

AMERICAN UNIVERSITY OF BEIRUT

ENHANCING WALKABILITY THROUGH OPEN SPACES:
THE CASE OF HAMRA, BEIRUT

by
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AN ABSTRACT OF THE THESIS OF

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Title: Enhancing walkability through Open Spaces: The case of Hamra in Beirut

In order to improve livability in cities, urban design studies are increasingly promoting accessible open spaces in neighborhoods where walkability is a central principle. The neighborhood of Hamra in Beirut is a neighborhood where a lot of walking takes place: students going to schools and universities, people visiting clinics and hospitals, clients getting services from public and private enterprises, people shopping, etc. However, many physical and behavioral constraints hinder this walking experience and make it both unsafe and unpleasant.

This thesis will focus on the physical constraints that constrain walkability in Hamra. It documents the existing streets, alleys and open spaces in Hamra, those currently accessible and inaccessible, showing that there is an extensive pattern of streets and open spaces that can be used to design a safe and livable pedestrian network throughout the neighborhood. The resources needed for this pedestrian network rely on existing urban planning laws, which can be used by the municipality of Beirut to implement the project. I provide a detailed design intervention on a selected section of Hamra which shows how open spaces can be linked up via a pedestrian network, and offer diverse types of public spaces for different users.

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CHAPTER 1

INTRODUCTION

1.1. Case Study Profile

The neighborhood of Hamra (Beirut, Lebanon) is one of the most vibrant neighborhoods of the Lebanese capital city. Home to several universities, including the prestigious American University of Beirut, as well as office buildings, medical facilities, department stores, and a large residential building stock, Hamra is to many visitors and city dwellers a regular shopping and work destination. This was however not always the case. A rapid look at the neighborhood at the turn of the previous century shows large cactus fields and vast empty lands and sand dunes. It was only “[...] in the after the second half of the previous century that the population of Hamra increased, growing according to Samir Kassir (2005) from 2,400 to 15,000 inhabitants. Kassir further describes young, educated, middle class users, well aligned with an essentially service oriented, white collar economy (Kassir, 2005).

A largely unplanned urbanization, Hamra’s growth is perhaps more the result of external and unexpected circumstances, including many foreign influences such as missionary investments and refugee influx (Boudisseau, Kassir, Khalaf, etc.). Somewhere in the early 1970s, Khalaf and Boudisseau describe a dominant centre for commercial and cultural activities forming a mixed land-use pattern, and attracting a heterogeneous population... In less than three decades, Hamra changed from “a garden farming area to densely populated urban district”(Khalaf 1973).

After years of deterioration during the civil war, Hamra has gradually regained its central standing in today's Beirut. The neighborhood has become an educational, healthcare, service hub in Beirut. It counts 8 schools, 3 universities (AUB, LAU, MUBC), and four hospitals (AUBMC, CMC, Khoury Hospital, and Najjar Hospital).

The neighborhood streetscape is busy with retail activities, such as clothing, handbags, jewelry, carpets, or antiques. Some of the large clothing industry shops like ABC, H&M, Jack & Jones, American Eagle, Vero Moda, Max and Akil have chosen to open in Hamra, all of which attract a large number of shoppers daily. Hamra also counts numerous banks. It also boasts some of few remaining theaters in the city, as well as art galleries and bookstores that mark it as one of the main culture hubs of Beirut.

The neighborhood is also alive with a wide array of services, such as restaurants, cafes, and pubs swarming with people, as well as more affordable snacks and small grocery stores. It also counts a handful of hotels, furnished apartments, and dorms appealing to the numerous students who attend its universities. Finally, and given the presence of a wide array of workers as well as students, Hamra's services appeal to a wide array of users and classes, with a wide range of prices going from the most affordable corner snack to the high-end gourmet restaurant. Despite this mixity of land-uses, Hamra continues to retain a large residential base (Fig. 1.2), while mixity of landuses is shown well in the ground floor land use map (Fig. 1.1).

In contrast to this variety of functions sheltered in buildings, the land use patterns of open space around buildings is rather simple and uniform due to there sizes

and uses, where most of such spaces are used for storage and parking or kept a closed unused backyards. While the traditional garden has almost ceased to exist, one still

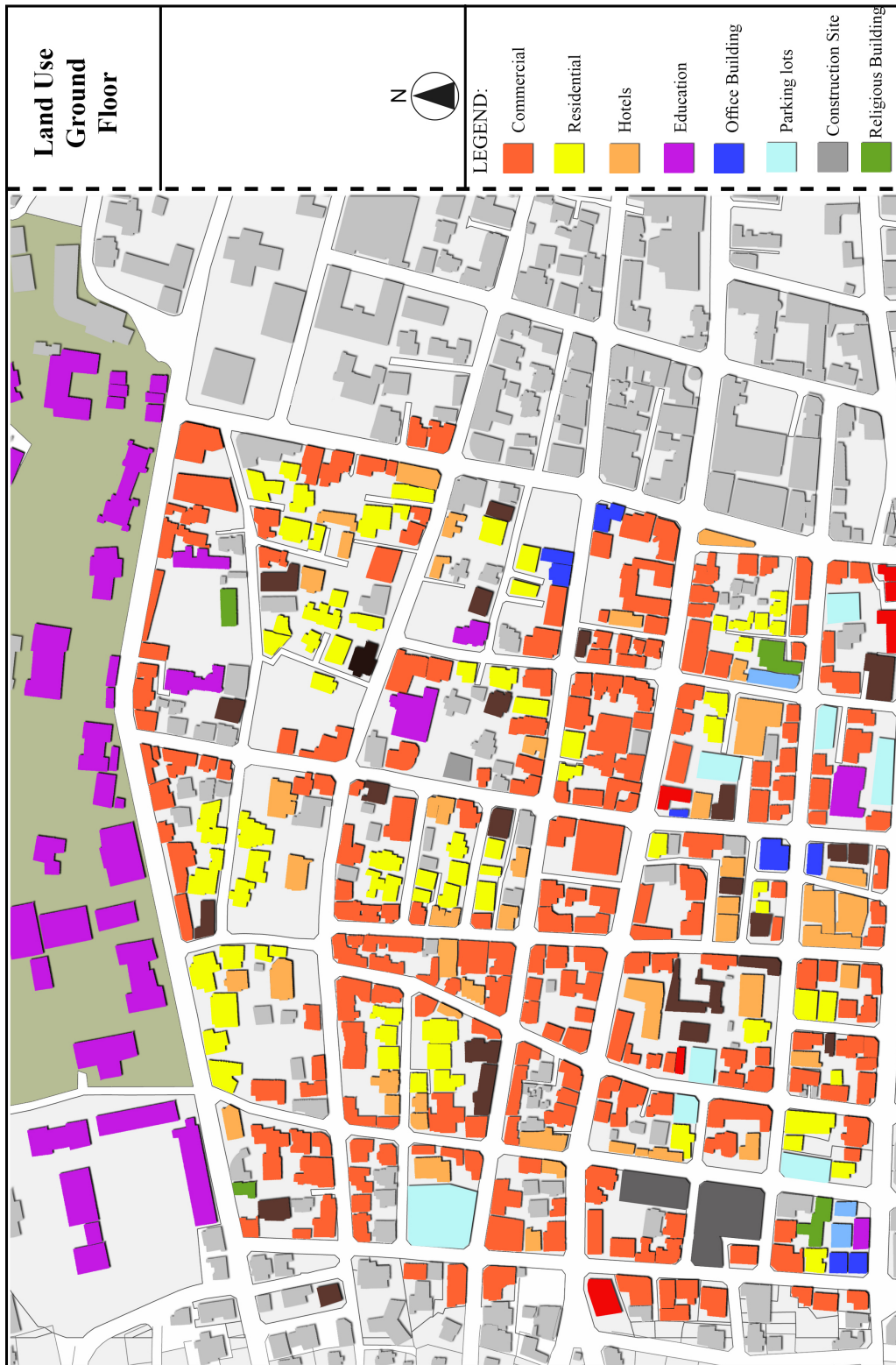


Figure 1.1: Landuse map Ground Floor. Source: Mais & Balaa

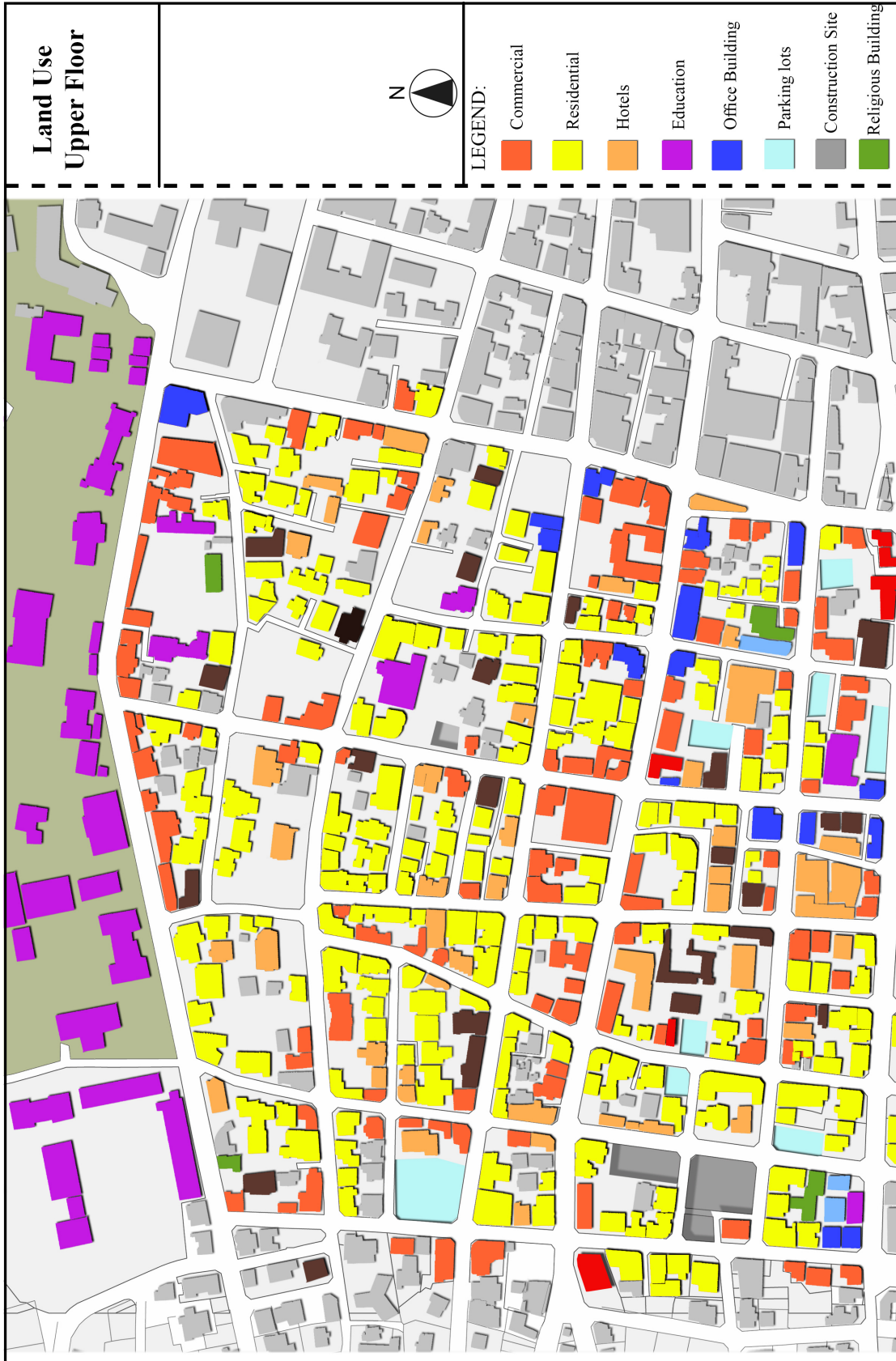


Figure 1.2: Landuse map First Floor. Source: Mais & Balaa

finds a few inhabitants who cultivate their garden plots in old houses behind Makdessi Street in the shadow of high-rise buildings. Each type of open space differs in its function and use. The land use map that I developed shows more closely that despite the high density, Hamra retains a large number of open spaces, particularly used as public parking lots.

Given this wide array of land uses, it comes as no surprise that the area attracts many daily visitors, including workers (blue and white collars), students, and others. This makes Hamra a rather socially diverse neighborhood of Beirut. Many of these users struggle to get to their destinations in the face of dense vehicular traffic, narrow and congested sidewalks cluttered with obstructions, and more generally a poor pedestrian infrastructure and scarce open spaces. This thesis is an attempt to address this particular challenge.

1.2. Research Topic

The walkability of a city or neighborhood is increasingly seen as a core component of its livability as it encourages a healthier lifestyle and consequently, healthier cities (Salinas 2001). Furthermore, higher levels of passive and active engagement throughout the walking routes and open spaces help increase connectivity between people and places. In sum, walkability intersects with issues related to transportation, public space, density, ecology, social inclusion and public health. As a result, scholars typically concur on the importance of enhancing this function or, to paraphrase Sanyal et al, to “*embed walkability into the DNA of cities*” (Sanyal, S., Nagrath, S. and Singla, G. 2009).

I chose to investigate walkability in Hamra because the neighborhood houses a wide base of people who walk in it daily: shop owners, residents, employees, students, shoppers, visitors and beggars. Although these users actively share and practice pedestrian activities daily, they struggle with a particularly harsh physical infrastructure that prevents them from enjoying the actual benefits of walking. Pedestrians also struggle with dense vehicular activities with which, as I will show, leads them sometimes to compete with cars even for the use of sidewalks! In this context, an intervention aiming at improving the “walkability” of the city needs to primarily tackle the physical hurdles facing users. It is hence design improvements to the streetscape rather than people’s practices that need to be targeted, particularly through the insertion of pockets between buildings that could allow for a more pedestrian friendly environment. The thesis seeks hence to investigate such options, relying on soft interventions that build on the already existing infrastructure of left-over spaces and unused lots.

1.3. Research Problem

1.3.1. Problem definition

Walking in Hamra Street is a major way of transportation for all people visiting the area, and for its residents. Yet, my experience as a student who lives in Hamra, and who walks a lot in this neighborhood, many hurdles prevent users from enjoying this walking experience safely.

Crossing roads in Hamra is a main issue, be it at the main artery on Hamra Street or near the universities or schools: it is neither clear *where* one should cross the

street, now *when* he/she should cross it. Neither are sidewalks earmarked for pedestrians: they are frequently blocked by motorcycles (Fig. 1.3), parked cars since in most roads, there is great deal of illegal parking taking place where as most of the drivers who do not found a place to park, considered the pedestrian side walks as a space to park there car. (Fig. 1.4)

Sidewalk obstacles make walking uncomfortable and frustrating (garbage containers, trees, signs, benches, newspaper racks, bushes, low tree branches, restaurant tables, and other obstacles). Sometimes, pedestrians need to return to the street to avoid the obstacles on sidewalks (Fig. 1.5). Such obstacles also make it nearly impossible for people with disabilities, and people using strollers or wheel chairs to use most sidewalks. This crowding of valuable pedestrian space often results from the lack of open public spaces, or their poor design when they exist.

Some of the pavement areas are not adequate to cater to the pedestrians. As a result, the pedestrians are forced to move out to the roads /streets, creating dangerous chaotic situations (Fig. 1.6). Especially at the narrow bends, it is very dangerous and the heavy vehicular flow makes this situation even worse. Connectivity of the pavements is another major concern.

Traffic signage and facilities for pedestrians are not provided in the site area such as, public toilets, dustbins, benches, drinking water, Signage etc. Moreover some streets lack lighting at night and especially in some of the narrow roads in Hamra, creates unsafely while walking in Hamra Street, you face a lot of hackers selling gums,

or some handmade accessories, especially in small alleys.

So, it is necessary to provide hawkers space in pedestrian planning so that they do not encroach upon the walkways for their daily income because Hamra is becoming a home of such people. In addition to that,



Figure 1.3: Motorcycle parking on the sidewalks. Source: Mais & Balaa

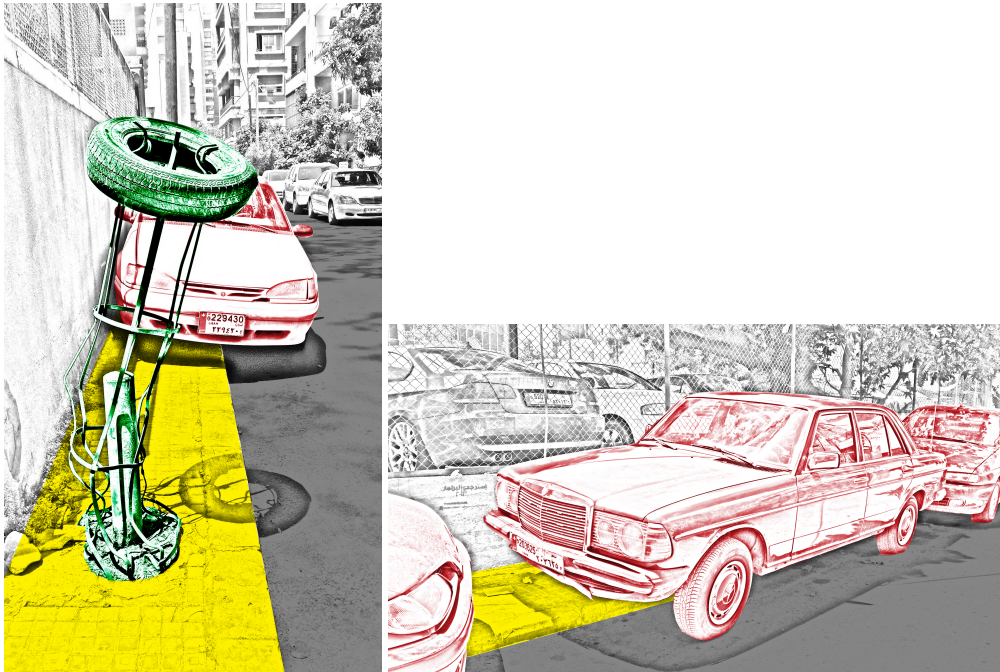


Figure 1.4: Cars blocking the sidewalks. Source: Mais & Balaa

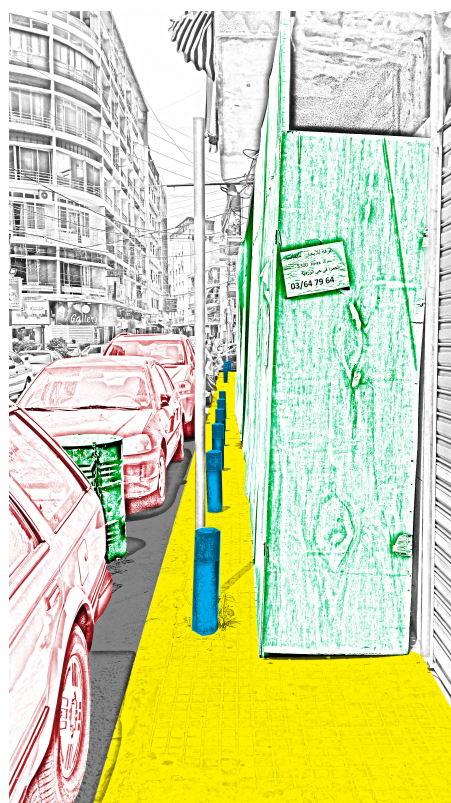


Figure 1.5: Sidewalk obstacles. Source: Mais & Balaa



Figure 1.6: dangerous pedestrian movement. Source: Mais & Bala

1.3.2. Research Question

In this thesis, I seek to investigate how the Hamra district in Beirut can be upgraded towards a walkable and livable neighborhood, responding to the Mixed-use neighborhoods needs and those of its diverse dwellers and visitors. My argument is that a network of open spaces, privileging soft mobility and building on existing spatial practices and neighborhood, through focusing on the physical constraints that constrain walkability in Hamra social spaces, will engage all the users of Hamra and lead to improved livability in the

1.3.3. Objectives

In this thesis, I seek to find design solutions for promoting walkability in the Hamra neighborhood and for creating a network of outdoor open spaces usable by all. Promoting walkability would reduce traffic congestion, air and noise pollution, and the need for additional transportation infrastructure. Improving walkability also encourages

healthier lifestyles and provides safer routes for children to walk to school, and students to universities. Additionally, increased walkability is inclusive of a variety of user groups across age and income levels. Moreover, creating places through those walkable routes provides social interactions between ranges of people.

1.3.4. Significance

Living in the city can have harmful effects on humans since dwellers lack green spaces and are constantly exposed to vehicular traffic fumes, and high levels of noise pollution, which negatively affect their physical and mental health. Creating public urban green spaces can mitigate these problems. Open spaces foster livability and reinforce social, environmental, economic, and health benefits for individuals and the community as a whole.

Introducing an open space network can contribute positively to the development of this neighborhood. It offers different advantages that enhance walkability, and can support progressively the following goals:

- Connect socially, physically and culturally with users.
- Adopt a healthier lifestyle.
- Ensure environmental sustainability by reducing car reliance, particularly for mobility within the neighborhood.

Implementing a network of open spaces, and enhancing walkability as the same time in a dense urban setting, will provide Hamra in this case, a meeting place for the

local community and visitors, green pedestrian environment and an encouragement to a socially divers. Moreover, such different functions of open spaces in the city, will serve and offers different vulnerable social groups such as children, youth, elderly and women a comfortable spaces in the city where they can sit or hang out.

Another significant contribution of this research lies in articulating a methodology, which provides an open-space planning framework that would be useful to apply in other case studies and open space projects. It entails a systematic approach to identify and test the application of a pedestrian network, where institutional and legal methods are devised for the project to operate. This methodology is outlined fully in the following section. The methodology can be replicated elsewhere, providing a framework to analyze the possibilities of pedestrianization.

1.4. Methodology

The project is part of an AUB-FEA research initiative led by Dr. Maya Abou Zeid and Dr. Isam Kaysi, with Dr. Mona Fawaz and Dr. Mona Harb, entitled “Walkability and Pedestrian Mobility in the AUB Neighborhood” (2013-1014). A collaborative work between the Urban Design department and the Civil and Environmental Engineering department, whereby several groups are assigned to investigate the area of Hamra and the different possible ways that could help in improving the activity of walking within the neighborhood.

The general approach to this study was to observe and evaluate the outdoor spaces of the Hamra neighborhood. I sought to understand the neighborhood’s physical

connection (public spaces, streets, buildings, Transport and landscape). Three main types of data collection will be used to gather information for this thesis; fieldwork, observations, interviews and research using available data.

Fieldwork is about interacting with people – watching, getting out into the real world, and talking to people where they work, live and interact. This method focuses on observation and interviews. Fieldwork was used to assess walkability conditions as well as spatial features related to walking. I documented the conditions of the streets and sidewalks, the availability of open spaces and their functions, path obstructions, types of buildings and land-uses, building setbacks, building heights/conditions, barriers and signs on the sidewalks, street functions and traffic during different hours of the day, and during weekends. Mapping analysis was also conducted (users during the day/night, block accessibility, social infrastructure and services).

I spent time observing participants during their daily routine, how do they walk, and how do they cross the road, their activities, and interactions. When appropriate, and only with the permission, I took photos and videos. A physical description and location of each space was made. Observations about where people gathered, walked, stopped or sat were made. How long people stayed in the space or what they were doing in the space was noted. Also, it was noted whether the people in the spaces looked like students, faculty, staff or visitors- meaning any non-university associated person. Observations about the physical space were based on Jan Gehl and Clare Cooper Marcus's ideas about what makes a space functional as well as lively. The following were evaluated for each space: seating and standing opportunities, the quality of the

edges, available shade or protection, and did the space instill a sense of place? The spaces were recorded by sketching rough maps, looking at official maps, and photography.

Finally, site visits were made to each school to observe, map, and photograph the spaces. In order to observe the movement of a high number of people through the spaces, the evaluations took place during the late morning and early afternoon hours. Each campus was observed for two or more hours by walking through and sitting in the spaces. To understand better socio-spatial practices in the area, I rely on both informal conversations with the users, as well as semi-structured interviews that helped me identify different groups' needs and representations about the neighborhood. These interviews were open-ended, that focused on participants' behavior.

The research will also build on existing data, such as the information collected by AUB's Neighborhood Initiative, as well as other reports and documents about the topic and the area, namely from Beirut's municipality and other stakeholders.

1.5. Thesis Organization

The thesis is organized into six chapters:

- The present chapter includes an introduction along with a profiling of the study area.
- Chapter two introduces a review of the literature on walkability and open spaces along with design guidelines tools that improve walkability in urban areas. It

also examines some case studies that are relative to the topic of open spaces and walkability.

- Chapter three articulates an in depth design investigation of the study area.
- Chapter four presents and explains the design strategy adopted.
- Chapter five includes a micro-scale intervention, detailing a particular area of the strategy.
- Chapter six discusses the thesis findings and limitations, along with directions for future research.

CHAPTER 2

LITERATURE REVIEW

This chapter presents the findings of the literature review. It consists of five main sections. The first section outlines the argument for introducing pedestrian spaces and the importance of walkability in dense urban settings. The second section discusses the meaning of public spaces. The third section lists the typologies of open spaces from two different planners perspectives. The final section provides case studies on planning more walkable environments and designing open spaces that could be applicable to Hamra's neighborhood.

2.1. Significance of walkability

Walkability' and 'Walkable' are words that are used a lot in the urban field, but their definition is less clear. Neither of these words is defined in the Oxford Dictionary although 'walk', 'ability' and 'able' are all described. 'Walkability' and 'Walkable' are defined as "...the extent to which walking is readily available as a safe, connected, accessible and pleasant mode of transport". This definition has been copied from the Mayor of London and Transport 'Making London a Walkable City: The Walking Plan for London'.

Another definition from "Walkable Communities", defines walkability as "*The extent to which the built environment is friendly to the presence of people walking, living, shopping, visiting, enjoying or spending time in an area*" (walkable communities, Sept 2008). Walkable Communities identified several factors that affect walkability at the macro level, such as mixed land use, high levels of street connectivity, high residential density, and the presence of many places that people can

use in proximity to their homes. Other factors at the micro level address street details such as “transparency” and “buffers “ from moving cars. According to Walkable Communities, walkability is enhanced with place making, which combines well-laid out public streets, squares, plazas and small parks. In addition Burden (2011) identifies several variables that contribute to improved walkability such as, location of facilities, adequacy of walkways (sidewalk dimensions), connectivity, street speeds (Streets, collectors, traffic calming devices, street parking, canopies).

From another perspective, Gehl (2001) defines walkability as the first and foremost type of transportation, a way to get which and provides an informal way to exist in the public environment, without being disturbed, pushed, and without having to maneuver too much. Human tolerance is very important for interferences encountered during walking so that spaces are sufficiently narrow and rich in experiences, yet still wide enough to allow for maneuvering.

According to (Boston, MA, 1994), to achieve such a vision and apply walkability in a certain neighborhood, a community or planners/designers needs to address the following principles:

- **Coherence** A clear, understandable and organized sidewalk, street and land-use system consistent with the scale and function of the surrounding urban context. The sidewalk and street system should link points of interest and activity, provide clean lines of sight and travel, and include simple instructive signage.
- **Continuity** A pattern of design and usage that unifies the pedestrian system.
- **Equilibrium** A balance among transportation modes that will accommodate and

encourage pedestrian participation.

- **Safety** Pedestrian protection from automobiles and bicycles. Adequate time to cross intersections without interference. Physical separation from fast-moving cars. Signalization protection when crossing intersections.
- **Comfort** Secure and negotiable paving materials for sidewalks and crosswalks. Unobstructed passage on the sidewalk and at corners. Signals timed to enable safe and quick crossings.
- **Sociability** A sense of hospitality and suitability for individual and community interactions. Sidewalks should provide for a variety of uses and activities characteristics of the diverse urban scene.
- **Accessibility** The opportunity for all individuals to utilize the pedestrian environment as fully as possible.
- **Efficiency** Simplicity and cost-effectiveness in design and function. Minimum delay along a walking route.
- **Attractiveness** Clean, efficient and well-maintained surroundings, with adjacent storefronts and activities that provide sidewalk interest.

2.2. Significance of Open Spaces

Open space is an area that is not closed or blocked up and provides access for people to share. It is space that is shared with strangers, a common place for enjoyment, gathering, politics, religion, commerce, and sport. Its character expresses conditions of public life, civic culture and everyday discourse (Woolley 2003, pp. 3). Public open space is an essential part of a city with quality spaces having an immense impact on a city ranging in all areas including social, economic and environmental benefits. “Urban public space is of vital importance because of the way it shapes people experience and

understanding of the city and of the culture...These places are an expression of the public culture of a city comparable to public institutions. They demonstrate the relationship between the state and the citizens and express urban values.” (Mossop 2001, pp. 10). The figure below demonstrates the many benefits and values of open space on the public.

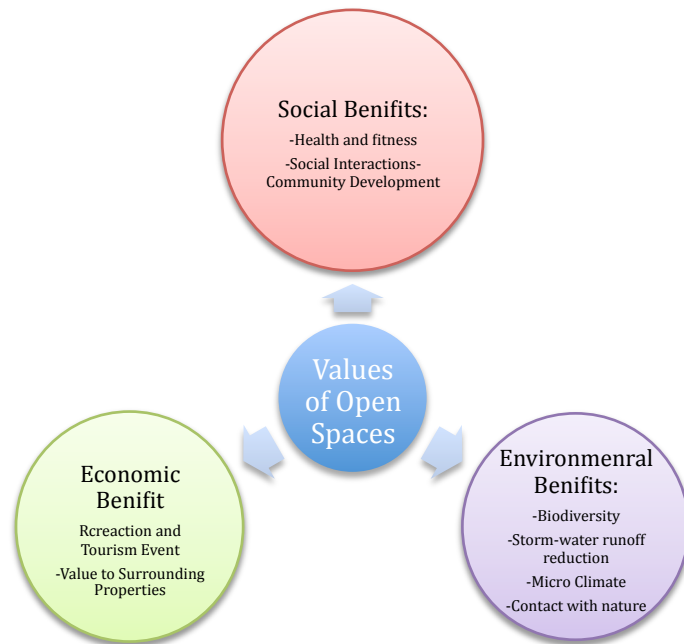


Figure 2.1 Public open space benefits Source: Stratcorp Consulting 2007, pp 3.

One of the main components of urban spaces that can improve walkability is the presence of active open spaces. As many authors have discussed, “open space is not only for recreation and conservation of environmental and cultural values, it is the foundation of urban live-ability. It underpins many social, ecological and economic benefits that are essential to healthy functioning of the urban environment.” (Stratcorp Consulting 2007, pp. 3).

Gehl (2001) defines open space in the city as “ life between buildings ” .He studies the positive and negative aspect of open spaces with the aim of transforming the

city into a welcoming space for the pedestrians. Life between buildings is not only pedestrian traffic or recreational or social activities; it comprises the entire field of activities, which combine to make common spaces in cities and residential areas meaning-full and attractive.

Woolley (2003) sees also open space as a crucial asset to cities as many benefits are derived from effective open spaces including social, health, and environmental and economic benefits. For Zhai and Baran (2001), open spaces are urban parks. “Urban parks are open spaces that encourage people’s physical activity (McCormack et al. 2010), and social interaction (Matsuoka and Kaplan 2008)”. According to Woolley (2003) and Collins (1994) open spaces can create outdoor recreational opportunities for social activities, which respond to people’s needs for passive rest, for socializing activities, and other leisure time.

The development of open spaces enhances public living environments, attracts the local businesses and provides spaces for community facilities and institutions. This is convenient and attractive to local residents and also generates job opportunities. On the other hand, there are various types and subtypes of open spaces, depending on their functions and characteristics. Its is important to understand different types and roles of open spaces as it helps urban designers how to develop, manage and improve these open spaces

2.3. Typologies of open Spaces

Types of open space are usually categorized according to spatial locations, levels of use and levels of intervention. According to Thompson (2002; 2004) these are the different types of open spaces that are relevant to a mixed-used dense neighborhood

like Hamra. These types are urban open spaces, social open spaces, and prospective open spaces. Carr (2001) provides other types of open spaces that exist in dense neighborhoods, public parks, streets, markets, playgrounds, community open spaces, greenway and linear parkways, urban wilderness, atrium (indoor, marketplaces), neighborhood spaces, and waterfronts.

Thompson (2002) defines social open spaces as places for neighbors and community members to interact. Gehl (2001) defines social open spaces as spaces that provide social activities depending on the presence of others in the open space. Those activities include children at play, conversations and greetings, and simply seeing and hearing other people.

The character of social open spaces varies, depending on the context in which they occur. In residential and condensed streets, near universities, where there are a certain group of people having the same interests or backgrounds, such open spaces can be quite comprehensive since people may know each other. “This connection is very important in relation to physical planning” (Gehl 2001), since it is a form of contact that architects and planners can provide in a certain area.

Other types, according to Thompson (2002; 2004), urban open spaces are spaces existing within or adjacent to the built-up areas, often has very high level and potential to intervene on it. It is readily accessible, often has recreation and intense activities. For example, such spaces are botanical gardens, undeveloped ridges, local small parks, urban squares, and community gardens. While, prospective open spaces are often degraded open spaces areas. These have the potential of becoming effective open spaces

after rehabilitation such as landfill site, or abandoned sites, and mine dumps.

Carr (1992) identified a lot of typologies that exists in dense neighborhoods. The mini/vest-pocket parks are small urban parks bounded by buildings; they may include a fountain or a water feature. Another example of open spaces that Carr (1991) identified is the farmers market, which is an open space or street or an alley way used for farmer's markets.

On the other hand, Carr considered streets as a type of open space. Pedestrian sidewalks and alleyways are two open spaces that are considered as a part of the street open space. Such spaces are everyday spaces, publicly accessible such as street corners, steps to buildings, which people claim and use.

Community open space are schoolyard and neighborhood spaces designed, developed or managed by local residents on vacant land; they may include viewing gardens, play areas, and community gardens; they are often developed on private land. Moreover, Carr (1992) identified the atrium open spaces; which are privately developed and managed as part of commercial development.

2.4. Principles and Tools to activate and create open spaces

Planners and designers have investigated what makes a public space physically successful. These are the main criteria they advocate:

1. Linking and Connecting

Ease of access and appropriate linkages to its surroundings are required to attract users. People are more likely to places that are easily accessible. "The

degree of movement within any square is dependent upon how well connected its site is to surrounding districts and to the city as a whole. This is crucial to a space's success" (Corbett 2004).

The following are the qualities that achieve the principle:

- Ease of access to space through high activity connecting streets
- Reliance on topography to encourage pedestrian activity towards the space
- Clear visual relation between connecting streets and open space
- Ease of access to public transport

2. Legibility/Quality of space

Creating legibility in public open spaces is important. Designers need to define the boundaries of a space with clear entrances and focal points. Users need to be able to identify where a space begins and ends to evaluate their position in a space and city. "Creating legible centers within a main square strengthens the identity of a space" (Gehl 2007).

The following are the qualities that achieve the principle:

- Clear visually defining boundaries
- Clear permeable and pronounced entrances
- Hard and soft edges that are appropriate
- Accented and legible focal points

3. Scale and size

The scale of an open space plays an important role in determining its usage.

Unlike large-scale modern places that separate neighborhoods and often fail to respond

to the needs of communities surrounding them, compact areas having logically connected routes, and modest space dimensions can provide highly used spaces (Gehl, 2010).

The following are the qualities that achieve this principle:

- Sufficient size and shape catering to the intended purpose;
- Small scale, perceived to be safe;

4. Accessibility and Diversity

Providing physical attributes and accessibility for users of all ages is important. Installation of homogeneous high quality pavements, accessible ramps and car spaces within distance of key open spaces are all measures that can be implemented to allow for use of spaces for people with disability. Moreover, catering spaces to attract youth is equally as important. A diverse group of users in an open space affects positively the success of a public open space. “Successful public spaces are ones that are responsive to the needs of their user, are democratic in their accessibility, and are meaningful for the larger community and society” (Francis 2003).

The following are the qualities that achieve this principle:

- Design for cultural diversity (all sorts of artistic activity, drama shows, music shows, outdoor galleries and bazars within this space);
- Providing access and usage of spaces for persons with disability;
- Designing spaces with all ages in mind through providing different functions for children than that of seating areas and comfortable walking paths for elderly people;
- Allow for spaces to be meaningful and non-definitive to allow for future growth

in the community.

5. Sense of Place/Social Activities

The creation of public open spaces is basically to create useable and meaningful spaces for people, and to achieve this, there is need to create a sense of place.

“Coming together as one gives people a sense of membership, this generates a sense of place” (Gehl, 2007) Achieving a sense of place for all users is the ultimate aim in all spaces where by “people can actively participate in life within the public realm...this is especially important for developing ideas about citizenship. By simply standing in a lively public realm, where different age groups and different members of society are gathered together, there is a shared experience that evokes a positive sense of participation,” a sense of place (Gehl 1987).

Uses and Activities	Comfort and image	Access and linkages	Sociability
<ul style="list-style-type: none"> -Provide Amenities that will Support Desired activities. -Create focal points where people gather. -Change the type f events that are held or modify the space, if necessary, to better accommodate events. -Work with adjacent property owners and retails to develop strategies to lease ground floors of empty buildings and help revitalize the area. -Develop a series of community-oriented programs with local 	<ul style="list-style-type: none"> -Add practical amenities –seating, telephones, waste receptacles, information booths, food vendors, and community oriented public art. -Create a management presence through vendors or food and information kiosks by creating an entrance or adding a view onto the place from windows in an adjacent building. -Increase security by providing more uses for an activities at the place, which will increase the number of people present, or by appointing an individual to be in charge of 	<ul style="list-style-type: none"> -Wide sidewalks or provide sidewalk extensions at crosswalks, better balancing pedestrian uses with other uses (vehicles, bicycle, deliveries, and so forth). -Construct Cleary conveniently crosswalks. -Make accommodation for Bicycle users (bike lanes, lockers, storage) -Infill vacant lots with structures and uses to create continuity of pedestrian experience. -Balance on street parking with other uses. 	<ul style="list-style-type: none"> -Develop focal points-public gathering places that accommodate a variety of activities. -Arrange amenities to encourage social interaction, such as grouped benches and movable seating. -Stage special events and activities to draw people. -Encourage community volunteers to assist with improvements or maintenance of a place. -Provide a variety of uses in adjacent building to attract a

talent from institutions (churches, schools, libraries) to attract people in the short term and to demonstrate that someone is in charge.	security. -Upgrade maintenance, including daily cleaning, and preventive of physical facilities. -Establish a community – policing program.	-Change traffic signal timing to improve pedestrian access. -Improve use of parking through changes in enforcement or regulation.	diversity of people.
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Table 2.1: Design strategies and recommendations. Source: Urban open spaces designing for users need Source: Mais & Balaa

2.5. Case studies

These case studies include some common characteristics of outdoor open spaces, their uses, and the way in which they are used. The findings of three case studies, together with the limited amount of relevant literature, were drawn upon to derive design recommendations.

2.5.1. San Francisco General Hospital, California: Hospital outdoors spaces

San Francisco General Hospital, California: Hospital outdoors spaces

Excerpt from Author :JHON WILEY , People Places.

The Comfort Garden is a small but well-used outdoor space established in 1990, adjacent to buildings 80 and 90 on the sprawling campus of San Francisco General Hospital, which is a public hospital.

Discription:

The feeling of this garden is of a residential scale oasis. Its is surrounded on two sides by six buildings and on the other two by fences separating the garden from 22nd Street and a parking lot. The garden is about 49m long and 31m across its widest point. A grassy and colorful border of flowering perennials and shrubs runs the length of the garden, with short garden benches set within it and stepping stone paths. The rest of the space consists of a small area of short mown grass and pathways shaded by three very large trees. Incorporating logs, pruned benches, rocks, etc.

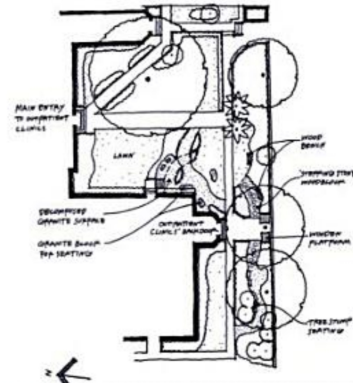
Successful features (principles)

Successful features (principles)

- Lush, colorful, well maintained planting;
- Domestic scale and sense of enclosure;
- Intimate scale and location of seating;
- Wide pathways to accommodate major pedestrian flows;
- Complete contrast to institutional hospital interiors
- Choice of places to sit, or lie on grass, in sun and shade;

Major Users and Users

An interview and observation study was conducted in this garden in spring-summer 1995 (Cooper Marcus and Barnas1995). On warm days the garden is in constant use from mid-morning to late afternoon. Of those who spend time sitting, standing, or lying down on the garden, about half are out patients and the other half are staff and employees. Staff members are typical users who come out for a smoke break, or to have lunch; visitors or out patients sit for a while, sometimes smoking or drinking, or lie sleepy on the lawn before or after appointments. The use of the garden by out patients is specially appreciated because all the clinics are places of potential stress. Employees, too, report that they return to work refreshed and less stressed after time in the garden. All but 4% of 50 garden users interviewed reported a positive change of mood (calmer, more relaxed, more positive, stronger, less-stressed) after being in the garden. Many used the garden every day and stayed for 30 minutes or more when they came out. When asked what they liked best, more than half of those interviewed cited the garden's aesthetic attractiveness: flowers, plants, and trees; privacy, quite, and comfort.



2.5.2. Charlie Dorr Mini-park, Berkeley, California

Charlie Dorr Mini-park, Berkeley, California

Excerpt from Author :JHON WILEY , People Places.

This small park is located in a moderate-income neighborhood in west Berkeley. It is located on a narrow, quite, tree-lined residential street. Two houses border the open space on two sides. This mini-park was created because of the lack of local open spaces in the neighborhood.

Discription:

The mini park is 0.22 of an acre (9,556 square feet) in size and forms a narrow slot of open space between two houses. This mini park is virtually invisible because of the narrow entrance, adjacent houses, and lush streets trees. A timber play structure with swings and a slide dominates the front of the park, and narrow asphalt paths bordered by a small patch of grass leads the space users to a larger play area, a climbing structure set in sand forming the back "L" of the park. An arbor that shades the seating and two picnic tables separates the front and back play areas. 1 bench and a drinking fountain are visible from the street. Shrubs and ground planting cover about 5% of the park; grass, another 5%; and hard surfaces (pathway and seating arbor), 12%. The remainder of the park is sand and redwood chip-surfaced play areas.



Successful features (principles)

- Good use made of a very small site;
- Variety of surfaces, textures, materials, and levels;
- Vine-covered chain-link fences creating effective and safe boundaries;

Major Users and Users

Users can walk or bike to this park. 6 to 12 years old form the largest user group. Teenagers and young adults for hanging out use such open space. Relatively also few parents come here with there children.

2.5.3 life of the public realm – A case study in Copenhagen.

Description

In this project (Fig. 2.2), a network of walkable streets is created in Copenhagen through linking the city to the beach by providing a continuous green corridor with multiple open spaces across the city. This network could be relevant to the Hamra neighborhood by applying the same concept in the area to connect it to the lower part to the beach, and to provide a walkable environment for the users.



Figure 2.2: The city belt, Copenhagen. Source: www.stadsbyggnad.lth

Figure 2.2 is showing the network that is connecting the city from the eastern side to the western one. This network includes many different open spaces that are represented as circles in the figure up, passing through many different land-uses in the city.

Objectives

- Creating spot like developments as public places along the path and adding density around them to support the public realm.
- Activating the street by providing public space and allow for interactions along it.

As well as creating spaces users would be interested to discover or spend time in (meeting points). Passive and active engagement will make it much more interesting.



Figure 2.3: Connecting the city, Copenhagen. Source: www.stadsbyggnad.lth

This section (Fig. 2.3) is taken from middle of the street showing the relation of the vehicular path with the greened open spaces on the left side of the section, it also illustrates how the buildings near this open space have wide view toward this space, and how is the height of the building is not affecting the lightning in the open space since it is not narrow space. While in the left part of the section, it shows how there is an open space that is surrounded by the buildings providing the people there a shaded seating area, without any vehicular access giving them a safe feeling.

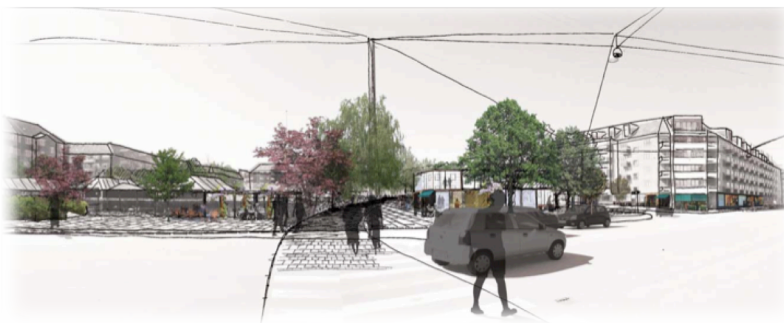


Figure 2.4: Zebra crossing, Copenhagen. Source: www.stadsbyggnad.lth

Zebra crossings would also be used to make it safer for children and the elderly to cross the road alone (Fig. 2.4). Green public spaces give the entire locality a harmonious nature; the place will feel friendlier even to those trapped in their offices, or

homes, since green areas in those spaces, that are viewed from offices or houses gives the people a sense of safety and privacy creating a visual barrier between the buildings and a relaxing view.

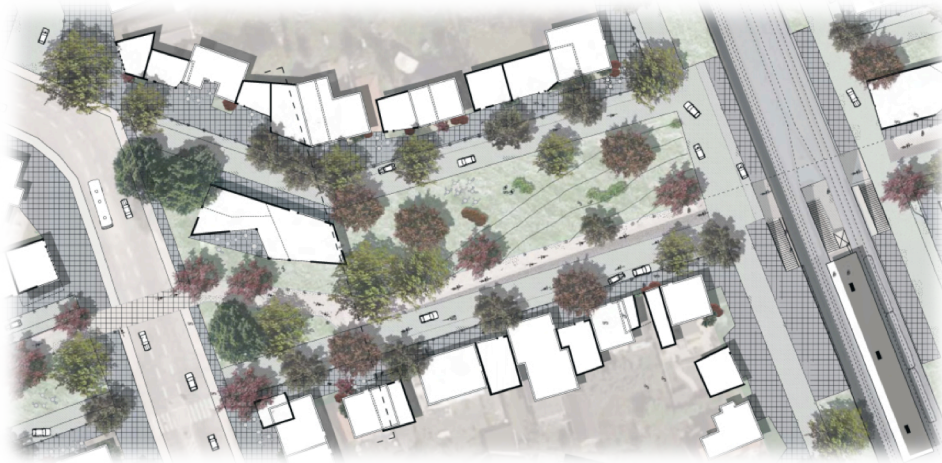


Figure 2.5: Zoom In detailed Plan. Source: www.stadsbyggnad.lth

This zoom-in detail plan (Fig. 2.5) shows the relation between the pedestrian path and the vehicular one, in which they are connected to each other through a zebra crossing, that will oblige the cars to slow down, so pedestrian keep walking till they reach the open space that is located in the middle of the plan between the vehicular roads. This open space contain a lot of trees that helps in shading the space, so people will more attracted and feeling safe to come and pass through this area.

Moreover, this plan in figure 2.4 show how there is different patterns and colors in the street, separating the different functions from each other. For example, the pattern with grey color indicates the pedestrian movement, which is different from that of the light grey paths that are accessible for bicycle and vehicular movement. While the beige color it is obvious for vehicular movements.

2.5.4 Liaison Douce

The project consists of creating a "soft connection" between the Pine Forest and the city center via the Damascus Road (Fig. 2.6). The project does not aim to ‘beautify’ the street. It focuses on green public spaces and ‘soft’ modes of transportation such as walking and cycling. It seeks to regain the urban space from private cars in favor of green spaces, public transportation, and walking, cycling and recreational use.



Figure 2.6: Liaison Douce, Beirut, Lebanon. Source: www.idf-beyrouth.com

Description

The ‘Liaison Douce’ route starts at the North-East Entrance of the Pine Forest passing through the Badaro neighborhood. The first phase of the study was to 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’. It is composed of four sequences depending on the types of activities around, and defining the possible development: each sequence or node was developed as an entity depending on its use and aspect. Being an innovative approach that tackles

all the issues at the street level, Liaison Douce had to work on many strategies to reach its final agreed form: parking spots, infrastructure, landscaping, street furniture, public spaces, security and sustainability (Fig. 2.7). Such project focuses on the mode of transportation, and public spaces serving the needs of the users, providing a safe environment (Fig. 2.8).

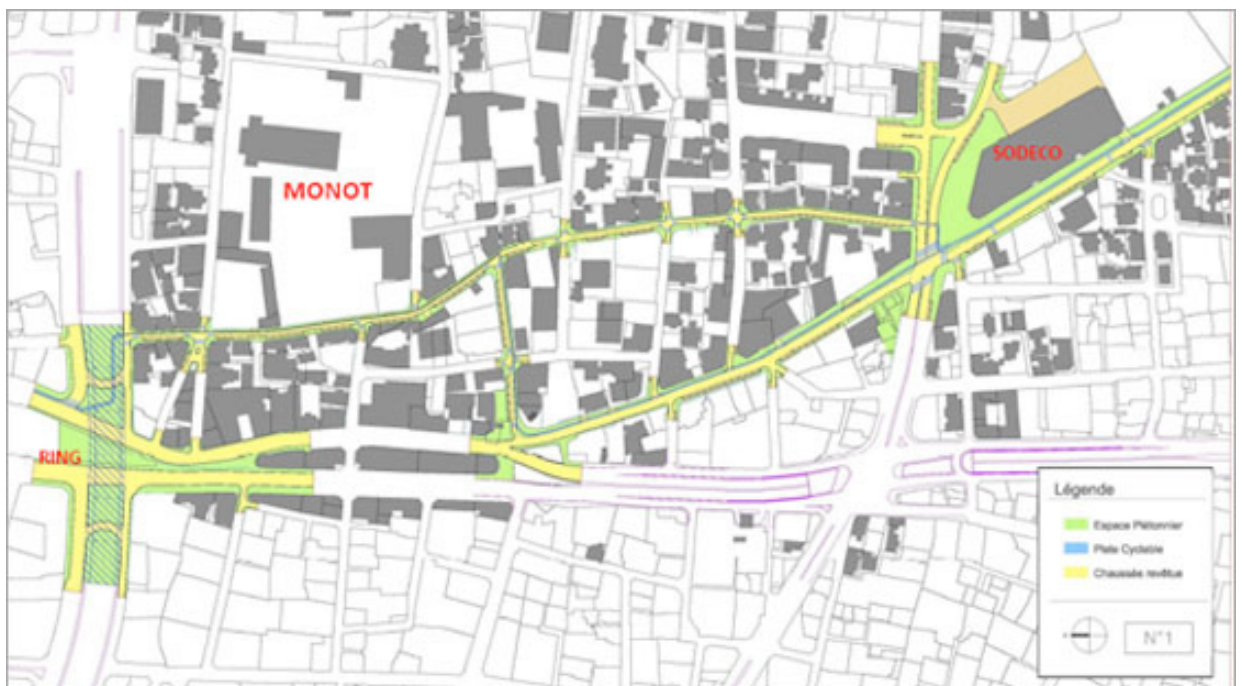


Figure 2.7: Liaison Douce, street hierarchy maps Beirut, Lebanon. Source: www.idf-beyrouth.com



Figure 2.8: Pedestrian movement near sodiko building Beirut, Lebanon. Source: www.idf-beyrouth.com

CHAPTER 3

INVESTIGATING HAMRA

As part of a joint research initiative designed to enhance the walking infrastructure in Hamra, I conducted extensive fieldwork in the neighborhood of Hamra. Over the months of May, June and July, I mapped many indicators in the neighborhood that helped me analyze the existing pedestrian infrastructure and identify intervention opportunities, particularly in relation to designing open spaces along pedestrian paths (designed as part of the thesis project of Dana Balaa [Enhancing Walkability through Urban Connectivity: The Case of Hamra]).

In mapping the neighborhood, I paid special attention to the physical makeup/urban fabric of the area, the various user groups, activities taking place within the neighborhood, and the average time people spent in the open spaces. My observations indicated that despite crowded streets, congested sidewalks, and difficult circulation, many users spent considerable time in Hama because they enjoyed the services and social interactions it provides.

Various users enjoy existing open urban spaces to walk to different destinations throughout the district; these spaces are however devoted for a large spectrum of activities. These activities vary in accordance to the services surrounding them. Analyzing the current social aspect would therefore require an investigation of the diversity of users, the type of activities taking place and the different categories and locations of social infrastructure distribution along the neighborhood.

Every morning a remarkable number of visitors enter Hamra. Those who study or work in the area are referred to as the daily users. These are the users who spend a significant part of the day in the area. Whereby those who tend to spend just a few hours in the area are the temporary users. These are the visitors who head to Hamra to shop, visit someone, watch a play in one of the theatres, or finish some paperwork.

One of the critical decisions that we had to take was about the boundaries of the mapping. Given how integrated Hamra is in its surroundings, it was difficult to determine the edges of the area. As a result, the mapping was framed according to time and physical constraints and should be read as such, rather than an actual representation of area boundaries.

In this chapter, I analyze street networks, conflicts in space, users' patterns, and open spaces as entry points to understanding walkability. My aim is to analyze the open spaces found in the Hamra neighborhood and eventually creates a healthy pedestrian network to connect these open spaces. My investigation of Hamra is based on three months of extensive daily visits in which I mapped, as part of a larger research initiative about enhancing walkability, the spaces of the neighborhood. More specifically, I mapped the following:

3.1. Social Infrastructure and services

Hamra is a mixed-use neighborhood. As outlined in the thesis introduction, it is a residential, cultural, educational, healthcare, service and commercial hub serving both its residents and visitors daily. The neighborhood also houses governmental facilities.

These functions are mapped in figure 3.1, which shows the social functions of the neighborhood. Residential buildings frequently include commercial activities on the ground floor level such as small shops and retail in addition to the services sector such as banks (17 banks) on the ground floor or upper floors of residential buildings. The area also includes branches of governmental institutions such as the Ministry of interior, the Ministry of Tourism, and Bank De Liban. One of the most important characteristics of the area under study is the presence of many educational, and health care facilities (e.g. LAU, AUB, AUBMC, CMC, Khoury hospital, Najjar Hospital...).

On the other hand, around 46 hotels exist in Hamra neighborhood, 16 hotels on the upper part on the right side from Hamra's main street, and 40 on the lower left part from the street. This indicates how much visitors and students are coming from abroad to the area.

Moreover, this map (Fig. 3.1) shows the mixity of religious between Muslims and Christians since there are four churches, and four mosques in the area.

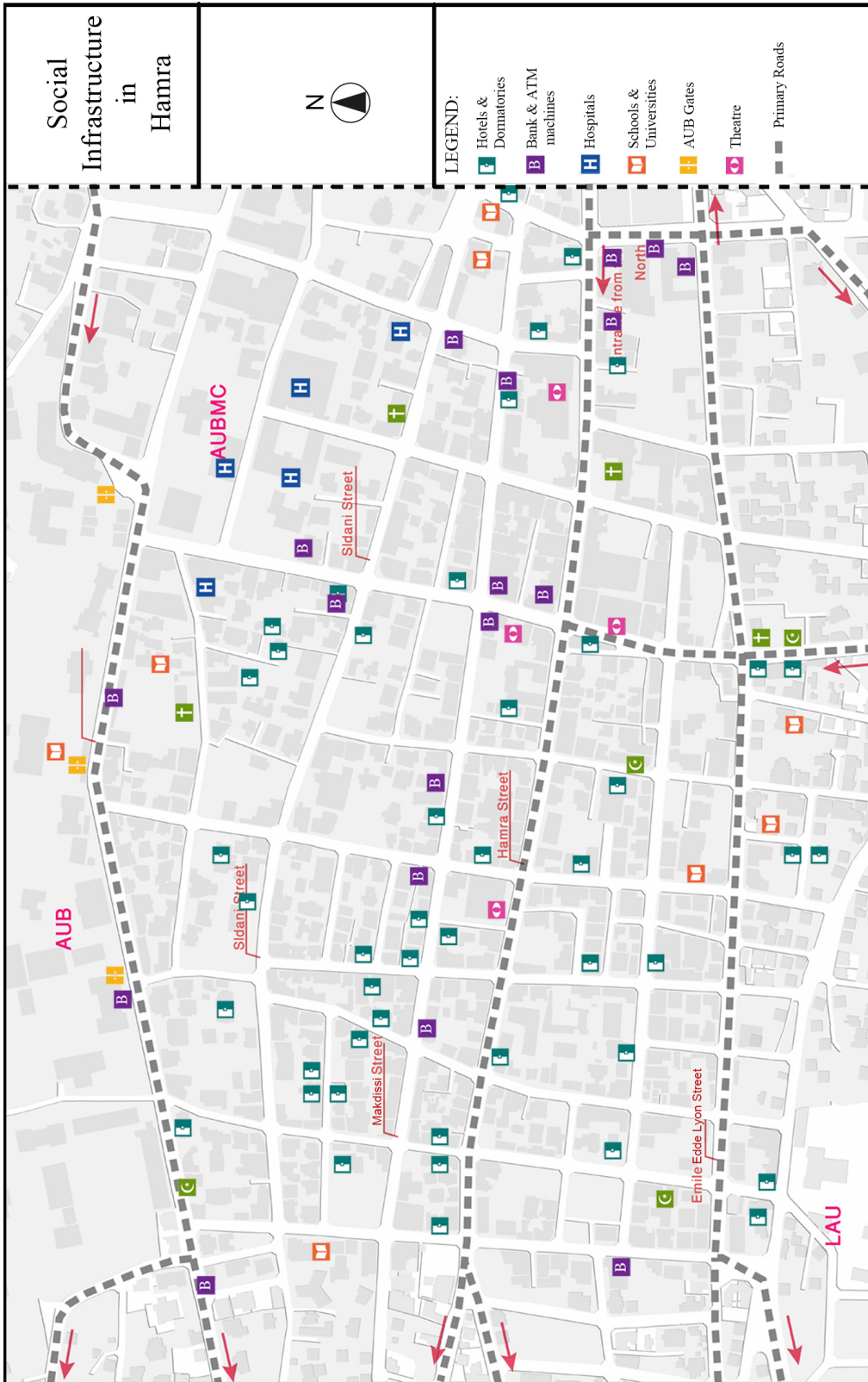


Figure 3.1: Social Infrastructure and services. Source: Mais & Balaa

3.2. Block Level in-Depth Analysis

Using Hamra's cadastral map as the base map of this analysis, we identified every leftover or unbuilt open space, including spaces between buildings, and looked at how these spaces are used by their owners (e.g. parking, private garden, storage of building facilities...) (Fig. 3.2).

The analysis on figure 3.2 classified the existings in Hamra into nine categories in order to simplify the analysis: these include the built up area, the closed open spaces (trapped pockets), parking locations, construction sites, green areas, generators, water tanks and physical boundaries which include walls, gates and fences, last but not least areas accessible by pedestrians. The map below shows the followings:

1. Back Setback Area
2. Entrance Setback Area
3. Abandoned Open Spaces
4. Parking Lots
5. Construction Sites
6. Intact Urban Landscaped Areas
7. Educational Facility Open Spaces

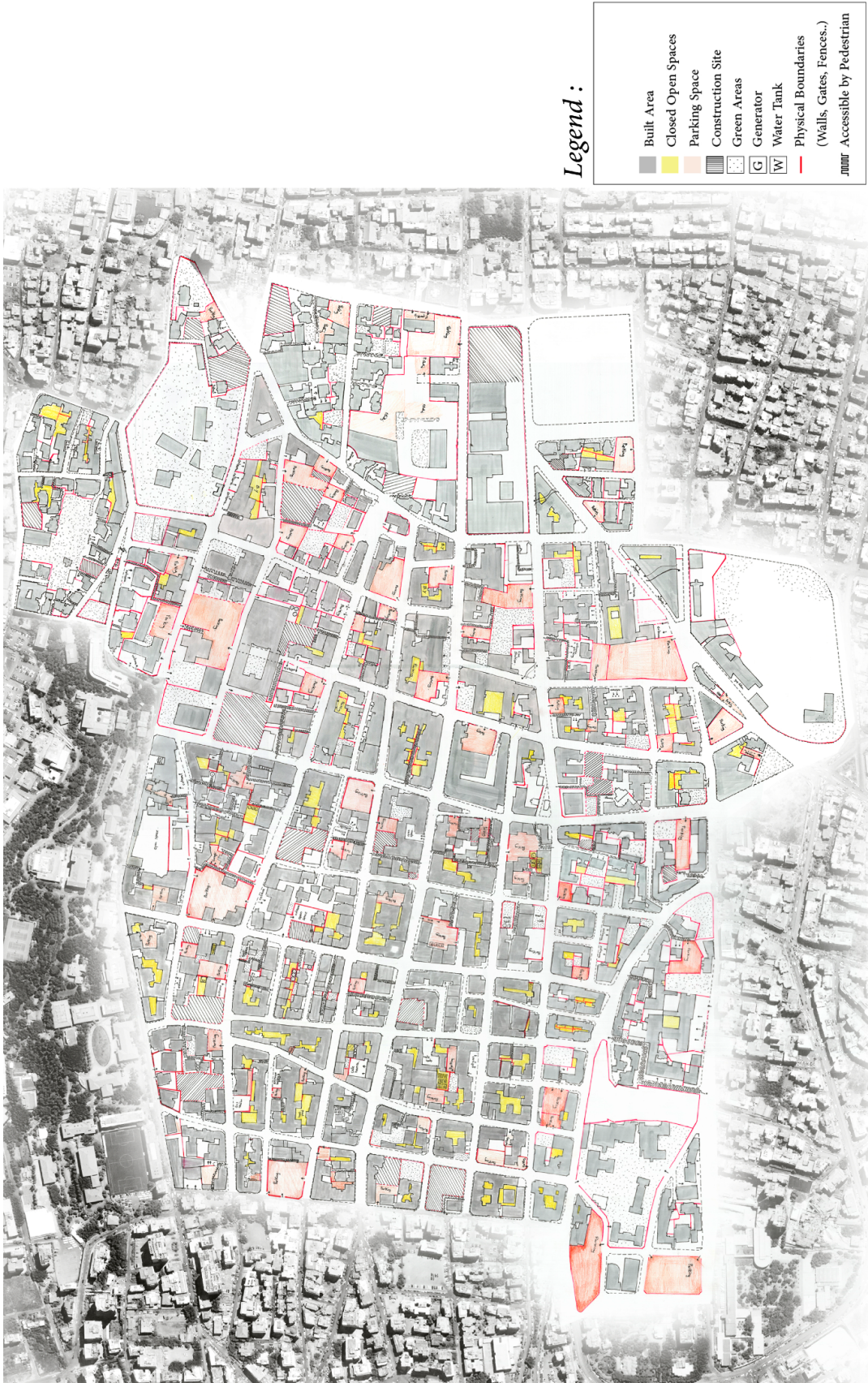


Figure 3.2: Hamra Detailed Analysis. Source: Mais & Balaa

Figure 3.2 shows clearly that built up areas extend well beyond open spaces. The first type of open spaces and the most common are the back building setback spaces (Fig. 3.3), which are mostly gated. Since the buildings are lined very near to each other in such a way that the open spaces between them have formed pockets of dead space that are inaccessible and of no good use to pedestrians, not only so they are not always visually pleasant if looked upon from the nearby buildings. These spaces are used for private parking, an enclosed garden or a storing space for water tanks and electrical generators. Few of these back building set backs are however open for public use.

The second type of open spaces would be the building entrances setback, this space is at times gated and at others open for public use. These spaces could be considered an extension to the pavement width, allowing for a friendlier pedestrian route with space for extra soft and hard-scape. Third are the abandoned lots, these lots are left untreated and redundant which have wild nature growing in them. These spaces are not currently user friendly however they have the potential to become nodes along the network.



Figure 3.3: Building Set Backs. Source: Mais & Balaa

The most common function of any open space in Hamra is vehicular parking. This is because of the large number of employees who drive to Hamra daily using private cars. Parking needs are also generated by shoppers and other visitors, such as those coming to a dentist's appointment or just for visiting a friend in the area. These parking lots therefore solve a vital problem in the area and reduce traffic congestion.

After that the construction sites; they are either a replacement for old buildings or using up previously empty lots. These new buildings are a result of the booming taking place in Hamra district. In total Hamra district has over fifteen construction sites, which have been causing temporary traffic and noise pollution however when complete will create a pleasant visual image in the mind of Hamra users. The advantage to new buildings is that they have adequate parking spaces in their basements, which will mean less congestion of streets with cars for easier pedestrian movement.

There are of course the well-shaped urban spaces. These are the landscapes areas belonging to a certain building or foundations. An example would be the open space in front of FransaBank or the open area near the Gefinor Center.

Finally, educational facilities also count open spaces; these are schoolyards and university open spaces. These are in most cases serving their purpose and giving students a place to move around in a vehicle free zone, with a fair amount of nature or sport courts.

It can therefore be deduced that the open spaces, regardless to their ownership, vary in type and function. These open spaces are evenly spread throughout Hamra area. These open spaces however have access limitations, which will be further looked into.

3.3. Block Accessibility

During my fieldwork, I came to realize that Hamra is very similar to a tricky maze that is full of surprises. I discovered alleys that I never knew existed. I came across new paths, shortcuts linking from one road to another saving me time, felt more users friendly and mostly shaded. It was therefore concluded that Hamra district has great potential to include a network of pedestrian paths and open spaces. There are many narrow alleys between buildings, and setbacks that could be made accessibly for pedestrian movement within an area. Making pedestrian space wider and encourage users to walk their way to places rather than depend on different means of transport.

After many site visits we came to notice that Hamra dwellers and frequent users have become familiar with the short cuts and alleys in between buildings. Although frequently private properties, these allies and passages were widely perceived by users as public and used accordingly. These are mapped in (Fig. 3.4)



Figure 3.4: short cuts and alleys. Source: Mais & Balaa

When interviewing people who used these short cuts, we inquired about their choice of route. What had they chosen these hidden routes over the main streets? Most of our respondents gave the same reply: why walk around the block when we can walk through it. They all found it more adequate to minimize their pedestrian journey and therefore reduce effort in reaching their destination. A few others saw these paths as an alternative to overcrowded streets, especially since these narrow passages provide a more pleasant environment for walking.

The morphological structure of these buildings within the different lots, and the freedom that the lot owners are providing, whether intentionally or not, by eliminating all obstacles, from gates, fences and walls, renders this physical activity possible and alters the building setbacks into public pedestrian pathways.

In our mapping, we identified all accessible blocks, as well as partly accessible and blocked blocks according to how easy the lot is to penetrate or walk through (Fig. 3.5). This map also shows all walkable spaces, be it on public or private domain. It also shows where pedestrian paths exist, where obstacles block pedestrian movement and where security measures have been applied.

Physical boundaries block pedestrian movement in many places, either to keep them from trespassing or to serve as a premises edge. The barriers are either of walls, which totally block visual continuity, or consist of gates and fences, which only block physical continuity.

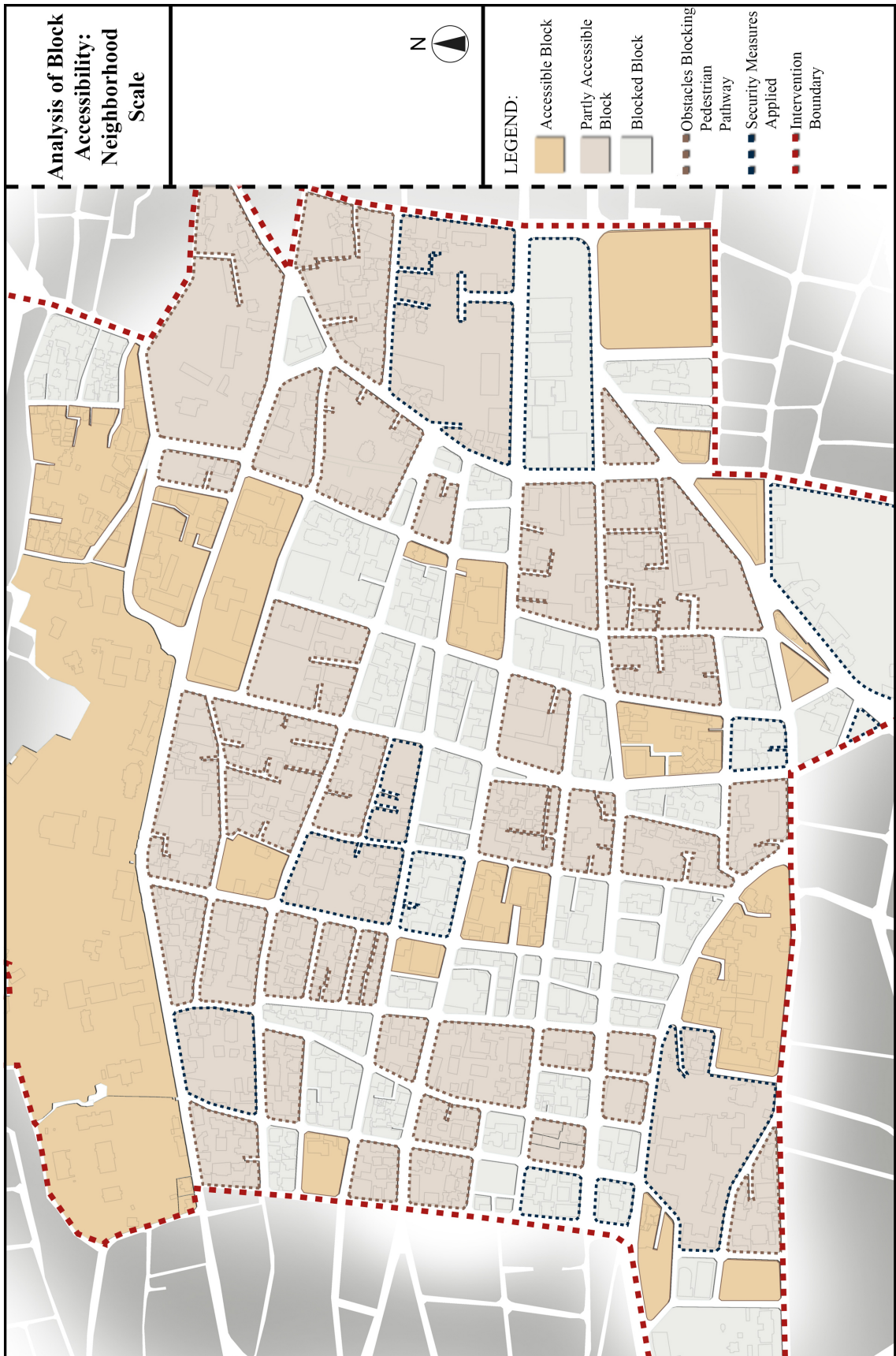


Figure 3.5: Block Accessibility. Source: Mais & Balaa

3.4. Users/ Activities within Hamra

During the day (Fig. 3.6).

In this map the focus of the analysis is on the special practices of users during both day and night, where they take place and why. The map shows where people tend to gather for various activities. During the day the area is generally family friendly, safe for the elderly and comforting for people of all ages. Commercial activity keeps the area alive; Restaurants, Cafes & Resto- Pubs area always swarming with people. Hamra Street is almost always full of shoppers. Summer and winter, autumn and spring, the vivid services keep people coming back. The widest range of shops are available along the main Hamra artery and fairly branch out. Shops that sell clothing, handbags, jewellery, gadgets, stationary stores, toys, carpet and antiques can all find their customers strolling in. Employees fill their offices each day and construction workers give Hamra the city vibe, with their yellow helmets and their hammering sounds. These workers can be seen gathered on the streets puffing smoke or sipping tea during their breaks. Office workers may also walk down the street biting into their sandwiches. The sense of place is unique and favorable especially for the city lovers, and the general mood is like an adrenaline rush. It is fair to say the most congested places are Hamra Main Street and Bliss Street. The traffic jamming is when working hours start and end and during lunch breaks.

Another cause of traffic is the visiting hours for patients in the hospitals that are open during the day and students hurry to their classes. The activities taking place may also include having lunch, drinking coffee, watching a film in the new cinemas open at bliss or playing games at an Internet café.

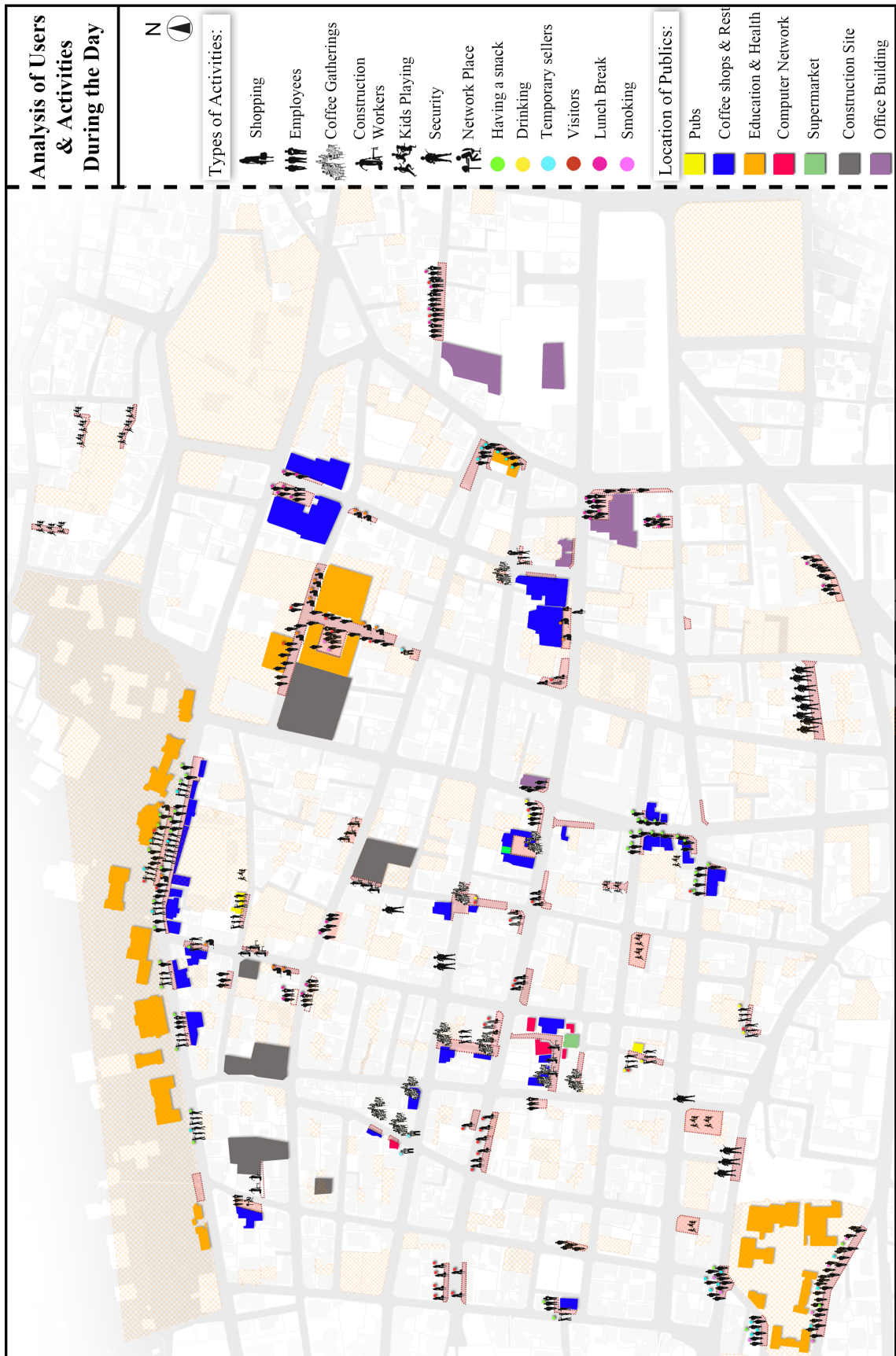


Figure 3.6: Users during the day. Source: Mais & Balaa

During the night (Fig. 3.7).

Places of congestion vary from day to night. Construction sites stop and with all the employees gone, shops closed, and hospital visiting hours over Hamra does become somewhat more peaceful. The places of worship also close their doors and the beggars go back to where they came from.

A slight drift in the sense of place and in the audience of the area takes place as the late evening begins. Hamra nightlife is becoming rather famous. Pubs in Hamra are often packed with people, mostly youngsters, many of which linger along sidewalks nearby. Those looking for a prostitute or illegal material are also bound to find what they are looking for. Outside Play Station centres, Bowling & arcade or Cinemas young adults are also found hanging out smoking “arguileh” which is often served at low prices next to these entertainment shops. Tourists from the gulf also tend to meet their needs in the alleys of Hamra. The restaurants at bliss and the Twenty-Four hour markets and pharmacies are amongst the few open to serve the youngsters up all night and the students awake in their dorms studying. Delivery service has no limited time in most cases. Moreover, doctors on duty at the AUH are also found strolling by during the late night. A few cars go by and shallow sounds of chitchat or laughter as groups walk buy are all that is heard.

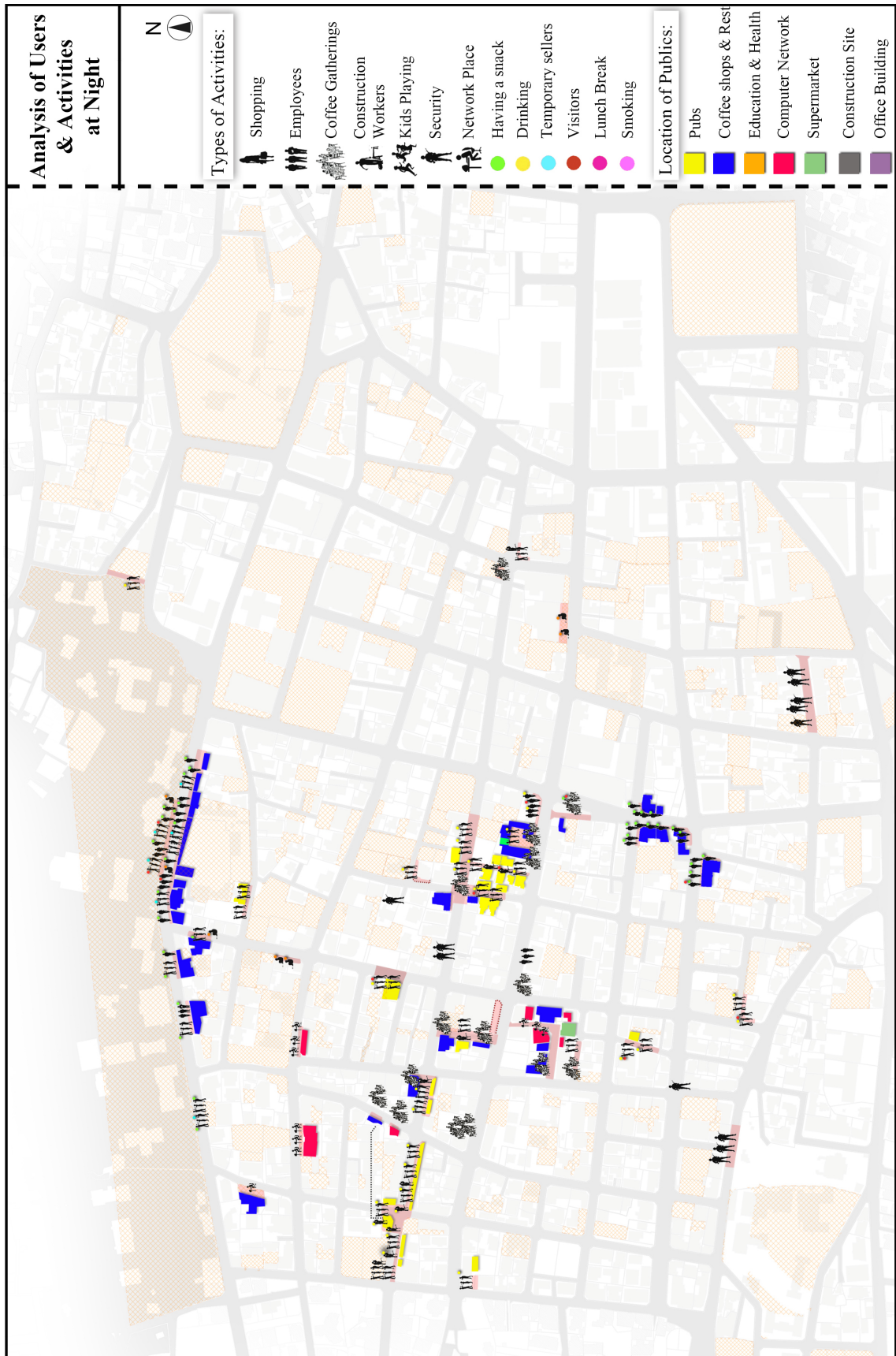


Figure 3.7: Users during the night. Source: Mais & Balaa

3.5. Different Functions

An intervention of open spaces and connectivity can be clearly distinguished in the two sections in parts of Hamra district (Fig. 3.8). The private and public green spaces can be easily located and the residential buildings can be noticed. Pedestrian paths and vehicular streets both narrow and wide can also be detected. Sloped green areas and stairs make the general journey a pedestrian would take more and more interesting. Moving along topography is generally pleasant and allows users to feel a fluctuation in the kind of spaces they are going through.

The continuity among these different spaces helps us think of solutions as to maintain a pedestrian path. Wide speed bumps and transitional spaces such as stairs can lead pedestrians to public, urban green spaces, forming a user-friendly path and a journey worthwhile for users of this network to be. The ratio of private green spaces is rather high in both sections. Building footprint and basement space can be easily compared. Also the building heights differ and their distances from one another vary, this can give us an approximate idea of the amount of shade in each area. The road widths can be seen in the diagrams. Wide roads will naturally make pedestrians feel alienated, the width of the pavement is usually minimal along such roads and cars catch higher speed.

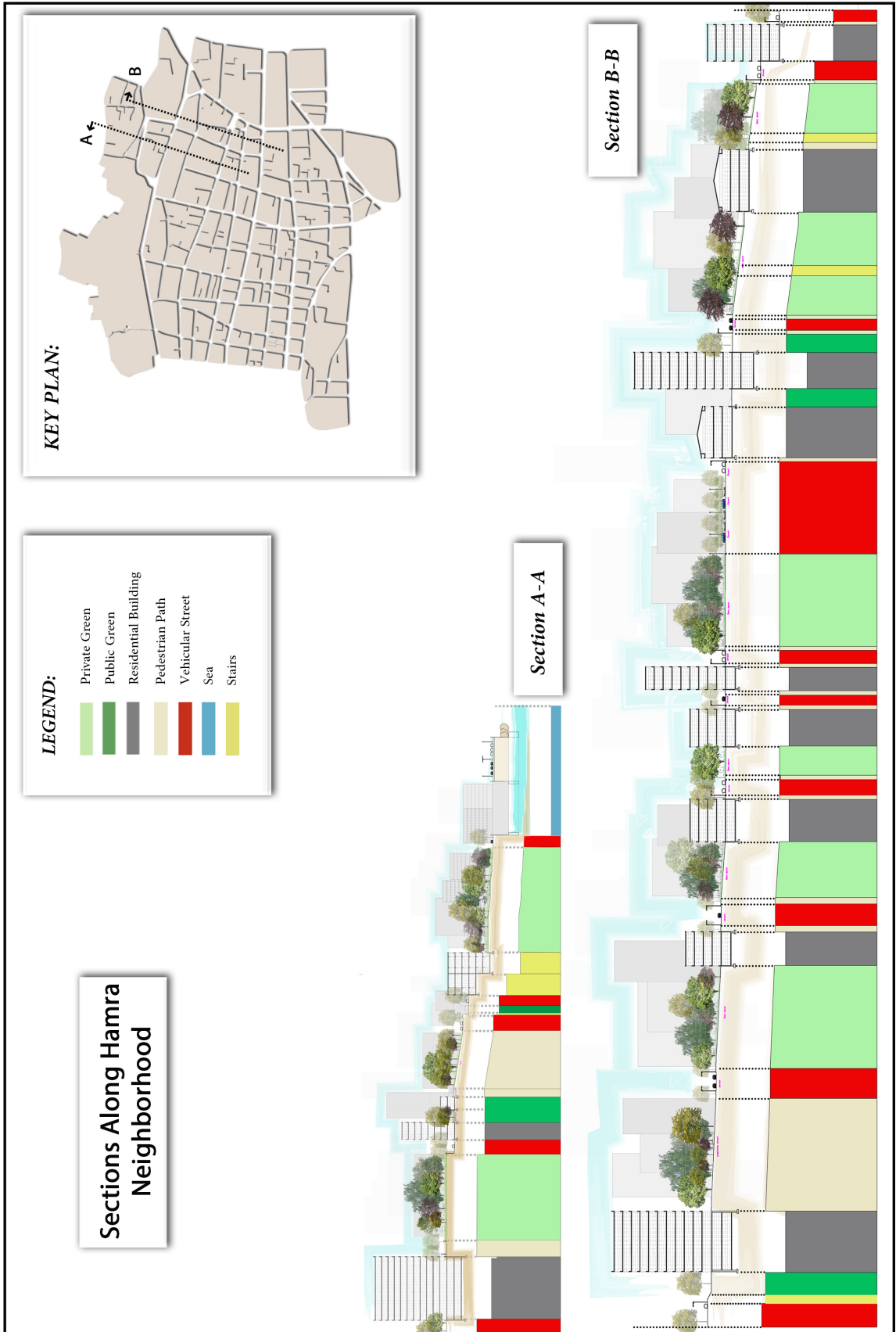


Figure 3.8: Section showing different functions. Source: Mais & Balaa

CHAPTER 4

COMPREHENSIVE PEDESTRIAN NETWORK

All in all, maps showed that the area is very accessible for dwellers and visitors. It includes major commercial activities and services that attract visitors; therefore, a network of open spaces, privileging soft mobility and building on existing spatial practices and neighborhood, through focusing on the physical constraints that constrain walkability in Hamra social spaces, will engage all the users of Hamra and lead to improved livability in the area. In this section, the strategy for identifying the resources that will help introduce a comprehensive network will be clarified along with the open spaces analysis.

4.1. Strategy for Identifying a Network of Open Spaces

This network will offer the area with all the resources needed from open spaces to pedestrianized streets, pocket gardens, and the connections between them. Un-built lots and leftover spaces will be the major elements to activate this network. Knowing that, those two types open spaces are privately owned, even though they are open for public use most of the time. For this reason, expropriation from the Lebanese planning law will be used by expropriating up to 25% of the lot area for public interests without paying any compensation to implement roads, passageways, or public spaces. The main stakeholder, the Municipality of Beirut, will take this action. A lot of open spaces with their different functions exist in the area. Those open spaces are sub divided into two different types. The maps below will illustrate the potential and existing open

spaces that allow for many design opportunities to be included in the network.

4.2. Types and functions of Open Spaces

Open spaces within Hamra can have many different functions (Fig. 4.1). Some open spaces are actually hidden between buildings serving as a storage area, storing tanks generators and resident cars these are referred to as back yards. Private and public parking's, unused and institutional spaces, in order to the construction sites that have been mapped. as to clarify what spaces remain for us to include into our pedestrian network.



Figure 4.1: Different function of open spaces, Source: Mais & Balaa

Such open space were categorized under two types, the un-built lots (Fig. 4.2) and leftover spaces (Fig. 4.3) since these spaces have potential to become a main part of our pedestrian network and urban space nodes.

- Leftover spaces are of two types: setbacks and building entrances.

Some building entrances stretch out on to the streets and can be either fenced or not.

The ones that are not fenced have the potential to be used as a part from the open space network that can serve the walkers as a resting place, that contains some landscape furniture such as (lightning, benches, flowerboxes...).



Figure 4.2: Different function of open spaces, Source: Mais & Balaa

Setbacks are used for private parking spaces alongside the building, or used for water tanks and electrical generators. Most of the time, setbacks are not well managed and used in the right way. Why don't such setbacks between buildings can be opened and shared by the residents to make there own open space?

- Un-built lots:

In Hamra neighborhood, there are a lot of un-built lots that have been used as public parking spaces or empty lands. Such lots have the potential for being a public open space serving the areas missing needs. But most of these parking lots are privately owned, except the one in Abdul-Aziz Street facing the Golden tulip Hotel. Such parking space has the greatest potential for achieving a project that will help in creating the open space network starting from a neighborhood scale open space.



Figure 4.3: un-built lots, Source: Mais & Balaa

4.3 Potential Network of Open Spaces

This map (Fig. 4.4) is basically a filtering of all the tangible spaces ready for to be included in the network of open spaces. The spaces that can be used for “pedestrian pauses” in order to create attractive destinations in their journey, places to sit or walk or perform physical activities, places for entertainment or work, and actual extensions that complement and reinforce the network.

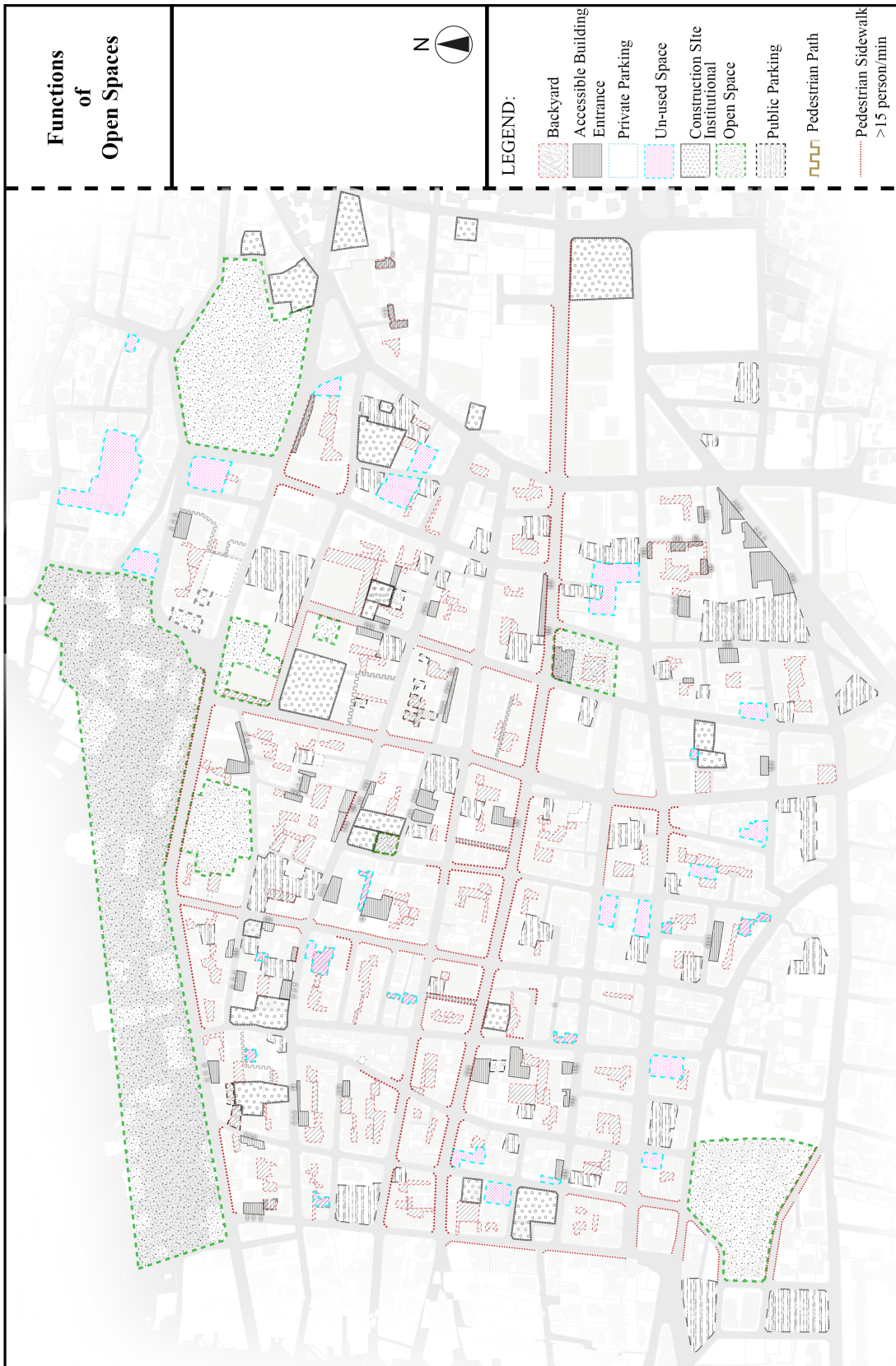


Figure 4.4: function of open spaces, Source: Mais

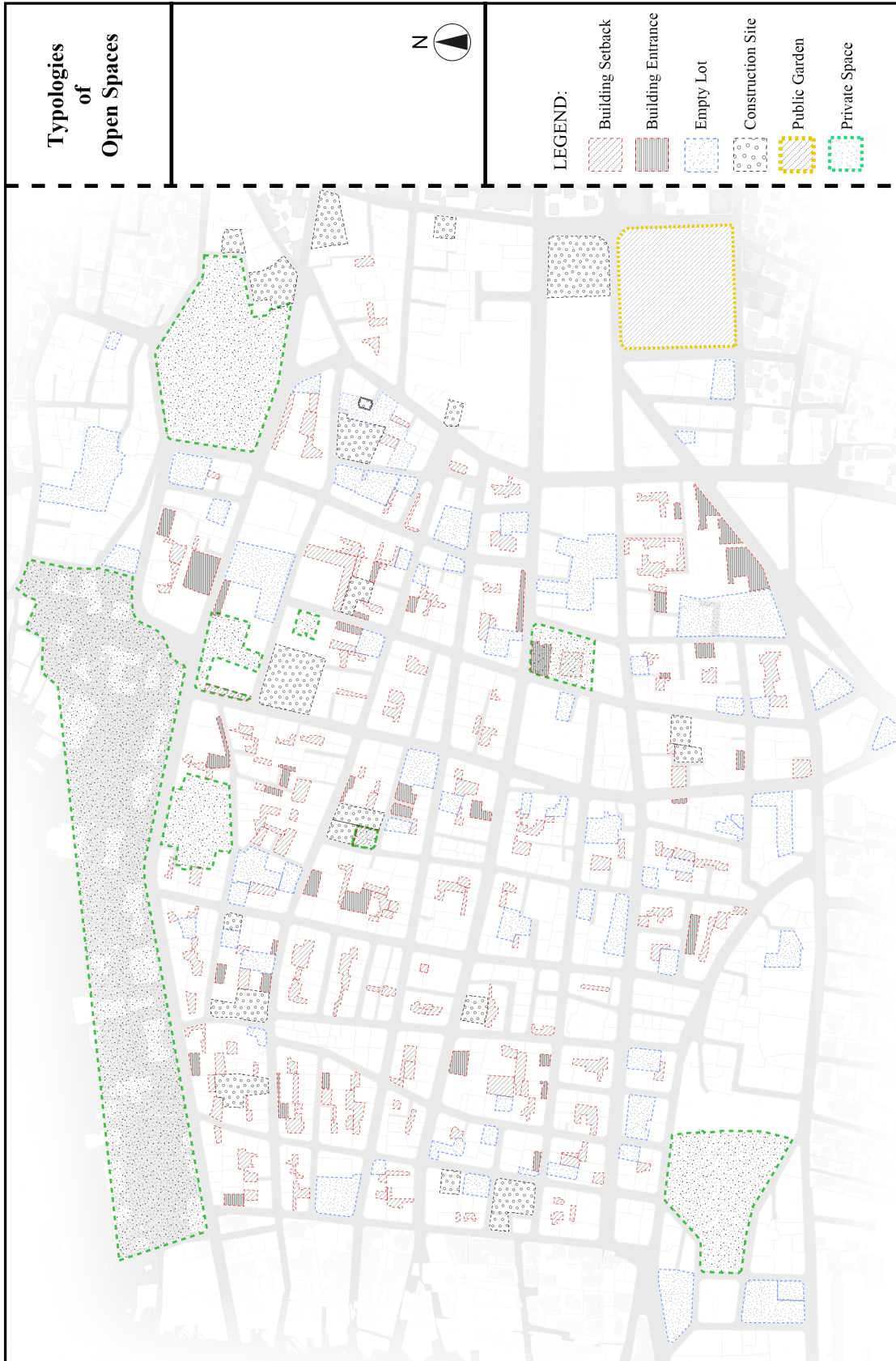


Figure 4.5: Types of open spaces, Source: Mais

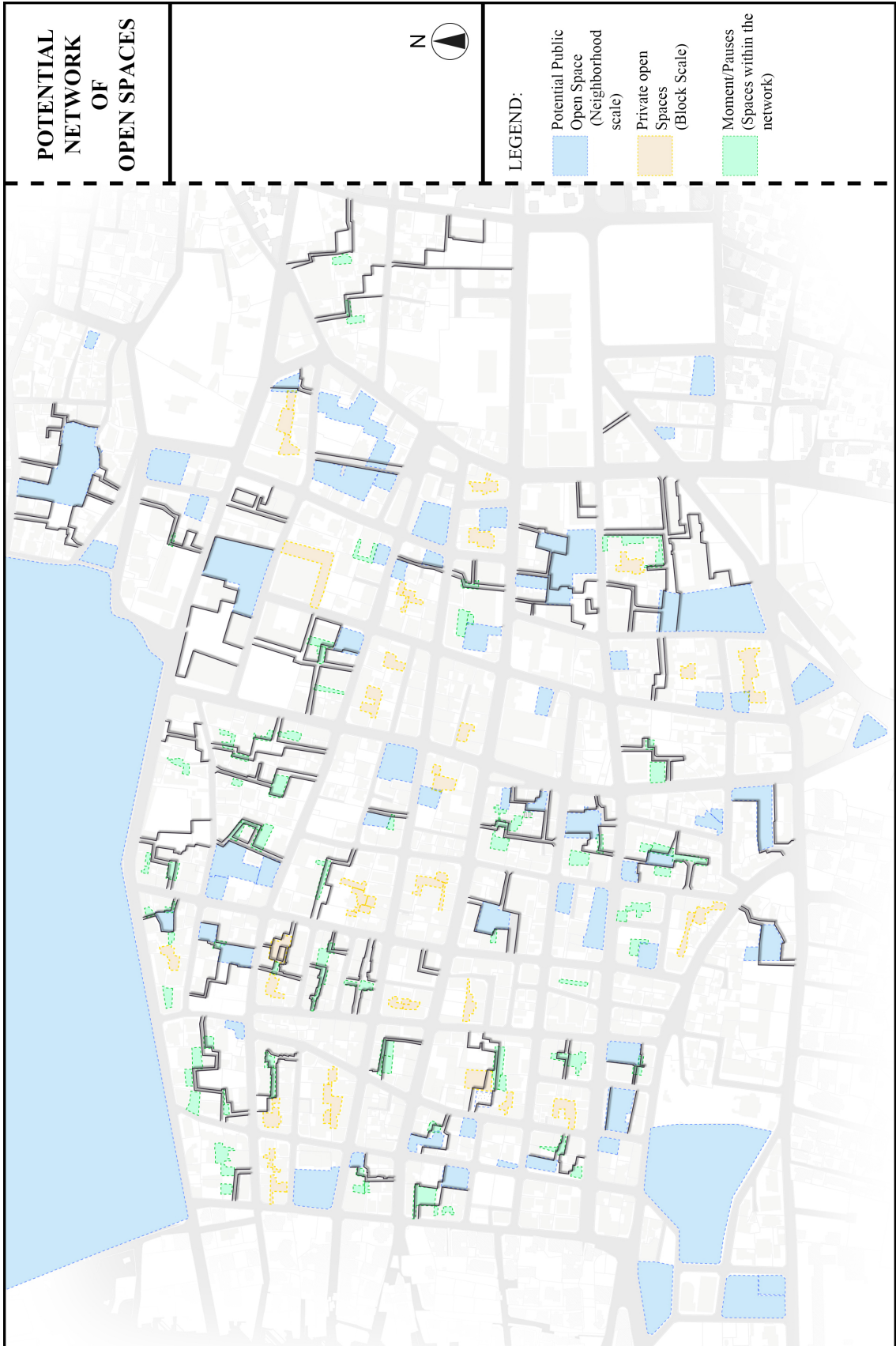


Figure 4.6: Potential Network of open spaces, Source: Mais

After identifying the different Functions, typologies and accessibility of open spaces, a study by Dana Balaa was done for achieving a pedestrian network. This study includes the potential pedestrian path at both the block and neighborhood scale.

1. At the block scale, accessible pathways within the blocks, and different types of blockages have been highlighted all over the neighborhood. The obstacles are mostly walls (high and low); gates, fences, level difference and wild nature are also types of blockage. Water tanks, generators and construction sites are another. The blocked pathways within the blocks aren't always visually blocked; having visual continuity onto an open space allows the user to feel that they are in a larger open space than to have them visually blocked out. The accessible pathways within blocks are the key to creating the network; it allows the pedestrian to penetrate through the block within a shaded and car free area. These accessible networks will have to be reassembled as to fit the public needs and landscaping added to animate them.

- Pedestrians appreciate visually attractive environments, it cannot be expected that paths and spaces will be popular if there is no attention devoted to such features.

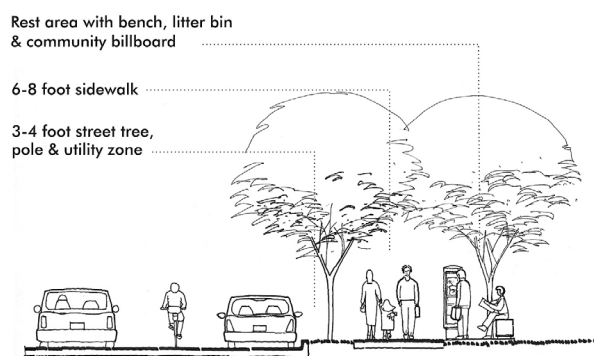


Figure 4.7: Detailed Section showing Pedestrian area Source: www.internetigloo.com

- Walkers also need resting places from time to time; landscaping, coordinated graphics, and attractive street furniture are all a part of the design challenge. These include benches, water fountains, telephone booths, signs, information kiosks, public toilets, litter baskets, and possibly quite a bit more (Fig. 4.7).
- Sidewalk cafes, vendors, pushcarts, musicians, and entertainers may also be present, adding lively activity and color (Fig. 4.8).

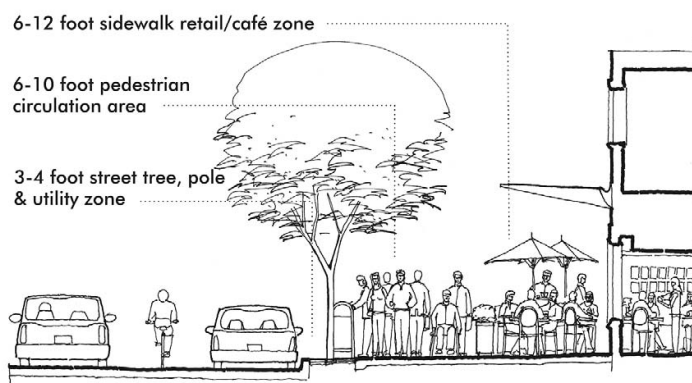


Figure 4.8: Detailed Section showing Pedestrian area Source: www.internetigloo.com

Not to forget sufficient drainage to keep rain water running and street light fixtures as to insure safety during the dark hours will also help keep the pathways user friendly. These accessible pathways are almost all visible from the surrounding buildings; which makes it a "home watch area". A home watch area is an area kept safe by its residents; in any case of inappropriate behavior the residents will call some sort of security service. This causes troublemakers to feel paranoid and helps keep any burglar activity at a minimal level.



Figure 4.9: Analysis of Pedestrian network: Block scale Source: Balaa

2. At the neighborhood scale, Street classification system consists of four categories (Fig. 4.10):

1. Local streets-minor and major
2. Collector streets-minor and major
3. Arterial roads
4. Freeways

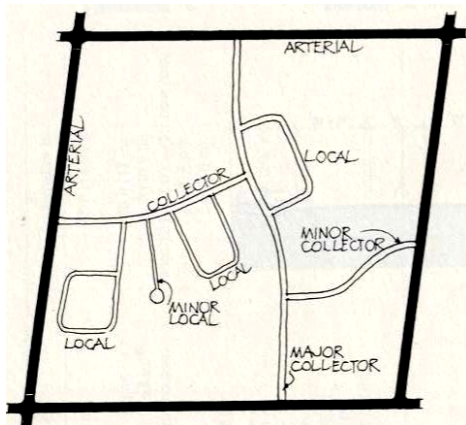


Figure 4.10: Street classification system Source: www.cornwall.gov.uk

Mapping vehicular roads is a process usually carried out to study possible pedestrian networks. Vehicles are restricted however to move only along the roads designated for them; as for pedestrian movement, producing a focused mapping of their movement cannot be limited to the identification of existing walkways. In Hamra it is hard to stick to one particular route or lane, not only are the streets animated with shops that may attract you to move from side to side but some find plenty of obstacles on the pavement and tend to walk haphazardly from one side to another in order to reach the destination they are going to. Some people tend to walk only in the shade, while others walk alongside the cars due to the appalling state in which sidewalks are in. An absence of crosswalks and controlled pedestrian barriers has caused an absurd mix between

pedestrians and vehicles. Pedestrian mapping must hence take into account all walkable areas rather than just existing sidewalks along the road system. The walking areas highlighted belong to both the private and public domain

Therefore the map (Fig. 4.11) reveals a traffic calming treatment for both arterial and collector streets. Wide speed bumps, Zebra crossings and traffic lights can help calm the traffic.



Figure 4.11: Potential Pedestrian network, Neighborhood scale source: Balaa

- Traffic Calming on Arterial & Collector streets (Fig. 4.12):

construction of roadway surfaces with materials that introduce surfaces texture to the roadway, such as paver stones, bricks, surface concrete patterns or stamped asphalt. Surface texture can create visual, vibratory and auditory effects. Texture can be utilized in a variety of applications, from treating entire streets, sidewalks or intersection to accenting and defining pedestrian crossing locations.



Figure 4.12: Street classification system Source: www.cornwall.gov.uk

- Traffic Calming on major streets (Fig. 4.13):

Road humps are used to stop people speeding up rather than slow them down on major streets. They need to be accompanied by slowing features at each end of a run of humps. They are suitable for residential areas. Effectiveness decreases as spacing increases, 150m maximum.



Figure 4.13: Street classification system Source: www.cornwall.gov.uk

- Traffic Calming on Local streets (Fig. 4.14):

Speed Tables similar to road humps but longer and with a flattened top, sometimes used to give pedestrians a level crossing between footways. They can also be used throughout a junction. Especially useful where there are a lot of pedestrians, and in narrow and local streets where pedestrian walks a lot. If they are long enough, they provide a smoother ride for buses than humps. Often used in conjunction with humps.



Figure 4.14: Street classification system Source: www.cornwall.gov.uk

4.4. Preliminary Comprehensive Network

Last but not least the map (Fig. 4.15) that was put together is a combination of all the filtered open spaces and the potential pedestrian paths that was conducted by Dana, to allow a user-friendly route. Encouraging walk-ability and continuity, all the possible spaces a pedestrian could use to move throughout the neighborhood and places of intersection have been mapped as to prepare us for the detailed design we will reach in the next chapter. The proposed final network consists of a pedestrian path, and a series of open spaces to serve pedestrian movement within the neighborhood, leading residents as well as visitors to different locations and activities.



Figure 4.15: Preliminary network: Mais & Dana



Figure 4.16: Selected Block: Mais

4.4.1. Selected Block (Fig. 4.16)

Based on the investigation of open spaces, streets and alleys in Hamra and the identification of potentials and constraints through which a pedestrian and open space network can be proposed within the neighborhood, I now turn to defining the urban design strategy. For this end, I have selected a section of Hamra within which the urban design strategy components can be implemented. This section extends from the medical gate of AUB to the north, towards Hamra Street to the south, up to Wardieh to the east and HSBC Bank to the west (See Fig. 4.17). There are several reasons that justify the selection of this section:

- The presence of a large-scale municipal property (facing HSBC Bank), currently earmarked to become a parking building by the municipality that can serve as a main open space anchor to my intervention.
- The presence of several quiet, shaded and green streets and alleys surrounding residential blocks, with setbacks, which have strong potential to be connected and linked into a pedestrian path punctuated by small open spaces.
- The presence of AUB and AUBMC's open spaces which can be integrated into a network of open spaces, building on the interests of the AUB to enhance public space in the neighborhood, as demonstrated in the several urban projects proposed by its Neighborhood Initiative.
- The wide variety of land uses (medical and health facilities, hotels, shops, restaurants...) make it one of the busiest sections of

Hamra which could really benefit from the creation of livable open spaces where people could pause and rest, and from car traffic regulations.

- The proximity to the seaside corniche—through the staircases close to AUB medical gate—also presents a major opportunity for connecting Hamra through a network of open spaces to its most open space: the sea.



Figure 4.17: Selected Block of the network, Source: Mais

There are of three types of open spaces in the selected area: unbuilt privately owned open spaces, leftover open spaces, and setbacks. My design strategy focuses on developing leftover spaces and setbacks, as it will be difficult to expropriate private lots or to convince the owners of developing them for public use. The urban planning law provides me with the tools needed to intervene on setbacks and leftover open spaces for promoting public interest, as their size is equal or less than the 25% which can be expropriated without compensation.

My strategy operates on two scales: the block scale and the neighbourhood scale. The former allows me to work with the leftover open spaces, while the latter allows me to focus on existing large open spaces in order to turn them into public spaces/gardens. The cornerstones of my strategy are two open lots: one is publicly owned (the municipal lot facing HSBC) and one is privately owned (AUB open spaces adjacent to the medical gate).

Figure 4.18 highlights the network of open spaces I propose to create. It is made of two key open green spaces in the selected area (black squares), which have linkages (via the blue bubbles). Traffic-calming measures are also designed to reduce conflict between pedestrian and vehicular movements. The orange-dashed path and the black-arrowed streets indicate the walkways that are for exclusive pedestrian use. Along their way, pocket gardens adjacent to buildings' entrances will animate the path and create rest areas. Figure 4.19 illustrates conceptually how the proposed open space network flows and connects through the streets and alleys. Figure 4.20 presents the details of the intersections between the vehicular street and the pedestrian network, showcasing the traffic calming measures proposed. It also locates the four open spaces designed

through the network, as well as the several pocket gardens that will provide pedestrians with shaded open spaces, which can be used for different activities.

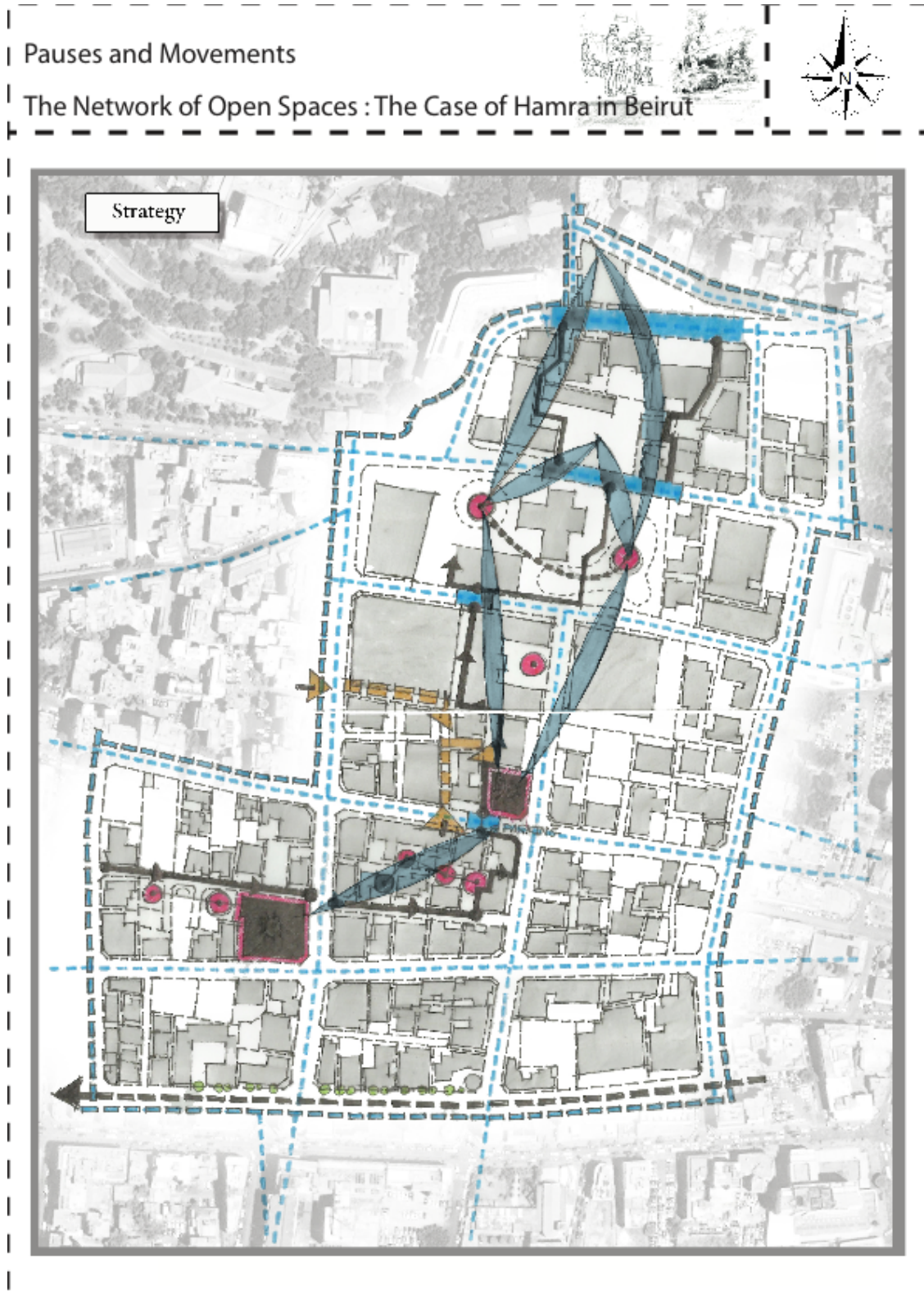


Figure 4.18: Strategy of the selected Block of the network, Source: Mais



Figure 4.19: network of the selected Block of the network, Source: Mais

Pauses and Movements

The Network of Open Spaces : The Case of Hamra in Beirut

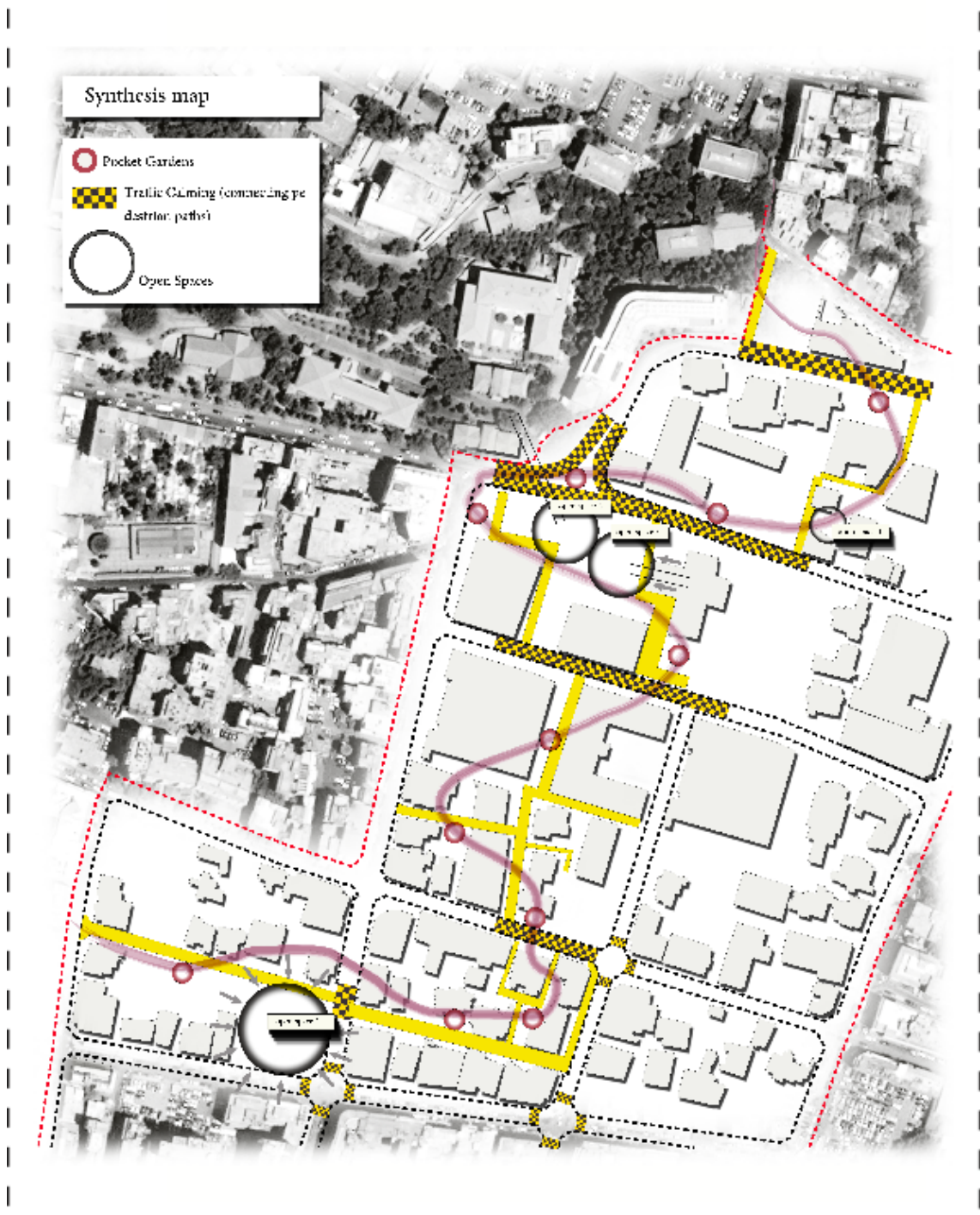


Figure 4.20: Synthesis map, Source: Mais

4.4.2. Elements of the Open Space Network

More specifically, the open spaces network consists of four main elements:

1. **Open Spaces:** There are four of them, which are open to everyone, though they prioritize different publics through their designs and functions.

- The first open space (Fig. 4.21) is the municipal lot. I suggest developing parts of it into an income-generating intervention for the municipality, which can sustain the maintenance and operating costs of the overall design intervention I am proposing. A set of design guidelines will regulate the architectural intervention on the site in ways for the site to remain a publicly accessible open space, geared towards cultural, arts and leisure functions at the city scale.



Figure 4.21: Open Space 1, Source: Mais

- The second open space is the one located next to the AUB medical library (Fig. 4.22).

This space will be designed in ways to serve AUB medical faculty, students and staff, as well as other people living in or coming to Hamra. Its design guidelines will favor a quiet, shaded space, conducive to resting and reading.

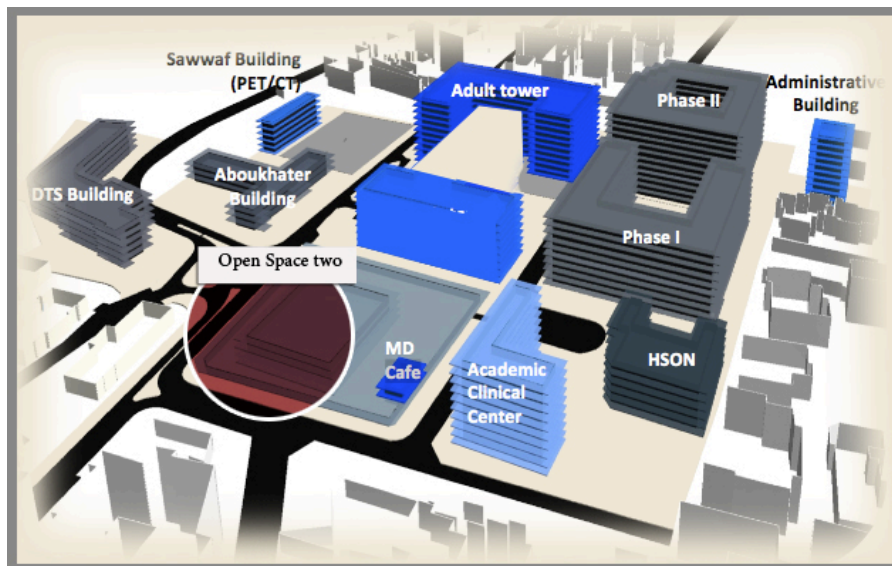


Figure 4.22: Open Space 2, Source: Mais

- The third open space (Fig. 4.23) is located next to St.Jude Children Research Hospital, within AUBMC. It is right beneath the medical library open space, with a 4.5m

difference in level. The design guidelines I propose here are to connect both spaces through staircases, in ways that still safeguard the quiet character of the library open space. This lower open space should be designed to accommodate in priority the needs of children and parents coming to St. Jude, but will also be open to other families residing in Hamra, or visiting the neighbourhood, and will include play areas and socializing areas.



Figure 4.23: Open Space 3, Source: Mais

- The fourth open space is the AUBMC public parking lot, which I suggest to design as a community garden, with an underground parking.

2. **Pocket Gardens:** These small scale open spaces will be situated along the open space network (Fig. 4.24) and will serves the adjacent buildings in priority, as well as pedestrians using them as shortcuts. They will act as resting shaded spaces where casual gatherings can take place.



Figure 4.24: Pocket Garden, Source: pagestreetgarden.blogspot.com

3. **Pedestrianized Streets** (Fig. 4.25 – 26): These are streets with restricted car access (only for building residents and for building servicing) which are designed in ways to include shaded areas, with seating and urban furniture that encourage sitting, hanging out and interaction. They could also serve as sites for occasional events, such as street markets and festivals, as well as other activities.

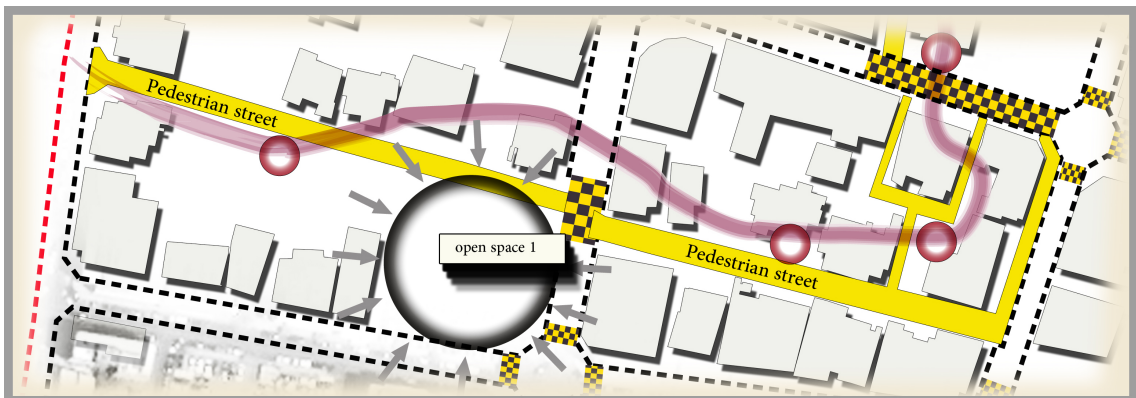


Figure 4.25: Pedestrian Streets within the area, Source: Mais



Figure 4.26: Pedestrian Streets within the area, Source: Mais

4. **Traffic Calming Measures** (Fig. 4.27): These reduce vehicular traffic's intrusions onto pedestrian movements. They are situated on intersections between pedestrian streets and serve to make pedestrian flows safer and more pleasant.



Figure 4.27: Pedestrian Streets within the area, Source: Mais

4.4.3 *Hierarchy of movement*

Figure 4.28 shows how the open green spaces are connected to a range of different pathways, with a clear hierarchy: partially pedestrian streets, smaller pedestrian paths, wide sidewalks (more than 3m.), and vehicular streets.

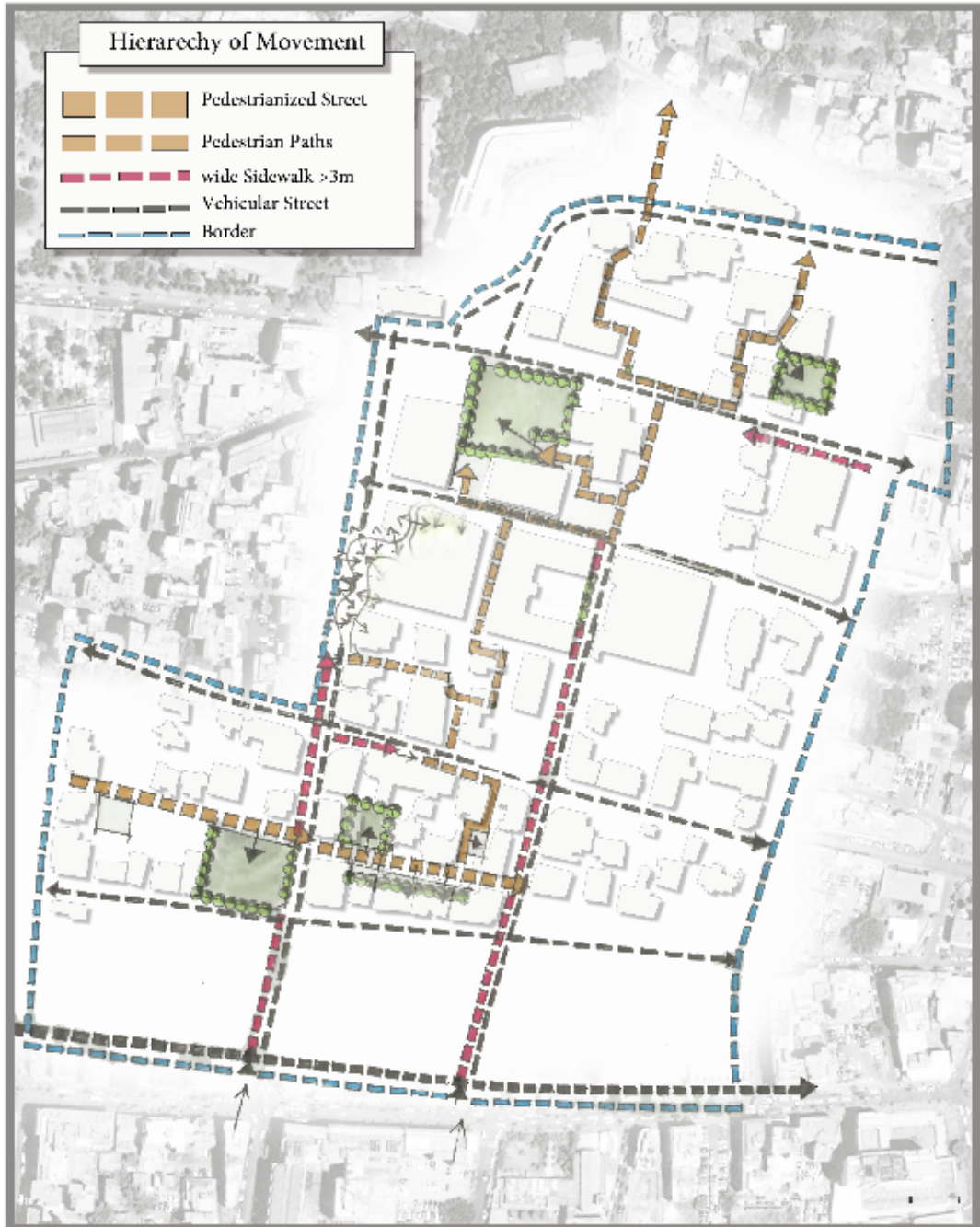


Figure 4.28: Street Hierarchy , Source: Mais

CHAPTER 5

DETAILED DESIGN INTERVENTIONS

5.1. LEGAL AND INSTITUTIONAL FRAMEWORK

This section means to form a lawful and institutional framework for the proposed project. Setting the legitimate system was a huge part of the study since it could either discourage or guarantee the achievement of the project. An exhaustive understanding of the Lebanese Urban Planning Law helped in demonstrating how the project will be implemented, and to let it work. While, at the institutional level, I endeavor to set up an assumption, helping in understanding the structure that would indicate how the task could be overseen and kept up.

5.1.1 Planning Framework in Lebanon

In this section, I overview the existing planning laws in Lebanon, using the urban planning law number 93 (1983) and building in the thesis of Maya Majzoub. Some of these planning tools will be selected to legally acquire the selected open spaces. These are the Lebanese laws:

- Land pooling/re-parcelization
- Public agency
- Real estate company
- 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. Especially that I want to benefit from the setbacks that are usually disregarded leftover spaces and are often neglected and used for storage, and building entrances to create the pedestrian path with the pocket gardens. 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.

Furthermore, expropriation is difficult in general because public authorities do not have sufficient amount of money to expropriate, and land prices in Hamra are very high. So, It is however possible to compensate for the high prices of land by:

- a. Expropriating less than 25% of a lot, allowing hence for the decree to expropriate land as "passage" or "roads".
- b. Expropriating land when exploitation factors have already been used, allowing hence for low prices since the price of land is already paid.

Tool	Level of built up	Costs to public authorities	Technical feasibility	Political feasibility
Expropriation /Road Planning (up to 25% of total lot area)	Doesn't matter as long as 25% free space is available in the	No cost	Not difficult if it does not trespass buildings or agricultural properties.	Such planning intervention can be implemented, but it also depends on property owners' receptiveness towards intervention

Table 2.2: chosen Legal Methods to Acquire Open Spac. Source: Maya majzoub

5.1.2 Institutional framework

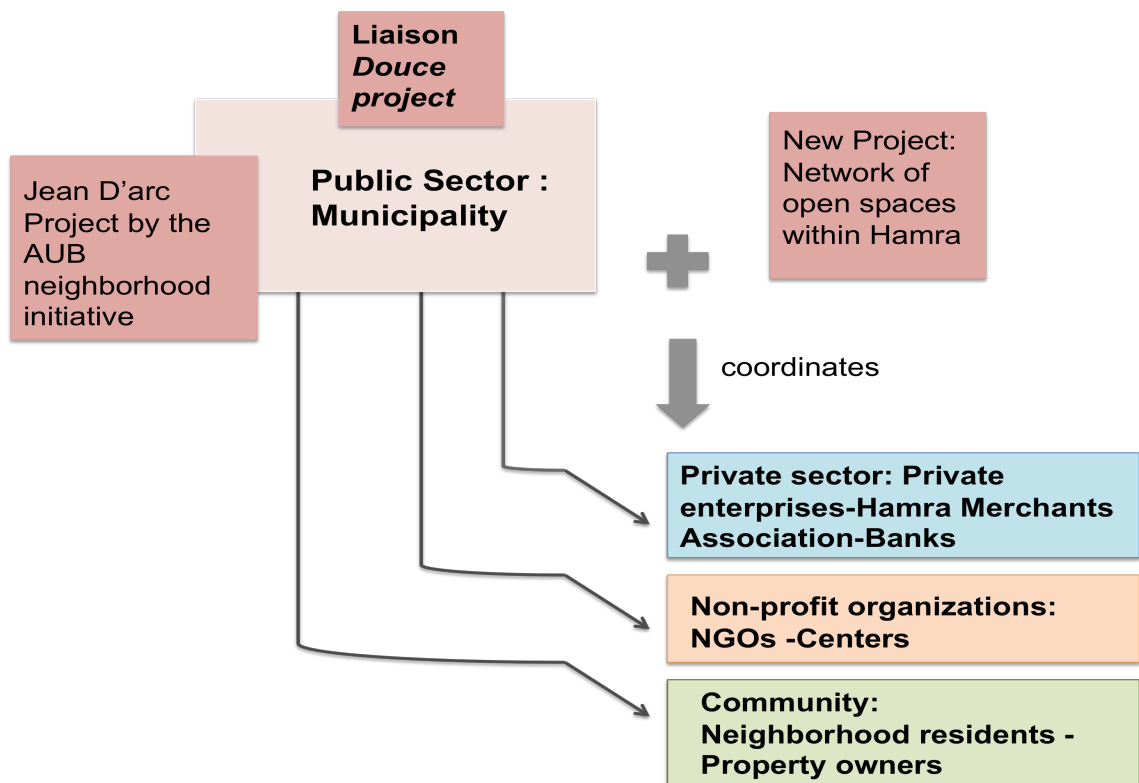


Figure 5.1: Governance Structure, source: Mais

I will assume that the Municipality of Beirut will accept to implement the project (network of open spaces), since it has the power to apply it legally. The municipality also has interest in such project especially after accepting to implement the project of the AUB neighborhood initiative in the Jean D'arc street, and the project of the l'iaison douce; and it would provide connections and coordinate with governmental institutions and authorities that could participate in funding the projects (Fig. 5.1).

Moreover, The private sector could be a potential partner in funding such projects, especially that the project would result in pedestrianizing some streets, and rising the value of some open spaces that will attracts users and visitor. Such Project will encourage the banks in Hamra and the Hamra Merchants Association, especially that the merchant association have closed several times Hamra, and Makdesi street and transform the only for pedestrian movement, providing bazaar, and many other cultural activities that fits all ages. On the other hand, the non-profit organizations “ NGOs “ would be helpful partners since they would provide expertise and volunteers for project planning and implementation. Also universities can provide some students who are studying urban design and planning to help in implementing this project. Without forgetting Hamra residents, they should be involved, since they are one of the most considerable stakeholders that are directly affected by the transformations that would develop in their surroundings.

Public Sector: Municipality of Beirut

The Municipality of Beirut leads the undertaking, since the project obliges a robust structure to dispatch it and guarantee its maintenance and progression; in particular, the municipality of Beirut is the authority that has the right to arrange and execute lawful apparatuses for creating spaces in the city, especially that such a plan is complementary to the projects that the municipality has for the city like the Jeane D’arc project and L’aison douce. Since the project would incorporate public and private associations, the municipality will lead this public private partnership.

Private Sector: Private enterprises

Hamra Merchants Association might be a good potential in funding the project. First, they will get benefit from the spaces around and behind their shops by attracting visitors and residents more, since those spaces will be upgraded. Moreover, Hamra Merchants Association have interests in this project since they already did the “Hamra Spring Festival “ and other similar projects in Hamra, that can be considered as a good example of how pedestrianization would work in Hamra. On Sunday 13 April, many Hamra streets and parking lots were closed of circulation. Many activities were organized for divers groups and attracted a wide audience of users. The project was organized by Makdissi’s trades association and involved many NGOs. It demonstrates how such public-private initiatives; including multiple stakeholders can be successful in promoting walk-able neighborhoods.

Non-Profit Organizations

Non-profit organizations are one of the main stakeholders that help in activating projects relating for public open spaces and securing the progression of such projects. Especially in the area of Hamra there are more than 31 NGOs, so it is important to establish partnerships with them in order to develop connections and benefit from their experiences, volunteering and know-how.

The AUB Neighborhood Initiative (AUBNI) could also provide support for such projects, especially intellectual AUB resources. The Initiative supports research and outreach activities, including noise pollution, increasing density and congestion, lack of greenery, broken and obstructed sidewalks, lack of public space, and lately working on

improving the walkability of Jeane D'arc street.

Community: Neighborhood Residents

The Municipality of Beirut would approach dwellers by holding meetings with the residents to seek their involvement in planning and designing upper spaces along the network.

5.2 DETAILED DESIGN INTERVENTION

In the selected area, we can identify two areas, which include open spaces that have the potential to provide a variety of functions and services to different users. I will refer to the first one, located to the south, as the HSBC area, and to the second one, located to the north, as the AUBMC area (Fig. 5.2).

While the first area is mixed-use, grouping residential, commercial and office buildings, one medium-size open space and several smaller open spaces, the second area is more geared towards education and healthcare, and includes larger open spaces, overlooking each other. The HSBC area also includes a long quiet narrow back street, running East-West that acts as a spine between mostly residential buildings. The AUBMC area includes several smaller streets, hidden within the blocks, as well as a difference in level.

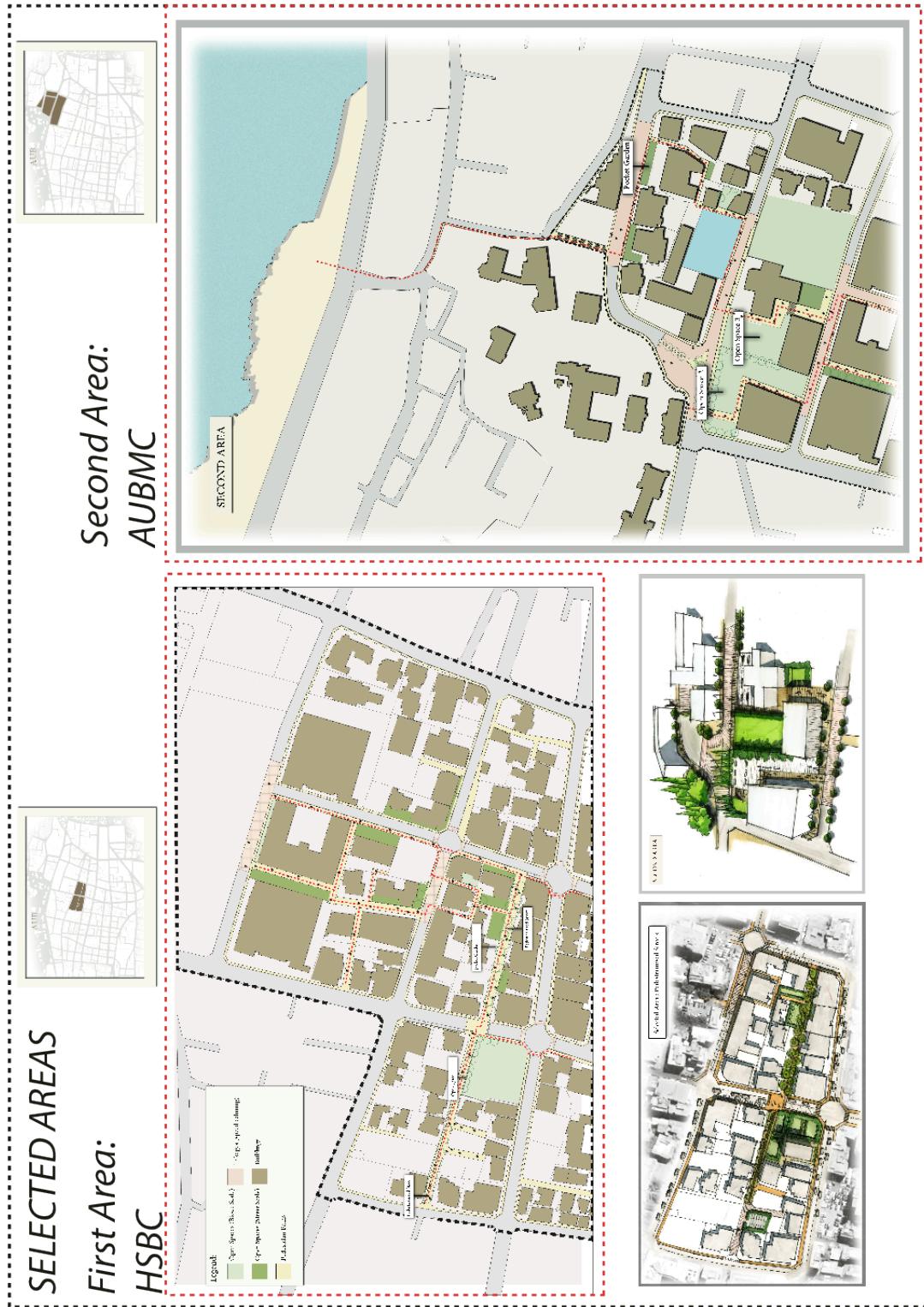


Figure 5.2: Selected Areas, source: Mais

5.3 Proposed Design Strategy for the HSBC Area

As shown in (Fig. 5.3), the HSBC area includes a secondary street between MakdIssi and Souraty extending 135 meters in length, and 7 m. in width, connecting Omar Ben Abdel-Aziz Street with the Indian embassy and residential buildings which form the majority of the buildings along the street. In its middle, a parking lot of 480 sq.m. Is situated. Most building and parking entrances are situated along this street. The street intersects the busy AbdulAziz Street and continues further East. The street is remarkable with its vegetation (trees, shrubs, flowers Fig 5.4), its enclosure, its pedestrian scale, and its relative isolation from traffic.

In addition, some of the buildings on the Eastern section of street include setbacks (Fig 5.4) that can be used to connect to smaller alleys through the block to other alleys in the adjacent block to the north, up to the AUBMC Area. These series of alleys and setbacks can be combined to form a pedestrian network with small open spaces, which can serve the dwellers of the residential buildings within the blocks, as well as pedestrian users of Hamra during restricted hours of the day as to maintain privacy and security of people living within these blocks.



Figure 5.3: Parkings and entrance analysis, Source: Mais

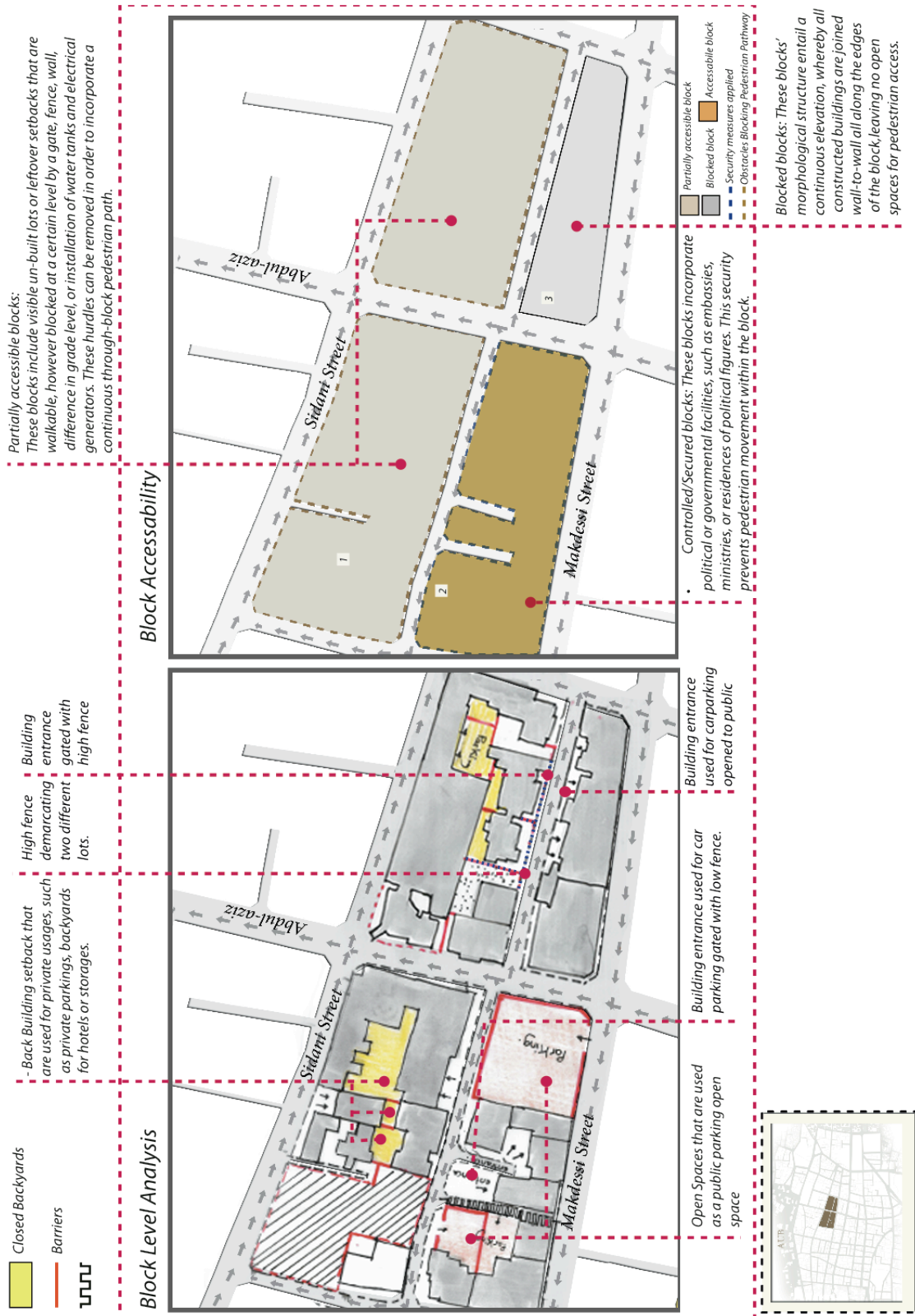


Figure 5.4: Block level analysis, Source: Mais

The map in Figure 5.5 shows the open spaces and pedestrian potential path I propose for the HSBC Area, as well as the accompanying traffic calming measures on the intersection with AbdulAziz and the streets between Makdissi and Souraty.

This map illustrates the design intervention for the HSBC Area, which will mainly take place along both streets between Makdessi and Souraty, and in the HSBC current parking site. The street between Makdessi and the India embassy will become only accessible by car to the dwellers of the buildings as shown. Visitors can use the underground parking I am proposing to build underneath the HSBC current parking site.

This underground parking will also serve the cars which currently park in the buildings' setbacks and which I am suggesting to integrate along the pedestrian spine and use as pocket parks, namely in the Eastern section of the street. The street will also become planted with trees that will provide shade and enclosure, as well as a sense of place. To facilitate access through AbdulAziz Street, I am designing a bump table at the same level of the sidewalk.

First Area
Block Between Sidani and Makdessi
Street. HSBC Area

- Pedestrian Pathways are linked
- Raised Crosswalk (table bump) is introduced
- Bollards are introduced preventing car accessibility to the sidewalk



These are streets with restricted car access (only for building residents and for building servicing) which are designed in ways to include shaded areas, with seating and urban furniture that encourage sitting, hanging out and interaction. They could also serve as sites for occasional events, such as street markets and festivals, as well as other activities.

I suggest developing parts of it into an income-generating intervention for the municipality, which can sustain the maintenance and operating costs of the overall design intervention I am proposing.

a pocket garden was introduced in the set back of an old building, that already contains old and big trees. In this area, benches, lights are installed

Figure 5.5: Intervention, Source: Mais

The below detailed sketches (Fig 5.6) provide further indications on the quality of spaces that will be created through my design intervention. (Fig. 5.6) shows how the street will be organized and divided. It includes four sections.

A first section (A-A) show how the table bump is continuous (Detail 1) with the same level of the pedestrian sidewalk, providing the pedestrians a safe way for crossing Abdul-aziz Street.

Detail 1 shows my intervention over the intersection with AbdulAziz Street, where I suggest giving priority to pedestrians and reducing car traffic. For this, I have added table bumps and introduced differently colored pavements to highlight the car-pedestrian segregation.

While Section B-B crosses the street before the table bump showing the variety of the sidewalk width, which is 1.8m Width, on the right side, and 3m widths on the left side adjacent to the open space to provide cars from parking near this open space.

Where as section (C-C), shows how the street is greened with bushes and trees, separates between the seating area and the walking area. This one functions as a shaded corridor, punctuated by lighting fixtures, and is 1.4m in width. These linear sections can also be used in a variety of ways for temporary events such as food markets, leisure events, cultural activities, etc.

FIRST AREA
Block Between Sidani and Makdessi
Street. HSBC Area

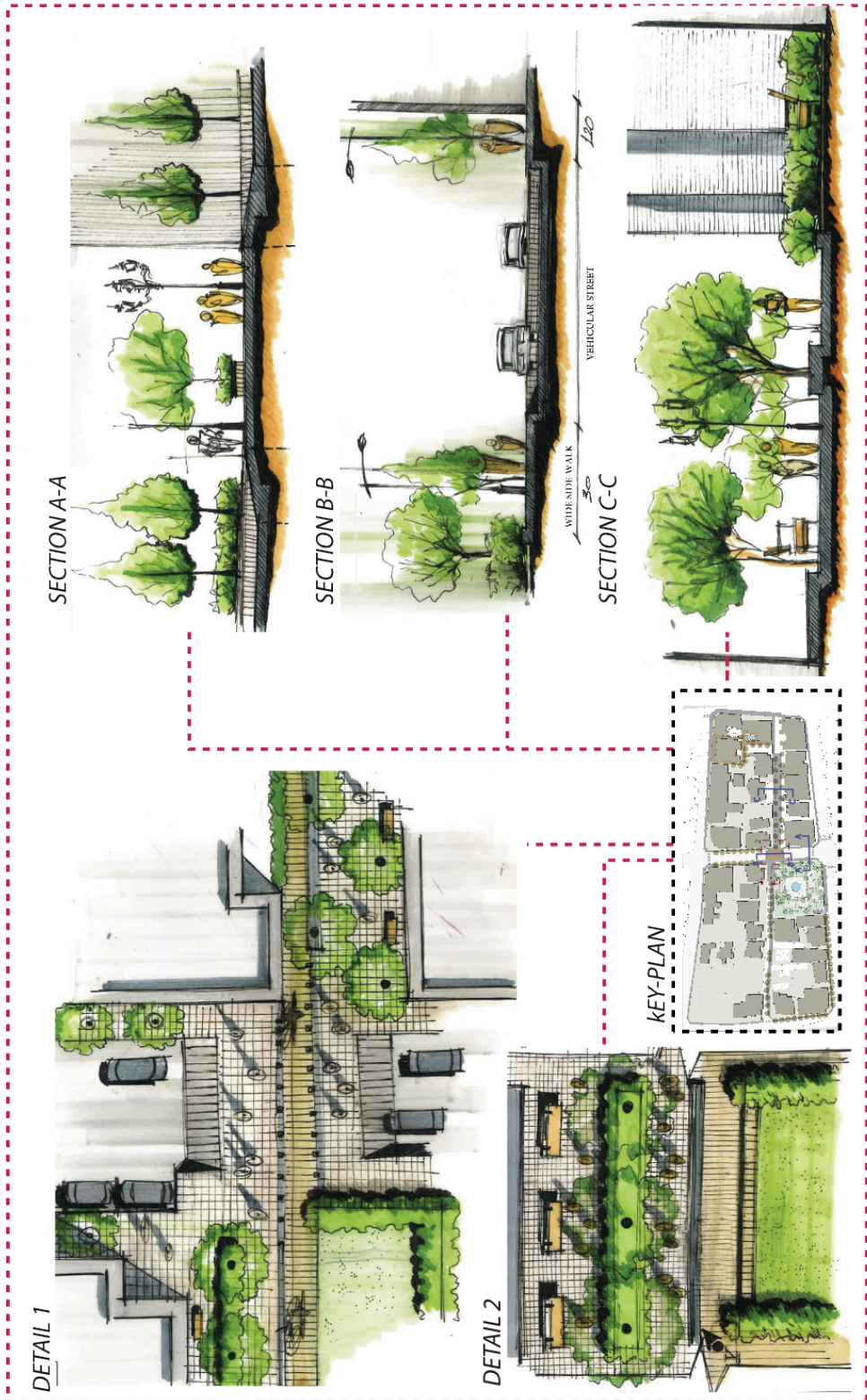


Figure 5.6: Detailed Sketches, Source: Mais

FIRST AREA
Block Between Sidani and Makdassi
Street. HSBC Area

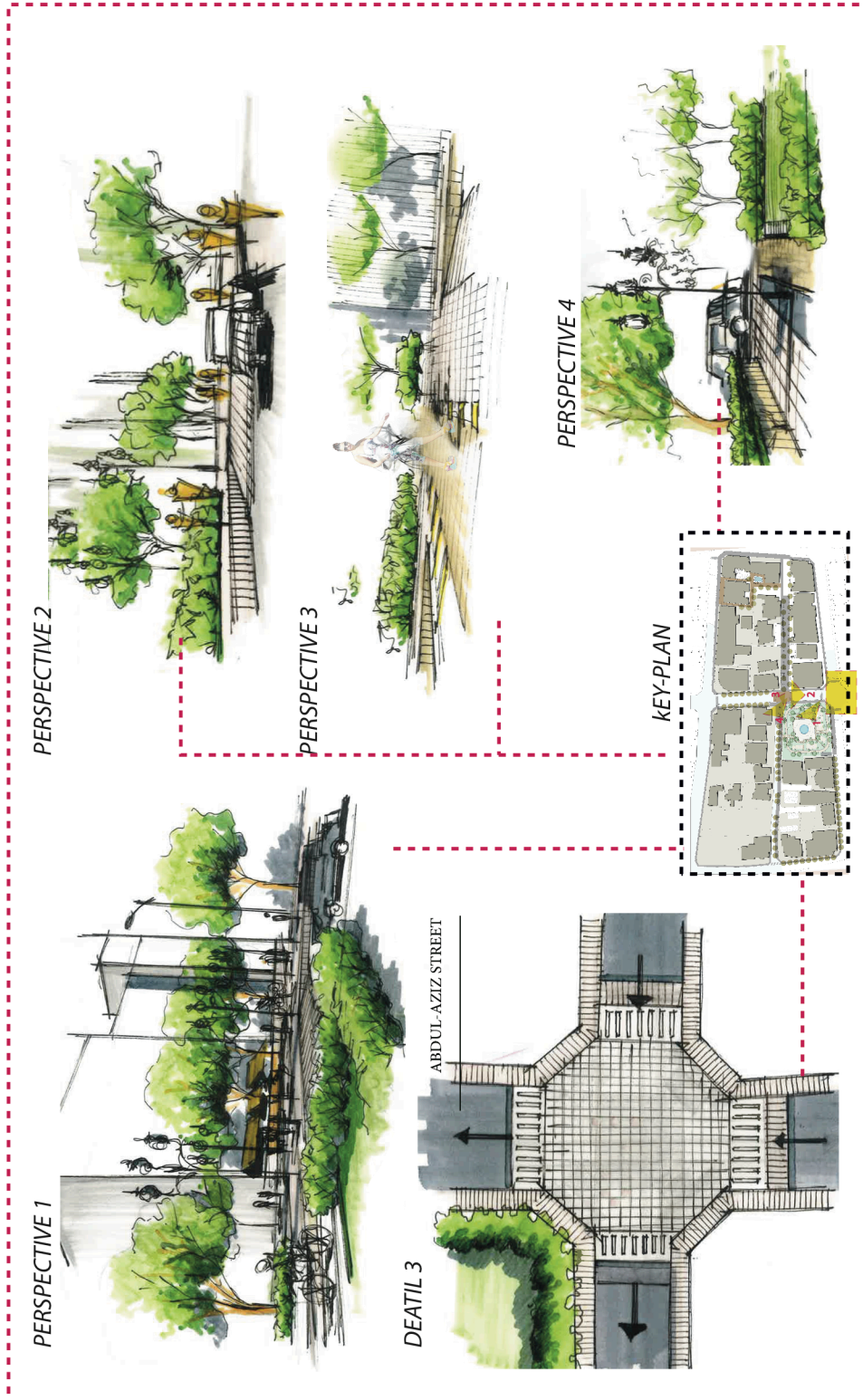


Figure 5.7: Detailed Sketches, Source: Mais

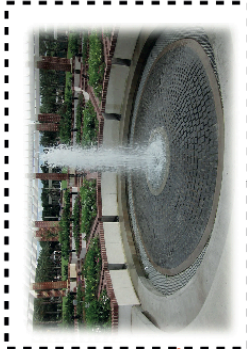
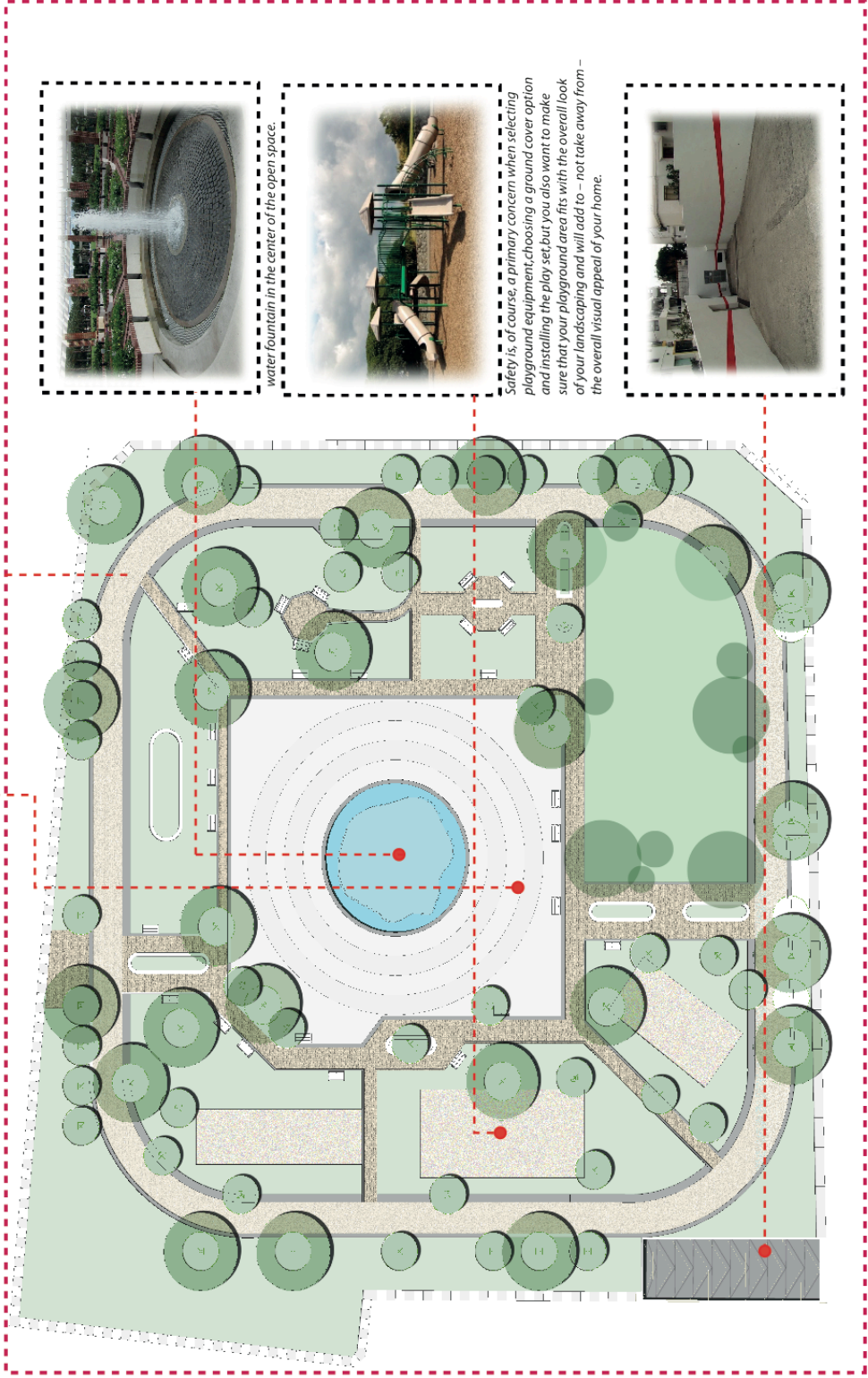
The sidewalk is raised 25cm from the vehicular street level to provide safety for pedestrians and to avoid car parking (perspective 2). Pedestrian movement is hardly affected by the presence of cars, as there is no change in level. So raising the sidewalk, and providing a lighted path on the speed table, provide a safe walking path for elderly and children but also for those with special needs. Such safe intersection between pedestrians and vehicles, and how it can be secure and harmonious is shown in perspective number 1 (Fig. 5. 7). Also by adding pavements, zebra crossings and speed bumps, crossroad can also be improved to accommodate pedestrian needs and safety better.

The key open space in this area is the current parking site-facing HSBC. This site is owned by Beirut municipality, which had plans to build on it a multi-storey parking building. These plans seem to have been put to a halt currently. Instead of parking building that will benefit very specifically the neighbourhood and the users of Hamra, I suggest putting the parking underground, and using the open space in more productive ways. (Fig. 5. 8).

Open Space 1
Between Sidani and Makdessi Street
HSBC Area



Sidewalks provide a flexible and porous alternative for a modern, environmentally friendly solution to cracked sidewalks, it can withstand even the heaviest amount of rainfall. Rubberwood Sidewalks can be designed to curve around corners, down slopes, and can be installed directly over tree roots without damaging them or hindering growth. The system actually encourages deep rooting, making the tree stronger and less likely to blow over in strong wind gusts.



water fountain in the center of the open space.



Safety is, of course, a primary concern when selecting playground equipment, choosing a ground cover option and installing the play set, but you also want to make sure that your playground area fits with the overall look of your landscaping and will add to – not take away from – the overall visual appeal of your home.



Figure 5.8: Open Space 1, Source: Mais

Parks are often oases of green in otherwise gray urban landscapes. Gravel paths meander under leafy trees, children play on grassy lawns and sand playgrounds, and fountains provide cooling spray on hot afternoons. However, this open space will bring together both beauty and utility by topping an underground parking garage with street-level greenery. In terms of the design, this project started with the idea of the green space, by relocating the parking to become an underground one (fig 5.9), helping pay for development of the green space above.

Open Space 1
Between Sidani and Makdessi Street
HSBC Area

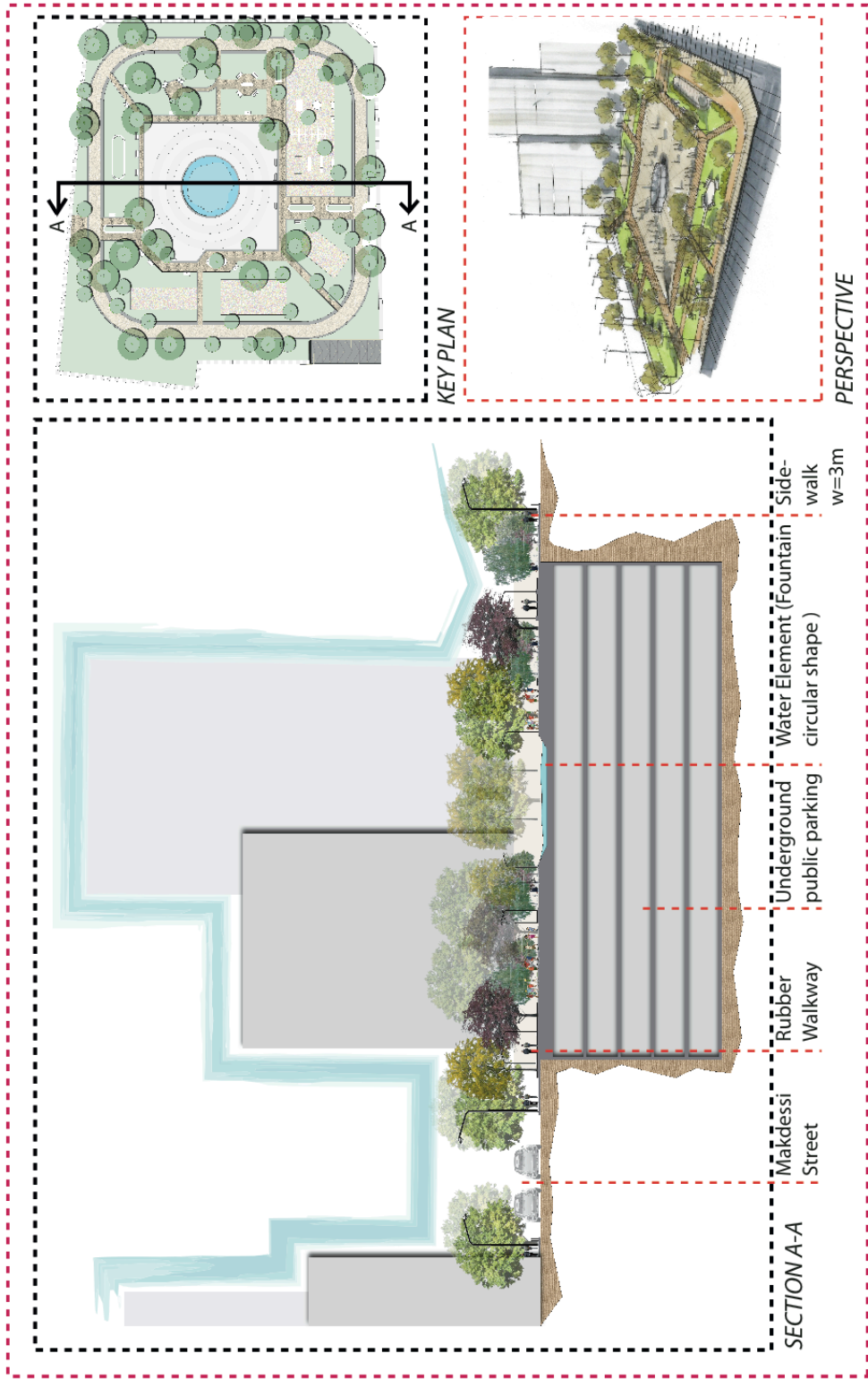


Figure 5.9: Section in open Space 1, Source: Mais

5.4. Proposed Design Strategy for the AUBMC Area

Map in figure 5.10 shows the open space surrounding the AUBMC library, and the open space located on Bliss Street below it, next to the Saint Jude center. It also shows the proximity to the seaside corniche through the staircases located along the AUB Eastern wall, close to the medical gate. The idea here is to create more lively public spaces in the currently deserted open spaces next to AUBMC buildings, connect them to each other through staircases, and connect them to the sea—the main open space of the city—thus creating a stronger physical connection between Hamra and Ain el-Mreisseh.



Figure 5.10: Second Area, Source: Mais

The AUBMC area has many open spaces, parking spaces and some pedestrian connections that are currently not well known to all users, and not well designed. To intervene on this area, I suggest a scenario within which AUB becomes a main partner of the Hamra community and supports its efforts to improve walkability in the neighbourhood, and to make it more liveable. This is plausible with the support of the AUB Neighbourhood Initiative which mandate is to enhance community-university relationships.

The AUBMC area contains three different functions of open spaces. The private, public and Semi-private fig (5.11). On the level of design, I suggest introducing stairs that directly connect the AUB medical gate to the AUBMC library and reading area. The AUBMC will gain improved connectivity between its campuses and better circulation for patients, faculty, staff and students. I also propose a landscaping strategy that will separate open spaces from each other, and from buildings, depending on function and use. In addition, traffic calming measures and zebra crossings are introduced along Bliss Street to facilitate the mobility of pedestrians. Fig (5.12)

The open spaces I propose play different roles for a variety of users. The open space next to the AUBMC library is quiet and enclosed to provide reading spaces for students. It is elevated from the ground by 1m, so it will be more private by planting trees around it to separate it from the rest of the space. Moreover, a small piazza is placed at the entrance of Issam Fares building to provide the visitors a gathering space. So, this open space is considered semi-private. The open space next to Saint Jude, and below the library level is geared towards families and children's of Saint Jude, and

includes seating areas and playgrounds. It is separated from the medical library's open space by cancelling the old connecting stairs between them. This space is more a private space only for Saint Jude children's .

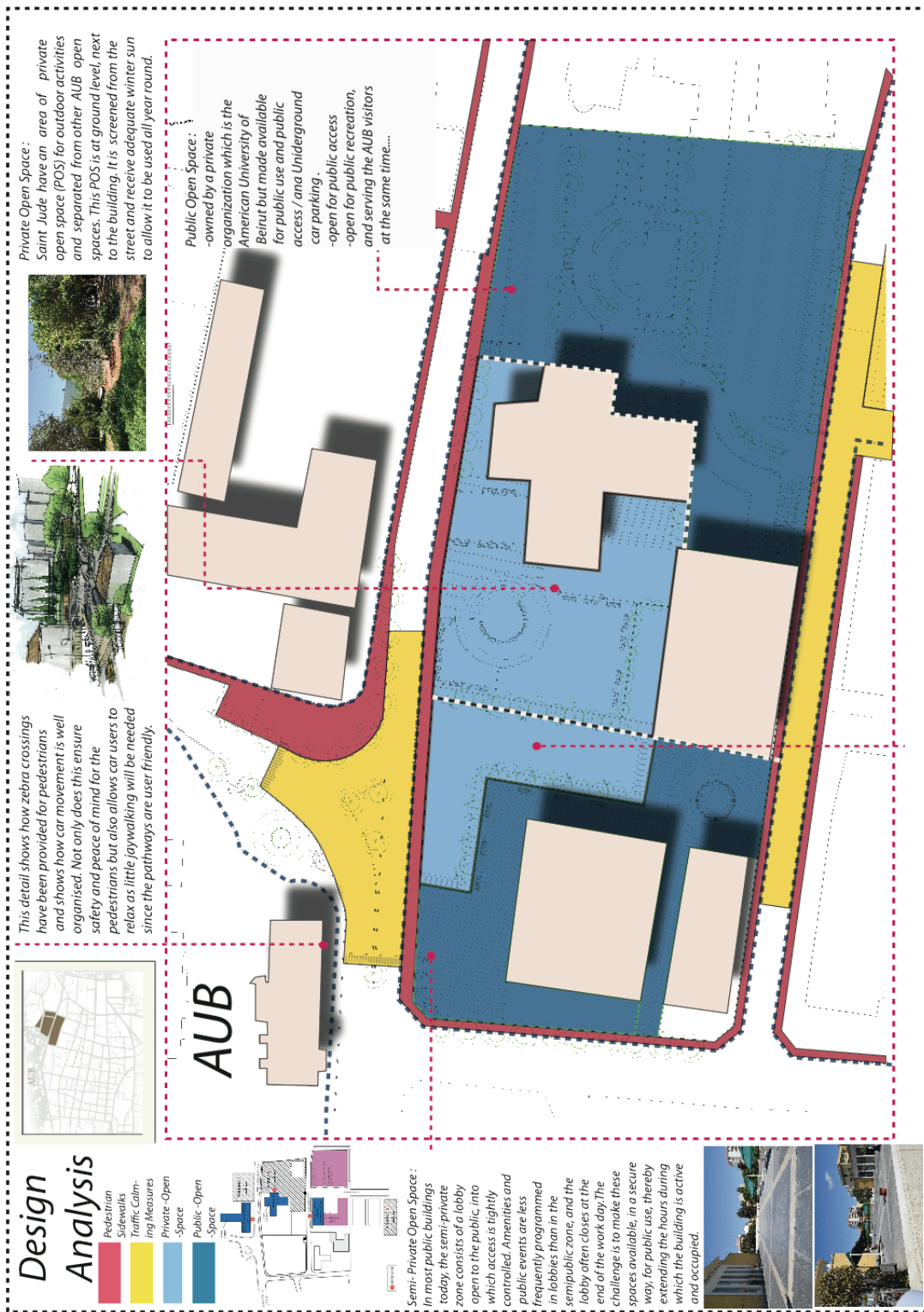


Figure 5.11: Areas different Functions, Source: Mais

Second Area of Intervention AUBMC

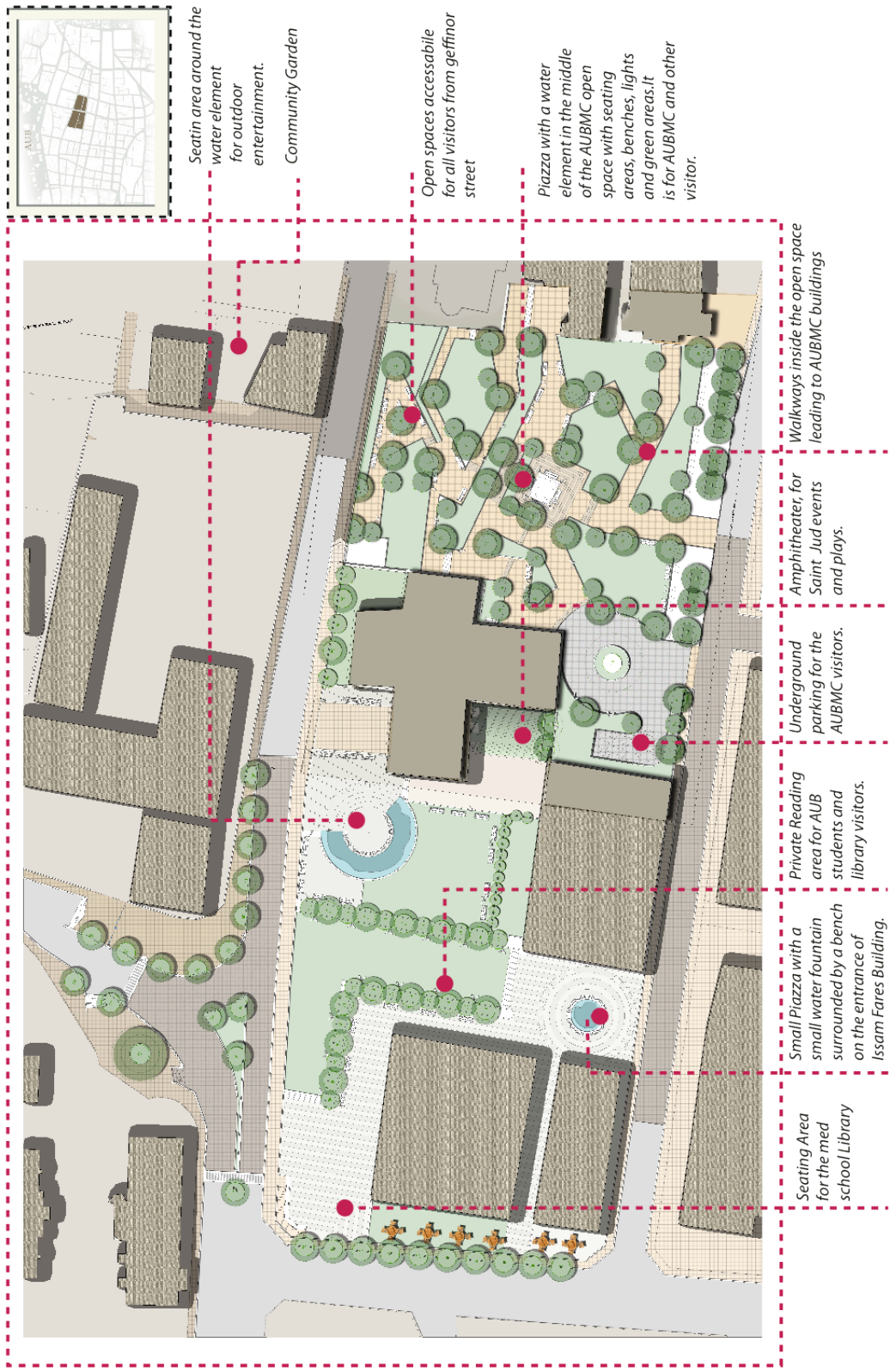


Figure 5.12: Second Area, Source: Mais

The other open space is the current AUBMC parking open space “Park above, park below”. This open space will consist of a public park and a public underground parking.

Green areas within the park are plentiful, with the addition of a piazza in the center of the park. The surrounding paths are tiled to provide accessibility for users and visitors to the AUBMC building and to Bliss Street going to the seaside. This open space is public in all seasons, containing a lot of species of plants. Bushes, plants and flowers edge sidewalks. A dense canopy of large trees protects the park, providing shade in the summer and filtering the light in the winter. The ground cover, shrubs and trees define and reinforce sidewalks, piazzas (Fig 5.13).

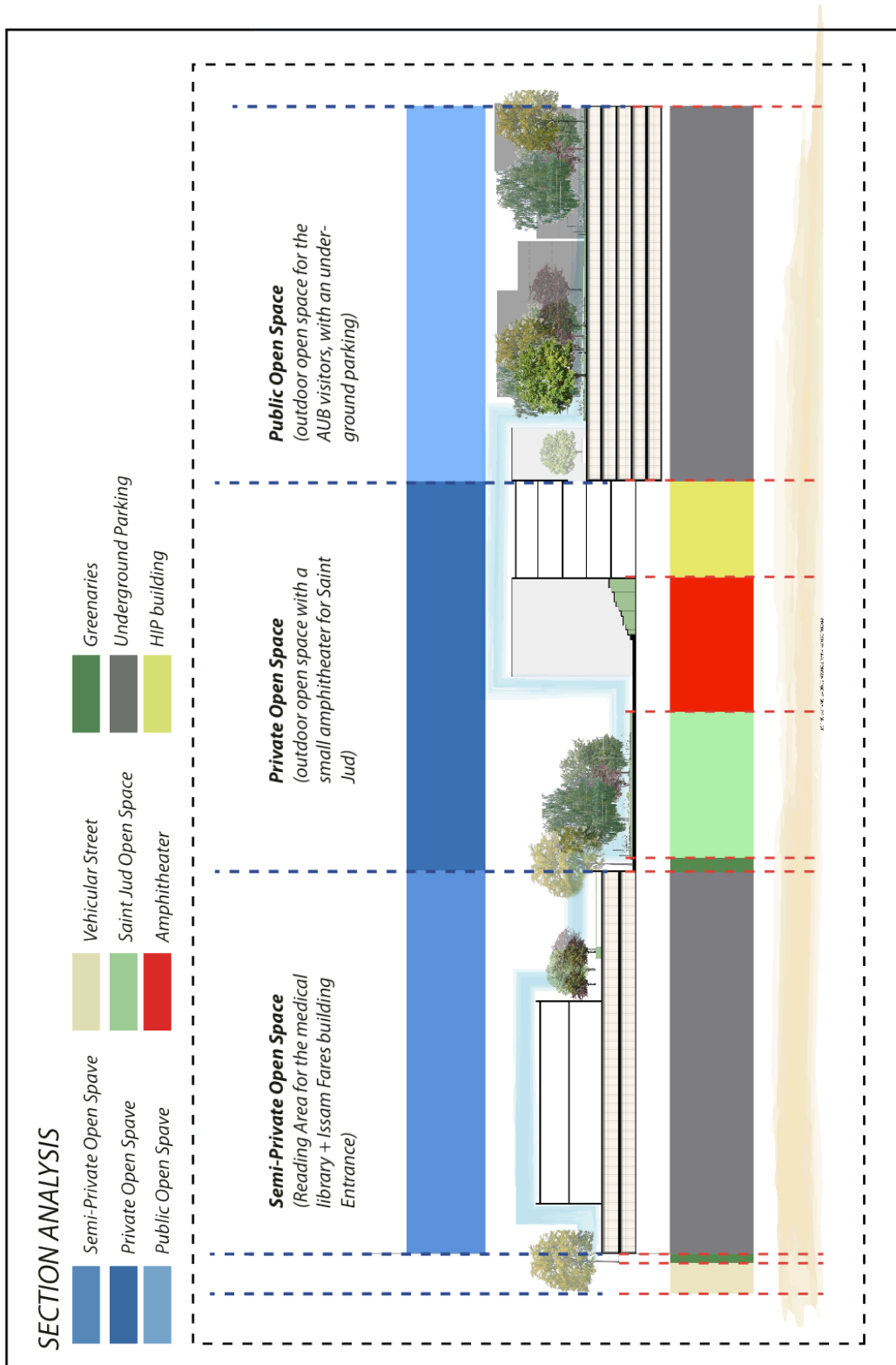


Figure 5.13: Second Area, Source: Mais

CHAPTER 6

CONCLUSION

This thesis investigated the possibility of enhancing walkability in the Hamra neighborhood, a central urban area characterized by the presence of substantial social infrastructure, a heterogeneity of land uses and a rich mixture of users. The thesis sought to attain a balanced strategy, which considers simultaneously the movement of the vehicles, and the protection of pedestrians and their needs.

In order to achieve this task, the thesis explored thoroughly the area of Hamra documenting its physical structure, the users' spatial practices, and their patterns of movement. This analysis helped in understanding the pedestrian experience within the neighborhood, and showed the presence of a high number of streets, alleys and open spaces, which are not all currently used by pedestrians as they are blocked by various obstacles.

Building on the existing resources Hamra has to offer, and the directives of the urbanism law, an urban design strategy was developed in which an open space network is designed after filtering all the public and private open spaces available in the area, in a way that makes it secure and livable. The intervention hence seeks, through this

network, 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 a shortage of time, I was not able to test my strategy on the dwellers of Hamra and validate its feasibility with them. This would have required more fieldwork over a regular amount of time which I did not have. Another limitation concerns profiling more fully the dwellers and social groups in Hamra which could have helped me identify a more specific governance scenario.

In terms of contributions, the investigation of Hamra's built up fabric have revealed the presence of a large amount of open spaces, an advantage that must be taken into consideration in the neighborhood's future developments.

In addition, addressing the problems of pedestrian connectivity within Hamra neighborhood contributes to walkability concerning the city overall, especially given many of the problems found within Hamra are present in other neighborhoods of Beirut. This research has provided a methodology for improving the public realm and enhancing walkability and livability throughout other neighborhoods in the city that present similar urban characteristics as Hamra (mixed-used areas with diverse social, economic and cultural infrastructure and a human scale which people enjoy, such as Mar Elias, Basta, Tariq al-Jadideh, Zokak al-Blatt, Gemmayzeh, Mar Mikhail, etc.). This methodology builds on the study of the Lebanese planning framework, which

includes the tool of expropriation that allows the legislator to acquire a free quarter of the left-over un-built spaces to improve the public realm.

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