

AMERICAN UNIVERSITY OF BEIRUT

GREENING DENSE INNER-CITY NEIGHBORHOODS
THE CASE OF SOLEIMAN BOUSTANY – JALLOUL STREET,
TARIQ EL-JDIDEH, BEIRUT (LEBANON)

by
NADA SAADEDDINE ABOUZEINAB

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AN ABSTRACT OF THE THESIS OF

Nada Saadeddine Abou Zeinab for Master of Urban Design
Major: Urban Design

Title: Greening Dense Inner-City Neighborhoods: The Case of Soleiman Boustany-Jalloul Street, Tariq El-Jdideh, Beirut (Lebanon)

Urban greening is strongly emerging as a strategic approach to address the poor living quality of inner-city dense neighborhoods. Efforts are being exerted to revive urban ecologies for ensuring social, economic, and environmentally sustainable growth, while improving urban wellbeing. This thesis focuses on the “urban greening” of Tariq El-Jdideh, a dense residential Beirut district suffering from a lack of open spaces, crowded streets and high incidence of traffic generators such as hospitals, universities and public institutional buildings.

The thesis is an elaboration on a Planning and Design Workshop, which was conducted at the American University of Beirut (Fall 2016), entitled “Mobility and Neighborhood Planning: Tariq al-Jdideh”. The workshop focused on mobility and accessibility as an entry point to explore and understand the diverse problematics ranging from housing, to public open spaces. The premise of this thesis is that living conditions in Tariq El-Jdideh could be improved through the enhancement of walkability and the provision of green infrastructure strategies using contemporary approaches to urban design.

The thesis is situated within the general framework provided by the urban greening comprehensive study “Projet de Plan des Déplacements Doux” (soft mobility) supported by Région Île-de-France / Bureau for the Municipality of Beirut in 2011. In line with this study, my proposed intervention in Tariq al Jdideh aims to enhance walkability and to provide a healthy pedestrian environment on district and neighborhood levels. Through the concept of ‘green infrastructure’, I investigate the case of Soleiman Boustany–Jalloul transport artery bordering the Northern edge of the district. I provide recommendations for its improvement at three complementary levels: as transport infrastructure, as social infrastructure and mainly as green infrastructure.

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CHAPTER I

INTRODUCTION

Urban greening is strongly emerging as a strategic approach to address the poor living quality of inner-city dense neighborhoods. Efforts are being exerted to revive urban ecologies for ensuring social, economic, and environmentally sustainable growth, while improving urban wellbeing. This thesis focuses on the “urban greening” of Tariq El-Jdideh, a dense residential Beirut district suffering from a lack of open spaces, crowded streets and high incidence of traffic generators such as hospitals, universities and public institutional buildings. The thesis is an elaboration on a Planning and Design Workshop, which was conducted at the American University of Beirut (Fall 2016), entitled “Mobility and Neighborhood Planning: Tariq El-Jdideh”. The workshop focused on mobility and accessibility as an entry point to explore and understand the diverse problematics ranging from housing, to public open spaces. The premise of this thesis is that living conditions in Tariq El-Jdideh could be improved through the enhancement of walkability and the provision of green infrastructure strategies using contemporary approaches to urban design. The thesis is situated within the general framework provided by the urban greening comprehensive study “Projet de Plan des Déplacements Doux” (soft mobility) supported by Région Île-de-France / Bureau for the Municipality of Beirut in 2011. In line with this study, my proposed intervention in Tariq El-Jdideh aims to enhance walkability and to provide a healthy pedestrian

environment on district and neighborhood levels. Through the concept of ‘green infrastructure’, I investigate the case of Soleiman Boustany–Jalloul transport artery bordering the Northern edge of the district. I provide recommendations for its improvement at three complementary levels: as transport infrastructure, as social infrastructure and mainly as green infrastructure.

A. Case Study Profile and Problematic Context



Figure.1 Tariq El-Jdideh City-scale and district-scale location maps
source: Report: *Projet de Plan des Deplacements Doux, Phase1,2011*

Tariq El-Jdideh is located in southern Beirut and bordered by the Kaskas highway from the east, Sports Stadium City to the south, the Cola bridge highway to the west, and the Mazraa Boulevard to the north (Figure. 1). Tariq El-Jdideh is considered as one of the densest residential neighborhoods in municipal Beirut with a low to middle income population, ranging between 200,000-300,000 inhabitants according to a 2005 report by the CDR (NAHNO 2015).

Tariq El-Jdideh is a mixed-use residential neighborhood hosting major educational institutions, city scale health care buildings as well as numerous religious

landmarks. The variety of land uses attracts a large number of users leading to problems of mobility and accessibility compounded by a lack of open spaces and a poor-quality pedestrian environment.

The growing population density and lack of reliable public transportation has increased the demand for private cars, causing inner district congestion, curb parking encroaching both on sidewalks and vehicular lanes and hindering walkability and accessibility to the diverse land uses.

According to the workshop findings, green open spaces in Tariq El-Jdideh amount to less than 7% of the total neighborhood area and are concentrated mainly in the cemeteries, the public sports stadium, the Beirut Arab University complex and the playgrounds of secondary schools. Most of these areas are located within public and private institutional grounds, making it difficult to be accessible by neighborhood and city residents at large. Historically, the area of Tariq El-Jdideh consisted of pine meadows with a direct connection with Horsh Beirut. Today, this connection is hindered by “Kaskas Highway” as infrastructural break in the neighborhood-city fabric.

Furthermore, the increasing demand for inner-city residential space and the high F.A.R. is leading to the mushrooming of high-rise buildings with ground floors occupied by ‘piloti’ parking, replacing residential uses at ground level and the lively commercial street frontages and of the 1960s and 1970s midrise buildings.

B. Research Question

How can urban design and landscape strategies improve the livability of dense inner-city districts like Tariq al Jdideh? By focusing on infrastructure as a catalyst of urban upgrading:

- How can **mobility infrastructure** enhance pedestrian and vehicular connectivity and accessibility between residential, institutional and recreational uses?
- How can **social infrastructure** enhance district legibility and unique identity with regards to religious, educational and health care landmarks?
- How can **green infrastructure** enhance the quality of shared public spaces within the district and adjacent city-scale open spaces like Horsh Beirut?

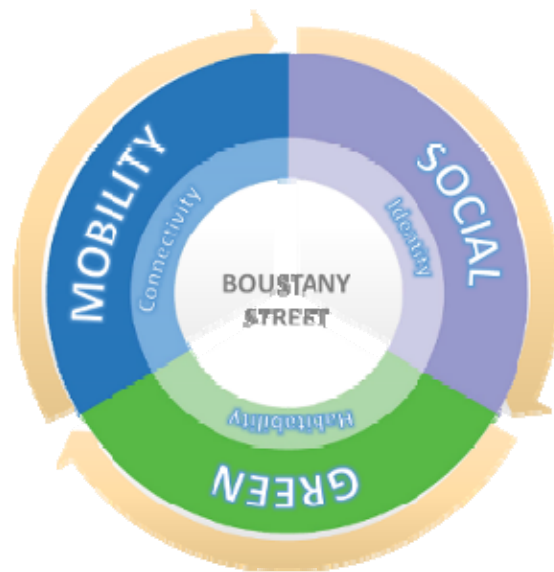


Figure.2 Thesis Objectives

C. Thesis Significance

Due to increasing density and high F.A.R. stipulated by Beirut's zoning law, most residential districts are subject to the same congestion and lack of open spaces exemplified by Tariq el Jdideh. Many international case studies are turning towards urban design and landscape interventions targeting infrastructural improvements to provide the following benefits (The Scottish Government Green Infrastructure, 2011):

- **Place making:** making places more beautiful and distinctive, green pedestrian environment.
- **Environmental:** 1) reducing noise pollution and Co2 emissions, 2) saving energy, and 3) improving mental and physical health
- **Community and social:** creating green spaces for socializing and interaction that respect the needs of different types of users, genders, and ages.

Furthermore, by focusing on Soleiman Boustany-Jalloul Street as an action area, the thesis is in line with the PDD (Plan Vert et du Plan des Déplacements Doux) back in 2011 to promote a soft mobility network at city scale. As such, Soleiman Boustany-Jalloul Street will propose a 'soft connection' strategy between Cola node, Beirut Municipal Stadium, Beirut Arab University, the adjoining Pine Forest and the remaining city infrastructure (Figure 3).

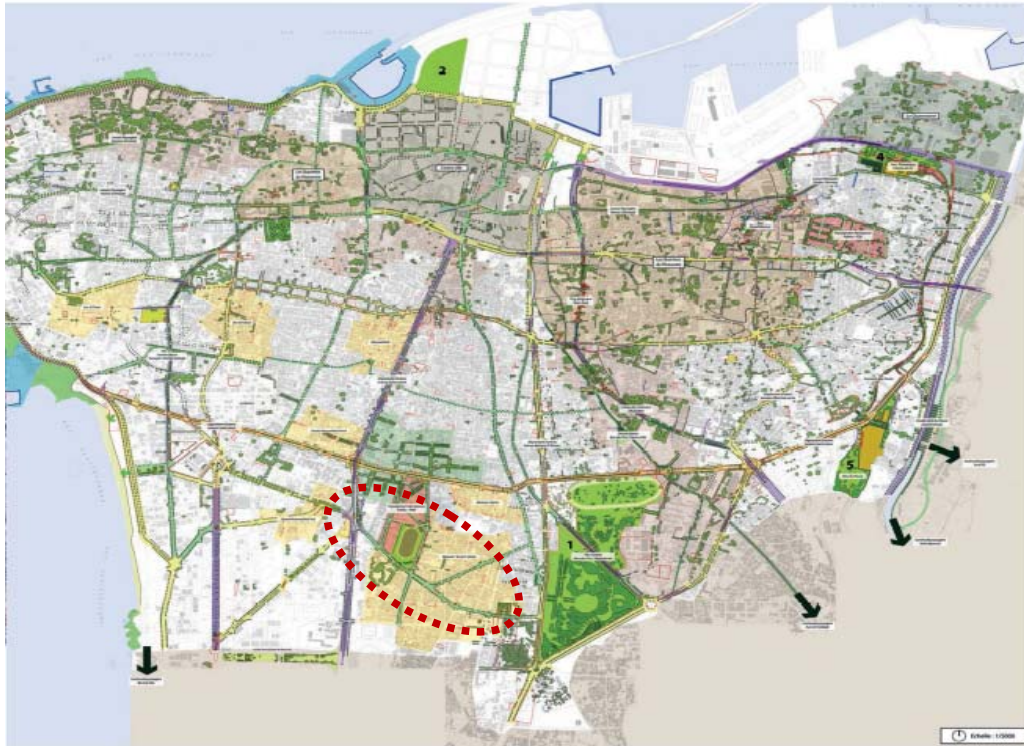


Figure. 3 Boustany-Jalloul Street in the context of PDD (Plan Vert et du Plan des Déplacements Doux)
source: Report: *Projet de Plan des Déplacements Doux, Phase1,2011*

D. Methodology and Thesis outline: From Studio to Thesis

As mentioned above, the thesis is based on a planning and design workshop conducted at the American University of Beirut-Fall 2016, entitled “*Mobility and Neighborhood Planning: Tariq al-Jdideh*”. The workshop proposed a series of recommendations to improve mobility and accessibility conditions in dense mixed-use neighborhoods through urban planning and design interventions. In order to develop the workshop into a thesis I will proceed as follows (Figure 4):

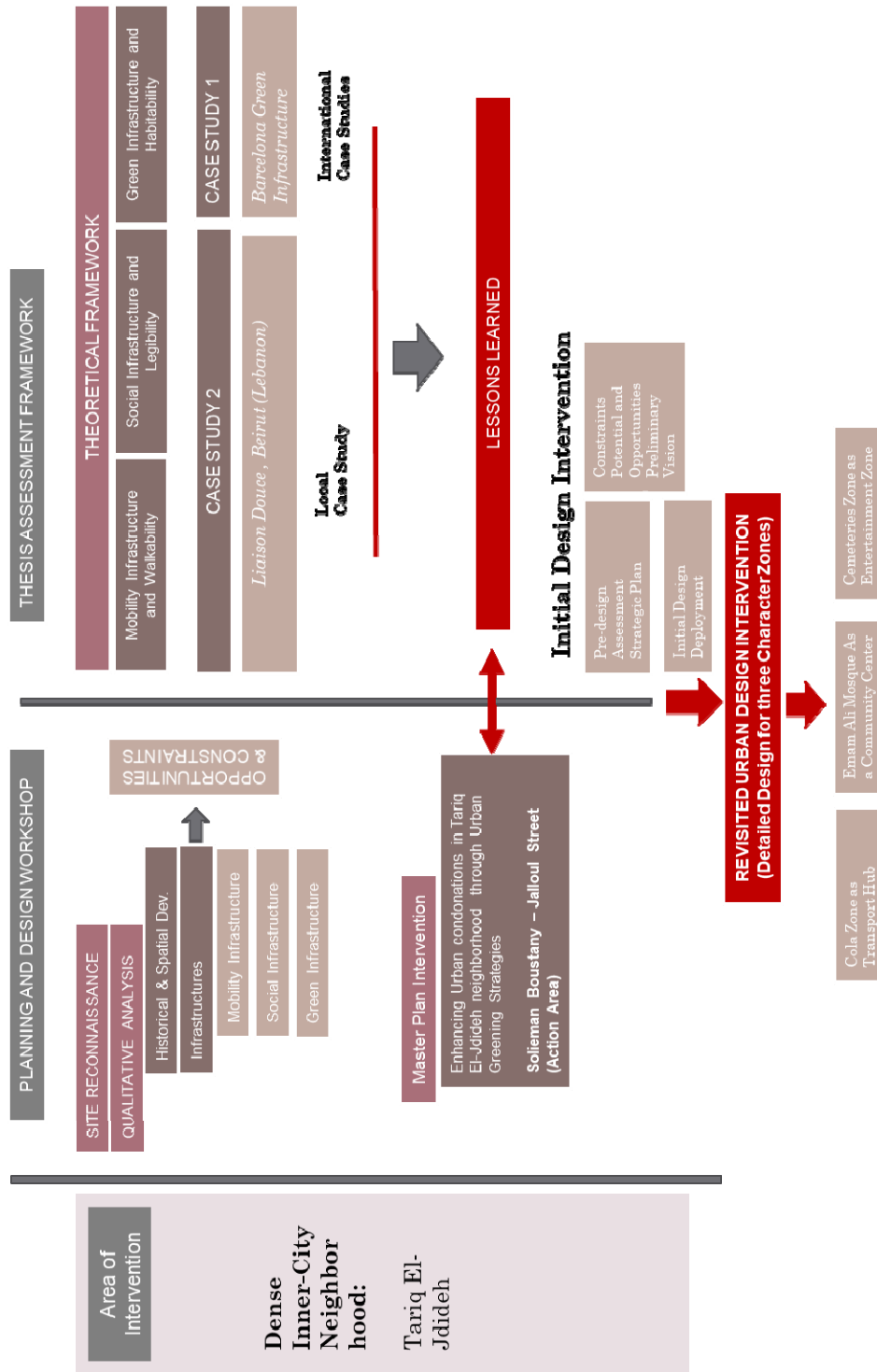


Figure 4. Thesis Methodology

The thesis revolves around three complementary parts:

- **Planning Workshop Outcomes:** The first part retraces the process followed in the planning and design workshop entitled “Mobility and Neighborhood Planning: Tariq al-Jdideh”, which defines the study area boundaries and a preliminary design problematic statement that set the overall goals and objectives for the study. The aim of this phase is to reach a critical understanding of the problems and challenges generated from increasing densification of the built environment affecting the study area and to define opportunities and constraints that provide an urban development framework, leading to initial design intervention. The phase included fieldwork, observations, interviews with different users, to understand the different aspects of neighborhood such as, character zones, economic, social/ spatial practices, stakeholders, political, accessibility and mobility.
- **Literature review:** I will articulate a ‘thesis assessment framework’ based on the review of theoretical and methodological literature and case studies illustrating the greening of dense urban neighborhood and the improvement of shared public spaces and walkability.
- **Action area:** I will complement the studio findings with a detailed investigation of Boustany Street as the main transport artery distributing Tariq al Jdideh and linking the neighborhood to the surrounding districts and to the city. I will articulate my analysis and design recommendations around three complementary dimensions of Boustany Street: 1) as ‘mobility infrastructure’, 2) as ‘social infrastructure’, and 3) as ‘green infrastructure’.

The general approach to this study was to observe and evaluate the outdoor spaces, mobility patterns, nodes and landmarks, and availability of green spaces.

Accordingly, my analysis is classified according to the following categories: 1) Mobility Infrastructure, 2) Social Infrastructure, and 3) Green Infrastructure.

1. Mobility Infrastructure

investigates the following:

1- Defining the different functions that BJ street serves.

The investigations include the map of:

- Number of cars enters and exits the area based on expert traffic engineer study
- Cars drop off for different landuses (schools, retail shops, mosques)

2- Mapping different mobility patterns (Vehicular and pedestrian mobility) at different nodes at different time of the day.

This section also includes the analysis of the existing mobility generated from different users, nodes and landmarks of the street. The street hosts major landmarks such as schools, mosques, university, commercial corridors in addition to residential buildings which lead to create different users that activate neighborhood all the day. As such, my mapping is framed to investigate the different types of mobility patterns generated from different landuse zones:

- Mobility at transportation hub (Cola area)

-Mobility generated from social infrastructure (schools, mosques and universities), taking Imam Ali Mosque zone as an example to perceive mobility patterns in community area

- Mobility besides the green areas adjacent the cemeteries and Horsh Beirut.

b. Social Infrastructure: investigates the existing schools, mosques, and BAU along Soleiman Boustany-Jalloul Street. In addition, the research highlights the historical background of landmarks and how they are rooted to the memories of the residents, and give Tariq al-Jdideh its unique identity.

c. Green Infrastructure: investigates the availability of green spaces in both public and private domains. I mapped vacant plots, surface parking's, cemeteries and green spaces existing in the educational facilities, since these areas could act as opportunistic green spaces and parking areas that will host the on-street parking lay on the street. The section also will assess the quality of these spaces environmentally and physically.

E. Thesis Outlines

The thesis is divided into six chapters. Chapter 1 introduces the research problem and methodology with the case study profile. Chapter 2 presents the literature review with emphasis on the themes of *walkability* and *urban greening*; it will also introduce principles, guidelines and evaluation criteria of ‘soft mobility’ based on Damascus street case study.

The thesis explains and analyzes case profile by using two frames. Chapter 3 provides a general overview of Tariq El-Jdideh based on the Fall 2016 workshop, explaining the negative consequences emerged from increasing urban densification through examining the 1) historical background, and 2) mobility infrastructure, 3) social infrastructure, and green infrastructures layers. Chapter 4 represents the second frame which provides a complementary of planning studio with a detailed analysis and diagnosis of Soleiman Boustany – Jalloul Street at three levels: mobility infrastructure, social infrastructure, and green infrastructure. Chapter 5 provides 1) a synthesis of these three layers that will led to define the character zones along Soleiman Boustany – Jalloul street, 2) an urban design strategy for the improvement of mobility, social and green infrastructure as related to the different character zones of Soleiman Boustany – Jalloul, and 3) detailed design intervention for three character zones.

The thesis concludes with a critical summary of findings and recommendations with suggestions for further research on upgrading the livability in inner-city dense neighborhoods.

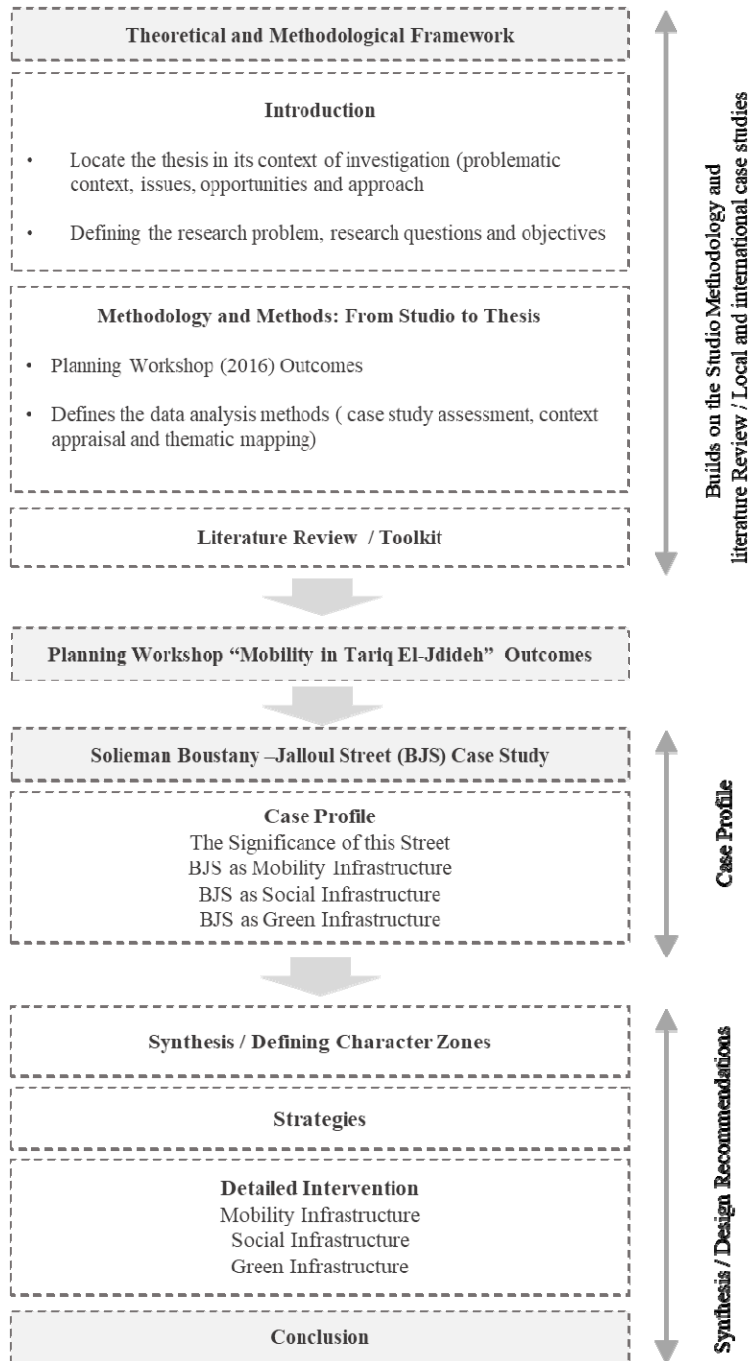


Figure 5: Thesis Outlines

CHAPTER II

LITERATURE REVIEW

A. Conceptual Framework

The thesis is based on the premise that *livability* in high density urban neighborhoods may be improved through the adoption of infrastructural upgrading strategies addressing the three urban design themes of Connectivity/walkability, legibility and habitability. This chapter will articulate a conceptual framework (Table.1) around the above key urban design themes that will be explored through relevant theoretical literature and case studies. It will conclude with lessons learned in terms of relevance and applicability to the Tariq El-Jdideh context and more specifically to the action area of Soleiman Boustany-Jalloul thoroughfare.

Infrastructural Dimensions	Urban Design Qualities			Case Studies
	<u>Connectivity & Walkability</u>	<u>Legibility</u>	<u>Habitability</u>	
				> Liaison Douce-Damascus
A-Mobility Infrastructure				>Barcelona Green Infrastructure and Biodiversity
B-Social Infrastructure				
C-Green Infrastructure				

Table. 1 Conceptual framework linking infrastructure dimensions to urban design qualities

The above conceptual framework (table.1) outlines vertically the three *dimensions* of infrastructure in urban design that need to be addressed through analysis and diagnosis, ie, *mobility, social* and *greening* infrastructure. The corresponding urban design *qualities are* listed horizontally and discussed below.

B. Mobility Infrastructure and Walkability

Mobility Infrastructure addresses problems hindering connectivity and walkability in terms of traffic congestion, the conflict between vehicular and pedestrian circulation, and the encroachment by on-street parking on sidewalks and traffic lanes. Mobility infrastructure plays a key role in determining the walkability of an urban space. Cars, motorcycles, bikes and pedestrians each travel at different speed on urban streets and if the design of open spaces and streets does not make such a distinction; it can affect the safety of the walking environment and the level of comfort (mainly due to air and noise pollution). Jeff Speck (2012), mentions the importance of “putting cars in their place” and reducing parking spaces to discourage inner-city driving. Cars, and their mobility, thus occupy most of streets making less space for other means of transportation and walking in particular. Walking on the other hand, requires a dedicated space. Jahn Gehl (2010) stresses the importance for providing plenty of room for walking which in turn creates a comfortable and pleasurable experience. In the past, people used to move freely in every direction, but as cars dominated, people have been pushed closer to the buildings facades.

Speck’s book also emphasized that to make streets walkable, pedestrian should be kept safe and that the main purpose of streets (and sidewalks) is ensuring safety. On

the other hand, Alfonzo (2014) proposes five basic needs that affect people’s decision to walk and safety and comfort are essential and if mobility infrastructure is not in place, it can hinder it both safety and comfort (Figure. 6)

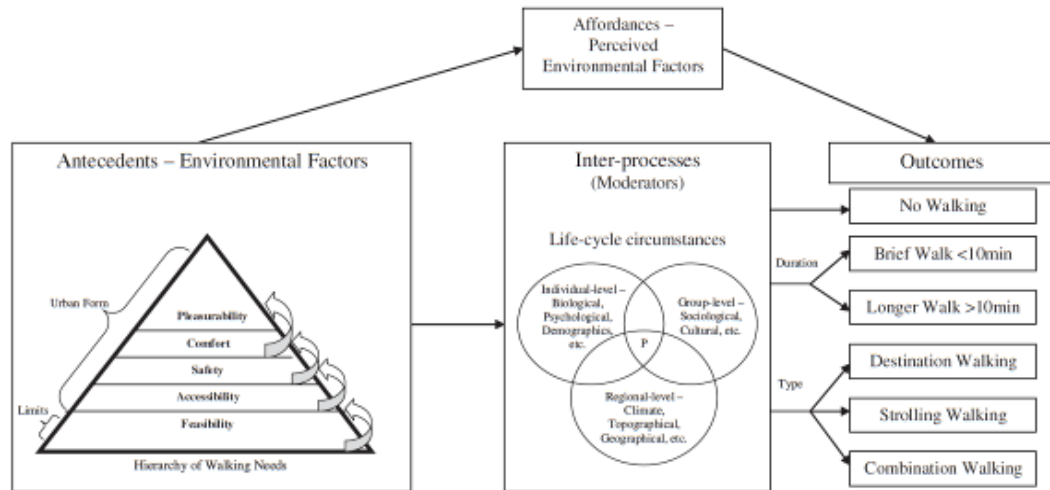


Figure 6. The Hierarchy of Walking needs (Alfonzo,2014)

C. Social infrastructure refers to Social Infrastructure and Legibility

Social Infrastructure also depicts issues related to urban identity and the negative effects of high density on a clear legibility and sense of orientation within and between districts. Rossi (1984 in Sepe& Pitt, 2014) states that the city is the collective memory of people, and that memory is linked to events and places. One way to highlight the collective memory is to reinforce the five elements outlined by Kevin Lynch (Nodes, edges, districts, landmarks and pathways) as the key reference devices linking connectivity to the legibility.

Another key concept linking infrastructure to community network is *social capital* as a measure of networks, personal connections, and involvement with social infrastructure. Like economic and human capital, social capital is considered to have important values to both individuals and communities (Coleman, 1988). Walkability does play a role in building social capital (Halstead, et. al, 2011). Where a survey of neighborhoods of varying built form revealed strong correlations between the number of locations one could walk to and the indicators of social capital. For that to happen, there should be a well-established network of social infrastructure. Social infrastructure thus could be landmarks, stores, community centers as well as open spaces. In his discussion of walkability, Speck stresses the importance of making the walk useful as a key mobilizer. Having a strong social infrastructure also contributes to connectivity while also avoiding unnecessary detours and interruptions, which would discourage people from walking (Gehl, 2010)

The literature on place-making and identity creation is quite expansive and has been tackled from different academic and professional discipline, but one definition that ties these different concepts together the defines place and *'the way places work and such matters as community safety, as well as how they look. It concerns the connections between people and places, movement and urban form, nature and the built fabric, and the processes for ensuring successful villages, towns and cities'* (Detr, 2000).

Identity has other implications, as it influences the desirability of a city and people's willingness to connect, invest and claim ownership to a city which in turn will play a key role in its competitive positioning versus other cities (Parente, 2016). These

implications will ultimately influence the economic growth, environmental quality and the social development of that neighborhood (Anholt, 2007)- which also play a role in reinforcing identity. So, in that relationship is a feedback loop where reinforcing one aspect of identity reinforces identity as a whole and vice-versa.

Despite this above discussion being in terms of city as a whole it also applies to the neighborhood scale as a unit that contributes to the city's as a whole and these principles could be applied to the level of the neighborhood intervention in the later parts of this thesis.

With that being said, maintaining identity, at either the scale of the city or a neighborhood, requires attention for adaptability and for identity reinforcing strategies that would make a city desirable and a medium for which a collective memory can be cultivated and tied to the everyday life (Dovey, 2009).

One strategy to highlight and achieve identity and place making is the creation of walkable open spaces. As I will illustrate later in this chapter / as I illustrated earlier, creating walkable open spaces builds on the social infrastructure of places through green infrastructure and mobility infrastructure to create a pleasant experience for residents and visitors which would then define a set of experiences that will help build the collective identity of Solieman Boustany-Jalloul Street.

D. Green infrastructure and Habitability

Green infrastructure addresses issues of habitability and the corresponding design guidelines that strengthen the interaction between urbanity and nature. Green

infrastructure improves the habitability of the built environment. It purifies air and water, provides outdoor recreational spaces, and offers attractive settings that aid mental peace and encourages physical activity (Coutts, 2016). By introducing shaded areas and calming traffic, green spaces enhance walkability, where the landscaped streets provide spaces for community gatherings, social interaction and promote connectivity. Moreover, green infrastructure provides habitat for flora and fauna and preserves natural features (Rouse et al, 2013).

Green infrastructure is also considered as a crucial component that can affect the growth and progress of our communities (Benedict & McMahon, 2002). The green infrastructure concept is gaining increasing recognition internationally nowadays as a comprehensive planning framework that can result in sustainable community development by conserving the fundamental functions of natural systems and improve the societal and economic state of communities (Rouse & Bunster- Ossa, 2013)

Successful green network is established via collaborative efforts between adjacent communities in an aim to conserve the landscapes. Green infrastructure can also help make connections within and beyond a community. Such connections would make walkability useful which should be a consideration when trying to motivate people to walk and creating a walkable environment to them (Speck, 2014)

One of the key elements that green infrastructure can provide is through the micro climates it creates. This is because trees and green infrastructure in general make urban environments more comfortable to navigate and more pleasant due to the micro climates they create and buffers between different modes of mobility. Through elements

such as green walls, park, parkettes and greenways, green Infrastructure would help create environments that are tailored to the human scale and create enclosure.

According to Ewing and Handy (2009) green spaces can define the streetscapes and harmonizing future redevelopment to create continuous sidewalks which would help develop sight-lanes. Green spaces would also make outdoor spaces seem room-like and create an enclosure which instills a sense of position, identity with the surrounding and the idea of “here-ness” (Alexander et. al. 1977). Human scale on the other hand refers to a size, texture, and articulation of physical elements that match the size and proportions of humans and, equally important, correspond to the speed at which humans walk and introducing green infrastructure patches and corridors can help define the scale of streetscapes and urban environments and make them more walkable (Ewing & Handy, 2009).

In conclusion, walkability constitutes the linking components that embeds mobility, social and green infrastructure to promote urban environments that are safe, pleasant and useful. As reference, Alfonzo (2014), also mentions a hierarchy of walking which would be useful to keep in mind (Figure .6)

E. Case Study (1): Barcelona Green Infrastructure

Barcelona Green Infrastructure case study is an example of habitability. The plan aims to accentuate the interaction between nature and urbanity through urban green infrastructure, and the creation continuities between the city and the existing surrounding natural areas.

Barcelona is committed to preserving and enhancing the natural heritage present in the city as well as enabling each and every one to benefit from and enjoy this natural heritage. To achieve this in a systematic manner Barcelona Green Infrastructure and Biodiversity was launched. In 2013 hoping to achieve by 2020 its commitment for “preserving and enhancing the natural heritage present in the city” and enabling “each and every one [...] to benefit from and enjoy it”. The plan aims to converge nature and urbanity through urban green infrastructure, and the creation continuities between the urban fabric of the city and the natural area surrounding Barcelona. This plan is thus vital for the city to strive towards the convergence of nature and urbanity while both elements enhance one another.

More particularly, green infrastructure helps achieve a connectivity while preserving green heritage maintains the existing continuity with the natural areas surrounding the city - resulting in a genuine green network of spaces. This green network is conceived as being part and parcel of the city and serving an environmental function as well as a social and economic function that would enable nature to fit comprehensively into the city and to enhance biological diversity. Because a city with greater green infrastructure is a city where people can benefit from higher levels of health and wellbeing.

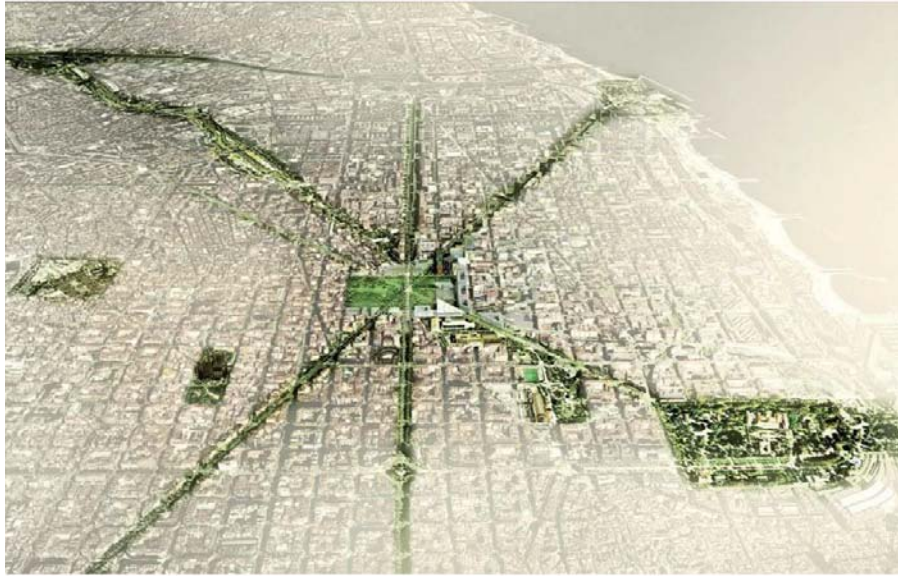


Figure7. Barcelona Green Infrastructure
(Source: Barcelona Green Infrastructure Report)

The main design elements of this plan are:

Natural Heritage: Thorough preservation of natural habitats of species

Ecological Services: mosaics, patches and corridors of habitats and diversity of species

Quality of Life: Through different land-uses and activities to program pen and green spaces.

Cultural Heritage: Through enhancement of Identity, heritage listings and the protection and preservation of species

Education: Through different educational activities, these networks and their imporaces are constantly preserved.

Through these design elements and the conceptual frameworks of connectivity and re-naturalization, the Barcelona Green Infrastructure and Biodiversity Plan achieves multiple levels of benefits and the strategies used could apply to Tariq El-Jdideh

neighborhood, where segmented patches of greenery exist and there is potential to connect them through an arterial strategy as was seen in the plan in figure. 8.

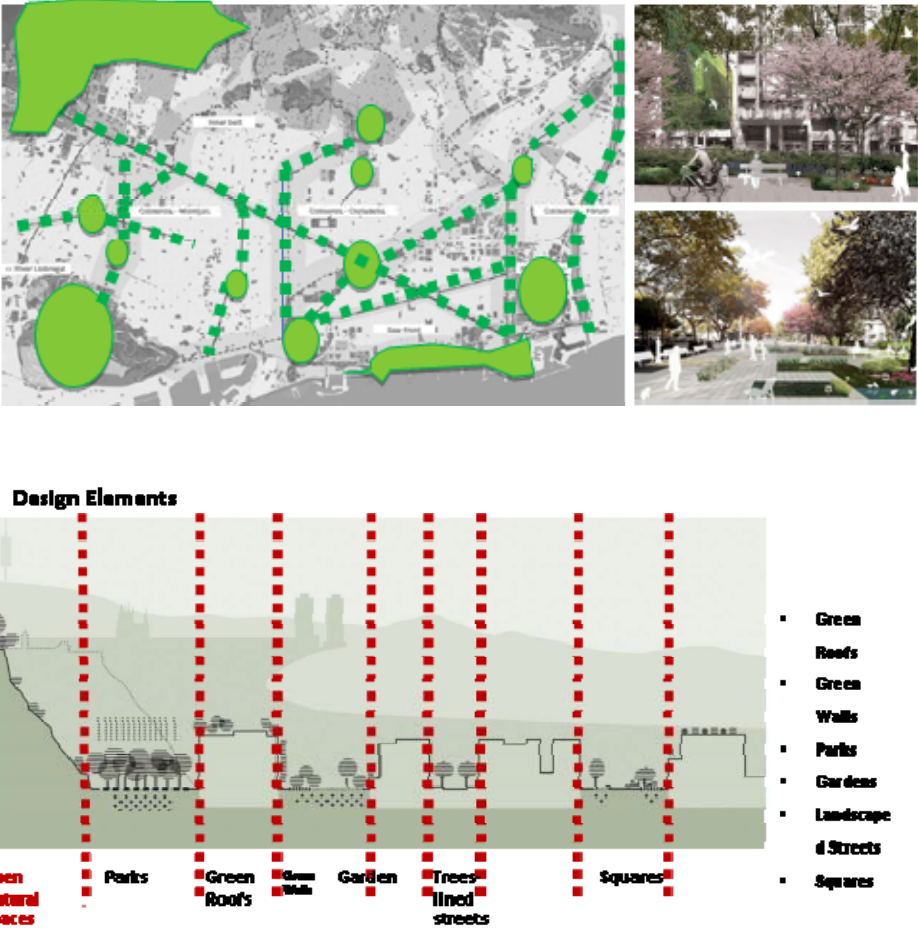
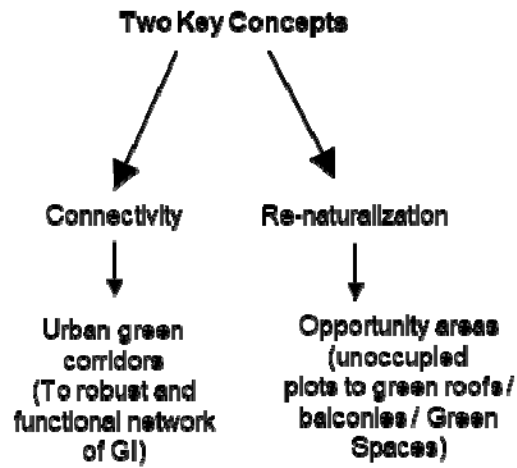


Figure 8. Barcelona Green Infrastructure Strategies (Source: Barcelona Green Infrastructure Report)



Design Principles

- ✓ **Natural heritage**
- ✓ **Ecological services**
- ✓ **Quality of life**
- ✓ **Cultural heritage**
- ✓ **Education**

- **Nature & preservation of habitats and species**
- **mosaic of habitats & diversity of species**
- **uses and activities**
- **Identity, heritage listing and protection**
- **preservation of species**
- **Educational activities**

Figure 9. Synthesis of Barcelona Green Infrastructure Design Principles and strategies (Source: Author)

F. Case Study (2): Aménagement d'une Liaison Douce entre le Bois des Pines et le Centre-Ville de Beyrouth par la Rue de Damas

1. Project Definition



Figure 10. Liaison Douce Beirut (Source: Liaison Douce Report,2013)

September 2012, the municipality of Beirut, has proposed on investigating soft mobility options for the city, via a project entitled “Liaison Douce”. The urban designer in charge of the project, Habib Debs suggested an innovative approach elaborating a series of interventions along a main axis in the city that promote pedestrian activity and soft mobility options. One of its pilot projects is a soft link between the Pine Forest and the city center via the Damascus Road, able to accommodate private vehicles, pedestrians, cyclists and public buses altogether, alongside existing parks and diverse open spaces. The project does not aim to 'beautify' the street, but:

- To connect two major city nodes;
- To promote alternative modes of mobility;

- To improve the quality of open spaces in Beirut City
- To re-stitching the urban and social fabric along the old green line.

This was the first study to be held at Beirut city scale, managed by Beirut Municipality, particularly considering an approach that goes beyond beautifying a simple road network planning, but rather suggesting new urban guidelines that will improve the public urban realm, without minimizing the needs of existing social fabric (Liaison Douce Report, 2013). As such, the current project aim to regain the public spaces in the city for the use of the people. It focuses on green public spaces and 'soft' modes of transportation such as walking and cycling. To achieve this vision and to reach its final agreed form, the project has to tackle different issues at the street level, through working on many strategies at mobility, social and green levels.

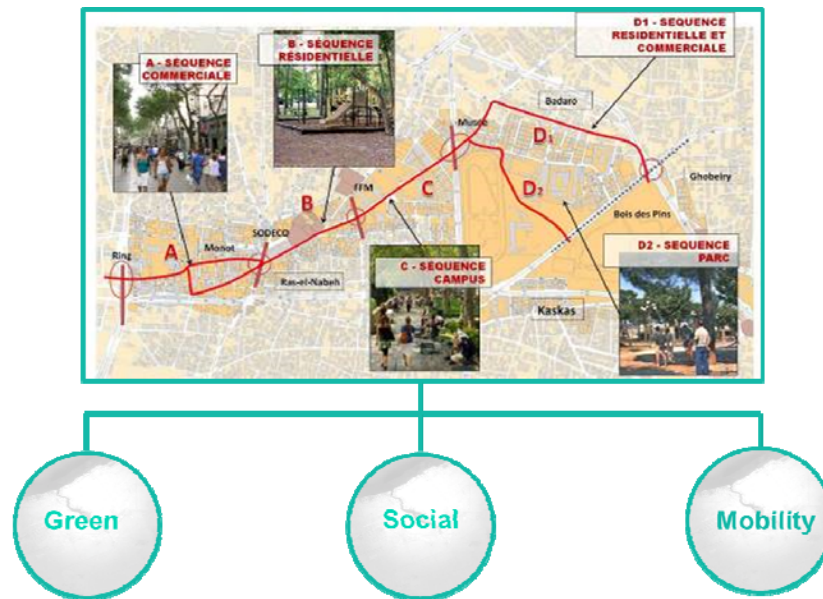


Figure 11. Liaison Douce Beirut Strategies (Source: Author)

2. Mobility Objectives and Strategies

- **Connectivity:** Link the Horsh Beirut to the City Center, through developing a high-quality planted promenade throughout the city
- **Modes of Mobility:** Promote alternative modes of mobility to the private vehicle, through ensuring a more equitable distribution of the use of public space between pedestrians, cyclists and vehicles. This is to offer users new forms of mobility without hindering their freedom of movement or security conditions. Multi-modality requires the definition of a new distribution of functionalities and widths of pathways acceptable for all.



Figure 12. Soft Mobility (Source: Liaison Douce Report,2013)

- **Parking**
 - Seeking to regain the urban space from private cars in favor of green spaces, public transportation, and walking, cycling and recreational use
 - Creating parking spots
- **Vehicular Circulation**
 - Traffic Flow Direction: Changes in traffic direction, limit incoming flows on Damascus Street.

- Circulation Loops: traffic loops have been planned, allowing motorists to easily return to the places they are looking to enter or park.

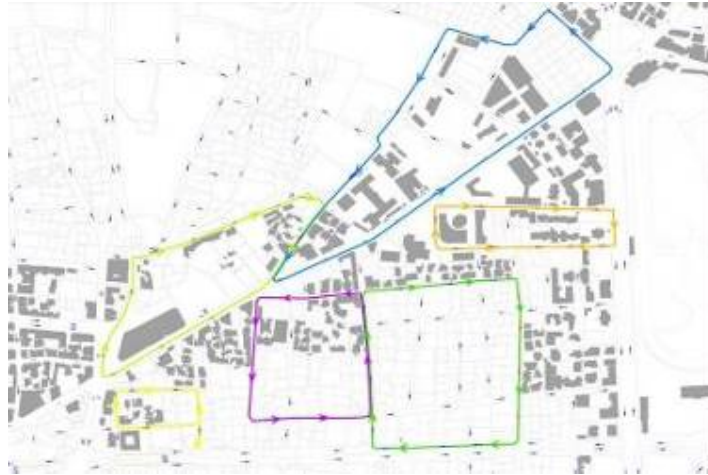


Figure .13. Circulation Loops Strategy (Source: Liaison Douce Report,2013)

3. Social Objectives and Strategies

- **Landmarks:** Highlight the cultural axis of Damascus Street through rethinking space in front of museums, theaters, universities and cultural centers according to current and expected practices and articulate these squares, gardens and esplanades around the course of the soft link

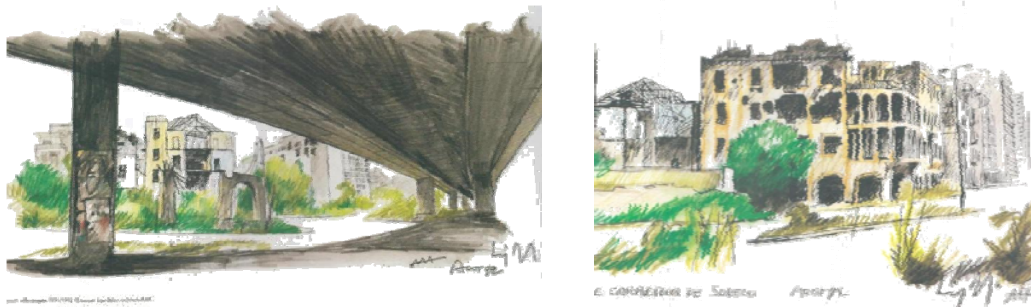


Figure 14. Landmarks (Source: Liaison Douce Report,2013)

- **Community**
 - Serving a large number of neighborhoods with different identities, illustrating the diversity that promote social and cultural wealth of the city.
 - Rest-itch urban and social fabric around the old green line through supporting existing social practices and involving the different communities in the design process
 - Respond to the urgent needs of open spaces expressed by residents and users of adjacent neighborhoods through allocating part of the public domain for activities of residents
 - Conduct surveys with the residents and institutions involved in the project, their needs, and their vision of the desired space and their perception of the limits of neighborhood and of 'the other'
- **Identity:** Preserving the memory dimension of the urban landscape of Damascus Street, though using landscape elements that respect space memory

4. Green Objectives and Strategies

- Requalifying the image and use of public space Beirut, through creating public places of high quality, recreational areas, cultural practices, taking into consideration the criteria of security and functionality
- Create a green lung at city scale through planting the public space, along the route and in adjacent pockets
- Heritage Landscape: the landscaping palettes were selected to reflect the different neighborhood characters and places that the soft link crosses

To respond to challenges generated from urban density, the landscape framework will ensure the coherence of the public space. The composition of a plant

fabric in sequential planes intermixed between the traffic corridors (pedestrian, vehicle or cyclist) as well as the interface between public and private spaces, especially to hide the existing and future great towers. These vegetation screens of different heights depending on the setting frame, their functions and their messages can be declined in the form of different curtains or plans: trees, hedges and dry grass. This system of strata or plant planes allow to integrate / hide buildings and towers that will run along the street of Damascus

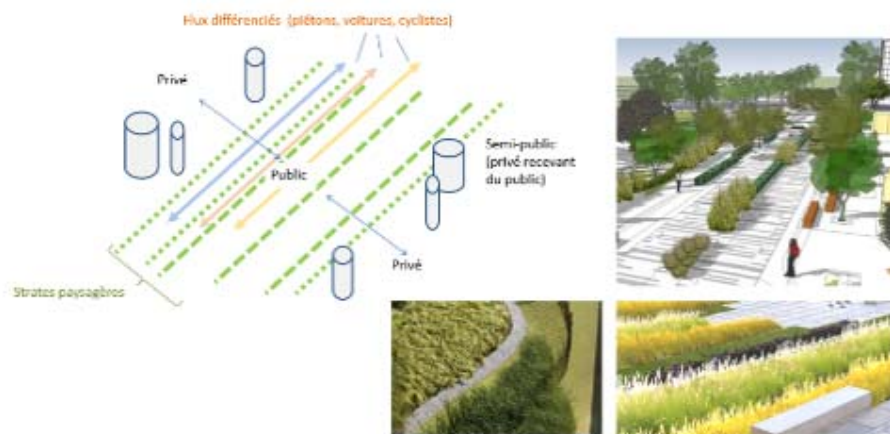


Figure 15. Landscape Strategies

G. Lessons Learned

Green Infrastructure	Walkability	Legibility
<ul style="list-style-type: none"> • A holistic approach that promotes the resiliency of the neighborhood. • enhance the interaction between urbanity and nature for the benefit of neighborhood dwellers to enable them to benefit from nature. • offer rich city experience and enhance the quality of living, while preserving the natural features even in a dense urban setting. • Introducing green corridors that will enhance walkability and spatial environment of the neighborhood (links open spaces and the opportunistic spaces (residual spaces and empty plots) • GI preserves the social and natural identity of the city. • GI network also provides a natural drainage system that enhances the quantity and quality of water 	<ul style="list-style-type: none"> • enhance the shared public spaces • Designing a walkable network that reflects the social and cultural aspects of the neighborhoods will improve the connectivity and reinforce their identities. • security, safety, comfort • Activities (different age / gender groups and social levels) • Creating connections between schools, public spaces and neighborhood amenities will enhance the quality of life and provide a healthy & enjoyable environment: • More fitness opportunities leading towards better public health, reductions in CO2 emissions, and more pleasant streets. • physical changes in street layout and design will enhance user experience: Furniture, Signage and pavement, Traffic Calming, continuity of materiel 	<p>the identity of a city is to create a walkable open space network that connects its cultural assets and creates opportunities for human interactions, highlighting its social and physical identity.</p>



Table 2. Literature Review / Case Studies Synthesis (Source: Author)

Physical changes in street layout and design to enhance user experience

- o **Furniture and Amenities:** Street furniture ensures that movement along routes is pleasurable and interesting
- o **Signage**
- o **Pavement and marking**
- o **Traffic calming & Raised Interruptions**
 - Encourages both bicyclists and motorists to slow down and share the road
 - Raised interruptions placed at intersections will slow the speed of motor vehicles.
- o **Change street layout**
- o **Bicycles and Pedestrians:** Clear demarcation between bicycles and pedestrians allow users to move at comfortable speeds without interruptions or conflict.
 - a. Sidewalk
 - b. Bollards
 - c. Ground material changes
 - d. Vegetated strip
 - e. Variation in curb height
- o **Trees and Vegetation**



Design Principles

- ✓ Safety
- ✓ Environment
- ✓ Health
- ✓ Quality of Life

Figure 16. Physical Changes in street layout

CHAPTER III

TARIQ AL-JDIDEH GENERAL OVERVIEW

As participating in planning workshop on Tariq al-Jdideh that was held in fall 2016, I and other students conducted extensive fieldwork in Tariq al-Jdideh neighborhood. The workshop was mainly focusing on Mobility and accessibility as an entry point to explore and understand Tariq al-Jdideh's neighborhoods. This phase included fieldwork, observations, interviews with different users, to understand the different aspects of neighborhood such as, different character zones, economic, social/spatial practices, stakeholders, political, transportation and accessibility. We mapped many indicators in the neighborhood that help us analyze the existing conditions that affects the walkability of different users and social practices taking place in neighborhood. Despite crowded streets and congested sidewalks, many users spent considerable time in Tariq al-Jdideh, since the neighborhood hosts a variety of landuses and services where many social interactions happen.

In this section, I will provide a general overview about Tariq El-Jdideh neighborhood in the light of how the urban density has caused a negative impact in neighborhood, focusing on the physical elements such as road networks, building condition- landuses, open spaces, and social infrastructure. This section act as introduction of my case study through highlighting major problematics that affect walkability experience and environmental quality of public spaces in neighborhood

which will be addressed in details in Bostany-Jalloul Street - case profile in the following chapter.

A. Evolving Densification of Tariq El-Jdideh

The section assesses the historical densification through a chronological study of its shaping dynamics and the resulting types of urban morphology. Historical maps show that the urban growth of Tariq El-Jdideh is divided into three main waves: Rural period (1910-1930), Peri-urban (1930-1955) and Urban (1955-2000).

Before the year 1900, the whole area of Tarek el Jdideh was consisted of pine meadows and sandy hills. The first signs of urbanization were seen after the foreign cemeteries were implemented in after the World War I (1914-1918). The rural period between 1910-1930 didn't witness much urban growth on the neighborhood.

The second wave (peri-urban period) happened between the years 1930-1955, witnessed projects of road construction and urban planning which turned the rural image of the neighborhood to an early stage of urbanism. Many farm houses during this period were turned into high end suburban houses. In addition, the alignment and plot sizes during this period became more organized (Kheir, 2002).

At the beginning of urban period, the area underwent many waves of construction between 1950 and 1975: Beirut comprehensive plans drawn by the French planner Michel Echocard. During this period, a building law, zoning plan, and infrastructural plans were planned, and parcelization configured the area from a natural/agricultural zone to a small city. During this period, many of the plots started using their ground

floors as commercial shops. The growth of population and being far from the center resulted in the creation of a mixed-use commercial residential zone where residents could live and work. This process of transformation continued, although at a slower pace due to the civil war (1975-1990).

Today Tariq El-Jdideh is considered as a relatively the densest neighborhood in Beirut, populated with dwellers from low to middle socio-economic status in a close-knit community. According to a 2005 report by the CDR, the inhabitants of the area are around 200,000-300,000 people (NAHNO, 2015).

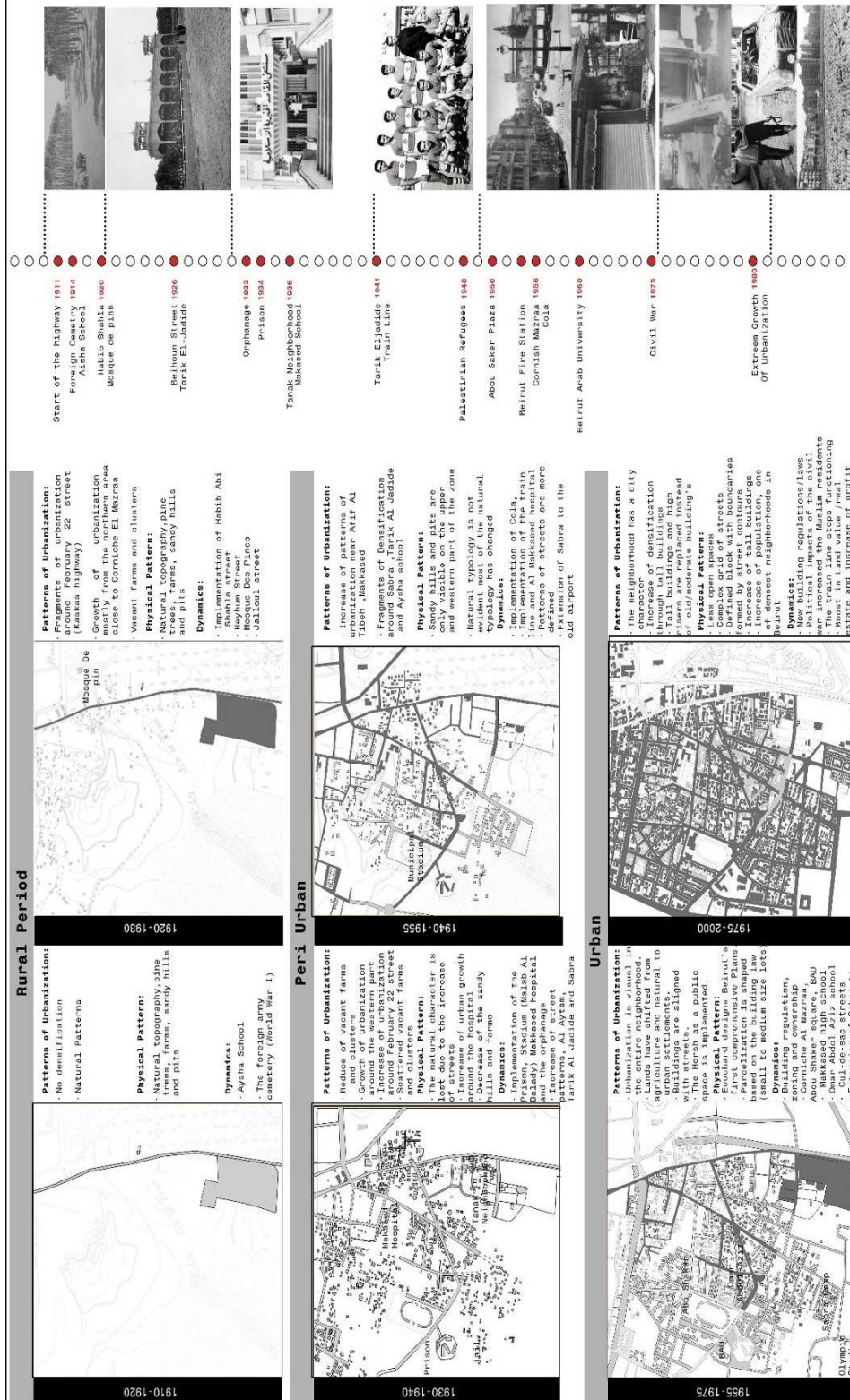


Figure 17. Tariq El-Jdideh Historical Overview (Source:AUB Planning & Design Workshop, Fall 2016)

B. Building Land Uses

The existing built up fabric is thoroughly detailed in maps 18 and 19, representing the building land uses at both ground floor and upper floor levels. Tariq al-Jdideh neighborhood's main character is mixed use with the majority of residential buildings with retail shops at ground level. Furthermore, it consists of major national landmarks which give it a significant importance. The neighborhood houses substantial social and cultural buildings such as schools, university, health care buildings and mosques. As such, the variety of landuses attracts different users to the neighborhood that led to be a highly congested area.

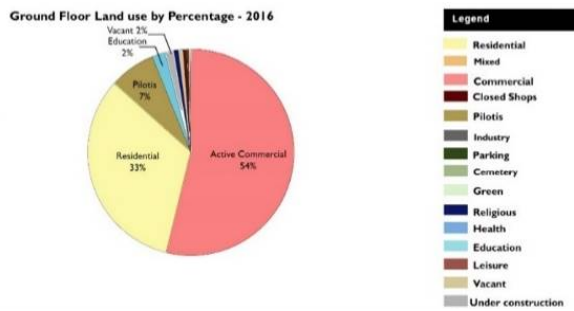
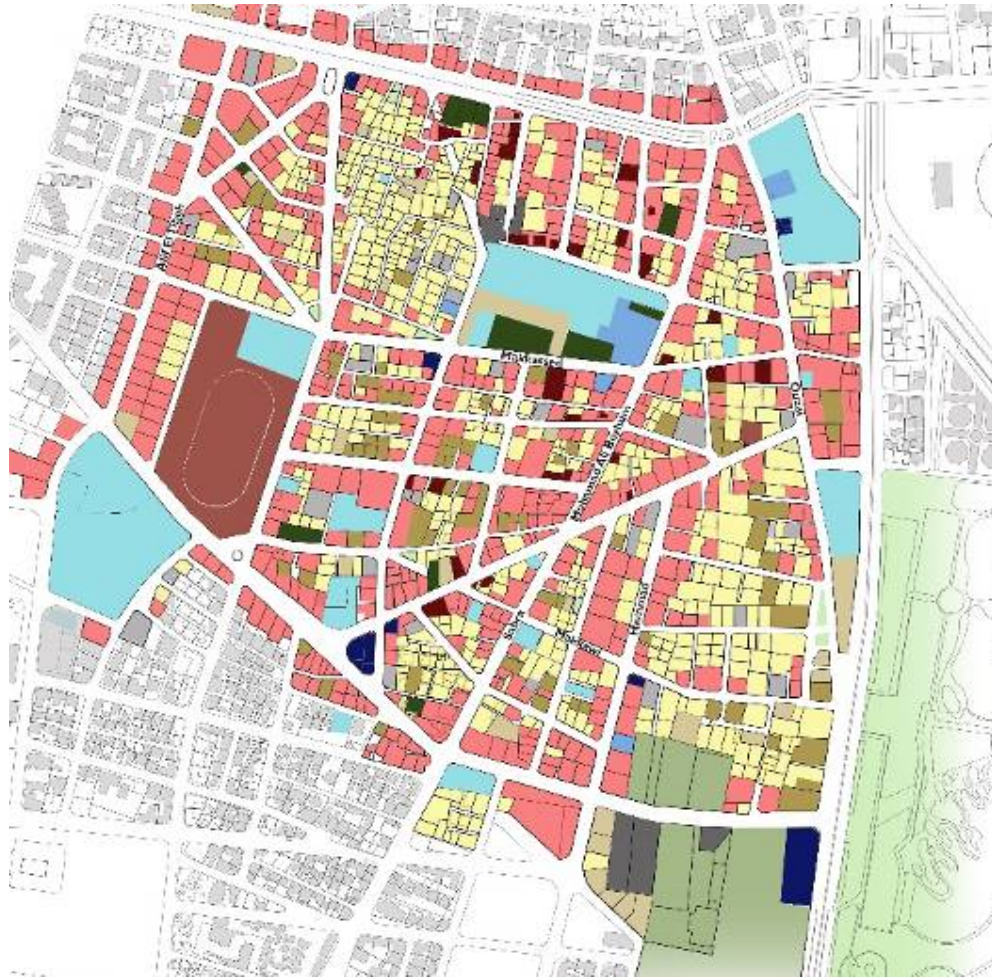
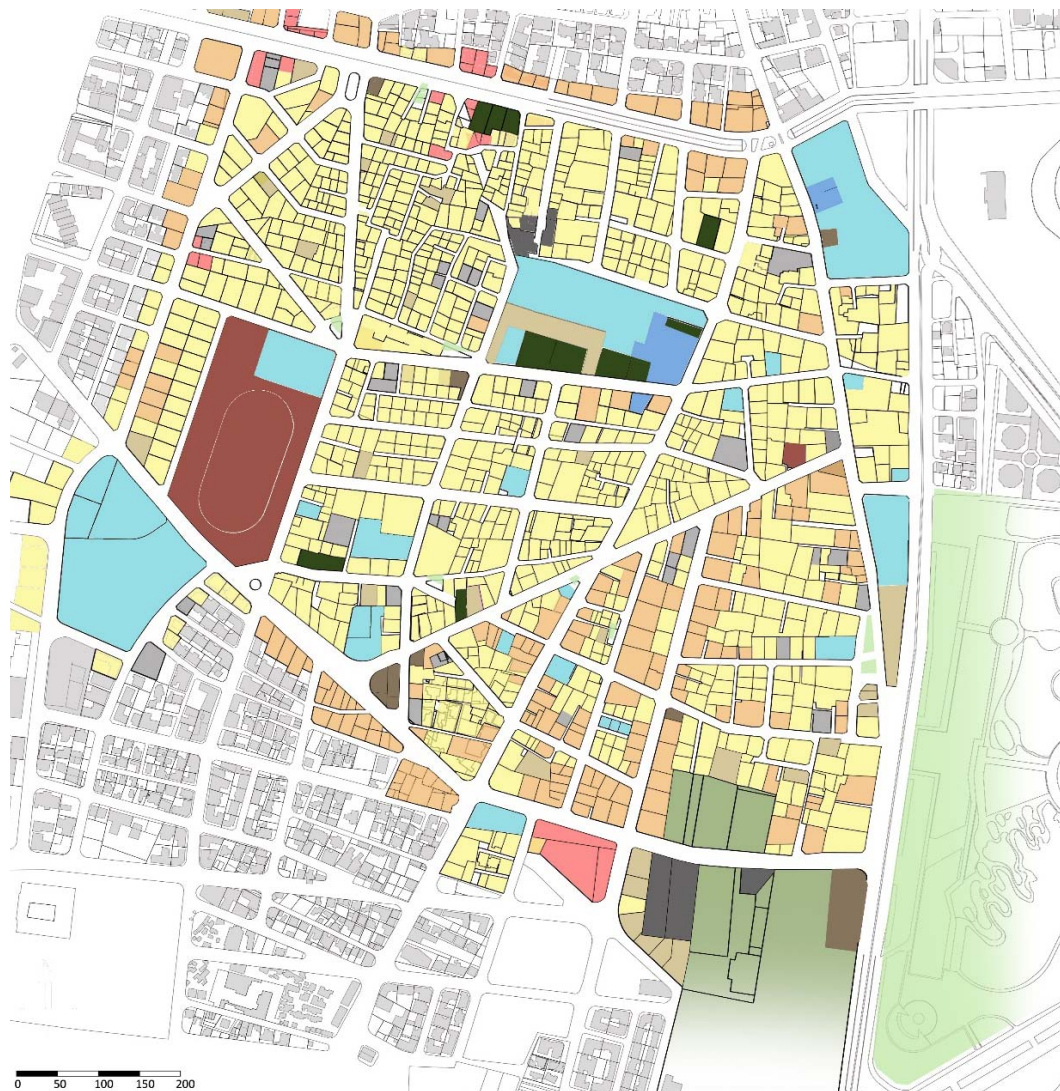


Figure 18. Ground Floor Landuse Plan (Source: AUB Planning & Design Workshop, Fall 2016)



Upper Floor Land use by Percentage - 2016

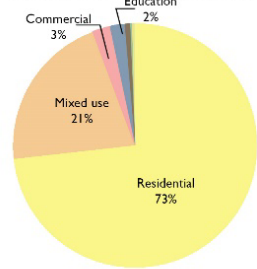


Figure 19. Upper Floor Landuse Plan (Source: AUB Planning & Design Workshop, Fall 2016)

C. Social Infrastructure

The social infrastructure study includes the studying of existing amenities in the neighborhood, such as educational facilities, health care centers, and religious buildings. Mapping Tariq al-Jdideh shows that the neighborhood enjoys a diversity of public amenities: public schools, university (Beirut Arab University), Makkased hospital and health care centers, mosques and Beirut Municipal Stadium. These amenities, mainly educational facilities and healthcare centers, serve Tariq al-Jdideh's dwellers and other neighborhoods in Beirut. The proximity of Tariq al-Jdideh users to schools, BAU University, Makassed hospital, and several mosques gives the neighborhood the opportunity to be a self-sufficient environment, as most social infrastructure buildings are within the adequate walking distance of users. Accordingly, various walking experiences exist: students use the streets to travel from their homes to their academic institutions and vice versa, patients visit the clinics, workers cross by to reach their labor destinations, and shoppers practice their commercial activities on streets.



Figure 20. Civil Defense Location (Source: AUB Planning & Design Workshop, Fall 2016)

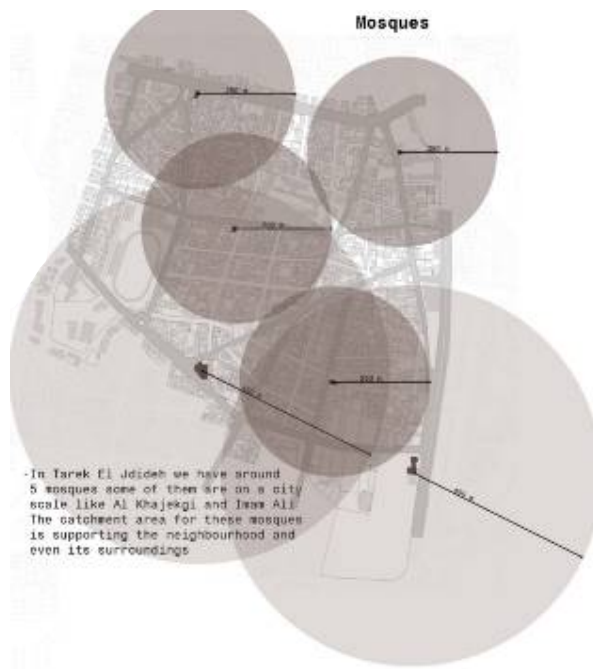
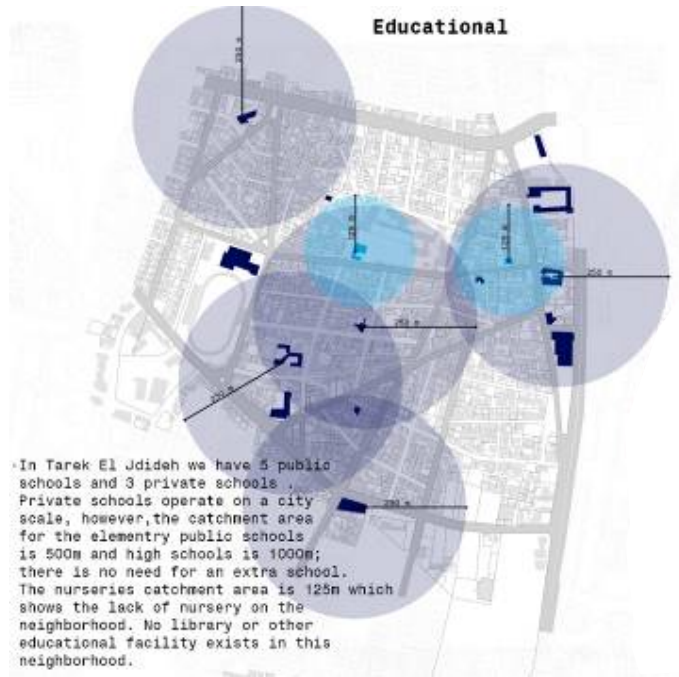


Figure 21. Schools / Mosques Location at walking distance (250 m)

D. Green Infrastructure

According to the workshop findings, green open spaces in Tariq al-Jdideh amount to less than 7% of the total neighborhood area and are concentrated mainly in the cemeteries, the public sports stadium, the Beirut Arab University complex and the playgrounds of secondary schools (Figure.22). Most of these areas are located within public and private institutional grounds, making it difficult to be accessible by neighborhood and city residents at large.

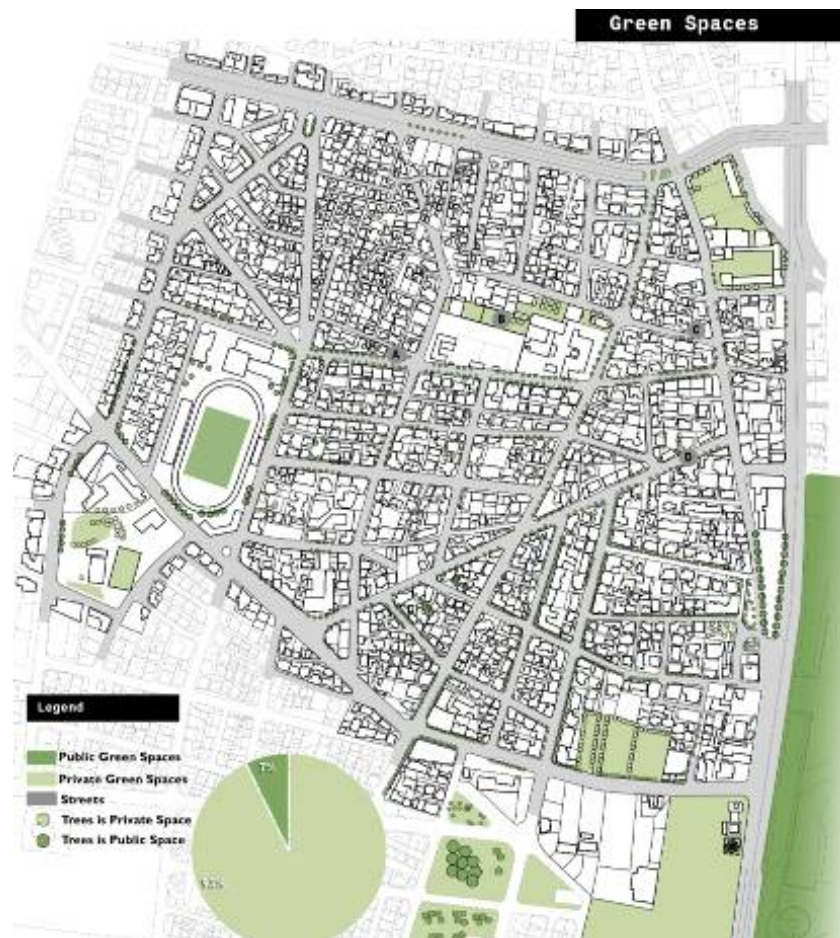


Figure 22. Green Open Spaces (Source: AUB Planning & Design Workshop, Fall 2016)

Major public recreational areas such Beirut Municipal Stadium and Horsh Beirut are closed most of the days to public. Historically, the area of Tarek el Jdideh consisted of pine meadows with a direct connection with Horsh Beirut. Today, this connection is hindered by “Kaskas Highway” as infrastructural break in the neighborhood-city fabric.



Figure 23. Horsh Beirut and Beirut Municipal Stadium are the only public spaces (Source: Nahnoo workshop,2016)

As a consequence of this issue, social interactions takes place mainly on sidewalk where Streets are used as social, commercial and leisure places for neighborhood dwellers.

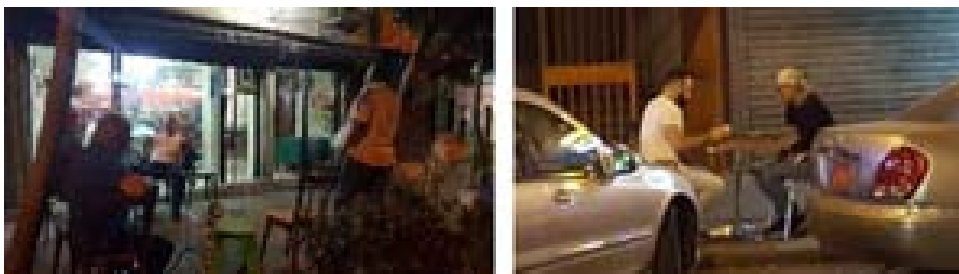


Figure 24. Streets becomes places for Social Interactions (Source: Author)

E. Physical Patterns of Densification

The existing built up fabric is thoroughly detailed in the figure 25 and 26, representing the floor number of each building and its condition. we notice that the average floor number within the neighborhood is currently between eight and twelve.

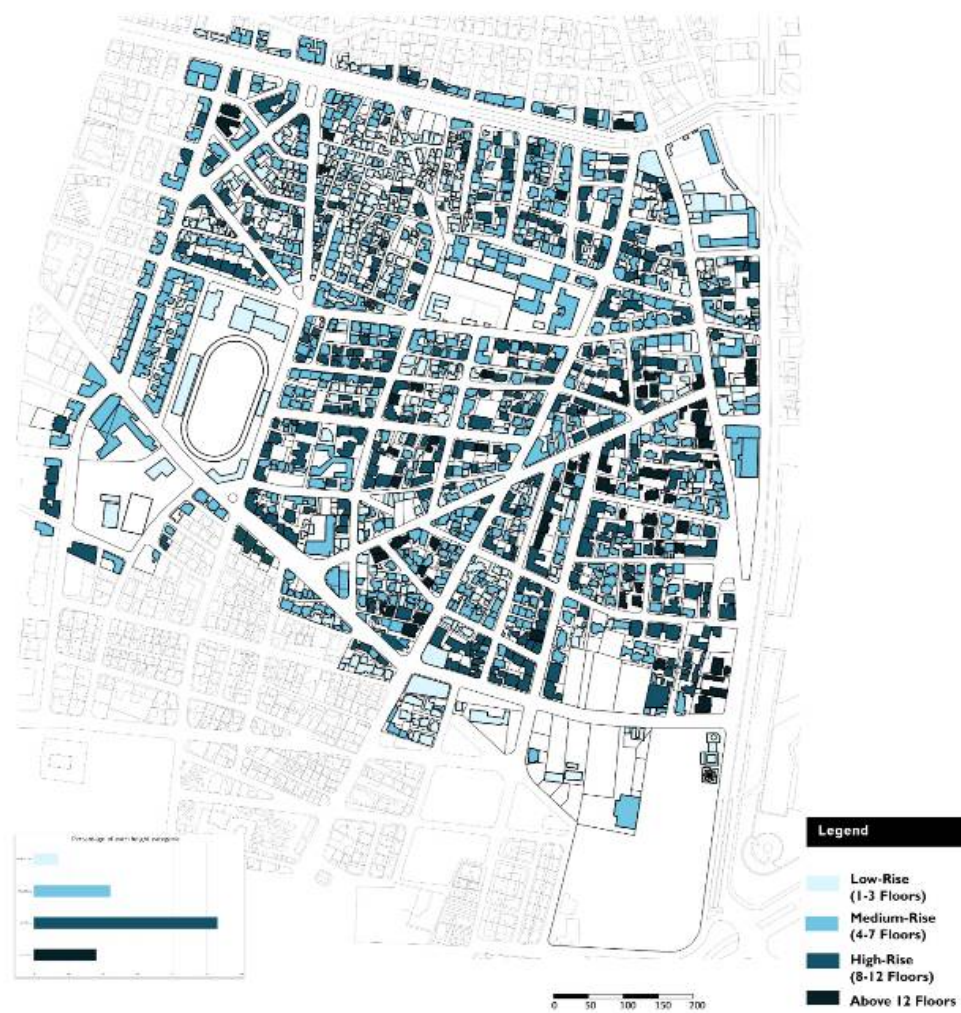


Figure 25. Building Height (Source: AUB Planning & Design Workshop, Fall 2016)

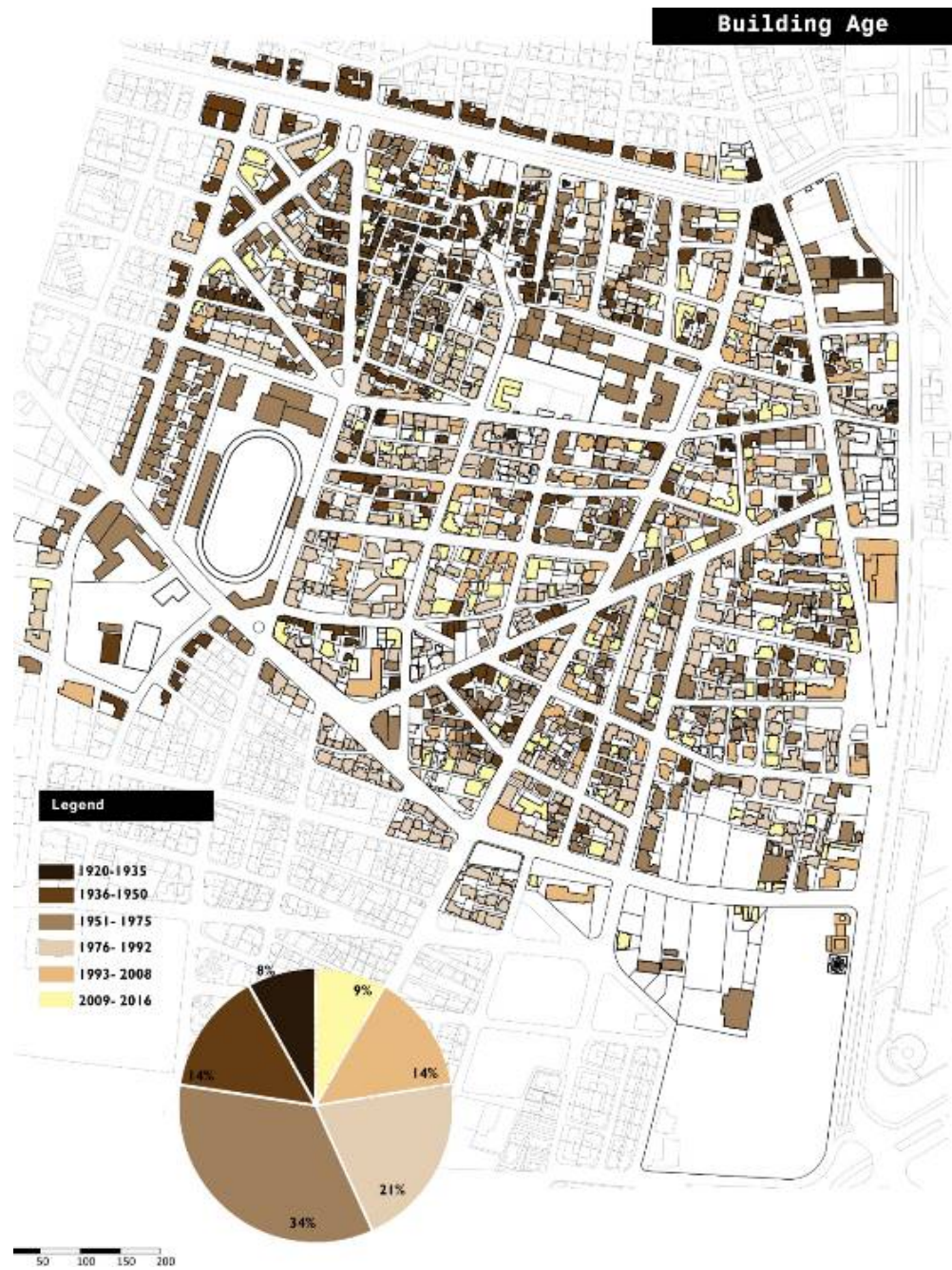


Figure 26. Building Condition Map (Source: AUB Planning & Design Workshop, Fall 2016)

Due to increasing in densification and population in the neighborhood, the existing old building envelope which ranges between 4 to 6 floors are threatened by the ongoing introductions of high –rise buildings with heights that reach twelve floors. Moreover, and given that the neighborhood still accommodates old buildings, the threatening does not only add new heights, but also affect relationships between the public domain and the private domain. This relationship can be explained through the presence of repeated parking at ground floor instead of garden and residential use at old building typology (Figure 27).

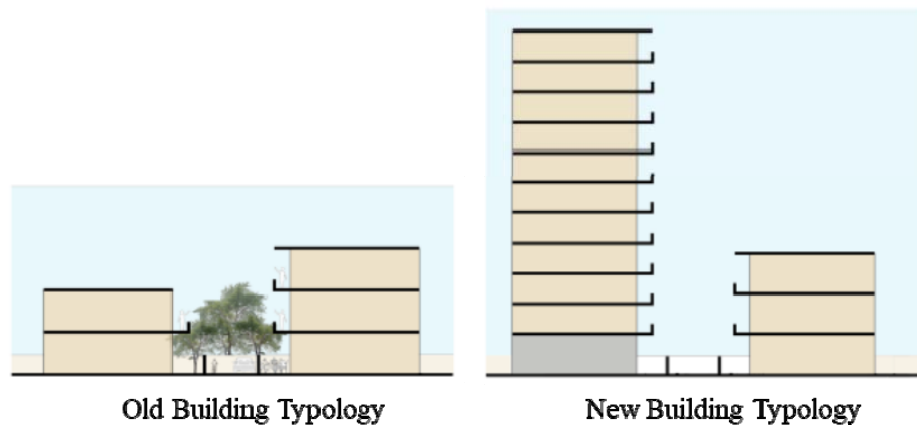


Figure 27. Old and New Building Typologies (Source: Author)

F. Mobility Infrastructure

The existing road network within Tariq El-Jdideh is mapped according to the following attributes: hierarchy of streets, direction of traffic flow and main exit and entry points of the neighborhood. As shown in figure 28, Tariq El-Jdideh is bordered by major highways that generate large volume of traffic every day: The Kaskas Highway from the east, the Cola Bridge highway to the west, and the Mazraa Boulevard to the north. The traffic arteries of Tariq El-Jdideh can be summed up in four traffic routes:

- **Soleiman Boustany – Jalloul Street:** main artery of Tariq El-Jdideh and a through traffic route that links between two important poles: Cola bridge and Kaskas highway. The route is considered the main entrance and exit of the neighborhoods
- **Malaab Baladi Street:** connects Tariq El-Jdideh to Mazraa Boulevard and acts also as exit road.
- **Afif Tybi Street:** is a commercial street that connect the neighborhood to Mazraa boulevard. It serves also as entrance to Tariq El-Jdideh neighborhood.
- **Bayhoum Street:** is a commercial street that connect the neighborhood to Barbir area.

Other traffic routes are not as significant which operate as secondary and tertiary arteries that serve as a drop off for residential buildings.

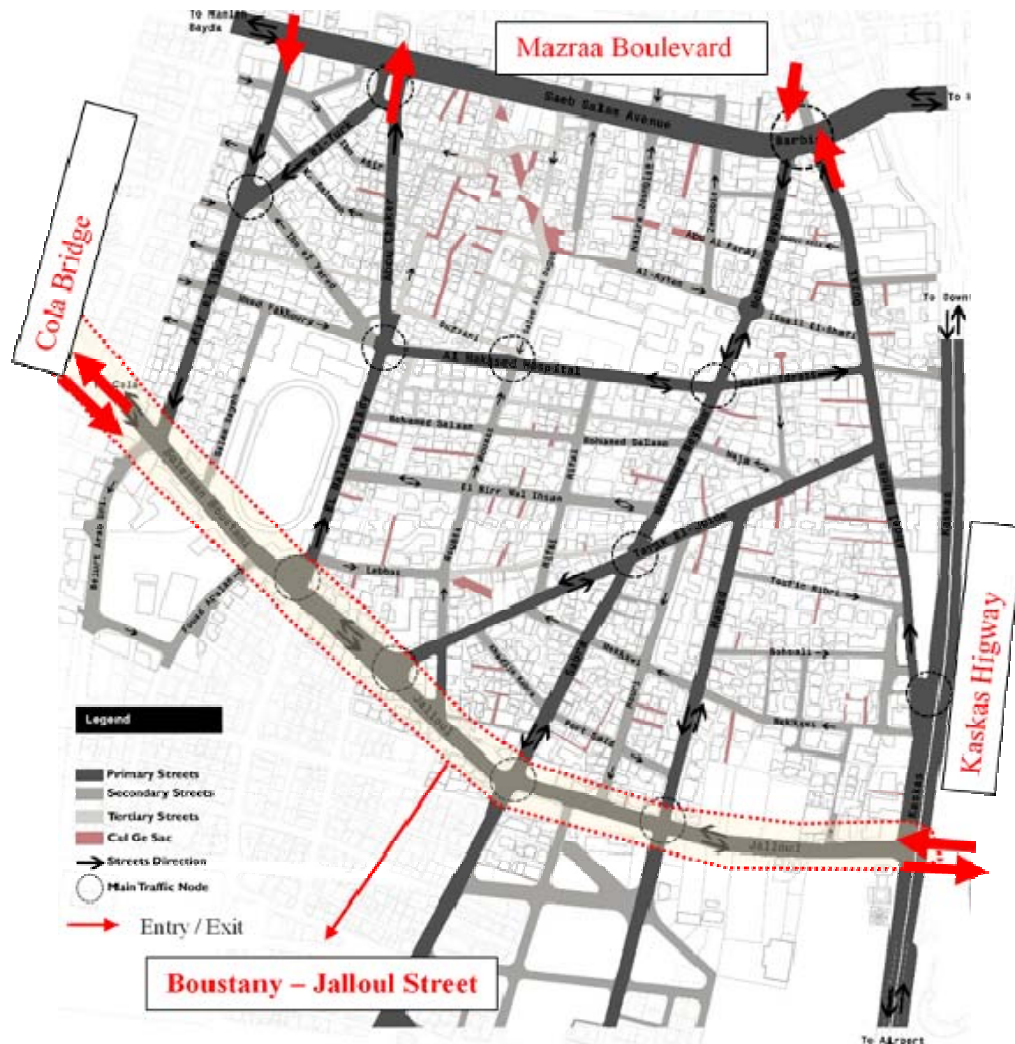


Figure 28. Road Hierarchy (Source: AUB Planning & Design Workshop, Fall 2016)

SETS, an infrastructure consultant, studied the traffic volumes of the road network for the area of Tariq al-Jdideh. In the map below figure 29, the orange bar represents the volume of the traffic upon the street section; the increase of the volume of the traffic is illustrated by an increase of the bar thickness



Figure 29. Traffic Map (Source: SETS Infrastructure consultant,2019)

These maps show that Soleiman Boustany –Jalloul Street has the highest volume of cars, since it is the main artery, inner and inter vehicular distributor in Tariq al-Jdideh neighborhood.

Soleiman Boustany-Jalloul Street, a commercial street corridor, has been suffering of increase flow most of the day and especially from 7:00am till 7:00 pm resulting in deadlock traffic jams. This is a result of the following reasons:

- The street acts as through traffic connecting to major poles as discussed above
- The street hosts 1) major city landmarks: Beirut Arab University and Beirut Municipal Stadium, and 2) social buildings such as schools and mosques.
- The street acts as a drop off for the retail shops and residential buildings.

In addition, due to deficiency in parking lots in the area, different users generated from variety of landuses are forced to park their cars on both sides of its sidewalk narrowing the width of the street to two single vehicular lanes and resulting in further slowing of traffic and worsening the traffic jams.

Local residence and merchants depend on parking along the street. There are no few surface parking executed on vacant plots in the area which cannot accommodate the growing number of vehicles. In addition, since Tariq El-Jdideh is mainly composed of old buildings which does not provide car parking which makes on street parking the only space available for this function. The pedestrian circulation of the street is active. However, the sidewalk is shared by shopkeepers who appropriate the sidewalk to display their products, worsen the walkability experience of the users.

CHAPTER IV

SOLEIMAN BOUSTANY-JALLOUL STREET ACTION AREA

This chapter examines the Soleiman Boustany –Jalloul Street (SBJ) as an action area by assessing three main attributes: Mobility Infrastructure, Social Infrastructure, and Green Infrastructure. The first attribute “Mobility infrastructure” will be analyzed through studying the existing condition of 1) vehicular, 2) pedestrian and 3) modes of parking in SBJ Street. Second, the Social Infrastructure will examine the existing educational, religious and healthcare facilities along the selected stretch. The final section, green infrastructure, will describe the existing public and private open spaces.

Based on the investigation of road networks, open spaces, and the quality of public domain in Tariq El-Jdideh and the identification of potentials and constraints, I have selected SBJ Street as my detailed case study within which the urban greening strategy components can be implemented. The road extends between two significant poles: The Cola bridge highway to the west and the Kaskas highway to the east. The street is considered as the main artery of the neighborhood, since it acts as the main traffic distributor that serves neighborhoods inside Tariq El-Jdideh area.

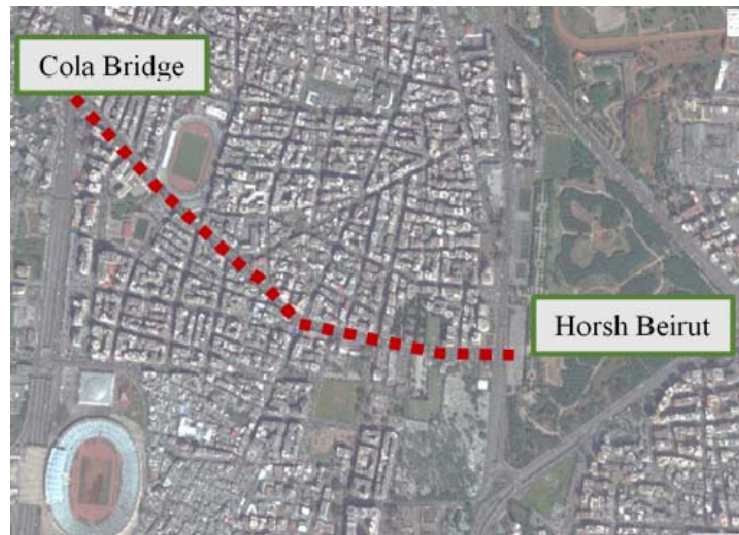


Figure 30. Soleiman Boustany-Jalloul Street

A. Justification

Investigating Tariq El-Jdideh led to selecting SBJ Street as a case profile for the following reasons:

1. Greening potential / concentration of cultural and community landmarks

Soleiman Boustany-Jalloul Street, a commercial corridor, runs at the heart of the Tariq al-Jdideh, connecting its many sub-neighborhoods. It covers a wide variety of land-uses (cultural, educational and religious facilities, residential and retail shops) which make it one of the busiest streets in Tariq al-Jdideh (Figure.31). I have chosen this street because of the concentration of major cultural and community landmarks and nodes that give Tariq El-Jdideh neighborhoods its identity. In addition, the street houses scattered green patches mainly concentrated near educational facilities, foreign cemeteries and public spaces such as Horsh Beirut. As such, these attributes present greening potentials which would lead to creating a green lung inside the neighborhood.

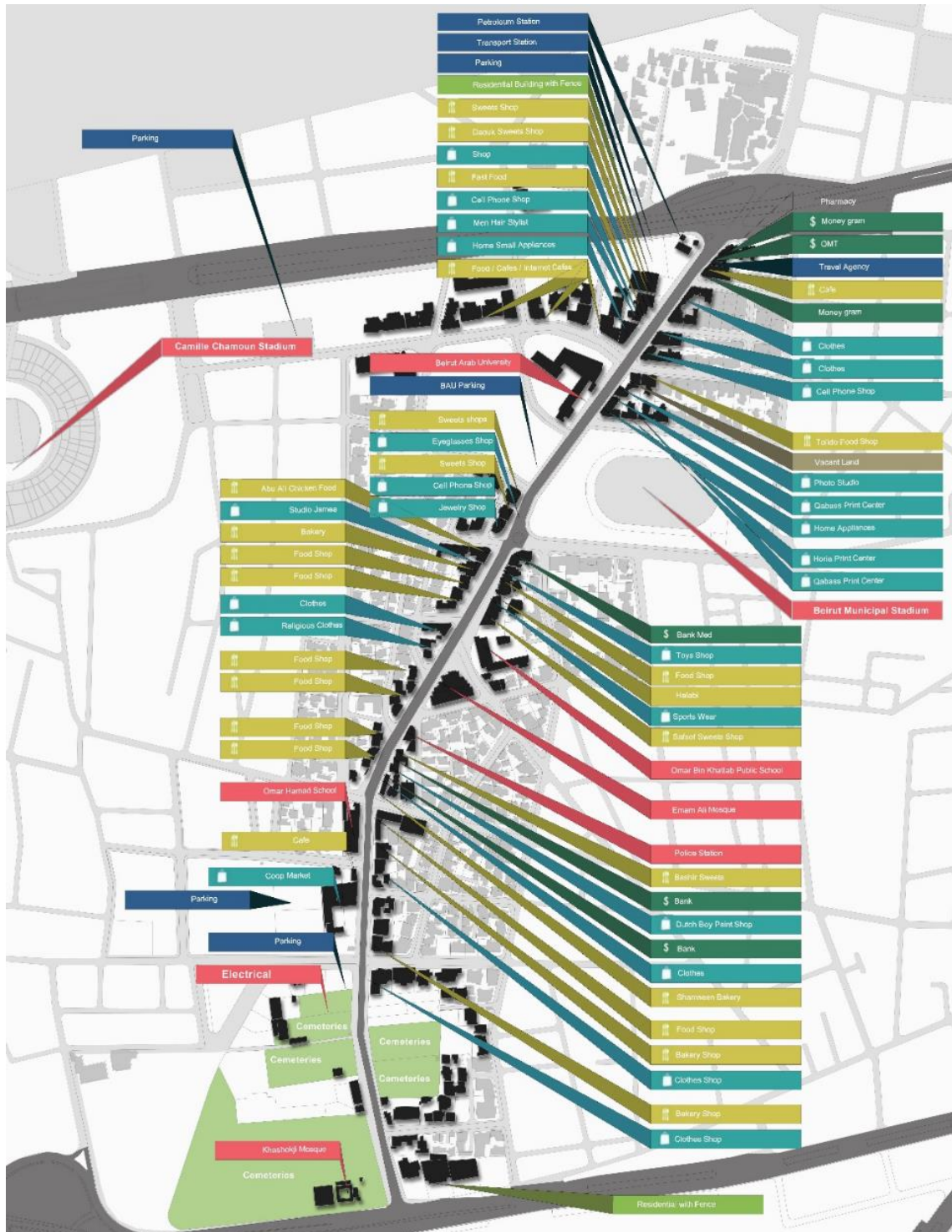


Figure 31. Diversity of Land uses

2. Similarity to Damascus Road (Liaison Douce)

The street is emphasized as a green soft link in “*Projet de Plan des Deplacements Doux*” study. This strategy embraces Boustany Street as a soft link, connecting the major hubs: Cola, Beirut Municipal Stadium, BAU, private green spaces (Cemeteries and Horsh Beirut) with a comprehensive green landscape network.

Similar to Liaison Douce’s objectives, the project does not aim to 'beautify' the street, but rather it connects two major city poles; promotes alternative modes of mobility; enhances green public spaces in Beirut City; and re-stitches the urban and social fabric along the street. Accordingly, I will elaborate on this study through adopting the same goals and objectives set by the two studies “*Projet de Plan des Deplacements Doux*” and “*Liaison Douce* study. This will be achieved by promoting a network of green spaces, adopting soft mobility options and greening strategies that will significantly enhance the livability and environmental quality not only at the Boustany Street level but also at neighborhood level.

B. Mobility Infrastructure

To assess the mobility infrastructure of BJS, I will assess the existing condition of vehicular, pedestrian and modes of parking of BJ Street. The vehicular section will first examine the vehicular function of the street by mapping the existing mobility experiences happening at different zones of the stretch. The pedestrian section will then assess the environmental quality and condition of sidewalks along BJ Street. Finally, section drawings will map the different modes of parking on BJ street.

1. Vehicular

a. Street Function

BJ Street acts as a main road inter-district and as a main entry to Tariq al-Jdideh (Figure 32). It has multiple functions overlapping from the city to the district scales:

i. Inter-district distributor linking two major city scale poles: Cola highway and Kaskas highway.

The traffic analysis shows that the road acts as a through traffic road, since many users who came from Cola area cross the neighborhood to the Kaskas highway which results in a large volume of cars that enter and exit the neighborhood.

ii. Inner-district distributor that links entrances and egress of Tariq al-Jdideh to main social functions inside the neighborhood.

Besides the residential and commercial uses in the neighborhood, the area hosts multiple schools and a university that draws in students, visitors, staff and school busses and cars which lead to an increase in the volume of vehicular and pedestrian traffic as they enter and exit the area to fulfill their needs.

iii. City scale distributor for Beirut Arab University and Beirut Municipal Stadium

The street also operates at the city scale level, since it links major city scale landmarks: Beirut Arab University and Beirut Municipal Stadium to other districts in Beirut City.

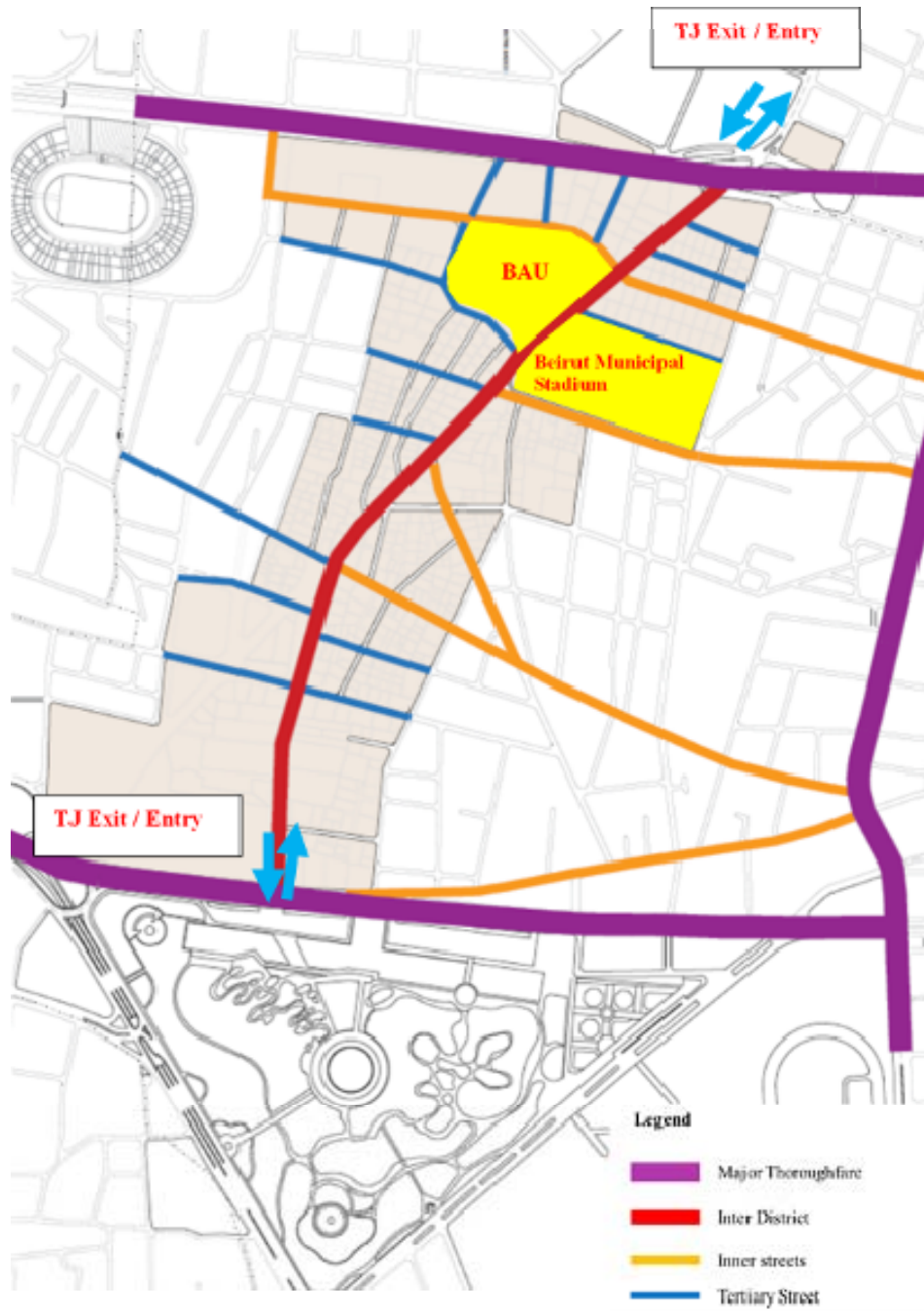


Figure 32. Inter-District Street

iv. Access road for residential building and frontage retail outlets (Figure 33)

The land-use of the area shows that a variety of activities take place along this stretch such as residential, commercial, educational (schools and a university (BAU)), religious (mosques) uses as well as public spaces that host public events. This diversity of land-uses brings in steady pedestrian and car traffics.

- Traffic from Inhabitants

The existing building typologies that exist along this street show that most of the buildings were constructed between 1950 and 1975. The average building height is 5 to 7 floors and they lack underground parking. Consequently, most of the dwellers who live in these buildings are dropped off and cars are then parked at the sides of the BJ street, or sometimes park in close private surface parking when available.

- Commercial drive-in

Most of the buildings in the study area constitutes commercial frontages at the ground level, causing shop visitors to drive in to the commercial shops, adding more congestion to the street.



Figure 33. Building Entrances / Vehicular Entrances

a. Mobility Patterns

SBJ Street serves different functions which have resulted in different types of mobility patterns in the area. The proximity of Tariq al-Jdideh users to schools, BAU University, hospital, and mosques gives the neighborhood the opportunity to be a self-sufficient environment, as most social functions are within the adequate walking distance of users. Accordingly, various mobility experiences exist. Mobility is divided into: pedestrian and vehicular motilities

- Pedestrian mobility consists primality of neighborhood dwellers, students, visitors, shop keepers, mosque prayers.

- Vehicular mobility on the other hand is related to the neighborhood dwellers, students, workers, visitors. They are in the form of School buses and vans for students and cars for school staff.

- Motorcycles on the other hand are mainly used by neighborhood dwellers to move easily inside the area and to avoid vehicular traffic. They are also used for delivery services by the shops in the neighborhood. The excessive presence of motorcycle inside Tariq al-Jdideh is causing conflicts to cars and pedestrian since they are uncoordinated with other modes of mobility and thus drive haphazardly while impeding the sidewalks most of the time. However, there is a large demand for these motorcycles inside the neighborhood and this is evident due to the large number of shops that sell and fix these motorcycles.

Studying the mobility system of the area also shows a conflicting intersection between the vehicular and pedestrian mobility along the street. I will explain the different mobility patterns that takes place along SBJ Street at different times of the day through investigating the following areas:

- Cola Area (Transport Mobility Type)
- Emam Ali Zone (Community Mobility type)
- Cemeteries Zone (Calm Mobility)

The methodology of selecting these areas relied on the ability to test different mobility patterns in different character zones. Cola zone is considered a transport hub which attracts users that respond to its functions. The Emam Ali zone is a neighborhood center where various community mobility's take place. The Cemeteries zone is considered a calm area, since it lacks retail functions (Figure 34)



Figure 34. Three different Character Zones

i. Cola Area

The character of this zone is mainly shaped by the dominating transportation hub nearby. This zone acts as the main entry and exit of Tariq al-Jdideh and as the link to the city, which justifies the type of users and the frequency of buses and cars around the zone. The users (residents, shopkeepers and travelers) fulfill their needs from commercial service shops along the segment, and thus invade the sidewalks with their on-street parking cars. As such, the zone is considered one of the most congested nodes.

Morning (Figure.35)

During morning hours, vehicular movement is frequent and consisting of buses, cars, public transport vans, and service trucks as follows:

- Buses are recurrent in dropping off students to and from BAU.
- Vans pass frequently for dropping off workers who commute in Tariq al-Jdideh neighborhood.
- Passerby cars cross through Tariq al-Jdideh neighborhood to reach other neighborhoods.
- Private cars of people who work or study in Tariq al-Jdideh.
- Service trucks that deliver goods and appliances from Beirut/Jnah, Khaldeh and Choueifat, taking a journey of around 45-minutes to get to the stores of Tariq al-Jdideh.

Pedestrian flow in to this zone is also periodic, and mainly takes two forms:

- People reaching Tariq al-Jdideh neighborhood while coming from the Cola transportation hub.
- College students using shops, cafeterias, and stationery services.

Afternoon (Figure .35)

During afternoon hours, vehicular and pedestrian flows are majorly shaped by the following:

- Major vehicular traffic is generated from cars that need to access the internal neighborhoods inside Tariq al-Jdideh.
- Cars drop off at commercial shops and residential buildings.
- Pedestrians, mainly BAU students, continuously use cafes and stationery shops for their everyday recreational and educational needs.
- Travelers coming from nearby transport stations to Moneygram shops and travel agencies located at this stretch of SBJ Street.

Night (Figure.35)

During the night hours, most of this zone becomes calmer than during the day time, and the vehicular and pedestrian activity are delineated by the following:

- Tariq al-Jdideh dwellers' movement who are coming back to their homes from other areas
- Garbage trucks services collecting waste from bins, blocking the street and causing more congestion.

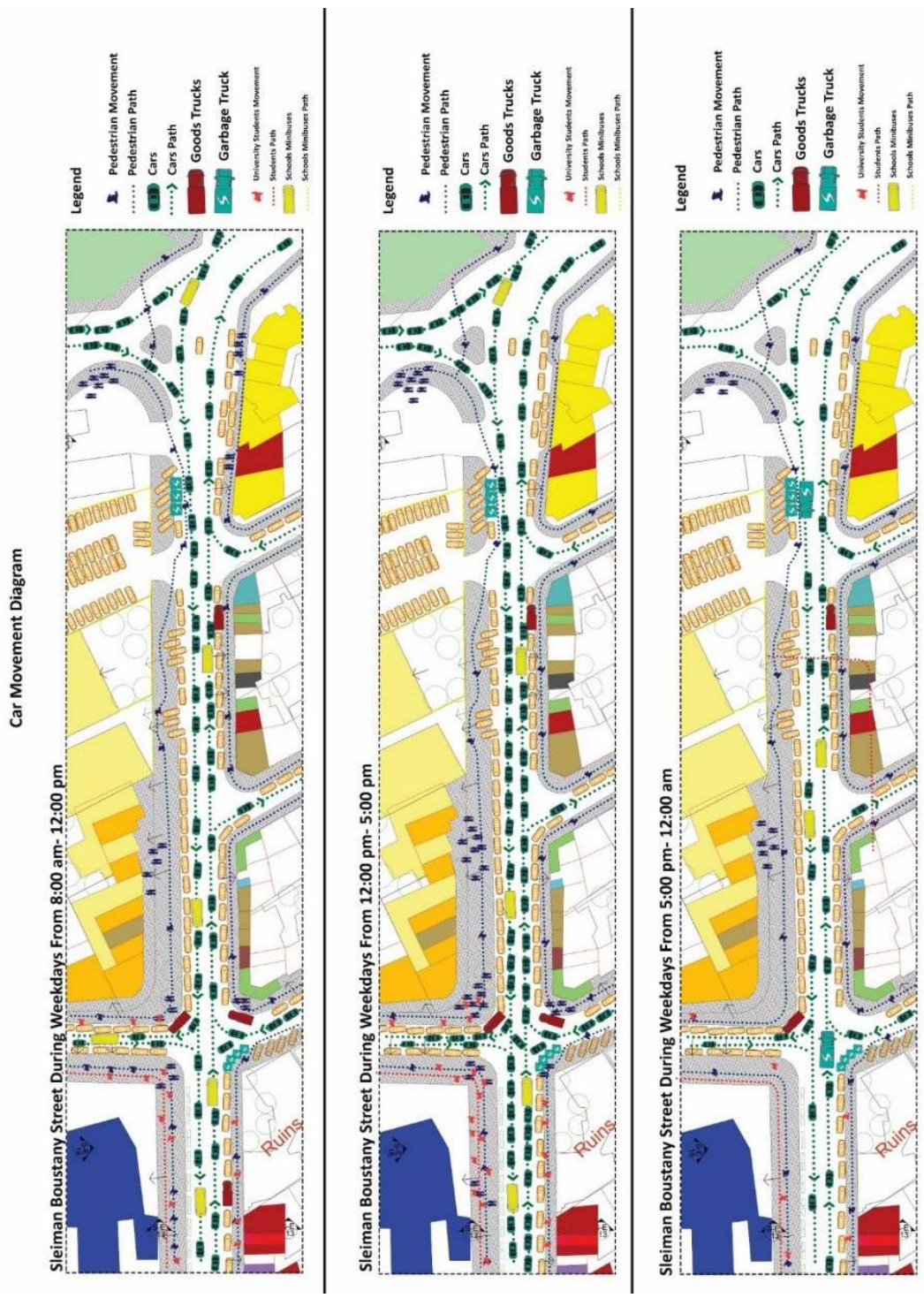


Figure 35. Cola Area - Mobility Patterns (Source: Author)

ii. Emam Ali Mosque

Emam Ali Mosque is a main religious node in Tariq al-Jdideh neighborhood. This area accommodates: 1) A variety of popular retail shops, restaurants, jewelers, bank branches (such as Bank Med, BLOM bank), 2) The Omar Bin Khattab and The Hamad schools and 3) Friday prayers and various religious events, which determines the type and frequency of users during several times of the day as follows:

Morning (Figure.36)

During the morning hours, this node is congested by the pedestrian movement is very active, as well as the vehicular, as follows:

- First shift of Students arriving to the school for their, either on foot or by cars (Around 400-450 student in the two schools mentioned)
- Shopkeepers who commute to their shops
- Service trucks for supplying shops along the street
- Employees arriving to their work destinations (school staff, shop workers, banks)

Afternoon (Figure.36)

The many uses afternoon hours cause congestion and movement is mainly shaped by social and educational activities such as the following:

- School students leaving school as well as the arrival of students from the second shift students who are mainly Syrian students who start their studies around 2:30 till 7:00 p.m.

- People attending the mosque for noon prayers
- Around lunch time, the restaurants and cafes that dominate the area cause heavy congestion by mostly male users.

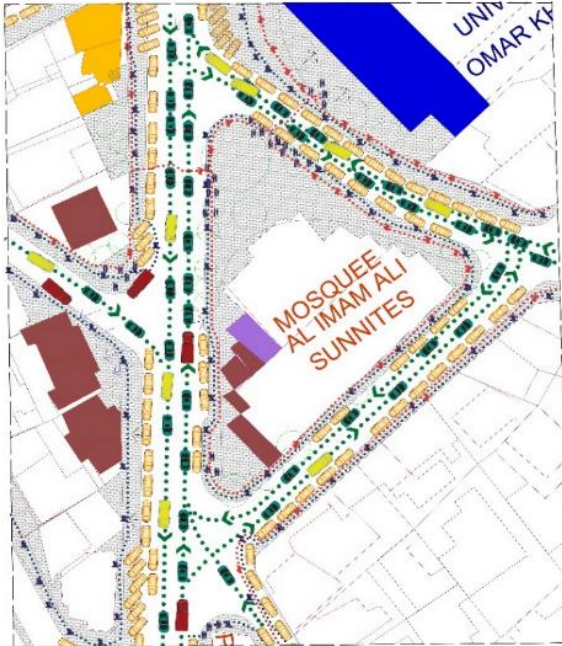
Night

During night hours, the street is very active and is mainly dominated by male gender and is characterized by the absence of the female character. Second shift Syrian students also form pedestrian flow along the street, from the school towards their houses.

Friday Prayer

People praying on Fridays extend their religious activities from the mosque area towards the sidewalks, causing the area to become congested with on-street parking, which also leads to double-sided on-street parking.

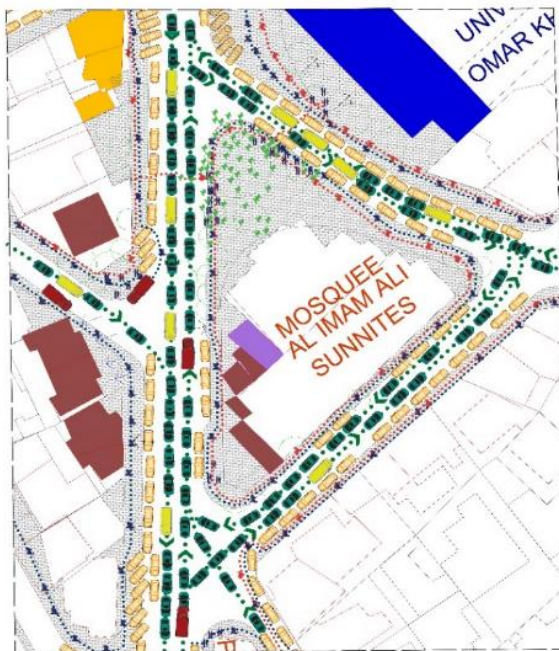
November 22 Street during weekdays From 8:00 am- 12:00 pm



Legend

- Pedestrian Movement
- Pedestrian Path
- Cars
- Cars Path
- Goods Trucks
- Garbage Truck
- University Students Movement
- Students Path
- Schools Minibuses
- Schools Minibuses Path

November 22 Street during weekdays From 12:01 pm- 5:00 pm



Legend

- Pedestrian Movement
- Pedestrian Path
- Cars
- Cars Path
- Goods Trucks
- Garbage Truck
- University Students Movement
- Students Path
- Schools Minibuses
- Schools Minibuses Path

Figure 36. Emam Ali Mosque Zone - Mobility Patterns (Source: Author)

iii. Cemeteries Zone

The neighborhood adjacent to cemeteries area is characterized by its residential character due to the lack of commercial store frontages which makes this area very calm and quiet.

During morning hours, pedestrian activity is mainly characterized by people jogging towards Horsh Beirut.

During afternoon hours, the zone becomes very calm with no vehicular congestion along this stretch of the street. Presence of people walking to funerals in Khashokji Mosque.

During night hours, the zone is known for its lack of lightning, which also causes minimal presence of vehicular and pedestrian flows.

November 22 Street during weekdays: From 8:00 am- 12:00 pm



- Legend**
- Pedestrian Movement
 - Pedestrian Path
 - Cars
 - Cars Path
 - Goods Trucks
 - Garbage Truck
 - University Students Movement
 - Students Path
 - Schools Minibuses
 - Schools Minibuses Path

November 22 Street during weekdays From 12:01 pm- 5:00 pm



- Legend**
- Pedestrian Movement
 - Pedestrian Path
 - Cars
 - Cars Path
 - Goods Trucks
 - Garbage Truck
 - University Students Movement
 - Students Path
 - Schools Minibuses
 - Schools Minibuses Path

November 22 Street during weekdays From 5:01 pm- 12:00 am



- Legend**
- Pedestrian Movement
 - Pedestrian Path
 - Cars
 - Cars Path
 - Goods Trucks
 - Garbage Truck
 - University Students Movement
 - Students Path
 - Schools Minibuses
 - Schools Minibuses Path

Figure 37. Emam Ali Mosque Zone - Mobility Patterns (Source: Author)

Conclusion

- Cola zone is a very congested node due to incompatible land uses (transport / commercial / retails) that generate different types of users including residents, visitors, passers, students and travelers.
- Emam Ali Zone: is considered a community zone and the most active area in SBJ Street and Tariq al-Jdideh neighborhood. It is a rich hub of community movements, since the neighborhood fulfills their needs through shops, mosques, banks, schools. Accordingly, different types of users are present at this zone: prayers going to the mosque, women buying goods during the day, students going to their schools, visitors and workers frequenting the existing shops (during the day and night dominated by male gender).
- Cemeteries Zone: The area is calm and quiet with minimal vehicular and pedestrian movements and dominated by its residential users.

2. Pedestrian Quality in Solieman Boustany-Jalloul Street

The section focuses on the quality of pedestrian in Boustany street in terms of assessing safety, comfort, convenience and areas of interest.

The street suffers from a lack of Road facilities, such as park meters, traffic direction signs, bollards, and traffic lights. Due to shortage of parking areas, an excessive number of cars park along the sidewalk, blocking the continuity of pedestrian movement. Furthermore, sidewalks are poorly maintained with cracks in the pavement of these sidewalks left untreated. This is rather minor in comparison to the absence of

street furniture and the fact that shops extend their space to the sidewalk in front of the shop to display their goods and other services interrupting the continuity of streets. Pedestrian sidewalks are also blocked by motorcycles, carts and merchandise, and garbage containers making walking uncomfortable (Figure.38)

Since I am a resident in Tariq al-Jdideh, and walk a lot in neighborhood, such physical obstructions prevent me from enjoying walking experience, since most of the time I have to walk on vehicular streets which is unsafe. This situation is further exacerbated by the lack of safety and security measures for sidewalks such as active lighting which contribute to feelings of safety. The sidewalks are dominated by the male gender during day and night where presence of women is limited to frequenting shops or to taking their children to nearby schools. Men are often using the sidewalk beside the restaurants for their social gathering. Accordingly, the presence of seats at sidewalk is a common culture in neighborhood. The area is also characterized by the polluted environment which results from the d CO2 emission from excessive number of cars.

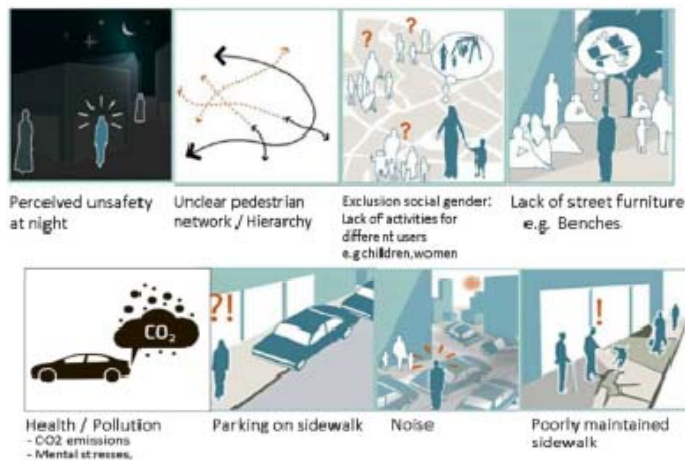


Figure 38. Pedestrian Quality (Jan Gehl)

3. Modes of Parking in SBJ Street

One of the main problems in Tariq al-Jdideh, is that its streets are congested with on street parking from both sides, causing a major traffic in the area. This is due to shortage of number of parking spaces which are not enough to house the large number of cars in Tariq al-Jdideh.

Modes of parking along SBJ Street are divided into the following categories (Figure 39):

- Paid parking located underground of Beirut Municipal Stadium, constructed and managed by Municipality of Beirut
- Private Parking owned by BAU University used by University staff only
- Paid surface parking opened to public on private plots (As shown in the map)
- On-Street Parking at both sides of the street (Highlighted in Blue)
- On-Street Parking impede pedestrian sidewalks (Highlighted in green)
- At BAU edge, on-street parking is prohibited. Instead, the university allocates flower boxes to prevent people to park at this side (Highlighted in red at below map)
- Surface Parking executed by the Municipality of Beirut located at Horsh Beirut
- Availability of vacant plots act as a surface parking

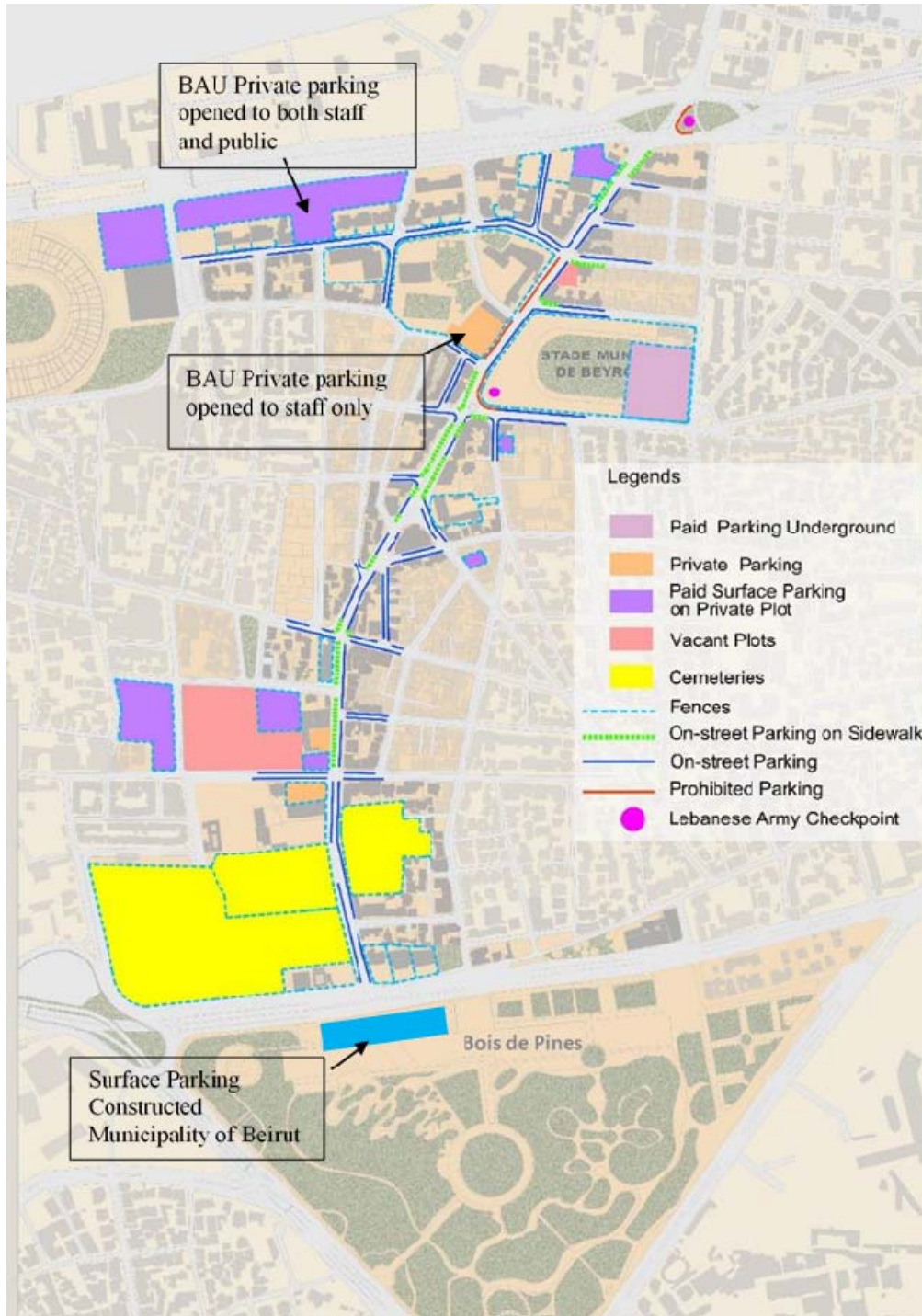


Figure 39. Modes of Parking in SBJ Street (Source: Author)

C. Social Infrastructure

Mapping SBJ Street shows that this stretch enjoys a diversity of cultural amenities such as public schools, university (Beirut Arab University), religious buildings (Emam Ali and Khashokji mosques), and the Beirut Municipal Stadium. These amenities become landmarks and major focal centers which gives a unique identity not only at neighborhood scale but also at a city scale.

Sep and Pitt (2014) depicted the identity of the city is generally viewed in relation to the definition of its spatial elements. Furthermore, Rossi (1984) depicted the city as the collective memory of people, and that memory is linked to events and places. Consequently, the city is a collective memory generated from the mental map of its inhabitants.

Landmarks are important for their symbolic uses significance and their visual prominence. To understand the landmarks in Boustany Street in Tariq El-Jdideh, I talked to residents and asked them to draw mental maps of the study area. Along this stretch, significant city and neighborhood scales landmarks and nodes were mentioned by local residents. The dwellers expressed that some of these social infrastructure buildings are major landmarks that give a unique identity for Tariq El-jdideh. These landmarks and nodes vary between cultural, educational, religious, sports, and traditional such as, BAU, Beirut Municipal Stadium, Emam Ali Mosque, Foreign cemeteries and Horsh Beirut. This variety provides the Tariq-El-Jdideh neighborhood a unique community identity and generates different character zones along the street.

However, the weak connectivity and poor walkable experience across Boustany Street and between different nodes weaken this identity.

This section describes how the existing landmarks and nodes along Boustany Street shape the spatial character of the areas that surround these landmarks, hence, give the identity and provide a distinctive character zone for these areas. The study will include into the analysis the study of land use, and Spatial and social practices to define the characteristics of these character zones. The following chapter will define different character zones generated from these landmarks and nodes along this street.

Mental Map

As shown in figure 40, mental map generated by neighborhood dwellers show that most of the dwellers don't use "Soleiman Boustany-Jalloul Street" for this stretch, but instead they refer to the landmarks existed along this street. It also depicts that there is a certain hierarchy of landmarks which could be defined as the following:

Major Landmarks

- Beirut Municipal Stadium (Malaab Baladi): a city scale and key landmark. People refer to Tariq El-Jdideh neighborhood as "Malaab Baladi" neighborhood instead of saying Tariq El-Jdideh
- Beirut Arab University: a city scale and neighborhood landmark. Beirut inhabitants perceive SBJ Street as BAU street.
- Emam Ali Mosque, one of the oldest mosques in Beirut
- Horsh Beirut

Secondary Landmarks: Foreign and Islamic cemeteries, Omar bin Khattab and Hamad Schools

Edges: the street is defined by strong transport infrastructure breaks. The main one is Cola Highway that separates Tariq al-Jdideh from Watta Mussytbi area. The second one is Kaskas highway which segregates Tariq al-Jdideh from Horsh Beirut.

Major Nodes: Cola transport station, schools, Afif Tyibi commercial street, Bayhom commercial street, Khashokji mosque, Sabra coop, Hawari, Safsof and Nemer Wadi well-known sweet shops, police station.

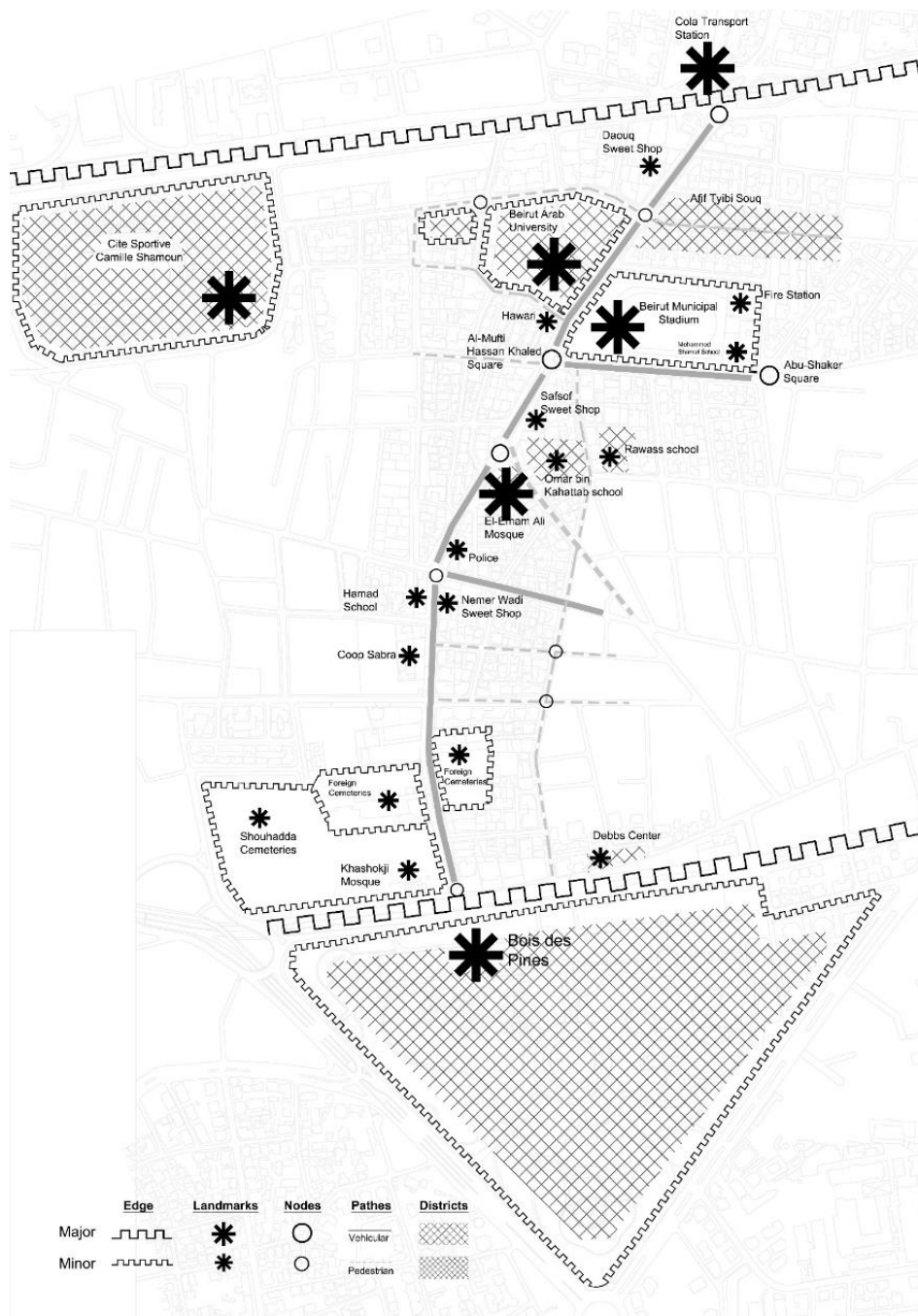


Figure 40. Mental Map (Source: Author)

I will describe baseline visual conditions mainly in the five zones and analyze their conditions, focusing on their visual character. Each zone is analyzed separately and in relation to the neighborhood.

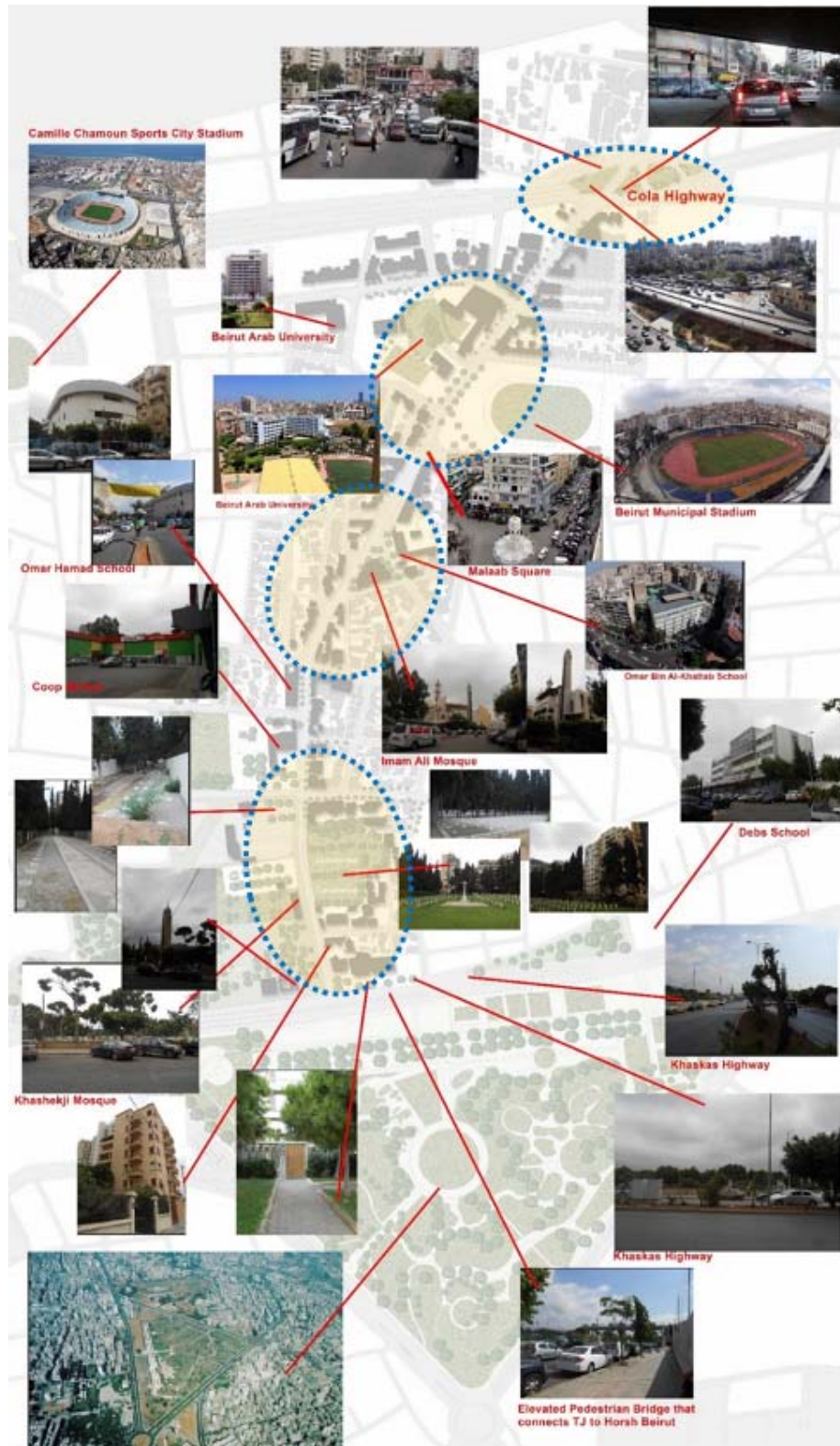


Figure 41. Major Landmarks and nodes in SBJ Street (Source: Author)

1. Cola Area

This zone includes the buildings located at the periphery of Tariqh-ElJdideh, facing Cola Highway. The zone acts as the main gate and exit of Tariq al-Jdideh, resulting a large volume of cars coming from Cola that interpret Boustany street as an entrance to the neighborhood. The area overlooks the Cola bridge and transportation hub with busses that link the city with the south, the mountains and some suburban neighborhood (Figure.42).



Figure 42. SBJ Street Entry Point Adjacent to Cola Highway and Transport Stations (Source: Author)

The zone has a visually distinctive commercial corridor- frequently with residential units above ground floor commercial space. It is very obvious that the character of this segment is shaped by its location nearby Cola Bridge highway. This is shown clearly in the type of retail found at the ground floor of the buildings along this segment. Most of shops along this segment are travel agencies and money exchanges that fulfill commuters 'needs. At the end of this stretch closing to Afif Tybi Street and BAU campus, there is a presence of food and notable sweet shops such as "Daouk Sweets".

Overlaying the age/condition and height of the buildings with land use shows that most of the building typologies within this zone were built between 1950 and 1975. The architectural characters of these buildings are: heights that ranges between 6 to 10 floors with the absence of underground parking, retail shops at ground level, concrete construction, minimal details and finally balconies that face the street. The buildings footprints generally occupy the entire plot, leaving little to no open space, this makes the residents interact with the street more. Interviewing people who live in this zone shows that some of them refer to their residence as the "Cola area" more than Tariq al-Jdideh, since they live at the neighborhood edge adjacent to Cola. In addition, the area resembles the noisy environment similarly to Cola environment. The Cola highway which was constructed beside residential and community areas, has inevitably caused major noise pollution problems to the adjacent neighborhood dwellers. People living along this segment express dissatisfaction from the noise levels during both the day and night.

2. *BAU*



Figure 43. Beirut Arab University map (Source: Author)

Historical Background

To serve the community and respond to the increasing population density in the area, the Barr wal Ihsan Islamic Association established in 1954 the Jamil Rawass School as another secondary school in the Tariq El Jdideh area next to the Sand Prison (Nahnoo,2015). During the presidency of Fouad Chehab, that school was turned into the Beirut Arab University and began operation in 1960, predating the Lebanese University.

Today, students from different areas in Lebanon come and study at BAU, as it is considered one of the key learning institutions in Lebanon. Beirut dwellers refer to SBJ Street as BAU street, since the street takes its identity from this significant landmark. The university shapes the surrounding physical environment that could be shown easily in the presence of street cafes surrounding the area, book shops, stationeries, and print centers. In addition, some of the apartments in residential buildings nearby the campus

act as dorms for the students especially who come from other parts of the country. Also, the university conducts from time to time cultural events that are held mainly in Jamal Abdul Nasser Hall and are open to the public. In addition, the BAU opens its *Musalla* (prayer hall) and engages the residents in Tariq al-Jdideh for the Jumaa pray each Friday. This is shown clearly when you see the number of prayers extend from the *Musalla* area to the outside sidewalk.

3. *Beirut Municipal Stadium*



Figure 44. Beirut Municipal Stadium (Source: Author)

Beirut Municipal Stadium is located at the heart of Tariq al-Jdideh and adjacent to Boustany Street. The Main Stadium gate and square lies on this street, reinforcing the identity of this stretch. It is considered a major city-scale landmark which gives identity not only to SBJ treet, but also to the whole Tariq al-Jdideh neighborhood and people in Beirut also refer to Tariq El-Jdideh as Malaab Baladi. The Stadium was first built in 1936 during the French mandate period. It remained the official stadium in Beirut until

the execution of Camille Shamoun Sports City at 1959. At the time of construction, the stadium was a significant part of the in the social practices of dwellers and groups in the neighborhood. Different groups and organizations in the area took to holding their activities and events at the stadium (Nahnoo, 2015). For example, The Makassed Islamic Association conducted a number of events there during the 1950s. Many holiday prayers were also held at the stadium, such as those for Eid al-Adha.

The stadium was rehabilitated after the Civil War, as a part of the post-war reconstruction phase of Beirut, led by Prime Minister Rafiq El-Hariri. Due to political issues and sectarian conflicts following the Rafiq El-Hariri assassination, football matches stopped being held and the Municipal Stadium and today it still does not function appropriately and is losing its vitality and role.

In 2009 and in attempts to revive the stadium, the Mayor of Beirut Municipality Bilal Hamad, decided to transform the nonfunctioning stadium to a “Cultural Modern Civic Center”. The project aimed to serve Tariq al-Jdideh residents and to solve the excessive traffic congestion in the neighborhood which is considered one of the most crowded neighborhoods in Beirut. As shown in figure 45, the project consists of multi-purpose hall, cafes, green and landscaped areas and playground that will be executed on the top of four underground parking levels accessed by the surrounding streets (public parking accommodates 2,500 cars).



Figure 45. Cultural Modern Civic Center proposed by Beirut Municipality at Beirut Municipal Stadium

Although the project program would have provided some missing amenities and fulfilled some of the neighborhood's needs, building 2,500 parking spaces under the stadium would have increased and slowed down the traffic within the neighborhood, especially at the parking entrances and exits which would have exacerbated the problem (Raja Njeim, 2015). In a campaign led by Nahnoo and the residents in Tariq al-Jdideh during the months of June and July 2015, Raja Njeim, who represented the *Association for the Protection of the Lebanese Heritage*, argued that the execution of this project would bring a large number of cars to the area and would thus not solve the existing problems of congestion in the neighborhood. Instead, this project would aggravate the problems, especially at peak hours. The residents also expressed that the stadium is a key landmark and contributes to creating the area's main identity. The stadium is also a fundamental part of the history of Tariq El-Jdideh. So, the residents protested against the municipality project, because the proposed project would have compromised the area's identity and heritage.

Today Beirut Municipal Stadium is not functioning appropriately and losing its importance since most of the football games are held in Camille Shamoun Sports City. Instead, part of the stadium is used as Lebanese army checkpoint and it functions only as a symbolic landmark of the neighborhood. Investigation the side of the stadium adjacent to SBJ Street shows that the garbage containers are placed at this side away from the residential buildings. In addition, some people supported by Future Movements use the spaces besides the concrete fence of the stadium to sell café express to the people who passes through the area (figure.46).



Figure 46. Spaces besides the concrete fence of the stadium act as café express

To strengthen the identity of the stadium, schools and volunteers' initiates artworks on the concrete fence of the stadium (Figure .47). The pictures include illustrations that represent the historical and cultural background and major landmarks of Lebanon, specifically Beirut City, accentuating the identity and the importance of the stadium as one of the major landmarks not only at Beirut city scale but also at the national scale of Lebanon.



Figure 47. Artworks initiated by Schools and Volunteers

4. Mufti Sheikh Hassan Khaled Square (Malaab Square)

Located at the mid of SBJ Street, the square is considered a major node in the neighborhood for the following reason: 1) It acts as a major entrance to Beirut Municipal Stadium, 2) it was named after the Martyr Mufti of the Republic of Lebanon Sheikh Hassan Khaled who was assassinated in 1991.



Figure 48. Mufti Sheikh Hassan Khaled Square (Source: Unknown)

Interviewing neighborhood dwellers shows that the square is a main square in Tariq al-Jdideh, as most community, religious and political events take place at this node. For example, most of Future Movements events happen at this square especial during the parliament elections. In addition, religious events such as “المولد النبوي” celebrations take place at this node where residents and groups recite the Quran, pray and distribute food for poor people and sweets for the passers.

People perceive this node as a main center and square of Tariq El-Jdideh. The node is very active during the day and night since it is surrounded by commercial store frontages of retail jewelry, different notable bank branches, as well as food and beverage stores that neighborhood scale. In 2010, the Mayor of Beirut Municipality Bilal Hamad, rehabilitated the square and executed a Clock similar to the one in Nejmeh Square at Beirut Downtown. The aim from this project was to establish an entrance for the “Cultural Modern Civic Center” project that was proposed by the Beirut Municipality in 2009 at the Beirut Municipal stadium in Tariq al-Jdideh. As a resident in Tariq al-Jdideh for more than twenty years, I still remember how residents in Tariq EL-Jdideh refused to remove the name of “Mufti Hassan Khaled” from the square. Adjacent to clock, they hang a big photo of the Mufti and his name, refusing the Mayor’s neglect and disregard to the original character and purposed of the square and its symbol.

5. Emam Ali Mosque

One of the oldest mosques in Beirut, the Emam Ali bin Abi Taleb mosque was founded in 1931. The mosque houses the headquarters of the Sunni Sharia Court, and from 1985 to 1996, it encompassed the headquarters of the Islamic Endowments before they were moved in 1996 to the current Dar al-Fatwa building located in the Aisha Bakkar neighborhood.

The Mosque has been a witness to many significant events such as the protests against the security decisions of February 6, 1984 as well as other political demonstrations against the Israeli attacks on Palestinian territories (Nahnoo,2015).



Figure 49. Emam Ali Mosque (Source: Author)

Today, Emam Ali Mosque is a main religious node in Tariq al-Jdideh where residents view it as equally important to Dar al Fatwa as Sunni Sharia. Every Friday, the space adjacent to the mosque is closed to cars in order to accommodate a large number of prayers for Jumaa Pray. In addition, many religious events such as “المولد النبوي” and “ليلة القدر” are held in the mosque. Analyzing the area surrounding the mosque, I observed that most of the retail shops are selling religious stuff such as clothes for veiled women, religion books, hajj wear and accessories. Both Beirut and Tariq el-Jdideh dwellers refer to the area surrounded the Mosque as the “Emam Ali Mosque Square”

6. *The Cemeteries Area*



Figure 50. Foreign and Islamic Cemeteries (Source: Author)

It combines the Foreign Armies Cemetery and Islamic Martyrs' Cemetery:

The cemeteries of the Foreign Armies in Tariq El-Jdideh date back to the period of the Second World War. The graves belong to soldiers from a number of different nationalities, such as French, Tunisian, Moroccan, Polish, British, Egyptian, and Indian soldiers. The land on which the cemetery was built is co-owned by the embassies of the countries whose soldiers are buried there, and every year, commemoration ceremonies are held by those embassies to remember their dead (Nahnoo,2015). The cemetery is a

well-kept green space that is lined by trees and both sides of the road that join the Khashikji mosque to Sabra and Ard Jalloul areas. .



Figure 51. Foreign Cemeteries (Source: AUB Planning Workshop 2016)

The neighborhood that surrounds the cemeteries area is characterized as a calm neighborhood since it lacks commercial frontages. Instead, medium to high class development that overlooks the cemeteries and Horsh Beirut were executed. People who live in the area facing cemeteries and Horsh Beirut consider their neighborhood belong to the Kaskas area not to Tariq al-Jdideh, since the Kaskas area houses medium to higher end residential developments.

7. *Horsh Beirut*



Figure 52. Horsh Beirut (Source: Author)

Located at the end of SBJ Street, the forest of Horsh Beirut was revitalized through a partnership between the Beirut municipality and that of the Ile de France. It park is less than 300,000 square meters and is a hilly terrain covered by mostly pine trees, as well as some oaks, Eurasian trees, olive trees and others. Despite the revitalization, the Horsh's gates remained closed to Lebanese visitors and it was only after a lot of advocacy and pressure that it reopened again to the public in 2015. The forest of the Horsh once covered over one million square meters of land and Tariq al-Jdideh was connected to it before the current Kaskas highway was constructed.



Figure 53. Horsh Beirut (Source: Unknown)

Today the highway acts as a major break that segregates the neighborhood from Horsh Beirut. Interviews with neighborhood dwellers show that in the past, the old dwellers used to spend their social practices at Horsh especially in Eid time. At that time, Horsh Beirut was a collective of memories not just a green land with trees.

Recently, Horsh Beirut area is threatened by a recent project led by the Beirut Municipality that intended to construct the Egyptian hospital. After a campaign led by NGOs and residents against this construction, the project was stopped. Lately, The Minister of interiors and Municipalities has allocated an area at Horsh to construct a new General Security building at Horsh Beirut (Figure 54).



Figure 54. Excavation at Horsh Beirut (Source: The Daily Star Lebanon,2018)

4. As Green Infrastructure

Green areas in SBJ Street are limited to the planting of some streets. The green areas are scattered randomly near the stretch which can be further divided into public and private open spaces.

- Public Open Spaces: Horsh Beirut, Beirut Municipal Stadium and Existing green trees along the street
- Private Open Spaces:
 - Foreign Cemeteries
 - Green Spaces in Beirut Arab University and existing schools
 - Vacant private plots
 - Islamic Cemeteries

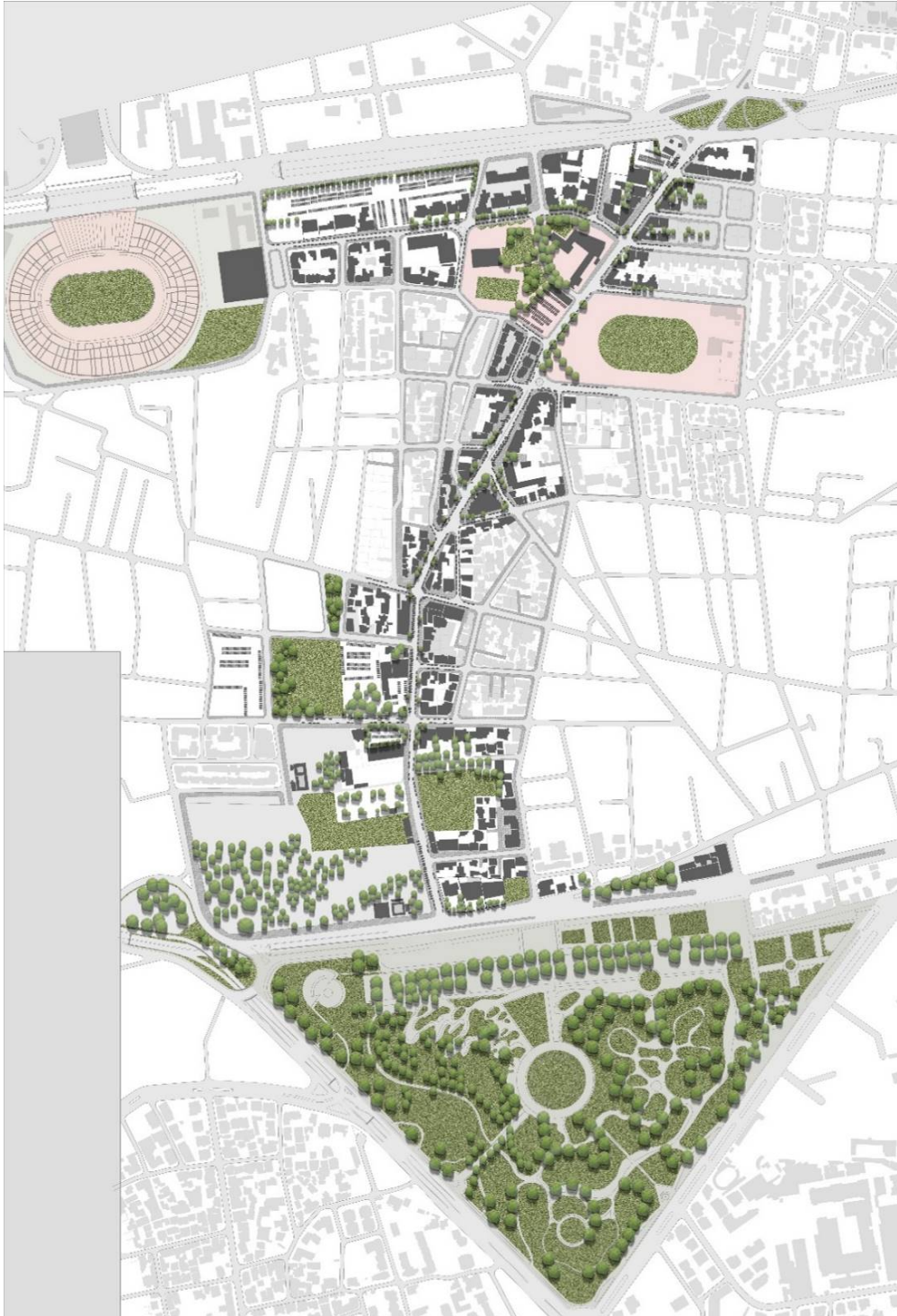


Figure 55. Existing Green Areas along SBJ Street (Source: Author)

E. Synthesis

Analyzing the three infrastructure layers along SBJ Street shows that the existing community and cultural landmarks generate different character zones:

- Transportation Hub: Cola Station
- Cultural Heritage
 - Beirut Arab University
 - Beirut Municipal Stadium
- Community Hub
 - Main square: Sheikh Hassan Khalid Square
 - Mosques: Al Emam Ali Mosque
- Commercial streets: Afif Al Tybi and Bayhoum Street

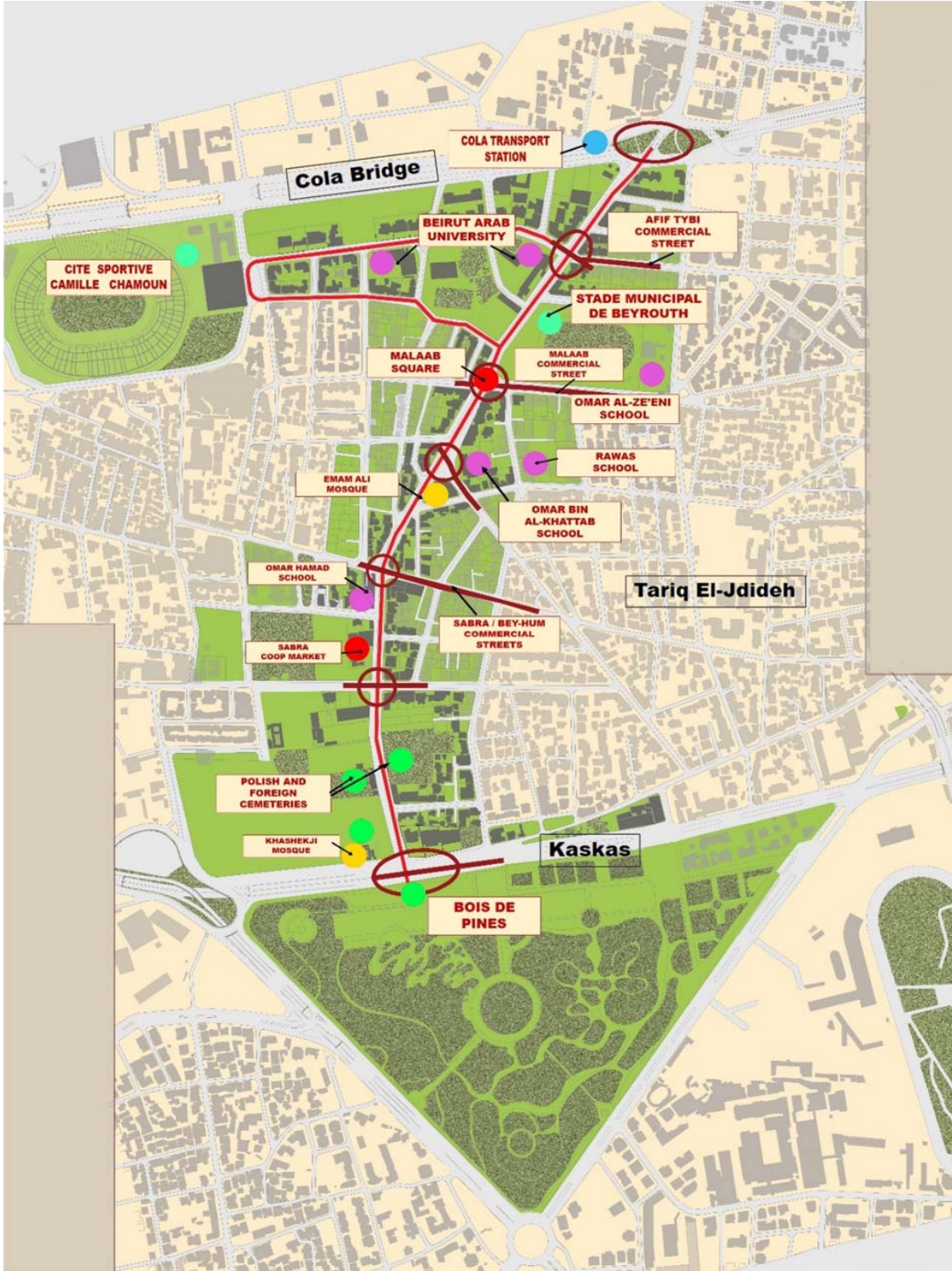


Figure 56. Different Hubs located along SBJ Street (Source: Author)

Synthesis Map

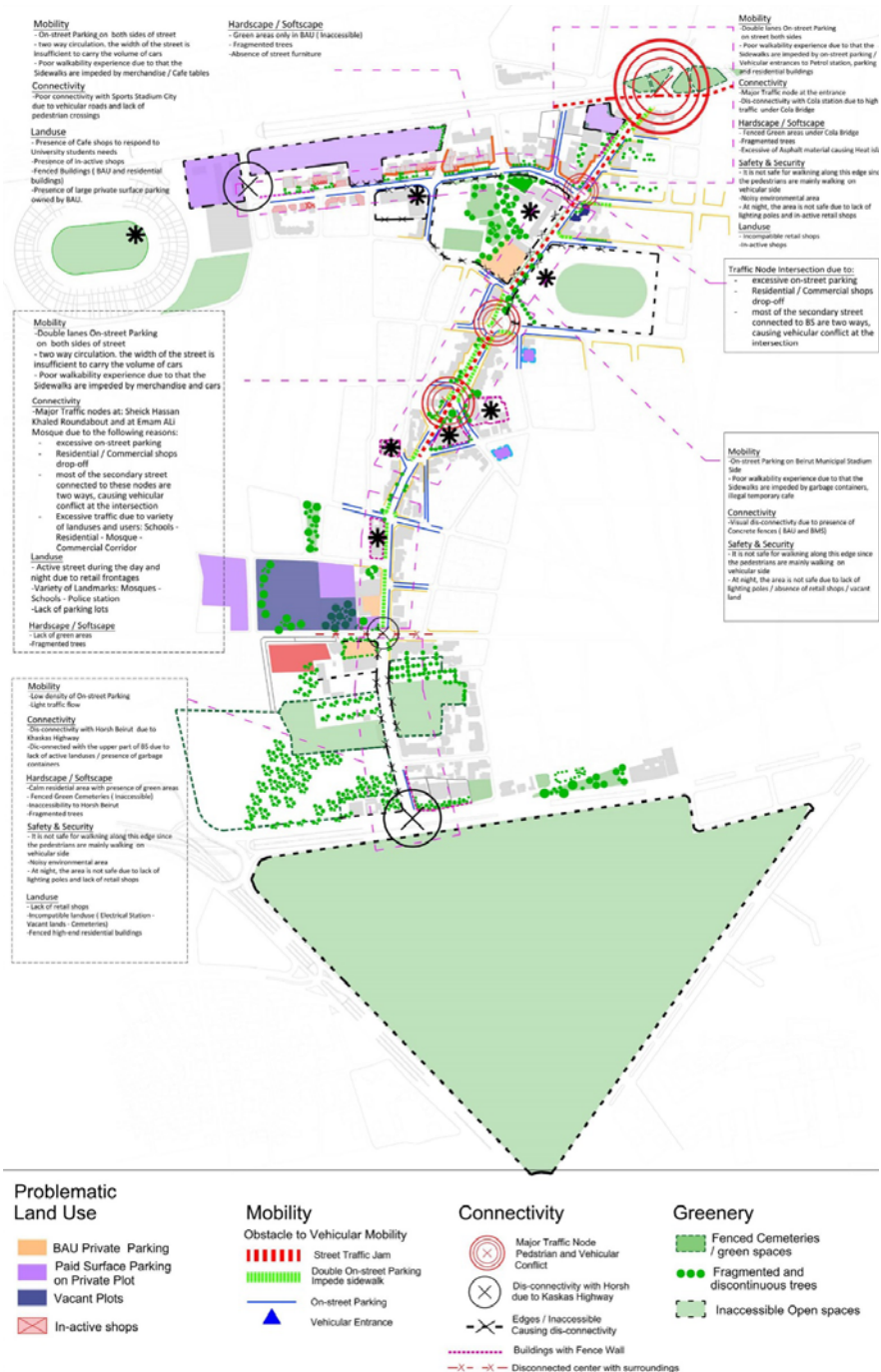


Figure 57. Synthesis of three infrastructure layers (Source: Author)

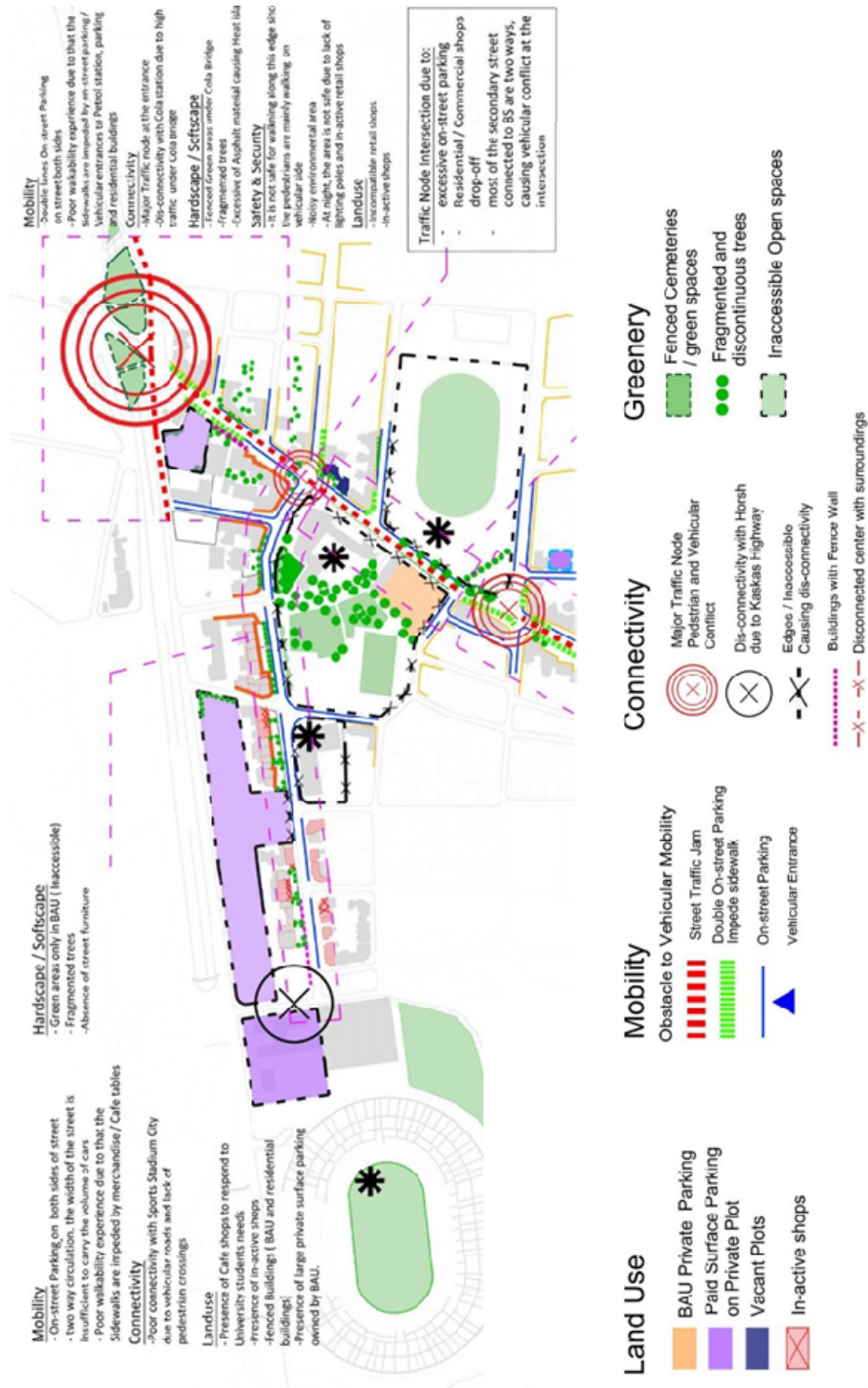


Figure 58. Cola / BAU and Beirut Municipal Stadium Synthesis map (Source: Author)

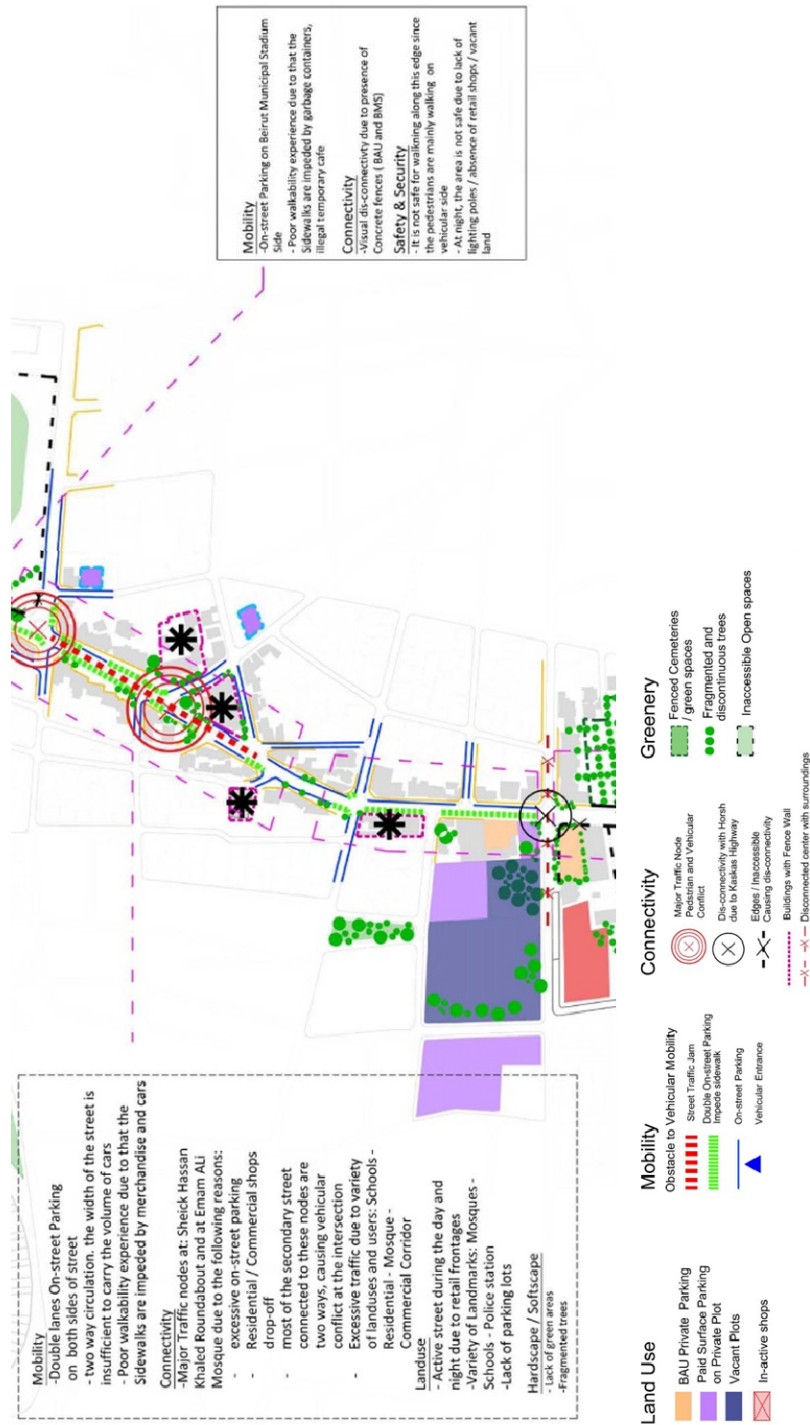


Figure 59. Emam Ali Mosque Area Synthesis map (Source: Author)



Figure 60. Cemeteries Area Synthesis map (Source: Author)

Mobility Layer Synthesis

	Connectivity	Vehicular	Pedestrian
Cola Zone	<ul style="list-style-type: none"> -Major Traffic node at the entrance -Dis-connectivity with Cola station due to high traffic volume at the gate of the SBJ Street 	<ul style="list-style-type: none"> -Double Lanes On-street Parking on street both sides 	<ul style="list-style-type: none"> - Poor walkability experience due to that the Sidewalks are impeded by on-street parking / Vehicular entrances to Petrol station, parking and residential buildings - It is not safe for walking along this edge since the pedestrians are mainly walking on vehicular side -Noisy environmental area - At night, area is not safe due to in-active lighting poles / in-active retail shops
BAU – Beirut Municipal Stadium Zone	<ul style="list-style-type: none"> -Visual dis-connectivity due to presence of Concrete fences (BAU and BMS) 	<ul style="list-style-type: none"> -On-street Parking on Beirut Municipal Stadium Side 	<ul style="list-style-type: none"> - Poor walkability experience due to that the Sidewalks are impeded by garbage containers, illegal temporary cafe -Visual dis-connectivity due to presence of Concrete fences (BAU and BMS) - It is not safe for walking along this edge since the pedestrians are mainly walking on vehicular side due to the reason that the sidewalks are impeded by temporary café, garbage containers, metal wire mesh used by Lebanese army at stadium entrance and adjacent sidewalk - At night, the area is not safe due to in-active lighting poles / absence of retail shops / vacant land
Emam Ali Mosque	<ul style="list-style-type: none"> Major Traffic nodes at: Sheick Hassan Khaled Roundabout and at Emam ALi Mosque due to the: - Excessive on-street parking - Residential / Commercial shops drop-off - Most of the secondary street connected to these nodes are two ways, causing vehicular conflict at the intersection - Excessive traffic 	<ul style="list-style-type: none"> -Double Lanes On-street Parking <u>on</u> both sides of street - two-way circulation. the width of the street is insufficient to carry the volume of cars 	<ul style="list-style-type: none"> - Poor walkability experience due to that the Sidewalks are impeded by merchandise and cars

	due to variety of land-uses and users: Schools / Residential / Mosque/ Commercial Corridor		
Cemeteries Zone	-Dis-connectivity with Horsh Beirut due to Kaskas Highway -Dis-connected with the upper part of SBJ Street due to lack of active landuses / presence of garbage containers	-Low density of On-street Parking -Light traffic flow	- Calm area comparing to the other zones - At night, the area is not safe due to in-active lighting poles and lack of retail shops

Table 3. Mobility Synthesis (Source: Author)

	Land-use
Cola	- Incompatible landuses (Transport stations, petrol station, residential, retail) -In-active shops Travelers Circulation
Emam Ali Mosque	- Active street during the day and night due to retail frontages -Variety of Landmarks: Mosques - Schools - Police station -Lack of parking lots -Dominated by Male Gender
Cemeteries Zone	- Lack of retail shops -Incompatible landuse (Residential, Electrical Station - Vacant lands - Cemeteries) -Fenced high-end residential buildings -Presence of jogging at morning

Table 4. Social Synthesis (Source: Author)

Cola	- Fenced Green areas under Cola Bridge -Fragmented trees -Excessive of Asphalt material causing Heat island
BAU	- Green areas only in BAU (Inaccessible to public) - Fragmented trees -Absence of street furniture
Beirut Municipal Stadium Emam Ali Mosque	- Fragmented trees on sidewalk - Absence of street furniture
Cemeteries Zone	-Calm residential area with presence of green patches - Fenced Green Cemeteries (Inaccessible) -Inaccessibility to Horsh Beirut -Fragmented trees at sidewalk

Table 5. Green Synthesis (Source: Author)

CHAPTER V

URBAN DESIGN INTERVENTION

A. Strategy

Investigating BSJ Street provides a good understanding of the urban structure, mobility patterns and social practices in the neighborhood. The study shows how dwellers are attached to their neighborhood through the existing landmarks that give Tariq El-Jdideh its unique identity. These landmarks generate different character zones along Boustany Street, creating different spatial experiences for users and visitors who use this street in their daily basis. The study also reveals there is a conflict between vehicular and pedestrian motilities that affects the walkability experience of the street and hence, hinders its identity.

Through this research, I am able to take a renewed look at the research objectives and find out how to accentuate the identity of the street through enhancing connectivity, walkability and environmental quality of public spaces within a dense urban neighborhood. This will be done through enhancing walkability along SBJ Street through adopting urban greening strategies. This chapter thus defines the resources and strategies that will help introduce a soft mobility street along with their design guidelines.

1. Boustany Street as a Soft Pedestrian Street

a. Design Objectives

A thorough analysis of Boustany Street's physical structure, spatial practices and patterns of movements shows that the street has a significant potential and considerable assets to adopt soft mobility concept, which would promote walking as a mode of transport. The street acts as a main artery of Tariq al-Jdideh neighborhood, running at the heart of the neighborhood and is characterized by the presence of substantial assets such as landmarks and nodes, a social infrastructure, a heterogeneity of land uses and a diversity of user-groups. As such, these landmarks, and the assets around them, will act as catalysts and hubs that would activate the pedestrian experience along Boustany Street and making walking a more pleasurable activity.

The outcomes of the analysis of the transport, social and green infrastructure layers of the Boustany Street show that the stretch hosts three different experiences generated from the existing landmarks (Figure.61):

- 1) Transportation Zone: includes the area adjacent to Cola bridge and transport station.
- 2) Social and Cultural Zones:
 - a. BAU and Beirut Municipal Stadium
 - b. Emam Ali Mosque area
- 3) Green Zone: includes the areas adjacent to green cemeteries and Horsh Beirut

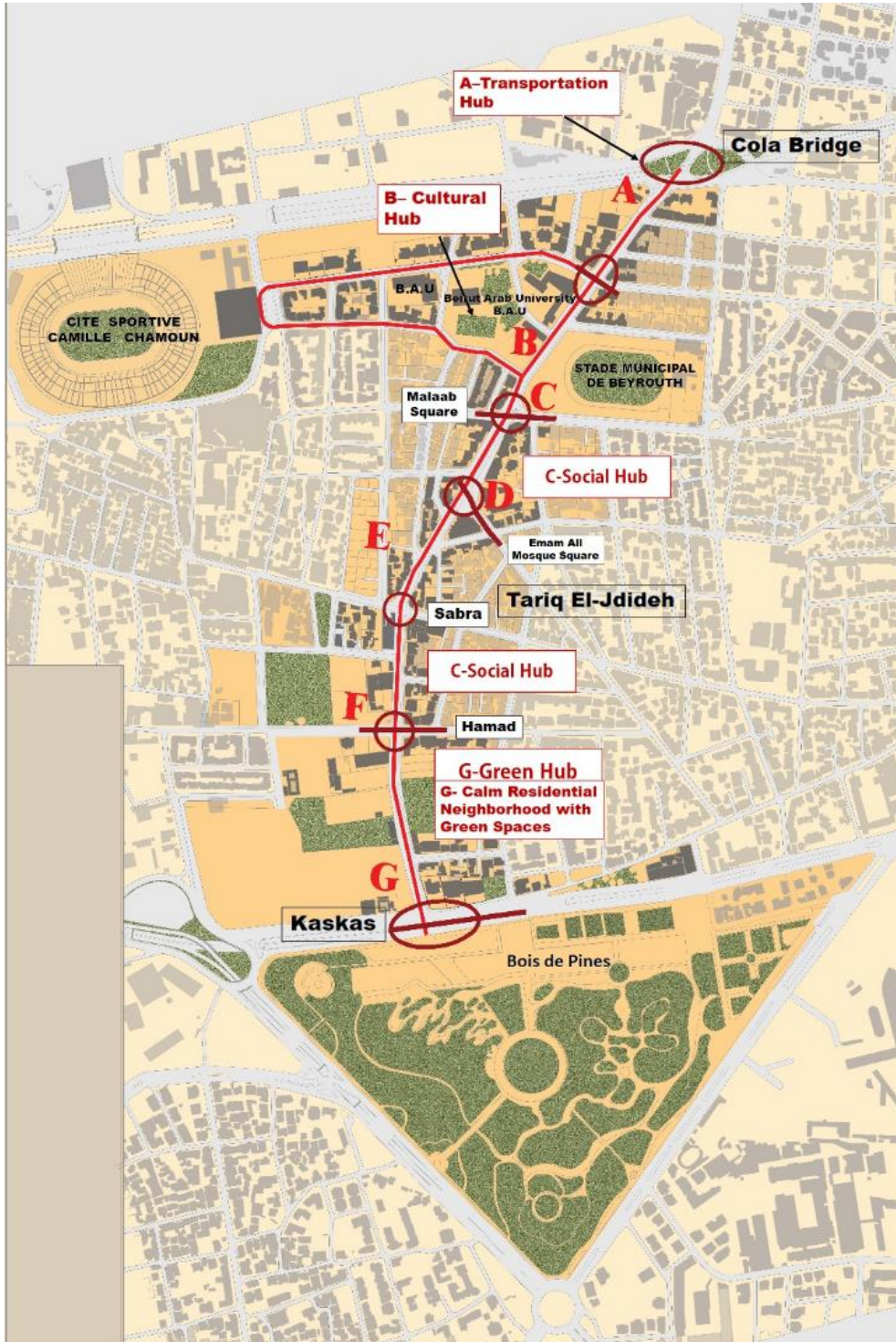


Figure 61. SBJ Street Character Zones (Source: Author)

Based on this analysis as well as the analysis of the innovative approach used in “The Liaison Douce Study”, I will elaborate on a series of interventions along the main axis of the neighborhood, SBJ Street. These interventions will primarily promote pedestrian activity and soft mobility options to create a green soft link between Horsh Beirut and the Cola transport station. This link will be able to accommodate private vehicles, pedestrians, and cyclists altogether, alongside existing landmarks and green open spaces.

The following project’s main objectives are extracted from the main objectives of Liaison Douce study:

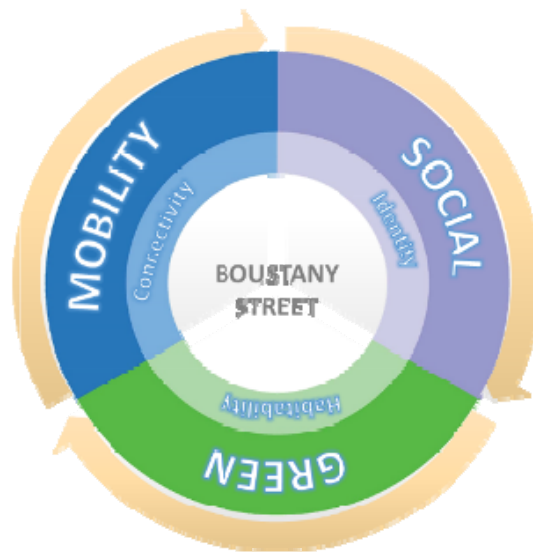


Figure 62. Design Objectives (Source: Author)

i. Mobility

- **Connectivity:** link Cola transport zone to Horsh Beirut, through proposing a green pedestrian link throughout the neighborhood.

- Promoting alternative modes of mobility and transport through
 - Enhancing mobility system by removing on-street parking and encouraging the use of soft mobility (Cycling)
 - through ensuring a more equitable distribution of the use of public space between pedestrians, cyclists and vehicles.
- Seeking to regain the urban space from private cars in favor of green spaces, public transportation, and walking, cycling and recreational use
- Enhancing Vehicular Circulation: Changes in traffic direction
- Allowing street parking on one side of street where commercial shops (using park meters)

ii. Social Strategies

- **Landmarks:** connecting the neighborhood's major landmarks and nodes; through rethinking space in front of Mosques, schools and cemeteries according to current and expected practices and articulate these squares and gardens around the course of the soft link
- **Community:** Qualifying and rebranding the image of Tariq El-Jdideh's public spaces; and stitching the urban and social fabric along the Boustany Street through supporting existing social practices and involving the different communities in the design process

- **Identity through Heritage Landscape:** Preserving the memory dimension of the urban landscape of Boustany Street, though using landscape elements that respect space memory
- Enhancing the program of public spaces by injecting variety of activities (spaces for students, women, elderly, safe play spaces for children, waiting areas for travelers at Cola zone)

iii. Green Strategies

- Enhance pedestrian / social experience through Improving quality of life of public spaces (mainly streets and sidewalks) to make neighborhood feel safe, comfortable, and lively
- Requalifying the image and use of public space, through creating public places of high quality, recreational areas, cultural practices, taking into consideration the existing social practices, the criteria of security and functionality
- Create a green lung at Tariq al-Jdideh neighborhood scale through planting the public space, along the route and in adjacent pockets
- Creating different hierarchy of green network to connect exiting public spaces / landmarks / social buildings

PROBLEMATIC

Boustany Street
Current Situation



STRATEGY

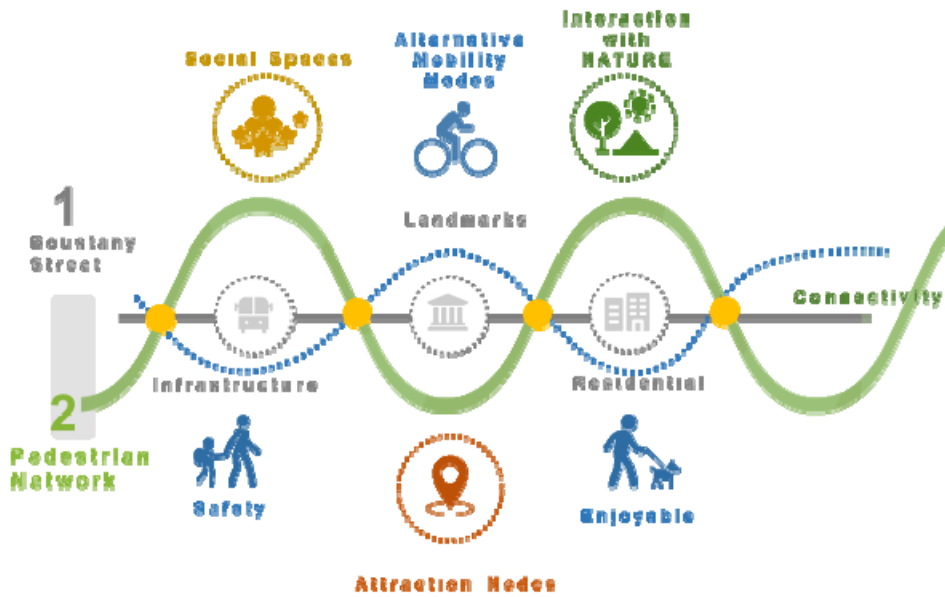


Figure 63. SBJ Street Vision (Source: Author)

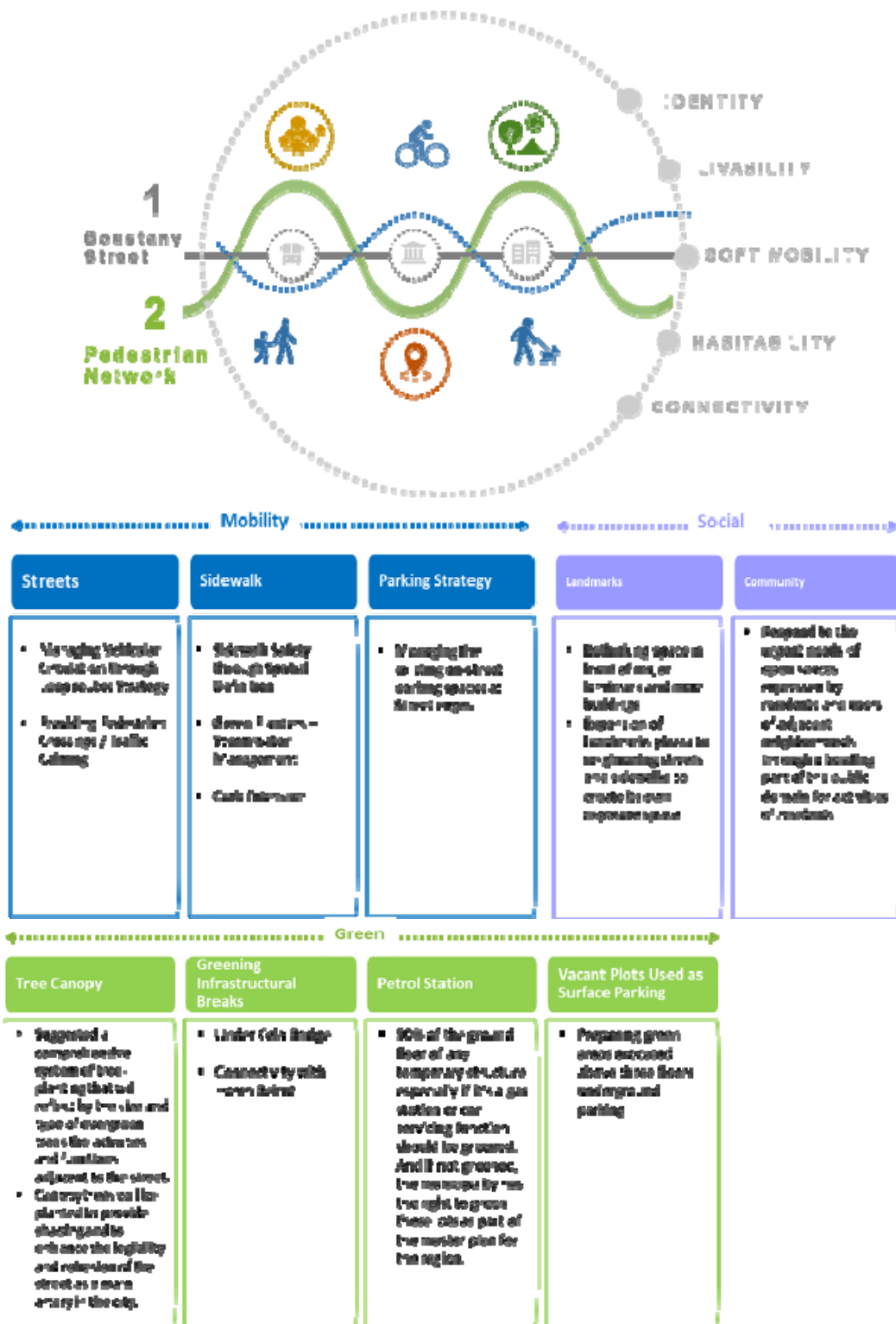


Figure 64. SBJ Street Design Pillars (Source: Author)

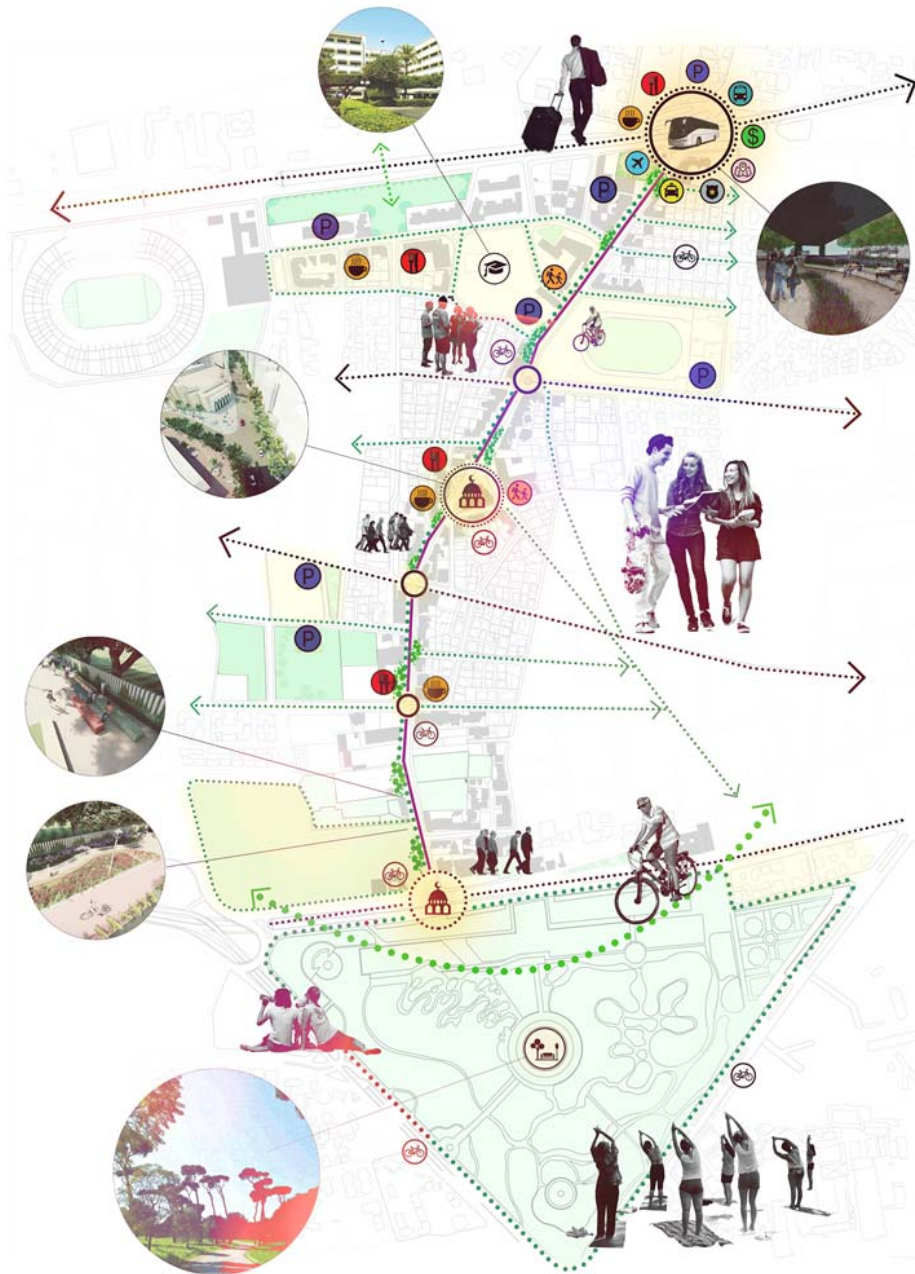


Figure 65. SBJ Street (Soft Mobility / Variety of Hubs / Different Programs for Public Spaces) (Source: Author)

Design Strategies

I-Mobility
Public Domain The public domain in the study area comprises the following: <ul style="list-style-type: none">• The 4 lanes street stretching from Cola Bridge to Khashokji Mosque (two lanes are dedicated to circulation, and the others are for on-street parking)• The sidewalks demarcating the street from both sides;• Beirut Municipal Stadium
A. Street
ii- Street Strategies a) Managing the existing on-street parking spaces at Street edges - Residential Buildings: provide parking spaces for the residential buildings at a close parking zone with reasonable/subsidized prices



Figure 66. Parking Strategy (Source: Author)

- **Besides Social Land Use:** investigating the street shows that the BAU prohibited parking on the BS side to allow for a safe drop off for its users and to reduce congestion level. Instead of parking spaces, flower boxes are located at the edge of the street to prohibit cars from parking.

This strategy could be replicated to prohibit on-street parking besides other the social buildings like schools and mosques and to reduce the traffic congestion especially at the peak hours. The users, could park on close parking areas located at a walking distance.



- **Commercial Shops:** Installing metered side-parking where necessary around retail clusters on the ground floor will eventually decongest the street and allow for more functional vehicular circulation by freeing a lane on either side of the strip from double parking.

B. Providing Pedestrian Crossings / Traffic Calming

Improve pedestrian circulation space in order to encourage walking trips by providing pedestrian crossings at main intersections to ensure safe pedestrian crossing from one sidewalk to another. This strategy could be achieved through using Highlighted colors for pedestrian crossings and elevating them from the street level

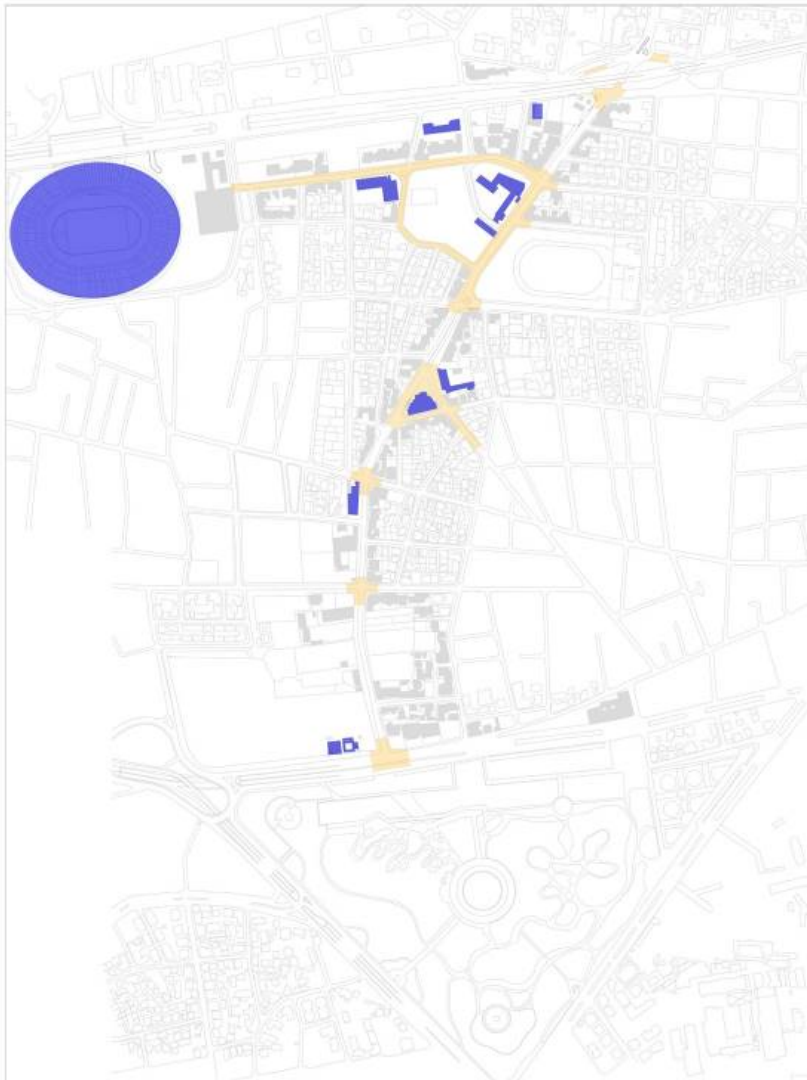


Figure 67. Applying traffic calming at major nodes and landmarks (Source: Author)

Private Development

The existing private domain in the intervention area ‘comprises of empty lots used as a surface parking, building setbacks, and petrol station. Most of the existing empty lots are now used as public parking facilities due to the prominent need of parking spaces on the strip.

Planning Tool

1-Expropriation

Expropriation is the tool that I am going to use in my design intervention. This tool allows public authorities such as the municipality the right to acquire privately owned spaces. This tool is usually used for developing public roads and passages, where public authorities have the right to expropriate 25% of the lot being trespassed. "If Public authorities plan to implement roads, passageways, or public spaces in a certain estate, they have the right to expropriate up to 25% of the land without paying any compensation". This is stated in article 37, acquiring privately owned spaces for road planning interventions.

2-Land pooling and readjustments

“Public authorities are entitled to conduct a land pooling and re-subdivision project (وفرز ضمّ), particularly when the current geometry and organization of the lots don’t allow for a planning intervention. Private agents are also able to apply for the initiation of a land pooling and re-subdivision project, which is approved pending it fits within the rules of environmental protection, etc. Private lot subdivisions are mandated to secure a set of services, including roads and parks,

which are stipulated by public authorities and can go up to 25% of the surface being subdivided” (DGU)

Strategies

Greening of Surface Parking on Private Land

BAU Parking

BAU committee, once expressed their vision in transforming their surface parking plots into a green park to be executed on three underground parking floors. The committee argues that the campus needs more green spaces to serve the different needs for their students. Currently, BAU campus encompasses two surface parking spaces: the first one adjacent to BS street, and the second one located adjacent to Sports City Stadium.

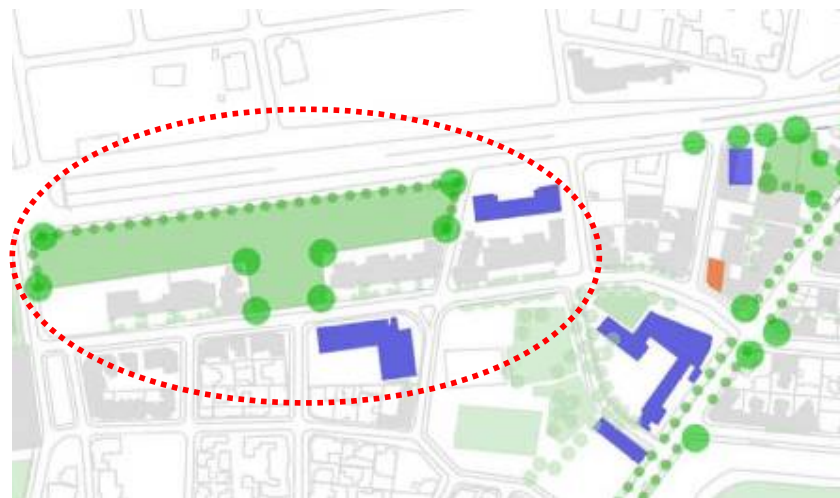


Figure 68. BAU Surface parking (Source: Author)

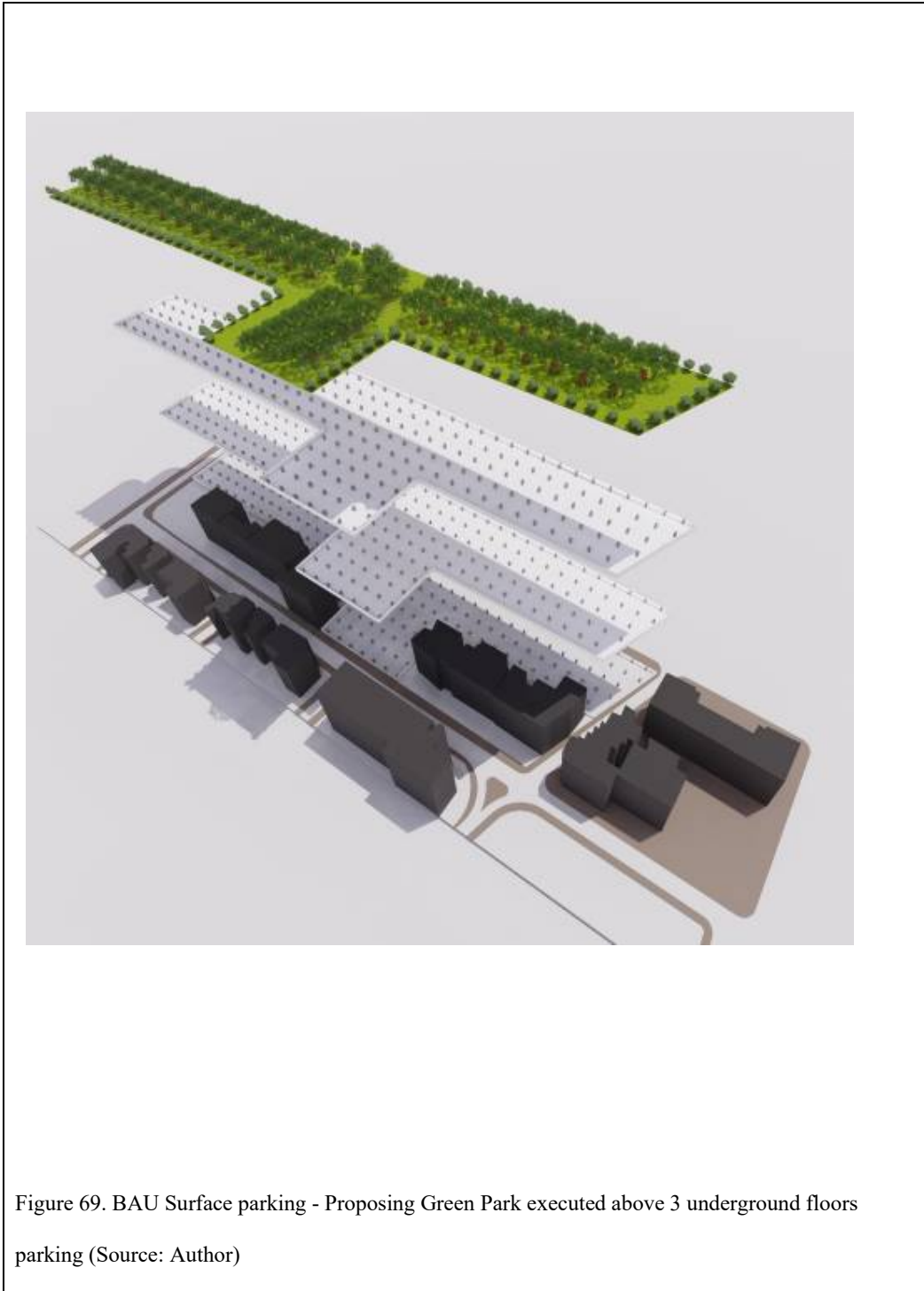


Figure 69. BAU Surface parking - Proposing Green Park executed above 3 underground floors parking (Source: Author)

Stakeholders / Management and Implementation

Municipality of Beirut

The municipality of Beirut is the main authority that has the right to manage and implement such project, and to guarantee its maintenance. In this research, I am assuming that the Municipality of Beirut will be aware of the benefits of improving walkability in BS and would accept to implement the project (network of open spaces), since it has the power to apply it legally. The municipality has shown interest in similar project after conducting a similar study with Dr. Habib Debs of the project of the l'iaison douce. As such, in my project, I am assuming that the Municipality of Beirut will tackle the issues related to street enhancement strategies such as widening sidewalks, adding pedestrian crossings and traffic calming, managing landscape and hardscape material. In addition, The Municipality of Beirut has the right to buy lands for the benefit of the city and its dwellers. My research shows that there are a several empty lots close to SBJ Street used as surface parking. The Municipality of Beirut can buy some of these lands and transform them into green lands executed above three underground parking floors with reasonable/subsidized prices.

Non-Profit Organizations

Nahnoo, would be helpful partners since they conduct several workshops and campaigns for Tariq El-Jdideh. They would provide expertise and volunteers for project planning and implementation.

Educational Facilities

Beirut Arab University & Schools

The BAU is a notable educational institution at Tariq El-Jdideh that could also provide support for such project, especially through research and academic resources that would solve neighborhood problems such as noise pollution, increasing density, environmental problems, vehicular traffic and circulation and lack of greening and open spaces.

Tariq al-Jdideh Community

Residents as they are key stakeholder, since they would provide key insight for executing the project. Since the Municipality of Beirut will lead this project, the municipality should approach neighborhood dwellers through involving the residents into this process by holding community meetings with them to gather their needs issues which would in turn involve them in the planning and design of the spaces. Similar to Liaison Douce case study, the study should:

- respond to the urgent needs of open spaces expressed by residents and users
- Conduct surveys with the residents involved in the project, to understand their needs, and their vision of the desired space and their perception of their neighborhood

B. Detailed Design Intervention

From the character zones map in figure 61, three character zones A, D and G are selected in this section as main intervention areas, namely: *Mobility Zone* adjacent to Cola station, *Social Zone* around the Emam Ali Mosque and schools' area, and 3) *Green Zone*: areas adjacent to cemeteries and Horsh Beirut.

Each of these zones has potential to provide a variety of functions and services to different users. The first zone is the Transportation Zone and is located adjacent to Cola bridge and transport hub which is a major through traffic of Beirut city that accommodates a large volume of cars.

The second zone is the Social Zone which contains the schools, the Emam Ali Mosque area. This zone is considered as a core of the community at both scales: Tariq al-Jdideh neighborhood.

The third area is the zone that includes cemeteries and is adjacent to Horsh Beirut which I will refer to as the Green zone. This will be characterized as being a calm area since it houses residential buildings, green cemeteries, a fruit and vegetable market, and vacant lands which could be opportunistic areas for green open spaces.

These interventions will be examined under the same conceptual framework discussed in the previous chapter. The three interventions are representing the three urban issues highlighted in framework: Mobility Infrastructure, Social Infrastructure, and Green Infrastructure (Table 6)

		QUALITIES			
	Levels	Connectivity Traffic and parking generators (nodes) and connections (inter/inner/access roads) Parking Vehicular//pedestrian conflict Soft mobility	Walkability Improving Comfort, convenience attractiveness	Legibility Enhancing Identity features	Habitability or re-naturalization: The interaction between urbanity and nature
Mobility Infrastructure: Vehicular, Parking, Pedestrian	Cola	High	medium	medium	low
		Y			
Social Infrastructure:	Imam Ali	medium	high	High	Medium
				Y	
Green Infrastructure	Cemeteries Zone	Low	high	medium	High
		Y			Y

Table 6. Selected Character Zones (Source: Author)

1. Proposed Design Strategy for Transportation Zone

As shown in figure 70, the transportation zone includes the first stretch of BS adjacent to Cola Bridge. The area also faces Cola transportation station where many vans and buses are parked at the peripheries of the Tariq al-Jdideh neighborhood. Accordingly, the shops at this stretch are mainly travel agencies and currency exchange to respond to travelers' needs. The area houses surface parking and petrol station that serve buses and vans.

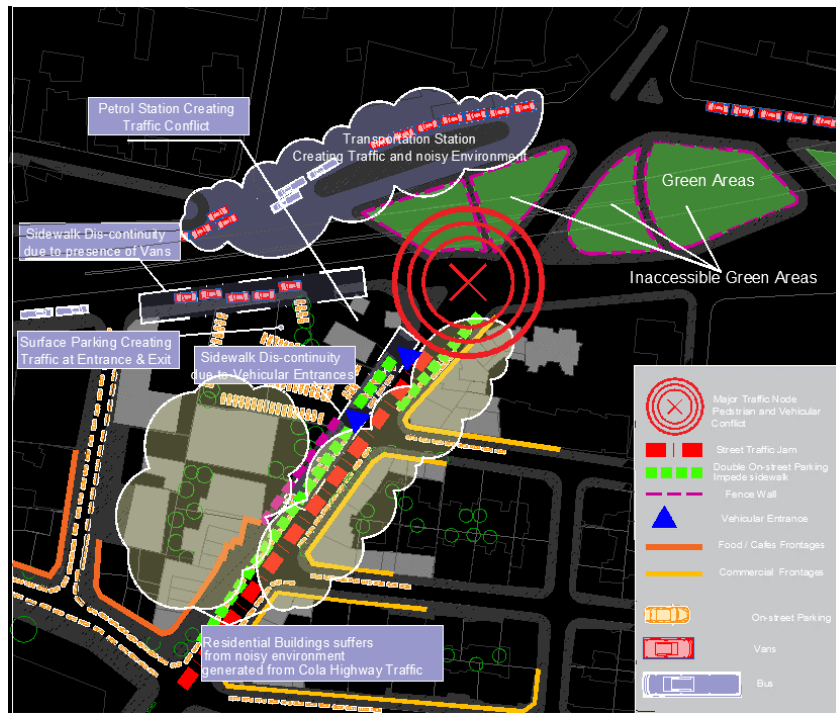


Figure 70. Cola Area Synthesis Map (Source: Author)

The zone houses:

Transport Stops

- Major transport stops for cities in South of Lebanon. This station requires large waiting areas. Most of the travelers use sidewalk to wait and use these buses
- Minor Transport stops for the cities in Mountain and North: Most of the buses for this station are parked at both sides of the street, creating vehicular circulation conflict with the other cars especially when they depart and arrive from and to their stops.

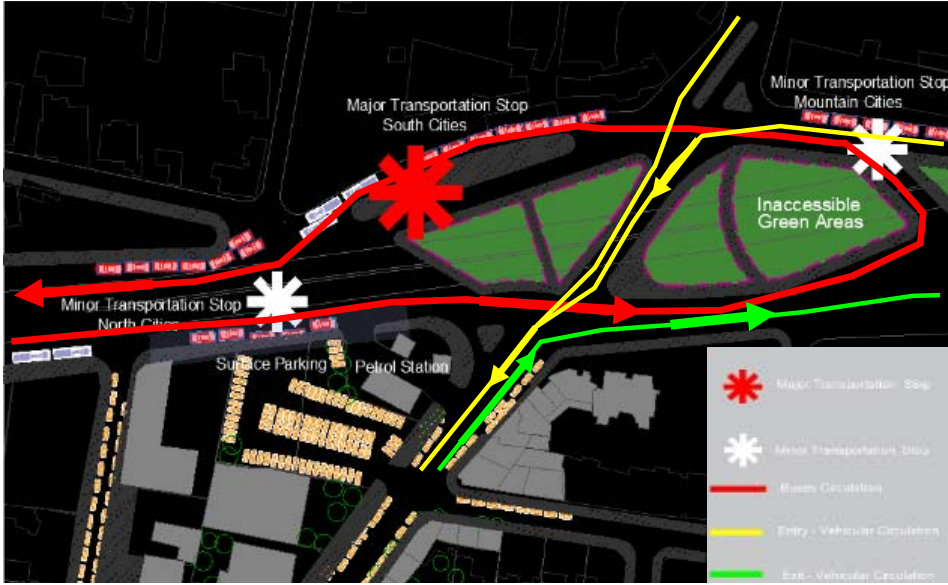


Figure 71. Conflict between Buses Circulation / Vehicular / Pedestrians (Source: Author)

Surface Parking

- Located at Cola highway edge
- serving the adjacent residential buildings
- creating vehicular conflict at its entry and exit points

Sinno Petrol Station

- Located at the corner of Boustany Street
- Serving Tariq al-Jdideh dwellers in addition to Vans that depart to North areas
- Creating a vehicular conflict at its entry and exit

Residential Buildings facing Cola Highway

- the dwellers suffer from the noisy and polluted environment generated from large volume of cars in Cola Highway
- the adjacent sidewalks are impeded by doubled on-street parking, since most of these buildings don't include parking areas

General Problematic

- Incompatibility of Landuses Residential buildings with transport zone
- Vehicular and circulation conflict created between pedestrians, cars that enter and exit Tariq al-Jdideh, busses of different stations, petrol station, and surface parking



Figure 72. Strategy (Source: Author)

The intervention will:

- Enhance the connectivity between SBJ Street and Cola station through proposing:
 - 1- Traffic calming area to reduce traffic conflict at this node
 - 2- Removing Vans and buses that impede the sidewalks.
 - 3- Creating protected environment for travelers through using spaces under Cola bridge,
- Improve environment quality for the residential buildings
 - 1- Adding canopy trees at the peripheries of the Tariq al-Jdideh and under Cola bridge

- Enhance the walkability experience
 - 1- Enhance sidewalk quality by removing on-street parking along this edge
 - 2- Adding street furniture and green elements
 - 3- The street will also become planted with trees that will provide shade and enclosure, as well as a sense of place.

- Crafting green spaces to reduce heat island of the area
 - 1- Instead of surface parking, proposing green areas above three floors underground parking floors to accommodate on-street parking at this stretch.
 - 2- Using permeable pavement
 - 3- Greening Petrol Station

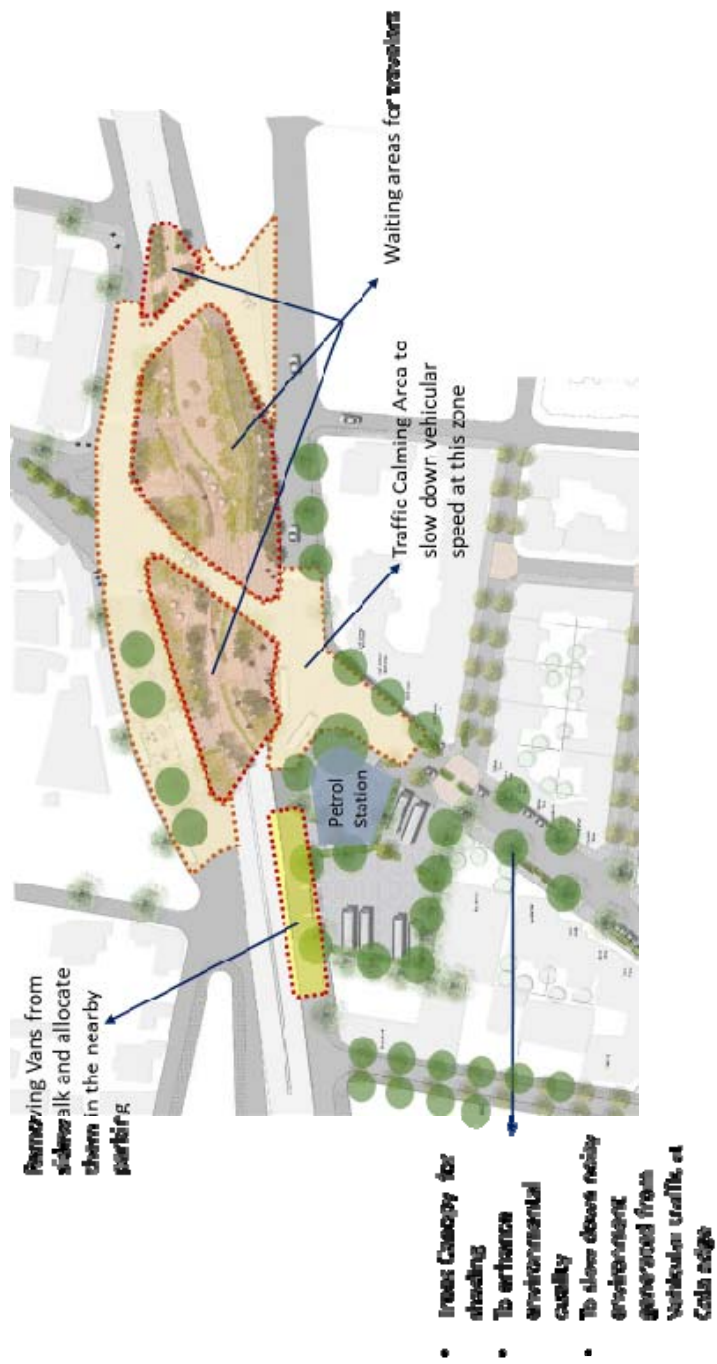


Figure 73. Cola Area Design Intervention Strategy (Source: Author)



Figure 74. Cola Area Design Intervention Strategy (Source: Author)



Figure 75. Cola Area Design Intervention – Creating Waiting Areas under Cola bridge (Source: Author)

Hardscape / Softscape Selection

HARDSCAPE PALETTE

- Permeable interlocking pavers
- Design flexibility
- Infiltration, detention, and treatment of stormwater runoff
- Flattened curbs
- Large pedestrian path of travel
- Widened sidewalks allow ample room for restaurant patios

SIDEWALKS
Permeable Interlocking Pavers

RAISED JUNCTIONS
Traffic Calming Pavers

SHARED STREETS
Permeable Concrete Pavers

UNDERBRIDGE PATHWAYS
Crushed Loose Gravel

Quercus virginiana
Southern live oak

- Tree
- Dense canopy
- Pollution tolerant
- Over 20m

Eriobotrya deflexa
Bronze loquat

- Tree
- Dense canopy
- Pollution tolerant
- Up to 5m

Sophora secundiflora
Texas mountain-laurel

- Tree
- Open canopy
- Pollution tolerant
- Up to 8m

Canna indica
"Purpureo" (Canna Lily)

- Shrub
- Spread up to 0.5m
- Border plant
- 1.5m to 3m

Liriope muscari
(Lily Turf)

- Ground cover
- Spread up to 0.5m
- Mass planting
- Less than 0.5m

Hedera helix
(English Ivy)

- Tree
- Medium texture
- Pollution tolerant
- Up to 15m

Tree Height Leaf Persistence: Evergreen Deciduous Sunlight needs: Full Part Shade Water needs: High Moderate Low

Figure 76. Cola Area – Selection of Material (Hardscape / Softscape) (Source: Author)

2. Social Zone

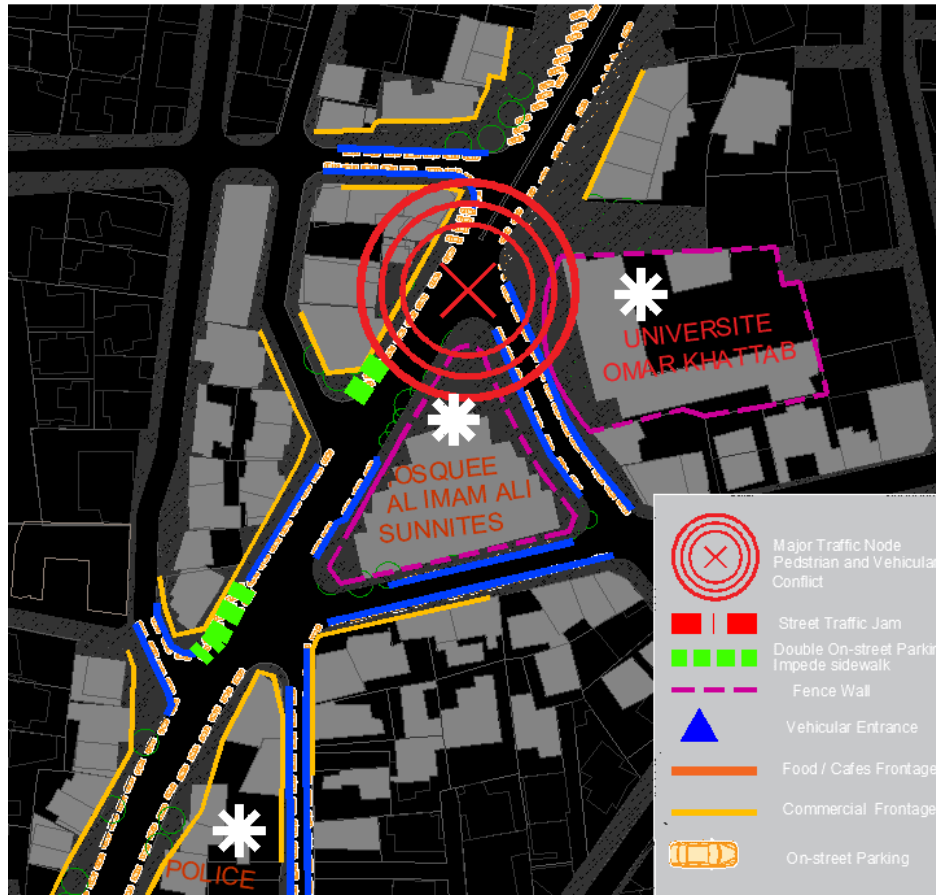


Figure 77. Emam Ali Mosque Zone –Synthesis map (Source: Author)

Mobility

- On-street Parking on both sides of street
- Most of the secondary street connected to this node are two ways, causing vehicular conflict at the intersection
- the width of the street is insufficient to carry the volume of cars

- Poor walkability experience due to that the Sidewalks are impeded by merchandise and cars

-

Connectivity

Major Traffic nodes at Emam ALi Mosque due to the:

- Excessive on-street parking
- Residential / Commercial shops drop-off
- Excessive traffic due to variety of land-uses and users: Schools - Residential - Mosque - Commercial Corridor

Land-use

- Active street during the day and night due to retail frontages
- Social activities at this zone is very active all the day.
- Variety of Landmarks: Mosques - Schools - Police station
- Lack of parking lots

Hardscape / Soft-scape

- Lack of green areas
- Fragmented trees

Identity

- Even though Emam Ali Mosques has a strong identity at neighborhood scale and city scale, the mosque is bounded by steel fence that act as a barrier and screen for the mosque, creating visual discontinuity for the street users.

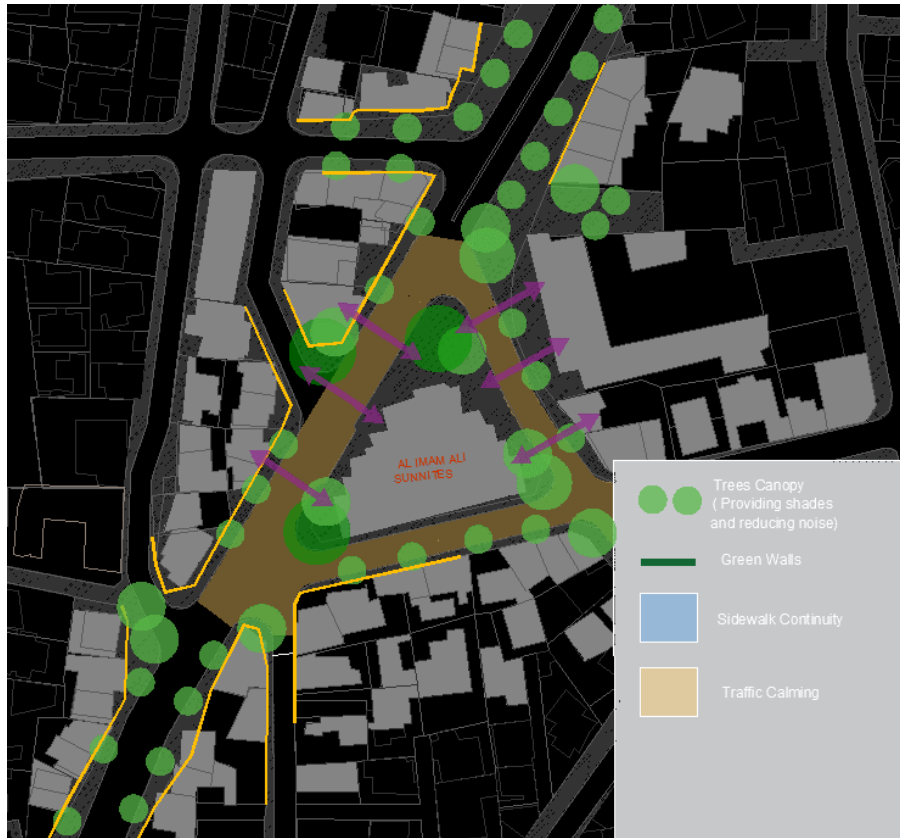


Figure 78. Social Zone –Strategy map (Source: Author)

Accentuating Mosque Identity

- Removing mosque fence to ensure visual continuity for street users
- The mosque ground pavement will be extended to external sidewalk to create its own plaza to carry the religious activities and to accentuate Mosque identity. The plaza will act also as a traffic calming to slow down vehicular speed at this zone.

Omar Bin Khattab School

- Freeing on-street parking facing school

- Creating a pleasant areas for parents and children

Mobility

- Removing on-street parking to nearby parking area
- Installing park meter besides retail shops

Landscape / Hardscape

- Trees Canopy to create shading areas for social activities and for different users.
- Bio swale to manage and collect storm water
- Implement street furniture such as benches

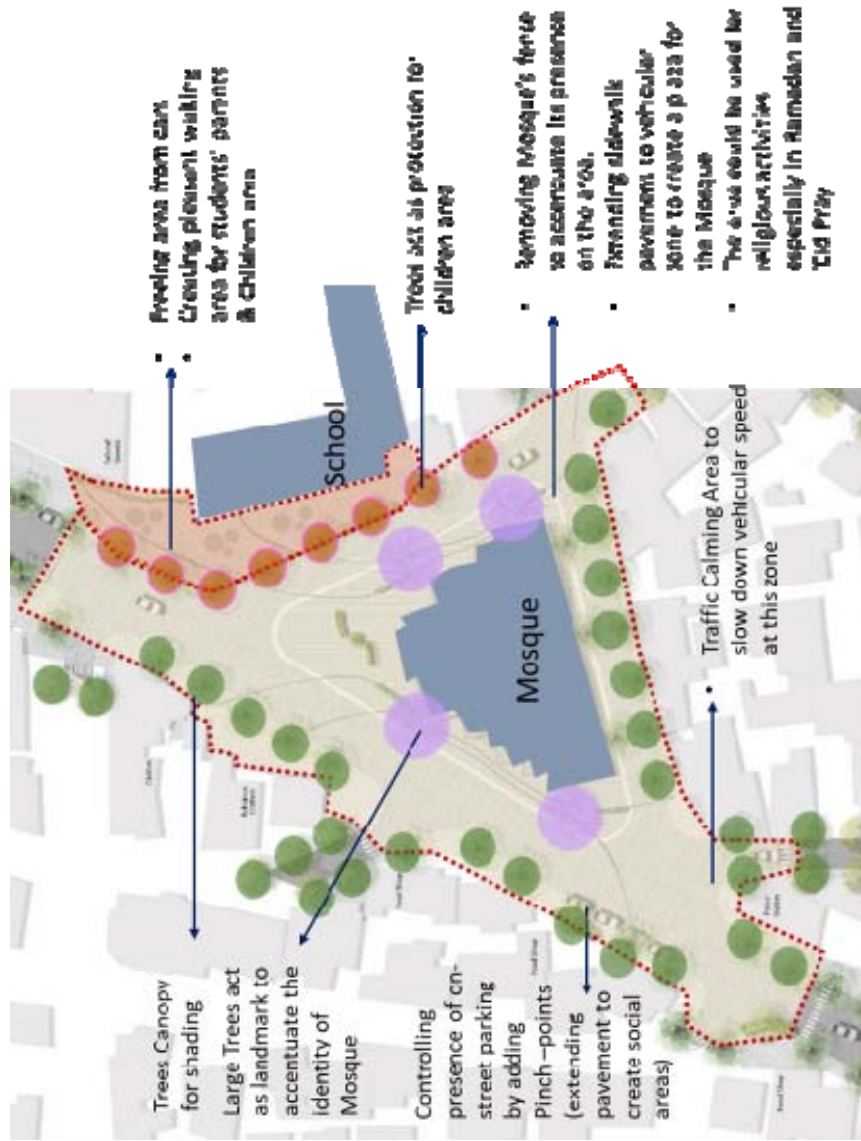


Figure 79. Social Zone Design Intervention Strategy (Source: Author)



Figure 80. Social Zone Design Intervention Rendered Plan (Source: Author)



Figure 81. Social Zone Design Intervention Rendered Perspectives (Source: Author)

3. Green Zone

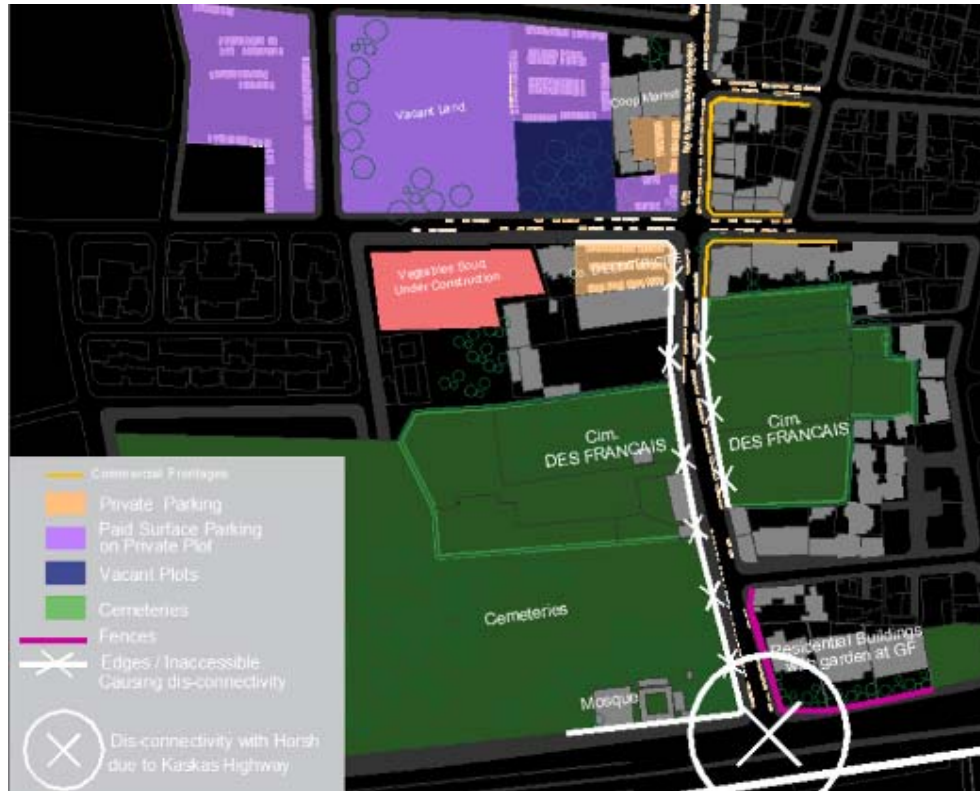


Figure 83. Cemeteries Zone –Synthesis map (Source: Author)

Mobility

-Low density of On-street Parking

-Light traffic flow

Connectivity

-Dis-connectivity with Horsh Beirut due to Kaskas Highway

-Disconnected with the upper part of BS due to lack of active land-uses / presence of garbage containers

Green

- Calm residential area with presence of green areas
- Fenced Green Cemeteries (Inaccessible)
- Inaccessibility to Horsh Beirut
- Fragmented trees

Safety & Security

- It is not safe for walking along this edge since the pedestrians are mainly walking on vehicular side
- Noisy environmental area
- At night, the area is not safe due to lack of lighting poles and lack of retail shops

Landuse

- Lack of retail shops
- Incompatible landuse (Electrical Station - Vacant lands - Cemeteries)
- Fenced high-end residential buildings

Strategy

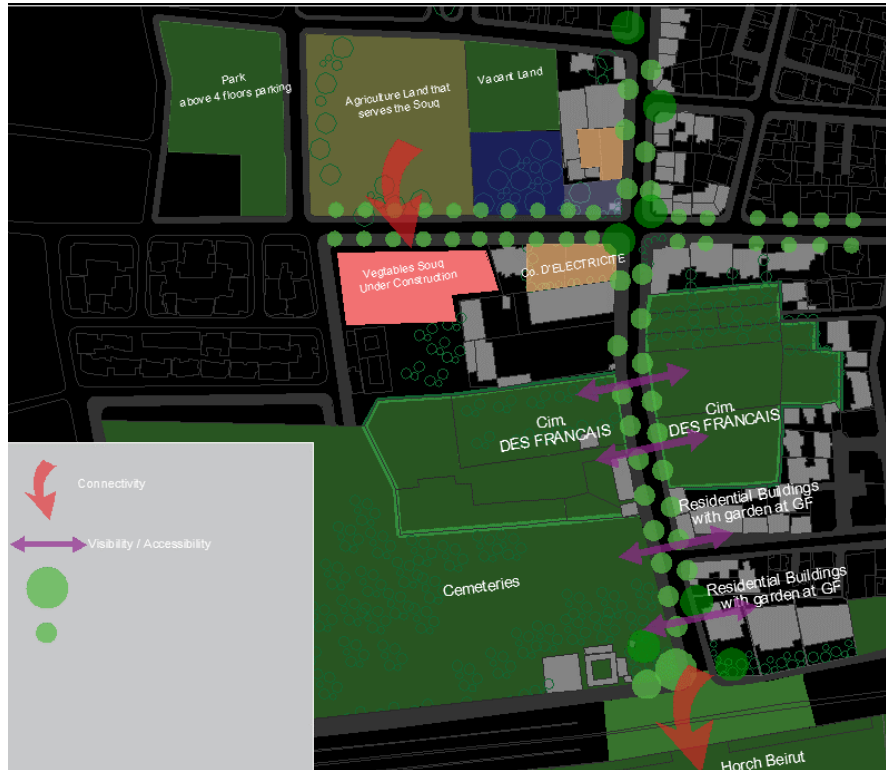


Figure 84. Green Zone –Strategy map (Source: Author)

Sidewalk

- Widening sidewalk from 4.5m to 9m, keeping 8m for vehicular circulation (two –ways). As such, the widening of sidewalk will provide variety of activities for different genders and ages (Liaison Douce): Playground for children / Seating areas for adults with green elements

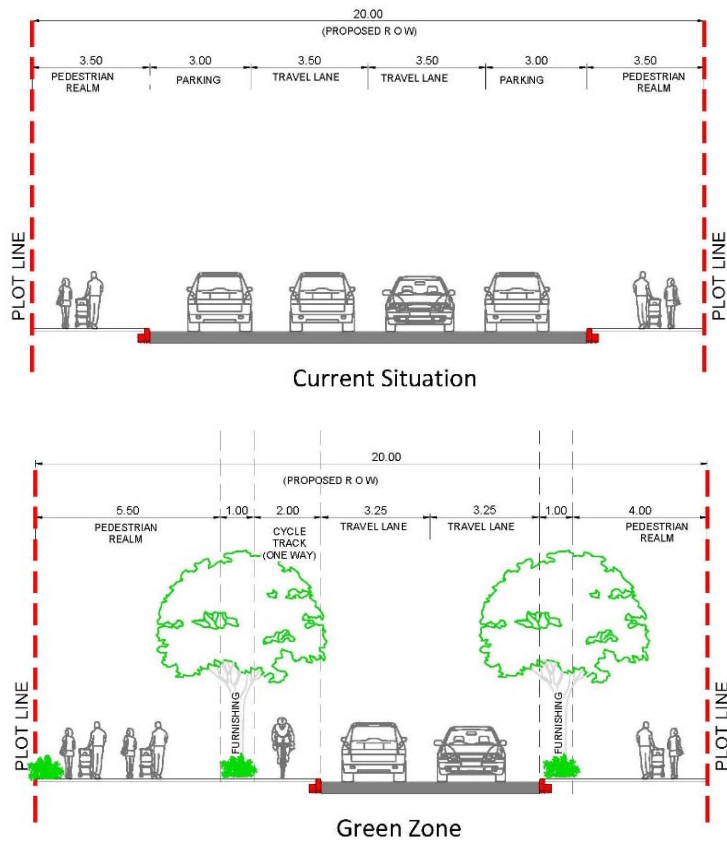


Figure 85. Green Zone –Street Section before and after (Source: Author)



Figure 86. Green Zone –Rendered Plan (Source: Author)

Green Strategy

Canopy trees will be planted in the planters to provide shading and to enhance the legibility and cohesion of the street as a main artery in the neighborhood. It will connect the existing fragmented green areas (Cemeteries and Horsh Beirut), creating a green network with livable and accessible green open spaces for the neighborhood dwellers.



Figure 87. creating social areas through widening sidewalk (Source: Author)



Figure 88. creating children area (Source: Author)



Figure 89. social and green area / cycle lane (Source: Author)

Connectivity with Horsh Beirut

Enhancing connectivity between BS and Horsh Beirut by creating a green pedestrian connection. Currently, Kaskas Highway acts as major infrastructure break that cuts Tariq al-Jdideh neighborhood form Horsh Beirut. The strategy will suggest to implement pedestrian connection between two poles, allowing vehicular circulation to be underground. The strategy will keep one vehicular lane above for the cars that enter and exit Tariq al-Jdideh neighborhood.

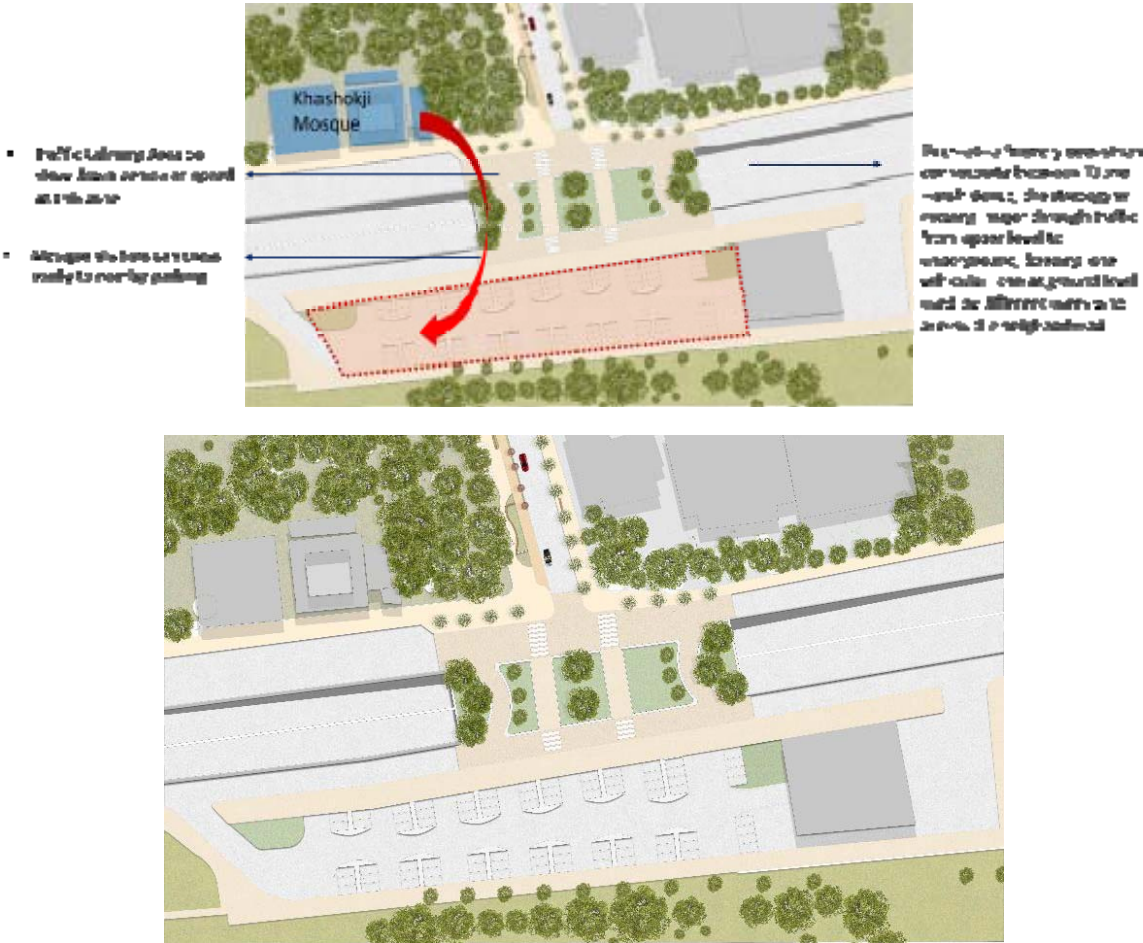


Figure 90. Connectivity with Horsh Beirut (Source: Author)

CHAPTER VI

CONCLUSION

The thesis researched and investigated means that could the possibility enhance the living conditions in Tariq El-Jdideh, a dense neighborhood in Beirut that is characterized by the presence of substantial social infrastructure and a mix of landuses and user groups. The thesis sought to attain comprehensive strategies, which simultaneously tackle the movement of vehicles while also catering to pedestrians and their needs.

More specifically, the thesis focused on the Soleiman Boustany-Jalloul, a main artery of Tariq El-Jdideh. The research methodology documented the physical structures, the users' spatial practices, and their patterns of mobility. This analysis helped develop a deep understanding of mobility, social and green infrastructure layers along the street, and showed how landmarks generate different character zones along Soleiman Boustany-Jalloul Street, creating different spatial experiences for users and visitors who use this street in their daily basis. The study also reveals there is a conflict between vehicular and pedestrian motilities that affects the walkability experience of the street and hence, hinders its identity.

Building on the resources of the Soleiman Boustany-Jalloul Street and the present urban planning laws, an urban design strategy was developed in which vibrant character zones are designed after analyzing and filtering all the public and private open

spaces that are available in the area to make the area overall secure and livable. The intervention hence seeks, through these strategies to enhance walkability, make the neighborhood more livable and to build on the existing density of activities and pedestrians in the streets.

In what follows, I briefly present the research limitations as well as the significance of this thesis.

In terms of limitations, because of the short timeline, I was not able to test my strategy on private empty plots located very close to Soleiman Boustany-Jalloul Street nor was I able to prepare a general building guidelines that ensure a friendly relationship between private and public domain. The private domain could be targeted through the amendment of strategic sections of the building law and municipality guidelines in an attempt to green existing buildings and private lots, and the regulation of future development by giving developers incentives for greening and following the strategies presented in this thesis. Based on the strategies developed, I am first recommending to provide a reward based incentives that will encourage professionals to apply these strategies within their everyday practice. Most of the modified regulations target future development in the study area and on buildings that did not fulfill their full FAR exploitation.

Nevertheless, these incentives adopted which at times gives extra exploitation for the integration of greening guidelines in developments allows to intervene on existing building by giving them the chance to develop their buildings further in a

greener and sustainable manner. The updated building guidelines will also include incentives for greening roof tops, revising setbacks of the future buildings.

In terms of contributions, the investigation of Soleiman Boustany-Jalloul Street 's built up fabric have revealed that solving parking problem and upgrading the quality of public domain could enhance the living conditions of neighborhood dwellers. In addition, addressing the problems of pedestrian connectivity within the Soleiman Boustany-Jalloul neighborhood contributes to walkability concerning the city overall, especially given that many of the problems found within Soleiman Boustany-Jalloul are present in other neighborhoods of Beirut. This research has provided a methodology for improving the public realm and enhancing walkability and livability that could be applied throughout other neighborhoods in Beirut where situations and urban qualities similar to Tariq El-Jdideh is present such as, Basta, Zokak al-Blatt, Bashura.

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