a predominant background matrix of one ecosystem or landscape-element type in which patches of one or more other types are enmeshed.*
- Network landscapes:  
*These are characterized by prominent intersecting corridors throughout the landscape.*
- Interdigitated landscapes:  
*Here two or more continuous landscape-element types are prominent and mesh or interfinger along their common boundary.*
- Checkerboard landscapes:  
*These landscapes have a grid with two or more landscape-element types in alternating cells of the grid. (Forman, Richard 1990)*

Whether ‘biological or imaginative, evolutionary or metaphorical’, the processes of which ecology and creativity speak are “active, dynamic and complex, each tending toward the increased differentiation, freedom, and richness of a diversely interacting whole”. The landscape architectural project is about “the invention of new forms and

programs” more than “the merely corrective measures of restoration”. Further ecological knowledge enables kinds of management of ecosystems; the ecological knowledge can be used to “heal” and reconstruct “natural systems”. An ecological landscape architecture is less about “the construction of finished and complete works. It is about “the design of processes, strategies, agencies, and scaffoldings – catalytic frameworks that might enable a diversity of relationships to create, emerge, network, interconnect, and differentiate”. (Corner, James 1997)

Ecological studies found that “the interactions between patterns and processes are more complex than previously thought”. “Complexity requires ecologists to study the dynamics of change with tools and analytical methods that enable them to perceive the patterns that may exist”. If we think that it is important, Biodiversity becomes the most interesting challenge for urban designers. It is an opportunity to learn about “what it means to be human, by making room to those that are not”. The recent shift in ecological theory led to a new consideration of dynamic processes that offer new opportunities for designers who are interested in complexity. It challenges designers to “propose patterns that influence complex processes over time, sometimes in unpredictable ways”. Our ecological knowledge and design experiments have been growing recently (Hill, Kristina 2001).

The ecological bias was highlighted to shed the light on the depth of the dimension within the approach knowing that the thesis is dealing only with the spatial framework that could open horizons for ecological recovery.

## **2.5. Infrastructural Bias**

The last twenty- five years, with the rise of postmodernism in architecture, has seen a “massive defunding of urban infrastructure”. There is a recent shift in practice toward infrastructure. “Going beyond stylistic or formal issues, infrastructural urbanism offers a new model for practice and a renewed sense of architecture’s potential to structure the future of the city”. It prepares for future building and creates the “conditions for future events”. Infrastructure’s primary modes of operation are: “the division, allocation, and construction of surfaces”. Infrastructures are “flexible and anticipatory. They work with time and are open to change”. Infrastructural work “recognizes the collective nature of the city and allows for the participation of multiple authors”. Although they are static, infrastructures “organize and manage complex systems of flow, movement and exchange”. Infrastructural systems work like “artificial ecologies”. The time has come to “approach architecture urbanistically and urbanism architecturally” (Allen, Stan 1999). The thesis is not about infrastructural breaks, but it looks for opportunities for using infrastructural spatiality.

## **2.6. Case Studies**

The chosen case studies vary in projects’ scale, subject and objective. Every one of these examples is unique in some point that allows me to learn from. In that sense, I will be focusing on the unique point of each example that may be about its design strategy, its way of representation, its cultural dimension, its innovative urban landscapes or typologies.

Design competitions offer different kinds of reflection on theory and practice, they give a chance for designers to develop “a range of prototypes for a particular setting”. Downsvie competition, for example, asked the competitors to design “for fluctuations over time in ecosystem conditions and human use, while creating a significant cultural work in an urban space”. It asked designers to place the ecological objectives and the goals of art together. If we see Downsvie Park throughout the context of Toronto’s park system, we realize that it exists as part of a larger ecosystem that holds the daily and seasonal movement of Animals, energy and materials.

OMA’s team proposed forms of the traditional urban parks, but they used a language of mimicry to describe them, dealing with the park as a “tree city” that celebrates its suburban context. Perhaps they won because their proposal was “committed to so little, in terms of its spatial strategies, and offered so little challenge to the traditional form of urban parks”.



Figure 2.3: OMA’s proposal for Downsvie Park’s competition (Oma.eu, 2015)

The strategies of several design teams were built on the following ecological design principles:

- Long flow paths through can improve water quality.
- Wetland areas are used to increase the diversity of plants.
- Corridors of woody vegetation enhance the movement of wildlife species through a landscape. (Hill, Kristina 2001)

What I want to learn from this case; first, is how they conceptualized the site as an ecological link that connects Downsview Park to the city's surrounding natural context and the green network within Toronto. Second, is the proposed phasing strategy that treats the park as an adult which is capable of sustaining itself rather than a child that needs an eternal care. The capital generated from the park will be spent to support future development in an evolving cycle of implantation.

Statin Island study, as another example, offers hope for a planning process that is "rational, explicit, replicable and can employ the values of the community in its development". Land use maps usually show broad categories of uses. The maps in this study are more like "mosaics than posters". They try to reflect the "real complexity of opportunity and constraint". It has been accepted that the place is "a sum of natural processes and that these processes constitute social values, inferences can be drawn regarding utilization to ensure optimum use and enhancement of social values".

(Mcharg, Ian 1969)

What I want to learn from this study; first, is its ability to be replicated in other similar case studies. Second, is the way it represents the different layers of the area that reflects the complexity of opportunity and constraints.

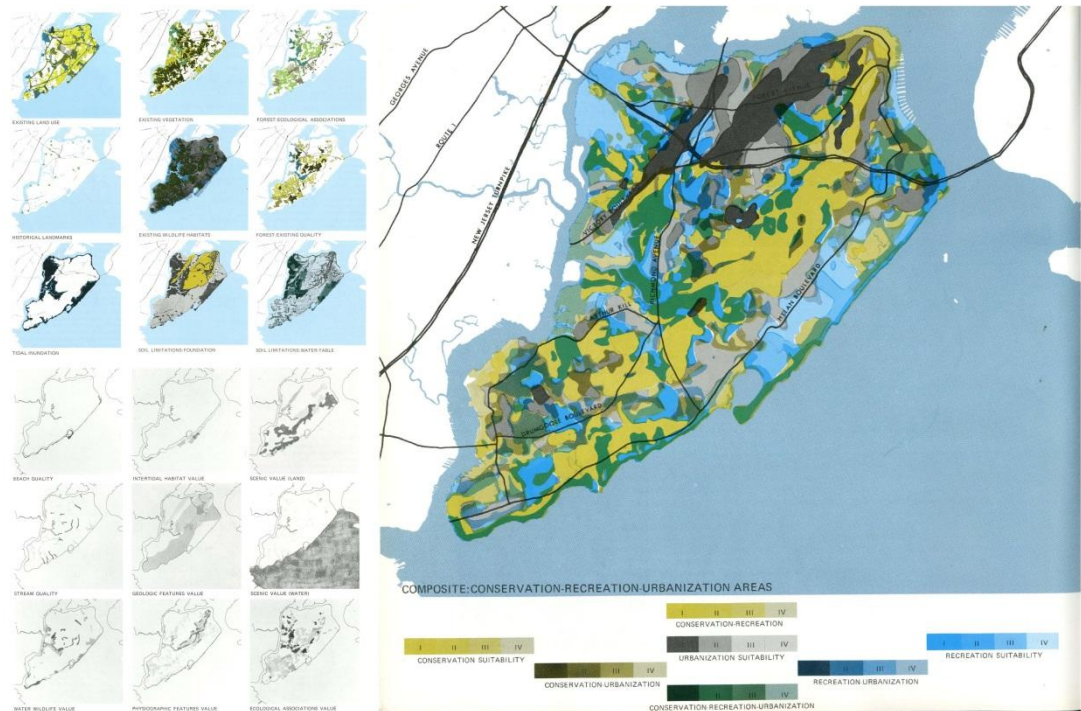


Figure 2.4: An illustration shows Staten Island study (Suzanneodonovan.files.wordpress.com, 2015)

The Mississippi Studio, as the third example, was conducted the spring of 2002 at the Harvard Design School. It was an attempt to investigate a new synthesis between the abandoned MBM (Mississippi Basin Model) and the real terrain of the Mississippi River. The model and its site are “an important cultural relic of the Mississippi River, the Delta and the United States”. The team studied how the army corps adopted cut-offs as a technique for shortening the river In the 1930s. It was an attempt to increase the velocity of the water’s flow and to facilitate shipping by forcing cut-offs. From the team’s point of view, the army corps “created more than just an increase in velocity, it created a disconnected cultural landscape”. (Mathur, Anuradha & Da Cunha, Dilip 2001)

We have to stop equating sites with building lots as parcels bound “by legal demarcations driven by property ownership” as opposed to understanding them “as large complex landscapes”. For example, understanding a river landscapes, forms, and processes is more important than simply seeing it as measures taken. Landscape design projects can address “environmental and ecological scales while still articulating issues of meaning, artistic expression, and language by their various components being either “open” or “closed” to external perturbations”.

What I want to learn from this case is related to its social and cultural dimension. In my case, I should find the way to enhance the relationship between the people and the river with its Ghouta. This could happen through proposing elements that could hold events to educate people how they can preserve their landscape heritage.

Rebstockpark project, for example, proposes “unconventional relationships” between the city and nature. The potential of the project “may afford new and different relationships between people, their daily routines and the environment”. The project creatively “construct and construe site, alternatively or rummaging through the particulars of a place to generate innovative urban landscapes”. (Czerniak, Julia 2006)

What I want to learn from this case is how it proposed an unconventional relationship between the city and nature and how it created innovative urban landscapes and typologies. I need this in my case since I am working at the edge where the city meets its natural surrounding and since I am opening the door for creating new urban forms and typologies.



Figure 2.5: Peter Eisenman's proposal for Rebstockpark project (Rebstockpark-ffm.de, 2015)

Longgang city is a landscape urbanism project at a city scale level. It is a regeneration of 11.8 km<sup>2</sup> of the urban fabric with a population of 350,000 inhabitants and 9,000,000 m<sup>2</sup> of new development.

The strategy that was followed starts from assisting the historical heritage of the site as a manifestation of the city identity. Ecological analysis have been done, to recuperate the health of the river, and defined as a design framework. Landscape typologies that varied from scale to material have been developed. Urban design frameworks have been established to determine the shape of the city (building height and setbacks for solar gain) but in service of ecological remediation. Then, urban design and planning knowledge have been looked at.





Figure 2.6: An illustration shows Longgang city's project (Isites.harvard.edu, 2015)

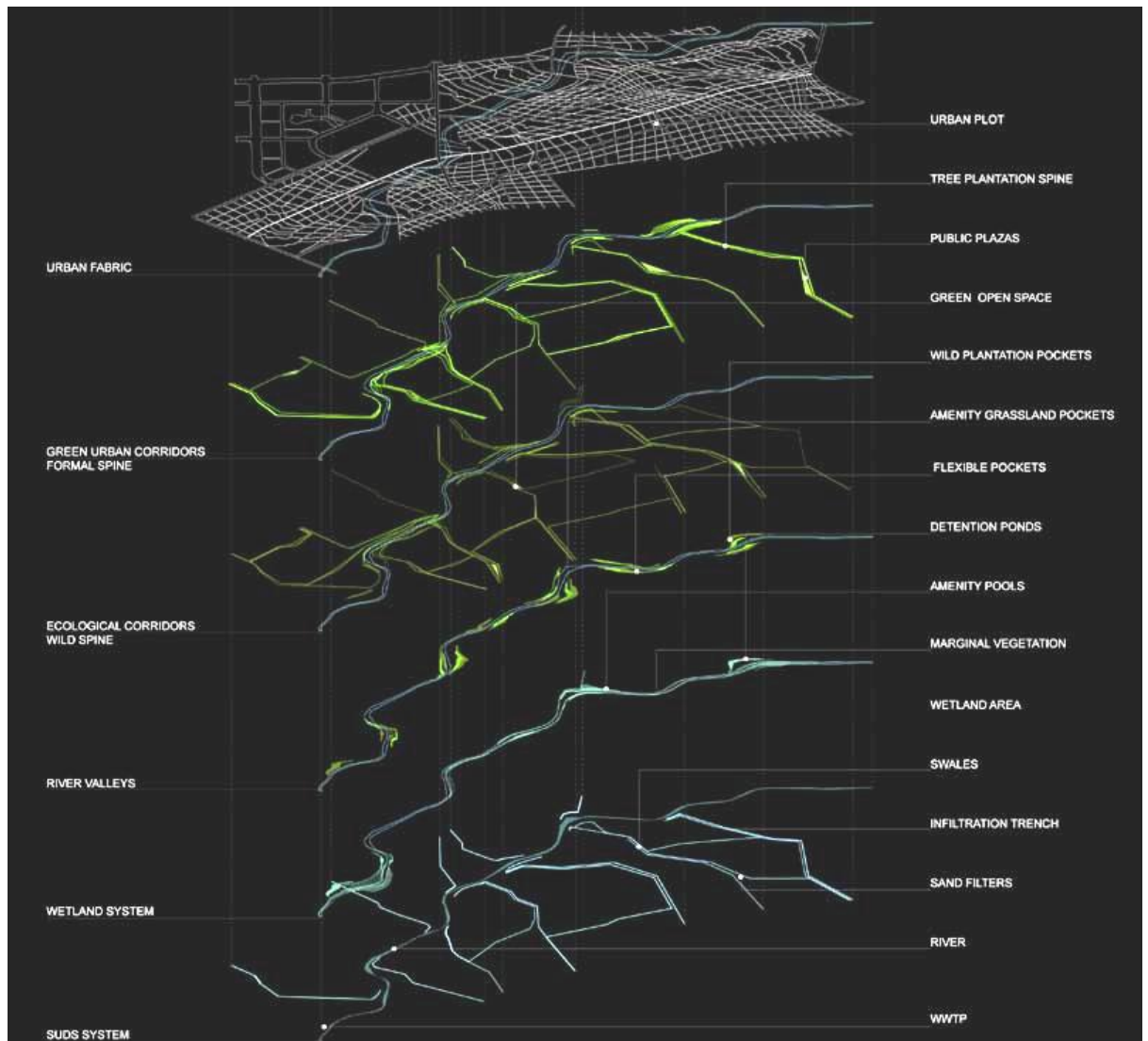


Figure 2.7: An illustration shows Longgang city project's strategy (Isites.harvard.edu, 2015)

Longgang city project has proposed a parametric model. It proposed sets of urban relationships which connect one another: building height, density and urban structure (typology). It generated different options which allow to study simultaneously the effects of different massing options in terms of spatial arrangement and to discuss the different urban fabric and architectural qualities.

What I want to learn from this case is how to create landscape and urban design typologies that varies from scale to material but in service of ecological remediation. I

want to learn how to create a parametric model to set urban relationships which connect one another and continues to work at an architectural scale.

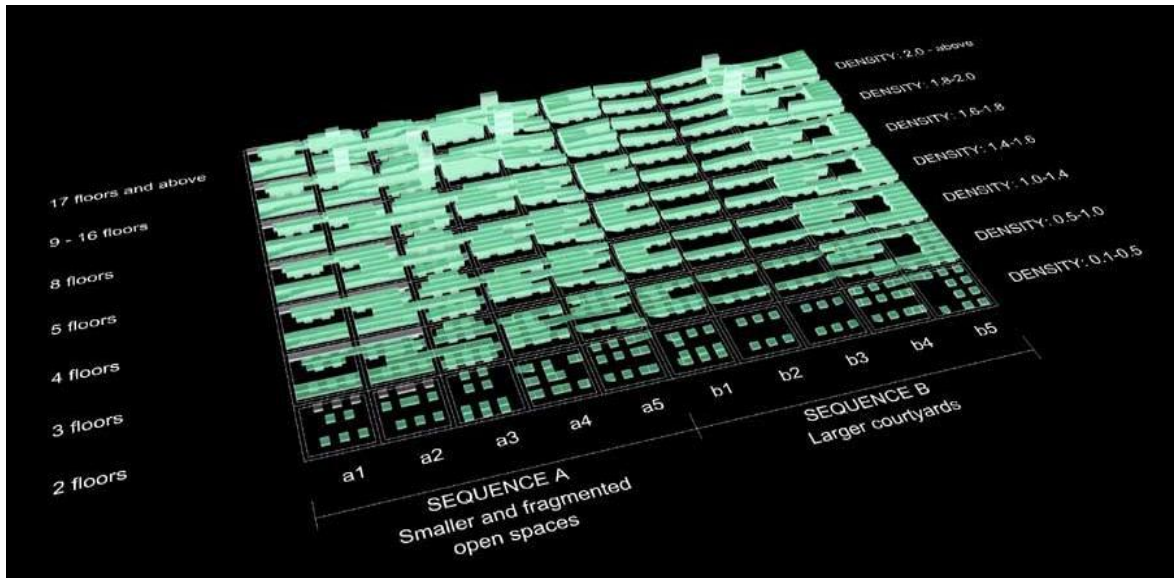


Figure 2.8: An illustration shows Longgang city project's parametric model (Isites.harvard.edu, 2015)

What brings all of these examples together is that all of them are serving ecological remediation through innovation. In my thesis, I want to learn from OMA's design strategy, from Staten Island study's innovative way of representation, from the Mississippi Studio's cultural dimension, from Rebstockpark project's innovative urban landscapes and from the parametric typological model of Longgang city project.

## CHAPTER 3

### HISTORICAL OVERVIEW AND SITE'S CONTEXT

#### **3.1. Damascus, Barada and Al Ghouta through History:**

##### *Damascus:*

Founded in the 3rd millennium B.C., Damascus is one of the oldest cities in the Middle East. It was the center of a craft industry in the middle Ages, specializing in swords. There are about 125 monuments from different periods in Old Damascus among which is the 8th-century Great Umayyad Mosque that was built on the site of an Assyrian sanctuary. Damascus geographical position between Africa and Asia made it an important cultural and commercial center. It is one of the oldest continually inhabited cities in the world that was inhabited as early as 8,000 to 10,000 BC. It's a multilayered city that has Hellenistic, Roman, Byzantine and Islamic architecture. Moreover, the Umayyad caliphate created Damascus as its capital. The old city today is still based on a Roman plan and applies the orientation of the Greek city, all its streets are oriented north-south or east-west and is still a key example of urban planning. (Kheir, Safouh 1982)

The remains of the Temple of Jupiter, the remains gates and Roman city walls are the earliest visible physical evidence that dates back to the Roman period. The Great Mosque was built on the site of a Roman temple over-laying a Christian basilica. “The present city walls, the Citadel, some mosques and tombs survive from the Middle Ages, but the greatest part of the built heritage of the city dates from after the Ottoman conquest of the early 16th century” (Centre, 2014). The key attributes of Universal Value include the plan of the city and its urban fabric, city walls and gates and its 125 protected monuments. (Kheir, Safouh 1982)

Damascus started as a small agricultural village for two thousand years, until it started to flourish in terms of its urban context during the Helenian period. During the Roman times, the city walls were built with seven gates, squares urban grid and a straight east west main axis perpendicular to another one. During the Omayyad period, it witnessed an urban regeneration as the capital of the empire. During the Abbasid period it was neglected until it reached the peak of its urban evolution during the Mamluk and the Ayoubi periods. During the ottoman period, streets network was revised in a complicated way according to a defense strategy. People started to accord importance their interior yard rather than the exterior, which developed the architectural identity of the damascene houses with their huge interiors. During the French Mandate in the nineteenth century, new urban and architectural typologies were erected and the urban sprawl started to invade Al Ghouta. After the independence, the city witnessed a huge raise in population and urban sprawl, and Al Ghouta became an unsecure area. (Centre, 2014)

The dramatic increase in population can be described in numbers. In 1878 during the Ottoman period, the population was 143,000 persons. In 1922 it increased till

173,000 persons, to reach 1,394,000 persons after the independence in 1944. In 2000, the population grew further to 3.5 million persons, a number that is still in constant increase. The reason behind this raise is not only related to population, it's also caused by the internal immigration. Informal settlements started to appear and grow with shortage in services, water supply and electricity. This urban sprawl killed the different identities of Kurdish, Armenian and many other neighborhoods throughout the city. (Centre, 2014)

The agricultural activities that started with the creation of the city created an economic interaction between Damascus and its surrounding agricultural lands (Al Ghouta). On one hand, it provides Damascus with vegetables, fruits, meat and milk, and its river is a water provider for drinking and irrigation. On the other hand, Al Ghouta was the breathing lounge for Damascenes recreation and leisure. Damascus and its Ghouta were complementary elements that could not be possibly disconnected without causing deep and complex urban issues. (Centre, 2014)

Damascus is the capital of Syria, the most important among its cities and the oldest continuously inhabited city in the world. It is located between Al Sham desert from the east and Lebanon Mountains from the west. Those mountains prevent the sea influence on its climate; reduce the rain annual average to around 215 mm and decrease the difference between the highest and lowest temperature to -4 to 40 c. Without the presence of Barada River, Damascus would have been an extension of Al Sham Desert. Barada is the life line of Damascus and the feeder of its green oasis which is called Al Ghouta. Its strategic location allows it also to control many commercial and martial routes through history. It's the gate of the desert which reaches Makah, Yemen,

Baghdad, Persia and India. It also was the connection between old Egypt and Mesopotamia. (Centre, 2014)

What is worthy to mention here is that the site which we are going to work on contains the part of Al Ghouta that is still located within the administrative borders of Damascus. Moreover, it has a special relationship with the old city itself since it is located at its eastern side.

### ***Barada:***

The name Barada is connected to the city of Damascus and was one of the main reasons behind the city's civilization along the history. The river, labeled by the Greeks as the Golden River, is mentioned in the Old Testament and many historic texts, drawings and mosaics. Many poets and historians wrote about it in their master pieces, referring to it as the Paradise River. (السنين, 2015)

Barada River springs out from Barada Spring's lake south of Zabadani area North West Damascus. It pours in Al Otayba lake South East Damascus after crossing Damascus, Old Damascus and Al Ghouta. After it springs out at the altitude 1100 m, it zigzags until it reaches Al Toukia land where it enters a very deep valley called Barada's Valley. It continues then to enter Damascus from Al Rabwe area after feeding six streams on its both sides. (السنين, 2015)

Many streams divaricate from the main stream of Barada by entering Damascus, such as the following: Yazeed stream, Torah stream, Mazawi stream, Deirani stream, Qanawat stream, Banyass stream, Akrabani stream and Daaiani stream. The river starts

by passing through 13 villages with many restaurants, cafes and resorts on its both sides. It inters Al Rabwe passing through a valley between the mountains parallel to the rail way until it reaches Damascus, old Damascus and Al Ghouta to feed its agricultural lands. (السنين, 2015)



Figure 3.1: Photo showing the rural identity of Barada River (Anon, 2015)

What is unique about these streams or water channels is their man-made nature. They were designed and implemented by Damascene people throughout the history to create a water network that distributes the irrigation water in Al Ghouta, provides the city's houses and public amenities with potable water and prevents the flooding danger of the main stream. Based on Mohammad Al-Dimashqi's book about the science of the running water in Damascus, Damascus was the first city that provided its houses with water since five thousand years. During the Arami period, Al Talee, which is the



mechanism needed to distribute the water, was invented in Damascus. During the Roman period, a tunnel was dug within the rocky nature between the spring and the city.

Banyass and Toura channels date back to the Arami period. Qanawat channel dates back to the Roman period, while Mazawi and Deirani channels date back to third century. And finally, Yazeed channel was implemented during the Omayyad period.

The eastern branches of Barada, that are located in our site, are even older. They date back to almost 6250 BC, Barada period as he calls it. This period covers the ancient human agricultural activities before the creation of the city itself.



Figure 3.2: Photos showing the natural and urban identities of Barada (Anon, 2015)

The previous pictures show the characteristics of the river spatial corridor, its three identities and its relation to the new and the old urban fabric. The thesis tackles the spatial dimension of the river's ecology; it adds the peri-urban identity proposing a new kind of relationships to serve the needs of the future.

### ***Al Ghouta:***

Al Ghouta is the agricultural land which surrounds Damascus, fed by Barada and its streams. Along the history, it grew and shrank due to many reasons amongst others the urban spread and water availability for irrigation. Its length is about 25 km while its width ranges between 12 and 51 km. (د.جوزيف زيتون, 2015)

Human presence is very old in Al Ghouta, some of the discovered sites dates back to 7800 BC. Among those sites are Tel Al Salhieh, Tel Aswad, Tel Abu Sawda, Tel Al Aathem and many more. Many ancient various Jewish, Christian and Muslim religious sites spread in Al Ghouta. The most important Jewish site is Jobar Synagogue. Many Christian Monasteries like Al Asafeer, Jermanos, and The Holy Cross are also there. Besides that, there are many tombs for Muslim figures like Sayeda Zaynab, Wajeeh Al Kalbi and Saeed Al Ansary. (د.جوزيف زيتون, 2015)

Urbanity in Al Ghouta used to avoid wet lands due to floods danger, as well as main streets or connectors due to security issues under the Ottoman or French rule. Accordingly, urbanity in Al Ghouta focused on peripheral agricultural lands. Increasing population, the internal migration towards Al-Ghouta, and the shift from local materials (wood, mud) and technics for building are among the reasons behind the gentrification process. Green agricultural lands were turned into urbanized lands lacking an identity:

they are neither the “city” nor the “countryside”. Modern Master Plan schemes for managing the urban sprawl accentuated further the gentrification issue. (د.جوزيف زيتون, 2015)

The economy of Al-Ghouta used to be based on the agricultural sector. Al Ghouta inhabitants inherited the agricultural knowledge and are professional farmers. In addition, many traditional industrial activities backing-up the agricultural sector flourished in Al Ghouta (د.جوزيف زيتون, 2015). Three areas define Al Ghouta, and are the following:

- 1- Intensive agricultural areas: growing vegetables and fruits three times per year.
- 2- Mixed use agricultural areas: growing olive and grains.
- 3- Large scale agricultural areas: growing only grains and grapes.

What is worthy to mention is that the amount of available water determines the kind of agriculture in each area. (د.جوزيف زيتون, 2015)

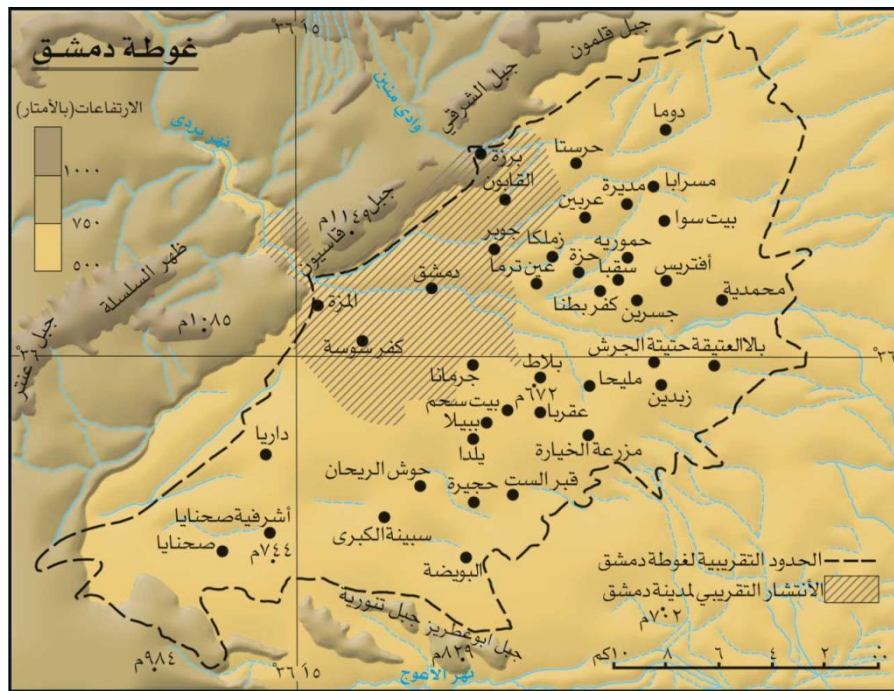


Figure 3.3: Map showing Al Ghouta in relation to Damascus (د.جوزيف زيتون, 2015)

The plantation in Al Ghouta could be categorized as follows:

1- Annual harvests

- Grains.
- Cotton, tobacco..... etc
- Bucolic plants.

2- Fruitful trees (apricot, nut, grapes, apple, olive, pear, peach, quince and Pomegranate.)

3- Unfruitful trees.

Al Ghouta was well-known for its handicrafts such as Perfume, soap, textile and dried fruits production. As part of the gentrification process of Damascus's countryside, industrial areas started to develop around the city which encouraged many farmers to leave agriculture and work in Mechanical, chemical, textile, food, leather and metal industries. (د.جوزيف زيتون, 2015)

Shedding light on the relationship between Al Ghouta and Damascene people, I use the work of my colleague Georgina Hafteh which “examines the role of gardens and the surrounding landscape in the urban development of Damascus”. She mentioned Al Ghouta as “the aesthetic backdrop of the Damascene recreational gathering (tanazzuh/siran), where visitors could experience the beauty of Damascus”. “Such gatherings used to be associated with roses blossoming in spring (ayyam al-ward), mostly on Saturday and Tuesday. On these days, Damascene citizens of all ranks were ready to burst the boundary of the walled city and go into the vast plain of gardens”. Our site was covered by her study as one of these places that were mentioned in Abd

Allah Al-Badri (d. 894/1489) text under the name of “Wadi al-tahtani”. (Hafteh, Georgina 2011)

The thesis tackles Al Ghouta from a spatial perspective; it seeks to reconfigure it in a way that serves the needs of the future taking into consideration the contention about what is Ghouta and what is not. It considers Al Ghouta as a landscape of the past knowing that many villages have already been incorporated and Al Ghouta agricultural landscape reconfigures.



Figure 3.4: Photo showing Al Ghouta (د. جوزيف زيتون, 2015)

### **3.2. The Current Situation / the War**

From what we mentioned above, we can read two kinds of pressure; the development pressure to build more neighborhoods which will erase Al Ghouta at the end, and the pressure to preserve Al Ghouta and stop the urban sprawl. Due to increase in population, unsustainable ways of using water for irrigation and drinking, Barada lost most of its water flow and turned into small streams which eventually dry in summer.

The current war created a schism between the city and its surrounding natural context the relatively ungoverned urban sprawl on the outskirts of Damascus was the breeding ground for opposition activity. “In Damascus, 65% of all deaths occurred in only seven neighborhoods. These neighborhoods generally share three things in common: they have grown rapidly over the past decade, they align closely with the opposition (in many cases they are controlled by the opposition), and are predominantly poor, working class city suburbs” (Kilcullen and Rosenblatt 2014).

“Unlike rich Syrians, the urban poor cannot rent an apartment in Beirut to wait out the conflict; these are the areas from which many of the one million plus registered refugees flee. When the conflict finally subsides, many activists and regime lackeys will have left the country. Picking up the scraps of what remains, Syria’s urban poor will try to rebuild it without the knowledge and experience of generations of rich Syrians who have abandoned it for greener pastures” (Kilcullen and Rosenblatt 2014).

What is worthy to be mentioned here is the urban farming activity that flourished during the war as the only way for people to survive. The thesis will build on this fact shedding the light on the positive side of this issue.



Figure 3.5: Photos showing the current war in Al Ghouta (Google.com, 2015)

### **3.3. The Criteria behind Choosing the Site**

The criteria behind choosing the river's eastern side are derived from the ecological, the physical and the political dimensions of the area:

1. The first criterion is the intersection occurring in this site between the urban and the rural identities that were created by a polycentric urbanization pattern. Due to an administrative and political domination of the center, these distinct identities are being gradually lost. The area could not be defined as an urban or a rural land, it lost its identity during the last decades. Knowing that the site was the “traditional Ghouta”, it is still considered as suburban for the old city while it holds potentials to be part of new central Damascus.
2. The second criterion is the fact that this site acts as an entrance amongst three other entrances for Damascus, the capital which extends beyond its geographical limit to act on national, regional and global scales. It can be considered as the eastern entrance that connects the city to the eastern desert which extends out of the Syrian borders reach Makah and Yemen on the ancient Silk Road.
3. The third criterion is the gentrification process invading Damascus’s countryside and hence the site’s rural lands. This gentrification process is eating up Al Ghouta that is the lounge of Damascus and its source of food production. The site could be considered as one of the most threatened and important sites from this point of view.
4. The fourth criterion is the physical break between the city and its surrounding natural context which materializes in the selected site acting as a peri-urban transitional zone. It is the entrance of the old Ghouta from old Damascus and the entrance of Damascus from the whole Ghouta.



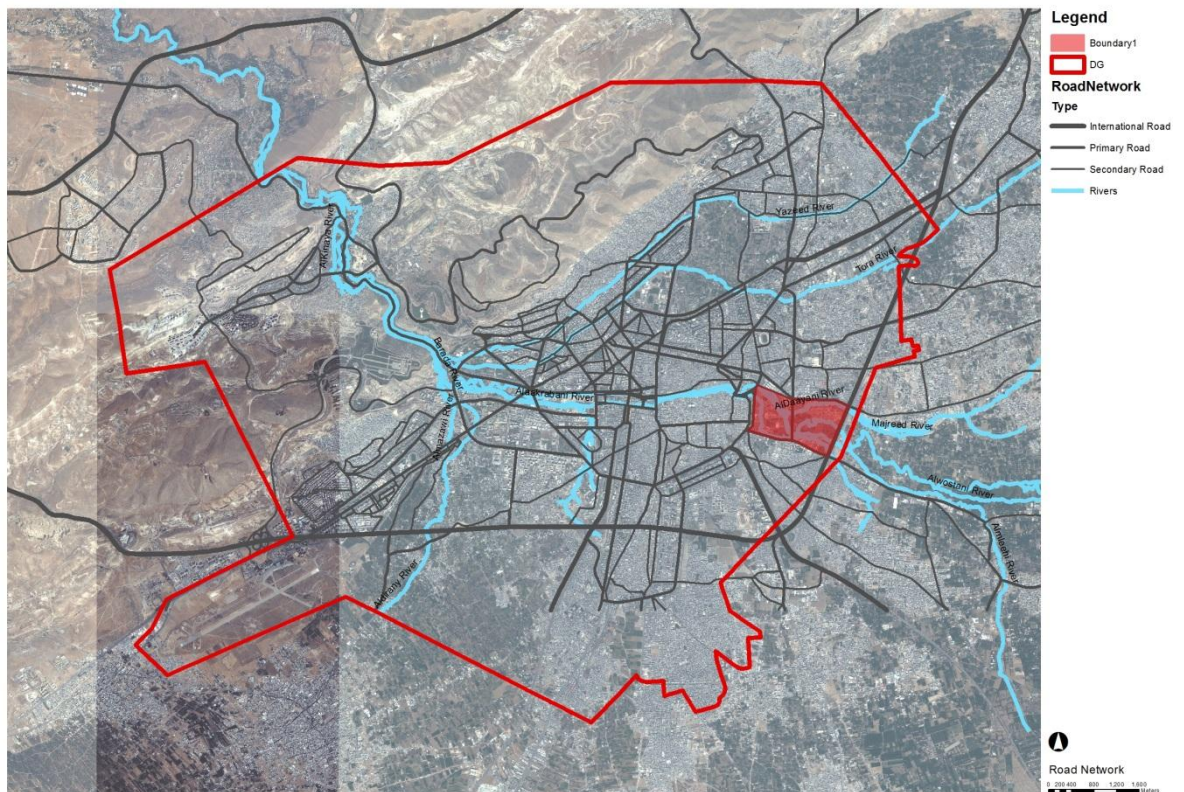
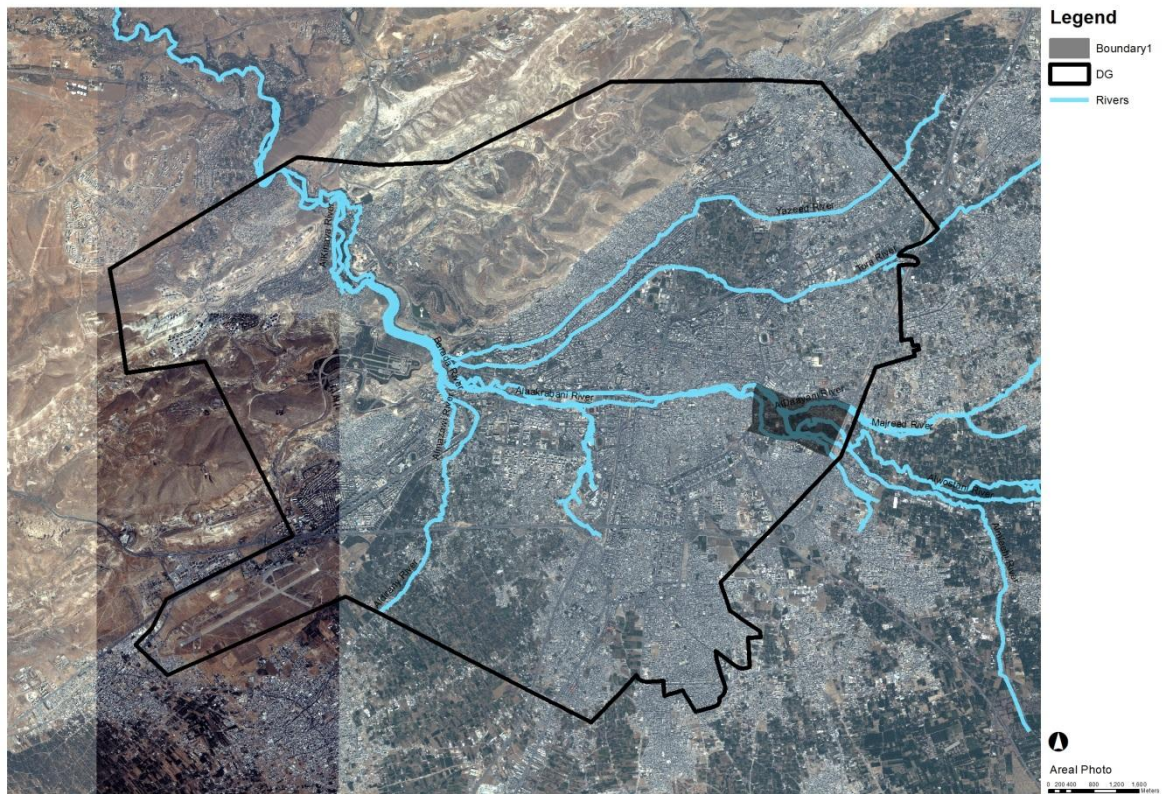


Figure 3.6: Maps showing the location of the site within the city's boarder and structure (Prepared by author)

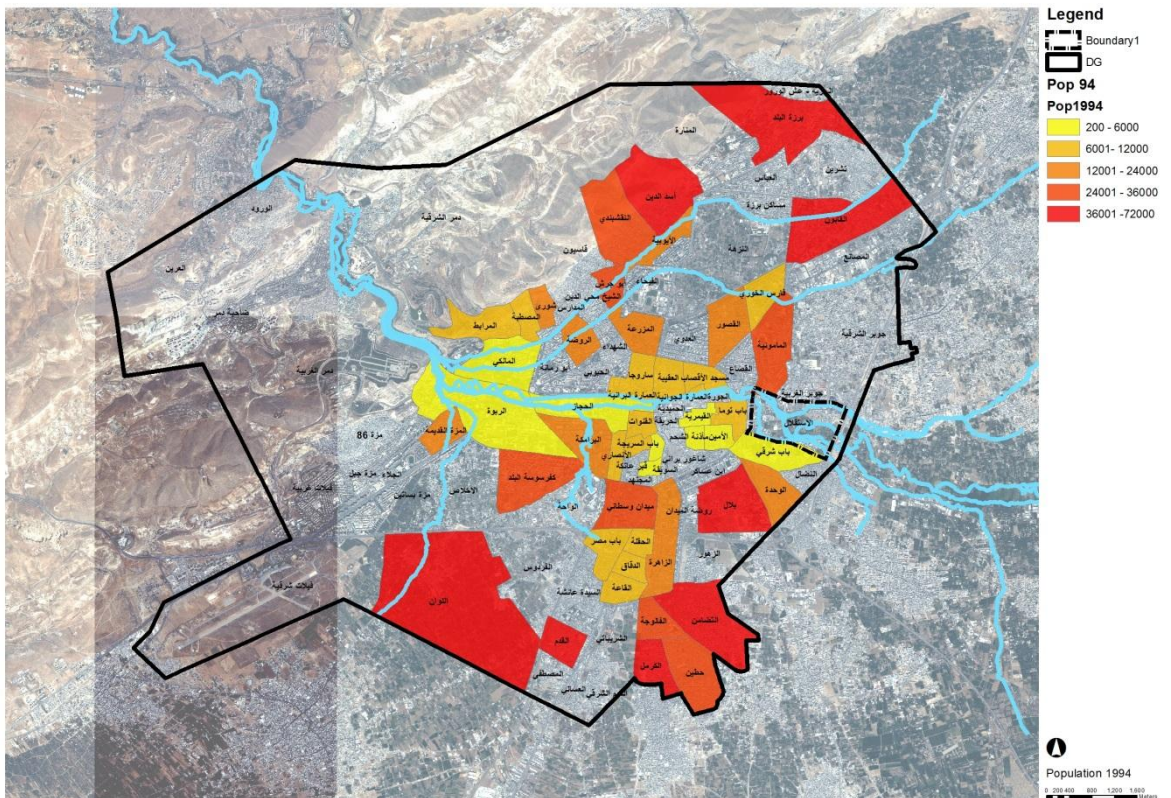
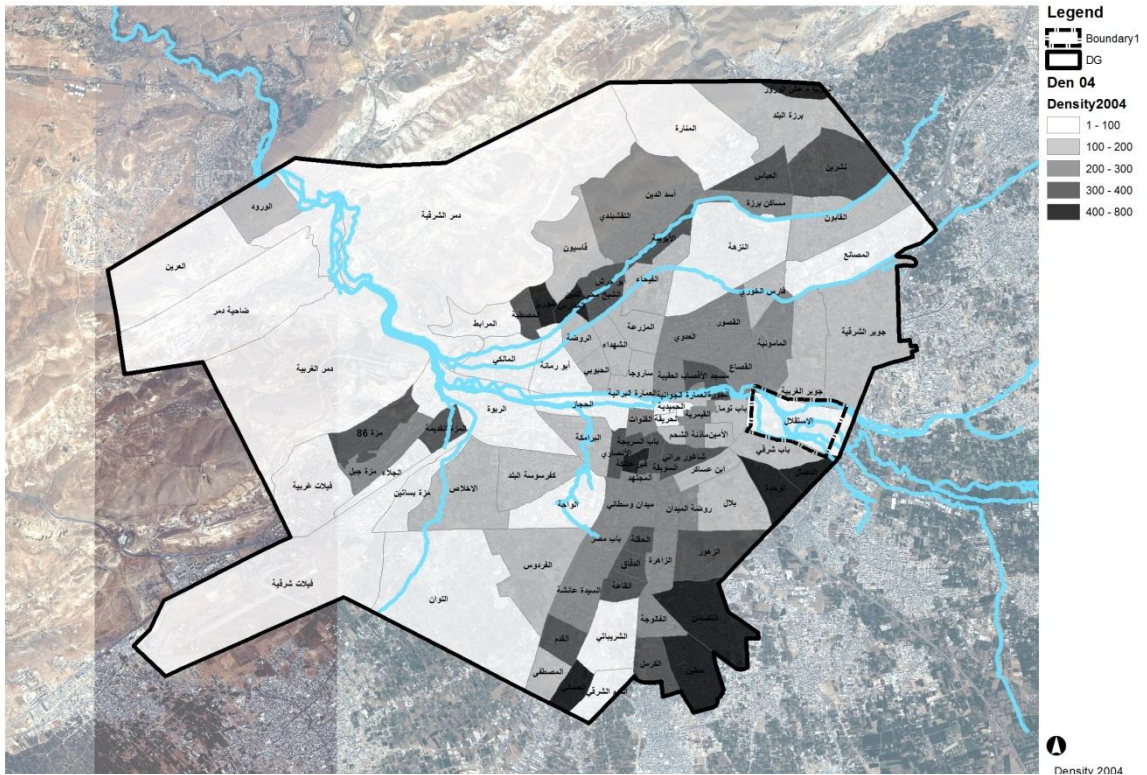
5. The fifth and last criterion is the physical, social and natural damages provoked by the current war. The site is one of the hottest points that carried out a lot of damage physically, socially and economically.

### **3.4. Historical Evolution of the Site**

The site can be considered as the southern green part of Jobar neighborhood. Jobar, a suburb of Damascus, is historically a village on the outskirts of the city. It contains the most important site for Syrian Jews which is an ancient 2,000 year-old synagogue. It also contains the place of Jewish pilgrimage for many centuries which is a shrine in commemoration of the biblical prophet Elijah. During the medieval period, it was "the most important and longest lasting Jewish community outside of the old city walls. There were many properties in the village that belonged to Jewish endowment and leased to members from other communities. (Wikipedia, 2015)

In 1839, the village was described as "...prettily situated on a green fertile spot," as a part of Al Ghouta that surrounds Damascus. During the rioting against the Jews of Damascus in 1840, "the mob fell upon the synagogue, pillaged it and destroyed the scrolls of the Law". (Wikipedia, 2015)

From the mid-19th century onwards there was an ethno-religious makeup of the village. A visitor mentioned that the village is a "favorite resort of wealthy Jews...It is their park and café. There they spend summer afternoons under the bower of vine and jasmine. By 1893, it was mentioned as a Muslim village and a pilgrimage for Damascus Jews, and in 1907 it was mentioned as only a Muslim village. "However, during these years, Jewish visits to the village persisted, and on festival days many of the Damascus Jews assembled at the synagogue to worship". (Wikipedia, 2015)



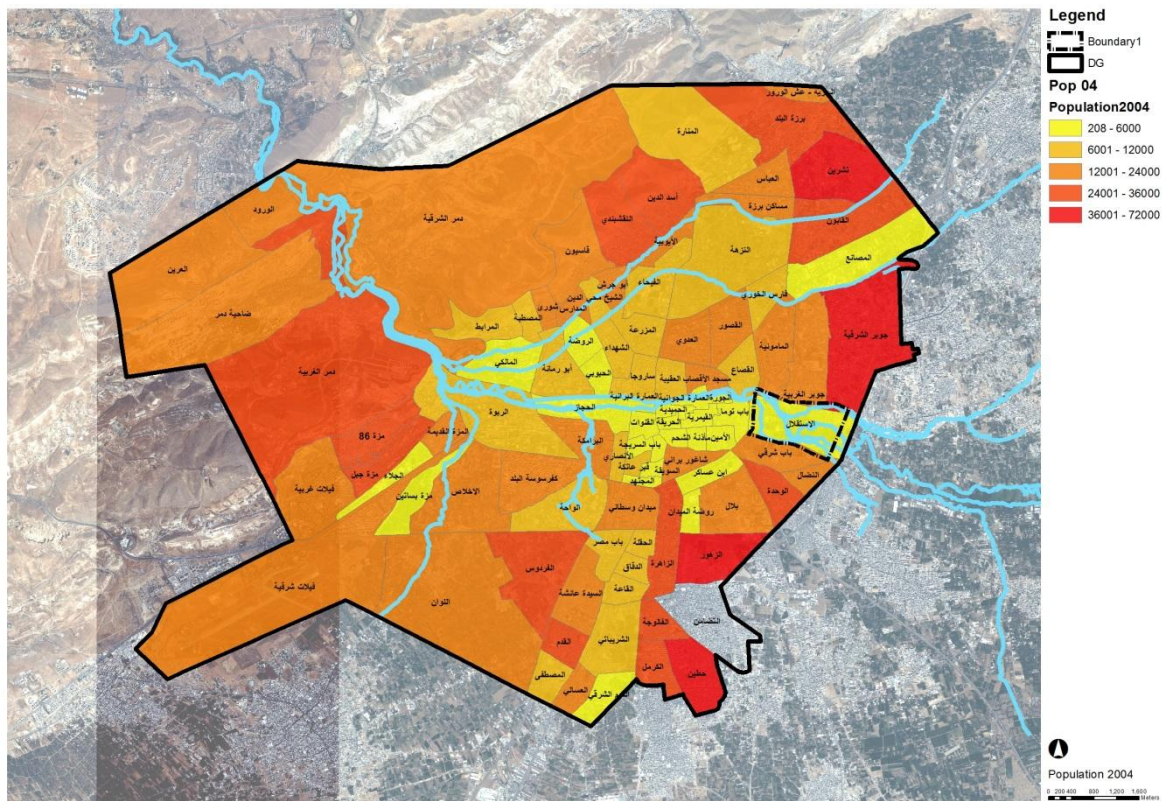


Figure 3.7. Maps showing the city's density and population in 1994 and 2004 (Prepared by author)

The maps show density and population of Damascus's neighborhoods in 1994 and 2004. They mention the increasing population within the site through time. The aerial photos date back to 2000, 2005, 2010, 2011 and 2013. They show the chronological order of the site throughout the last 15 years. The last one sheds light on the current war's physical effects within the site's area.



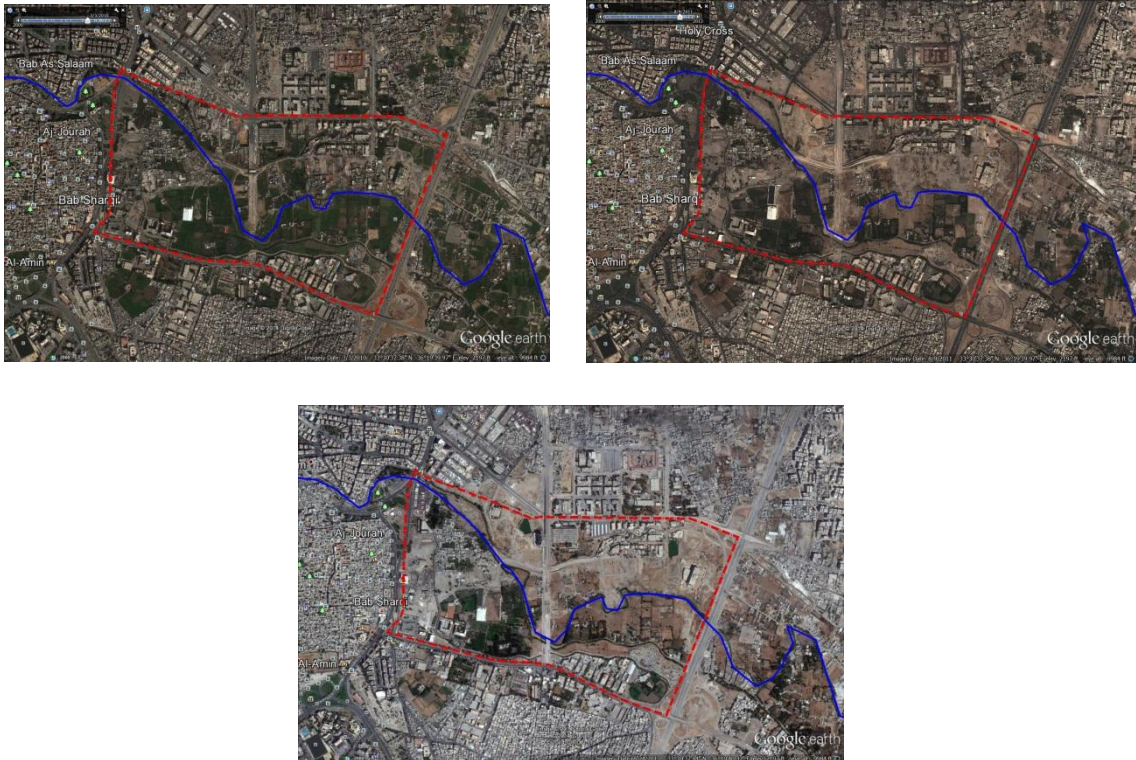


Figure 3.8. Aerial photos showing the site through time

### 3.5. Proposed and Ongoing Projects

#### 3.5.1. Japan International Cooperation Agency (JICA) Project

The project was done by Japanese as well as Syrian experts from Ministry of Local Administration (MoLA). The second phase of the project started late September 2010 and lasted till April 2011. The project purpose was to improve the capabilities of officers of MoLA and other authorities in Syria to formulate and implement the detailed urban plans. The overall goal was expressed as detailed urban plans to be implemented through a participatory approach in Damascus Governorate and the Rural Damascus Governorate.

Two district plans were prepared for two different areas which are; the Qanawat south area and the Ghouta road area. The second area is more important to be mentioned since it is located on the Eastern side of our site within Al Ghouta.

Basically, the study introduced the group irrigation system as a feasible strategy to provide farmers with the needed water for irrigation. Knowing that it is difficult for farmers to apply for the Government subsidy system since most of the existing wells are non-licensed and individual farmlands are too small to apply for Governmental support. Among the advantages of the project are; a new common well will be financially supported by the Government, it will be officially registered, a better production and marketing can be expected and a higher level of irrigation system is installed by joint capital investment.

### ***3.5.2. Damascus Master Plan 2030 (DM 2030)***

This section was written based on interviews with people who were part of the study process. I will not mention a name since it is still an ongoing project and it's not published yet. The study was prepared by Khatib & Alami in partnership with the Governorate of Damascus and its stakeholders. The duty was to prepare a study and elaborate a new Master Plan for Damascus city and its vital surrounding to define the needed development strategies. The target was to address the failings of the city in 2010, to ensure that its successes and positive attributes are not lost but carried forward to 2030.

The city was in need for a comprehensive study knowing that the last approved master plan for Damascus was done in 1968. The study took into consideration a

number of attempts that have been made to update the planning policy for Damascus since that time, which are:

1. The regional master plan submitted by GCEC in 2008.
2. The regional studies of the Barada Valley and Maaloula carried out on behalf of the Ministry of Local Administration and Environment 2007.
3. The framework for the city put forward by the Japanese International Cooperation Agency (JICA) in 2008.
4. Studies that have concentrated on particular areas of the city like:
  - a. The project of the German Agency of Technical Cooperation (GTZ) concerning the land use around the City (2008).
  - b. The study of the Municipal Administration of Modernization (MAM) that examined the informal housing areas at risk on Qassioun.

DM 2030 stated that the city and its vital surrounding need to be supported by a comprehensive infrastructure system which will provide public transport for all sections of society; a potable water supply; an efficient sewage treatment system; a reliable electricity supply and a telecom network that will support modern needs. The environment of Damascus and its vital surrounding was respected and enhanced envisioning Damascus as a livable and sustainable city.

The study addressed the loss of some 16,800 hectares of land from the Ghouta between 2010 and 2030 as both formal and informal development. It continues to take place threatening the existence of Al Ghouta with the loss of 2 hectares of land every day.

DM 2030 defined Al Ghouta as the unique heritage of Damascus which is integral to the memory and visual distinctiveness of the city, and large green belt that

enhances the city visually. Al Ghouta is an important component of the Master Plan because it embodies the identity of Damascus and it is a green area at the metropolitan scale that tempers the urban microclimate and enhances the visual character of the city.

The area of Al Ghouta exceeds 26,000 ha within the project boundaries. Its productive landscape contains a combination of orchards, arable farming, vegetables and grazing land. Historically, Al Ghouta was fed by Barada tributaries through an elaborate distribution of water. Recently, the river agriculture is increasingly relying on wells due to the reduction of water. Based on geographic location, aerial mapping and landscape character Al Ghouta was classified by DM 2030 into:

1. Inner Ghouta Clusters: which include fragmented pockets that are contiguous with the urban footprint and under direct threat from urban sprawl.
2. Outer Ghouta Clusters that are larger in area, located at the periphery of the Master Plan area limits.

The master plan vision was to protect Al Ghouta as a unique, environmentally and ecologically sustainable landscape that combines agricultural production and recreation. In order to preserve Al Ghouta, the Master Plan proposed three broad and overlapping lines of action:

1. It proposed a clear spatial and visual definition of Al Ghouta.
2. Defined its edges and critical locations vis-à-vis the urban footprint.
3. And proposed zoning within Al Ghouta landscape towards an environmentally sustainable agricultural production.

The Master Plan proposed that Al Ghouta should be developed into five landscape components:



1. Al Ghouta Buffer Landscape; which is a linear planted corridor that will provide clear spatial and visual definition for Al Ghouta and serve as an amenity landscape that includes parks and functions with a spine for pedestrian and cyclists.
2. Al Ghouta Metropolitan Parks which are open planted landscapes that will be located in critical locations where Al Ghouta is threatened by continuous urban development.
3. Inner Ghouta Clusters which include pockets surrounding the urban core. These areas are under direct threat from urban encroachment. Current water-intensive agriculture in these areas will be gradually replaced with environmentally and economically sustainable agriculture.
4. Outer Ghouta Clusters includes larger pockets defining the outer limits of the project that are threatened by urban encroachment from the Nahiyas surrounding Damascus. As with the Inner Ghouta Clusters, the proposed shift is from water-intensive to environmentally and economically sustainable agriculture.
5. Upland Landscape Clusters are an open, generally uncultivated landscapes north of the Qalamoun Range. They are threatened by new development even though they are not historically a part of Al Ghouta.

The Master Plan proposes actions to apply environmentally and economically sustainable agricultural and pastoral production as a necessary strategy to respond to water scarcity in the region.

1. Shifting from vegetable agriculture to fruit tree cultivation. Current water intensive vegetables that now dominate Al Ghouta will be replaced by fruit tree cultivation to reduce consumption of water.

2. Protect Ghouta agricultural production by creating a certification body to protecting quality and maintaining the standard of products.
3. Encourage public-private partnership in agriculture's management to ensure economic profitability.
4. Strengthen local food systems by creating markets that reestablish the link between the city and Al Ghouta.
5. Capitalize on agro-industries for example olive oil and carob based products.
6. Secure through phased planning supply of seedlings.

DM 2030 water study mentioned that the renewable water balance for Barada & Aawaj basin is estimated to be 528 MCM/year. The basin total demand of the basin reaches 976 MCM/year which substantially exceeds the available renewable resources. This demand is offset through the use of treated effluent for agricultural purposes by about 135 MCM/year which results in a water deficit close to about 313 MCM/year which is extracted from non-renewable resources. This is a substantial amount that will eventually deplete the underground water resources and will have a severe impact on the entire basin ecological system.

The study also mentioned that the irrigation system currently in use is described as a traditional surface gravity system that is supplied with water from three different sources:

1. natural water courses
2. treated effluent
3. private wells

The existing system is comprised of a series of open channels that distribute treated effluent from Adraa Sewage Treatment Plant, as well as a series of other smaller

channels and conduits that convey the water from natural water courses and private wells.

Barada River is the main source of surface water irrigation supply to the Damascus plain (Al Ghouta). But due to the extensive abstraction of water from the river, the flow that reaches Lake Ateibeh where the river discharges is no longer significant, there are currently 22 Irrigation canals that radiate from Barada water course.

These canals of Barada can be divided into 3 groups depending on the groundwater use and the reliability of flow from the river.

Group I canals contains 6 perennial canals that use solely Barada's water resources and discharge it into the El Hameh section.

Group II canals consists of 4 canals that are also perennial but have an additional inflow from the treated effluent of the Adraa wastewater treatment plant.

Group III canals cross Damascus and receive the runoff from watersheds they cross and at some locations even receive discharges.

The study proposed strategies for water balance in Barada and Al Awaj basin, defined the allowable uses for residential, agricultural and industrial uses in 2030. Those strategies help in revitalizing the water flow of Barada River and its streams and applying various mechanisms to introduce more water rationing or efficient use practices. Among them are the following:

1. Separation of existing sewer system, and implementation of a new independent storm sewer system that will handle the storm water discharges during the rainy seasons.
2. Proposing a new irrigation system that relies on the wastewater treatment plants in Rif Damascus since they have the capacity to irrigate the entire green areas.

3. Treated effluent generated from Adraa WWTP will not be used for irrigation in the Master Plan area. It will only be used to irrigate areas downstream of the WWTP. Treated effluent will be diverted towards Ateiba lake and surrounding streams.

### ***3.5.3. K&A Proposal***

As one of ten chosen sites for further studies, our site was named “Sharki Bab Sharki” and was a subject for a detailed urban design study. In this study, the remained undeveloped lands beside some of those which were illegally developed in the site were cleaned and preserved as part of Al Ghouta, an old cluster of traditional houses was also preserved and the rest of the site was developed. A previously planned ax that cuts the site in perpendicular intersections with rivers water beds was taken for granted. The proposed uses were mostly residential and the architectural typology varieties from residential buildings to villas as we come close to the preserved green center of the site. Over pass connections were proposed over the eastern highway to integrate the extension of Al Ghouta.

### ***3.5.4. Critique***

From my point of view, the traditional strategy that was used for the zoning of Al Ghouta is rigid. It relies on defining an unrealistic line that separates Al Ghouta from the urban context. Although the target was to protect Al Ghouta, it might not be realistic to have one line to delimiting Al Ghouta. We need an interphase zone that has the capability to integrate other dimensions. It will be more realistic, feasible and creative

if the strategy was flexible enough to allow for different actions to take place along the border integrating other social, economic and ecological circumstances. More understanding of the ownership status of the lands within the site would have been allowed for more sophisticated solutions that can be implemented easily. For example, using the publically owned right of way along the river water beds would enhance the connectivity without changing the ownership status.



Figure 3.9: An illustration showing K&A proposal for the site

At the site's scale, the environmental dimension was not seriously tackled by preserving the remaining undeveloped lands within the site. The proposed architectural typologies do not belong to the surrounding urban fabrics and do not relate to something

special in that site. The economical and the social dimensions could be managed by studying the ownership status in details to compensate the whole society in this area in an equal way. Testing new contemporary strategies that are more complex, creative and ecologically sensitive would have allowed for flexible solutions that could be replicated in other sites with similar circumstances. Especially that, after the war ends, the needed time, studies and resources will not be available to rebuild the destroyed neighborhoods. We will need flexible solutions that can adapt depending on different circumstances.

### **3.6. Planning Framework**

The thesis will take Damascus Master Plan 2030 into consideration, apply its visions and strategies and build on them adding the new dimension of the current war and its impacts. It will propose another strategy regarding the delimiting of Al Ghouta. The thesis will focus more on the mentioned study for one of the ten chosen sites by the Master Plan for further study. It will start from the detailed study that has been done by Khatib & Alami for this site, builds on the previous critique and present a new strategy that could be replicated in all similar sites in Al Ghouta after the war. Taking into consideration that DM 2030 will need to be revised after the war, the thesis will hopefully has the opportunity to be accepted as an appendix for the Master Plan.

## CHAPTER 4

### READING THE SITE'S FEATURES

This section is about reading the site's features. It starts by covering the socioeconomic dimension. Then it focuses on the physical dimension by studying the built up urban features of the site that contains the old city urban fabric, road network and hierarchy and the surrounding new urban fabrics. The third section of this chapter covers the open landscape features of the site by describing the existing condition of water beds within the site and the site as a part of Al Ghouta.

#### **4.1. Socioeconomic and Political Dimensions**

I conducted some meetings with people from the study area that provided me with the needed information for this section. They mentioned the economic role for this site throughout the history as a linkage between Damascus and its countryside. Within the site, they used to prepare the raw materials that come from Al Ghouta like wood and mud as well as food, milk and meat to be sold within the city's market. A part of the site was called Al Manasher which means "wooden factories" in which they store and prepare the wood for industry. Another part was called Al Maslakh which means the slaughterhouse that provided the city with meat. Al Dabbaghat which means "the tanneries" is another part that provided the city with animals' leathers. The agricultural activities on this site were focused on vegetables production. Water sellers were using

the water beds within the site to fill their tanks before they move to the city. During the 1950s, informal settlements started to be built around the site and to invade it at its northern and southern edges. Moreover, the role of the area as a transitional zone between the city and its countryside started to be erased especially after the governmental acquisition that happened on some parts of the site for administrative and military uses.

The thesis will take into consideration the historical social and economic role of the area as a transitional zone between Damascus and its countryside. It is the area where people from the city and from the countryside meet, buy, sell, and socialize. This relationship between Damascus and its countryside needs to be revitalized, especially after the war that created a gap between them.



Figure 4.1: An aerial photo showing water channels within the site (Prepared by author)



Politically, I read the site as a border between two visions of the city; an urban central political vision, and the vision of the towns surrounding Damascus pretending their own identity and culture. The thesis seeks to allow the two visions to come together and to open the door for negotiation of the two political realities.

Analyzing the current situation, the existing land use map shows large areas as mainly industrial, buildings on agricultural lands, unproductive lands, temporary uses and informal residential. The agricultural green lands started to be erased. Throughout time, and due to the lack in water for irrigation, more people tended to find new ways for investing in their lands other than agriculture. Since it's illegal to build on their agricultural lands, they started to either build illegally, temporarily or even to use their lands as open storages or industries for building materials like brick, wood and metal.

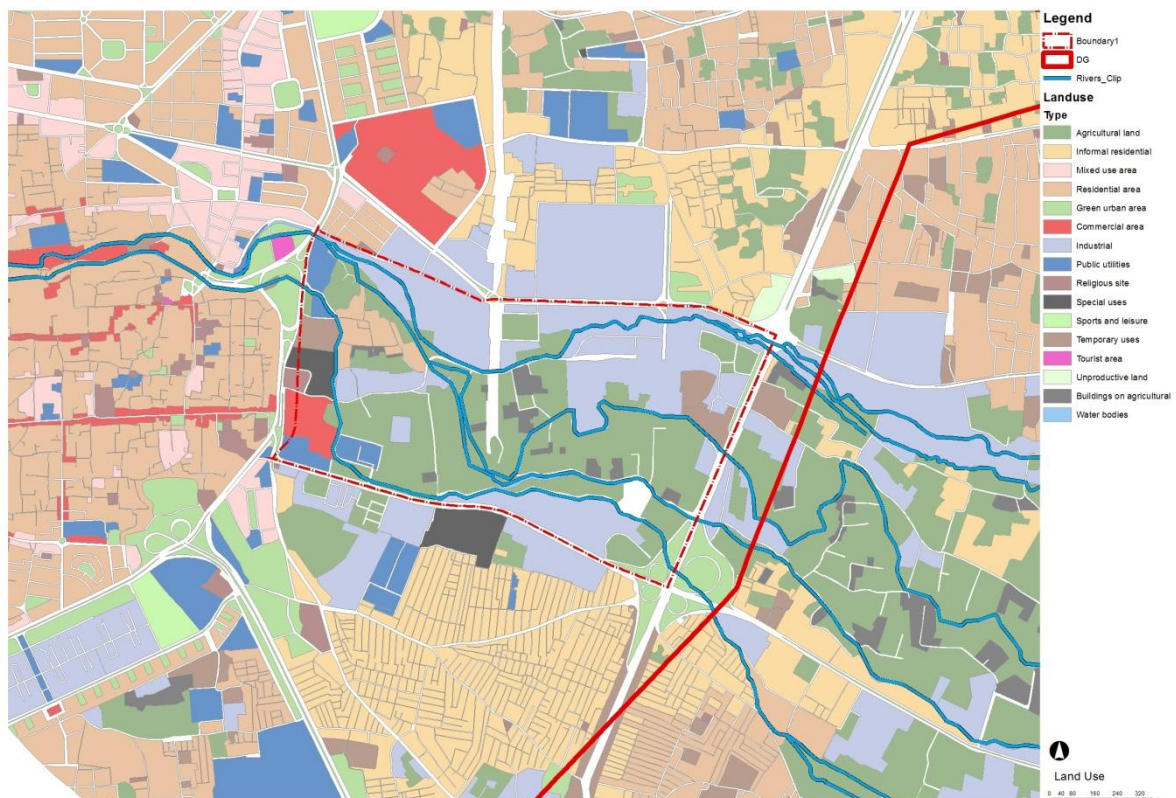


Figure 4.2: Existing land use map (Prepared by author)

## **4.2. Built up Urban Features**

### ***4.2.1. The Old City***

The lack of traditional approaches to maintenance, conservation and use of traditional materials and the lack of conservation policy for the historical zones outside the walled city by regional planning projects, threatened the urban fabric of old Damascus. The spatial pattern of the historic fabric has remained unchanged.

In the old city of Damascus you find the Damascus Straight Street that runs from east to west. “It was visited by St. Paul as recorded in the book of Acts and contains several interesting sights from the Roman, Christian and Islamic periods”. (Wikipedia, 2015)

The Roman Street’s long extends 1500 meters. It has columns and gates on its ends, houses and shops on its sides. “Today it consists of two main streets in old Damascus; the Avenue of Bab Sharqi and Medhat Pasha Souq, a major Damascus market, named after Midhat Pasha, the Ottoman governor of Damascus who renovated it and ordered its coverage with a lead-shade”. (Wikipedia, 2015)

“The east end of Straight Street is at Bab Sharqi, the Roman gate of the Sun. Like other monumental gates, it has a large central arch for horse-drawn vehicles and two smaller arches on either side for pedestrians. There is a minaret above the northern arch, which was built at the time of Nur ad-Din Zangi, in the 12th century”. (Wikipedia, 2015)





Figure 4.4: Bab Sharqi in Old Damascus (Wikipedia, 2015)

#### **4.2.2. Roads' Network**

Isolating the site from the rest of Al Ghouta on the east, the so-called “Southern Expressway” passes as a through traffic which connects Damascus to other cities in the North. With 64 m width, it allows for a maximum speed of 120 km per hour. Ibn Asaker Street is another infrastructural break that separates the site from the old city on its western edge. Al Ghouta Street in the south with another collective road in the north are the site’s edges before it meets its surrounding new urban fabrics. The proposed new highway will pass in the middle of the site and cuts it again into two parts; it threatened more and more the continuity of Al Ghouta and the water channels. Inside the site, there is a spontaneous network of light local streets that are not even paved. There is a need to solve the two infrastructural breaks at the eastern and the western sides of the site. The

proposed new highway in the middle should not be implemented if we seek to protect the landscape features of the area.



Figure 4.5: A map shows the site within the existing roads' network (Prepared by author)

#### 4.2.3. Surrounding Urban Fabrics

The surrounding urban fabrics could be categorized based on neighborhoods' names, densities and urban morphologies. Starting from the Northern side of the site, Kassaa is the first neighborhood from the west, Maamounie is the second, Western Jobar is next and then Eastern Jobar. On the other hand, the southern side includes two neighborhoods which are Bab Sharki on the west and Al Needal On the east. Parts of the mentioned neighborhoods like Dwelaa, Tabbaleh and Kabbas are informal settlements. They are among the poor neighborhoods of Damascus which population mostly came from Daraa in the south.

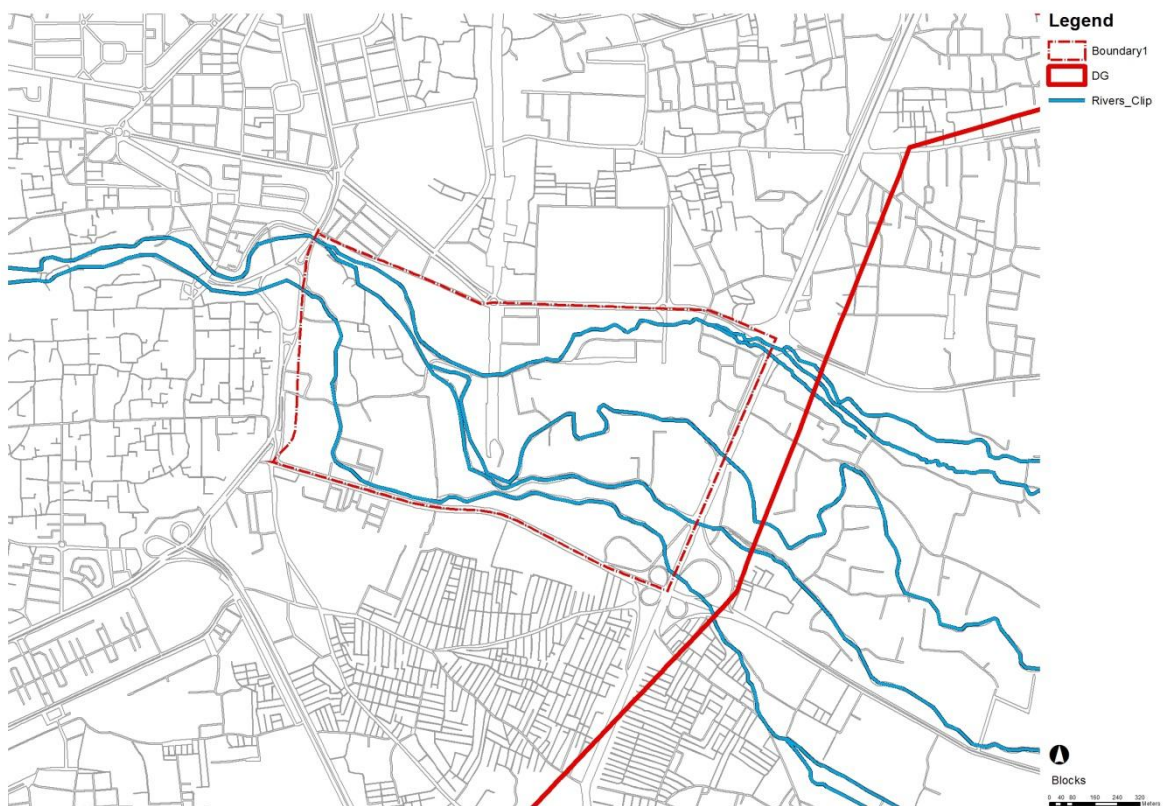
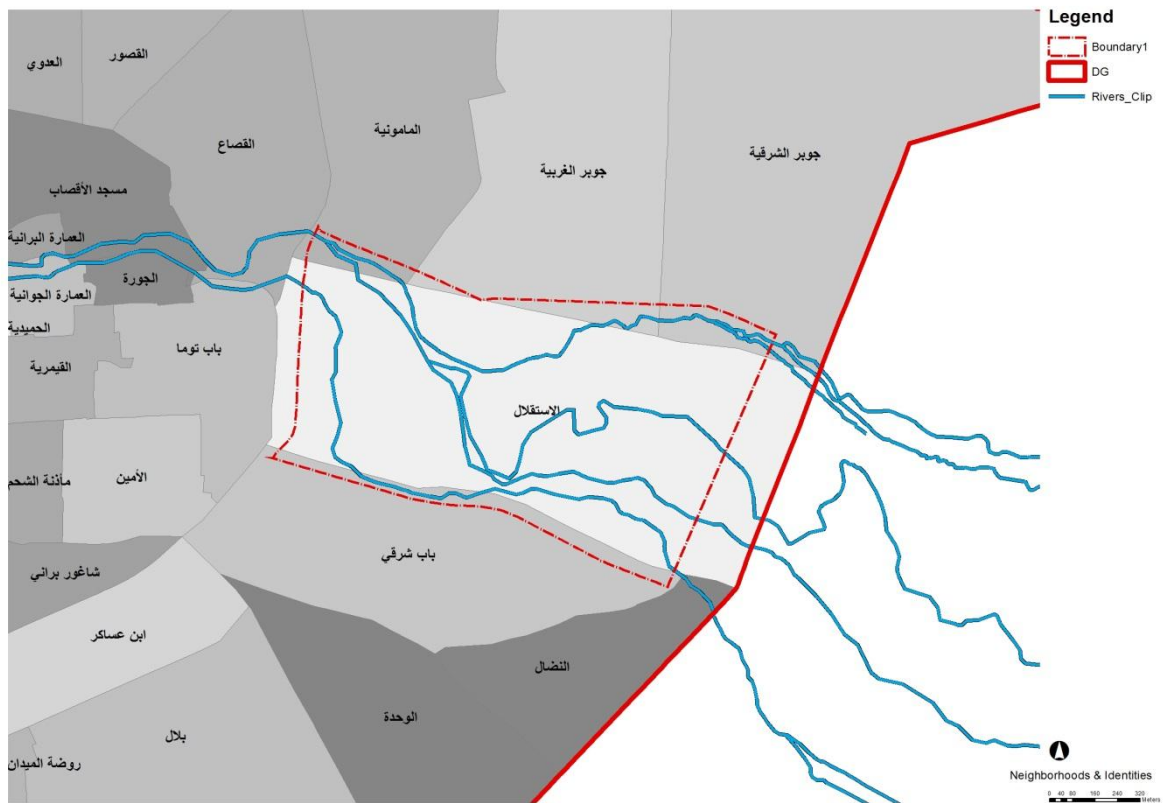


Figure 4.6: Maps show the site within the existing blocks and neighborhoods (Prepared by author)

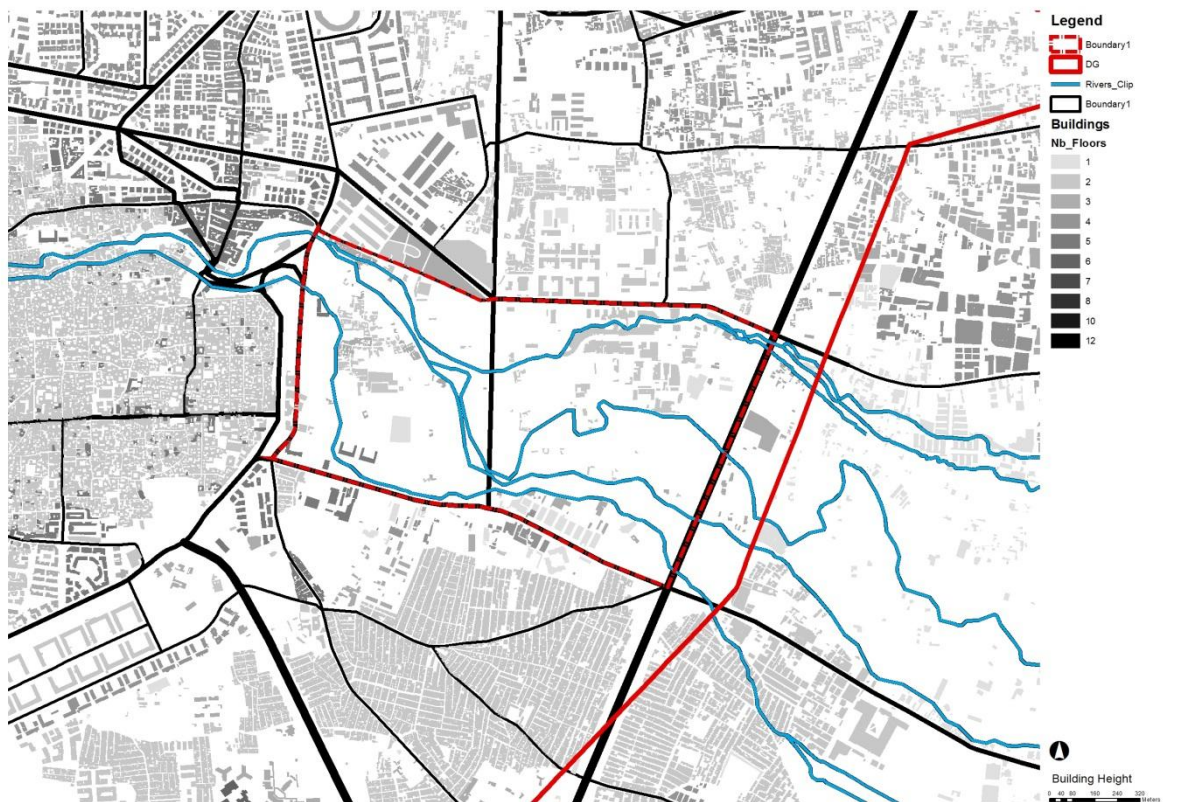
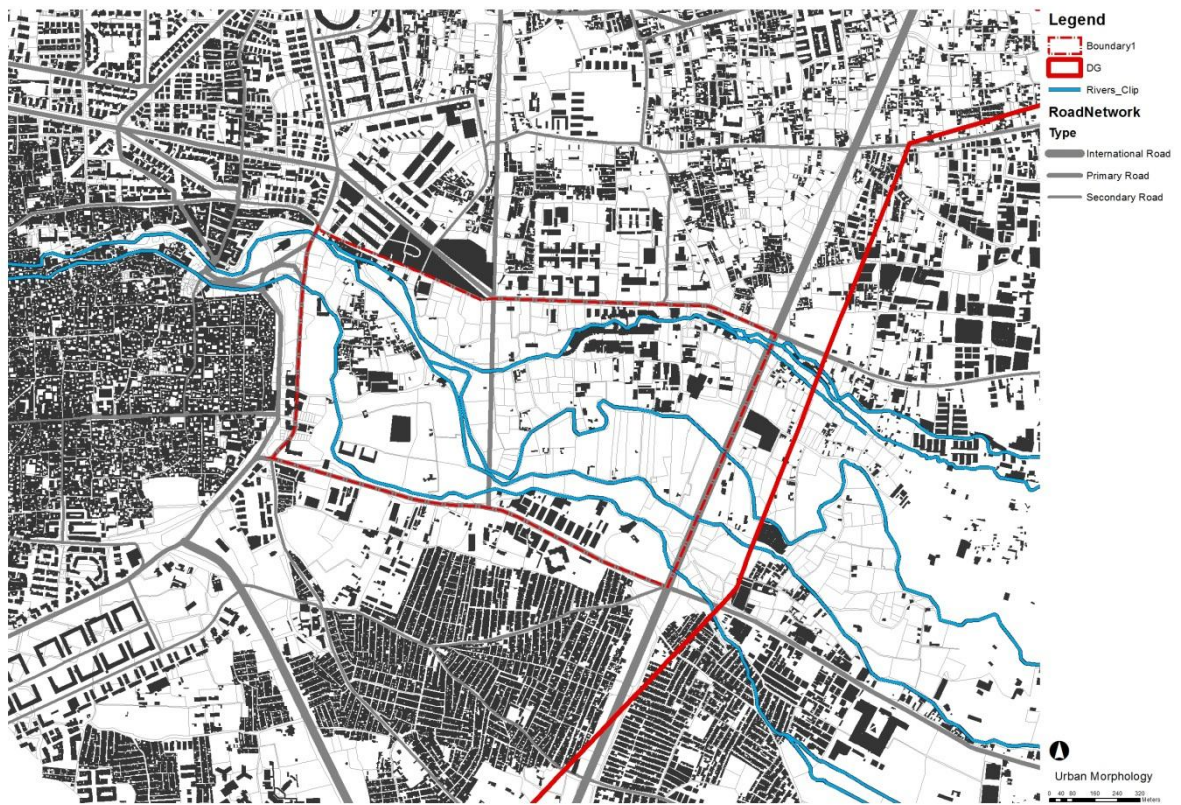


Figure 4.7: Maps show the existing urban morphology and buildings' height (Prepared by author)

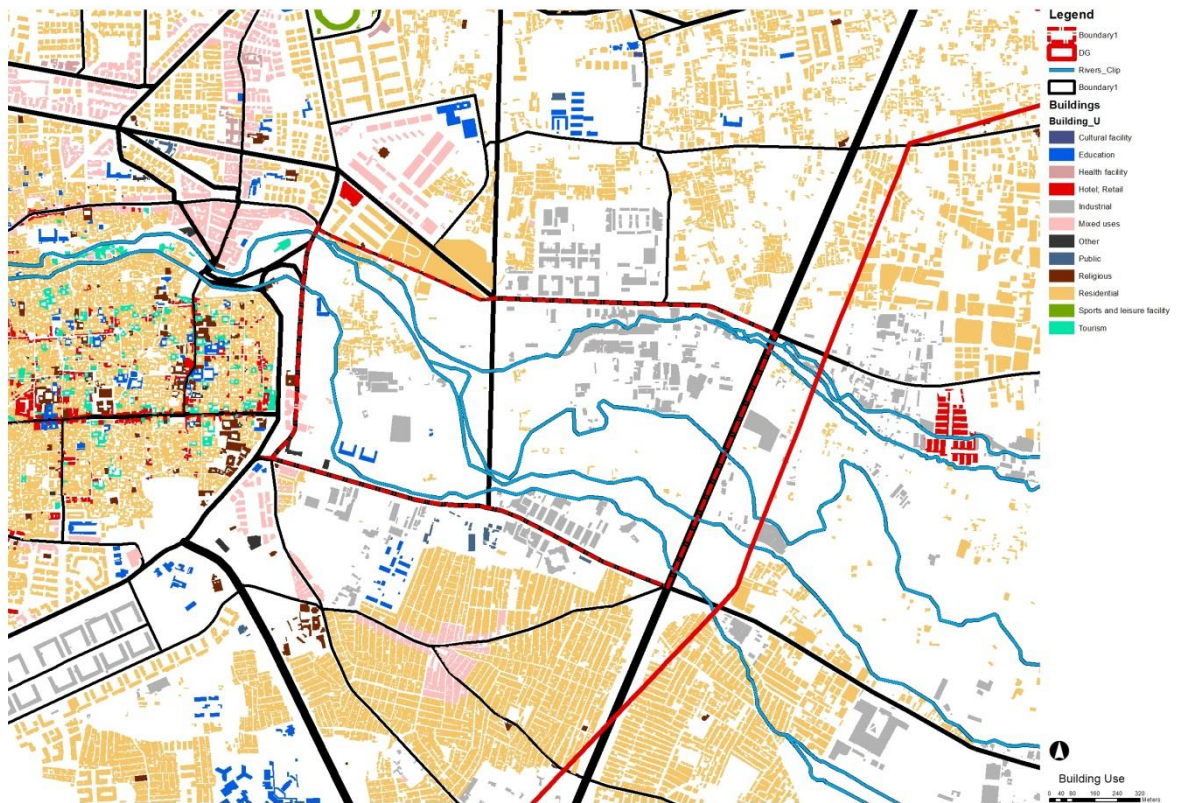


Figure 4.8: A map shows the existing buildings' use (Prepared by author)

The maps show the surrounding urban densities and urban morphologies that vary from dense informal settlements to medium density residential areas, scattered large and small industrial structures and some scattered small scale residential units illegally built on agricultural lands. Blocks, Lots and buildings' typologies vary based on these different uses and densities. The thesis will take into consideration that the urban fabric of the old city and the surrounding informal settlements was built through negotiation. It seeks to propose an urban fabric that allows for negotiations too.

The buildings' heights map shows that almost all the buildings within the site are just one to two stories' height, while the surrounding buildings' height reaches five stories as a maximum. The buildings' uses map shows how the industrial structures are scattered within the site's area.



#### *4.2.4. Existing Typologies*

##### - The Damascene House:

Old Damascene houses provide a kind of privacy for their owners. Inside the house, windows overlook the main courtyard, reflecting the light and giving the Damascene home its airy character. A unique water system allowed each house to have its own well. The water from a branch of Barada River called Baniyas supplied the houses' fountains. All fountains in the Old City were connected by pipes, using the same regenerated water. The design of the house and the urban fabric reflected a kind of a social relationships' hierarchy. The house is usually belongs to the father's family but it could be inhabited by the small families of his sons. The courtyard acts as a public space for the sons families. Neighbors from the same "Hara" or cluster also have a special kind of relationships, and so on.



Figure 4.9: A photo shows the Damascene house's courtyard (Google.com1. 2015)

- Al Sibat:

Al Sibat is a link between the houses over the street. It used to be built as a bridge between two houses if they belong to the same owner. It was also used as an extension for one house without affecting the street. What is strange about this concept is the overlapping between the public and the private ownership. Since the street is public, the Sibat is privately owned.



Figure 4.10: A photo shows an example of Al Sibat in Old Damascus (Scontent-a.cdninstagram.com, 2015)

## - Informal Settlements

There is no defined architectural typology that can describe the shape of the unit within the surrounding informal settlements. Buildings are overlapping in a complex manner allowing the residents to gain the maximum available area. Roofs are used as terraces; they are similar to the courtyards of the Damascene houses since they allow for similar uses. From my point of view, the hardest part in proposing new urban fabrics within the site will be about integrating these surrounding informal settlements and dealing with their complexity. However, the visual dimension of these informal settlements reminded me with Catal Huyuk, an ancient urban fabric that is located in the same region.



Figure 4.11: A photo shows the surrounding informal settlements (Betnabetak.com, 2015)

## - Catal Huyuk

It was a very large Neolithic proto-city settlement in Anatolia - Turkey, which existed from approximately 7500 BC to 5700 BC, and flourished around 7000BC. The population of its eastern mound estimated to be 10,000 people. “The inhabitants lived in mud-brick houses that were crammed together in an agglutinative manner. No footpaths or streets were used between the dwellings, which were clustered in a honeycomb-like maze. Most were accessed by holes in the ceiling, with doors reached by ladders and stairs. The rooftops were effectively streets. The ceiling openings also served as the only source of ventilation, allowing smoke from the houses' open hearths and ovens to escape”. (Realhistoryww.com, 2015)

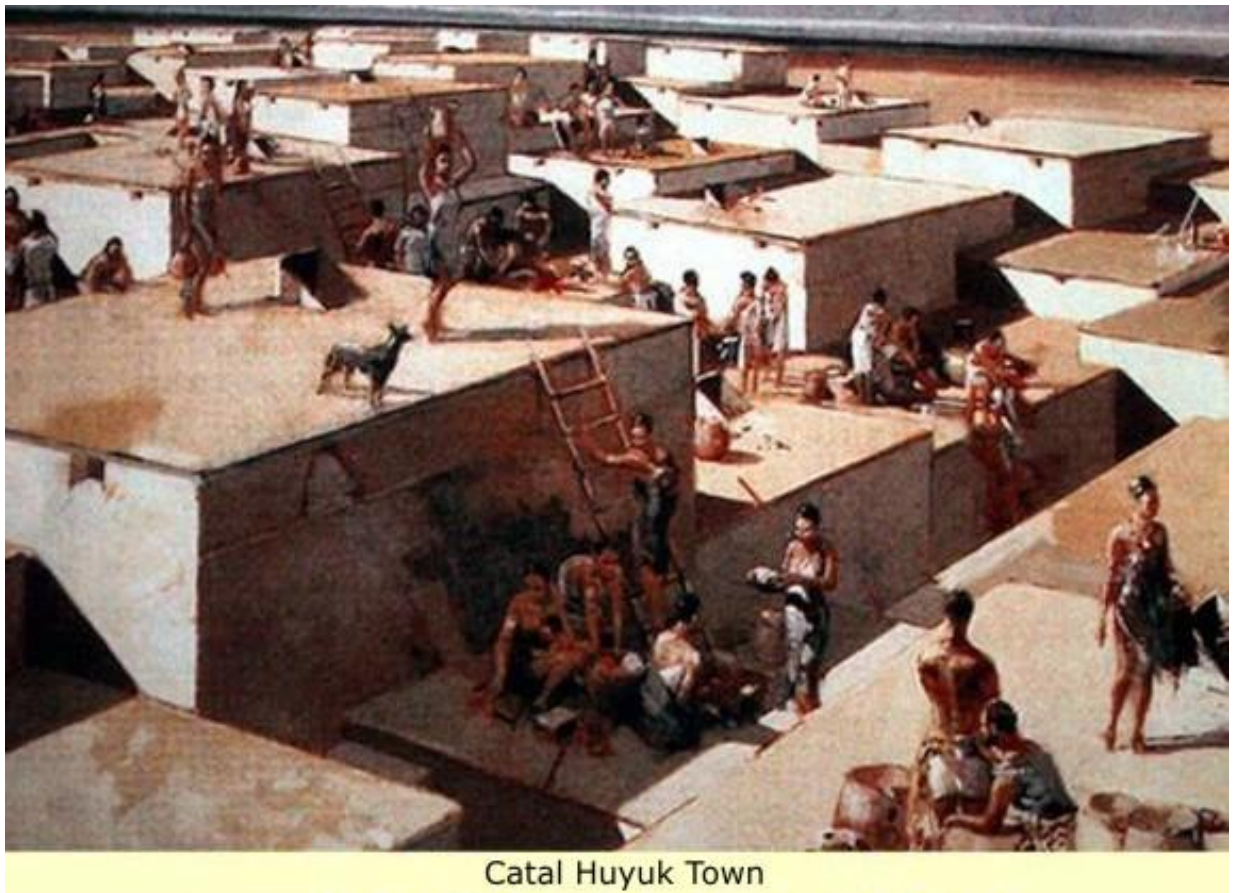


Figure 4.12: An illustration shows Catal Huyuk (Wikipedia1, 2015)

Conceptual linkages between the typologies that were mentioned will be built in the next chapter where I describe my vision. This will help me to formulate design strategies for the new typologies to be created based on these conceptual links.

### **4.3. Open Landscape Features**

#### ***4.3.1. The Rivers***

Starting from the North to the South, the four streams that pass through the site are: Al Daaiani, Barada, Al Mlehi and Al Akrabani.

Al Daaiani River had its name from an old erased village that was called Daaia. It branches from Barada beside Bab Al Salam in Damascus taking one quarter of its water amount. After it goes out of Damascus, half of Barada's water amount goes to Al Daaiani which makes it one of the most important streams that feeds many villages like Ein Tarma, Kafar Batna, Jesreen, Saqba and Hammouria.

Barada is the main stream that feeds Damascus and Al Ghouta within the surrounding dry lands. Its long is 60 km with an average water capacity of 12.5 m<sup>3</sup> per second in Al Hama that increases to 65 m<sup>3</sup> per second during floods in winter and decreases to 5 m<sup>3</sup> per second during summer.

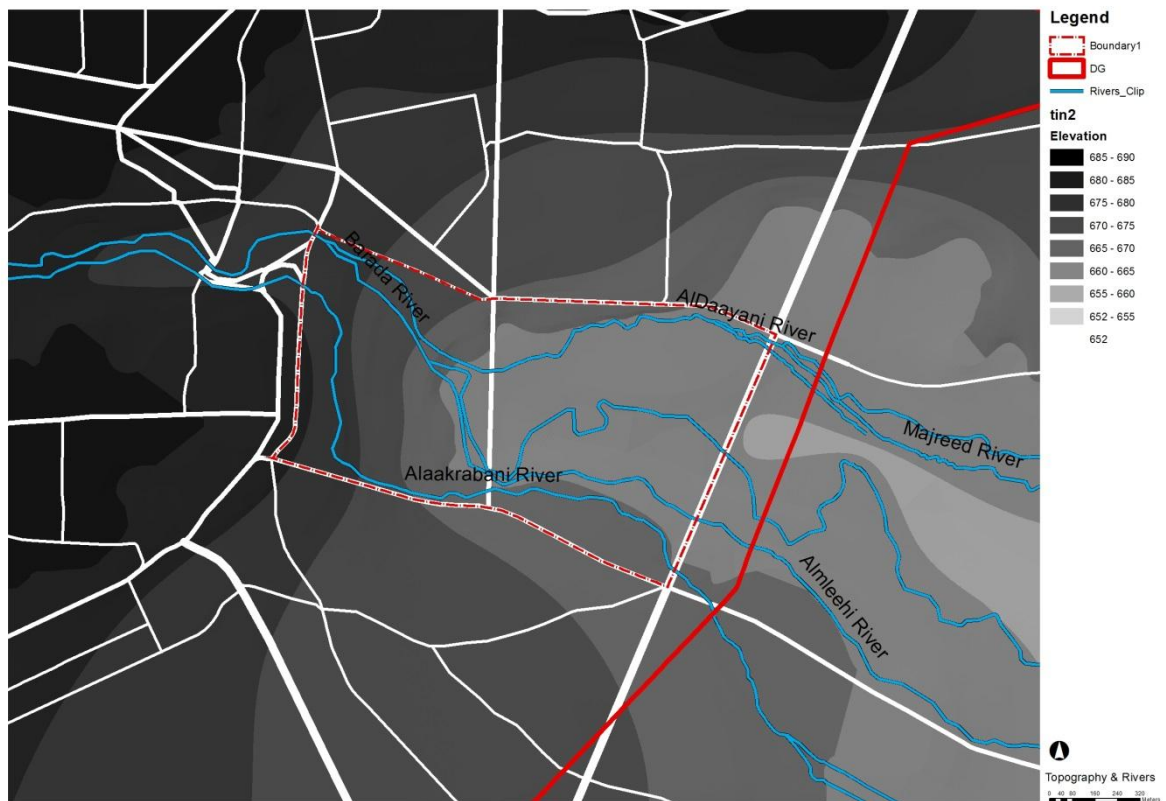


Figure 4.13: A map shows the existing topography and water channels (Prepared by author)

Al Mlehi River had its name from Al Mleha village and branches from Barada near Bab Sharki. It feeds Al Zour area then it goes south East to feed the Eastern Ghouta lands.

Al Akrabani River had its name from Akraha village. It branches from Barada in the city center (Al Marje area) and goes parallel to the Northern wall of Damascus Citadel. Then it passes through Al Amara, Bab Al Salam and Bab Touma until it reaches Al Ghouta. The map shows relationship between the topography of the site and the alignments of the four rivers. It describes the spatial dimension of the site's water system as a part of the water system in Damascus that feeds Al Ghouta which contains the lowest lands around the city. The rivers' network with its islands as well as the

publicly owned lands on rivers' sides could create a recreational network that acts as continuity for the proposed green corridor throughout the city.

#### ***4.3.2. Al Ghouta Part***

The site could be considered as the last remaining part of the old traditional Ghouta within the city's administrative boarder, and the well known as "Al Ghouta" because of its connectivity with the old city. It's the gate of Al Ghouta from the city in general and the old city in particular, and the gate of the city from Al Ghouta. It's where the image of Al Ghouta as a destination for the city's inhabitants during summer has been built. The following maps show how the urban sprawl is invading Al Ghouta and the opportunity for some illegal or temporal uses to be added back to Al ghouta. It also shows how the described infrastructural breaks isolate the old Ghouta from the city itself and from the whole Ghouta as one entity.

While preserving the remaining Ghouta within the site area is so important, building connections and links by reading the site differently is more important. Building on the previous mapping, my proposition is to read the site in a different way as continuity for the green corridor proposed by DM 2030. It could act as an ecological link that connects the green network of Damascus with its natural surrounding (Al Ghouta). This will also help protecting the water system and the wild life of the natural surroundings of Damascus. The infrastructural breaks should be solved taking into consideration the mentioned strategy.

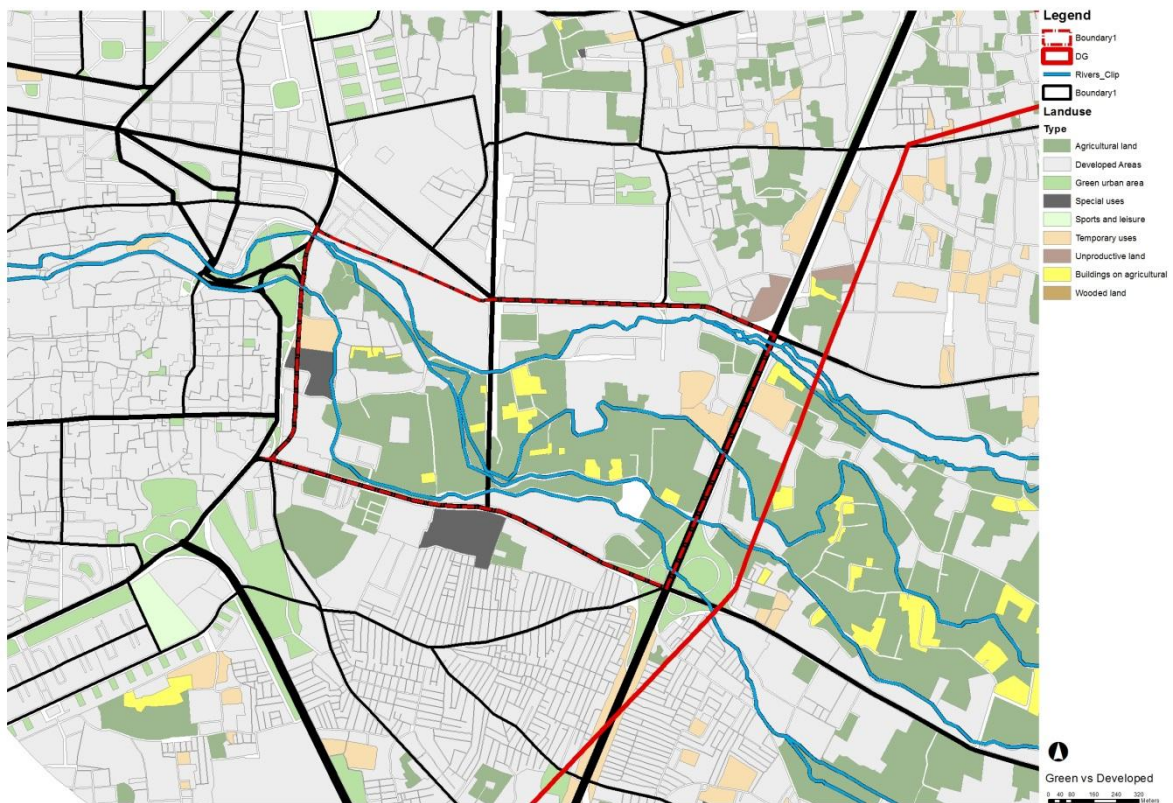


Figure 4.14: Maps show the existing urban sprawl and undeveloped lands (Prepared by author)





Figure 4.15: A Map shows the site as an ecological link (Prepared by author)

## CHAPTER 5

### VISION & DESIGN STRATEGY

This chapter exposes the vision guiding my proposal and the design strategy. It starts by defining the appropriate areas of intervention within the site, and elaborate then on the vision for the site's future and the conceptual links and backgrounds behind this vision. The character zones and the used criteria are then defined in the third section of this chapter, followed by the design strategy and process that led to the proposed structural plan. In the last section, the existing architectural typologies are analyzed and the proposed typologies and parametric scales are explained.

#### **5.1. Defining Sites of Intervention**

Looking at the following map, we realize the presence of industrial sites along the edge where the city meets Al Ghouta. What I propose is that the industrial sites itself can be read as the border between the city and Al Ghouta. DM 2030 has stated that these sites are harmful to the city and its Ghouta especially the leather industry that produces toxic liquids which are usually thrown away in the rivers. DM 2030 recommends moving these industrial activities to the industrial city in Adra, developing some of them as residential areas and adding back the rest of them to Al Ghouta agricultural lands.

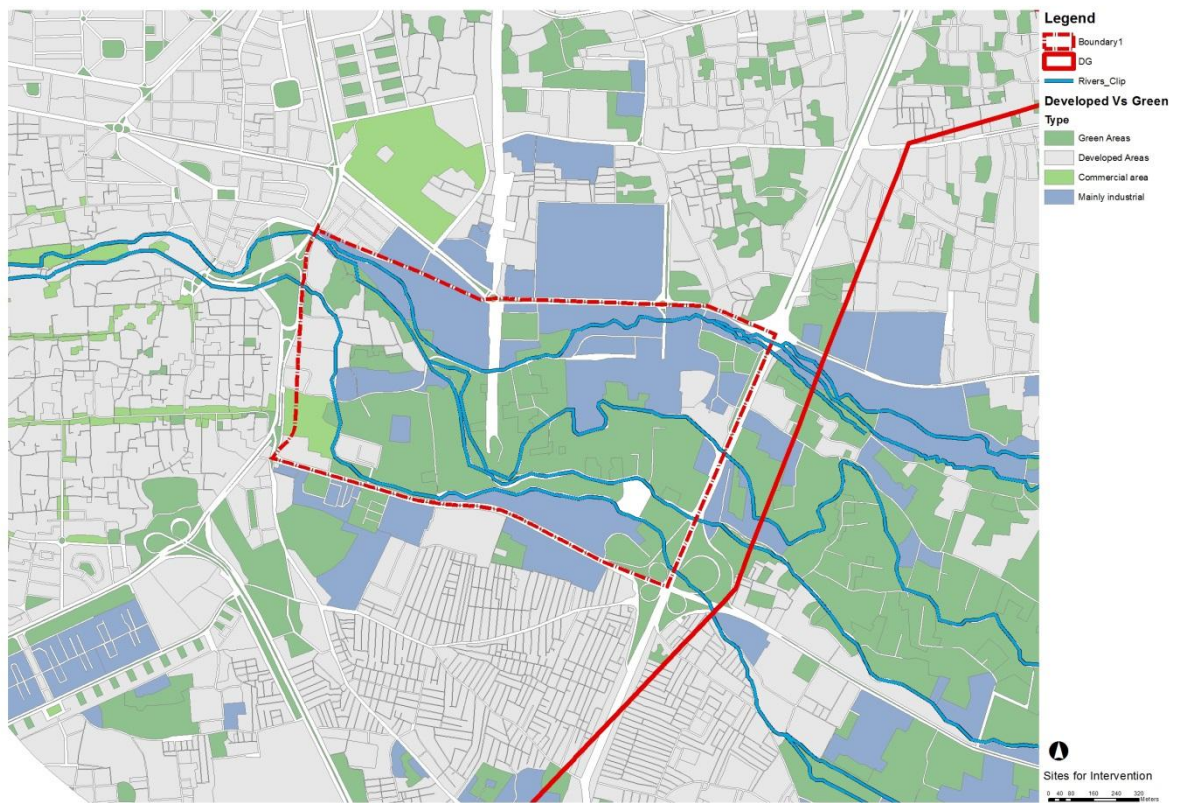


Figure 5.1: Maps show sites for intervention (Prepared by author)

## 5.2. Vision

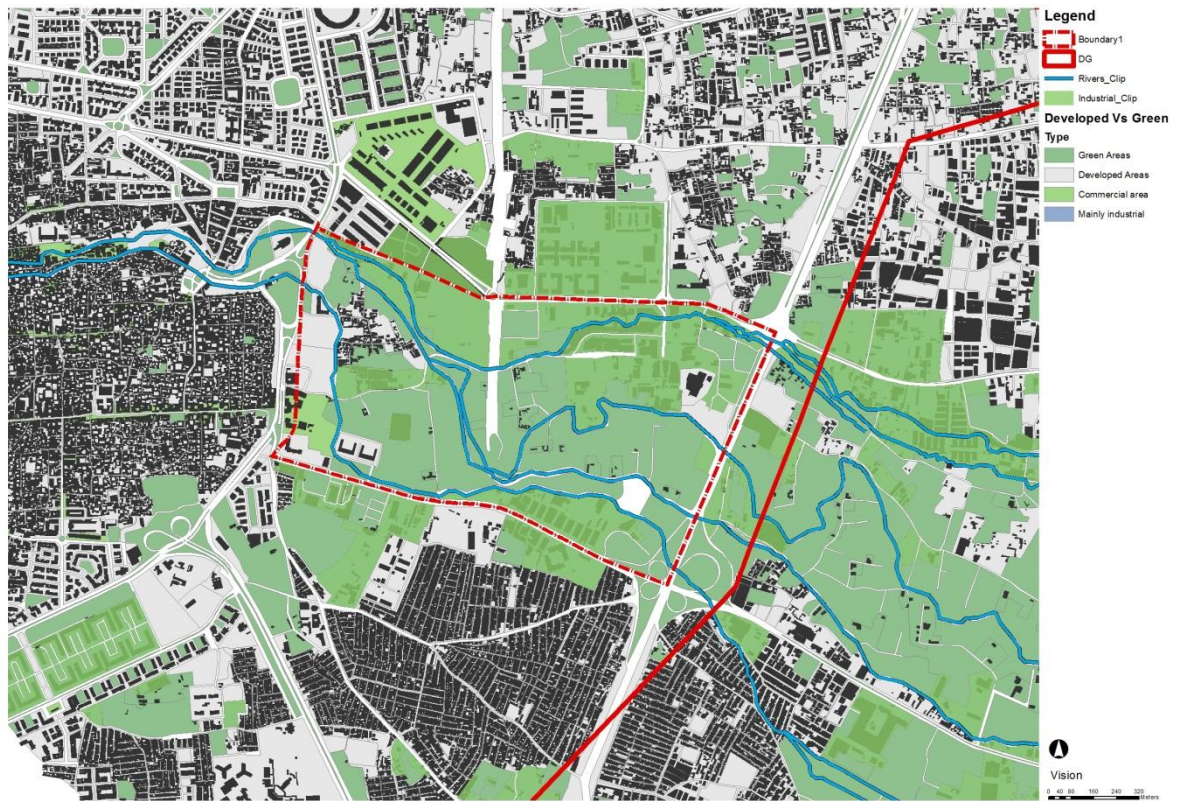


Figure 5.2: A map shows the vision (Prepared by author)

Building on this strategy, my vision is using the mentioned sites to blur the edge between the city and Al Ghouta. In other words, my vision is to reclaim as much as I can from these sites as productive agricultural lands, while, at the same time, responding to the urbanization pressure to develop these areas. What if these sites were added back to Al Ghouta and to the city at the same time?

From my point of view, the sites that form the border have the opportunity to be developed in a way that can handle pressures from both sides. It gives the opportunity for new kinds of urbanism to be designed or invented. Creating ecologically sensitive urbanism at the edge where the city meets its Ghouta can add the sites to the city and to

Al Ghouta at the same time. Moreover, it can act as a catalyst for such kind of urbanism to spread within the city in the future wherever there is a possibility.

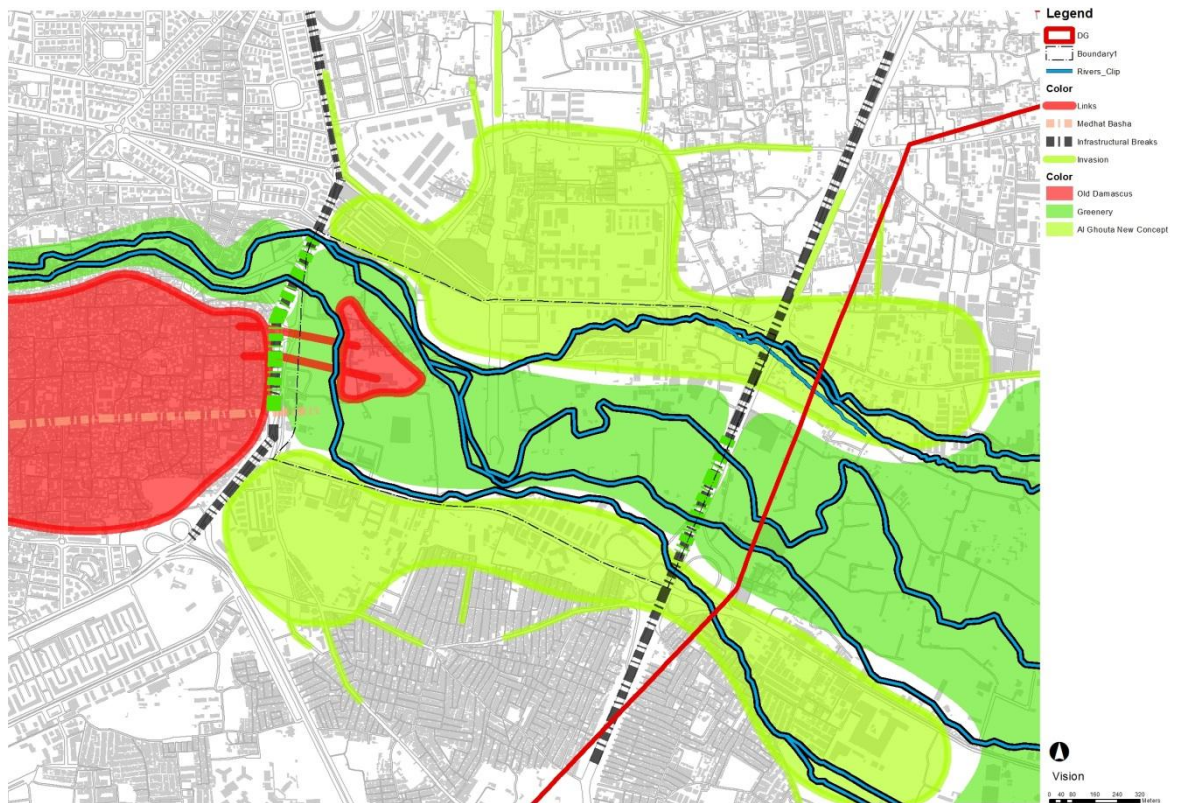


Figure 5.3: Synthetic mapping for the vision (Prepared by author)

The rest of these industrial sites should be reclaimed as Al Ghouta agricultural lands. As the map shows, the heart of the site should act as an ecological link. It should link the proposed green corridor throughout the city with Al Ghouta as its natural context. The privately owned lands in this heart should be revitalized as productive agricultural lands, while the publicly owned lands should be also revitalized as qualitative green open spaces at a city scale.

The publicly owned lands on rivers' sides can act as a continuity of the proposed green corridor with its pedestrian network, bike lanes, recreational and leisure facilities. The old fabric within the site should be preserved and linked with the old city's fabric. It can hold qualitative cultural facilities like traditional industry, art production and hospitality. Bab Sharqy can act again as the gate of the traditional Ghouta from the old city; Medhat Basha, the Roman axe, should be continued to link the old city with its traditional Ghouta and to facilitate a market that can revitalize the socioeconomic relationship between the city and Al Ghouta as its feeder. It should create the needed financial loop.

## STRATEGIC ANALYSIS

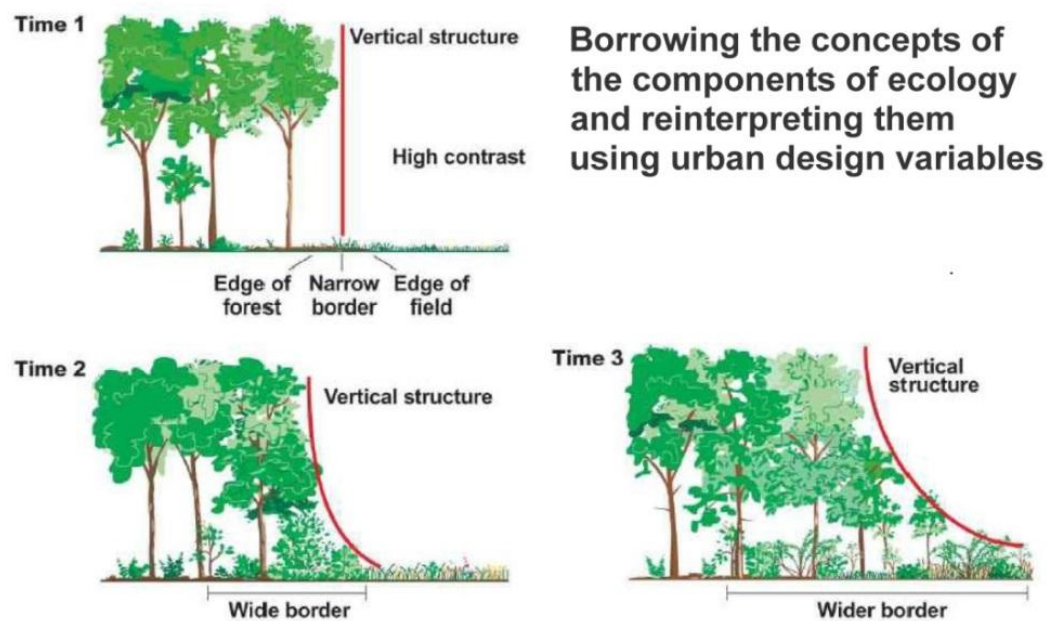


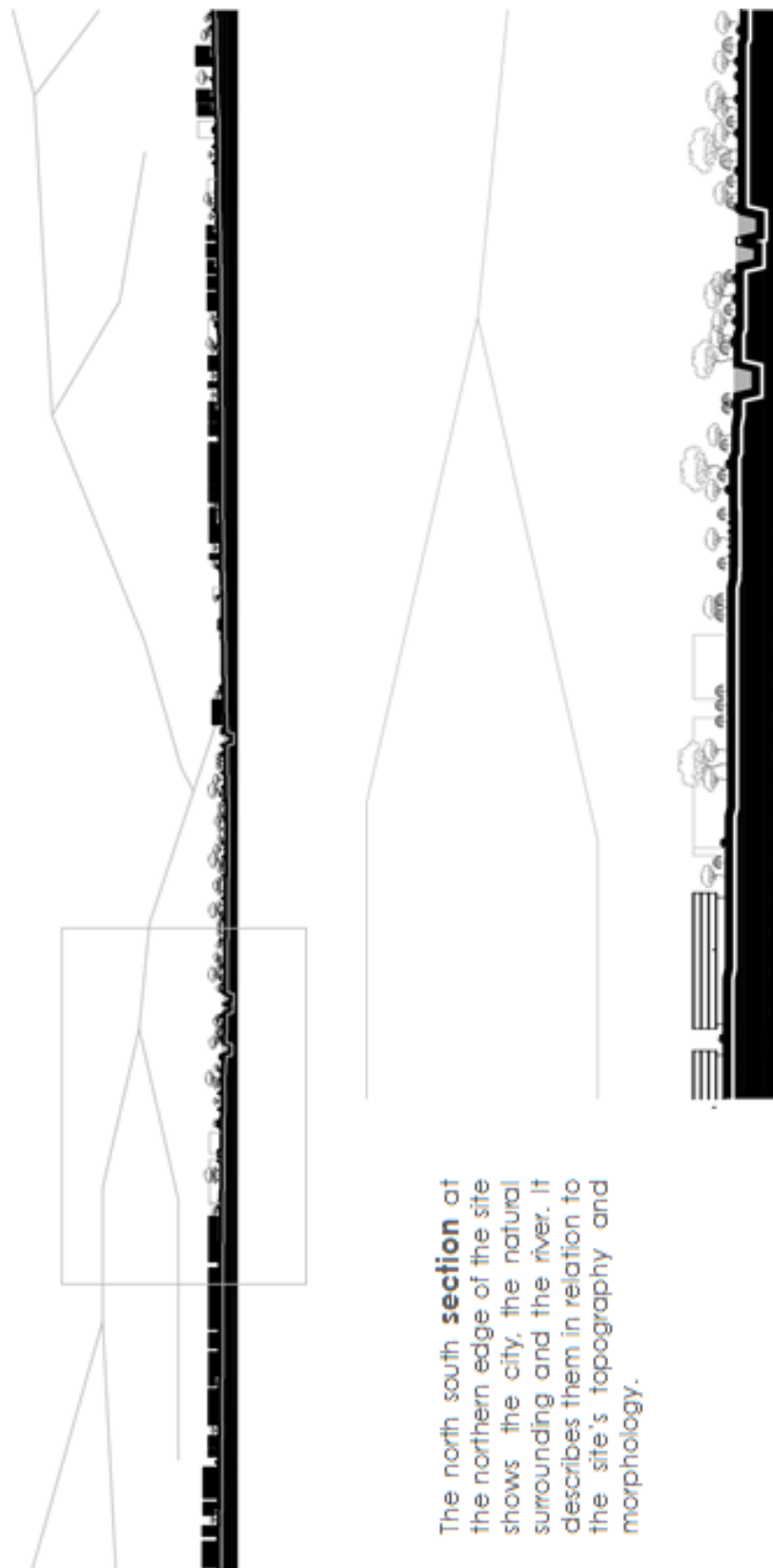
Figure 5.4: A diagram describes the concept of blurring the edges

In order to explain what I mean in blurring the edges of the city and Al Ghouta, I borrow the concept from landscape ecology and reinterpret it using urban design variables. In landscape ecology, the landscape could be defined through its patches, edges, borders and corridors. The diagram shows how the natural process widening the narrow border between the forest's and the field's edges. I call this process as the process of blurring the edges.

Getting back to urban design variables, the following sections show the existing situation; how sharp the edges are and how narrow the border is. The proposed strategy to blur these edges is to inject a third element that contains features from both patches. This third element itself is not an extension of the city or the Ghouta, it is a system or an ecology that can integrate the both.

### **5.3. Character Zones**

The question now is where exactly we can inject this system. In order to answer this question, a close-up study for the defined sites for intervention (the industrial sites) is essential. The best way to do so, with the shortage in data due to the current war, is to analyze the current situation using a recent aerial photography. The following aerial photo shows the current situation. It adds the layer of the current war's effects regarding some destroyed clusters, unfarmed lands and erased features. Building on this photo and the available data, I categorized the proposed sites of intervention into four categories; to be replaced, to be reused, to be preserved and the fourth category is 'brown fields'. I define these character zones as:



The north south **section** at the northern edge of the site shows the city, the natural surrounding and the river. It describes them in relation to the site's topography and morphology.

Focusing more on the edge where the city meets its natural surrounding, we see how **sharp** this edge is.

Figure 5.5: Sections show the existing situation and describe the vision (Prepared by author)



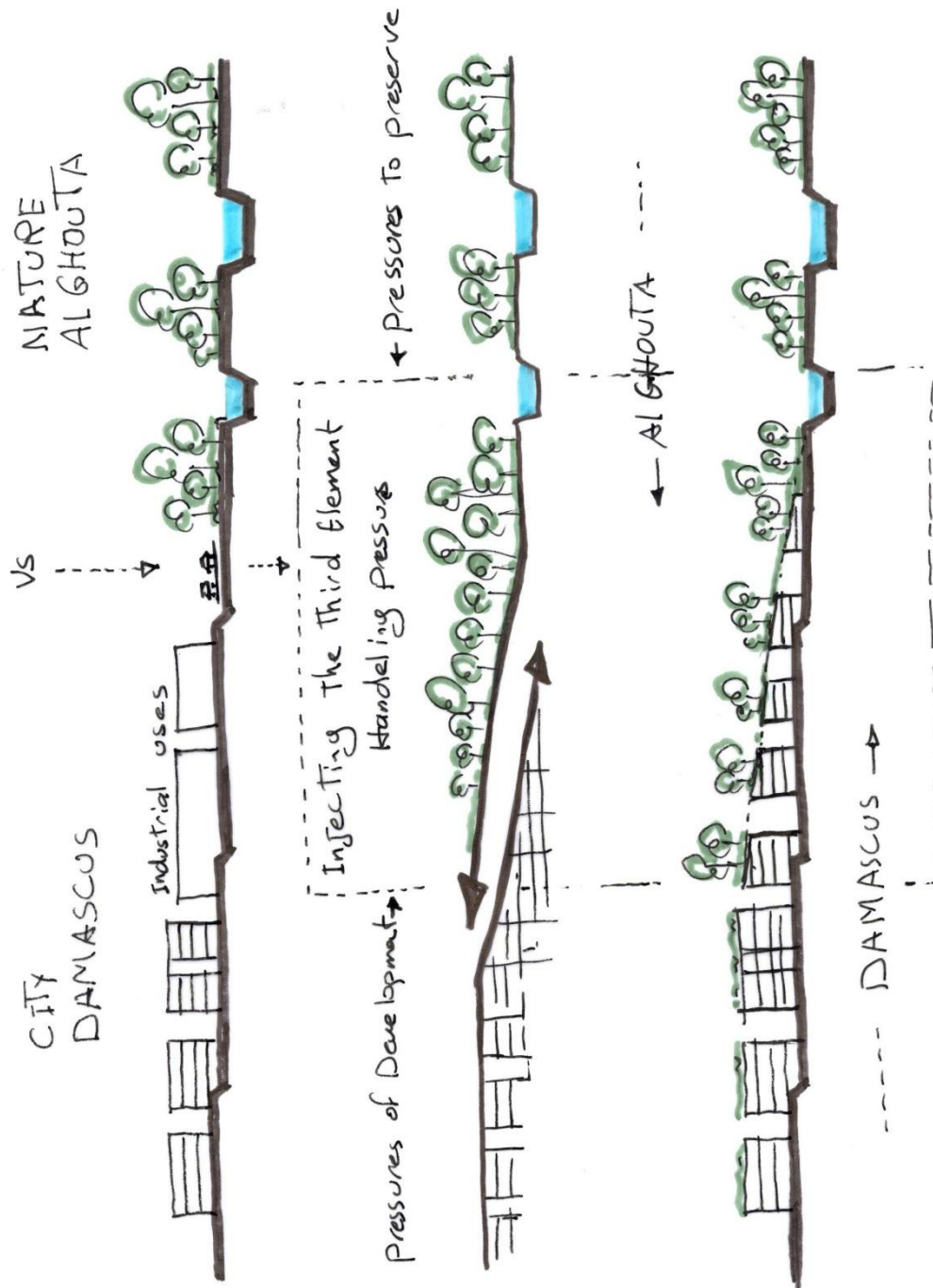


Figure 5.5: Sections show the existing situation and describe the vision (Prepared by author)

**1- *To be replaced:***

It contains damaged clusters and structures due to the current war. It also contains some scattered parts of informal settlements and illegal or temporary structures. These structures need to be removed and then rebuilt in a way that responds to the current needs. This category offers sites that are suitable for development.

**2- *To be reused:***

It contains clusters and structures that are in a good physical conditions and circumstances. Those structures could be renovated and reused for different uses. For example, many of these industrial buildings' typologies are suitable to be renovated as residential buildings. Their width, depth and structural systems allow for this change in use.

**3- *To be preserved:***

It contains the traditional old urban fabric within the site. These old houses should be preserved as a part of the site's architectural heritage.

**4- *Brown fields:***

It contains the completely destroyed clusters and structures' sites. It also contains unproductive agricultural lands. These sites have the opportunity either to be developed or to be revitalized as productive agricultural lands.

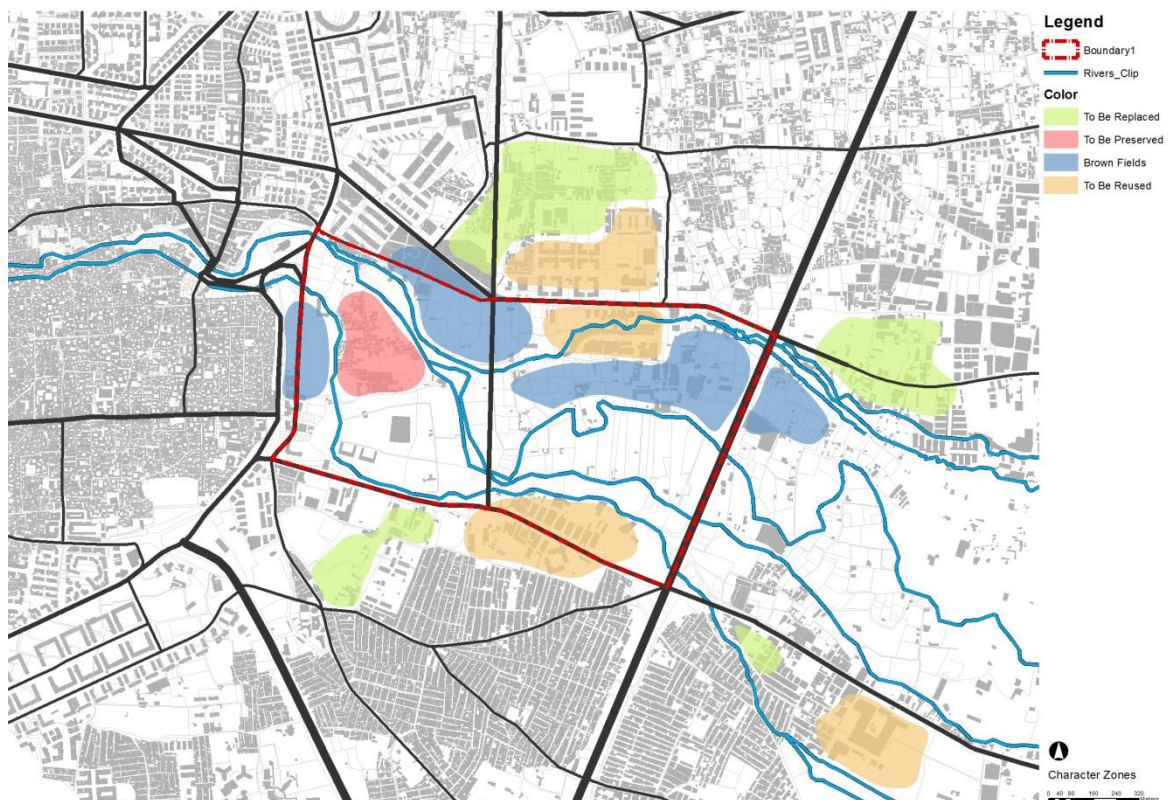


Figure 5.6: An aerial photo and a map show the defined character zones (Prepared by author)

## 5.4. Design Strategy

The proposed structural plan will be built on the following two physical structures:

- 1- Site's topography which is represented by contour lines
- 2- Existing surrounding structural plan represented by the existing road network and blocks' division.

The design strategy's first step will be derived from the integration between the two mentioned physical structures as shown in the following maps. If we intersect the contour lines' layer and the surrounding structure's layer with the needed sense of dance or play, we end up having a preliminary structural plan. It is a simple preliminary process that could be replicated in all similar sites along the border between Damascus and Al Ghouta. This process aims at creating a preliminary structural plan that varies from site to another based on its topography and connectivity.

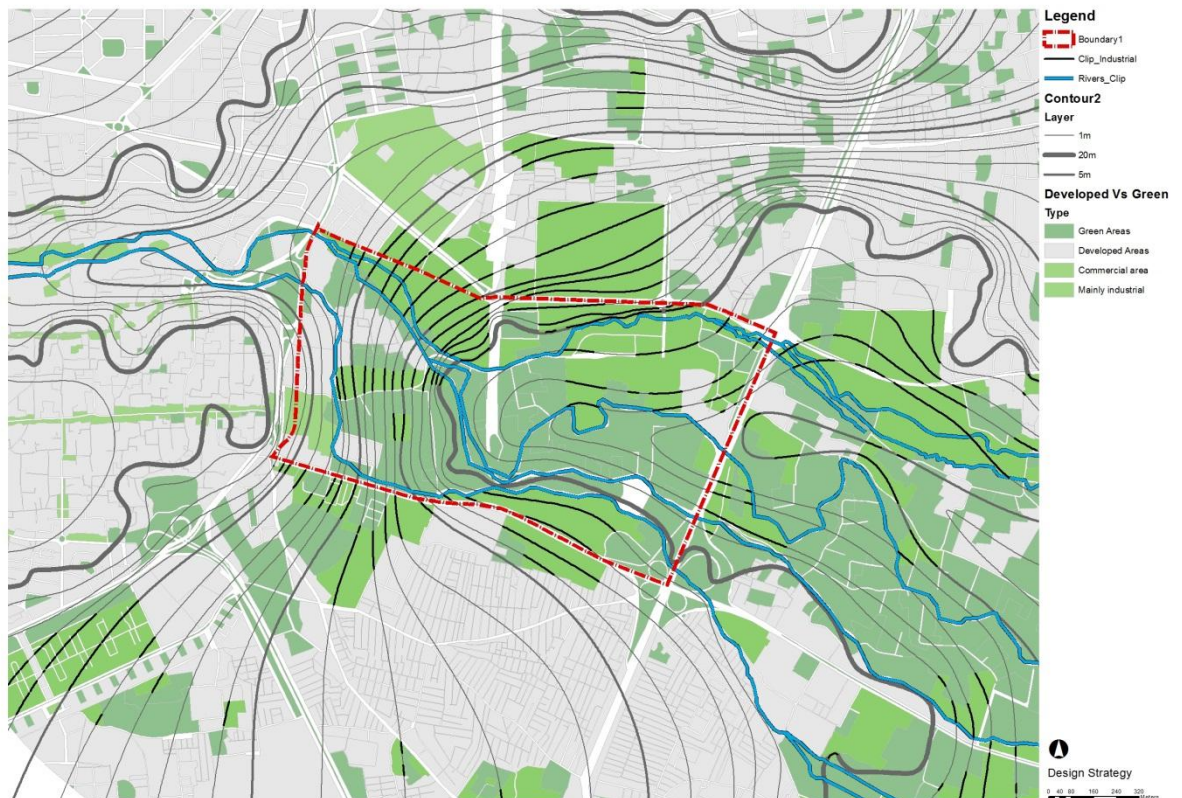


Figure 5.7: A map shows the design strategy (Prepared by author)

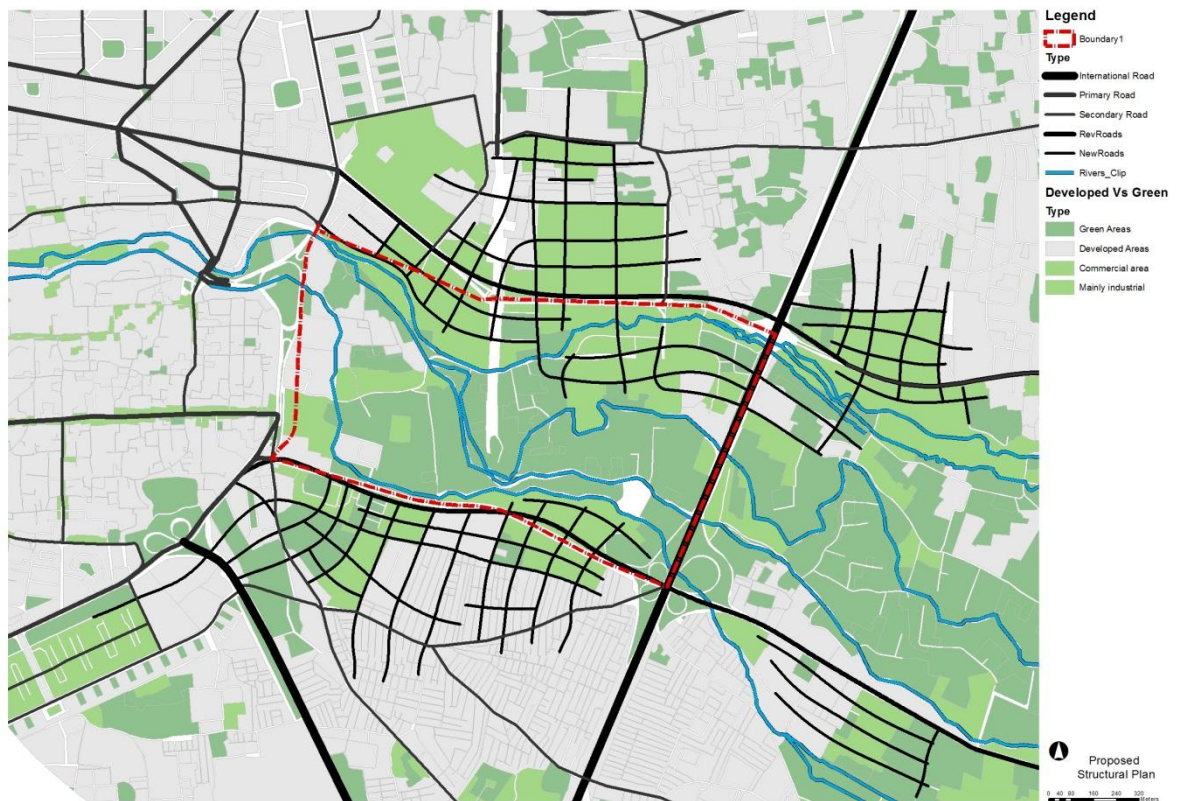


Figure 5.8: A map shows the proposed structural plan (Prepared by author)

## 5.5. Proposed Structural Plan

My first sketches regarding the proposed structural plan and urban fabric show the tendency to design a kind of a sophisticated urban system with a flexible parametric physicality that can:

- 1- Integrates the surrounding urban fabrics.
- 2- Fades down to meet the morphology of Al Ghouta agricultural lands.
- 3- Adds more green as a continuity of Al Ghouta.
- 4- Diverse in scale, height and density.
- 5- Integrates the proposed structure's lines and alignments.



Figure 5.9: Sketches show preliminary trials of creating typologies (Prepared by author)

## 5.6. Proposed Typologies

Building on the defined character zones' analysis, some of the existing clusters and structures could be renovated and reused. Most of these structures are located within the northern neighborhood as shown in the following sketch. The typology of these existing industrial structures could be described as an O shape building with approximate 13 to 14 meters strip depth. This typology has the opportunity to be reused as a residential, commercial or mixed used building. The interior courtyard could be used as an open green space for the residential units or it could hold other activities that support commercial uses. The typology inspired me to study it in more details and to build some conceptual links with other local or regional traditional or even ancient architectural typologies. For example, the traditional Damascene house architectural typology that was described in the last chapter.

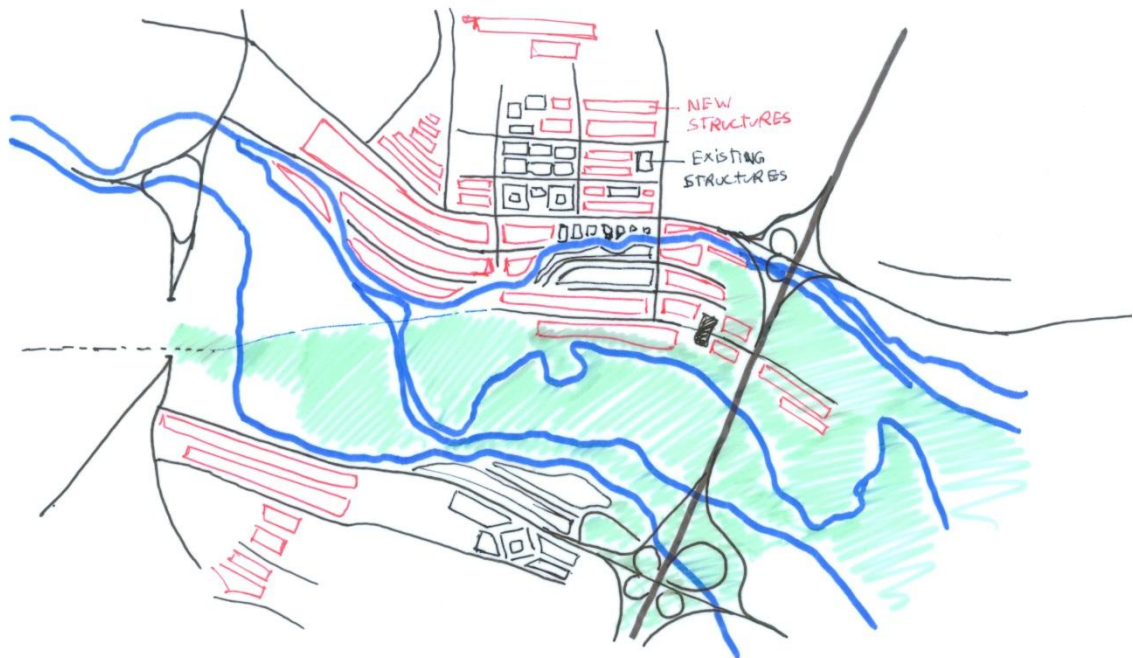


Figure 5.10: A sketch analyzes existing typologies (Prepared by author)

While the current social relationships are different from those which the typology of the traditional Damascene house was built upon, the hierarchy of these relationships is still there.

The question now is: can we adapt the traditional typology to suit the current society's needs? Can the architectural traditional typology be envisioned at a cluster scale? So the courtyard becomes the cluster's garden, separate rooms of the traditional house become separate apartments of the cluster and so on. If yes, the existing typologies in our site could be renovated in that sense. Moreover, even the new proposed typologies can take that into consideration. Based on my experience in previous projects and my continuous interest to analyze the architectural typology of the traditional Damascene house, I am proposing a similar typology at a block scale. It is an O-shape residential typology with a central garden, an inward block strategy rather than an extroverted one. Like the courtyard of the Damascene house, the inner block will be a communal space.

The urban farming activities through which people survived during the current war should be preserved and developed after the war. What if the proposed clusters developed this concept by applying a roof domestic agriculture or urban farms? The question that follows is hence: can we develop the social dimension of these urban farms? In other words, can we link the urban farms at an urban scale so they allow for social and economic interaction? If yes, a new concept of Al Ghouta is started to be developed. Thinking about how these urban farms could be linked in order to provide a sort of an added public dimension to this private activity, conceptual linkages are needed to be built. If we analyze back the surrounding informal settlements with their recreational roofs used for social gathering, and Catal Huyuk with its public space over



the houses, we can build the needed conceptual links. In that sense, we can imagine a continuous roof that contains the urban farms and allows for social interaction.

The following sketch shows how the proposed urban fabric with its continuously linked green roofs could be read as a continuity of Al Ghouta. On the other hand, it could be read as a continuity of the surrounding urban fabrics (the city). In order to do so, the proposed urban fabric should have parametric physical circumstances.



Figure 5.11: A sketch shows a preliminary imagination for the proposed urban fabric (Prepared by author)

The following diagram shows the parametric scale of the proposed urban fabric. The proposed typologies start from light architectural structures that are villas overlooking Al Ghouta. The residential strip comes next with approximate three floors height. Then the O shape blocks range in scale and height until they reach six or seven floors height. At the end, the typology of the O shape block changes to allow for building towers that can reach the height of any surrounding urban fabric. The

relationships among the parameters could be fine-tuned later with a further study.

Again, this parametric nature allows the proposed urban fabric to be replicated in other sites with different circumstances.

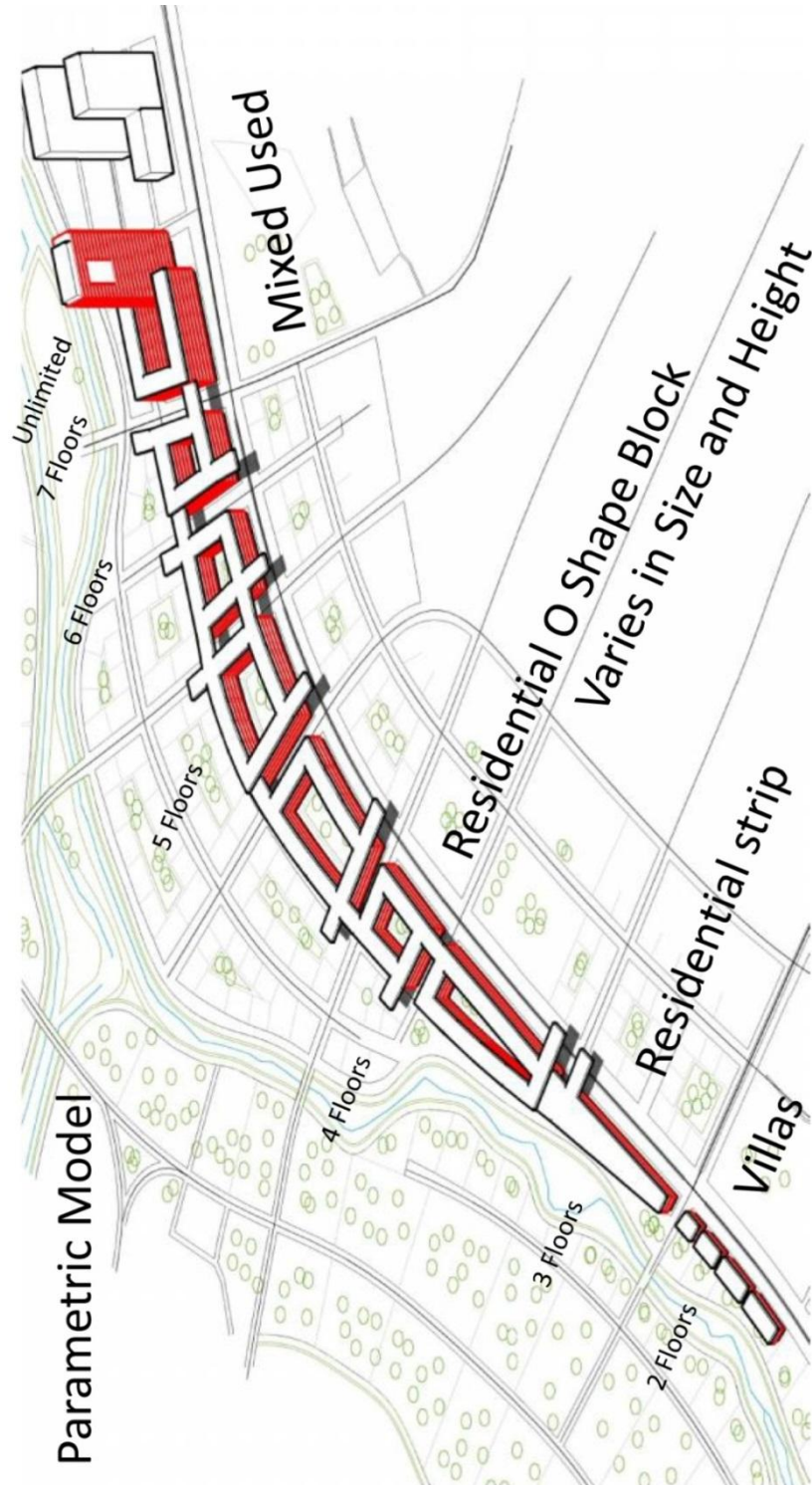


Figure 5.12: A three dimensional representation for the proposed parametric model (Prepared by author)

## CHAPTER 6

### WRITING THE SITE

This chapter starts by describing the proposed master plan, comparing the existing and the proposed land use maps and explaining the river sides' design elements. Then it focuses on the project's main elements in details. These elements are; part of the proposed urban fabric, the vegetables market, the city of cinematic arts and the thematic park. The reasons behind proposing each element will be discussed through its environmental, cultural, physical and economic dimensions. The layers of intervention are then exposed: the proposed road hierarchy, buildings' use and height, subdivision plan and the community facilities distribution's strategy. The chapter concludes with illustrating sections, diagrams and three dimensional perspectives that describe and further explain the proposed design.

#### **6.1. Proposed Master Plan**

The proposed master plan comes as a response of the site's reading and the elaborated vision and design strategies. I start with two maps (Figure 6.1) that show a mass and void analysis comparing between the existing and the proposed urban fabrics.

Then I present the proposed master plan that shows the urban design elements within the site's surroundings.

The master plan came as a response for the defined problematic. It highlights the site as an ecological linkage that connects the proposed green corridor by K&A to Al Ghouta. In that sense, it links the green network within the city to its natural context. It solves the two infrastructural breaks on the eastern and the western sides of the site. The eastern one was solved by proposing a bridge that passes over Al Ghouta allowing it to reintegrate the site as a part of it. On the other hand, the western one was solved by proposing a tunnel for vehicular movement and keeping the ground level for pedestrian, bikes and soft vehicular movement.

In this way, the design allowed the old city's commercial axe to have its continuity within the site reconnecting the old city with its traditional Ghouta. Moreover, this continuity was enriched by proposing a market that revitalizes the economic interaction between the city and Al Ghouta.

The old traditional fabric within the site was preserved and integrated with the old city's urban fabric by proposing the city of cinematic arts in this area between them. The fabric of this proposed city will be built using the traditional building strategy and materials; this will create the needed spatial connection.

A thematic park works at a city scale was also proposed as a response for the lack of green open spaces that was mentioned by DM 2030. The proposed urban fabric that holds the new concept of Al Ghouta was injected within the edge between the city and its natural context. The injection is clear at the northern and the southern sides of the site integrating Al Ghouta from one side and the surrounding existing urban fabrics from the other.

These mentioned parts of the project will be described in more details within the next section. It is also worthy to mention that the agricultural lands within the site were preserved as they are. The sweeping green color is not lawn and modern style landscape but a landscape typology that is intentionally left neutral to accommodate a new vision for Al Ghouta which is outside the scope of the thesis.

The river sides were developed as continuity for the proposed green corridor along Barada connecting it to the rest of Al Ghouta. They provided the needed network that reproduces the landscape scenery of the river and allows for different modes of transportation like pedestrian and bike lanes. Pockets along the rivers' alignments were developed as small scale green open spaces along the path way. Islands had special building regulations that allow for light structures for recreational uses like restaurants, cafes and exhibitions for traditional arts. Figure 6.2 shows river sides' design elements which are; the proposed bike lanes and pedestrian network and the proposed recreational activities along the rivers' alignments. The typology of this network came as a replication for the river's form on its both sides.

Then, I present a comparison between the existing and the proposed land use maps and areas' tables show in details land uses that were increased, decreased or replaced at area scale, site scale and neighborhood scale. The area scale's analysis contains the site and its surrounding urban fabrics, it covers around 8,500,000 sqm. It shows in numbers the effects of the proposed design on its surrounding area. The site's scale analysis covers the site's area (around 1,300,000 sqm), while the neighborhood's scale analysis covers a part of the proposed urban fabric (around 550,000 sqm) to display it in numbers.

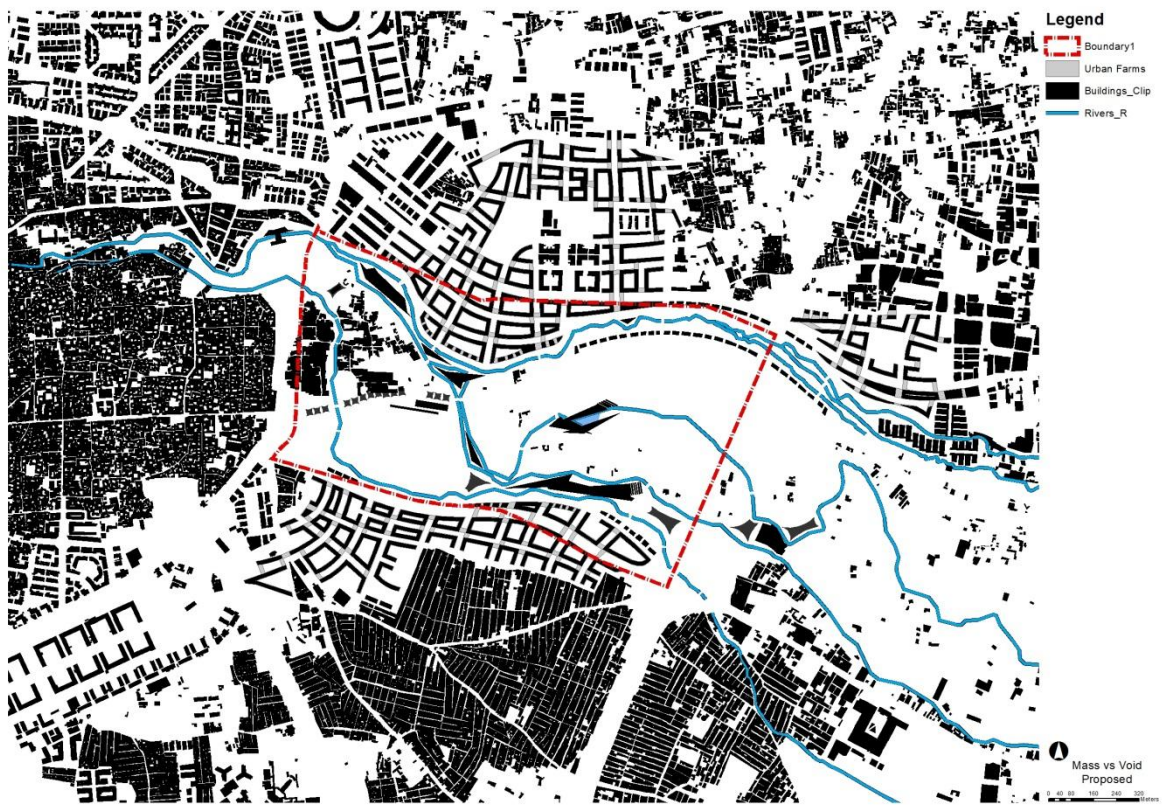
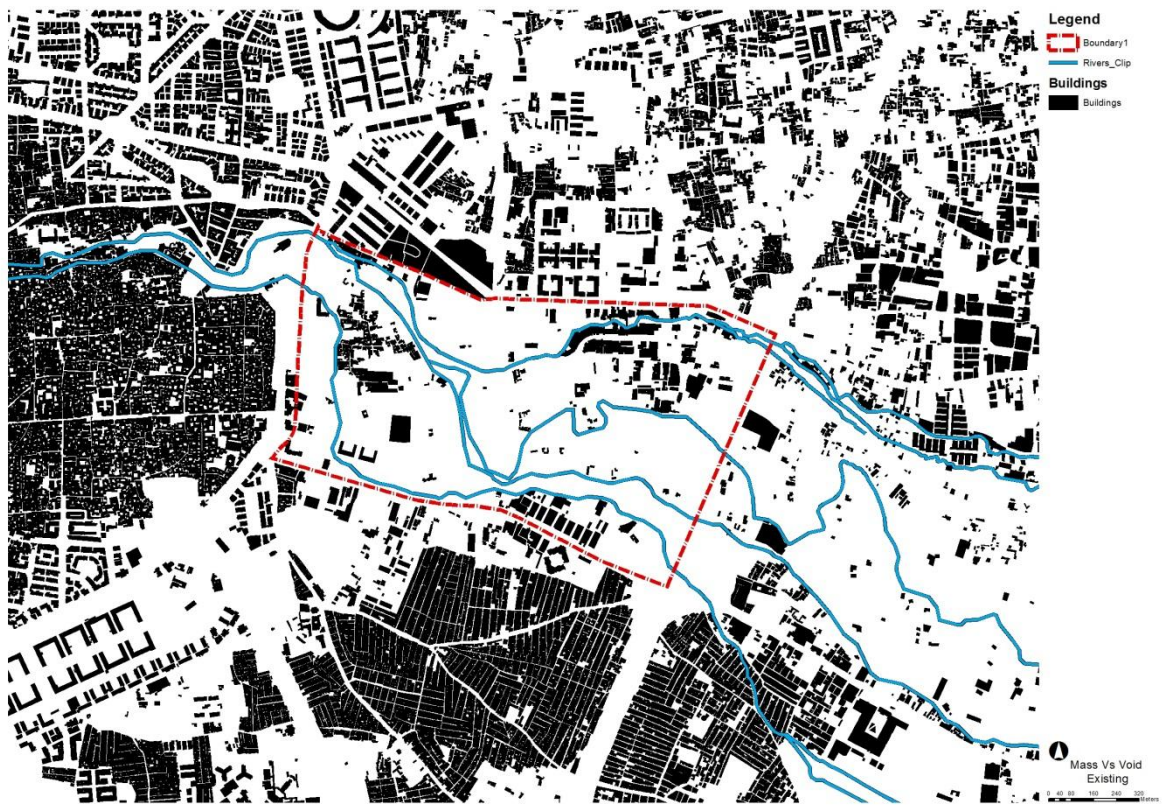


Figure 6.1: Maps show the river sides' network and the before and after mass Vs void analysis (Prepared by author)



Figure 6.2: A map shows the proposed master plan (Prepared by author)

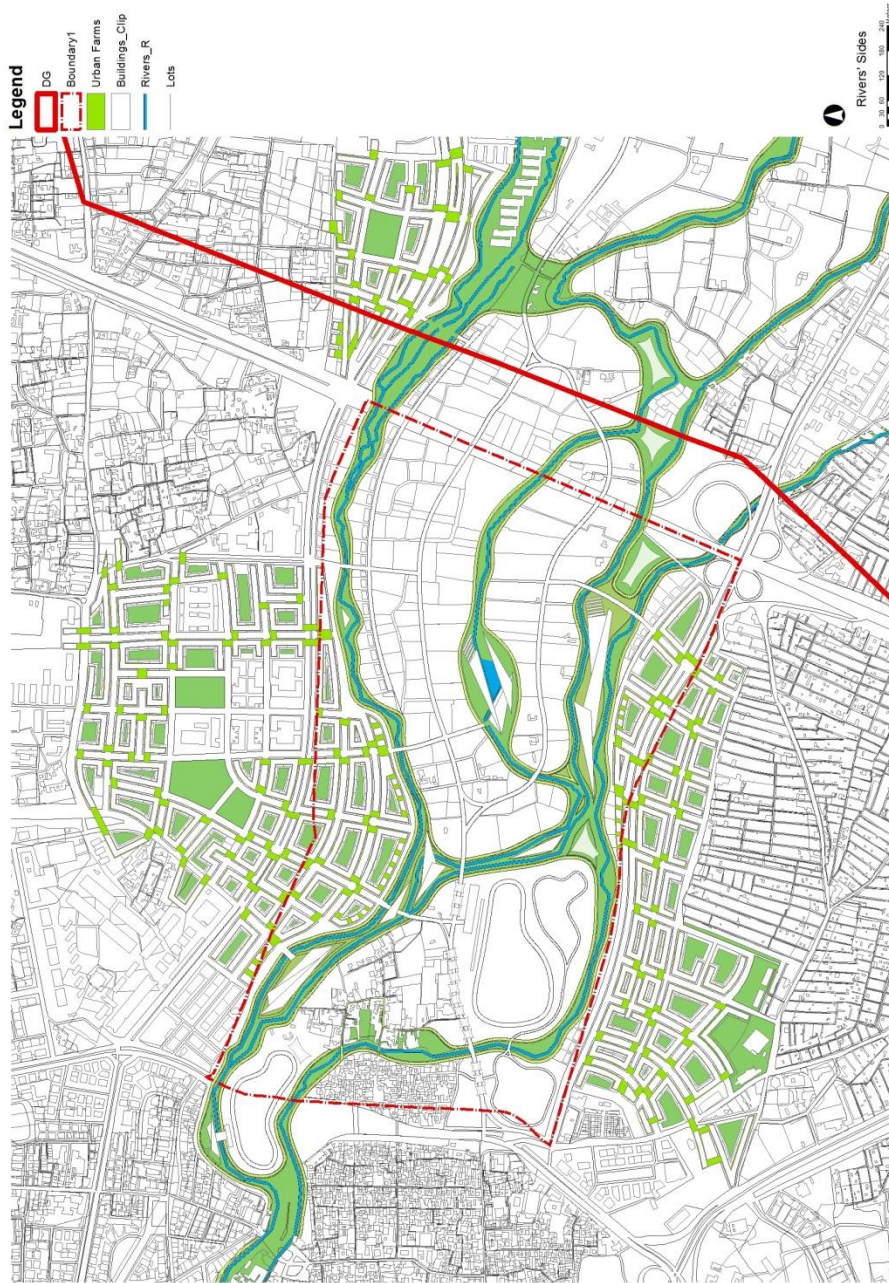


Figure 6.3: A map shows the proposed rivers' sides network (Prepared by author)



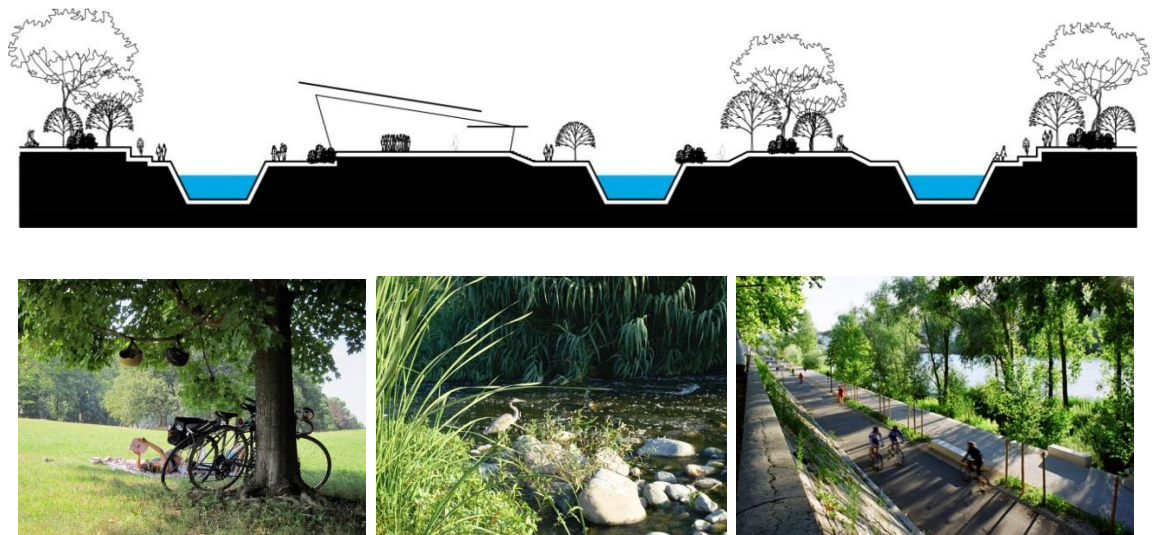
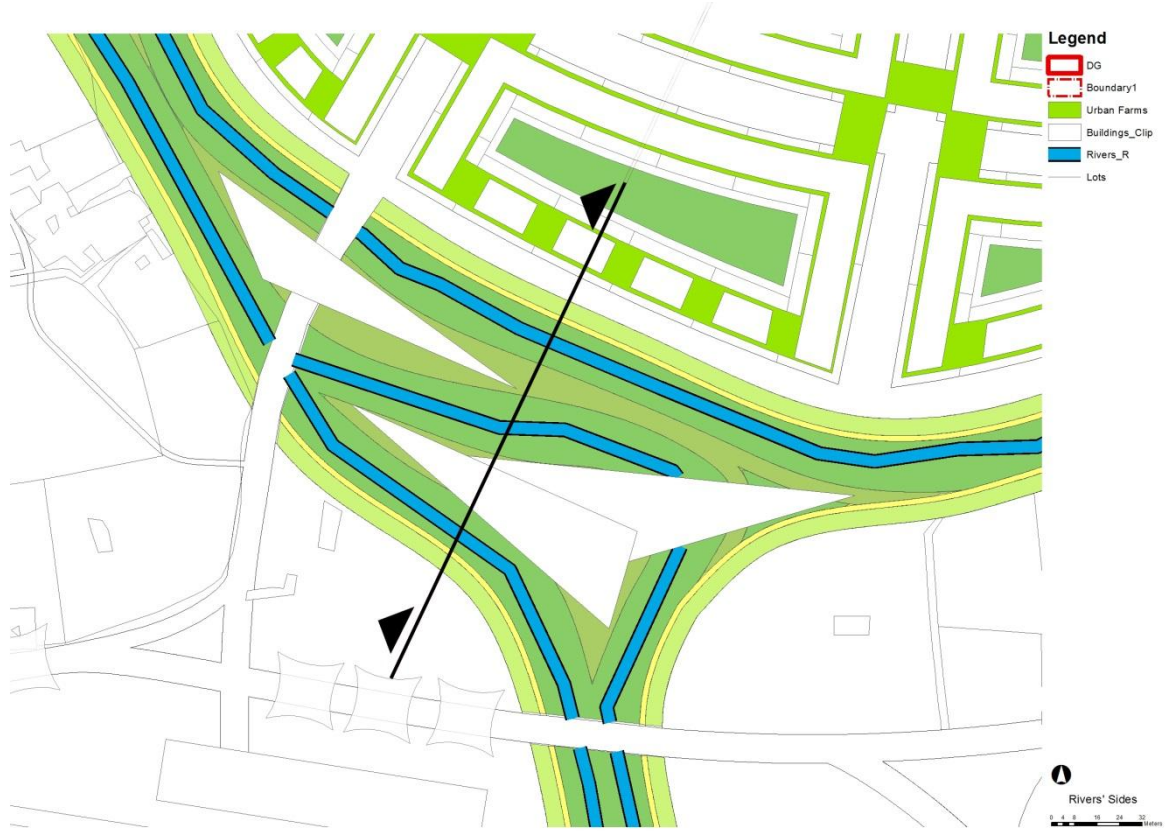


Figure 6.4: A map and a section show the proposed river sides' network (Prepared by author)

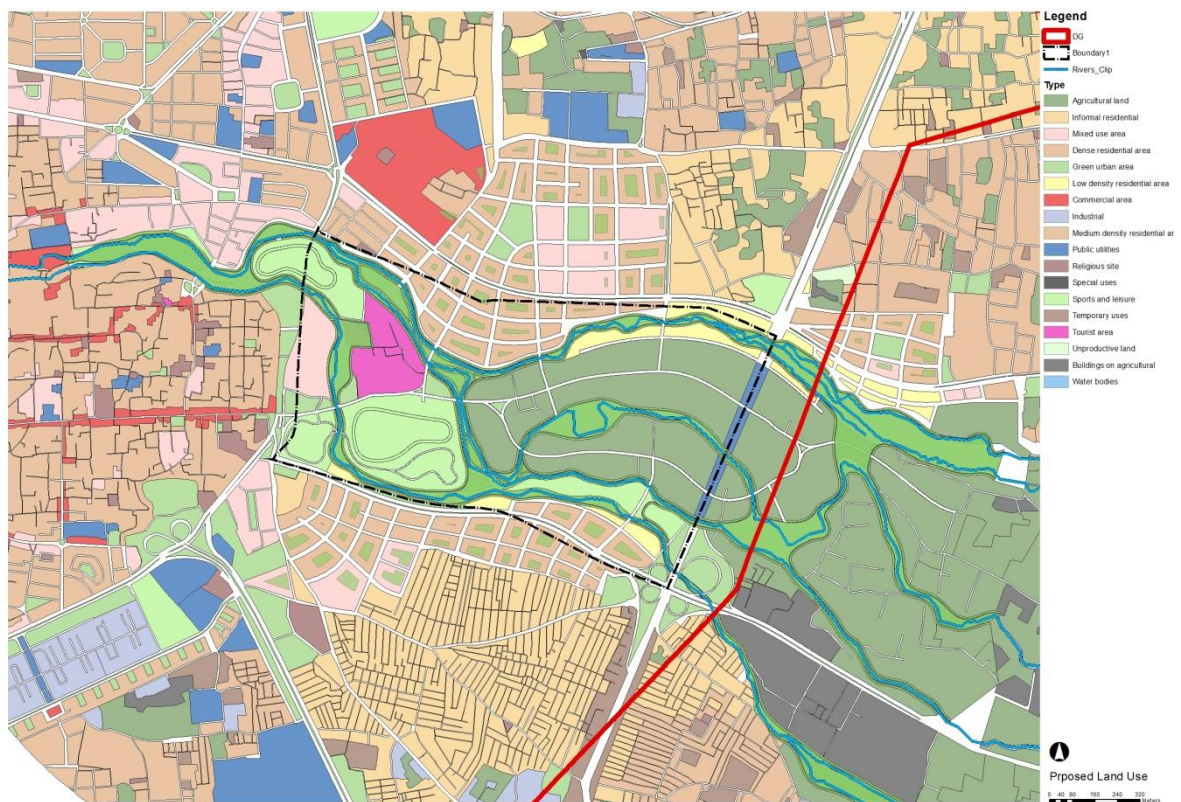
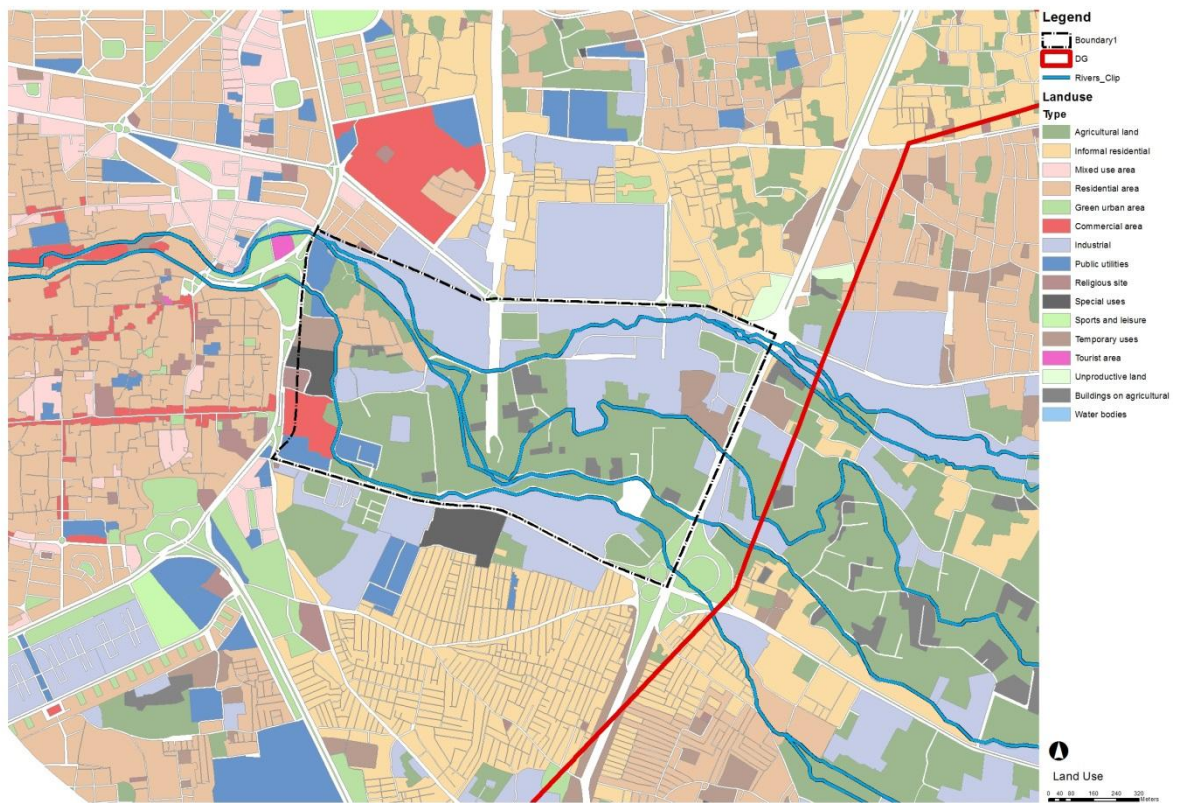


Figure 6.5: Maps show the existing and proposed land use (Prepared by author)

**Existing Landuse (Area Scale)**

Type	Number of Blocks	Area m2
Agricultural land	109	1,424,861
Green urban area	129	373,593
Sports and leisure facility	1	30,432
Urban sprawl on agricultural land	29	127,332
Unproductive land	2	20,833
Dense informal residential area	322	696,728
Dense residential area	193	1,010,639
Medium density informal residential area	132	696,715
Medium density residential area	115	596,265
Low density residential area	3	7,046
Dense mixed uses area with residential units	27	102,597
Medium to low density mixed uses area with reside*	28	117,738
Mainly commercial area	57	220,584
Tourist area	2	6,164
Mainly industrial	65	1,238,571
Religious site	34	85,680
Water bodies	41	112,230
Public utilities	41	284,619
Special uses	3	60,306
Temporary uses	39	200,196
Roads		1,074,183
Total	1372	8,487,311

Existing Buildings' Foot Print

2,422,832

**Proposed Landuse (Area Scale)**

Type	Number of Blocks	Area m2
Agricultural land	90	1,336,115
Green urban area	135	587,659
Sports and leisure facility	18	269,724
Urban sprawl on agricultural land	17	225,033
<b>River Sides</b>	<b>113</b>	<b>131,587</b>
Dense informal residential area	322	696,728
Dense residential area	193	1,010,639
Medium density informal residential area	132	296,597
Medium density residential area	188	995,315
Low density residential area	18	95,577
Dense mixed uses area with residential units	17	58,223
Medium to low density mixed uses area with reside*	18	369,677
Mainly commercial area	53	179,955
Tourist area	6	64,071
Mainly industrial	9	65,536
Religious site	34	85,680
Water bodies	41	112,230
Public utilities	30	213,528
Special uses	1	630
Temporary uses	28	129,349
Roads		1,563,457
Total	1463	8,487,311

Proposed Buildings' Foot Print

2,478,364

Urban Farms

388,906

Table 1: Tables compare between existing and proposed land use at an area's scale (Prepared by author)

**Existing Landuse (Site Scale)**

Type	Number of Blocks	Area m2
Agricultural land	28	481,942
Green urban area	13	19,024
Urban sprawl on agricultural land	11	34,633
Medium density informal residential area	2	124
Medium density residential area	6	37,954
Mixed use area	1	23,337
Mainly industrial	20	394,851
Religious site	2	3,025
Water bodies	18	59,237
Public utilities	3	28,612
Special uses	1	17,486
Temporary uses	3	41,436
Roads		151,128
<b>Total</b>	<b>108</b>	<b>1,292,791</b>
Existing Buildings' Foot Print		139,457

**Proposed Landuse (Site Scale)**

Type	Number of Blocks	Area m2
Agricultural land	14	331,297
Green urban area	15	29,453
Sports and leisure facility	16	216,664
<b>River Sides</b>	<b>81</b>	<b>92,948</b>
Medium density residential area	24	129,070
Low density residential area	7	53,382
Mixed use area	1	34,633
Tourist area	5	63,345
Religious site	1	358
Water bodies	18	59,237
Roads		282,403
<b>Total</b>	<b>182</b>	<b>1,292,791</b>
Proposed Buildings' Foot Print		167,816
Urban Farms		85,041

Table 2: Tables compare between existing and proposed land use at a site's scale (Prepared by author)

**Proposed Landuse (Neighborhood Scale)**

Type	Number of Blocks	Area m2	Percentage
Green urban area	7	30,912	7%
Medium density residential area	41	295,053	53%
Mainly Commercial	2	30,664	5%
Community Facilities	4	38972	7%
Roads		161,166	28%
<b>Total</b>	<b>54</b>	<b>556,767</b>	<b>100%</b>
Proposed Buildings' Foot Print		149,348	
Urban Farms		187,406	

Table 3: A table describes the proposed land use at a neighborhood's scale (Prepared by author)

## 6.2. Project's Parts:

### 6.2.1. Proposed urban fabric



Figure 6.6: A Map shows the proposed urban fabric (Prepared by author)

The main purpose behind the proposed urban fabric is to enhance the life quality of Damascus countryside's inhabitants. By intensifying development on parts of their lands, it keeps most parts for revitalizing their agricultural investment. Moreover, it allows for preserving the urban farming activities by developing the concept and enhancing its social dimension. A water circulation that provides the needed water for

irrigating these urban farms should be studied to integrate storm water with rivers' water in a sustainable strategy. Its proposed green roof decreases the heat island effect enhancing the environmental quality of the area. Within that context, some blocks will be developed before others allowing for variation through negotiation.

### 6.2.2. The Market



Figure 6.7: A map shows the proposed market (Prepared by author)

The main purpose behind proposing the market is preserving and revitalizing the socioeconomic relationship between the city and the countryside. Since it will be located within the city's boundary, it creates the opportunity for farmers of Al Ghouta to sell their goods and offers a new alternative for city inhabitants to buy their food directly from its source. It can recreate a kind of a financial loop between the city and the Ghouta as its source of food production. As a continuity of Medhat Basha (the traditional market of the old city), the market as a project has a cultural dimension. It also creates the needed link that allows for proposing new projects in the future.

### 6.2.3. *The City of Cinematic Arts*



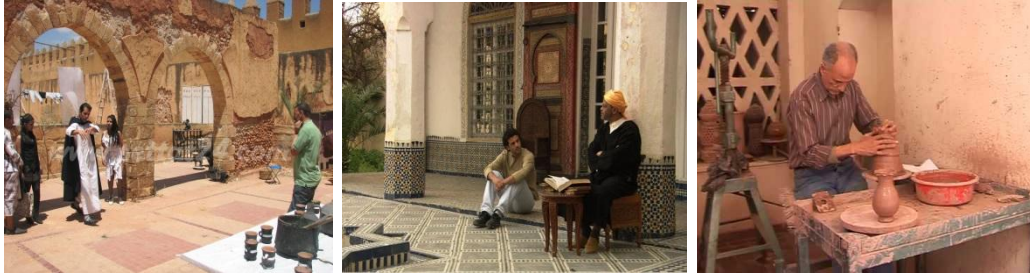


Figure 6.8: A map shows the proposed city of cinematic arts (Prepared by author)

The main purpose behind proposing the city of cinematic arts is to create the physical link between the preserved traditional fabric within the site and the old city's fabric. It also creates an event for the future within this transitional zone between the city and its countryside. The concept was borrowed from the cinematic city of Cairo that provided the needed traditional atmosphere for film production, a recreational public space with restaurants, cafes and other facilities, and a very good investment for the governmental authority that owns the land. The proposed tunnel solves the infrastructural break and offers a huge green buffer zone between the old city's wall and the proposed traditional fabric. This green public space has an opportunity to be used for cultural events regarding its strategic location and relationship with the old city. During these events, the old city's wall could act as a background huge screen for projection. Economically speaking, the city of cinematic arts offers the appropriate space of production for the Syrian drama with its cultural background creates more job opportunities and offers a space for traditional handcrafts to be preserved and developed.



#### 6.2.4. The Thematic Park



Figure 6.9: A map shows the proposed thematic park (Prepared by author)

The mostly publicly owned lands that act as the site's entrance from the old city have the opportunity to be used as a thematic park at a city scale. I chose the theme of Barada as the life line of Damascus to be elaborated through the elements of this park. This could add a sociocultural dimension to the project. In this park, people will learn more about how to preserve Barada and Al Ghouta as the element of Damascus's

landscape heritage. Economically, it offers new space of opportunities by holding cultural, recreational and sport events that are related to the theme.

The following maps show:

1- Proposed road network hierarchy: that describes the following:

- Solved infrastructural breaks at the eastern and the western sides of the site by proposing the eastern bridge over the Ghouta, the western tunnel parallel to the old city's wall and a small bridge over the river at the western end.
- Modified alignments of the northern and the southern primary roads in order to fit within the proposed structure.
- The proposed continuity of Medhat Basha as a traditional commercial axe that creates the loop and continues to navigate through Al Ghouta.
- Proposed local roads' network.

2- Mass vs. void analysis that shows the proposed morphology of the site.

3- Proposed buildings height's map that shows how, in terms of heights, the proposed urban fabric integrates the surrounding fabrics and Al Ghouta on the other side.

4- Proposed buildings use's map that shows how the proposed urban fabric can serve and be served by its surrounding uses.



Figure 6.10: Maps show the proposed roads' hierarchy and buildings (Prepared by author)

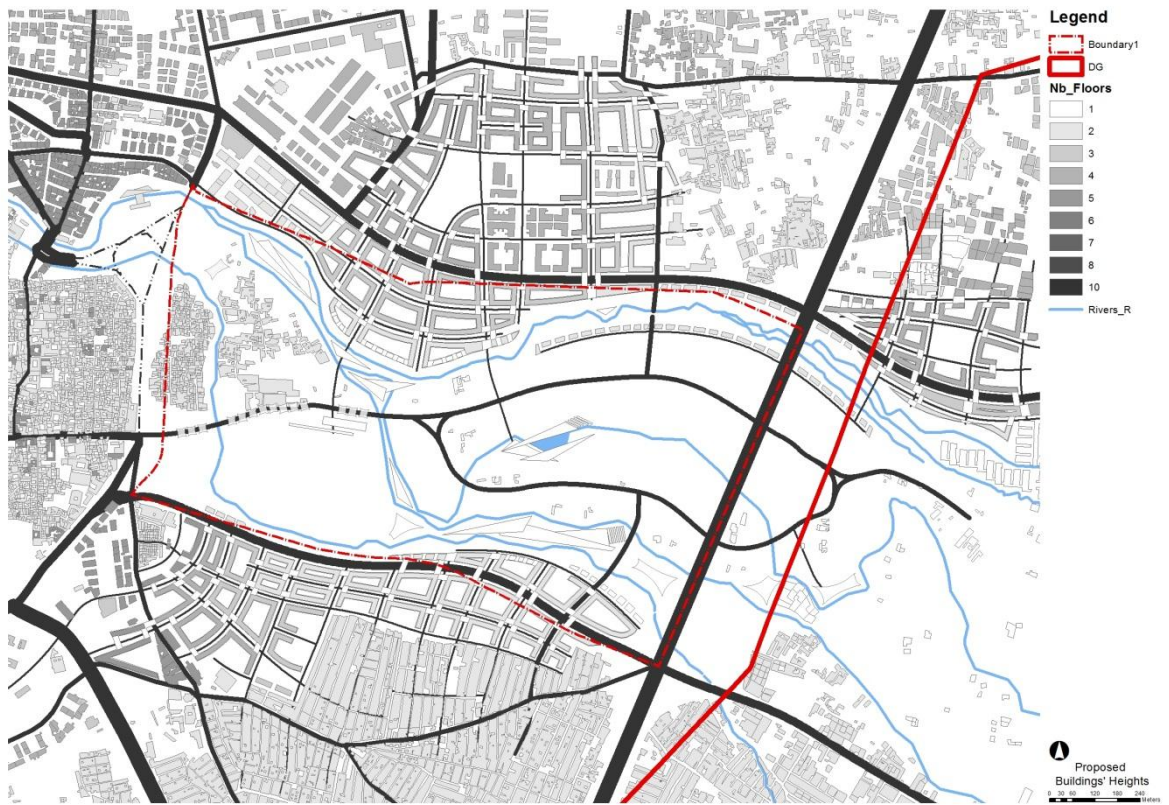


Figure 6.11: Maps show the proposed buildings' height and use (Prepared by author)

The following subdivision analysis shows that the built areas consist of two neighborhoods. Each of these neighborhoods contains a number of residential Mojaweras and each Mojawera contains a number of residential units. Community facilities' distribution was built on the mentioned subdivision strategy. Each residential unit's center contains a kindergarten besides the needed garden, children playground, parking and commercial activities with an approximate land area of 6,000 SQM. Each Mojawera's center contains additional facilities like a mosque, a health center, preliminary and intermediate schools. Each neighborhood's center contains additional facilities like a secondary school, a library, a post office and a police and civil defense station. The centers' locations were carefully chosen in order to cover the whole area with appropriate allowed walking distances as shown in the following maps.



Figure 6.12: A map shows the proposed neighborhoods' subdivision (Prepared by author)



Figure 6.13: Maps show the proposed neighborhoods and Mojaweras' centers (Prepared by author)

Analyzing the project's layers helps to understand each layer separately in order to understand the project's complexity. Some of the following layers are mentioned in the next diagram:

- Wild life: This layer deals with the site as a continuity of Al Ghouta within the city. It conceptualizes the site as the ecological link that connects Al Ghouta with the green network within the city in a way that serves the living plants, animals and birds within it. While DM 2030 created a green network within the city and preserved Al Ghouta, the thesis provides the needed link between these two elements.
- Green corridor: This layer deals with the riversides network that conceptualizes the site as continuity for the proposed green corridor along the river. It offers the needed different modes of transportation that extend the green corridor within the city's periphery to give Barada its added peri-urban identity.
- Water bodies: This layer deals with the existing water channels as a central part of water circulation within the site. It is a subject for further study regarding the hydrology of the site, its storm water collection and its irrigation water supply for the preserved agricultural lands and the added urban farms.
- Connectivity: This layer deals with the proposed road network and its hierarchy. It focuses on how the elements of the site could be

connected with each other's and with their surroundings in terms of vehicular movement.

- Ownership: This layer deals with the proposed subdivision plan and the lots' subdivision strategy within the urban and the agricultural areas. It focuses on how to re-parcelize some parts of the site while preserving others based on the current needs, the ownership status and availability.
- Urbanism: This layer deals with the proposed buildings' layer. It focuses on the morphology of the site and its proposed architectural typologies. It seeks the spatial integration between the site's elements and surroundings like to old city's fabric, other surrounding urban fabrics, the informal settlements and the light structures within Al Ghouta.
- Added green: This layer deals with the proposed urban farms' network. It focuses on the continuous green roof that shows the proposed fabric as a continuity of Al Ghouta.

The proposed system deals with the complexity of integrating the previous layers within the proposed master plan. It seeks analyzing each layer individually and then comprehensively in order to respond as much as it can to different issues related to different layers. It simplifies the complex process by defining the problems on different layers and then integrating these layers in a comprehensive way.



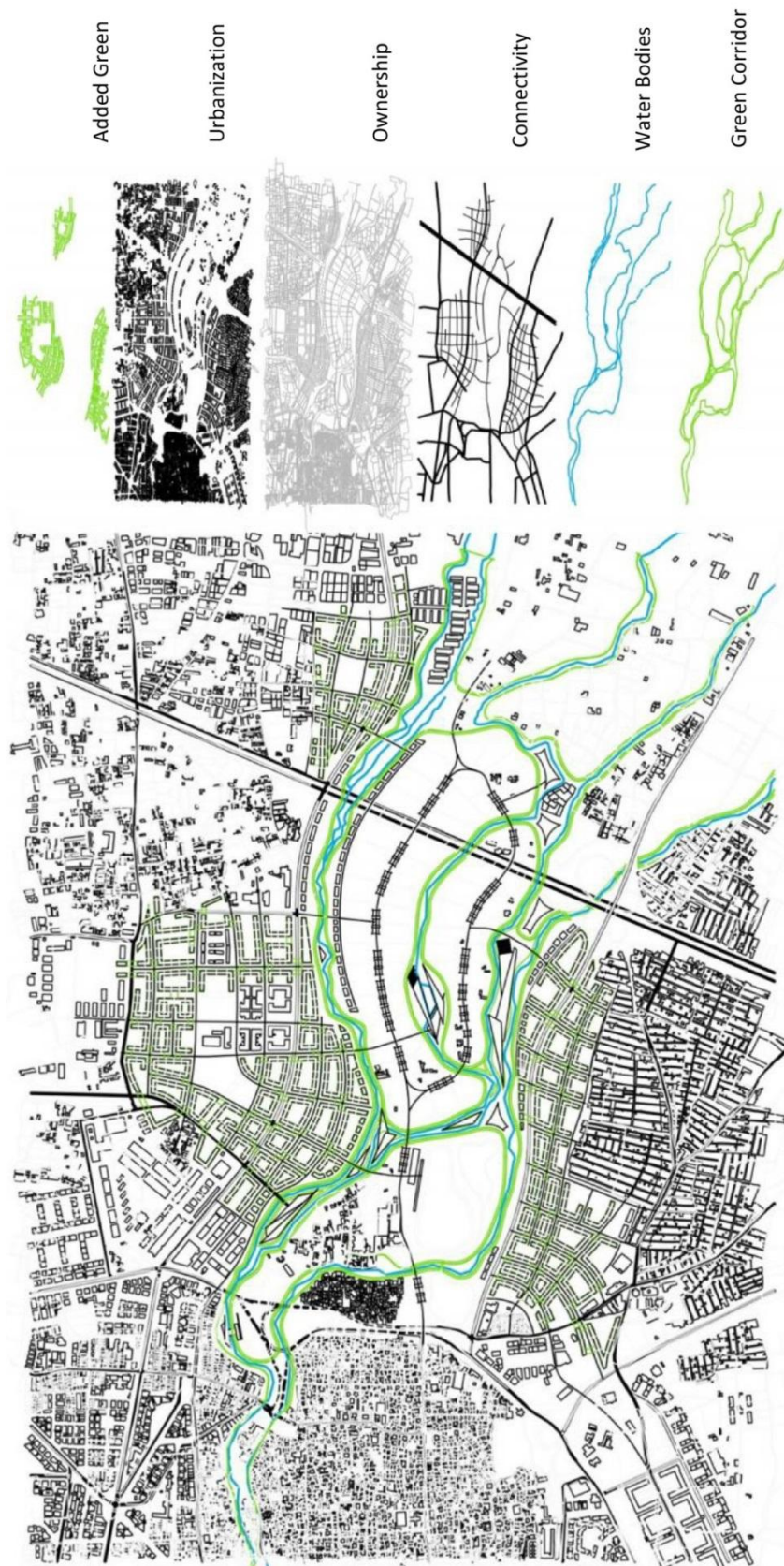


Figure 6.14: Illustrations show the proposed system's layers (Prepared by author)



Figure 6.15: A section shows the proposed system at a site's scale (Prepared by author)

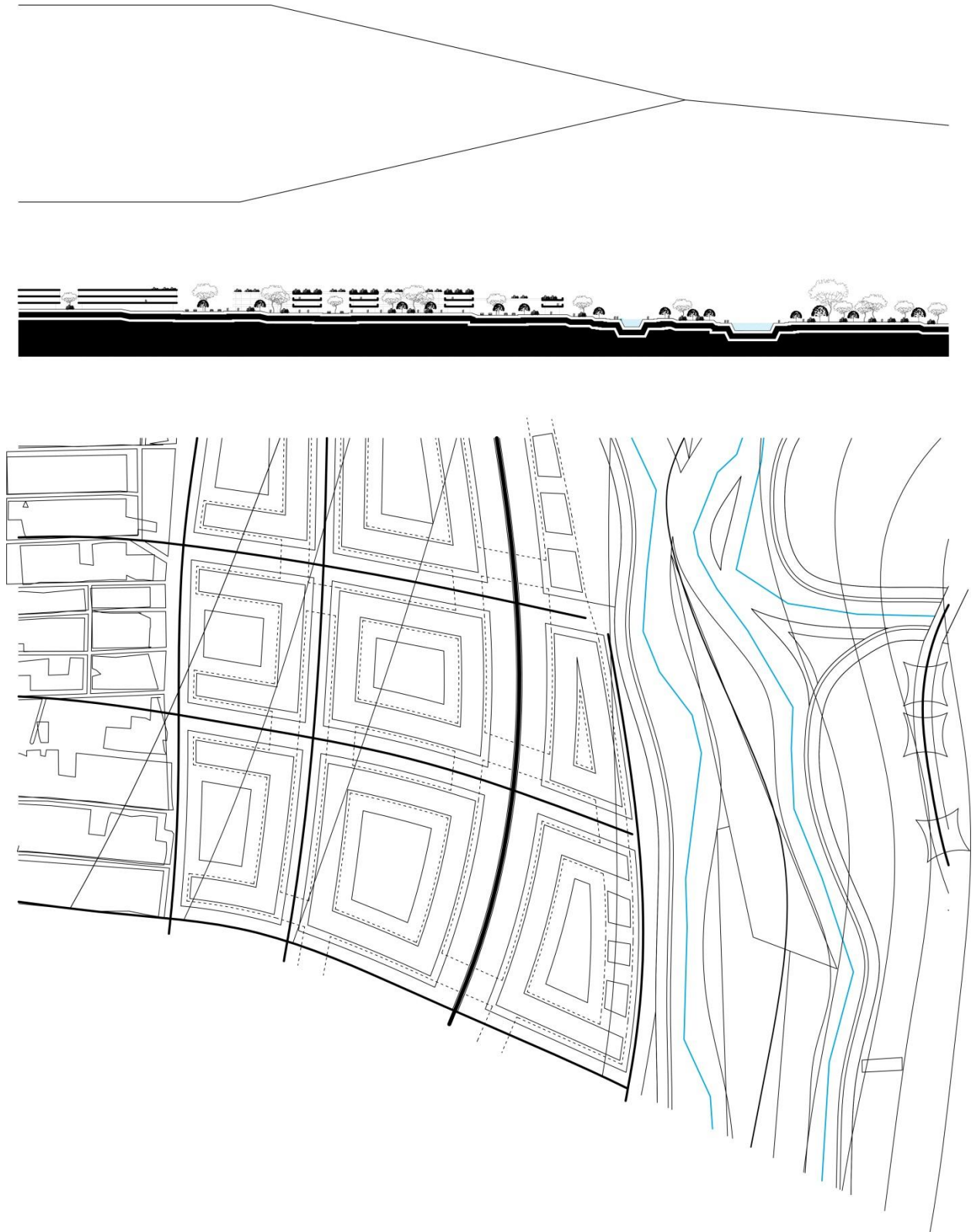


Figure 6.16: A section shows the proposed system at a neighborhood's scale (Prepared by author)

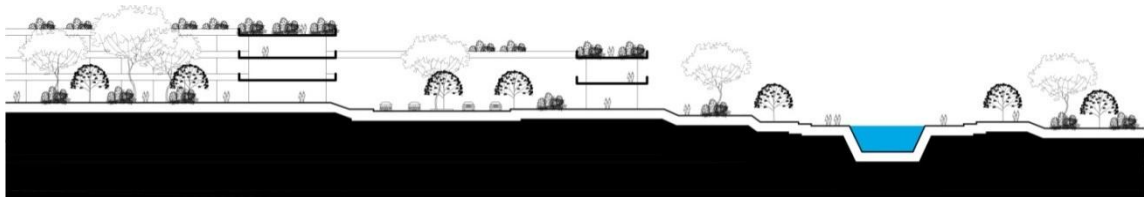


Figure 6.17: A section shows the proposed system at an edge's scale (Prepared by author)

The previous sections explain the proposed system or ecology at three scales:

- The site's scale: This scale deals with the topography of the site. It shows the integration between the existing and the proposed urban fabrics.
- The neighborhood's scale: This scale focuses more on the proposed urban fabric and the edge where the city meets Al Ghouta. It shows how the proposed system blurs this edge.
- The edge's scale: This scale deals with the architectural dimension of the edge itself. It tries to describe the proposed spaces, vegetation types, lighting systems, urban furniture and paving systems.

Before illustrating the three dimensional representation of the proposed design at different scales, a comparison is established between the existing and proposed green areas that contains the agricultural lands (Al Ghouta), green urban spaces and urban farms. This comparison as shown in the following two maps helps evaluating the difference that the proposal made regarding the environmental dimension of the site.

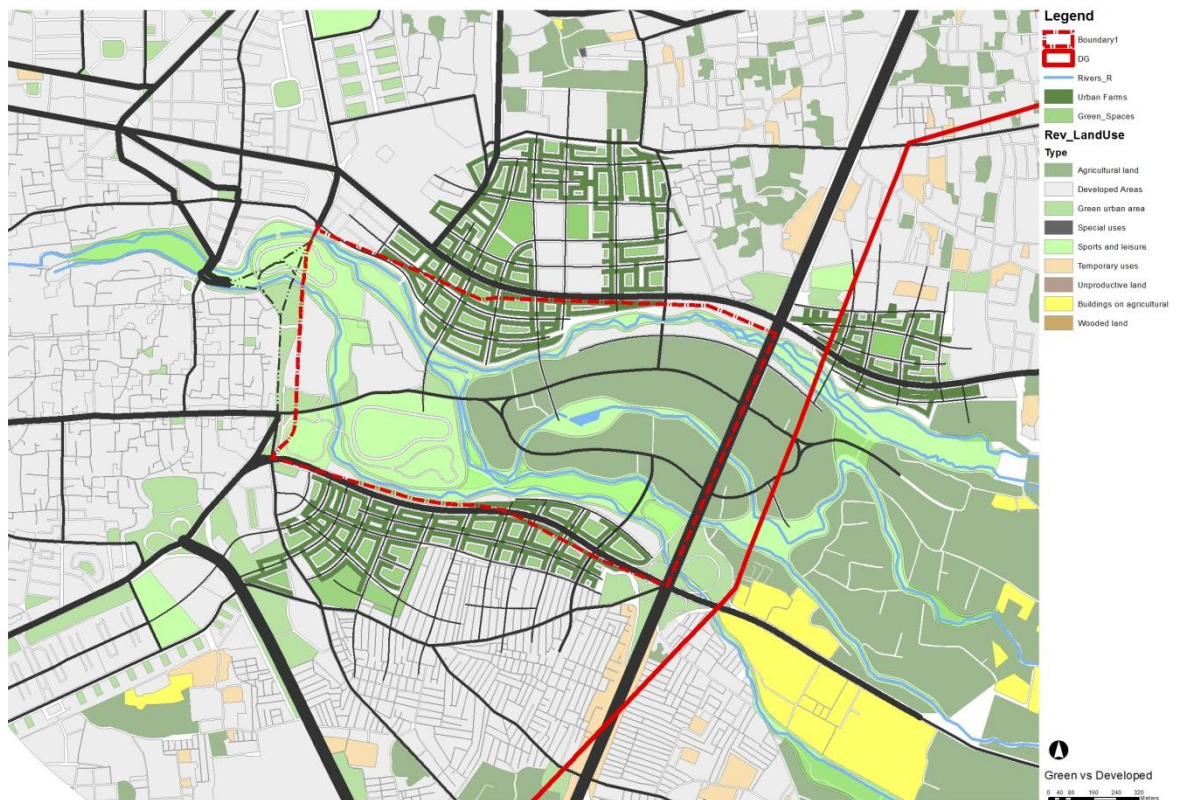
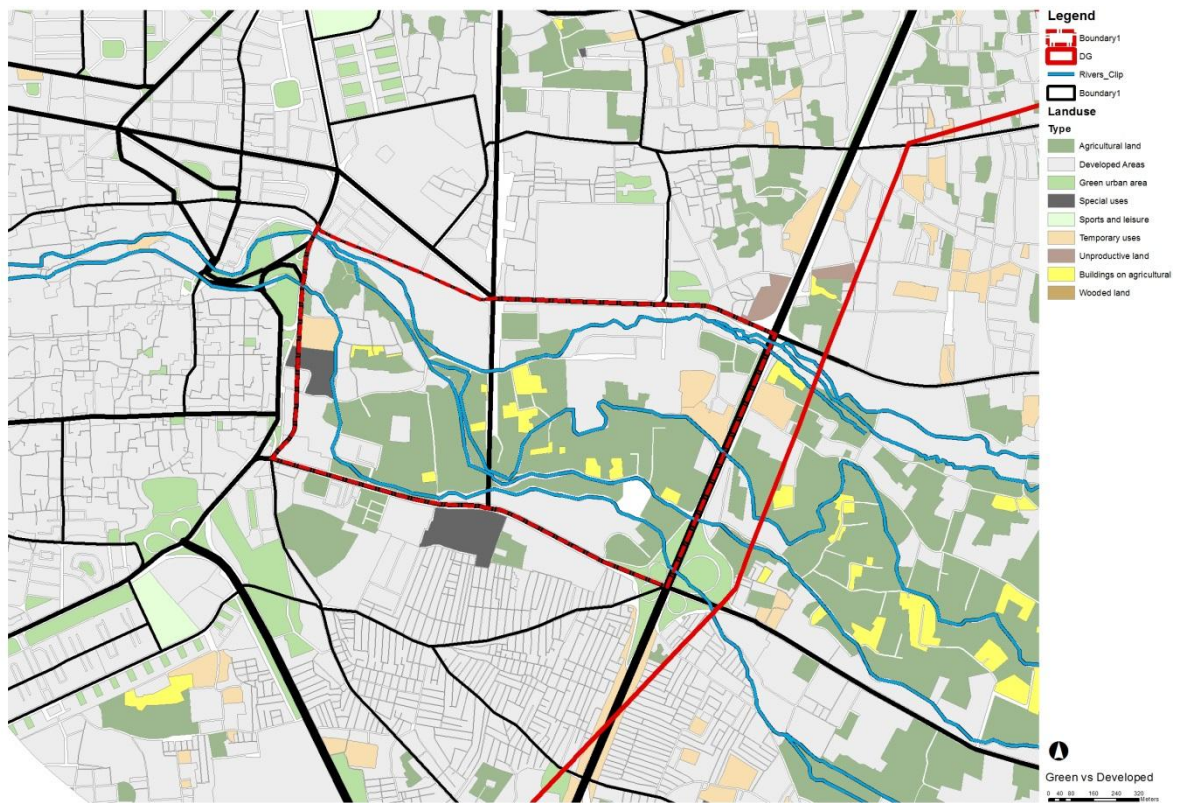


Figure 6.18: Maps show a comparison between the existing and proposed green Vs developed analysis

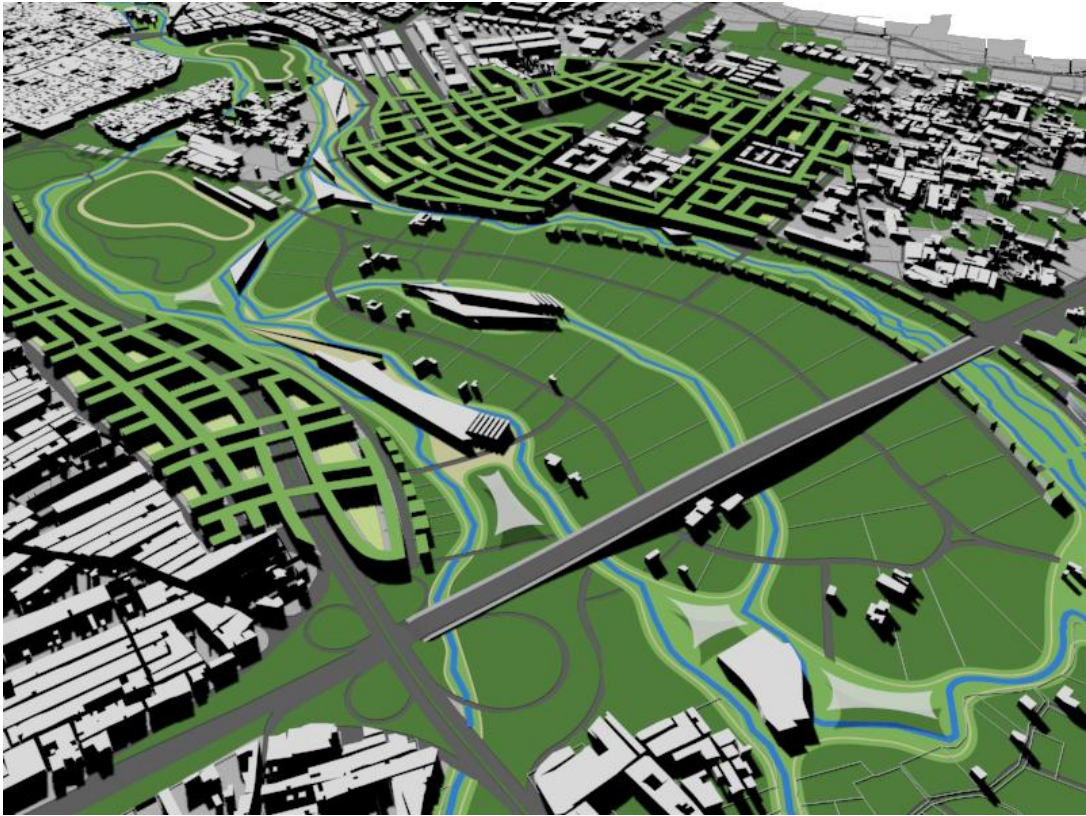


Figure 6.19: Three dimensional perspectives for the proposal (Prepared by author)



Figure 6.20: Three dimensional perspectives for the proposal (Prepared by author)



Figure 6.21: Three dimensional human scale's perspective for the proposal (Prepared by author)



Figure 6.22: Same three dimensional perspective from above (Prepared by author)



# CHAPTER 7

## INSTRUMENTS

### 7.1. Phasing

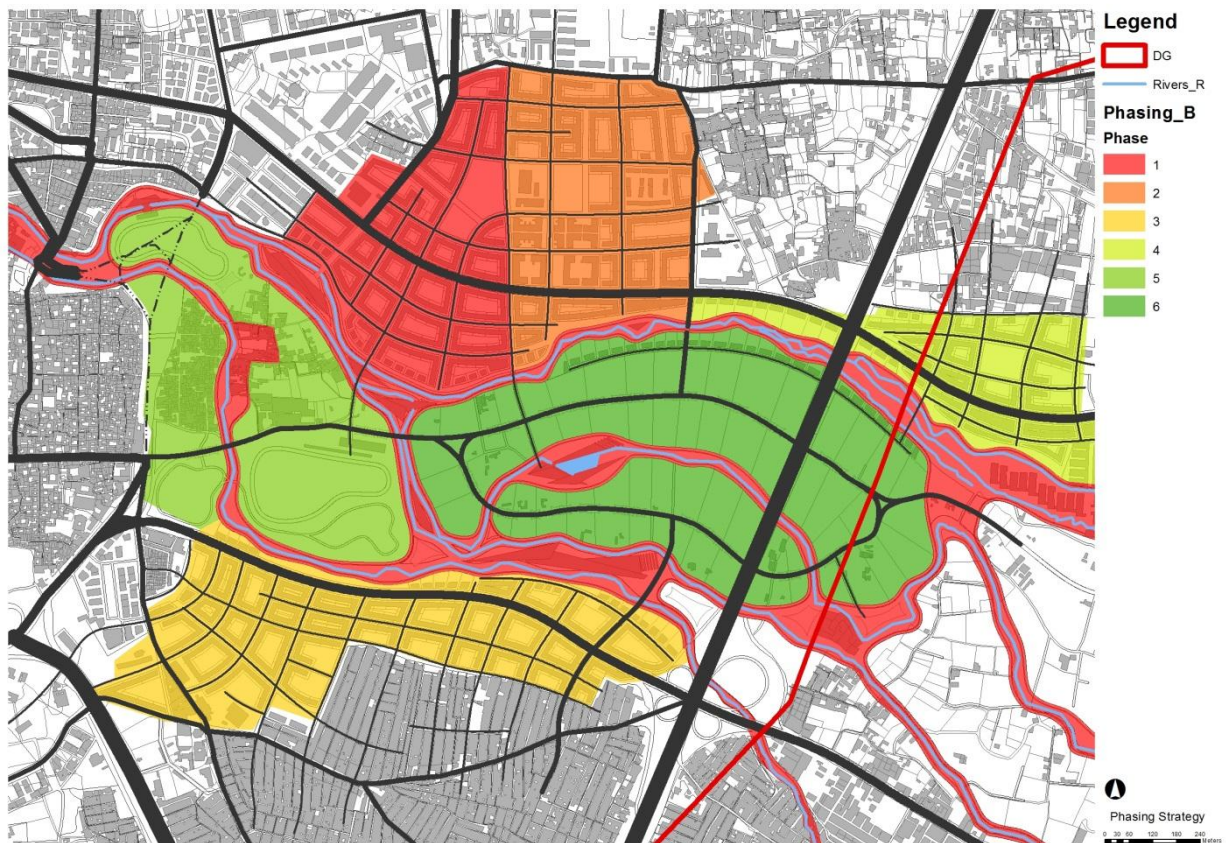


Figure 7.1: A map shows the proposed phasing strategy (Prepared by author)

The proposed phasing strategy divides the project into six phases. The first four phases focus on building the residential areas since housing will be the first priority

after the war. As shown in the map, phase one covers the river sides' landscaping and a part (the most appropriate part as it is ready to intervene on) of the northern neighborhood. It also covers the proposed interventions to solve infrastructural breaks at the eastern and the western sides of the site. Phase two covers the second part of the northern neighborhood. Phases three and four cover the rest of the northern neighborhood and the entire southern one. Phase five starts with the continuity of Medhat Basha Street, and then it covers the proposed thematic park and city of cinematic arts. Lastly, phase six covers the proposed market and its continuity to Al Ghouta.

## **7.2. Guidelines**

As I mentioned before, the thesis is about creating a feasible conceptual model to guide possible development in the future in a way that protects the city's vital green space and responds to the growth pressure. It is a reflection from an urban designer on the possibilities of the future doing plausibility design rather than a final design. It provides the needed flexible strategies and processes as an attempt to explore a design approach that integrates the organic process into a planning pre-design process. In that sense, what I am proposing here is not a detailed design that needs to be literally implemented, it is rather a flexible strategy that can be applied by the responsible authorities to produce the needed detailed studies. I only provided an example of how this strategy could be implemented within an urban design study.

Building on the above, the thesis is the needed document that the detailed studies and guidelines can be built on. It should be developed to translate the proposed

strategy into urban design and architectural guidelines that covers the following sections:

- The Agricultural lands subdivision guidelines
- The proposed fabric's architectural design guidelines.
- The community facilities architectural design guidelines.
- Green open spaces landscape design guidelines.
- The urban farms landscape design guidelines.
- The river sides landscape design guidelines.

Architectural and urban design competitions should be organized to come up with creative designs for the proposed strategic public projects like the thematic park, the city of cinematic arts and the proposed market.

A feasibility study is also needed in order to determine the appropriate development plan and to show that the proposed plan is feasible. This was taking into consideration by proposing elements, like the market and the city of cinematic arts, which provide income. The mentioned needed study analyzes the development sharing percentages between the public and the private sectors. It also proposes the appropriate financial strategies for the implementation process.

### **7.3. Regulatory framework**

What is worthy to be mentioned is that the thesis applies the proposed amendments for law number five which is the basic law for urban planning in Syria. These amendments were proposed based on a study prepared by Patrick Mc Oslan, an international urban planning expert, and Housam Al Safadi, a Syrian urban planning

consultant. The study criticizes law number five and other laws that control the urban planning process in Syria. It describes the current urban planning process as a man power and time consuming process, and a pure physical planning process that ignores the social, ecological and economic dimensions of urban planning. Moreover, it hinders the flexible legal development and indirectly allows for more land consuming and informal settlements.

However, the proposed amendments encourage strategic flexible planning, a participatory approach that integrates society, enhancing the role of the private sector and offering guidelines for developers, reducing the bureaucracy of the planning process and enhancing the role of local municipalities in decision-making.

The thesis came as a response for the mentioned amendments. It applies a flexible strategic planning process that encourages for sharing between the public and the private sector. It facilitates the role of the local municipalities since it provides them with a parametric conceptual model that could be revised to suit different cases. And then, detailed urban design and landscaping studies should be done by the local municipalities. In order to apply the strategy before transferring it to local municipalities, coordination with the higher responsible governmental authorities is needed. These authorities are Damascus Governorate, Damascus Countryside Governorate, the Ministry of Local Administration and the Ministry of Housing and Community Facilities.

## CHAPTER 8

### CONCUSION

#### 8.1. Lessons Learnt for Other Sites



Figure 8.1: An aerial photograph shows Damascus and Al Ghouta

This chapter acknowledges where I am in the process, what I have come up with, why my approach is different, and how it could enrich the master plan. It sheds the light on the plausibility of the proposal as a visionary attempt to create a framework of negotiating elements for different issues to be explored.

The aerial photo shows how the fingers of Al Ghouta meet Damascus. It shows the site as an example that is similar to other sites along the border between the city and Al Ghouta. For that reason, the proposed system was designed in a parametric way to offer the needed flexibility that allows it to be replicated along this border.

After the war, there will be no time for urban planning. People will need to rebuild their houses as soon as they can. Damascus's countryside and Al Ghouta are largely damaged. The proposed strategy could save time if it is applied by local municipalities as a guideline for after war reconstruction of these sites along the border. What is different in this case is the direct distribution of the role to local municipalities that are capable of a direct quick management of the needed development.

Politically, I read the site as a border between two visions of the city; an urban central political vision, and the vision of the towns surrounding Damascus pretending their own identity and culture. What I gave is allowing the two visions to come together and opening the door for negotiation of two political realities. It opens up a different way of negotiation at different layers within the city. It is not my job to negotiate on behalf of others; rather, I created the parameters on which the negotiations will take place about the future that Damascus will have. The proposal opens up a lot of horizons.

As mentioned before, the thesis aims at testing Landscape Urbanism as one of the most interesting contemporary urban design theories taking Barada River in

Damascus and its surrounding urban context as a rich case study. It applies the need for this new concept to be tested in Damascus's rich context in order to prove that recent urban design theories could be more successful and sustainable even when it is transferred globally. In that sense, it tries to put Damascus on the map of contemporary urban design interventions.

The thesis is opportunistic and visionary, it takes the city as it is, adds on its parameters, re-conceptualizes the form into a strategy or a dynamic. It acknowledges reality to transfer it. Landscape urbanism is a tool for exploration rather than answering certain problems. Asking the right questions on many levels is the right tool to explore opportunities. The thesis is a twist on landscape urbanism in a way that provides inspiration.

The proposed urban form acknowledges that this is not going to be developed in one go. As a possibility it might have been some negotiations about its heights, distances ....etc. I am creating parameters that could open the horizons for negotiation between Damascus and its countryside within the large urban context enabling identity creation at some level. This is just to open horizon for an approach, knowing fully well that the implementation will involve a lot of negotiations on other parameters that have not been discussed.

The proposed strategic urban planning process comes as an attempt to develop the traditional urban planning process in Syria. It saves time, human and financial resources, and provides a flexible framework for replication. Moreover, it offers a model and opens the door for other strategic planning proposals in Damascus, in Syria and in the region.

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