

**AMERICAN UNIVERSITY OF BEIRUT**  
**THESIS, DISSERTATION, PROJECT RELEASE FORM**

Student Name: Zoorob, Rayan Saado  
   Last  First  Middle

- Master's Thesis                            Master's Project                            Doctoral Dissertation
- Capstone Project

I authorize the American University of Beirut to: (a) reproduce hard or electronic copies of my Capstone project; (b) include such copies in the archives and digital repositories of the University; and (c) make freely available such copies to third parties for research or educational purposes.

I authorize the American University of Beirut, to: (a) reproduce hard or electronic copies of it; (b) include such copies in the archives and digital repositories of the University; and (c) make freely available such copies to third parties for research or educational purposes  
 after :   **One** ---- year from the date of submission of my capstone project.  
               **Two** ---- years from the date of submission of my capstone project.  
               **Three** ---- years from the date of submission of my capstone project.

|   |                                 |
|---|---------------------------------|
| <br>_____<br>Signature | 27-05-2020<br><br>_____<br>Date |
|---|---------------------------------|

This form is signed when submitting the thesis, dissertation, or project to the University Libraries

AMERICAN UNIVERSITY OF BEIRUT  
UNDERGRADUATE CAPSTONE PROJECT  
IN  
LANDSCAPE ARCHITECTURE  
SUBMITTAL FORM

**Tripoli: The Social Hub; Revitaliing  
the River**

by

**Rayan Saado Zoorob**

LDEM 242- ADVANCED DESIGN  
SPRING 2017-2018  
CAPSTONE PROJECT COORDINATOR:

**Maria Gabriella Trovato**

PRIMARY ADVISOR:

**Maria Gabriella Trovato**

SECONDARY ADVISORS:

**Balsam Al Ariss**

**Mona Khechen**

Approved by Project Coordinator:



[Signature]

---

**Maria Gabriella Trovato, Assistant Professor**  
**Department of Landscape Design and Ecosystem Management**

Date of project presentation: **May, 10, 2020**



# Revitalizing Abo Ali's River - Tripoli

## Tripoli's Social Hub

Professors: Maria Gabriella Trovato - Balsam Ariss - Mona Khechin

Landscape Architect: Rayan Zoorob







## Table of Contents

|    |   |
|----|---|
| 1  | Introduction                            |
|    | - Background and Context                |
| 5  | Review                                  |
|    | - Case Studies                          |
| 7  | Context                                 |
|    | - Site Selection                        |
|    | - Site Inventory                        |
| 13 | Investigation                           |
|    | - Site Analysis                         |
|    | - Elements of Kevin Lynch               |
|    | - Opportunities and Constraints of Site |
| 21 | General Proposal                        |
|    | - Statement of General Design           |
|    | - Strategy for General Design           |
|    | - Master Plan & Layers                  |
| 10 | Zoomed In Design                        |
|    | - Statement of Design                   |
|    | - Master Plan & Layers                  |
|    | - Details of Design                     |



# Introduction to Site - Tripoli

## The Triple City - Context

The triple city Tripoli, is a city located north of Lebanon and used to be one of the most important cities in the region. It was the center of the region. Tripoli was and still rich in heritage and cultural landmarks, it became one of the poorest left-out cities in Lebanon and the region. The most recent conflict is Jabal El Mohsen – Bab El Tebbeneh Conflicts where a strategical plan has been done to limit those wars. With all the external forces and the loss of its population Tripoli became what it is now. After the 17th of October revolution, Tripoli got herself a new name “Arous Al Thawra” the reason behind picking my site.





er of trade, education, communication, and connection. Regardless of the fact that  
e city of Tripoli overcame several wars. The earliest was the civil war and the lat-  
rces affecting on it as wars, low income, lack of job opportunities, and increase  
which means the bride of the revolution. Therefore the left-out city of Tripoli is





# Introduction to Site - Tripoli

## Historical Timeline

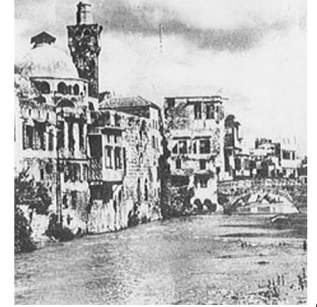
### 10th - 19th Century:

- Tripoli is a Greek name meaning 3 cities and tripoli is one of them. Sidon and Tyre are the other two.
- It was the centre for trade and education in the region
- Earthquake destroying the Byzantine city of Tripoli



### 1933:

Vegetable market was established in the Tabbaneh area



### 1970:

Major infrastructure projects were implemented to improve the city's infrastructure



### 1909 - 1911:

- Road link between Tripoli and Beirut was created
- Railway link between Tripoli and Aleppo was created

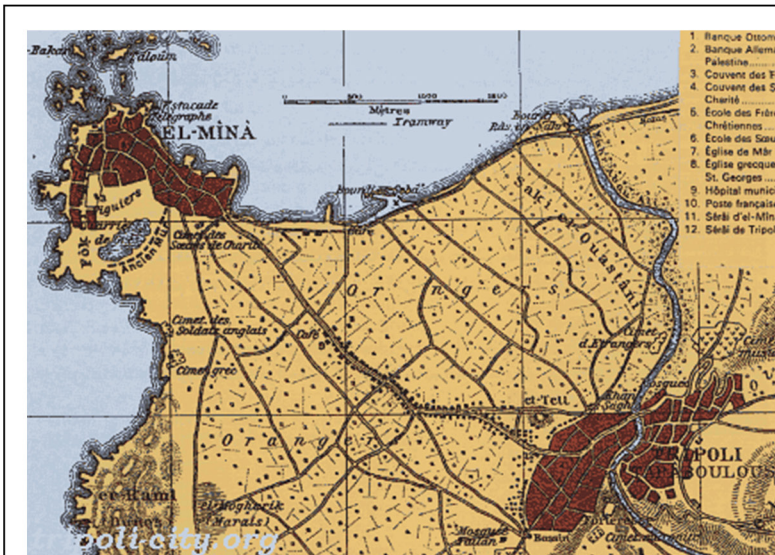


### 1942 - 1968:

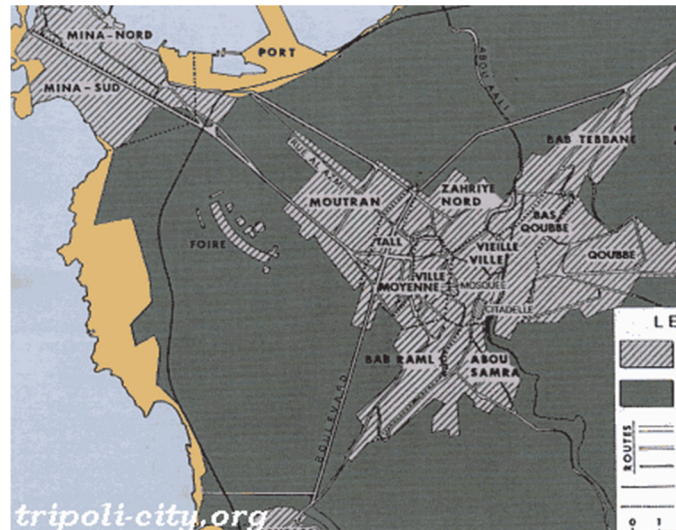
- Flood of the Abou Ali River leading to the demolition of 2000 residential units
- Concrete channel was built leading to the migration of the inhabitants to new neighbourhoods



## Evolution of Tripoli



1. Banque Ottoman
2. Banque Allemande
3. Couvent des Franciscains
4. Couvent des Sœurs de la Charité
5. École des Filles Chrétiennes
6. École des Sœurs de la Charité
7. Église de M. St. Georges
8. Église grecque orthodoxe
9. Hôpital municipal
10. Poste française
11. Sérail d'el-Mina
12. Sérail de Tripoli





structure services was ceased to the war as the rail connections due war.



**2007-2008:**

Increase in the tension between Jabal Mohsen and Tabaneh resulted in a forced exit of the syrian forces in Lebanon

**2014:**

Establishment of a Security plan to solve the issues between Bab el tabaneh and Jabal Mohsen



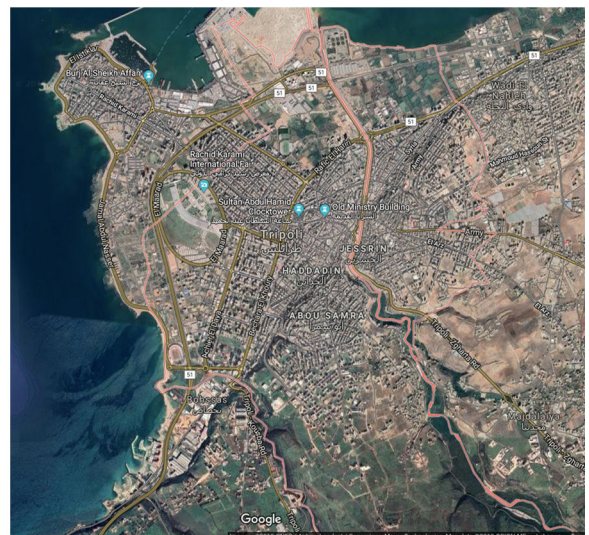
**1980-1990:**

- Start of clashes between Bab el tabaneh and Jabal Mohsen.
- City Lost is multi-confessional nature due to the migration of christians and having 90% muslims.

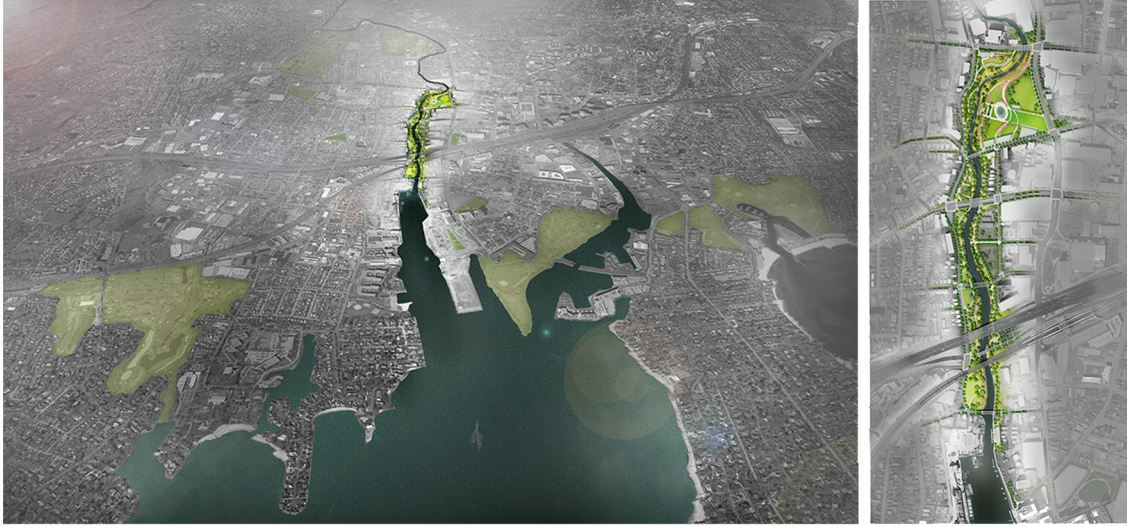


**2011:**

An increase of the population upon the syrian crisis and refugees coming to lebanon



## A Restorative Landscape Landscape for Stamford



### Asla Honor Award 2015

**Location:** Stamford, Connecticut,  
USA

**Completion Date:**  
2013

**Team:**  
Lucinda Sanders, Partner-in-Charge  
Judy Venonsky, Design Staff  
Tiffany Beamer, Design Staff

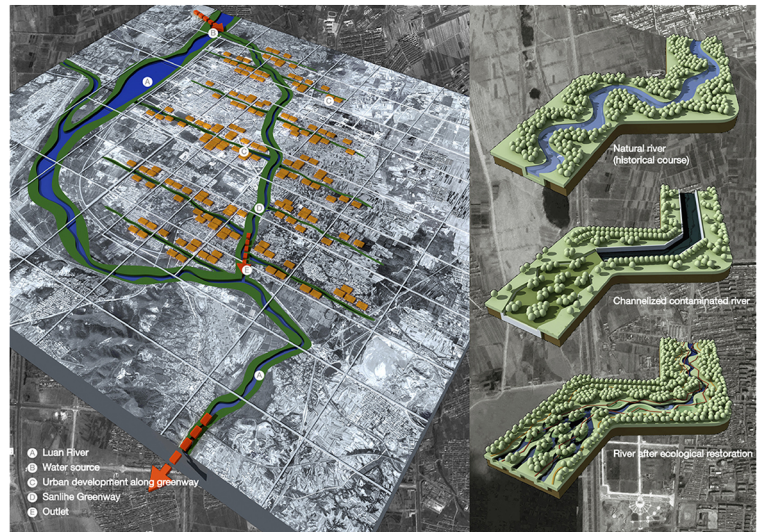
### Project Statement:

The plan envisioned the river as an **amenity and connector**, anchored by a park to the north and with a **multimodal greenway** stretching down to Stamford Harbor. Stamford and the Mill River Collaborative engaged OLIN to create—in collaboration with the Army Corps of Engineers—a plan to **restore the meandering river and craft a vision for the park**.

The plan aimed to achieve three primary goals: create a park that meets the recreational and civic needs of a diverse population, provide a natural habitat for native flora and fauna to flourish, and offer a vision that is economically viable, maintainable, and implementable.







## Asla Honor Award 2013

### Location:

Qian'an City, China

### Completion Date:

2013

### Team:

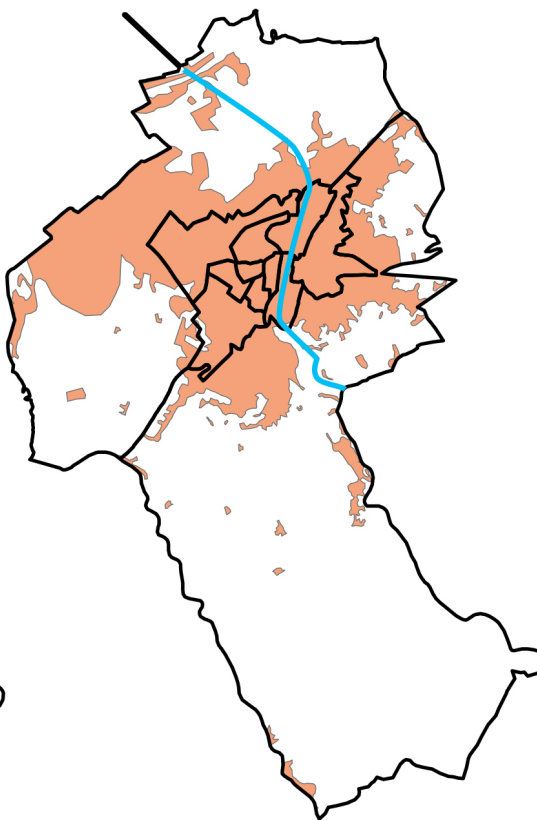
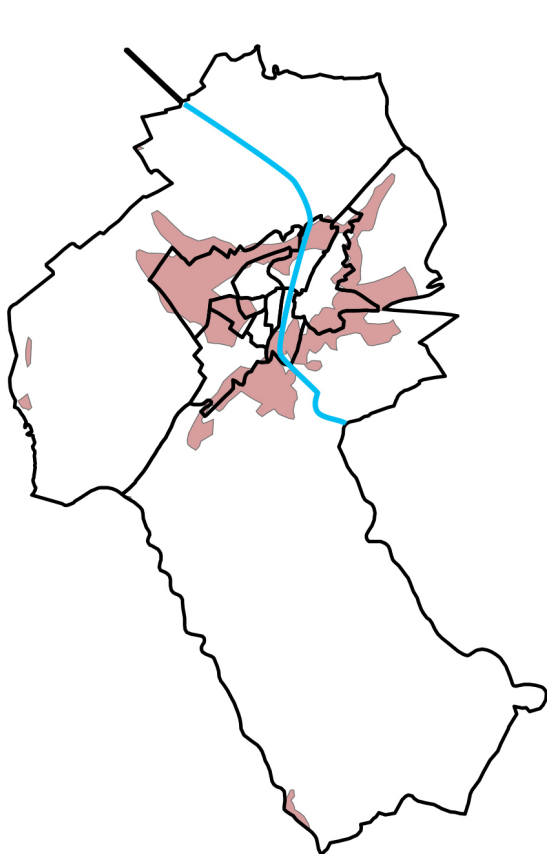
6 Landscape architects,  
3 Civil Engineer,  
Artist, Structural Designer,  
Horticulturalist, Team Leader

### Project Statement:

The Qian'an Sanlihe Greenway is transformed from the former garbage dump and sewage drainage. It exemplifies how a neglected landscape can be recovered as an green infrastructure and everyday landscape with restored ecosystem providing multiple services. The combined pedestrian and cycle paths for both commuting and recreational use are integrated with art, revitalizing social identity by reflecting local traditions. Through the generation of ecological and aesthetic benefits, the project catalyzes sustainable urban development in the region

# Context of Site

Within Tripoli, I've Decided to focus on the area of Abou Ali's River and neighborhoods around. River about ali used to act in the past as an element that brought people together, but it went under a lot of floods until the most disastrous one in the 1950s which pushed for the channelizing of the river creating as a result connection issues on different levels as the physical, vegetational, and visual for the cities on the opposite sides of the river bank. In addition to that there was a disconnection between neighborhoods on the character level. For instance on one side it was purely residential with activities being as minimal as people sitting or relaxing on the stairs while they were on their way to the destination area. While on the opposite side and across the river the commercial mixed activities were condensed. Hence this reflects the different characters found across the site.

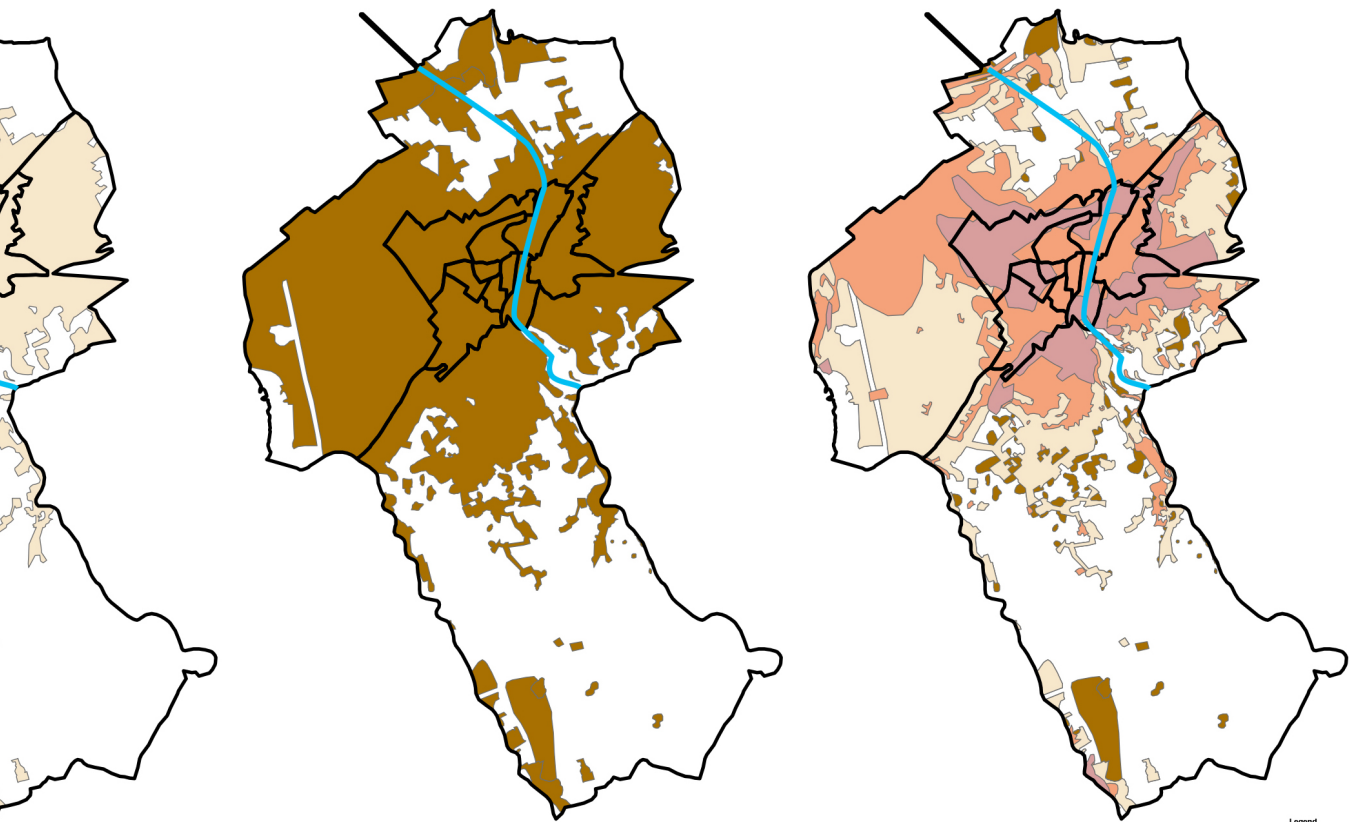




Context and Neighboring Cities to Tripoli

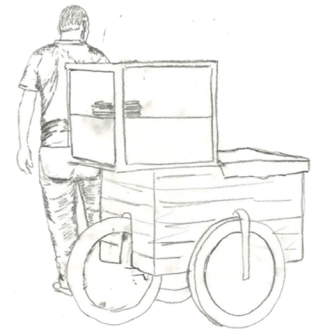


Population Growth 1920-2016  
source UNDP



Legend  
 CADASRAYAN\_Clip2  
 1963 BLD





**Legend:**

- Restaurants and Food Shops
- Extension of Restaurants and Food Shops
- Commercial Retail Touristic Shops
- Extension of Commercial Retail Shops
- Car Mechanic and Accessories Shops
- Extension of Car Mechanic and Accessories Shops
- House-holds Shops
- Extension of House-holds Shops
- Vegetable Market Shops and Vendors
- Extension of Vegetable Market Shops

**Ground-Floor Activities**  
Scale 1:2500





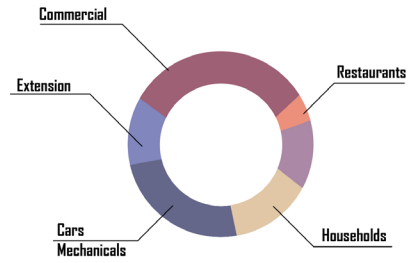
Mixed with a majority of necessary activities

Mixed with a majority of necessary activities

Mixed with a majority of optional activities

Mixed with a majority of optional activities

- Necessary Activities
- Optional Activities
- Social Activities
- Shopping
- Mechanical Car Fixer
- Vendors
- Shopping
- Smoking
- Kids Playing
- Chatting
- Sitting



Commercial Extension on side walks

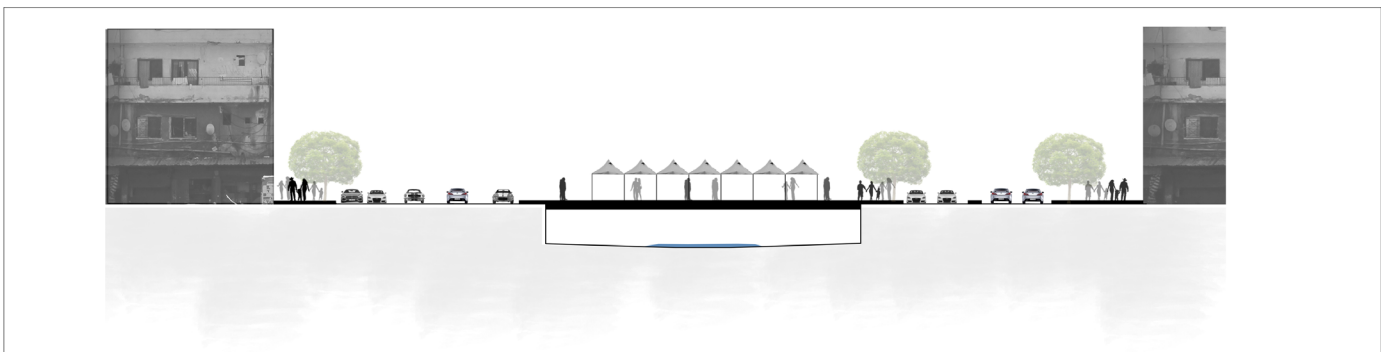
Commercial Extension on side walks



Commercial Extension on side walks



Activities on Site and zones they create  
Scale 1:3500



Section I: Existing Conditions and activities Along the River





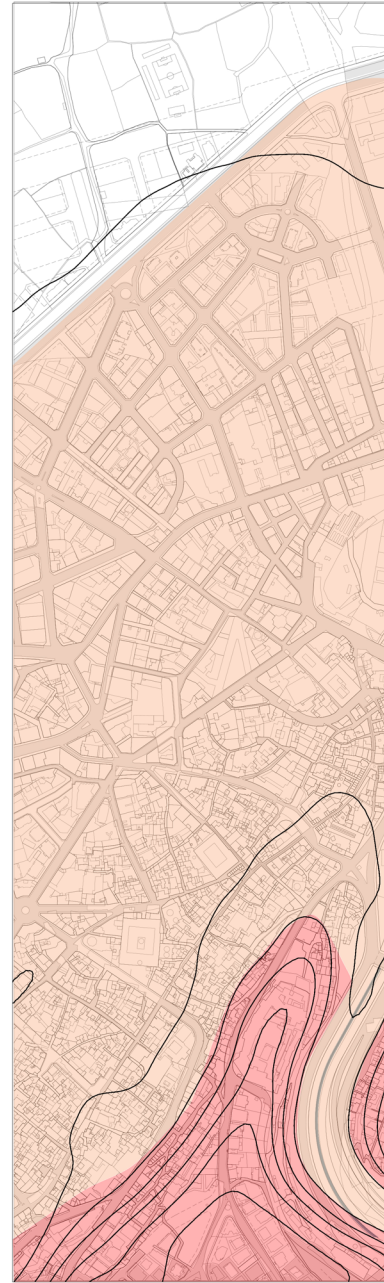
Physical Connectivity through infrastructures  
Scale 1:3500

Legend:  
 Secondary Road  
 Tertiary Road

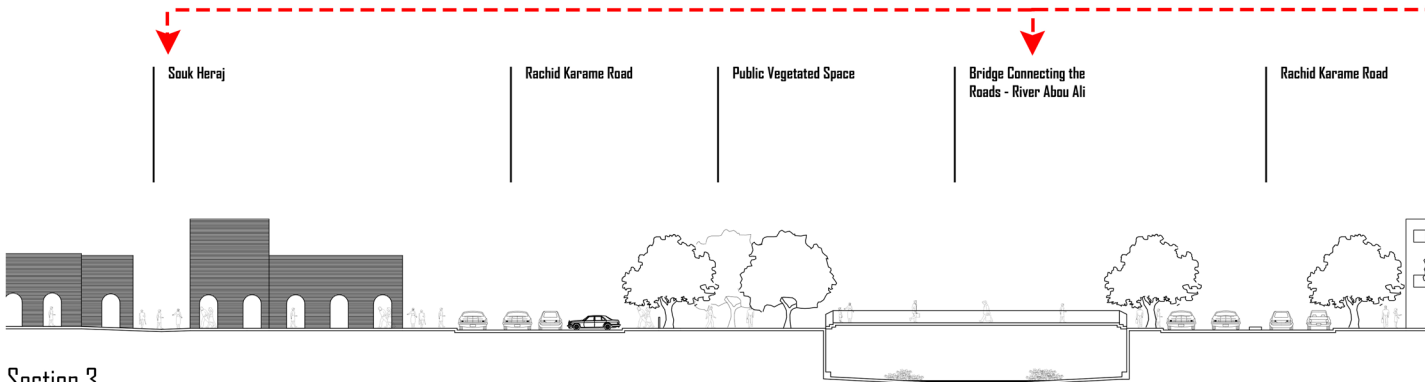
Strong Vehicular point with lack of connections to the other neighborhood

Strong Vehicular point with weak connections to the other neighborhood through tertiary roads

Strong Vehicular point with strong connections to the other neighborhood through secondary roads



Zoning of River Abou Ali Neighborhood  
Scale 1:3500



Section 3  
Scale 1:200

Souk Heraj

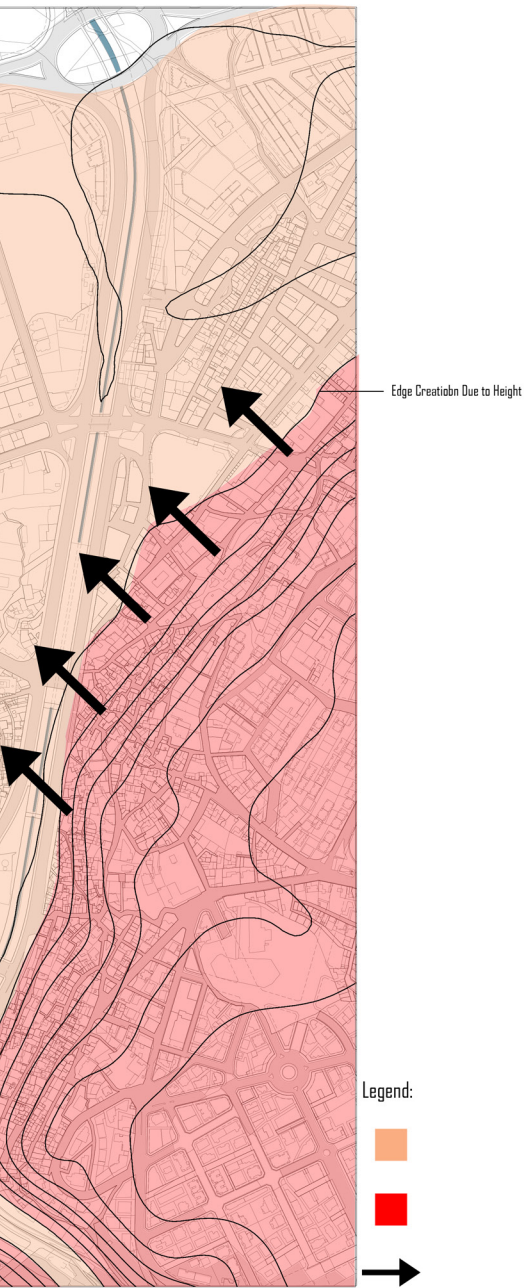
Rachid Karama Road

Public Vegetated Space

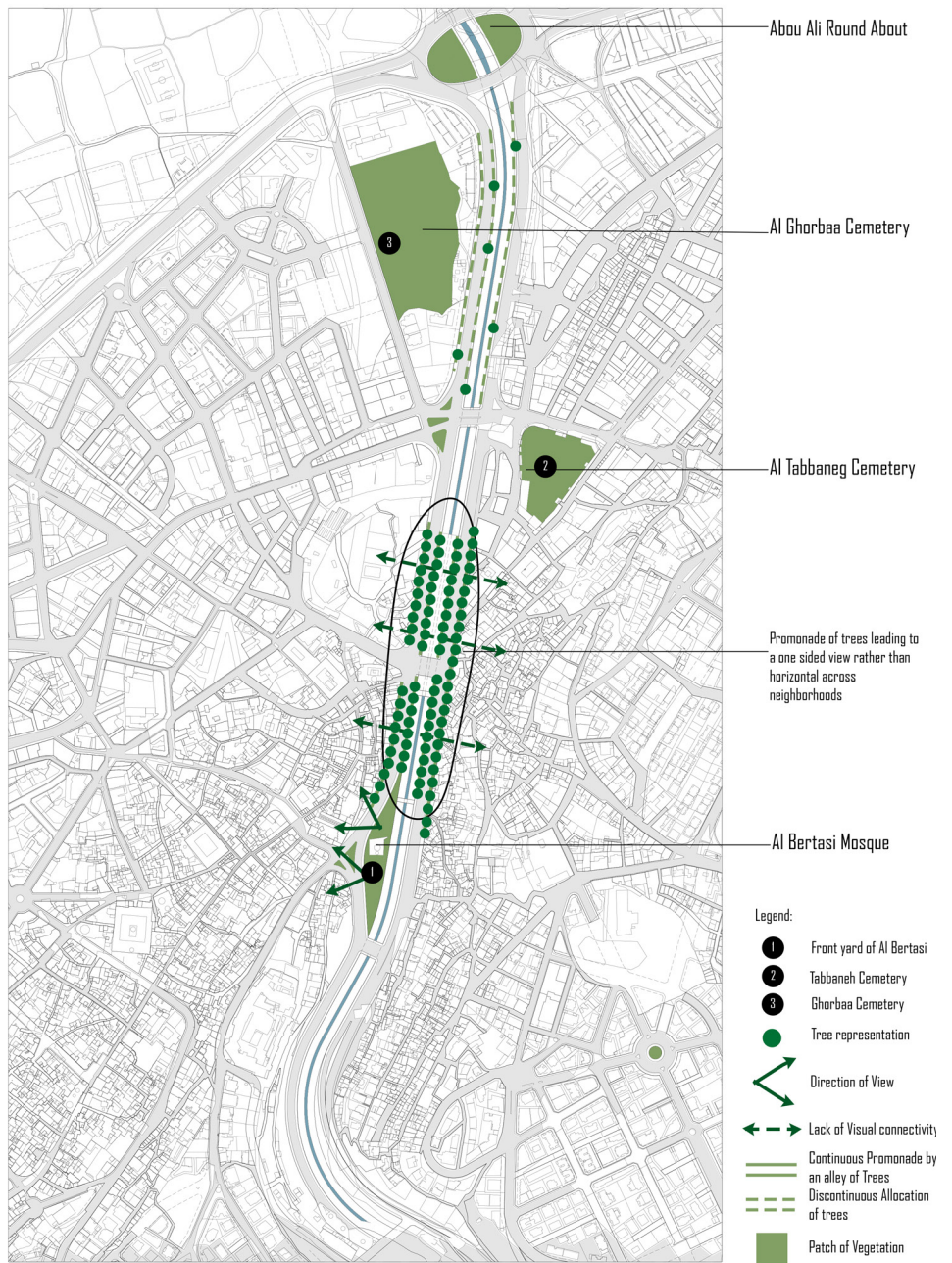
Bridge Connecting the Roads - River Abou Ali

Rachid Karama Road



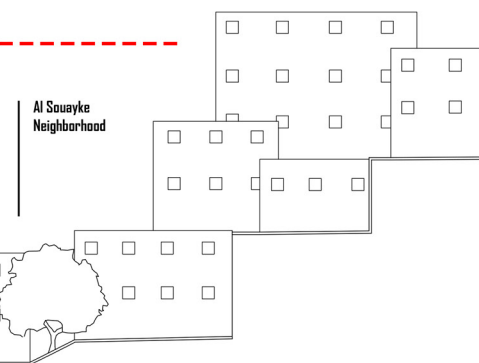


ds According to Altitude



Vegetation and Connectivity

Scale 1:3500





# Investigating Site

## River Levels and seasonality

About Ali river changing levels through seasons

## Main Roads

Existence of highly used main roads that connect to other neighborhoods leading to an important pass through zone

## Proximity of Landmarks

All Landmarks located next to each other in the old city neighborhood.

Neighbourhoods on the opposite side sharing same type of activities.

## Visual Connectivity through vegetation

Patches of open green spaces distributed all along the site

## Strong Physical Vehicular Connection across neighbourhood

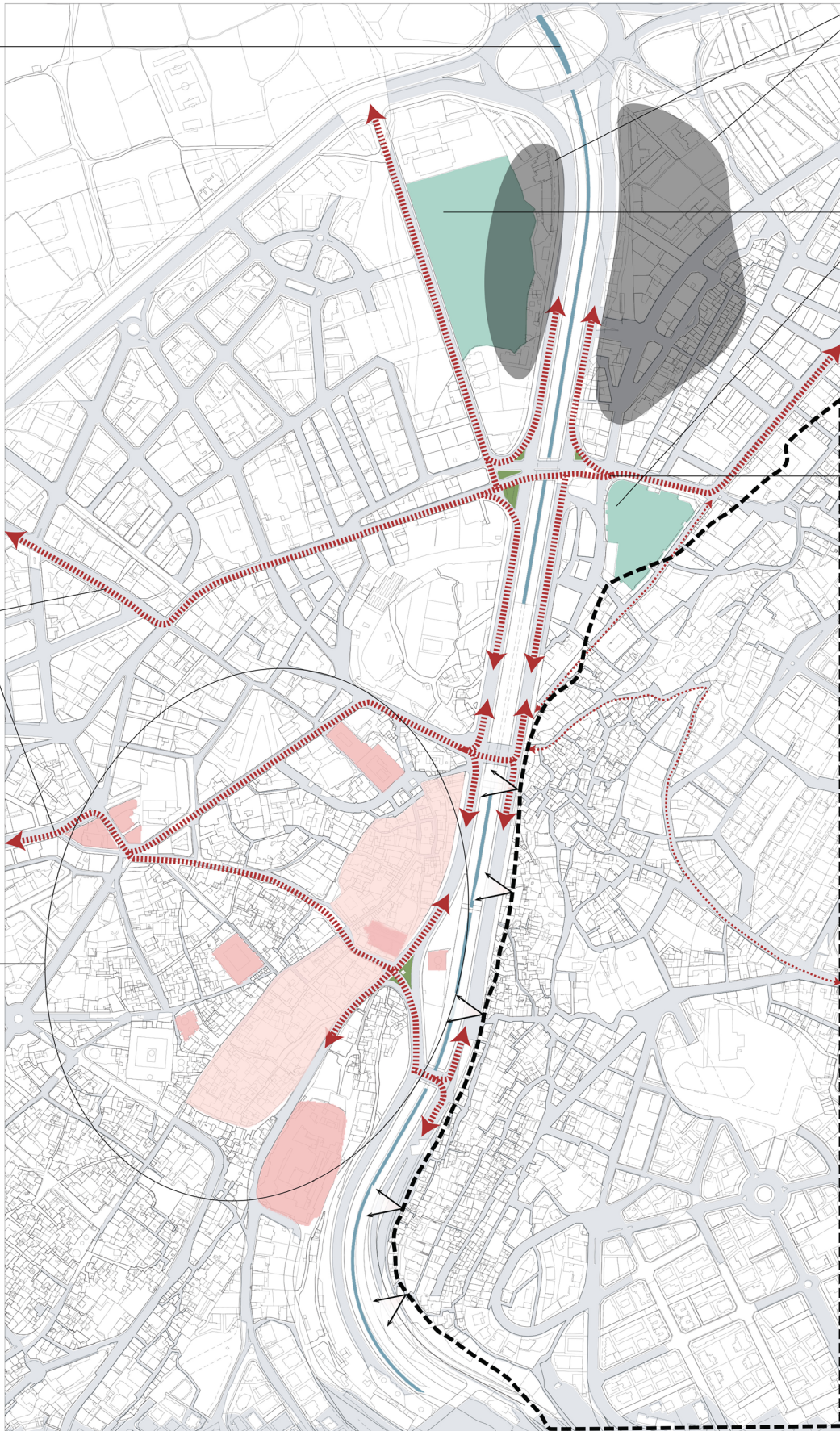
Presence of Secondary roads that are common and directly connecting Neighbourhoods to other cities. Other country in this case (Syria)

## Strong Visual connection among neighbourhoods

Area with a higher altitude having the ability to visually connect to other neighboring neighborhoods

## Slopes and watersaving

Benefit from slopes and rain to create watercatchment strategies



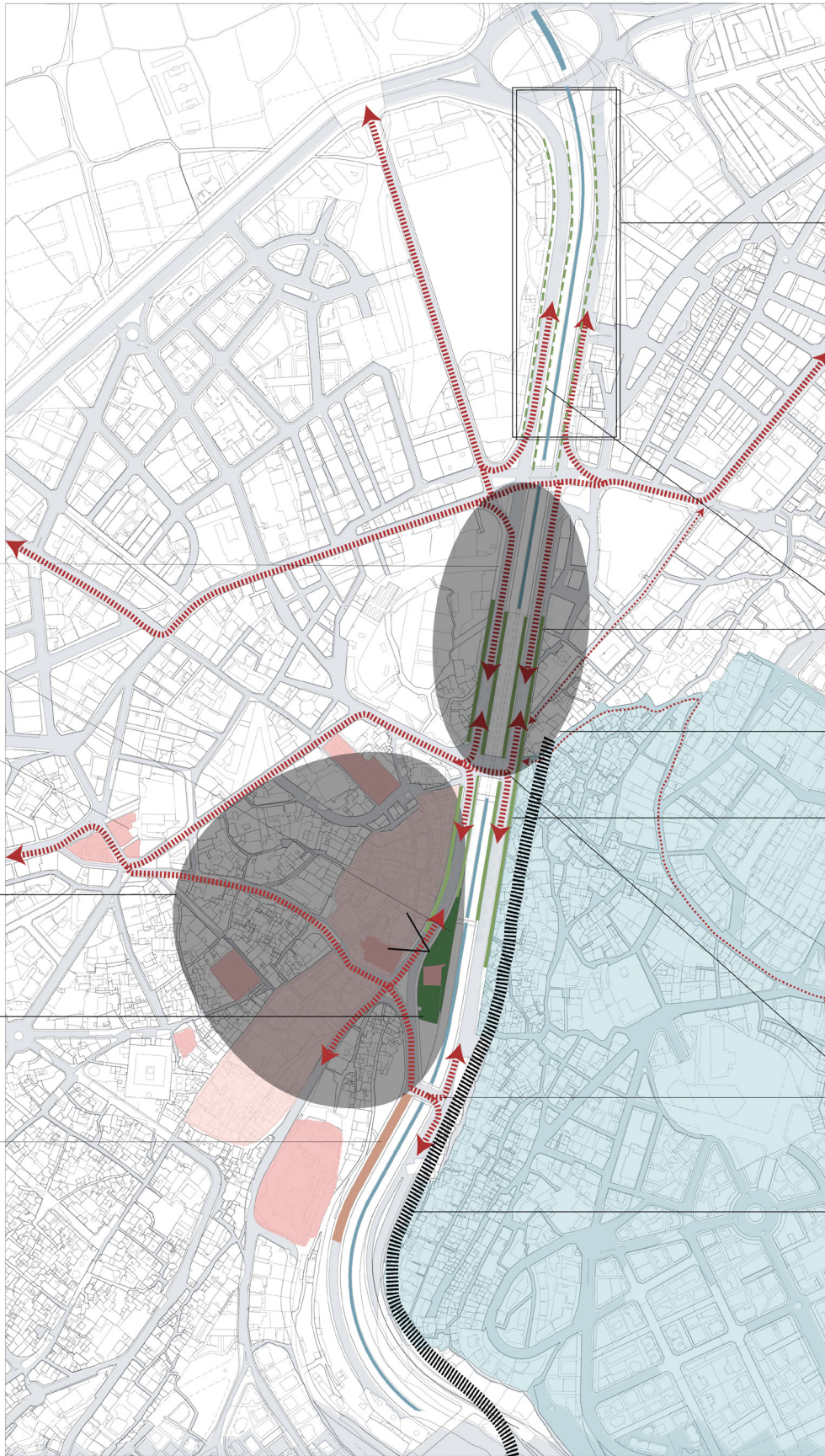
## Legend:

- Secondary Road
- Tertiary Road
- Visibility and views
- Higher Altitude zone
- Mixed with a majority of necessary activities
- Open Green Spaces
- Cemeteries
- Landmarks
- Old Souks

## Opportunities in the are of River Abou Ali and Neighborhoods

Scale 1:2500





**Irregular Parking Cars**  
Cars parking irregularly on walk ways

**Highly exposed to Sunlight**  
Open space with lack of trees for shade to help with the harsh weather conditions

**Signage to landmarks and visibility**  
Lack of signage referring to landmarks as they aren't visible to people away from the city

**Condensed social activities on one neighborhood**  
Social activities condensed in the old city rather than the interconnection of both neighborhoods

**One directional connection of the court yard**  
A strong open space that lacks the multi-directional connectivity to both neighborhoods on the opposite sides of the river

**Industrialised blocked road**  
Vehicular Road blocked for industrial use

**Lack of physical connection through infrastructure**  
Absence of infrastructure physically connecting neighborhoods on opposite sites

**Lack of Vegetational Continuity across the river**  
The use of two planting typologies a clear promenade and haphazardly place vegetation creating clear separation

**Linear Social Activity across the river**  
Social activities not emerging to neighborhoods next to the river.

**Limitation of visual connection to vertical rather across neighborhoods**  
The use of a promenade of trees directing the visual connecting on the street level to linear rather than horizontal

**Rainfall Loss**  
Lack of signage referring to landmarks as they aren't visible to people away from the city

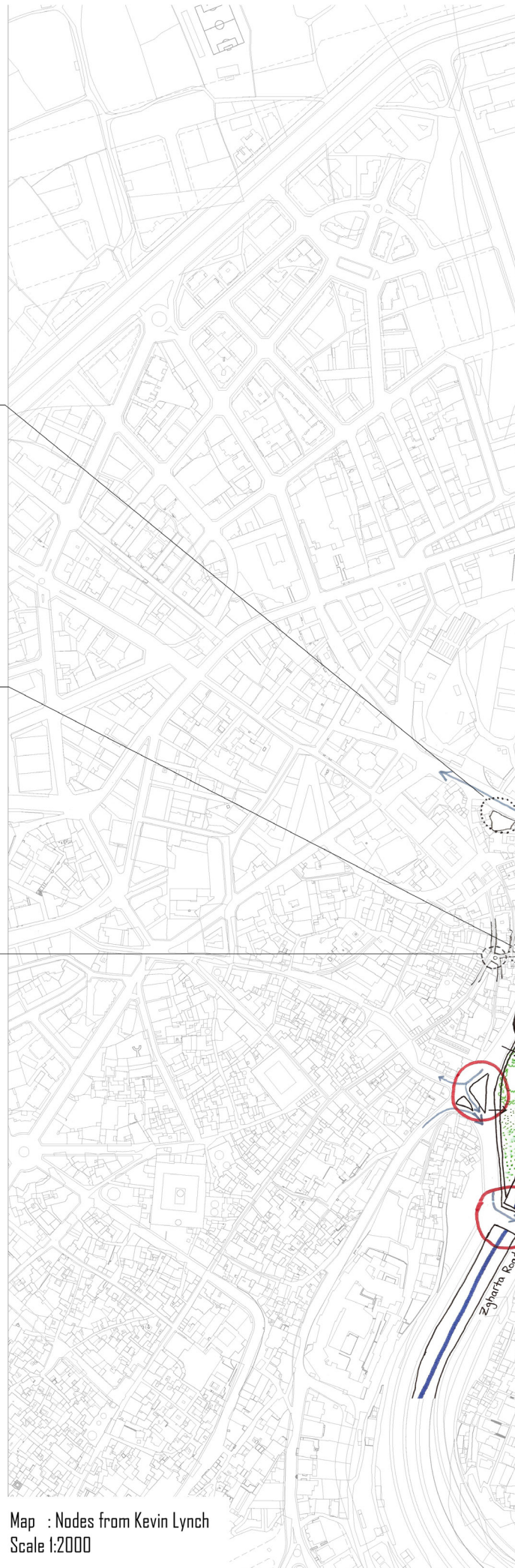
**Weak Physical Vehicular Connection**  
Lack of vehicular secondary roads connections to the neighbourhood. (tertiary roads)

**Weak Visual Connection between Neighborhoods by an edge**  
An edge has been created because of the building's facade as they turn their back to the river

- Legend:**
- Edge
  - Rainfall rate
  - Blocked vehicular road
  - Mixed with a majority of necessary activities
  - Open Green Spaces
  - Secondary Road
  - Tertiary Road
  - Continuous Promenade by an alley of Trees
  - Discontinuous Allocation of trees

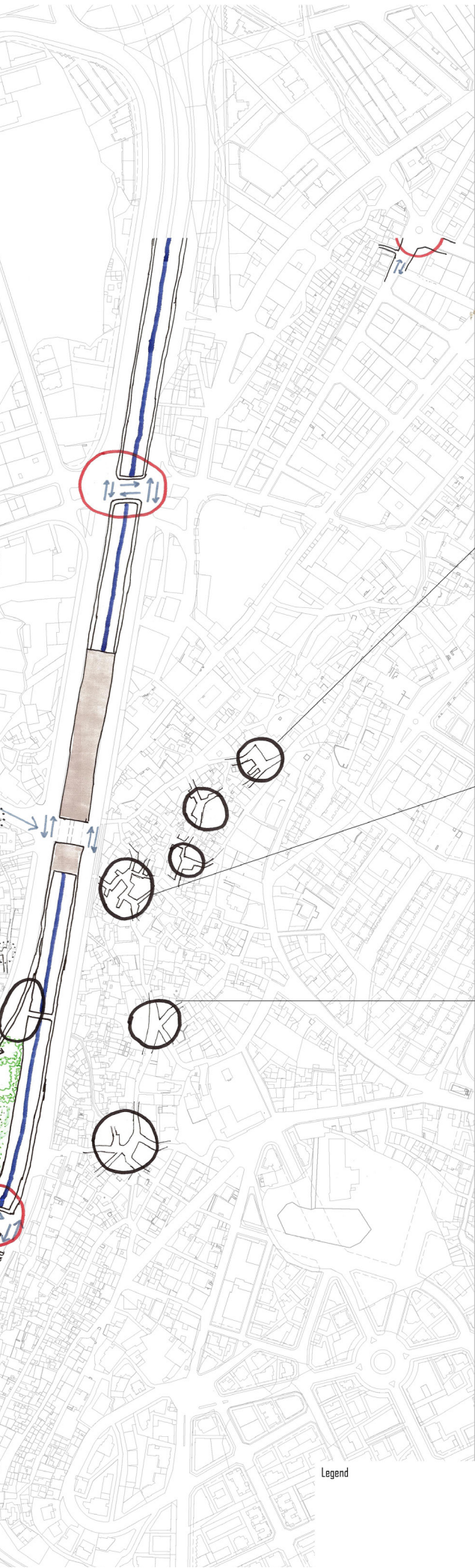
**Constraints in the area of River Abou Ali and Neighborhoods**  
Scale 1:2500





Map : Nodes from Kevin Lynch  
Scale 1:2000







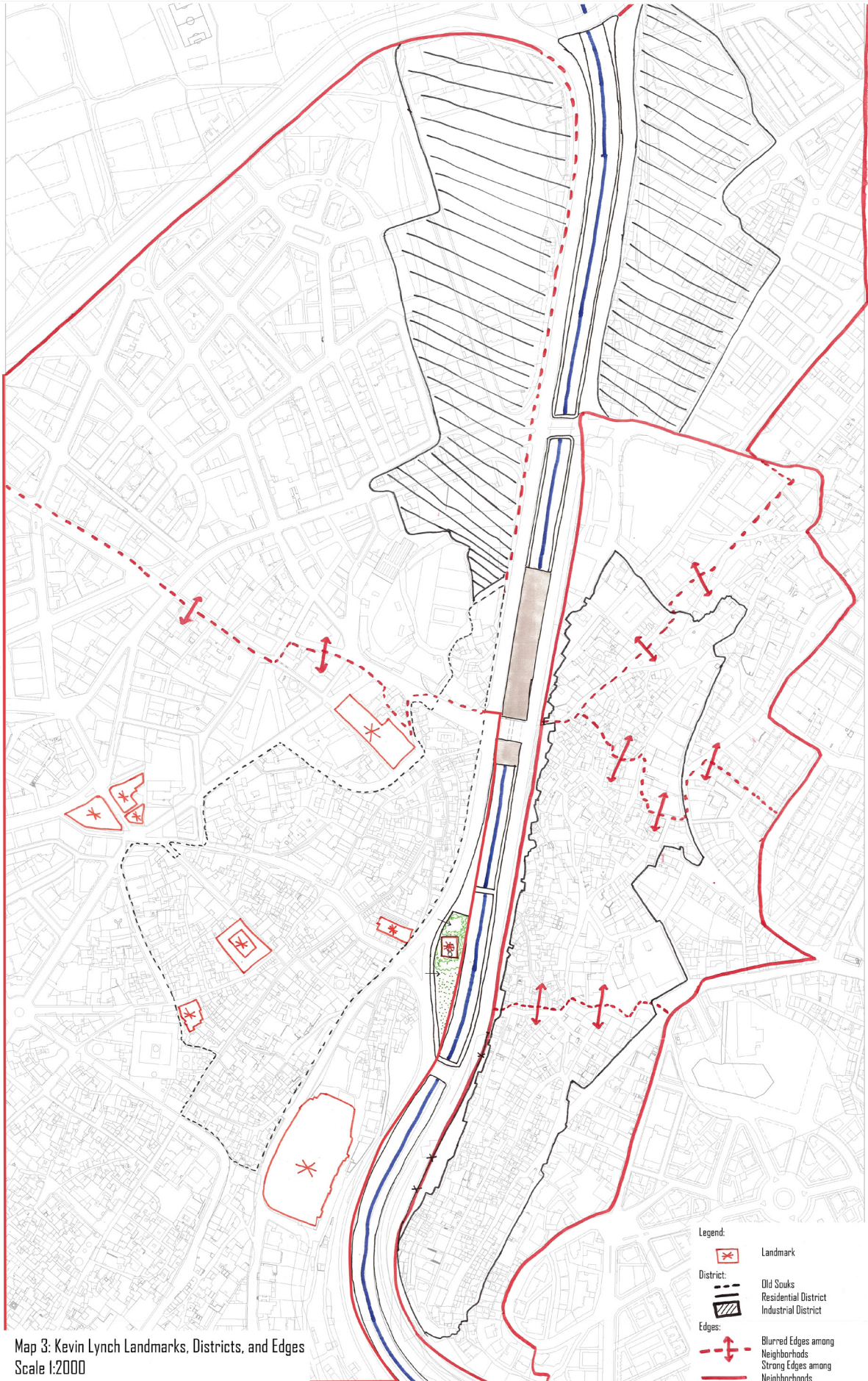


Map : Character of the Neighborhoods: Paths  
Scale 1:2000







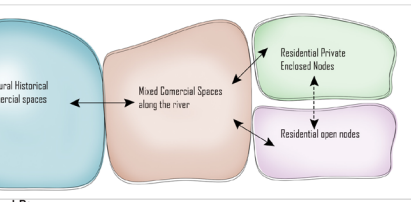


Map 3: Kevin Lynch Landmarks, Districts, and Edges  
Scale 1:2000

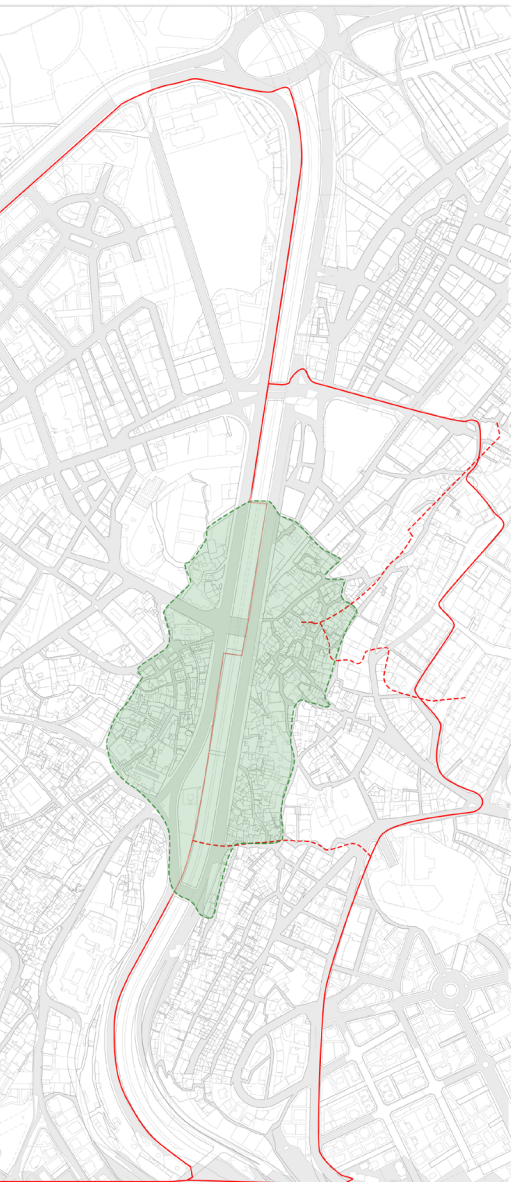
- Legend:
- Landmark
  - District:**
    - Old Souls Residential District
    - Industrial District
  - Edges:**
    - Blurred Edges among Neighborhoods
    - Strong Edges among Neighborhoods







Conceptual Diagram



Existing Conditions of the Old Sunday Market



Legend

- Existing Edges among Neighborhoods
- Blurring Edges among Neighborhoods
- Existing Blurred edges among neighborhoods
- Forming new blurred edge among neighborhoods
- Forming one entity/ space

## Concept Statement

This design aims on the neighborhood scale on enhancing the diverse characters of Abou Ali River neighborhoods to create a one joined neighborhood with its different characters through **3 main strategies** establishment of new techniques, enhancing physical and visual connections, and integrating new space

## Existing Conditions

1



2



3



## Strategy

**Establishment** of water catchment techniques as bio-swales within alleys and rain gardens, which aims to improve the environmental aspects and water shortage issues of the site through sustainable green lands

**Enhancing** the physical and visual connections using the existing nodes and alleys within residential neighborhoods as Al Qebbeh and Bab Al Tabbaneh through installing sitting areas and viewsheds exposures

**Integrating** a new multifunctional plaza that allows the existence of pop-up markets and get away plazas from the condensed urban life in the city spaces, which will improve the financial status of locals and connectivity of neighborhoods

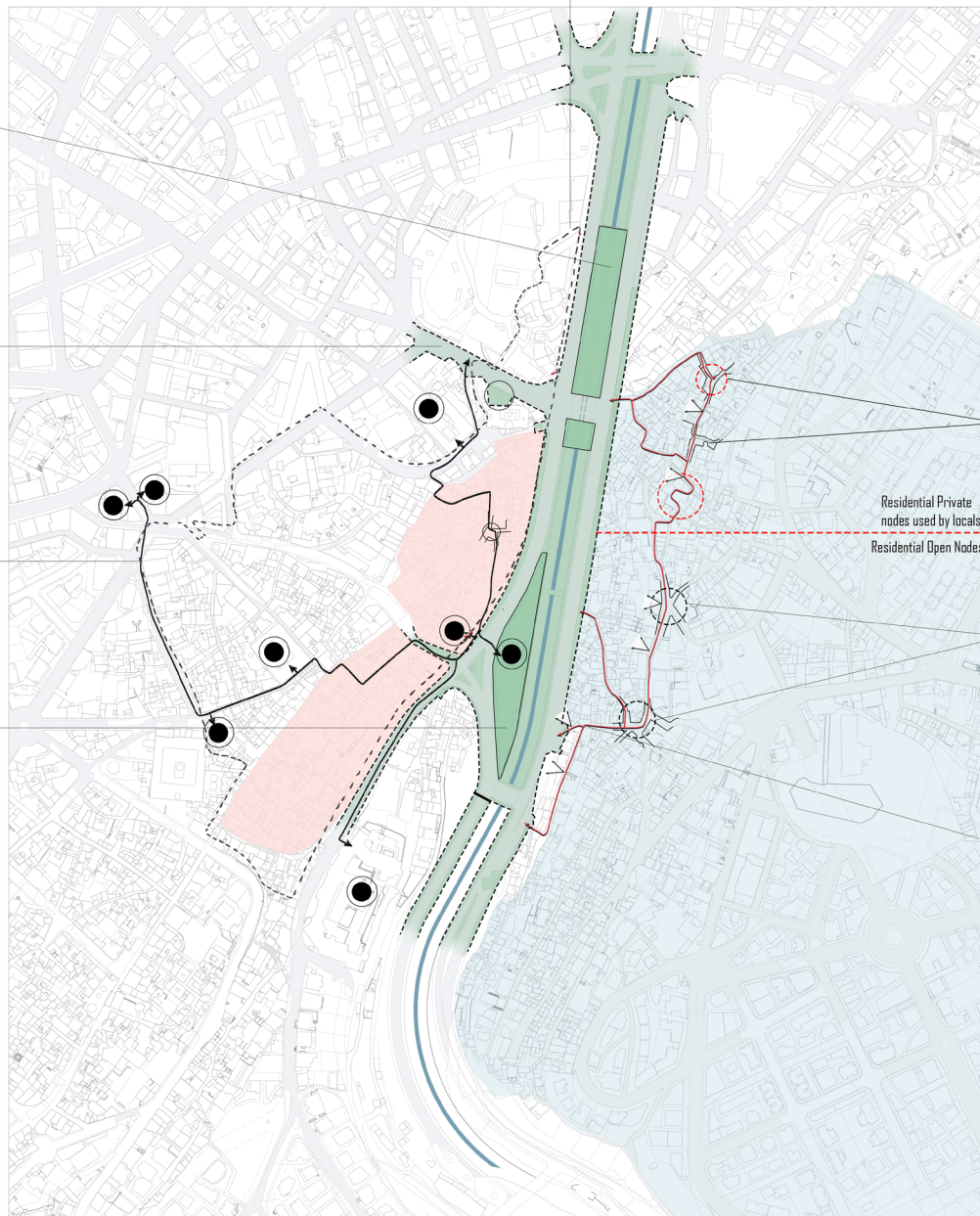
Inhance the old city character

Develop a multifunctional space for watercatchment strategies and open space

Create a buffer zone that helps cool down the micro-climate of the area

Develop a cultural trail that passes through landmarks

Inhance the character of the open plaza next to the mosque to cope with harsh weather conditions



Inhance the environmental factor within nodes  
Develop a more private enclosed residential space

Residential Private nodes used by locals  
Residential Open Nodes

Inhance the environmental factor within nodes  
Develop a more open resting space for locals

Create a unified trail through alleys and stairs for locals  
Create water catchment strategies for rainfall future use

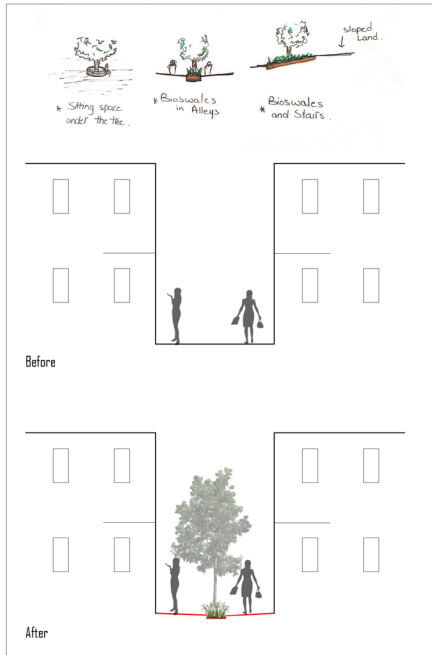
### Legend

- Rainfall rate
- Buffer Zone
- Open Spaces
- Old Souks
- Landmark

## Strategy

Scale 1:2500





Vision for Bio-swales on site



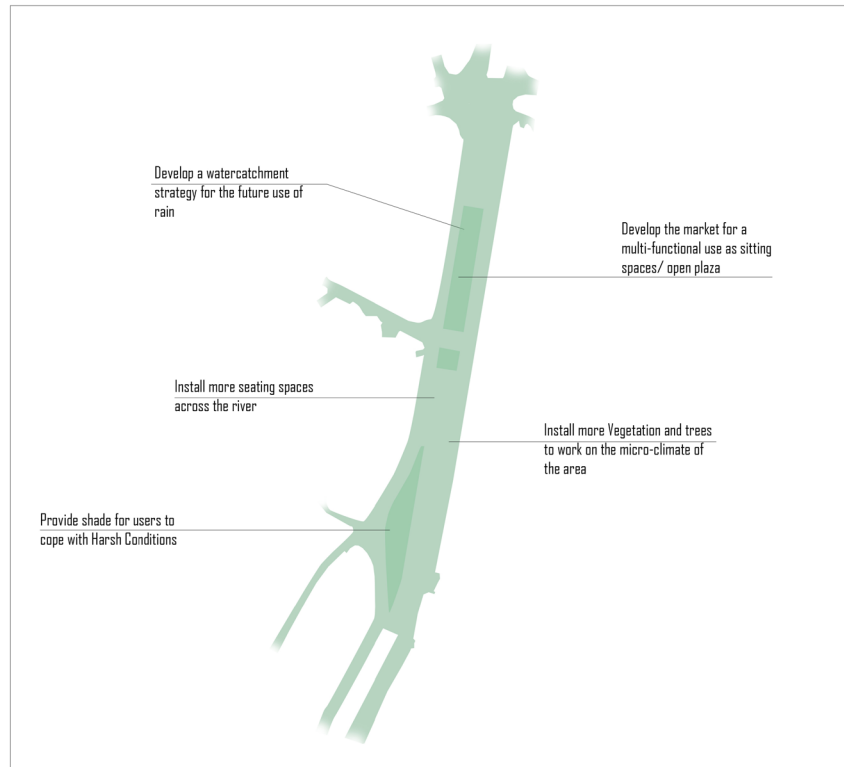
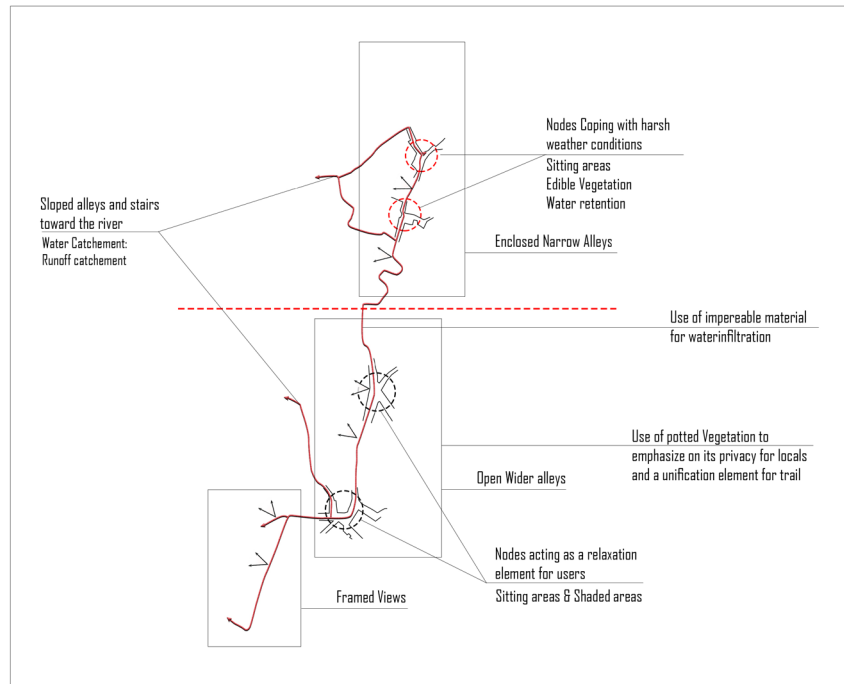
Vision for Viewing points to the viewsheds

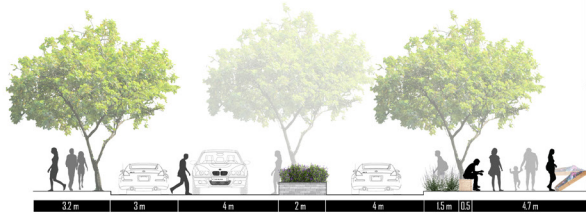


Vision of unified hardscape for unity



Bio-Swale mood Image





Section 3: Showing Road Edits  
Scale 1:100



Road View



Section 1: Bioswale in alley  
Scale 1:50

Compacted gravel for water infiltration  
Pipe for water collection  
Soil for water infiltration



General Design  
Scale 1:900





Nodes Within Neighborhood vision

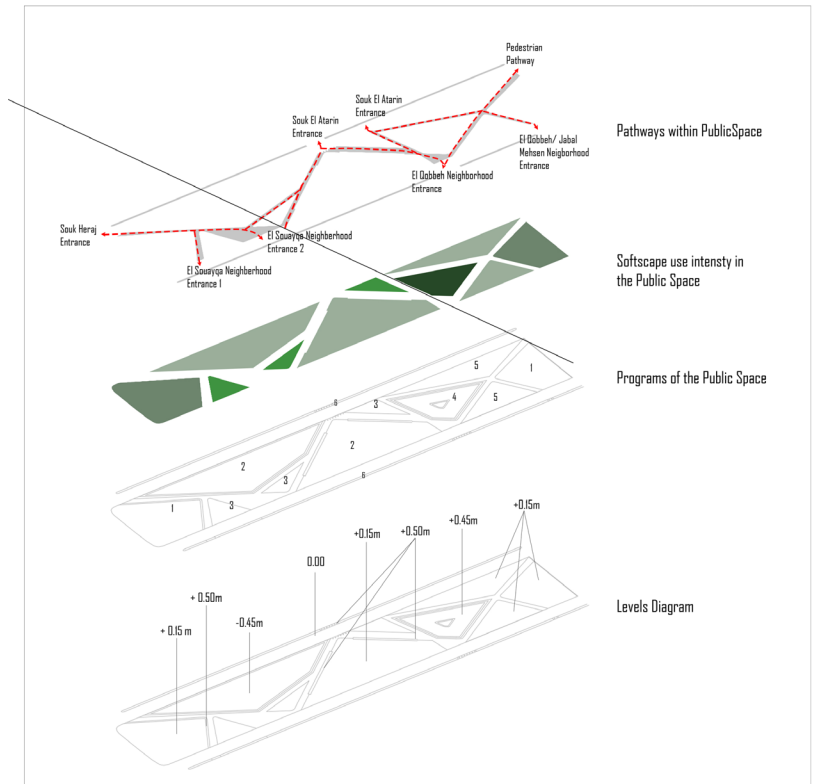


Section 2: Bioswales and stairs in Alley  
Scale 1:50



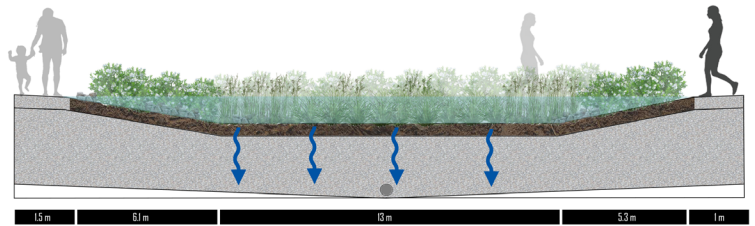
Vision for bioswales in Neighborhood

**Concept Statement:** The aim of this design is rethink the old Sunday Market as an open space, which this zone lacks, that allows the exchange of activities of neighborhoods across the river with a unique physical connection.



- 1. Plaza for cafeteria and coffee shops
- 2.1 Fixed Markets (Sunday Market)
- 2.2 Pop-up Markets (Farmers Market)/ Kids playing Area
- 3. Rain Gardens for water collections
- 4. Enclosed Getaway Plaza
- 5. Resting open plaza for workers and Street Vendors
- 6. Vegetated Street Median

- Intense Native Vegetation for Rain Gardens
- Light Vegetation with hard-scape material
- Light Vegetation with grass as ground cover
- Intense Vegetation for Inclosed Getaway impression



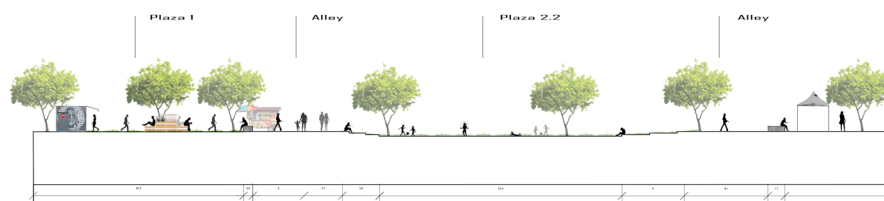
Section 1: Rain Garden After Rain

Scale 1:100



Section 2: Rain Garden before Rain

Scale 1:100



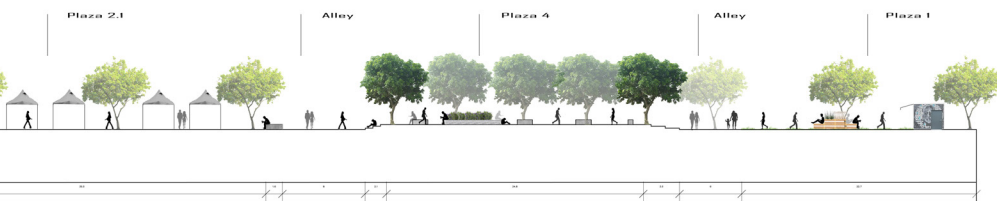
Section 3: Site Levels and Measurements

Scale 1:250





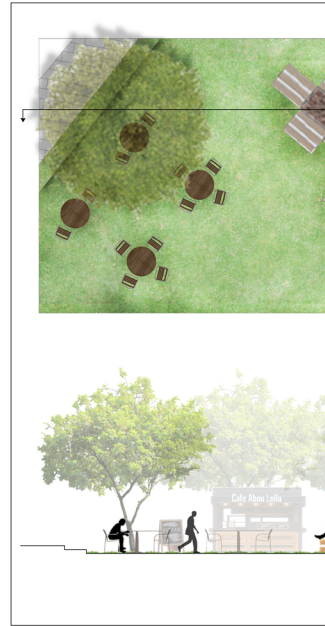
in: Open Space  
1:400







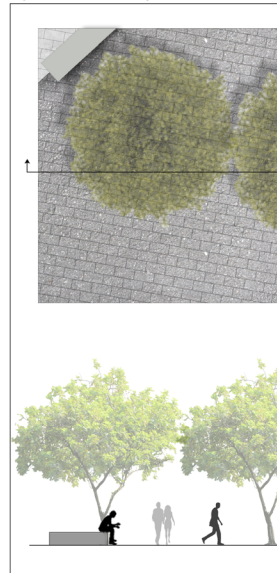
Blow Up 1: Enclosed Space



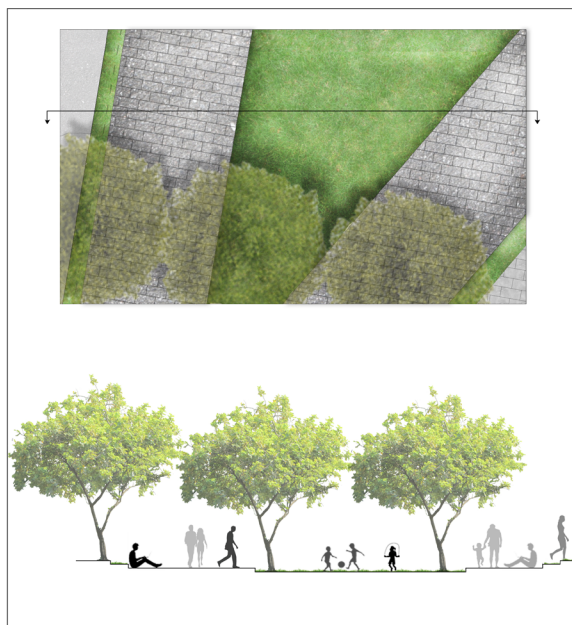
Blow Up 2: Coffee shop



Blow Up 3: Resting Space for workers



Blow Up 4: Market

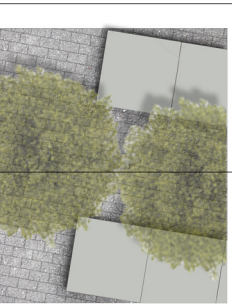


Blow Up 5A: Without Pop up market and kids area



Blow Up 5B: With Pop up market and kids area





Rain Garden



Streetscape and Bio-swales



Enclosed Space

Planting Palette



Reference

