

AMERICANUNIVERSITY OF BEIRUT

QUALITY BASED ZONING FOR RIVERFRONT
INDUSTRIAL SITES: THE CASE STUDY OF MKALLES

by
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AN ABSTRACT OF THE THESIS OF

Abir Mahmoud Al-Tayeb for Master of Urban Design
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Title: Quality-Based Zoning for Riverfront Industrial Sites: The Case Study of Mkalles.

This research provides a contribution to our understanding of the ways in which we zone / code industrial areas along prominent river bodies and environmentally sensitive edges. It does so through profiling the industrial zones of Mkalles situated at the edge of Nahr Beirut, a river that stretches along the eastern edge of Municipal Beirut. Hence, its scope evaluates the use and effectiveness of the current industrial zoning schemes and questions: What are the additional criteria that should be taken into consideration while zoning a river-edge industrial area like Mkalles? It provides an alternative through quality areas capable of incorporating environmental criteria and market dynamics.

This thesis highlights the built environment as a collective endeavor and stems from an understanding that current zoning schemes and divisions foster an environment that is collectively produced by the continuing struggle between creative, market-driven and regulatory modes of praxis / the tyrannies of practice (Carmona 2009). It also undertakes the comparative analysis of two recent investigations of the Beirut riverfront (Frem, 2009; Frederix, 2010) and stresses the need for an alternate strategy, i.e. a decision environments approach that is both operational and qualitative results. Decision environments (Tiesdell, 2011) accommodate the underlying forces that create the physical landscape within a framework of 'quality-making' policies capable of expanding the role of zoning (Ben Joseph, Carmona, et. al.).

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CHAPTER 1

INTRODUCTION

This research stems out of an interest in examining design methods capable of addressing existing industrial zoning along major environmental edges such as riverbeds. One example is Nahr Beirut.

I was initially exposed to Nahr Beirut as an architecture student during a Vertical Design Studio titled '*Water Water*'. The course focused on teaching us about the dominant industrial development patterns along the river. This interest evolved through two separate graduate experiences, one design oriented and the second planning. The first involved reading the thesis '*Nahr Beirut: Projections of an Infrastructural Landscape*'¹ by Sandra Frem in which she proposed the use of abandoned industrial land along the river as environmentally sensitive public spaces. The second took place during a planning course titled '*Geographies of Exclusions*' by Dr. Hiba Bou Akar in which I investigated the industrial zoning patterns along Nahr Beirut. Dr. Bou Akar encouraged me to focus in my thesis solely on investigating Mkalles as an operational industrial space located along the river (fig. 1).

Industrial spaces such as Mkalles grew along Nahr Beirut as a result of progressive urbanization and industrial zoning episodes through which agricultural areas

¹ Frem, S. 2009. *Nahr Beirut: Projections on an Infrastructural Landscape*. Cambridge, Massachusetts: MIT, Department of Architecture.

evolved into densely urbanized alluvial land. Such transformation is linked to five historic periods: the Ottoman period (1870s-1990 – agricultural use of peripheral land), the French mandate period (1920s-1940 – Start of urbanization and suburbanization), the Independence period (1940s-1960s – Start of modernization of transport systems and zoning through the 1964 Greater Beirut Master Plan), the Civil War Period (1970s-1990s – Heavy and chaotic urbanization of the municipal periphery and the introduction of zoning amendments that formalized industrial areas around Nahr Beirut) and the Present day (1990-Present – further industrial densification)².

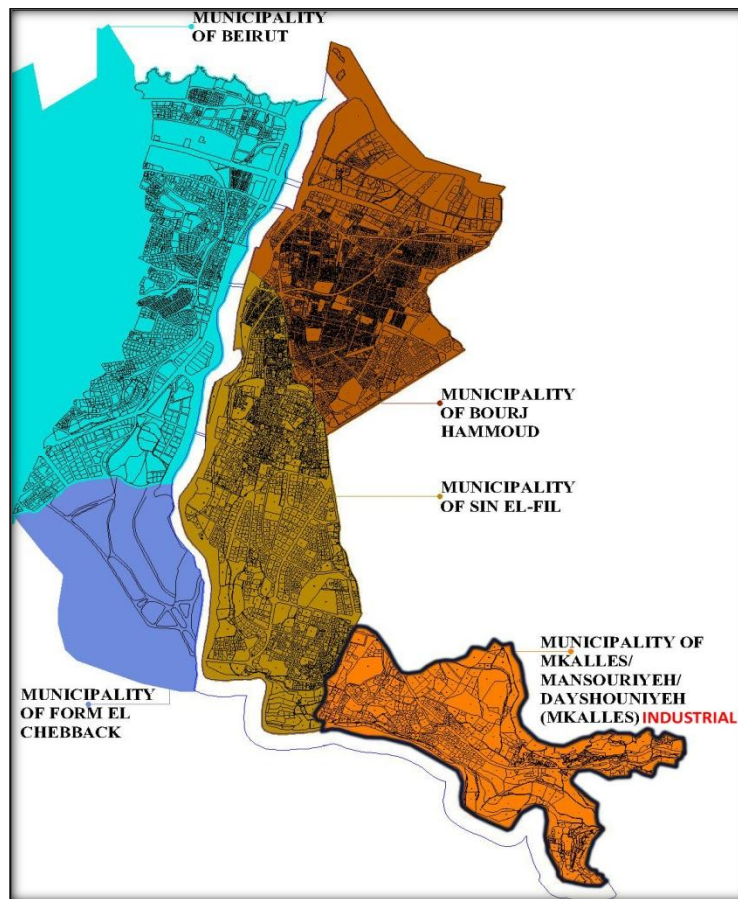


Fig. 1: Location of Mkalles Industrial Zones

² Frem 2009 / Davie, M. 2001. *Beyrouth 1825-1975, un Sible et Demi D'urbanisme*. Beyrouth: Ordre des Ingenieurs et Architectes / Fawaz, M. Zein, P. 1965 *L'amenagement du Nahr Beyrouth*. In Horizons Techniques du Moyen Orient, no 5. Pp.24-36 / Gerard, P. 2000-2001. *Les Transformations de l'Hydro-Systeme Fluvial de la Partie Aval du Nahr Beyrouth*. In Geospheres, Annales de Geographies. Universite Saint- Joseph, Beyrouth, Vol. 21-22, pp.135-147.

1.1 Research Objectives

1.1.1 Problem Definition

Industrial zoning as applied to the case of Mkalles is delineated through comprehensive land-use ‘planning schemes’. Such mode of zoning focuses solely on assigning land-use values and conceptualizing economic growth / the market benefits fueled by development while not addressing characteristics and qualities specific to Mkalles or river edges.

Hence, as it exists, the current zoning of Mkalles is not a ‘quality-making’ tool. It does not effectively combine environmental design criteria with development goals to be able to address the following site conditions:

- Sensitive environmental considerations such as a prominent river-edge condition
- The discontinuity of internal road networks creating a lack of access to the river.
- The importance of under-utilized land and their future roles in enhancing the relationship of the area to its context (fig. 2).

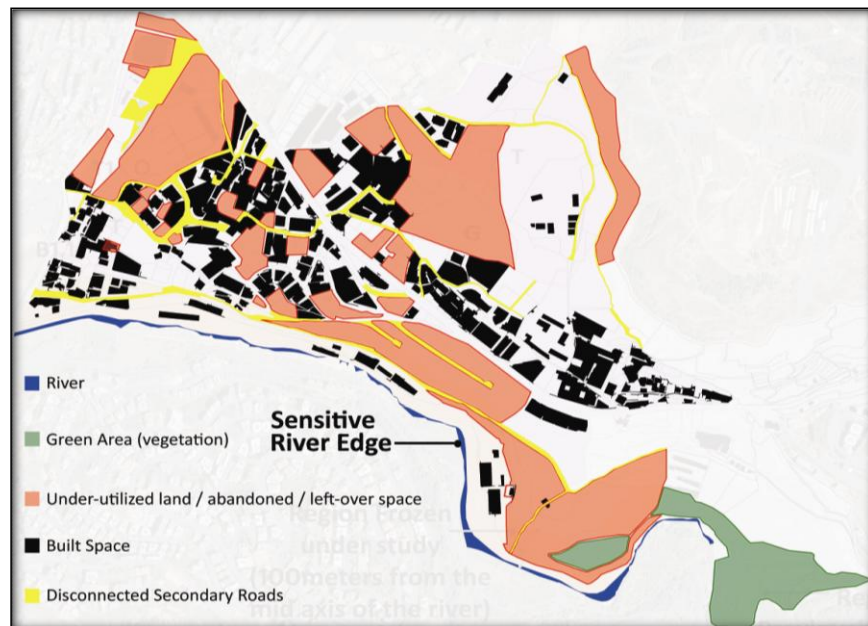


Fig. 2: Underutilized Lots Versus Built Space, Disconnected Roads and a Sensitive Environmental Condition

1.1.2 Research Question

This thesis aims at providing an alternate zoning scheme capable of incorporating ‘urban design’ concerns that revolve around the environmental and physical ‘qualities / characteristics of space’.

Hence, it questions: How can zoning be revised to be able to generate a quality environment within river-edge industrial zones? Accordingly, this thesis will investigate:

- What are the additional criteria that should be taken into consideration while zoning a river-related industrial area like Mkalles?
- How can an urban designer integrate within the existing code / zones and the market-driven development patterns in Mkalles, environmental design criteria?

1.2 Background: Literature Review

1.2.1 Development Experience

As mentioned before, my first experience with Nahr Beirut was as an architecture student, during the academic year 2004-2005. In a vertical studio titled: ‘water water’, professors Jala Makhzoumi, Stephen Campbell and Abdel Halim Jabr, focused on helping students gain interest in sensitive river-front areas subject to speculative industrial development and, hence, partial environmental degradation. The class adopted an approach that combined the architecture vertical studio with the landscape design one. It focused on the relationship between the delivery of sustainable design solutions and management of natural resources through environmental guidelines while studying the development / land-use trends around Nahr Beirut.

This studio for me raised a lot of concerns that were new in terms of my broader outlook of development in the city. Some of the main issues addressed in the class Syllabus (Appendix 1) were the following:

- The understanding of the land-use components around Nahr Beirut as ravaged by industry and speculation as opposed to quality development;
- The limitation of implementing environmental schemes' within the market-oriented development constraints and;
- Non-conformities to zoning laws in the built environment for the sake of facilitating development and quick construction

In terms of the course outcomes, these particular issues needed to be further elaborated on; and for me, remained without a full resolution or conclusion. This prompted me to choose Nahr Beirut now, as an MUD thesis case-study.

This choice evolved later through two separate student experiences, one design oriented and the other planning, the result of a twelve year academic exposure at AUB.

1.2.2 Urban Design Experience

My main design encounter was reading a thesis titled *Nahr Beirut: Projections of an Infrastructural Landscape* by Sandra Frem. Frem's study on Nahr Beirut focused on understanding the river as an ecological line that progressively evolved into left-over / interstitial space. She has successfully and meticulously widened the scope of investigation from traditional sustainable design methods to 'conceptualizing' Nahr Beirut as 'Cultural Ecosystems' (Poole 1998) and 'bioregional metabolisms' (Corner, Waldheim 2006) with the potential to be re-vitalized / re-used as public space. In the

process, she brings about environmental concerns and proposes strategic infrastructural and public interventions to remedy them.

Building on such work, I initially studied the design framework of ‘Integral Urbanism’ (Ellin 2006). Integral urbanism starts from the premise that infrastructural lines within the metropolitan city created left-over spaces in the form of environmental degradation. Hence, it aims to heal environmental problems associated with left-over spaces inflicted upon the landscape by Modernism. These are not viewed by integral urbanism as good or bad; however, need to be re-addressed through design interventions. It does not create an end product but “a *set of design goals*”³. These goals embody the five integral urbanism qualities: Hybridity, connectivity, porosity, authenticity, and vulnerability. Hybridity and connectivity bring activities together, rather than isolate objects and separate functions. Porosity allows physical access and permeability. Authenticity involves drawing inspiration from actual physical conditions. And vulnerability aims to relinquish control and value process over product⁴. Hence, it engages in dynamic processes that result in domino-effect interventions.

1.2.3 Planning Experience

My second exposure to Nahr Beirut and a defining one to this thesis took place during a Planning course by Dr. Hiba Bou Akar titled “Geographies of Exclusion”. In this class, we were asked to choose a site of interest that highlights planning in Lebanon.

Through working with Professor Bou Akar, she encouraged me to focus for both, a term paper and my thesis, on the Mkalles industrial zones along Nahr Beirut since

³ Ellin, N. 2006. Integral Urbanism. United States of America: Routledge, Taylor & Francis Group. Pp: 90.

⁴ Ibid: 18-19, 6 and 63.

they were the least researched sites. Within a term paper titled: ‘*The Interface between Industrial, River Beds and Infrastructure: The Case Study of the Mkalles Industrial Zones*’, the industrial zoning system was problematized as creating disconnected sites detached from the specific characteristics of their context (both physically and environmentally). The paper also addressed infrastructural planning as producing “physical lines of separation that disconnect and shape space”⁵.

1.2.3.1 Case Study

This thesis became an elaboration of that term paper I produced for the ‘Geographies of Exclusion’ class. Hence, based on Dr. Akar’s advice, I selected Mkalles as my thesis case study. The industrial zones of Mkalles sit on a steep topography, approximately 6 km south-east of Beirut city center. It shares one edge, the southern, with Nahr Beirut (fig. 3).

Mkalles started growing from agricultural land to industrial by attracting very limited amounts but large-scale industrial factories and warehouses (waste disposal - *معمل تحويل النفايات* and cooling warehouse - *الشركة المختلطة للتبريد*) as early as the 1960’s. Presently it exists as a fully fledged river-front industrial destination. Mkalles has large-scale industrial zones that have over 400 industrial buildings (fig. 4) (refer to Appendix 3 for types of industries), most of which are classified by the Ministry of Industry (Decree 8018 – 2002) as heavy. It also houses types of land-uses like high-tension electric poles, power stations zones and army settlements (fig. 5).

⁵ Georg, Simmel. 1994. *The Bridge and the Door*. In *Qualitative Sociology* 17, no. 4. Pp: 411-412.

Mkalles is defined as a cadastral unit (منطقة عقارية) in the Matn-District of the Mount Lebanon Governorate (fig. 6). Even though it is designated as an entity by itself, it is administered by the Mansourieh – Mkalles – Dayshouniyeh Municipality.



Fig. 3: The Mkalles Valley



Fig. 4: Mkalles Industries



Fig. 5: Mkalles High Tension Poles and Army Settlements

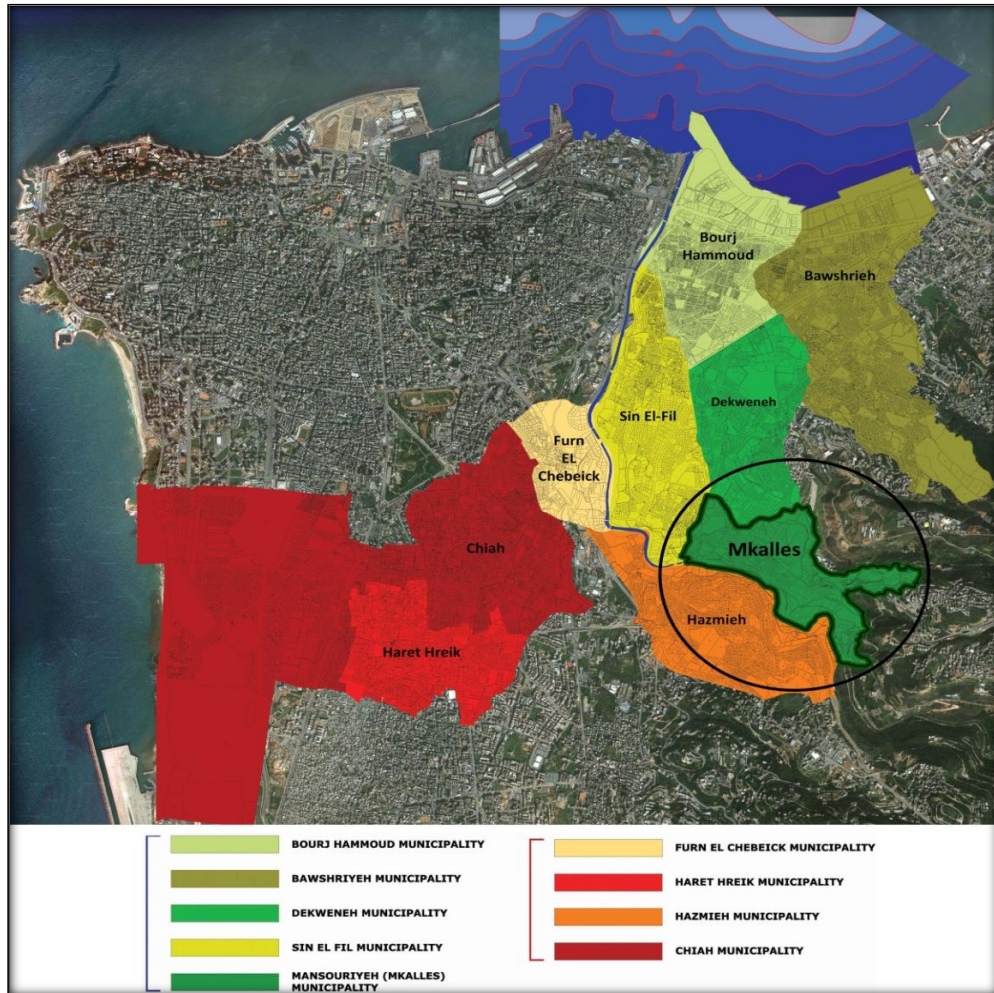


Fig. 6: Mkalles Administrative Limits in Relation to the Nahr and Boundaries of Beirut

The zoning policy in Mkalles is composed of the following four types of exploitation areas (fig. 7):

- Zone G - currently as densely-built industrial
- Its transitional extensions, Zone T, T1 and O - presently used as light industrial and /or abandoned and under-utilized estates due to ownership issues, but with high development potential in the planning law (T and T1 exploitation ratios are higher than zone G)
- A 100m offset from the river mid-axis, under study by the DGU and frozen from development (but with no prospects for an alternate solution or a formal delineation on a map)
- An area previously planned and now free from any organizing law

This zoning system follows the Greater Beirut master plan created in 1964 (fig. 8).

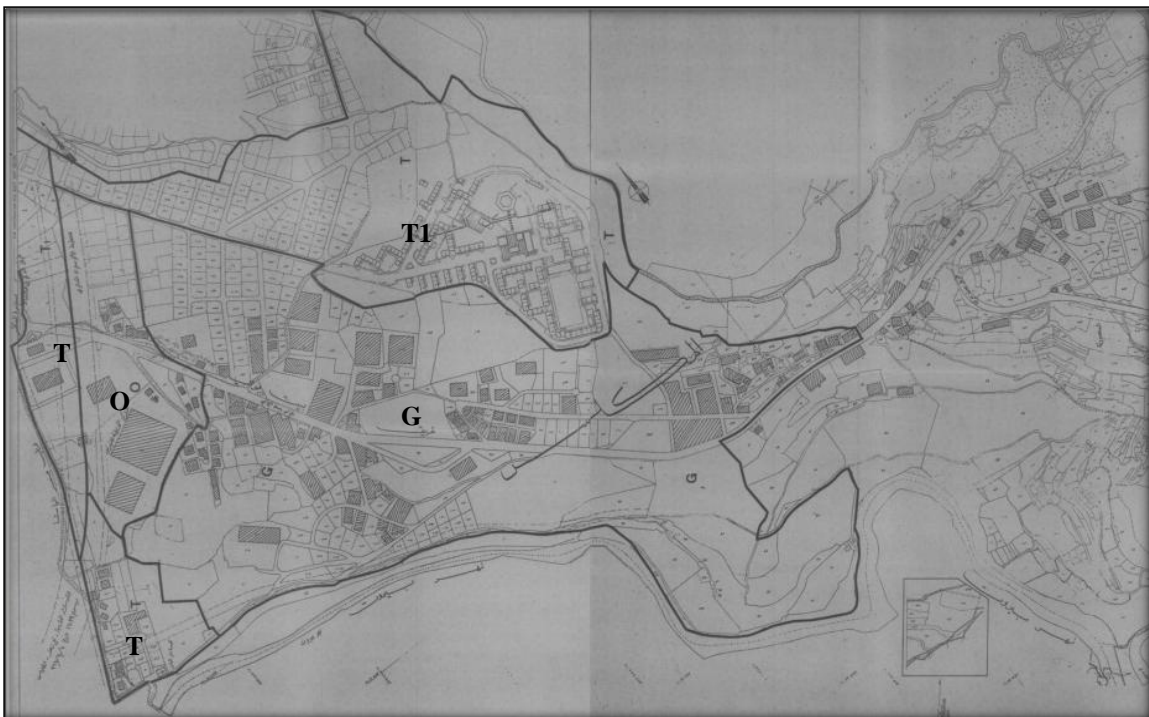


Fig. 7: Current Zoning Map of the Mkalles Industrial Areas (for corresponding rules refer to Appendix 2)

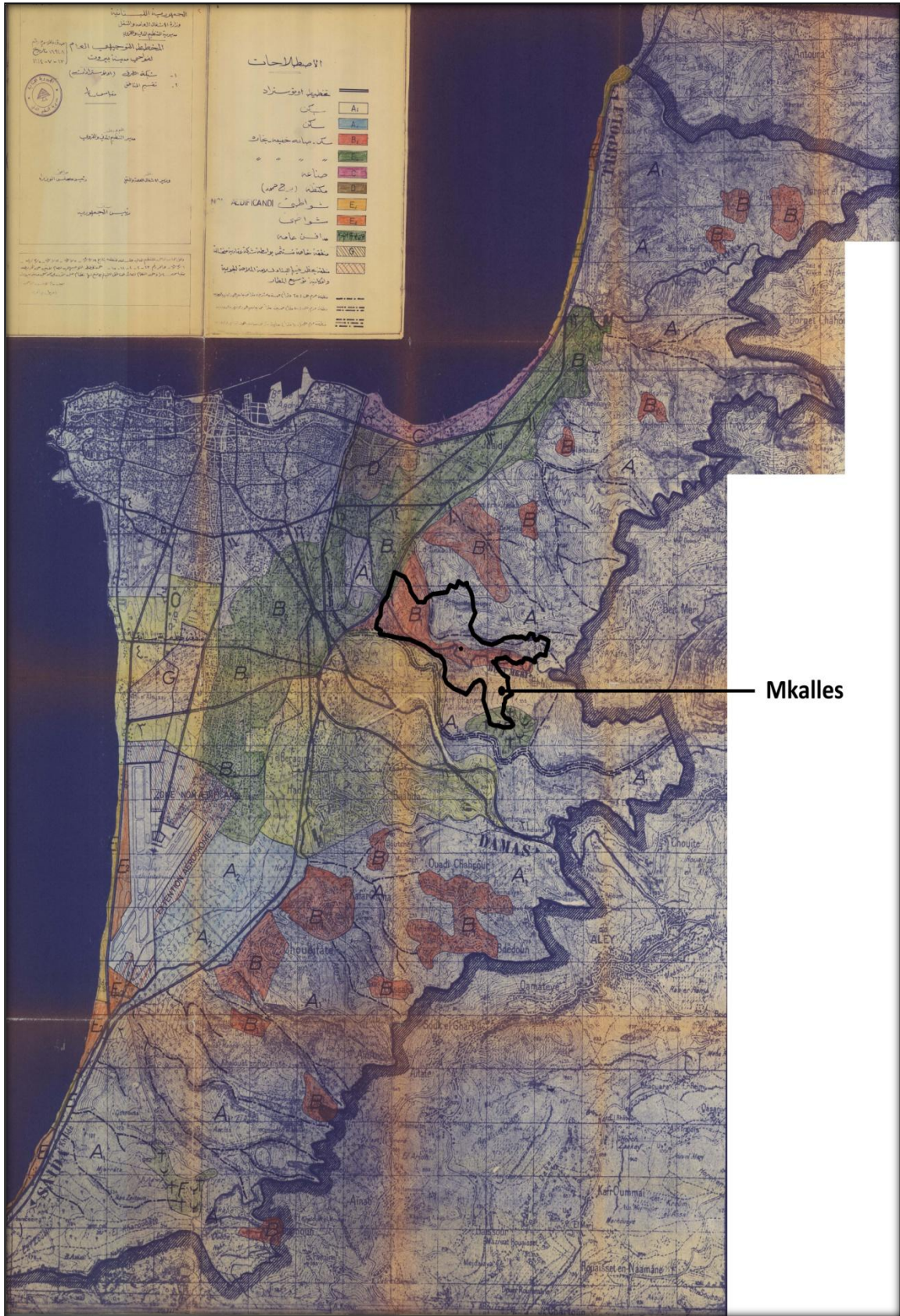


Fig. 8: Zoning Scheme for Metropolitan Beirut (1964)

1.2.4 Combining the Three Experiences in the Decision-making Environment

Having gone through these three experiences separately, the development, design and planning as mentioned before, I will now reference to a paper titled ‘*Design Coding and the Creative, Market and Regulatory Tyrannies of Practice*’, and the book ‘*the Design Dimension of Planning*’ by Matthew Carmona. I chose to read the work of Carmona because he elaborates on how the built environment is a collective endeavor that encompasses all the three categories mentioned above.

As opposed to aesthetic values, he conceptualizes space in terms of the decision-making systems that govern it. He terms the urban landscape the ‘*decision making environment*’ (Carmona, Tiesdell, 2011), seen as influenced by three types of stakeholders, ‘*the regulatory, market-driven and creative modes of praxis*’. Carmona describes those categories as ‘*the three tyrannies of practice*’ (Carmona 2009) since at worse, he views them as a single-minded pursuit of narrow-ends with potential to impact negatively the built environment. Most of the times, if addressed separately they do not end up creating ‘*quality places*’ (Carmona 2009)⁶.

He defines the three tyrannies or decision-makers according to the following:

- **The Regulatory Tyranny (planning):** The first, ‘*the regulatory tyranny*’ (Carmona 2009), is identified as “a form of a decision-making mode that lacks flexibility and is arbitrary, inconsistent and subdued to the market forces”⁷.
- **The Market Tyranny (development):** The second, ‘*the market tyranny*’ (Carmona

⁶ Carmona, M. 2009. *Design Coding and the Creative, Market and Regulatory Tyrannies of Practice*. *Urban Studies*, 46(12). 2643-2667. November 2009. Pp: 2643.

⁷ Ibid: 2647.

2009), reflects an argument that the market is informed by what sells and that designers are not part of the process. All what designers do is build within a speculative market.

- **The Creative Tyranny (design):** The third one, ‘the creative tyranny’ (Carmona 2009), is attributed to “the fetishing of design where the product rather than the inherent value (economic or environmental) is of concern and is valued above all. Such agendas are closely associated with the architectural, landscape and engineering professions.

Carmona also explains how at the heart of each tyranny there is an overriding imperative to achieve an innovative design solution, to make a good return on investment and to satisfy a broad range of policy objectives. As these are often in opposition to each other, the result is *three opposing forces* or *a zone of conflict*⁸ (fig. 9).

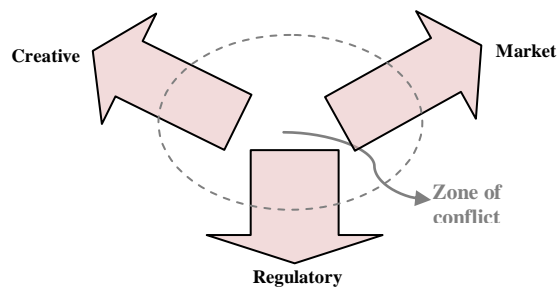
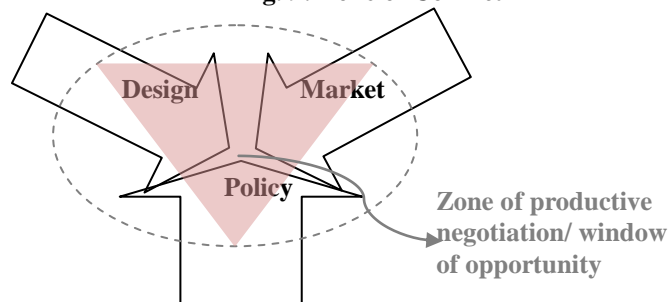


Fig. 9: Zone of Conflict



**Fig. 10: Zone of Productive Negotiation
(opportunity)**

However, he also says that

we can identify “‘tools for consensus building or windows of opportunity’ (zone of productive negotiation)”⁹ (fig. 10) presented in terms of quality-based design policies.

⁸ Ibid: 2645-2647.

⁹ Tiesdell, S. David, A. 2011. *Urban Design in the Real Estate Development Process*. Oxford: Blackwell Publishing. Pp: 9.

Quality-based design policies provide the means by which the forms of new development or redevelopment can be shaped to meet the desired qualitative criteria¹⁰ mentioned in the beginning. Carmon explains how this includes enhancing the character of the area, enhancing the quality and the functionality of the public realm, increasing the ability of the user to easily navigate an area, create adaptable and environmentally friendly buildings and protect environmentally sensitive areas.

1.2.5 Relation of the Model to the Lebanese Design and Planning Decision-makers

In parallel, an analysis of local ‘decision-making environment’ and the emergence of ‘planning cultures’ yields a milieu of professionals who shape the urban environment. In Lebanon, the creation of built environment was always a very dynamic process, subject to constant tension, contestation, subversion and discussion between planning schemes and individual designers and engineers – in other words similar to what Carmona terms as ‘negotiation’ (Carmona 2009) between decision-makers.

Hence, a wide range of actors take part in the Lebanese urban process, negotiate urban space¹¹ and can be grouped within two planning levels, the national zoning policy and the local zoning plan and includes two types of public institutions¹². In general, industrial zones have been recognized by the institutional body of the discipline of urban

¹⁰ Carmona, M. Punter, J. 1997. *The Design Dimension of Planning: theory, content, and best practice for design policies*. Oxford: Taylor & Francis. Pp: xiv.

¹¹ Nasr, J. Volait, M. 2003. *Urbanism Imported or Exported? Native Aspirations and Foreign Plans*. Great Britain: Wiley-Academy. Pp: xi, xvii.

¹² Khayat, B. 1999. *Land Zoning (Stated Land Use), and its Effect on the Development of the Urban Sector (Case Study: Lebanon)*, Paper Delivered at: Oxford Brookes University, School of Planning. Pp: 4.

planning in Lebanon on both levels as environmentally problematic spaces. On the national level, industrial zones have been described mainly by CDR (Council for Development and Reconstruction) in the ‘National Physical Master Plan of the Lebanese Territory’ as environmentally problematic areas that need redevelopment to “reduce the pollution damages and dangers that certain types of industries create with their immediate surroundings¹³. On the local level, industrial land zoning plan and development regulations are reserved for the peripheral limits of Greater Beirut, aiming to reduce damage to inhabited neighborhoods¹⁴.

1.3 Design Methodology

1.3.1 Design Goals

According to Matthew Carmona, good urban design should consolidate between two distinct forms of benefits; *market* and *environmental*¹⁵. In order to incorporate environmental considerations within the prevailing market-based zoning, a more encompassing quality-based division needs to be taken into consideration. Quality design should have the ability to:

- Combine environmental sensitivity with the developers’ right for profit.
- Address the performance of the built environment with respect to Nahr Beirut but not dictate aesthetic / built form.

¹³ Council for Development and Reconstruction. 2005. *National Physical Master Plan of the Lebanese Territory*. Beirut, Lebanon. Pp: 10.

¹⁴ Khayat, 1999: 4.

¹⁵ Carmona, M. 2001. *The Value of Urban Design: A Research Project Commissioned by CABE and DETR to Examine the Value Added by Good Urban Design*. London: ICE Publishing. Pp: 25.

1.3.2 Definition of a Quality Framework / Urban Design Criteria

The adopted definition of *quality-based intervention* includes a zoning scheme that can address the following urban design criteria:

- **Enhancing area character** through district and sector-scale zoning capable of responding to local context and character paralleling locally distinctive patterns of developments and environmental conditions.
- **Creating a better quality public domain** characterized as safe, continuous, accessible and well connected. The aim is to provide ease of movement, accessibility and local permeability by connecting spaces and facilitating ease of movement.
- **Providing adaptability and diversity** through flexible industrial developments / buildings can respond to changing environmental and technological conditions.
- **Protection** of environmentally sensitive riverfront areas from further construction¹⁶.

These over-arching four urban design principles for creating better places extend the limited scope of zoning from a ‘quantitative value’ to ‘qualitative’.

1.4 Research Methodology

In order to address my research question and generate a quality-making design approach to river-edge industrial zones, a tri-fold research methodology was adopted.

¹⁶ Ibid: 24.

First, an extensive mapping of the *process of coding* the river edge and specifically Mkalles was conducted. The acquisition of related graphical documentation such as maps, and textual materials concerning various planning, administrative and zoning laws was needed.

Second and in addition, another method of investigation involved *Fieldwork* and *Site Investigation*. Fieldwork was conducted in an incremental approach, over a period of a year and a half, as Nahr Beirut as a whole was studied and Mkalles individually was investigated within its municipal context. This involved elaborate photo documentations, consistent site visits and gathering and studying relevant materials.

Third, an extensive theoretical reading involved in the thinking, was a tool used to further a critical study of the site. In fact, it was part of my overall scheme to keep up a consistent effort of reading and rereading theories that apply, in addition to having a hands-on documentation and studying of the actual existing factors of the site.

1.5 Research Significance

The significance of this research lies in the fact that it investigates types of industrial spaces that were not approached yet within a quality-making medium.

Rather than focusing on urban design methods and products such as the design of public spaces, it brings forth the importance of the ‘design dimension of planning’ (Carmona, Tiesdell 1998) and the ‘urban design decision-making environment’ (Tiesdell 2011) situated within zoning policy. These paradigms are grounded in the contextual dynamics of ongoing urbanization and stress the importance attached to sector-wide

development plan policies. They combine environmental design and urban design goals with the current comprehensive planning system as an opportunity to improve the quality of the built environment.

1.6 Structure of the Document

This document will be divided into four parts.

The first section will study previous schemes that have addressed Nahr Beirut and its edges while grouping them in relation to three categories; the '*product environment*', the '*process environment*' and the '*urban design decision environment*'. The objective is to come up with a comparative framework that can situate my research in relation to previous approaches that have attempted to address Nahr Beirut and its various edge conditions. It learns from them while privileging a decision-making approach and a policy-grounding to urban design.

The second part will address my research on Nahr Beirut as a whole, while positioning Mkalles within its context.

The third and fourth components which will de-code/ re-code Mkalles in relation to 1) the existing patterns of regulatory frameworks in place (the industrial zoning- Zones G, O, T, T1); 2) development and market trends; and 3) environmentally sensitive conditions specific to riverfronts and agricultural land.

CHAPTER 2

QUALITY-BASED ZONING AS AN URBAN DESIGN DECISION-MAKING TOOL

This chapter proposes the practice of zoning as an urban design decision-making method that aims to implement qualitative improvements to the urban landscape through responding both to environmental concerns and market-based demands.

Recent academic studies that addressed Nahr Beirut and its edges have emphasized the systemic role of the river as an ecological and spatial entity, resulting in solutions that are too conceptual to be implemented within the realities of local planning and practices.

The objective of this chapter is to explore complementary approaches to ones that target Nahr Beirut as a system and proposes a pragmatic approach that addresses the realities of the planning and developmental river edges. It does so through an understanding of how urban design decision-making systems can better inform market forces, current legislation and governing codes, thereby promoting implementable and qualitative changes.

Hence, this chapter starts from the premise that zoning, as a Modernist practice, has the benefit of being predictable and implementable, yet has proven 1) ineffective in the face of changing urban conditions, 2) unresponsive to the demands of current trends, and 3) lacking in conceptual basis or significant theory. Accordingly, a new paradigm is

required, one which will update planning approaches to zoning, as defined in chapter one, but remain in step with contemporary urban design theory and practice.

To this end, this chapter builds on the work of Steve Tiesdell, David Adams, John Punter, Matthew Carmona, and Eran Ben Joseph, five prime authorities on the types of codes and zoning policies that are generally used in both urban design and planning practice to regulate the built environment.

It also references ideas by David Gosling and Barry Maitland on categorizing urban design concepts and projects.

To enrich the scope of comparison and debate, the framework will also include the Architectural Association school of Architecture's progressive reflections through 'Landscape Urbanism' and 'Machinic Design' which promote experimental process-oriented urban design intervention.

The following pages will investigate three distinct types of positions highlighted in the form of a proposed model for categorizing urban design approaches (fig. 11): 1) *the product environment* as a late modernist and functionalist view of design. It addresses projects as physical objects with assigned shapes and aesthetic values, including systems of public space interventions and complex engineered infrastructural solutions; 2) *the process environment* as a post-modernist mode of thought in which design is conceived as the flows / fluxes of physical and operational energies that operate within the built environment; and 3) *the urban design decision environment*, which attempts to update a modernist take by situating urban design within the underlying forces that create the

physical landscape. These forces are understood within a framework of ‘quality-making’ design policies capable of expanding the role of zoning to encompass design criteria that accommodate a larger group of decision-makers.

While the former two models, the product and the process environments reveal themselves to be, in one case, deterministic and in the other, open-ended, this newly proposed decision environments approach situated within zoning is perceived as having the benefit of being operational with respect to both built form and yields qualitative results.

The first two sections of this work will define and discuss the *product environment* and *process environment* approaches respectively, with illustrative examples of each as applied in the investigation of Nahr Beirut and its surroundings. This comparative analysis will serve to highlight the strengths of each, but more importantly, will justify the need for an alternative third model, one that is complementary to the emerging approaches, but with a tendency towards more implementable strategies. The third and fourth sections, then, will clarify this need, propose the aforementioned alternative method, and synthesize all three in order to illustrate their complementary characteristics.

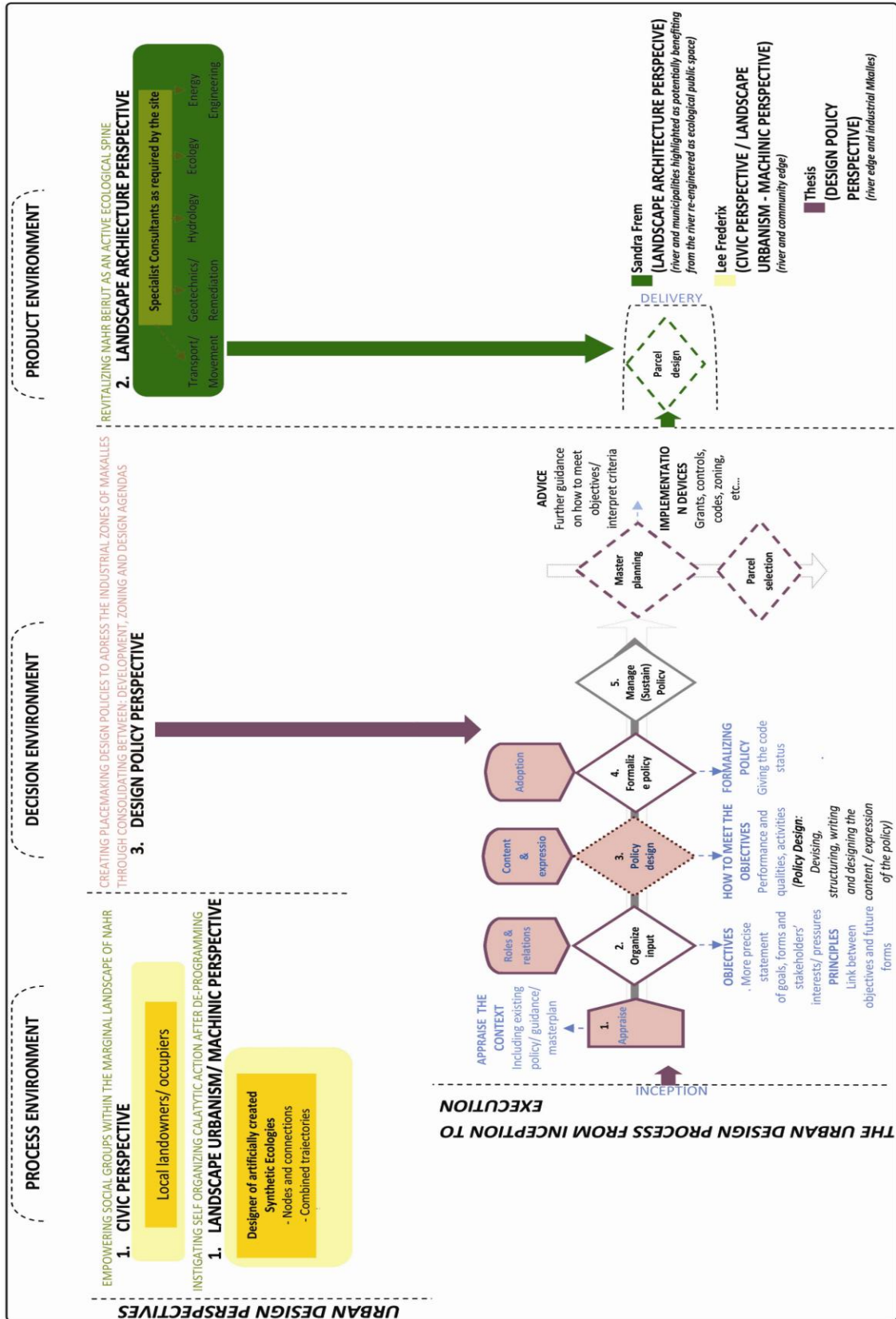


Fig 11: Urban Design Perspectives in Relation to the Urban Design Process from Inception to Execution (The 'Urban Decision process from inception to Execution' section is adapted from Carmona, 2009)

2.1 Product Environments: A Landscape Architecture Approach

In this section, the *product environment* is defined within the late modernist design realm that advocates a functionalist reading the city in terms of infrastructural linkages as opposed to built masses and figure ground models. Urban design projects in this category include infrastructural alterations and the resulting sequences of public spaces, all direct components of the built environment. *Product environments* clearly adopt an engineering and landscape perspective and can be viewed within the scope of ‘sophisticated public space networks’ and ‘circulation plans’ brought out for technical discussion¹.

A recent academic example of this approach to object-based ecological design, with its strong link to the practice of Landscape Architecture, is illustrated in Sandra Frem’s 2009 thesis entitled *Nahr Beirut: Projections of an Infrastructural Landscape*. Beginning from this ecological emphasis and engineering and landscape know-how, Frem addresses Nahr Beirut as a self-contained ecological system and envisages it as an environmentally restored circulation spine and pedestrian walkway within the metropolitan area of Greater Beirut.

In this process, Frem proposes numerous small-scale objects and symptomatic interventions which include

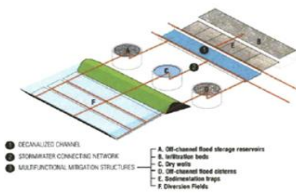


Fig. 12: Hydrological Mutations (Source Frem, 2009)



Fig. 13: Pedestrian Platforms (Source Frem, 2009)

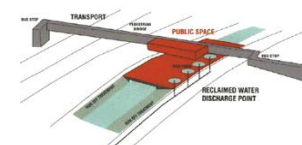


Fig. 14: Infrastructure as Public Space (Source Frem, 2009)

¹ Gosling, Maitland, 1984: 9.

the following engineered systems: 1) environmental water strategies (fig.12), 2) transport interventions as public spaces / platforms aimed at creating a physical connectivity to and across the river (fig. 13/14), and 3) urban form and infrastructural infill intended to regulate the built density levels around the water-edges. (fig. 15)



Fig. 15: Densifying the Edge (Source Frem, 2009)

Also, through eliminating the existing river walls and proposing multifunctional water systems, Frem initiates an ecological revitalization strategy that would create a new riparian ecosystem in the channel. To solve the severe flood problems that might hinder this process, she proposes using the agricultural fields around the river as an open-air diversion space. The work also proposes a building strategy that aims at densifying the urban form along the river edges.

Overall, Frem’s landscape objects / physical typologies are systematic in nature since they are uniformly applied and repeated across the whole length of the river.

2.2 Process Environments: A Landscape Urbanism Approach

This section discusses the focus of the designer on infrastructure as lines of energies and on processes as opposed to end results. This category is a postmodernist one that suggests re-configuring the modernist landscape through the concept of flux while highlighting social, economical and ecological process, linkages and connections. The proposed outcome is a non-physical datum onto which later design can be created. This reference implants “new potentials in a given field of reference through the orchestration

of infrastructural catalysts – infrastructures that perform and produce, or exfoliate effects with the intention to liberate future sets of possibility – cultural as well as logistical”².

Such designs are usually associated with the practice of Landscape Urbanism and are proposed through visually informative images. Their visualizations are by no means intended as physically deterministic, but instead are meant to represent the forces behind the urban environments and hence, draw attention to specific issues or circumstances.

This process environment approach can be illustrated by the recent thesis *Reclaiming Beirut’s Marginal Landscape: Cultural Infrastructure as Urban Catalyst* by Lee Frederix, which proposes a Landscape Urbanist methodology that operates from a machinic perspective.

As opposed to Frem, Frederix starts from a cultural perspective and articulately problematizes the marginal nature of Nahr Beirut as analogous to the existence of active artistic counter-cultures located within its edges. He starts by framing himself as a designer and artist with a reflective nature that describes himself as living within the margins as an alternative to the city, which itself has been “blamed for the loss of self [...and the] loss of ‘heimlichkeit’, a sense of comfort and belonging”³.

Using a poetic and personal narrative, he



Fig. 16: Synthetic Ecologies
(Source Frederix, 2010)

² Corner, 2003: 60.

³ Frederix, 2010: 14.

conceptualizes Nahr Beirut, not as an environmental entity, but as an edge condition and as a home for artistic and cultural activities on the margins of Beirut, both of which currently playing a diminished role within the life of the city.

Through experimentation that is informed by Landscape Urbanism practitioners like James Corner and Ciro Najle, Frederix produces a series of imagery that favor an intervention that is not physical- or object-oriented, but reconfigures the site as processes and flows of energies with catalytic instances that discreetly highlight the marginal figure; i.e. a marginal artist for whom the maps campaign.

Those images create what are termed as ‘*deprogrammed surfaces*’ and ‘*synthetic ecologies*’ (Frederix, 2010) which are similar to the identification of action areas in urban design but depict the urban environment in a constant state of flux. This allows an easier understanding of the forces at work within the site⁴, successfully shifting “the attention away from the object qualities of space (formal or scenic) to the systems that condition the urban form”⁵. This understanding creates an environment that is not so much an object, but instead a horizontal network made up of linkages

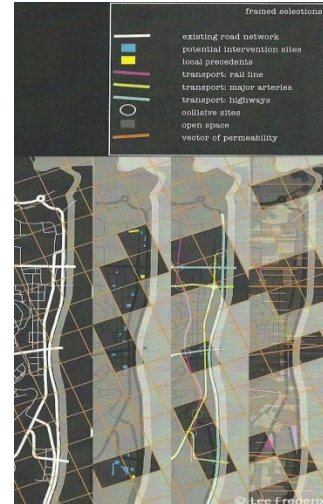


Fig. 17: Framed Selections
(Source Frederix, 2010)

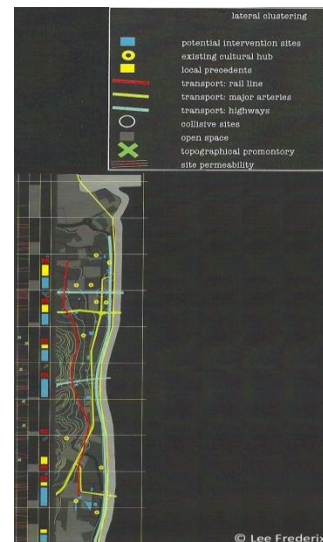


Fig. 18: Lateral Clustering
(Source Frederix, 2010)

⁴ Frederix, 2010: 44.

⁵ Ibid.

and opportunities⁶.

As a design intervention, Frederix comes up with five types of maps that create his ‘*Synthetic Ecologies*’ (fig. 16). They are produced through overlapping various types of cultural infrastructures with focus on highlighting the need for social connectivity and surface accumulation with concern for the differences in the built density. He proposes overlapped cultural infrastructural plans that produce the following maps: Framed Selections (fig. 17), Lateral Clustering (fig. 18), Descriptive Associations (fig. 19) and City as Body (fig. 20).

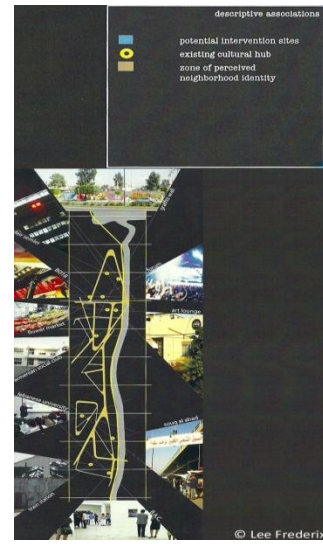


Fig. 19: Descriptive Associations (Source Frederix, 2010)

Unlike landscape architecture, which consumes the potential of a site, these maps are used for the preparation of surfaces for future appropriation allowing for the autonomy of the built environment to remain open for alternative permutations over time⁷.

Existing cultural nodes are emphasized and art related spaces highlighted to pinpoint ethnic, commercial, and educational niches, all of which act as an integral part of the proposed cultural infrastructure⁸.

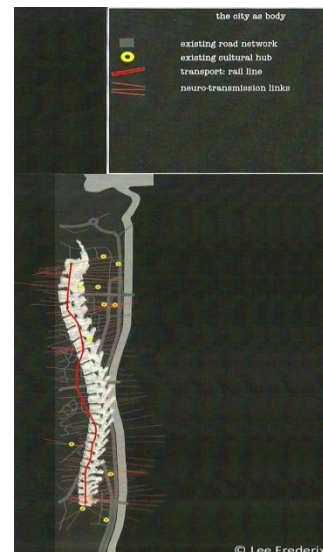


Fig. 20: City as Body (Source Frederix, 2010)

⁶ Corner, 2006: 31.

⁷ Ibid.

⁸ Frederix, 2010: 45-46.

Frederix's maps are operational as opposed to quantitative in a sense that they emphasize means over ends and logic over compositional design. This situates his work as a reflective exercise that creates open-ended and non-deterministic results.

2.3 Analysis: Defining the Need for a New Approach

Though each of the above works has merit within their respective fields, they both propose conceptual approaches which result in limited implementability. Alternately, the proposed approach builds on the strengths of each of the former, but with the added benefit of being operational with respect both to built form and to qualitative results.

2.3.1 Urban Design Decision Environments: A Policy Approach

In this section, the final product is seen as contingent upon creating a framework referred to as the urban design '*decision environment*' (Tiesdell & Adams, 2004). As mentioned previously, *process* and *product environments* look at urbanism in terms of systems and networks. *Decision environments*, in contrast, address zones and development patterns therein. They employ other actors, such as developers, community members, sundry designers, surveyors, etc.... in addition to landscape architects and engineers.

Urban design *decision environments* are the realm within which decisions that impact the built environment are made and are typically designed by means of policies

and frameworks, incentives and disincentives such as the re-development of an under-utilized landscape, for example, as discounted land⁹.

To many, design policies and frameworks are intrinsically seen as the least interesting part of urban or environmental design and as uncreative, stopping flair and imagination in the cause of ‘keeping in keeping’¹⁰. However, this process should occur before the design of the development proposal/project, and is both proactive and quality-shaping. It affects the design and development processes by creating a framework for design and not the design itself. In this respect, it is not entirely unique from the *process environment* approach.

As stated earlier, this current work is an attempt to define a third paradigm for the investigation of Mkalles along Nahr Beirut which is based on the *decision environment* mindset, but also integrates aspects of the previous studies and contemporary theory. Building on Frederix’s interest in the causal energies that influence the urban built environment, this new *decision environments* approach highlights the underlying forces that produce urban space and form, but specifically through addressing zoning. It utilizes the work of Eran Ben Joseph and Matthew Carmona on coding environments, or more specifically, design policies. It does so in order to produce an intervention framework encompassing enough to address the problematics associated with land-use metropolitan scale-based zoning, as described in the following figure (fig. 21):

⁹ Tiesdell 2011: 2.

¹⁰ Carmona, Punter 1997: xix.

Type	Characteristics	Examples	Advantages	Disadvantages
Conventional land-use and metropolitan-based zoning	<ul style="list-style-type: none"> . Includes districts, uses and dimensional and density standards. . Prospective: prohibits development not consistent with the code . Generally text-based with mapped districts. 	<ul style="list-style-type: none"> . Base districts . Land-use classifications . Dimensional standards: setbacks, height, lot size, density, floor-area ratio. 	<ul style="list-style-type: none"> . Fairly easy for staff to implement and for the public to interpret, if well organized. . Familiar to professionals, staff, public officials and the public. . Flexible for varied design within parameters of use and dimensional standards. Results are predictable. 	<ul style="list-style-type: none"> . Due to its wide-scale divisions it creates numerous lot-based nonconformities. . Lack of flexibility to address different site characteristics and surroundings or future problems and development directions (often disregards existing development patterns and futures) . Does not have the capacity to remedy problems it has created. . Creates conflicts between dictating policies at a nationwide scale and regulations imposed on a local level.

Figure 21: Disadvantages of conventional land-use and district based zoning (Source: Partly based on “Types of Zoning Codes and Formats.” Discussion Paper. Palo Alto, CA: City of Palo Alto Department of Planning and Community Environment, 2001 & Eran Ben Joseph, 2005)

However, conventional land-use zoning at the metropolitan scale creates uncertainty as to object design and does not have the capacity to prescribe urban design qualitative-based development outcomes or interpret the quality of physical consequences. This necessitates reconsidering the scale and scope of zoning, as well as redefining the term ‘design policies’. The definition of ‘design policies’ used in this work has been adapted from a composite of the Carmona-Punter definition of policy writing. This description encourages statements of design goals that are sector-scaled and quality-based. In general, it describes policies that embrace prescriptive and qualitative goals, objectives, principles, guidelines, advice and procedures (fig. 22). Additionally, most useful to this thesis is the section that highlights policy guidelines “bolstered with performance and quality criteria”¹¹.

¹¹ Ibid.

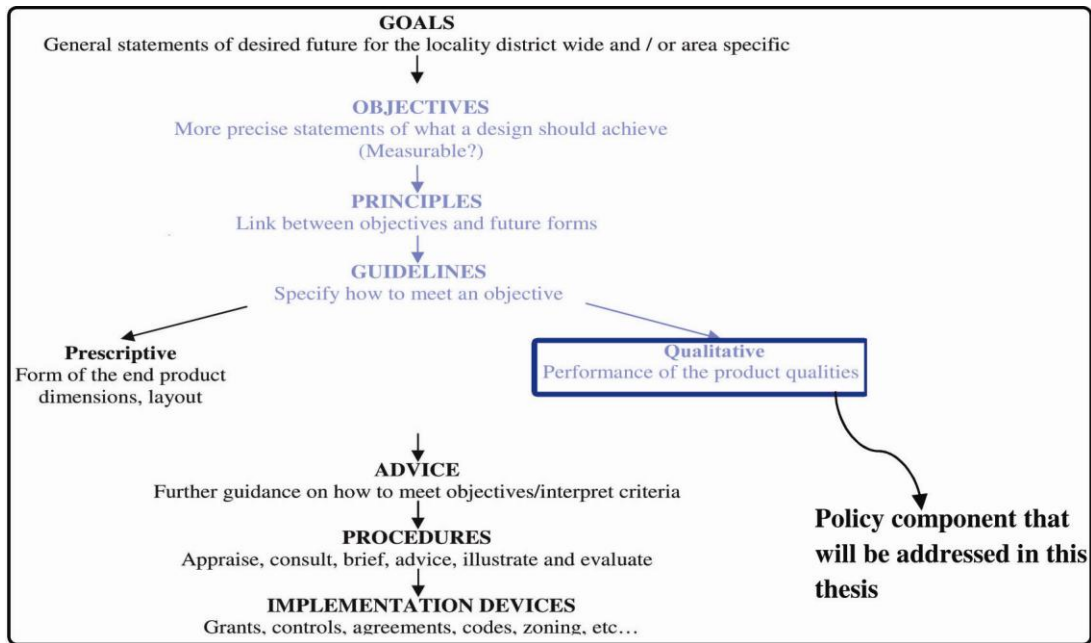


Fig. 22: Components of design policy highlighted in blue (adapted Lang, 2005; Carmona and Punter, 1997)

Also, it is important to remember that design policies should seek to go-hand in hand and be in continuity with the existing zoning scheme that they are seeking to control / amend so that the proposal can be applicable. And finally, the relationship between individual design policies and the plan’s broader sector-based needs should be clear in terms of the site and the quality and content of development¹².

Informed by the concerns of the two previous theses by Frem and Frederix, the policies themselves will range from issues of *environmental* concern and density control but through market and development policy. In the book, *The Code of the City*, Eran Ben Joseph examines the relationship between environmental and market standards through quality-making¹³. He envisions a new type of development, one of continuous interplay between the built space and the natural environment and the actors involved (fig.23).

¹² Carmona, Punter 1997: 95.

¹³ Ben Joseph, 2005: 1.

	Type	Characteristics	Examples	Advantages	Disadvantages
TYPES OF ENVIRONMENTAL & MARKET POLICIES (quality based)	MARKET / DEVELOPMENT POLICIES Incentive-based Standards / Based on quality areas	. Flexible to achieve objectives through 'incentives' such as density or floor-area bonuses in exchange for provision of selected uses and public amenities.	. Exemption from FAR versus density bonuses for preserving natural areas and sensitive zones.	. Relies on a carrot rather than stick approach. . All parties are involved. . Flexibility to vary uses, density and intensity of development and instead address impacts.	. Incentives may not be used and amenities not provided. . Bonus and benefits offered may be perceived as excessive.
	ENVIRONMENTAL POLICIES Performance-based Standards	. Regulates development 'impacts' such as nuisance factors, impervious surface, landscape surface area, trip generation, etc...	. Nuisance (odor, noise, vibration, glare, toxics, etc...) and standards in industrial zones. . Performance criteria (impervious surface, trip generation, etc.) to access development.	. May provide public amenities with 'win-win environmental approach'	. Impact approaches may not address site-specific conditions or constraints. . Difficult to implement, requires complex calculations.

Figure 23: Types of Codes and Policies (Source: Partly based on “Types of Zoning Codes and Formats.” Discussion Paper. Palo Alto, CA: City of Palo Alto Department of Planning and Community Environment, 2001 and adapted by the author of this document.)

2.3.2 Synthesis and Conclusions

The table presented below (fig. 24) attempts to synthesize the three approaches discussed above. The third methodology titled: ‘thesis’ retains Frem’s environmental consciousness and concern for the built density factors around the river and Frederix’s perceptive notion of the non-object oriented nature of design. Building on both contributions, this work is situated within the realm of the urban design *decision environments*, which is neither product- nor process-oriented but instead addresses similar environmental problems and density concerns through market-based and environmental outlooks. By responding both to environmental concerns and market-based demands, *decision environments*, in the form of policies and incentives, can be utilized to create a framework for design that encourages qualitative-based development outcomes.

	Frem 2009	Frederix 2010	Thesis
Problematic	The interstitial nature and the environmental degradation level of the river	Frederix views the site and the people [within the site] as marginalized and need to be given place for expression	Inability of land-use / metropolitan-scale-based zoning to address qualitative aspects
Position	. Object Environment	. Process Environment	. Decision Environment
Approach	. A Landscape Architecture / Engineering Perspective	. A Landscape Urbanism/ Machinic / Civic Perspective	. Design Policy Perspective
Concerns	. Environmental implications of the infrastructure on the river . Physical connectivity / dis-connectivity . Built Density around the river	. Social connectivity / dis-connectivity . Built Density around the river	. Environmental implications of the industry on the river . Market concerns that impact quality
Types of Interventions	Landscape engineered objects in the form of: . A water strategy . Transportation interventions . Building and Infrastructure Infill	Frederix approaches the river, not as an object, but as an entity that is affected by a series of processes and proposes (not a project) but the following images: <ul style="list-style-type: none"> . Framed selections . Lateral clustering . Descriptive associations . City as body <div style="margin-left: 20px;"> <p>Social Connectivity ←</p> <p>Density ←</p> </div>	Quality-based sector zoning scheme
Product(s)	She proposes different strategies and designed objects that address adjacent existing buildings, agricultural lands, and land parcels as affecting the riverfront; also by integrating pedestrian bridges, platforms, connections and infrastructure, Frem's design engineers the entire riverfront to give it back to the city. Her objects include the following groups of public objects: <div style="margin-left: 20px;"> <p>Environmental ←</p> <ul style="list-style-type: none"> . Public water reclamation tools . Hydrological mutations . Flood mitigation /storage spaces . Ecological mitigation and storage facilities . Water treatment and reclamation tools <p>Physical Connectivity ←</p> <ul style="list-style-type: none"> . Pedestrian Bridges . Pedestrian Platforms . Infrastructural manipulations . Infrastructural public spaces . Multi-functional water systems <p>Density ←</p> <ul style="list-style-type: none"> . Infill to densify the river edges </div>	Deprogrammed surfaces / Synthetic Ecologies in the form of: . Cultural infrastructures . Surface Accumulations	I propose using design policies to produce an intervention framework, as based on the work of Ben Joseph and Carmona on coding environments. Design policies are developed by referring to the following: <div style="margin-left: 20px;"> <p>← Market policies → Market</p> <p>← Environmental policies → Environmental</p> </div>

Figure 24: Synthesis Table

CHAPTER 3

INVESTIGATING NAHR BEIRUT

This chapter will present a continuity of the research conducted in the undergraduate Vertical Studio course. It will investigate the entire stretch of Nahr Beirut in a relatively conventional manner, mapping the historic evolution of the river from an agricultural metropolitan infrastructural line feeding into adjacent marshy land, to a sewer edge.

In addition, this section will study in detail the historic morphological changes that Mkalles went through while transforming into an industrial destination.

In the Vertical Design Studio “water, water” I had started investigating Nahr Beirut from a conventional, general site-analysis approach, and not in terms of zoning. This type of research inspired me, at the time. However, it is preliminary in its content; and after reading Carmona and his focus on zoning, I was motivated to develop the research and to focus more on Mkalles, zoning, and development markets; as mentioned before in the introduction and as will be explained in Chapter 4.

As for the preliminary investigation, the Sketches compilations (Figs. 25-28) better illustrate the research, and below is an analysis of each map:

- **Institutions:** The areas on both sides of the river have several Governmental, Religious and Educational buildings scattered.

- **Recreation:** One Eco-café is located in Mkalles near the river, and several Sport facilities and Public Gardens are distributed on both sides of the river.
- **Production:** Raw Materials versus Handmade: The main Garbage and Waste Treatment facilities are at the mouth of the river in Karantina, while other industries are spread from the mouth of the river upstream, and at the area of Sin el Fil and Mkalles. Physical Plants for Construction Materials, such as Tiles and Concrete, are part of the Industrial zones indicated in this map. On the other hand, Handmade products such as jewelry and shoes are manufactured in the heart of the Bourj Hammoud area, which is home to many artisan and craft-making businesses.
- **General Land-use:** A ‘Reversed Repartition’: the areas classified as Industrial are congested along the river banks, which then dissipate into mostly Residential and some Commercial zones. Agricultural lands are located mostly to the south area, mostly in Mkalles and Dayshouniyeh.
- **Characteristics of Open Spaces:** This map illustrates the existence of several ‘terrain vague’ properties along the river. This term describes privately owned land that is un-built and unused, possibly with some plantations as well as garbage disposals. The series of such existing land stops at the edge of sin el fil. Forest lands, on the other hand, exist mostly in Dayshouniyeh and cover a large area of land in that district. There are also agricultural lands, but they are not clearly demarcated in this map.
- **Relation to the River:** A very important issue is raised in this map, and it is the relation of a civilian to the River in terms of contact and sight. In the area of

Dayshouniyeh the river is still not contained in the channel; it is still a free form and there can be direct contact with it. There is also the presence of the Dam and ‘qanater zoubeyda’, which is a historical structure that used to exist as a bridge but is now partly a ruin. The concrete channel starts in the area of Mkalles and Hazmieh, and continues along the artery of the river until its mouth at Karantina. Along this artery, there are instances in which the river channel allows visibility to the pedestrian (highlighted in the map as ‘sight’) and there are other instances when it is a barrier, a large concrete wall denying visibility (highlighted in the map as ‘river as container’). At the very mouth of the river, the channel walls break down into a large area where the water is allowed to dissipate before pouring in to the sea. Here is another instance of direct “contact” with the river; albeit much different than the contact from the Dayshouniyeh forest.

- **Past and Present Vegetations/Natural Resources:** This map shows the stark contrast between existing vegetations along the river spine in the past versus the present condition. Citrus trees, vegetables, olive trees, eucalyptus, pine trees and deciduous trees are the main species that had previously existed along the river spine from Dayshouniyeh to the mouth of the river at the sea. Citrus trees had apparently existed in great quantities. The present condition shows a cut-down in the presence of those natural resources. Vegetable production still exists in the Bourj Hammoud area; some new greenhouses exist sporadically alongside the river; new cut flower production takes place in Sin el Fil; the only Pine trees remaining are those in the Dayshouniyeh forest; and the quantities of Citrus trees

that had previously existed only remain alongside the Mkalles/ Hazmieh waterfront and in the Dayshouniyeh area.

- **Main Circulation Axes:** There exists a difference illustrated here between the Upstream existing natural land cover and the Downstream developed areas. Yet the river and the existing highways and roads alongside it offer connectivity between those two areas, which is illustrated by the adjacent diagram that maps the highways and secondary roads.
- **Densities:** The map here is a figure/ground plan that shows the different densities of the existing urban fabric on both sides of the river and along its artery.
- **Types of Pollution:** There are many discharge points along the river, unfortunately, which is illustrated here and categorized as Chemical, Organic and Sewage discharges. Surprisingly, they happen as much along the industrial edge of the river as in the upper parts of Mkalles and Hazmieh and finally at the mouth of the river in Karantina.
- **Geological Formations of the Site:** This map diagrams the three different categories of geological formations in the site around Nahr Beirut: Limestone, Conglomeratic Limestone, and Sandstone/ Siltstone.
- **Floods and Water State:** This map illustrates the different Water conditions along the river, including areas where flooding is prone, the existence of stagnation and scarcity of water, and the regular appearance of dead fish and raw materials.

In conclusion, this thorough and significant research is able to stand on its own as a basis for a different kind of thesis. However, after several readings and studies, and after my exposure to theses focused more on planning and design, I decided to take my thesis in a different direction, by focusing more on the zoning, which will be explained in chapter four.

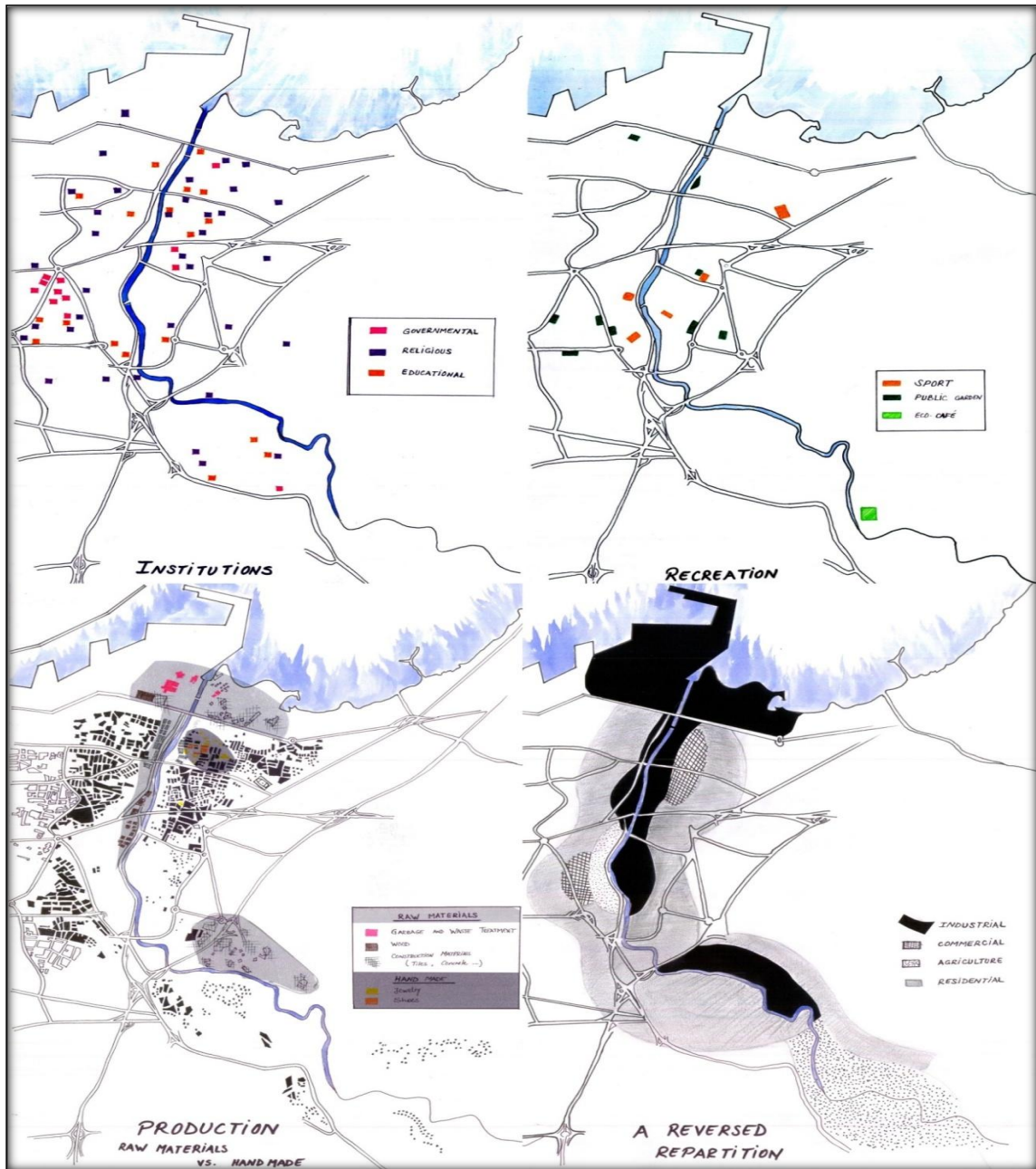


Fig. 25: Sketches Compilation 1 - Land-use

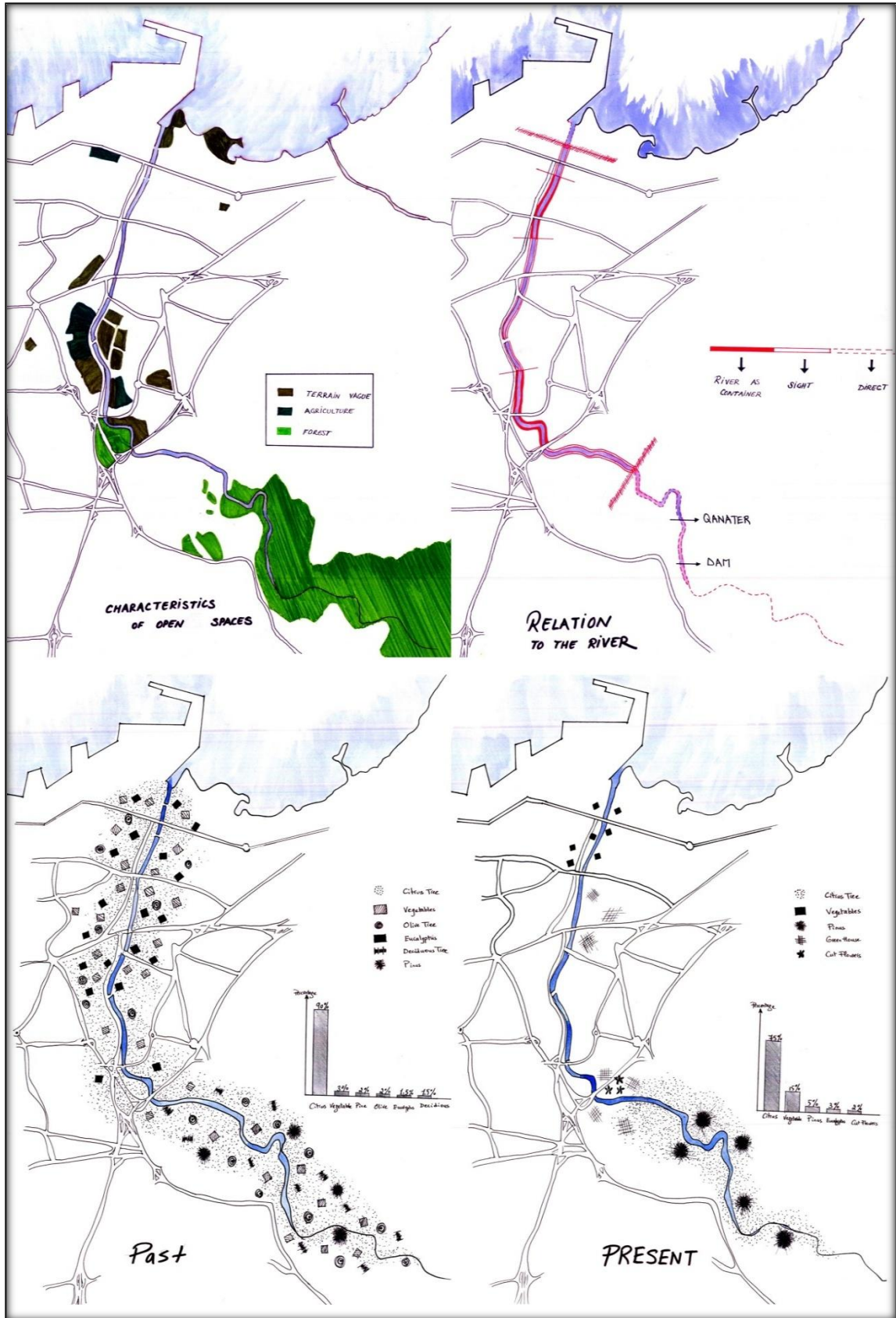


Fig. 26: Sketches Compilation 2 - Vegetation and Natural Resources

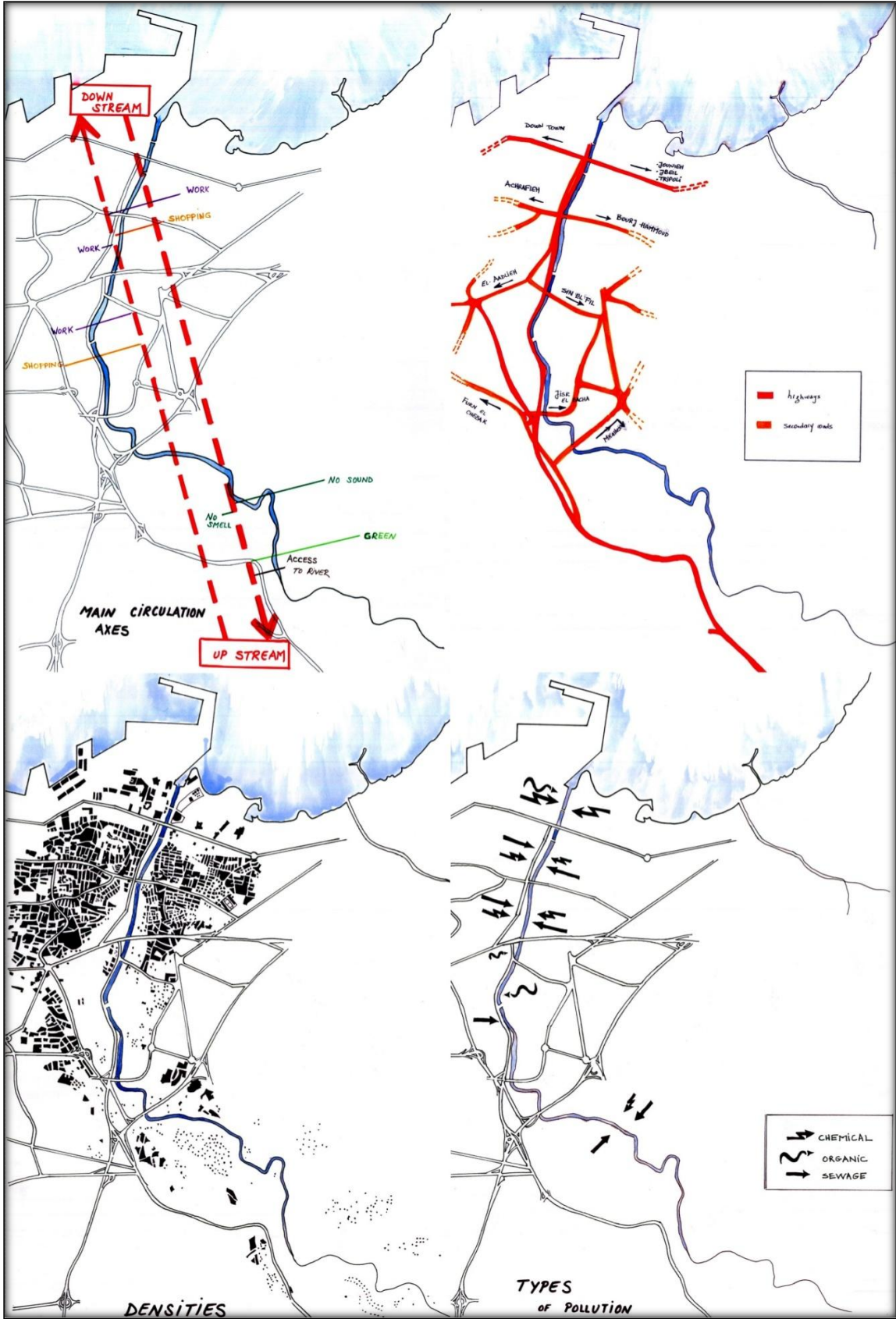


Fig. 27: Sketches Compilation 3 - Circulation, Built Mass and Result Pollution

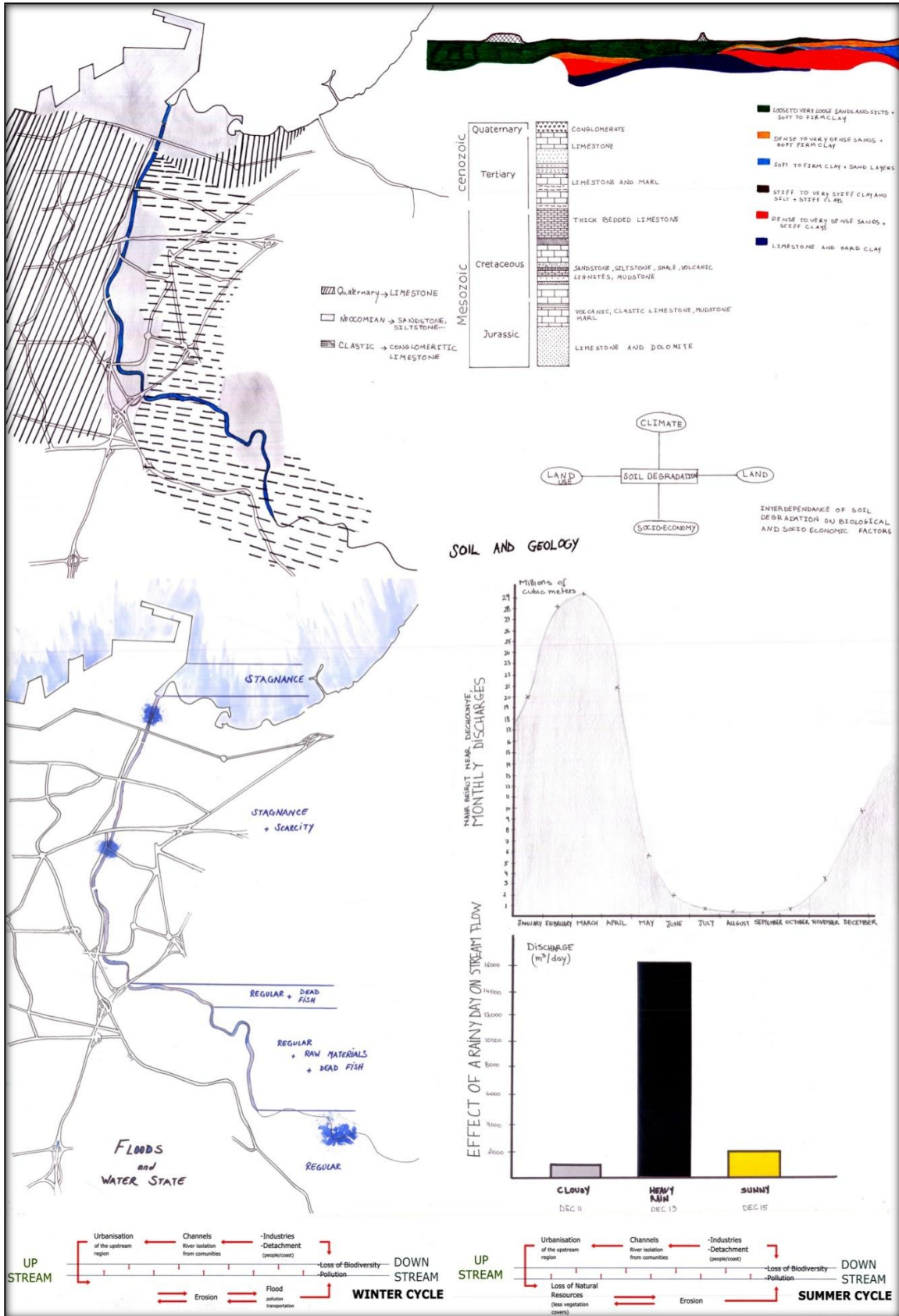


Fig. 28: Sketches Compilation 4: Condition of Natural Resources (Water and Soil)

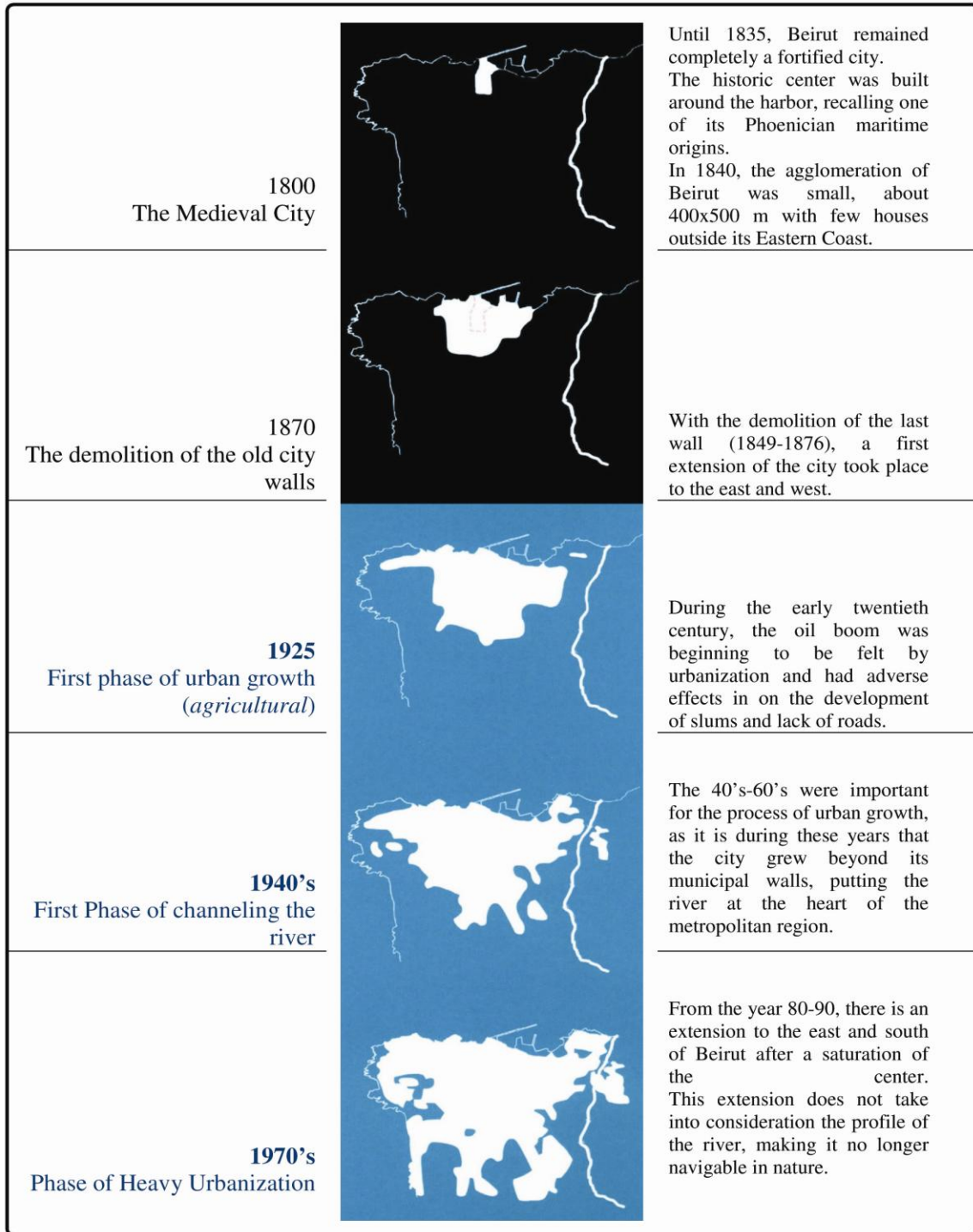


Fig. 29: River Formation and the Metropolitan Region of Beirut

Another component of the research conducted in the Vertical Design Studio is a historical analysis, which I elaborated on in this thesis. The historical study (Fig. 29)

showed in mapping form, was one way to track urbanization patterns over a specific period of time.

The overall amalgamation of research work and mapping, presented and analyzed here, was an initial step in the process of understanding Nahr Beirut. I drew upon this work for the next phase which was to study, research and map Mkalles; this is illustrated in the following maps (Figs. 30 – 33).

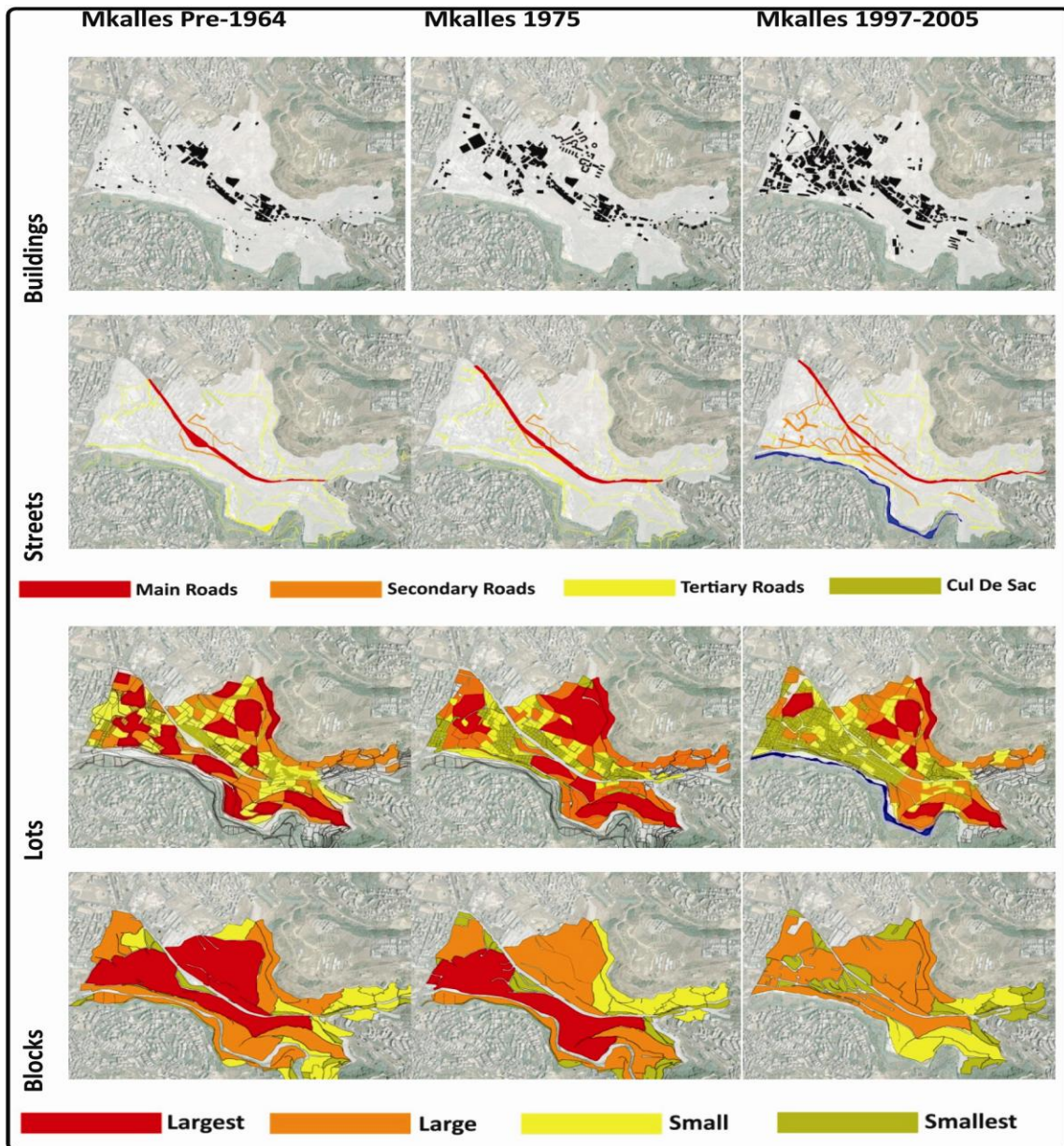


Fig. 30: Changes in Mkalles During the three Following Main Periods (1964 - 1975 - 2005)

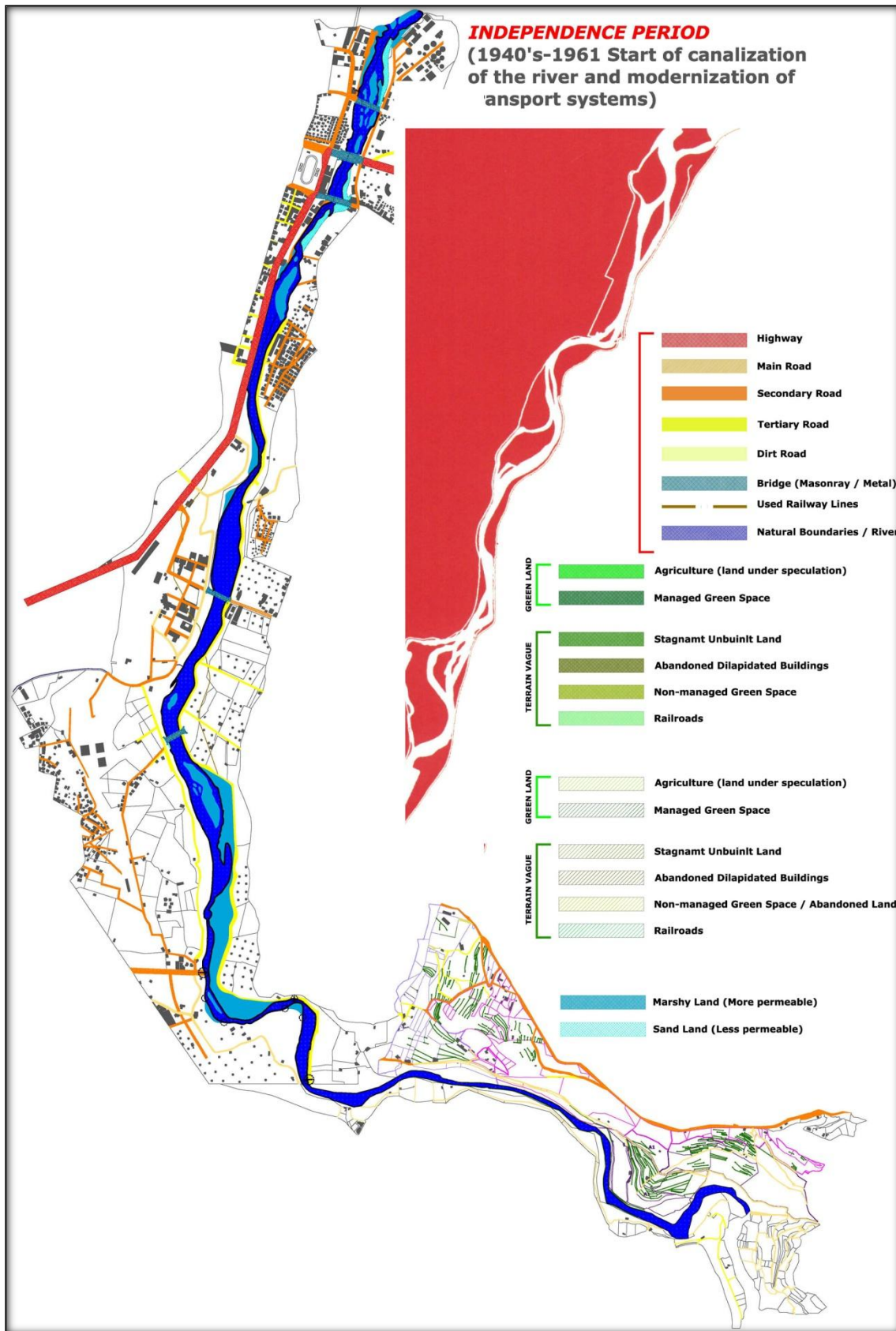


Fig. 31: Nahr Beirut during the Independence Period

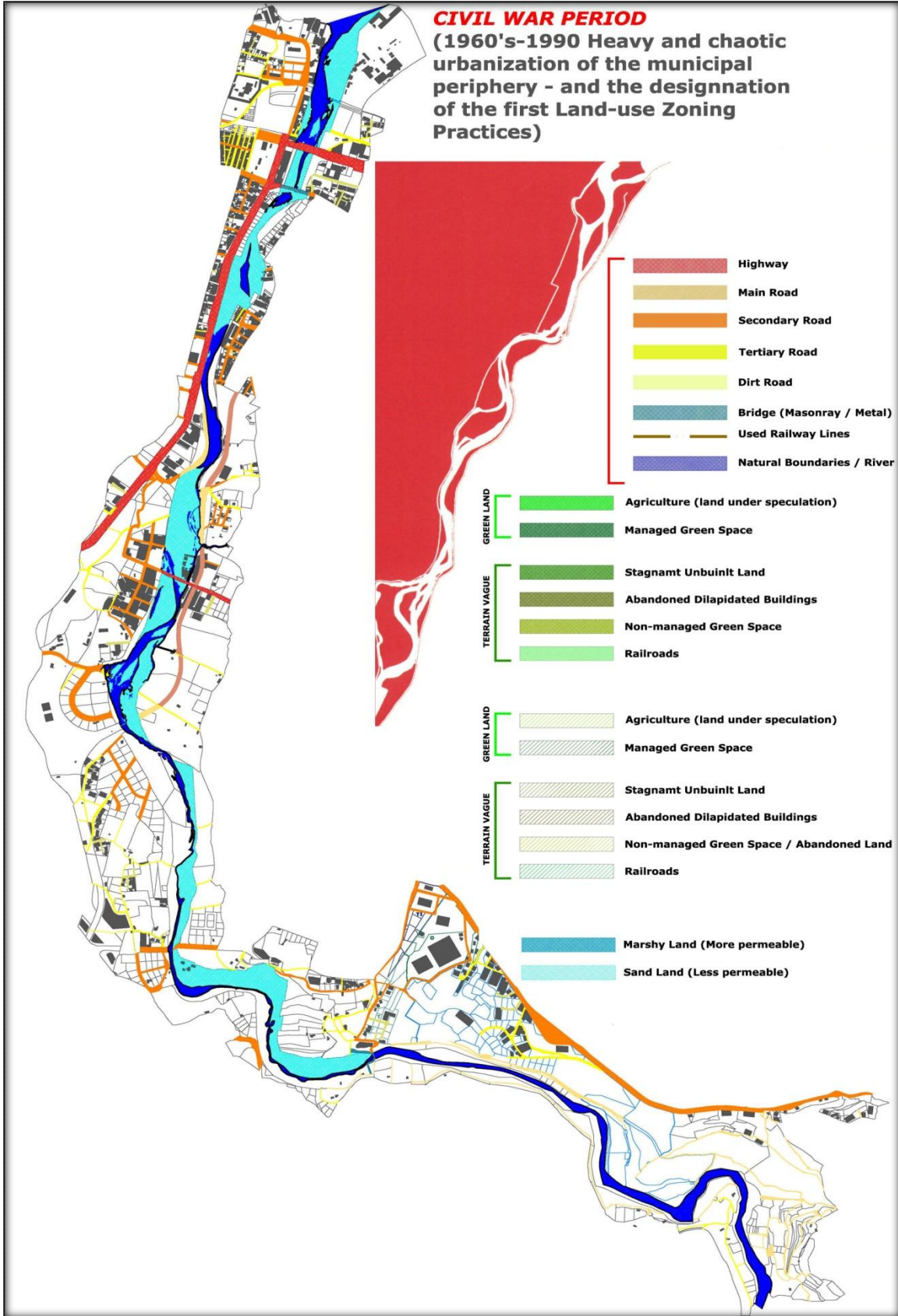


Fig. 32: Nahr Beirut during the Civil War Period

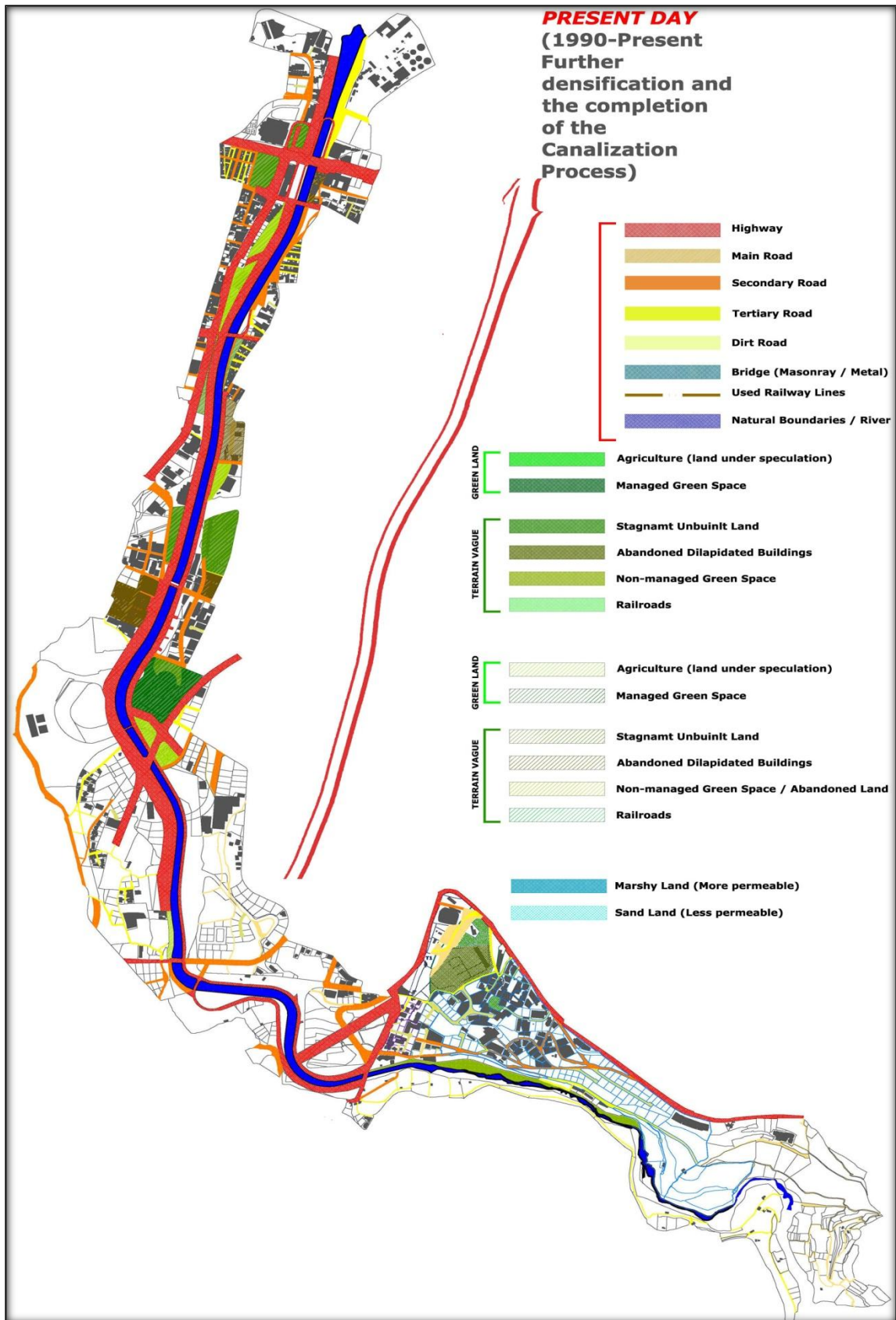


Fig. 33: Nahr Beirut during the Present time

CHAPTER 4

INVESTIGATING MKALLES

The second segment will be more in line with the over-arching structure of the thesis; the three tyrannies of practice. This part will deconstruct / decode the zoning laws that apply to Mkalles. It will highlight the legislative and development tyrannies (forces) that had shaped the area or that hold future potential for influence.

The industrial zones of Mkalles will be addressed as land that gets regulated under a specific land-use policy issued by the government body that is responsible (DGU), accompanied by three administrative procedures by the ministry of the Public Health, the Ministry of Industry, the Ministry of the Environment and the Council of Ministers. Those processes mainly include:

- The ‘Strategic Environmental Assessment’ law (Law 444 – 2002 – Environmental Protection – Article 4) by the Ministry of the Environment, articulating a group of environmental guidelines.
- A study by the ‘Investment Development Authority in Lebanon’ (IDAL-Council of Ministers) which aimed at expressing the need for performance guidelines while studying, building by building, the impact of existing / planned industrial establishments on the streetscape.
- A 1936 decree (Decree 21/L -1932) in which industries were divided into three basic categories by the Ministry of Public Health. And the 1997 law (Law 643 – 1997) that created the Ministry of Industry and the 2002 decree (Decree 8018 - 2002) by the new

Ministry, meant to address the growing diversification of heavy type industries through a scale of investments that ranges from Level one to five.

The purpose of the second section is to illustrate how the zones of Mkalles (Zone G, Zone O, T and T1), as they exist and accompanied by those three Decrees / Laws / studies, in reality respond to speculative market-oriented development patterns. Those trends create distinct characters / identities that foster development and ownership patterns unique to each coding zone.

The value of such an understanding of each zone is that it can guide the re-coding process in Chapter four. This will include re-dividing Mkalles into quality areas with place-making goals in mind.

4.1 Existing Zoning

Zoning in general is usually designated under a specific policy issued by the responsible institutional body of the discipline of urbanism and usually divides the built fabric into the three categories of agricultural terrain, industrial areas, or mixed use regions (residential / offices / commercial) with different levels of investment and rates of land exploitation. This usually leads to an end product of ‘a zoning plan’ showing clear divisions of land.

In the case of Lebanon, since land zoning is a nation-wide procedure, the concerned authorities responsible for the Building and the Urban Planning Law are the Ministry of Public Works, through its General Directorate of Urban Planning and the Council for Development and Reconstruction (CDR). However, the central government

applies the zoning system through the many ministries of development concerned and by specific supreme councils and public associations.

The process of land zoning happens on two levels: “the national zoning policy and the local zoning plan¹.”

On a national level, the government has made CDR in charge of elaborating a national physical Master Plan that will constitute the basis for local urban planning policy. The recommendations of this study will be imposed, on local urban planning master plans that will be elaborated or reviewed afterwards; however, this conformity of local plans would be accomplished progressively².

On a local level, zoning laws apply to the peripheral limits of a city.

The first event of master plans for Greater Beirut was the Ecochard plan, which was devised in 1943, and is named after Michel Ecochard, the French architect and urban planner responsible for it. The plan reflected a functional division of zones of different activities. However, it was never implemented.

In the 1952 master plan, the scheme subdivided the suburban areas with an FAR³ value that does not exceed 1.65, thus increasing the density of the built fabric.

In 1964, during the Chehabist period, the “المخطط التوجيهي العام لضواحي مدينة بيروت” (Greater Beirut Master Plan) (fig. 34), commonly mistaken as the Ecochard plan, was established introducing full amendments to the 1952 plan. Even though Ecochard

¹ Khayat, 1999: 4, 7.

² National Physical Master Plan of the Lebanese Territory, 2005: Forward – vii.

³ FAR is the ratio of total building floor area to the area of its zoning lot. Each zoning district has an FAR control which, when multiplied by the lot area of the zoning lot, produces the maximum amount of floor area allowable in a building on the zoning lot.

“disassociated himself from the final product”⁴, he was responsible for the legislations that “defined the location of different types of zones”⁵.

Within further amendments in 1997 (fig. 35), industrial areas were distributed within the extremities of Beirut extending from the Karantina area towards the suburbs of Beirut namely Bouchrieh (المدينة الصناعية) and Mkalles (منطقة المكلس الصناعية). This established Mkalles as an industrial stretch adjacent to Nahr Beirut according to a typical system of zones G, O, T and T1, as mentioned in the introduction.

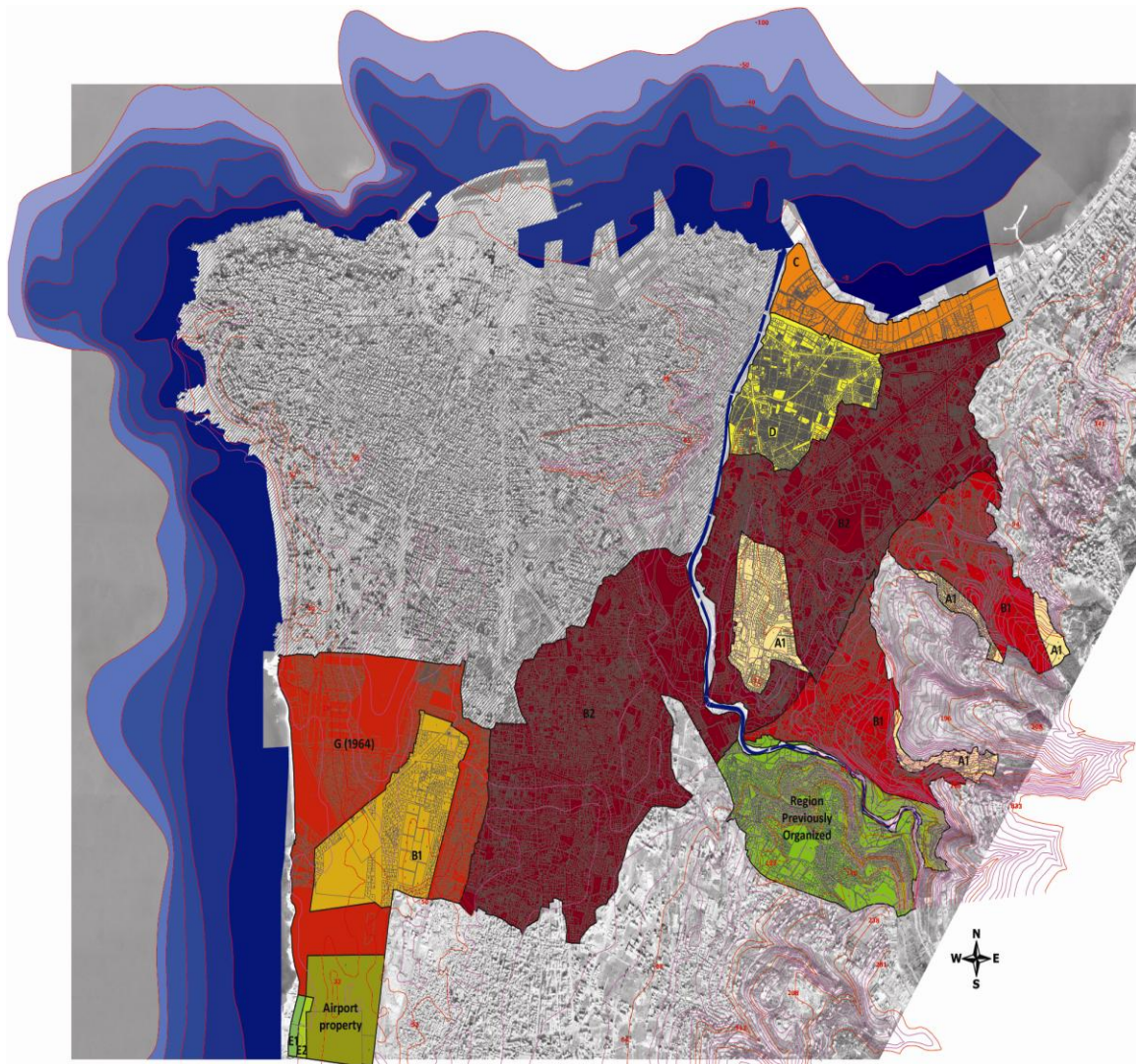


Fig. 34: Zoning around the edges of municipal Beirut according to the 1964 Ecochard Plan

⁴ Tabet, Khalaf, Khoury, 1993: 87.

⁵ Ibid.

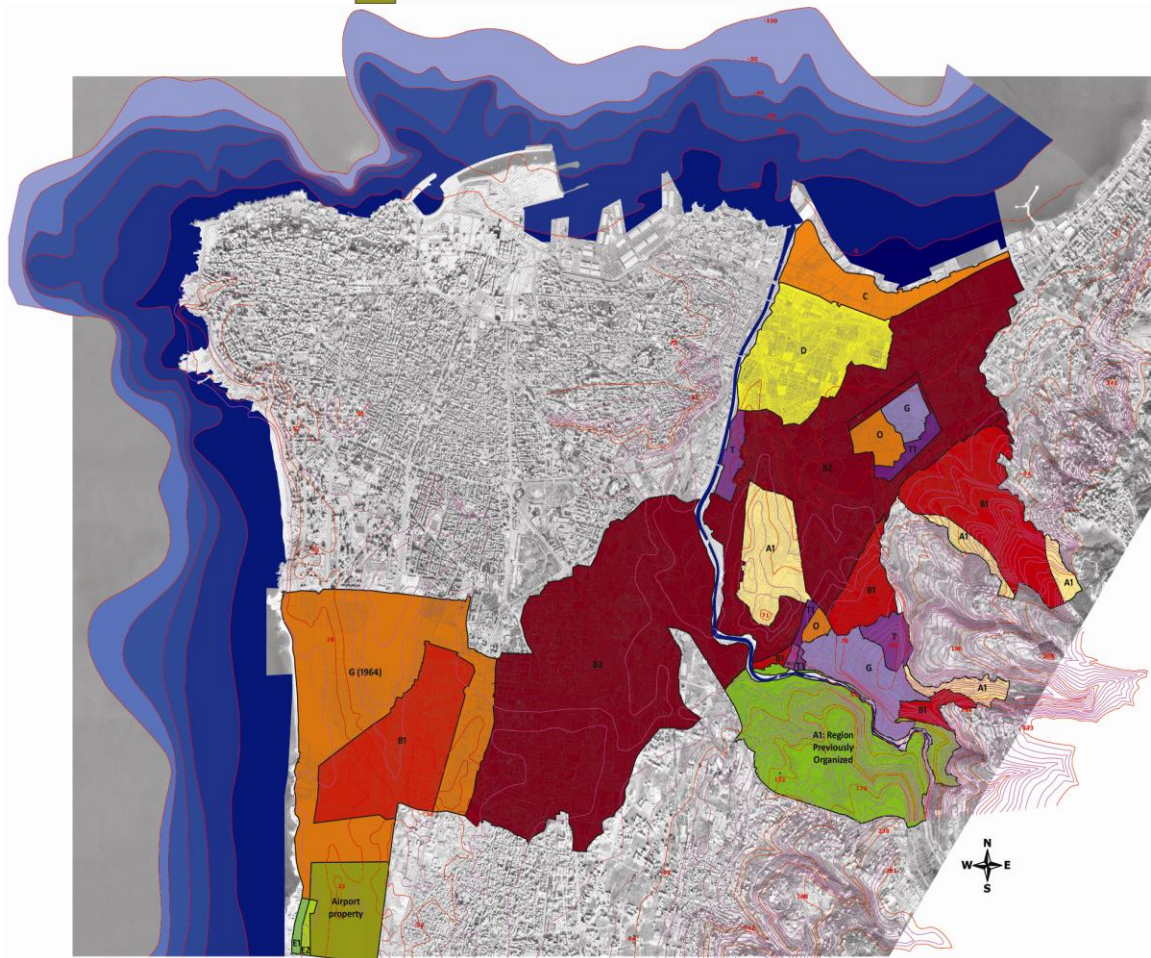
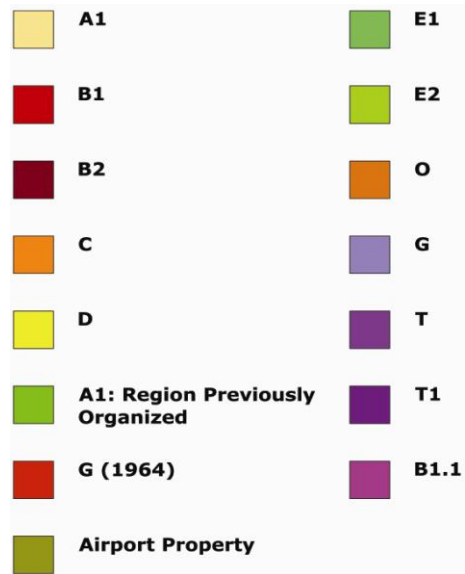


Fig. 35: The Introduction of the industrial zoning in 1997

4.1.1 First Episode of Zoning Mkalles

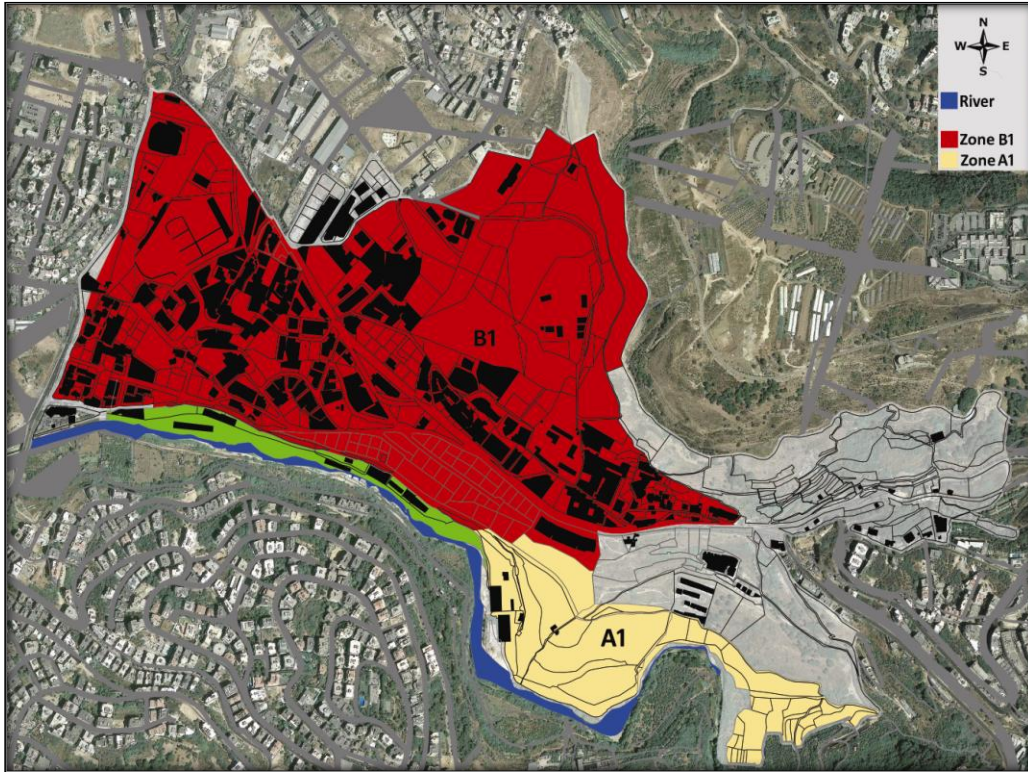


Fig. 36 Zoning of Mkalles pre-1964

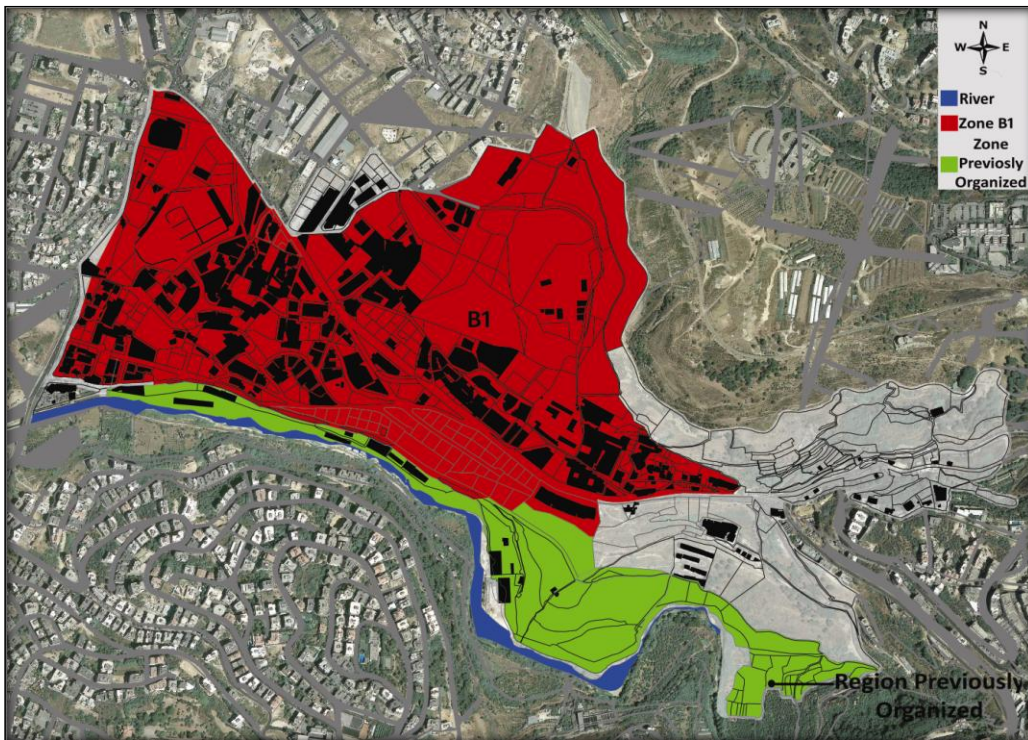


Fig. 37 Zoning of Mkalles in 1964

Similarly, according to “المخطط التوجيهي العام لضواحي مدينة بيروت” of 1964, Mkalles was formalized within two stages (pre-1964 and 1964) as a partially industrial zone (Zone B1) that included light industrial facilities, carpentry, commercial establishments, and mostly residential buildings (fig. 36 & fig. 37).

Zone (B1) was characterized by the following:

Parcel Lot		Buildable Lot		Minimum Setback	Floor Exploitation Ratio (FER)	Maximum Floor to Area Exploitation Ratio	Number of floors	Maximum Height
Area (m ²)	Length (m) x Depth (m)	Area (m ²)	Length (m) x Depth (m)	/	50% mixed use 60% industrial	1.65	4	17.00
500	15 x 15	250	10 x 10					

Table 1: Zone B Characteristics

Zone (B1) was surrounded to its western side by zones (B2) and (A1.2) which were characterized by the following:

Zone (B2)								
Parcel Lot		Buildable Lot		Minimum Setback	Floor Exploitation Ratio (FER)	Maximum Floor to Area Exploitation Ratio	Number of floors	Maximum Height
Area (m ²)	Length (m) x Depth (m)	Area (m ²)	Length (m) x Depth (m)	/	40% mixed use 50% industrial	2	/	/
600	16 x 16	250	10 x 10					
Zone (A1.2)								
Parcel Lot		Buildable Lot		Minimum Setback	Floor Exploitation Ratio (FER)	Maximum Floor to Area Exploitation Ratio	Number of floors	Maximum Height
Area (m ²)	Length (m) x Depth (m)	Area (m ²)	Length (m) x Depth (m)	/	30% mixed use	1.05	4	17.00
1000	20 x 20	500	15 x 15					

Table 2: Zones B2 and A1.2 Characteristics

4.1.2 Second Episode of Zoning Mkalles

In 1997 and 2005, decrees were introduced to rezone the area into four sections (G), (O), (T) and (T1) with varying levels of investments (fig. 38 & fig. 39). During the year, 2002, the Ministry of Industry issued a complementary law that divided the types of

industries into categories that ranged from Level one which is heavy industry to Level five which is light industry.

		Buildable lot		Setbacks		Floor Exploitation Ratio (FER)	Maximum Floor to Area Exploitation Ratio (FAR)	Maximum Height (m)
		Area (m2)	Length (m) x Depth (m)	Setback from the street (m)	Setback from other sides (m)			
	G	3000	50x50	1	4.5	50%	1.5	12
	O	4000	50x50	1	4.5	35%	0.9	10
	T	500	15x15	1	4.5	50%	1.6	14
	T1	500	15x15	1	4.5	50%	1.6	14

Table 3: Zones G, O, T and T1 Characteristics

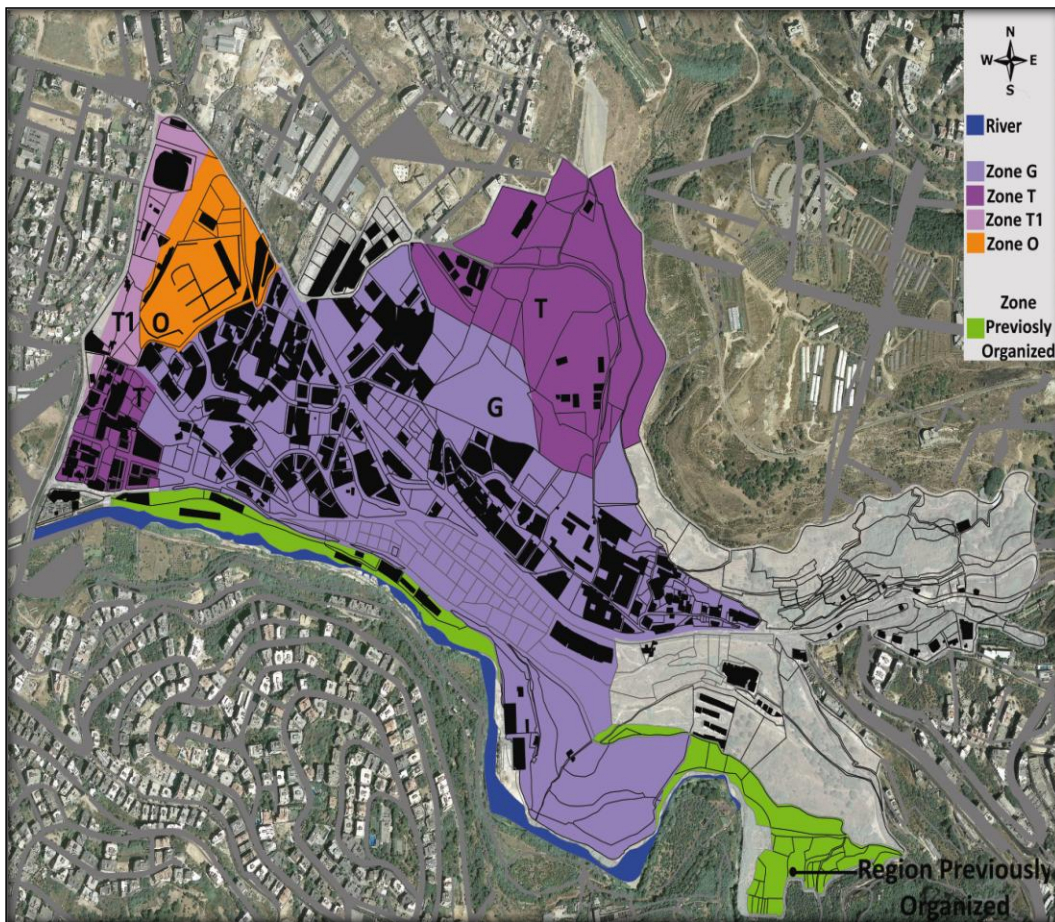


Fig. 38: Zoning of Mkalles in 1997

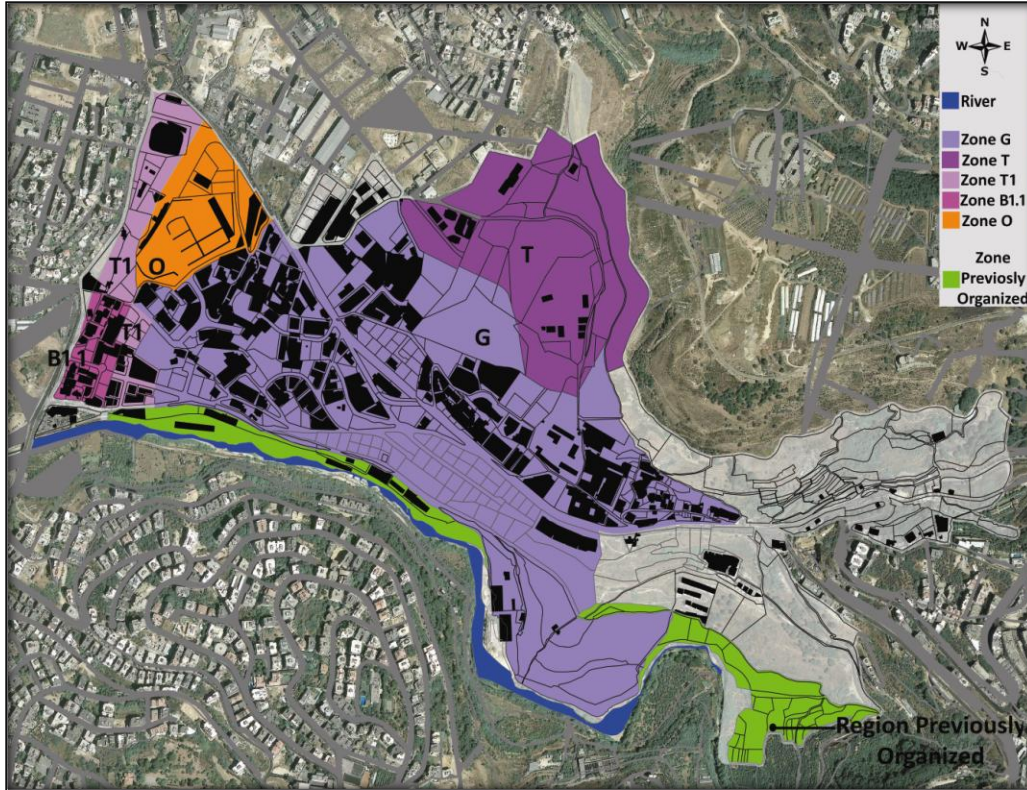


Fig. 39: Zoning of Mkalles in 2005

The types of exploitations mentioned above with maximum FAR of 2 for mixed use and 1.6 for industrial meant that the density of the area was regulated by DGU. However, Mkalles was slowly becoming subject to high development / construction activity.

Zone (G), which was formerly mostly zoned as (B1) is located in the middle of Mkalles and extends to its southern edge in interface with Nahr Beirut creating an edge condition that is currently under study and has never been addressed as important within current zoning solutions (fig. 40 & fig. 41). It was designated as a zone which allows all types of industries and levels, thus having the capacity to always draw industries in, as

opposed to its surroundings which were thought of as buffer zones to neighboring non-industrial land.

The western edge of Zone (G) is surrounded by: Zones (O) which allows for only one industrial establishment per lot in addition to commercial uses; zone (T1) which is considered as a transitional zone that allows for offices, commerce, services, and showrooms; zone (T) which in this case is either religious endowed land that only allows level three industries, or establishments that are not considered harmful and disturbing to other developments [as a transitional zone marking the edge of Mkalles (T1) and (T) prohibit level one and two industries which are considered as heavy]; and zone (B1.1) which includes residential and commercial investments. Zones (B1), (T), and (T1) are located next to Jisr Al-Basha which marks the western administrative boundary of Mkalles.

The northern edge of zone (G) is an interface with zone (T) which is also perceived as a buffer transitional zone to (G) and only allows level three industries, and industries that are not considered harmful and disturbing to other developments.

The eastern edge of Zone (G) is an interface with an un-zoned abandoned agricultural land, while its southern edge is in contact with Nahr Beirut and marks the administrative boundary of Mkalles with its neighboring municipality, Hazmieh. Hazmieh as a whole is considered as residential, offices, and mixed-use.

4.1.3 Third Episode of Zoning Mkalles

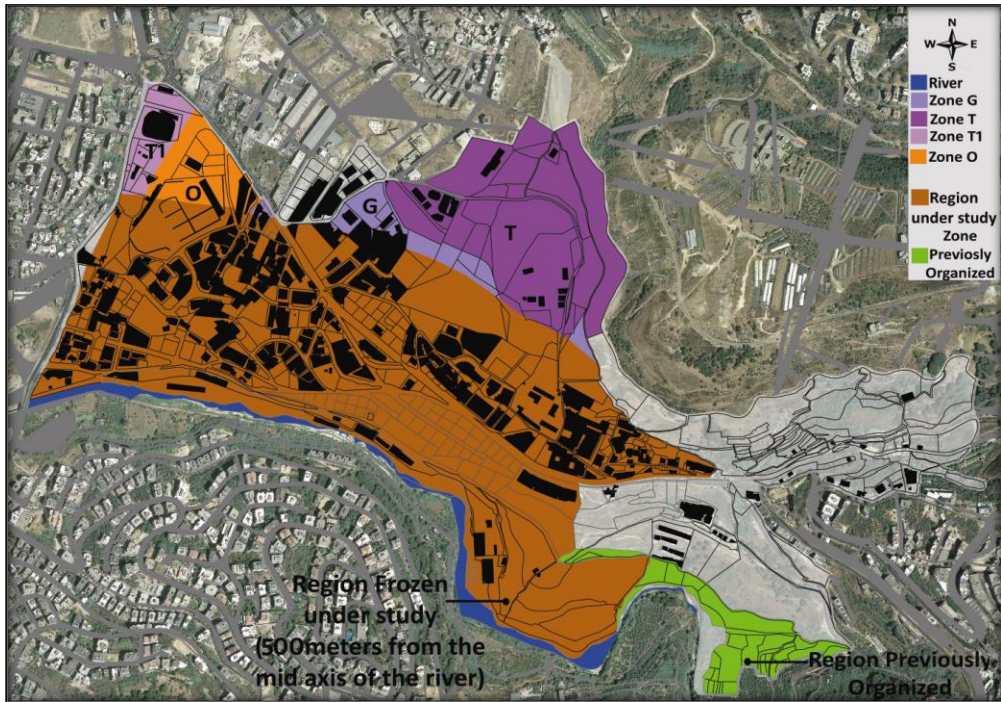


Fig. 40: Zoning of Mkalles in 2005 after Placing 500meters of Land from the Mid Axis of the River Under Study

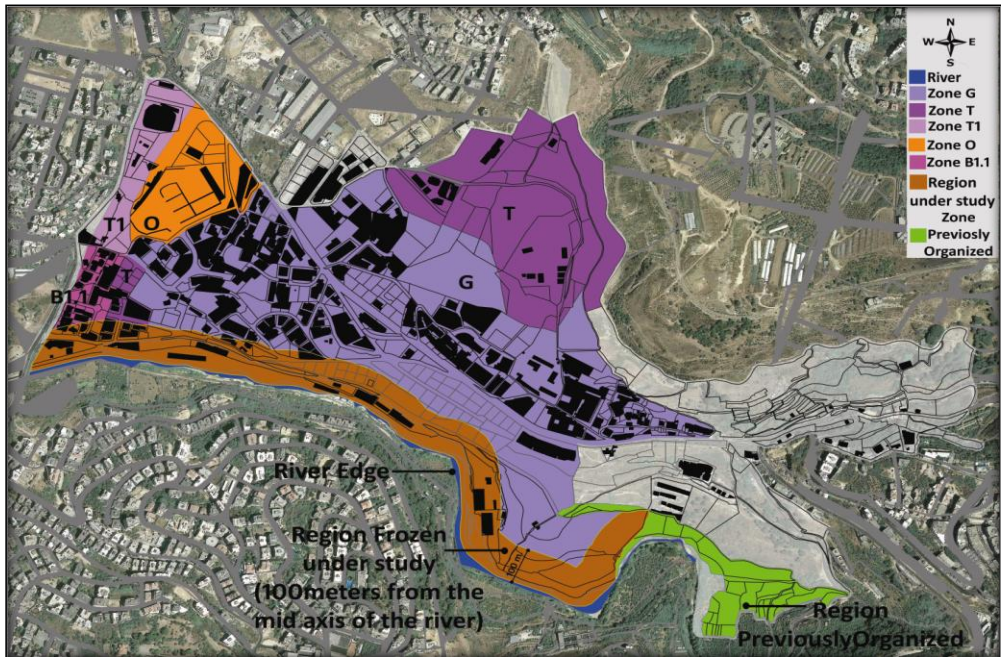


Fig. 41: Current zoning of Mkalles after Placing only 100meters of Land from the Mid Axis of the River Under Study

4.1.4 Problematizing the Zoning of Mkalles

The problems caused by such a zoning division, are accompanied by the following observed phenomena related to coding and a market-driven development:

- **‘Strict Comprehensive Regulation’ and hence, ‘lot by lot violations’:** The Mkalles industrial zone fostered ‘strict regulation’ that lead to ‘strict violation’, and hence, both became problematic categories. In parts, it fulfills the maximum exploitation rates indicated within previous zoning ordinances in terms of land-use trends and built-up potential. However, it does so to the level where it creates a spillover effect onto a section that has always lacked regulation but still houses heavy industrial complexes (plots directly in interface with the river).
- **Unforeseen side effects because of the following three reasons:**
 - The existing mode of coding:
 - Does not allow for the inevitability that, over time, changes might occur in the processes affecting the urban composition. For example, a successful industry might want to expand on the neighboring or an unsuccessful site, or contract and sell off some of its land (Ibid), which has the potential to affect the morphology of the fabric (lot allotment / lot division) and create abandoned patches within the urban fabric
 - Does not have the ability to detect future problems. As a strategy to remedy abuses / unexpected physical outcomes within the zoned areas like changes in density levels, public authorities freeze the zoning codes and plans and put them under study. However this does not solve the problem, since the private sectors

will already have taken advantage of the gaps within the codes in a manner that might not be clearly reversible within adopted orthodox methods.

- Hence, in conclusion, when a new zoning decree is issued, an in-time development imbalance between different land divisions is created. For example, industrial developers who were not allowed to expand a specific plot by merging with the adjacent lot will be tackling new neighboring recently zoned land units, leaving old ones in an abandoned extremely under-utilized status. Hence, new industrial action areas will reach high saturation status in a time lap much sooner than the zoning decree estimated because other plots became deserted.
- **Conflicts between dictating policies at a nationwide scale (general laws in Lebanon), and regulations imposed on a local level:** The National Building Law and the Urban Planning Law in Lebanon entitles the areas un-zoned on a local level a 40% horizontal & 0.8 total exploitation factors, with 3-floors of 13.5m maximum height, creating the following:
 - Inequity and lack of synergy / continuity between areas zoned on a local level and the adjacent un-zoned land plots (zoned on a nationwide scale) because of the great difference in land exploitation factors.
 - A local development crisis since some of the zoned and planned areas could have lower exploitation factors than the nearby un-zoned land.
- **Unclearly defined / vague under study decrees that do not yield a clear direction for a solution:** Current under-study decrees are text-based and too vague to be understood by professionals who will be enforcing the decree. For example, in the case of the 100meter section of Zone (G) that is currently frozen, a map is not

attached actually stipulating which lots are subject to the under-study decree. This makes the decision to indicate the 100 meter offset very arbitrary.

In addition, as mentioned in the introduction, the current development ‘unintentionally’ mediate the construction of a lack of quality of space when not effectively addressing the following regulatory frameworks that remain dominated by a market-driven development trend or outcomes:

- The Ministry of the Environment’s concern towards sensitive environmental considerations such as a prominent river-edge condition (fig. 42)

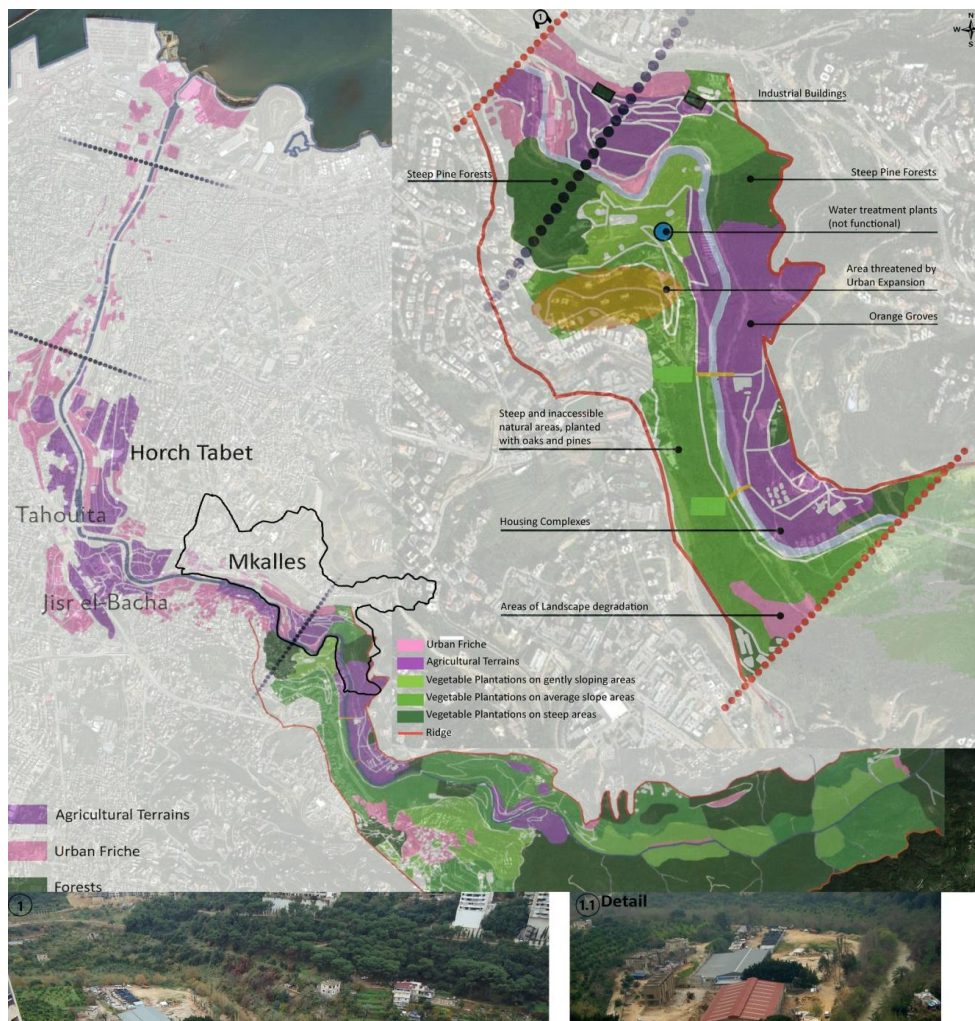


Fig. 42: The plateau of Mkalles/ Hazmieh as an environmentally sensitive context

There are thirty types of vegetation in this zone 70% of which include pine and oak. Today, a forest of oaks and pines still covers a number of plots (fig. 42) in the lower southern limits of the plateau of Mkalles / Hazmieh. This riparian vegetation needs permanent moisture in the soil. The plants that also grow on the banks of rivers are: sycamore, alder, willow and poplar. Trees cover up a small portion of the total. They are composed of: hawthorn, Judas trees, laurel, styrax, wild carob and pistachio, the aquonto and the limo.

Hence, this area includes several types of green spaces and ecological features making it a vulnerable space. It is threatened by development and does not follow a management plan since it is partly considered previously classified in the Greater Beirut master plan.

Therefore, in this thesis, it is characterized as a sensitive site and hence, needs to be protected from massive urban sprawl.

Since industrial zones present such environmental concerns through the Strategic Environmental Assessment law (Law 444 – 2002) / Article 4, the Ministry of the Environment (MOE) plays an important role in the planning of industrial estates, by advocating the reduction of environmental chaos and haphazard construction, and consequent environmental damage.

However, due to the multiple number of other actors involved (the ministry of industry, the ministry of public health and the ministry of public works), the opinion of the MOE is necessary; however, it can be overcome by other decision-

makers.

For example, what all this means is that the Strategic Environmental Assessment law can choose not to grant a building permit at the edge of Nahr Beirut in Mkalles. However, a developer is not necessarily obliged to commit to that decision, by petitioning to the council of ministers since the role of the MOE remains only as advisory.

- IDAL’s initiative through highlighting the discontinuity of secondary road networks and the lack of any pedestrian sidewalks (fig. 43)

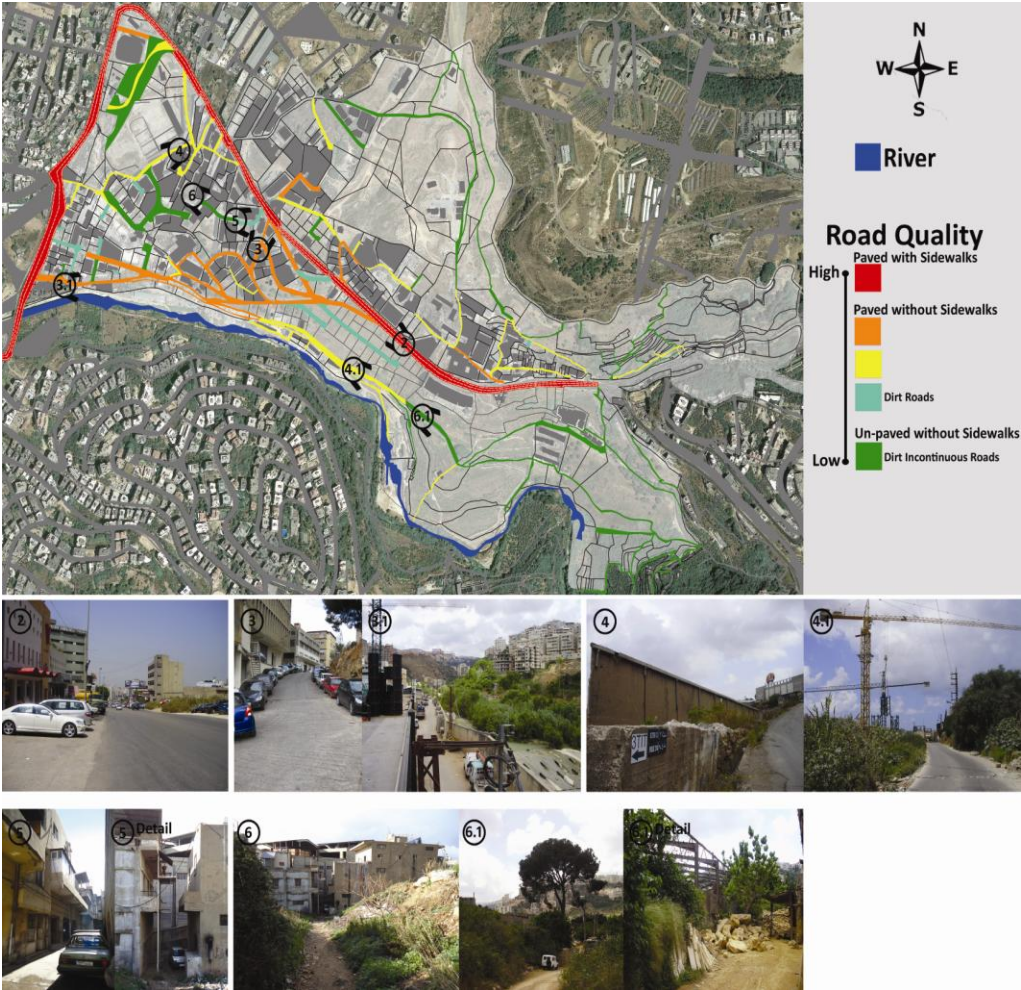


Fig. 43: Mkalles Road Quality

This concern was mainly raised by the Investment Development Authority of Lebanon (IDAL), which was in a report titled: the Status of the Services and Infrastructure of Mkalles (تقرير عن وضع الخدمات و البنية التحتية لمنطقة (المكلس) dated 1995.













IDAL was established in 1994 by virtue of Decree no. 5778, with the aim of increasing Investment in Lebanon. It is a public Promotion Agency responsible for attracting industrial private capital investments, prioritizing one industrial zone over the other.

Hence, the purpose of their concern for the road quality was not to make the area better serviceable for its current users, however, it was a strategy meant to enhance the area to make it more attractive to future investors which is a market-based concern.

This becomes an interesting convergence point between the act of 'quality-making' and development because we can extract from IDAL's concern the need to make 'better places' but not necessarily for the benefit of the user as much the future investor.

- The ministry of Industry's classification of the types of industries (Appendix 2)

Resulting Types of Development Trends

-  – Amusement Park (land temporarily used)
-  – Abandoned / Dilapidated Building
-  – Abandoned dilapidated land
-  – Un-managed Green land
-  – Buildings Under Construction
-  – Managed Green Land
-  – Residential buildings
-  – Retail buildings (Grocery)
-  – Retail buildings (electronics)
-  – Religious Facility
-  – Public Land occupied by the Army
-  – High tension Poles Areas

The content of the Legend above (the Levels and types of Industries) gave rise to the following types of development [see Legend to the left].

The intent of this mapping (fig. 44 & fig. 45 & fig. 46) is to illustrate the two following points:

- Mkalles follows non-river logic in its zoning divisions (fig. 44) but a metropolitan scale one (echoing Bouchrieh which is another industrial destination in the Matn region in the Mount Lebanon Governorate).
- It follows the same patterns of the levels of industries (types of industries) as illustrated in figures 45 and 46, and hence the same types of developments emerge (un-used land, abandoned dilapidated buildings / land, public areas occupied by the army and high tension poles land).

What all this proves is that a specific type of zoning and consequently resulting developments are, more or less, non-river related but results from the mode of industrial zoning present in the Greater Beirut Region.

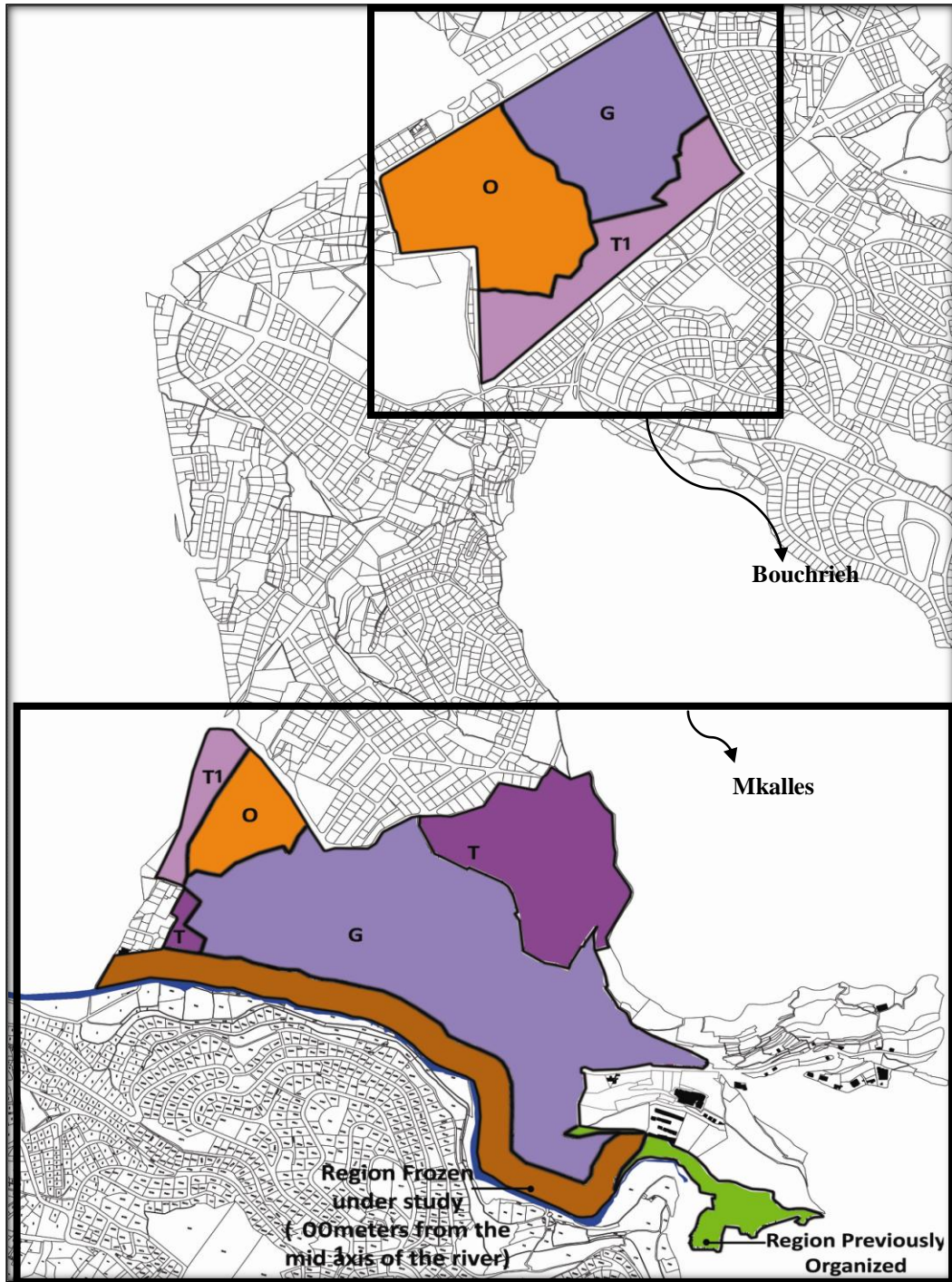


Fig. 44: Mkalles (river front) echoing the same zoning patterns of Bouchrieh (no river front / interface with the city)

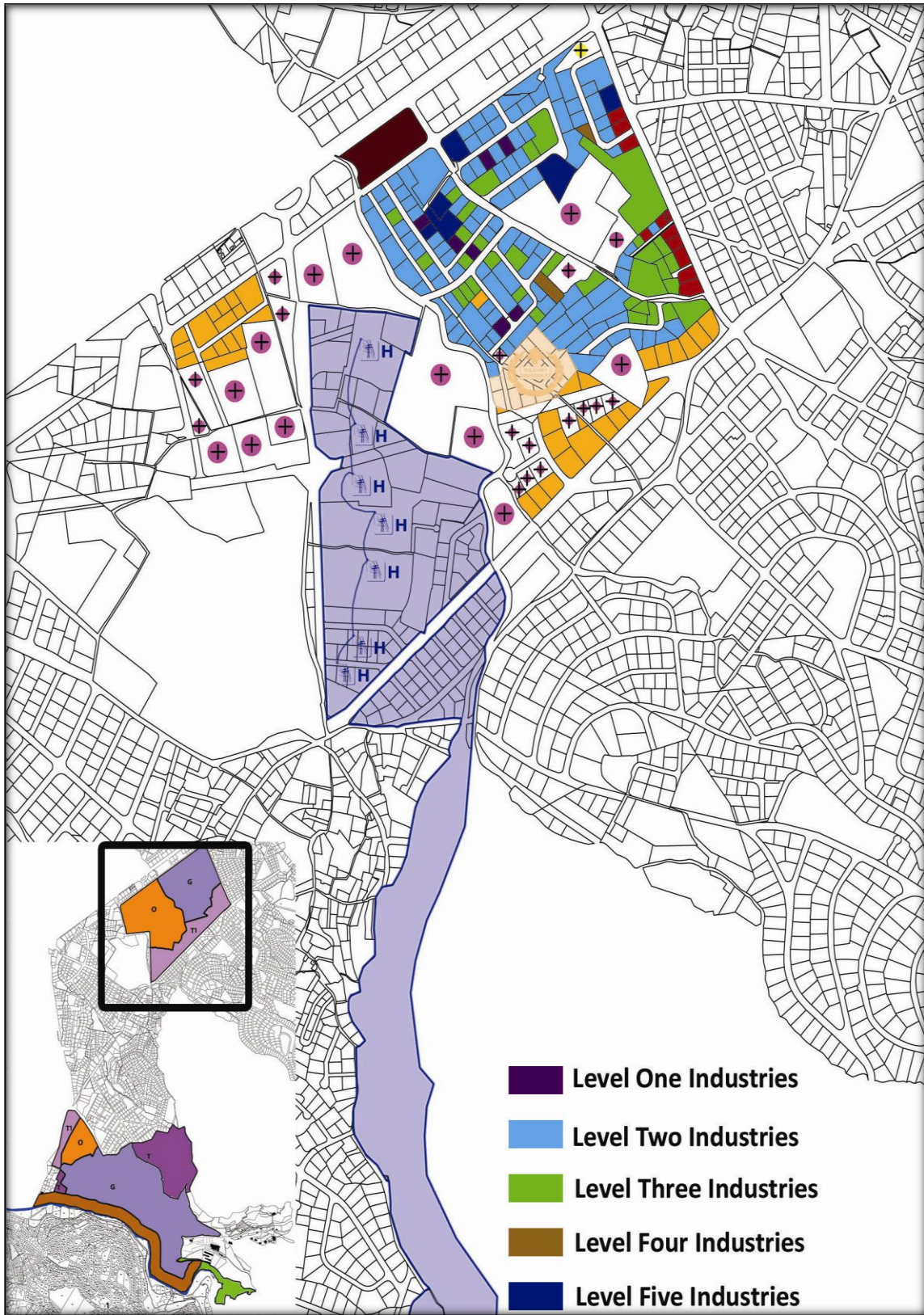


Fig. 45: Detailed industrial divisions and development trends of Bouchrieh

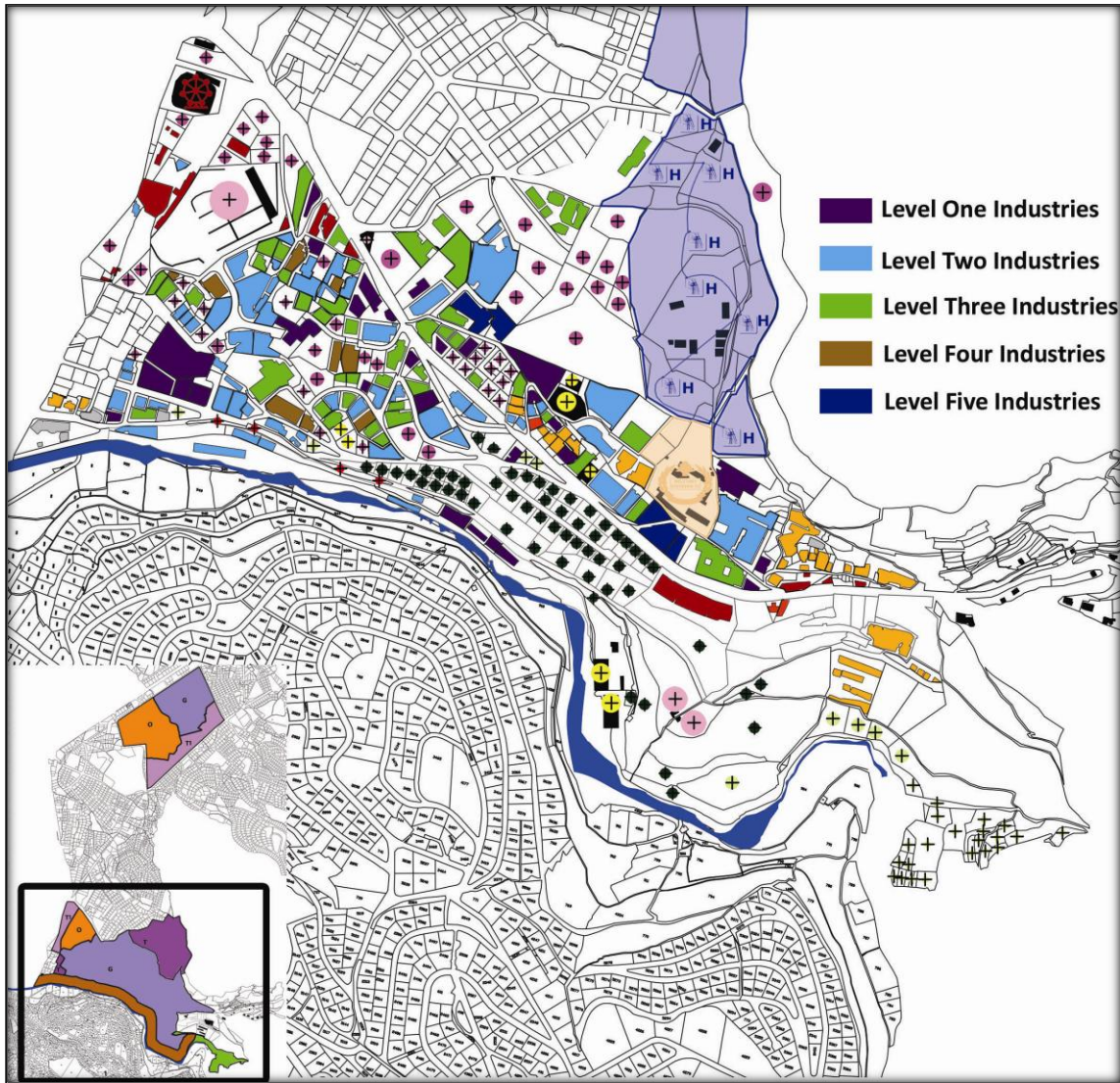


Fig. 46: Detailed industrial divisions and development trends of Mkalles echoing Bouchrieh

What can be extracted from the above information is that Development trends are the over arching determinates of the type of the character of the four zones (G, T, T1 and O).

CHAPTER 5

RE-ZONING MKALLES

This part of the thesis document will be divided into two sections, structured in a mini-report format. The first section will outline the chosen quality areas that are based on sector-scales (fig. 50) and the information accumulated in chapter three. The second section will go more in-depth into two types of policies; environmental (the space of the creative designer) and market (the space of the developer). This is elaborated on through the concerns of the environmentalist and the developer in the two intervention maps.

5.1 Character Analysis

In the first part of this chapter titled: character analysis, what I want to extract from the above information is an abstraction of the characteristics of each zone (fig. 47).

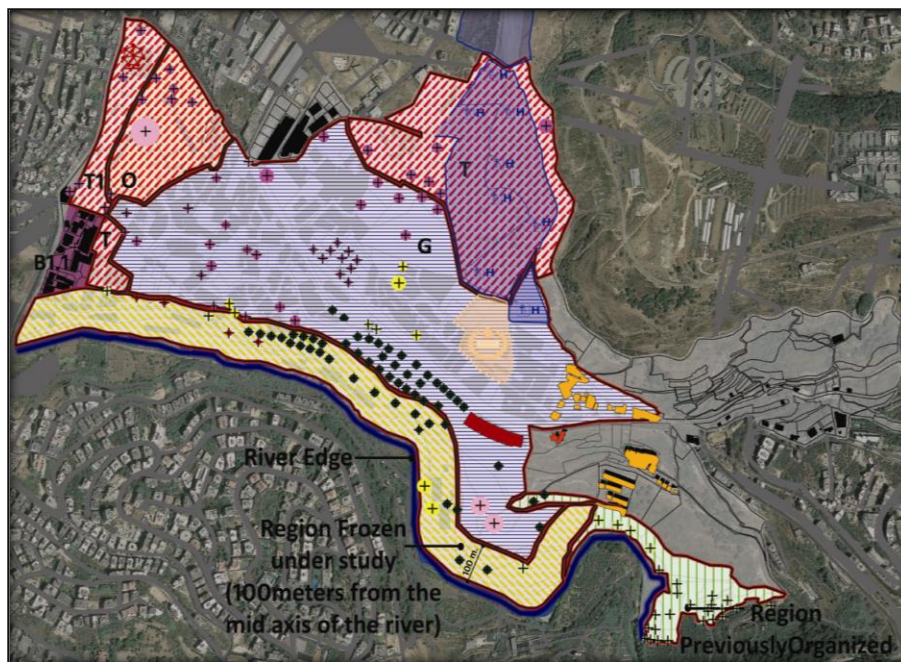


Fig. 47: Resulting characters of Zones G, T, T1 and O in Mkalles

This character analysis is divided into the following five conditions:

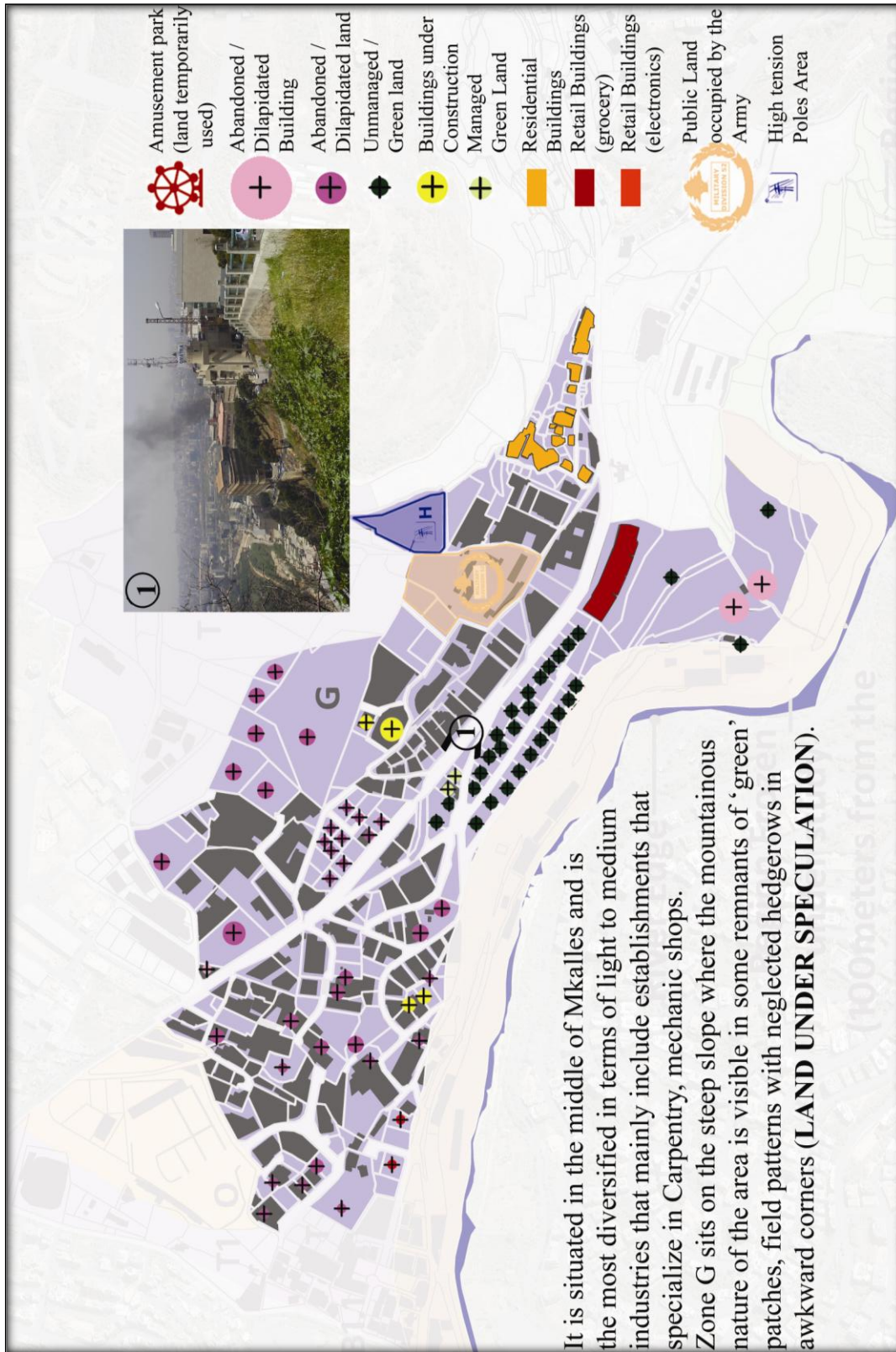


Fig. 48: Zone G

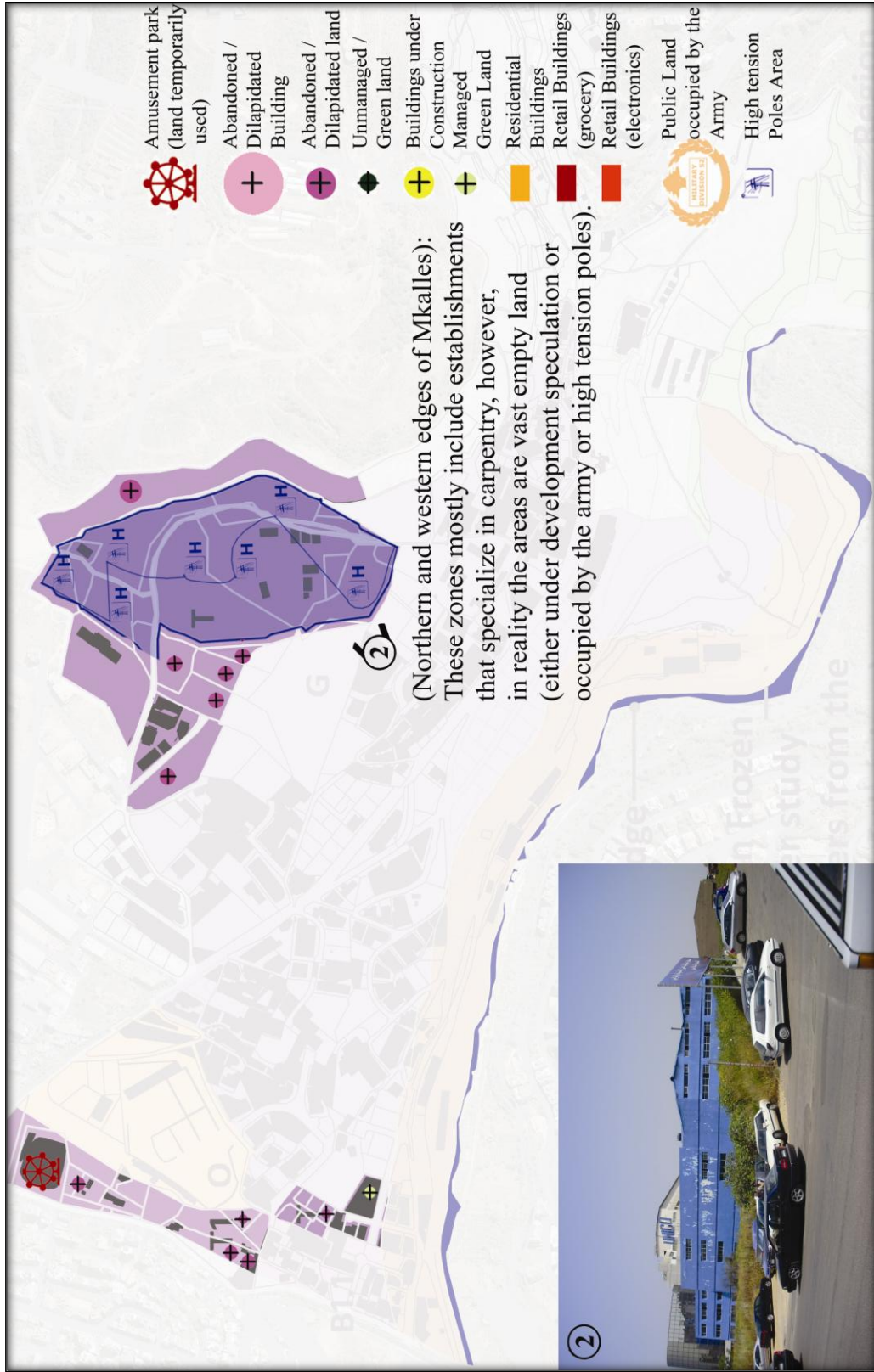


Fig. 49: Example of Zones T and T1

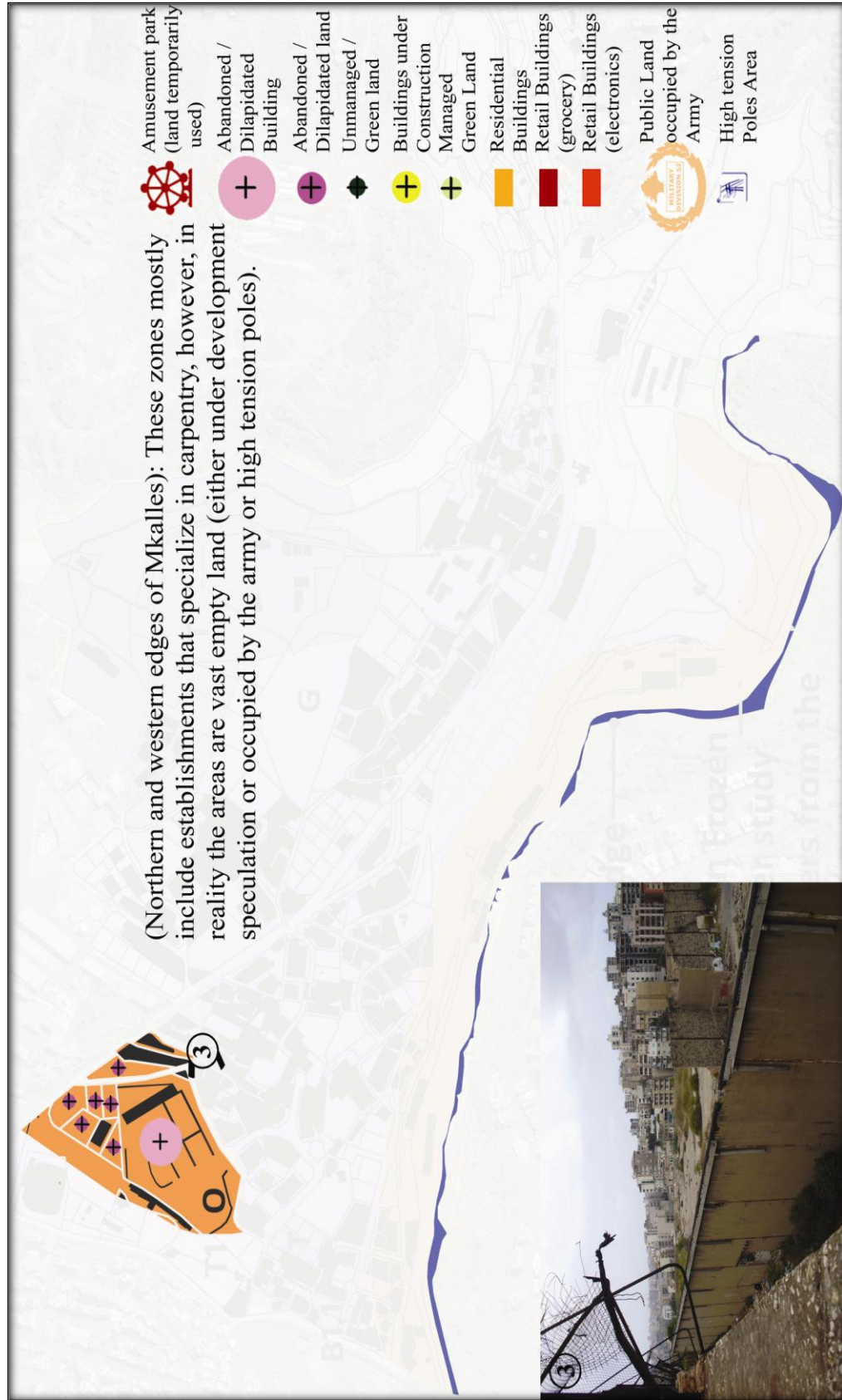


Fig. 50: Example of Zones O

(situated along the direct edges of the river): This part of the river runs along the northern edge of the industrial zone. Coupled with a lack of a formal street network, the river becomes a very defining line that characterizes the space.

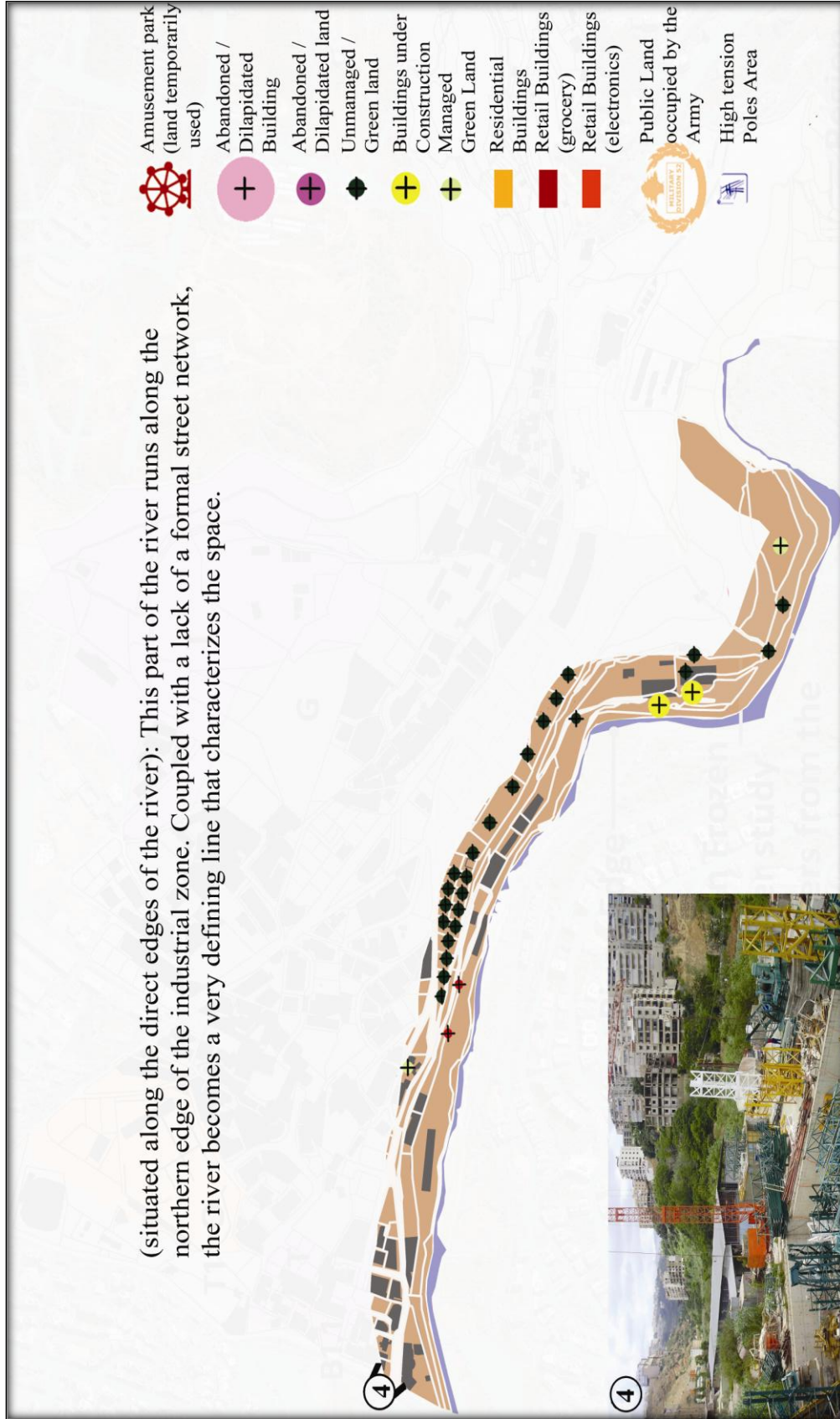


Fig. 51: Region under study

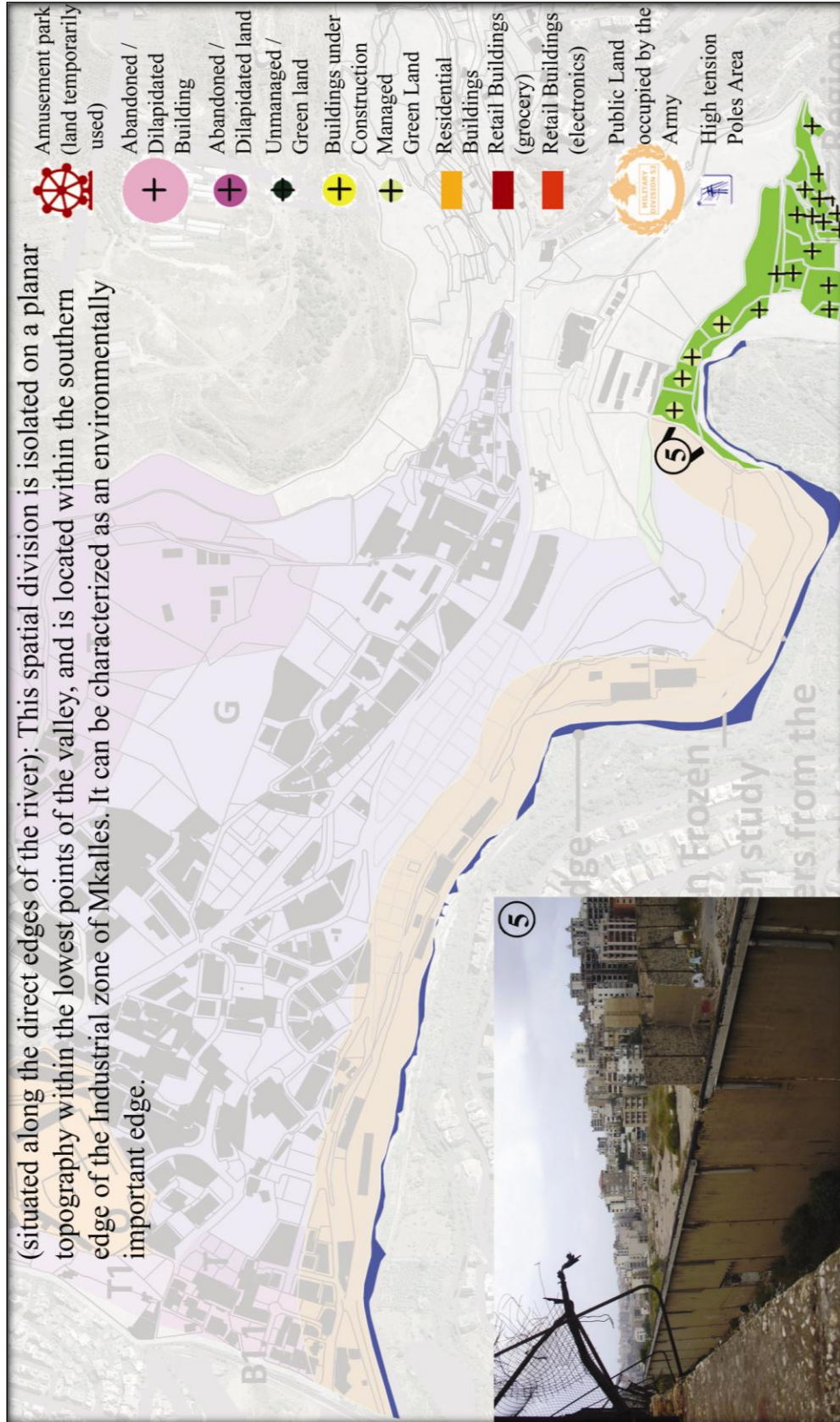


Fig. 52: Region Previously Organized

The driving strategy behind the choices made in the sector map is consolidating the market tyranny with the creative one / urban design principles.

The creative tyranny is abstracted as the '*corridor of creative opportunity*' (fig. 53), giving room for the creative designer to intervene along the river (*river-front policy area* and *environmentally sensitive policy area*); providing the premise that a designer, even with aesthetic biases, can have an environmental sensitivity in her approach.

The market tyranny is represented as the '*corridor of development opportunity*' (fig. 53) pushing the interest of the developer away from the river to investment priority spaces (*spacious policy areas* and *less attractive enhancement areas*). Those areas will be managed by DGU after being approved by higher council of urbanism and circulated to the Mansourieh-Dayshouniyeh-Mkalles Municipality. This is achieved through regulatory tools such as transfer of air rights / FAR incentives and dis-incentives and infill development. The '*corridor of development opportunity*' will help the developer flourish freely without creating environmental damages to the river vicinity.

The value of sector-based zoning is that it takes the existing divisions and the logic of the patterns of development behind them and super-imposes on them 'quality areas' (fig. 53). Quality areas have the ability to foster 'quality-making' characteristics specific to each one.

5.2 Sector-Based Zoning: Quality Areas (zones of negotiation and opportunity)

Differentiation will be used to support the creation of new Quality areas (fig. 53) used to categorize places as ‘environmentally sensitive policy area’, ‘spacious policy areas’, ‘riverfront policy area’, ‘high tension policy area’, ‘less attractive enhancement policy areas’, ‘special established policy areas’, ‘internal transitional area 1’, ‘internal transitional area 2’ and ‘internal transitional area 3’ managed through FAR and environmental incentives / dis-incentives.

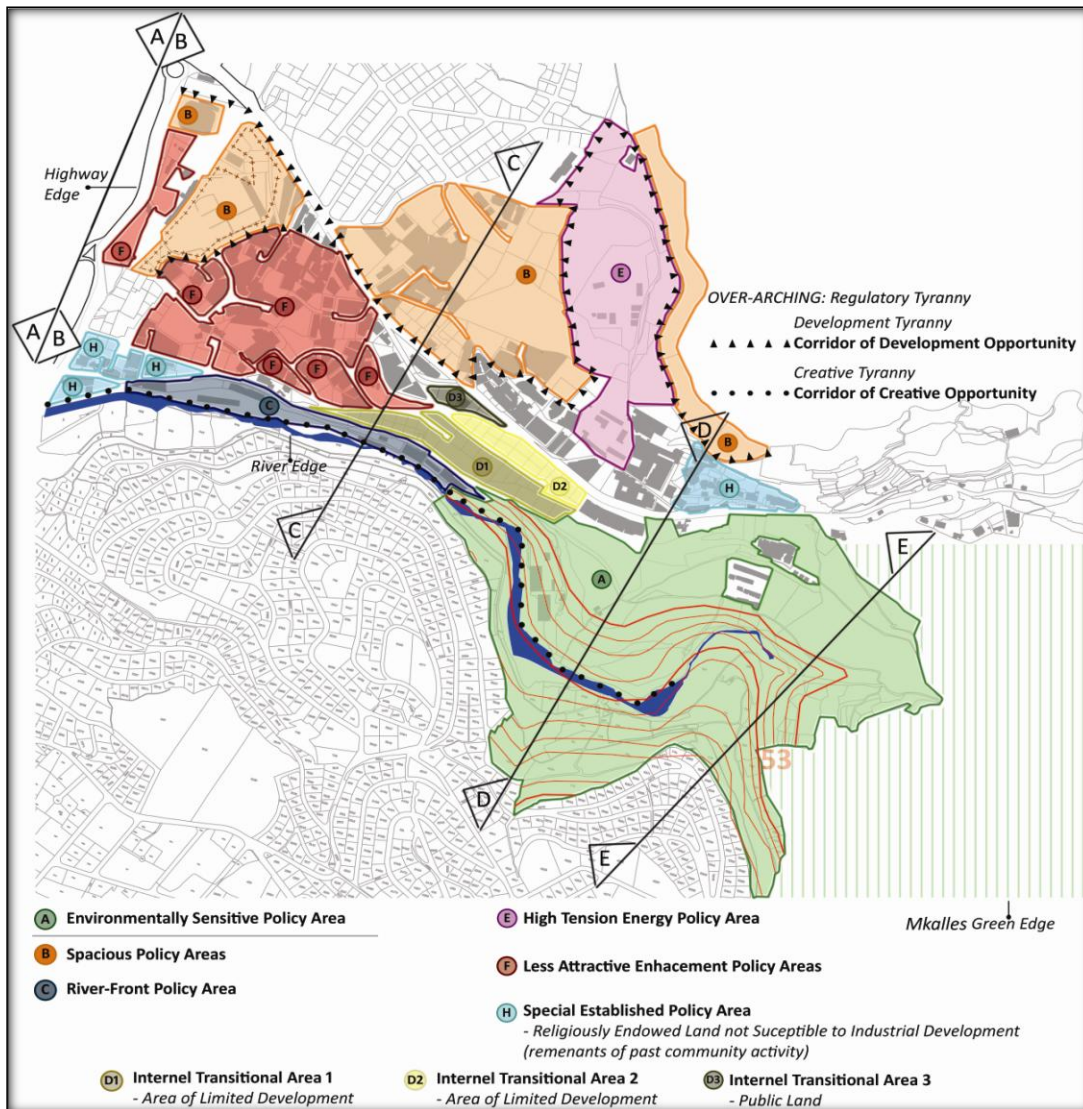


Fig. 53 Map of the nine quality areas

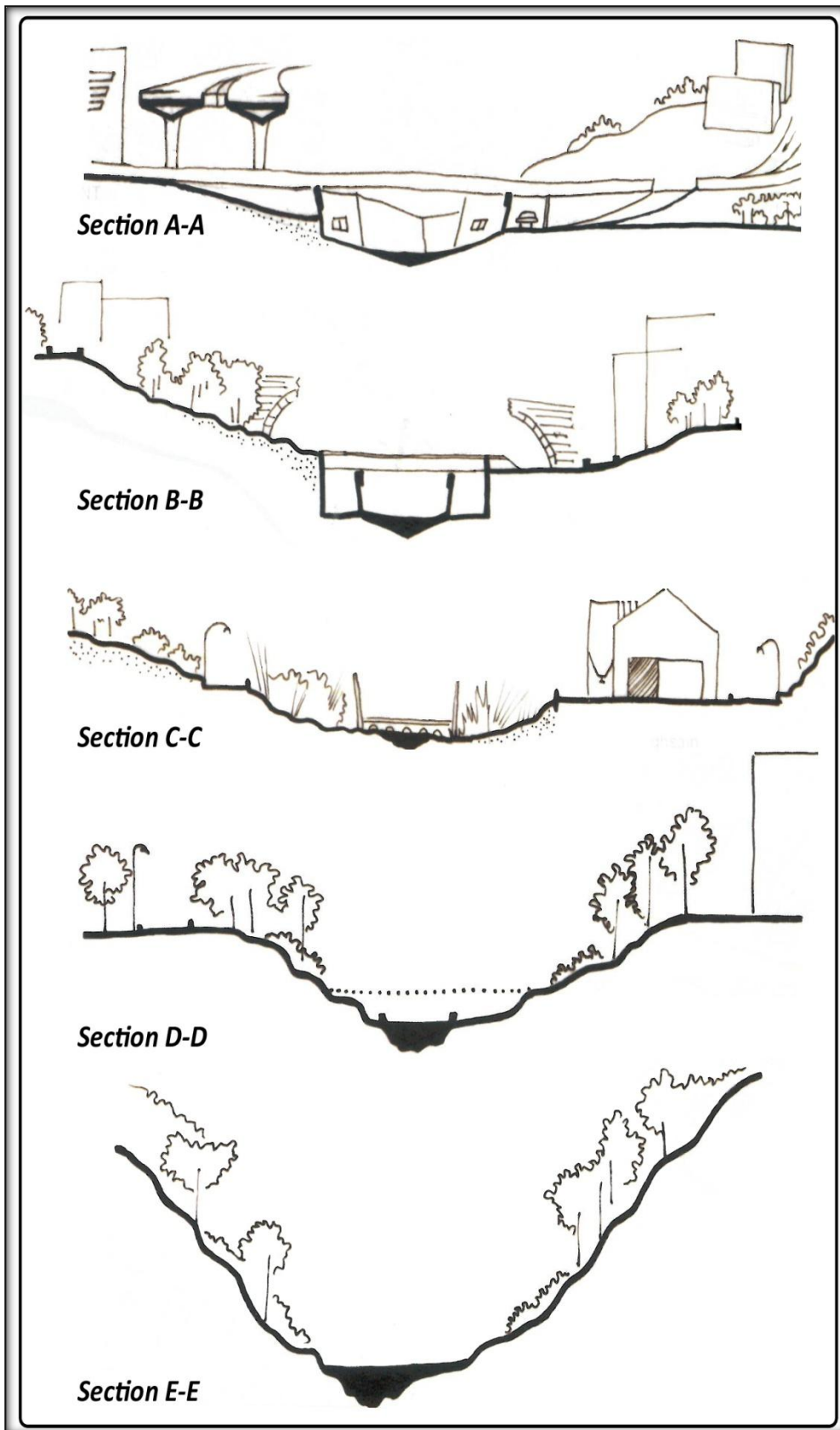


Fig. 54 Sections (refer to fig. 53)

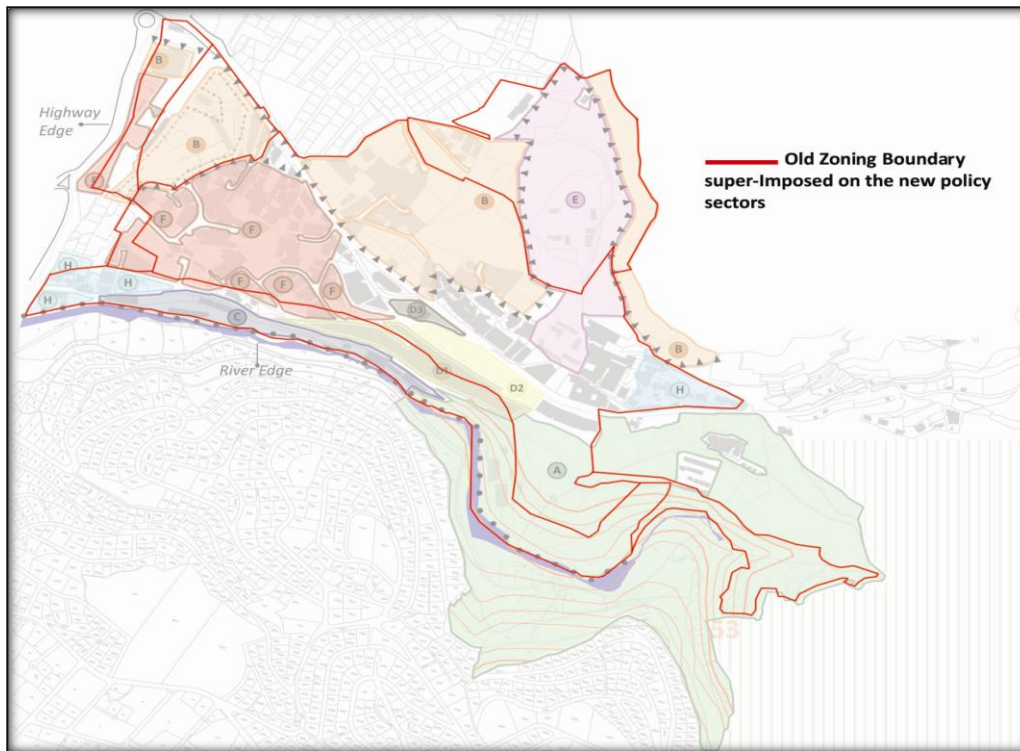


Fig. 55 Map of the nine quality areas with the outline of the coding zones super-imposed

The logic of the division of the nine quality areas is according to the following:

- Creating two special consideration areas (sectors A and C) which are mainly in the vicinity to the river. The purpose is to direct to the policy maker to further policies that address the area's environmental and infrastructural concerns.
- Establishing two densified areas (sectors B and F), so as not to neglect the developer / industrialist and her concerns to build more.
- Providing three transitional spaces (D1, D2 and D3). As opposed to zones T and T1 which provide a transition between Mkalles and other districts, sectors D1, D2, D3 generate an internal link / separation between the sectors A, C, B and F.

5.3 Preliminary Master Plan with Urban Design Principles Incorporated

According to Carmona, as mentioned in the introduction good urban design should be able to cover two distinct forms of benefits, market and environmental¹. Those benefits are addressed in the master plan (fig. 56) as buildings with enhanced environmental performance quality and landscape recommendations.

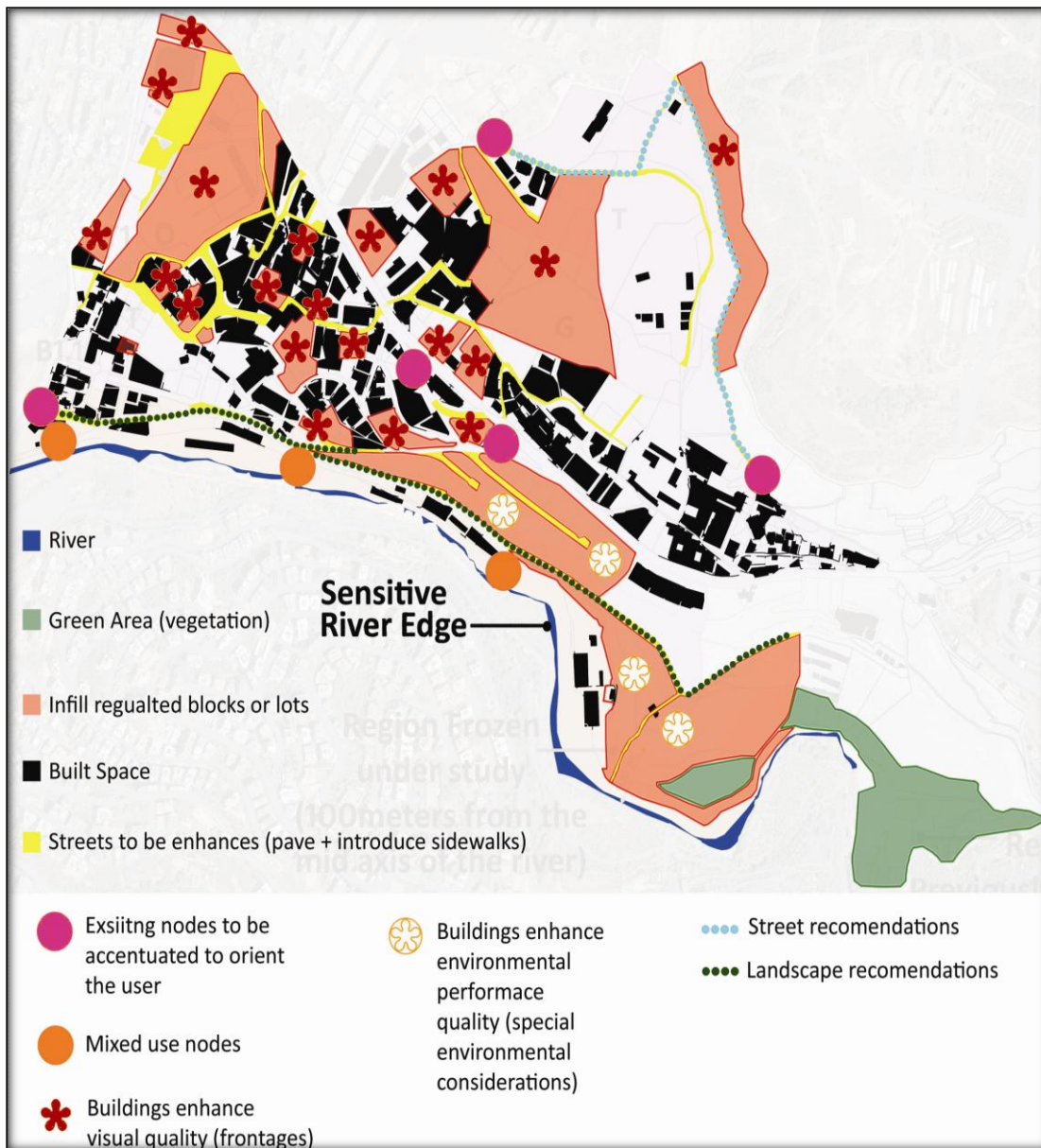


Fig. 56 Preliminary Master Plan

¹ Carmon, 2001: 25.

5.4 Quality-making policy Concerns

A set of two consolidated waterway design concerns for Mkalles will be developed in this section to guide the future development of the area. The two categories include density and environmental benchmarks that note the need to address key quality areas and their performance criteria as well as building quality.

5.4.1 Environmental Policies

When Environmental policies are concerned, the quality issues related to the relationship between the built fabric and the natural environment such as:

- *Topography and the need to create green chains and vista paths to orient a specific type of user.* For example, intervention on the southern side of Mkalles (the river edge), will highlight the ‘corridor of creative opportunity’ through green chains, as opposed to the ‘corridor of development opportunity’ which will be established through creating open vista paths and road improvements making the northern edge of Mkalles more attractive to investors.
- *Water, flora and fauna and pollution concerns* (the issues highlighted by the Ministry of the Environment- MOE). The main policies that should be provided need to question the relationship between the industries and the water. This is especially problematic since ‘quality-making’ dictates, by nature, that no component of the built environment shall gain preference over the other. For example; even though the environmental policy map creates a scheme for progressively planting the area (fig. 57), the purpose is not to attempt to revitalize the ecology, or halt development like Frem does in other parts of the river. The

intent is to make sectors A, C, D1, D2 and D3 more inviting for the creative designer (one of which is Frem) to come and experiment with the design and development of typologies of buildings.

- *Private development and the need to create sustainable forms of construction.* The environmental policy strategy map (fig. 57) proposes the need to address private real-estate units (lots) that were highlighted in the development trend map as ‘managed green land’ (fig. 45), with special considerations like recycling and energy consumption. The purpose, again, is not to revitalize the ecology through means of environmentally responsible construction or to stop construction. The goal is to devise a set of priorities that can manage the building activity that inevitably will happen on the edges of the river since they comprise private land prone to development.

In addition, the environmental policy map (fig. 57) brings forth, in skepticism, the environmental concerns that the MOE address as usually disregarded by the mind-set of the developer. This is why a textual elaboration of the map by policy-makers should highlight the economic value / revenue of environmentally sensitive forms of construction as actually boosting the value of land (sustainable construction means environmental sensitivity and not necessarily cheaper buildings in terms of market value and profits / returns).

- *Transitional spaces and the need to provide a clear continuity within Mkalles while respecting the need to respect the different qualities of the different sectors* (fig. 57). The policy questions if there is a current continuity within the area (internally and not in relation to its surrounding). The answer is a no since the

current zoning division provides transitional spaces (T, T1) between Mkalles and its surroundings and not internally. Zones D1, D2, D3 were indicated in the development trends map (fig. 45) as un-managed green space which will probably be sporadically developed since they do not provide prime investment interest. The policy map maintains them as such since they create buffer continuity between the environmentally sensitive and river edge and the prime investment sectors.

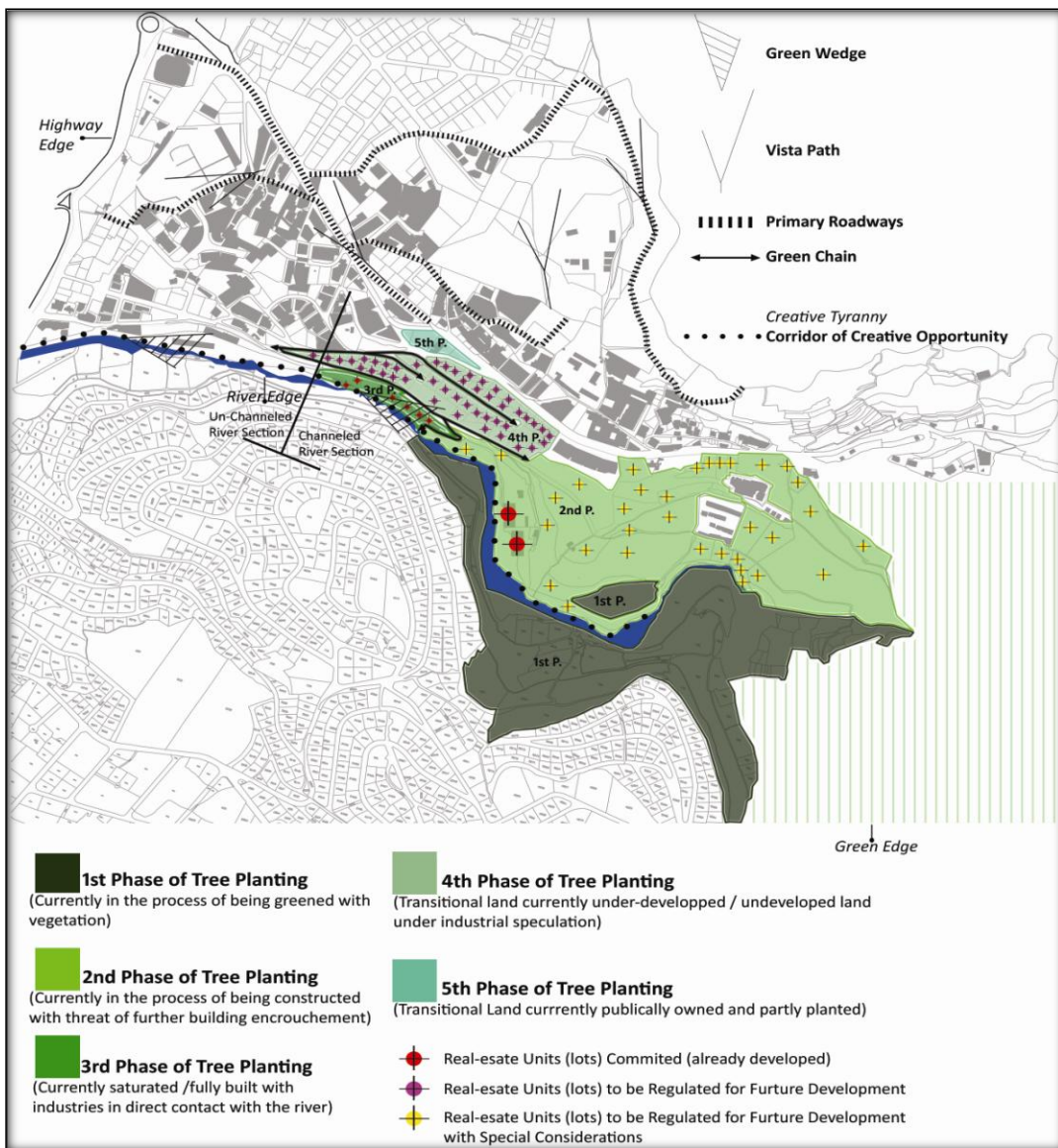


Fig. 57 - Environmental Policies

5.4.2 Market Policies

In the second map (fig. 58) market policies directions are highlighted. They are meant to consolidate the environmental concerns that the sensitive river edge creates with the development needs and construction trends that dominate and define the area.

To de-densify the river-edge, the following two directions are adopted in sectors B, E and F:

- Redevelopment of spacious under-utilized land into smaller real-estate units / lots to relieve the construction pressures on the river-side edge which is identified in the environmental policy map as *the corridor of creative opportunity* (fig. 58). This is done through the following three types of regulatory modes highlighted in the market policy map (fig. 58):
 - Retaining buildings that fully meet the exploitation limits that the land FAR provides and are functional / saturated in terms of viable and productive industries
 - Re-parcelization schemes through entire block strategies. Re-parcelization encompasses the re-division of entire blocks into smaller investment lots according the allowable parcel sizes that the current zoning allows.
 - Infill strategies which is the redevelopment of existing lots within a built-up area. Hence, it aims at regulating un-used land in, more or less, saturated blocks.
- Create FAR incentives through increased built density levels and tax deductions in sectors B and F to attract developers to invest further.

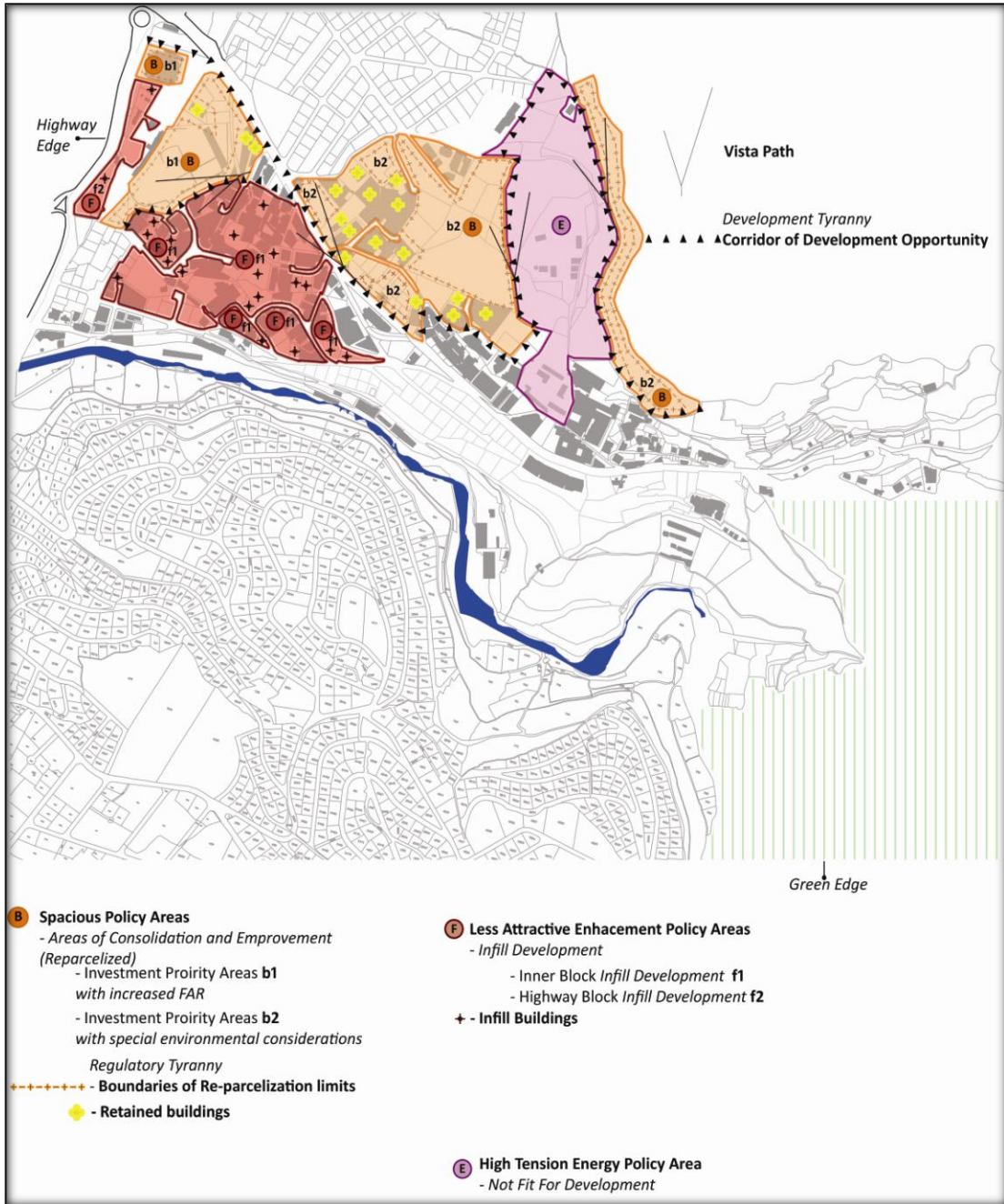


Fig. 58- Market Policies

The intention of the two maps (fig. 57 and 58) is to be adopted by the legal policy-makers and be elaborated into full fledged legislative policy reports.

CHAPTER 6

CONCLUSION

In conclusion, this research relied heavily on the work of Matthew Carmona, a key urban design authority on measuring and managing quality in zoning.

For me, Carmona helped situate design within the urban decision-making system and opened up an understanding of how the built environment is a product of the concerns, priorities and needs of both, developers and designers. The balance between the two could be achieved within urban design-oriented zoning policy reforms.

Accordingly, on one hand, this thesis formulated a river-related / quality-based zoning scheme for Mkalles and combined urban design issues related to environmental sensitivity and market-based development. Quality-based industrial zoning shifted emphasis from a regional scale to smaller sectors / quality divisions of Mkalles. Hence, it expanded the role of industrial zoning to encompass problems such as inaccessible and discontinuous roads and the vague future role of abandoned / dilapidated industrial buildings and lots.

Also, this approach did not deny the over-arching reality of a market-based industrial development but integrated within, environmental policies. Environmental concerns are usually a component of the built environment and the urban design realm but are locally not taken into consideration while zoning river-edge industrial areas.

However, on the other hand, it fell short in tackling the very basis of Carmona's 'current' interest which is the technical capacity of the public sector to produce good quality-based urban design zoning.

6.1 Urban Design and the Public Sector

According to Carmona, the debate around who can and should produce urban design quality zoning schemes highlights a number of often repeated shortcomings between property rights and public capacities, and those with design skills and those with none.

Hence, the realization of enhanced design value by the public sector depends on a number of problems and shortcomings including:

- A low awareness of urban design issues. Public decisions regarding the built environment are often made by those who do not regard themselves as designers at all.
- The delivery skills required by urban designers working in the public sector are similar to those of other public managers, which is very low.
- A lack of capacity in seeing design quality as part of the economic viability of development opportunities and increased local tax revenue.
- An inability to pin down and explain to public investors the economic and environmental value of good urban design. This occurs because of a lack of a vision that can see good quality-based urban design zoning as providing a range of monetary benefits to the public sector including higher rental levels, lower

maintenance costs, enhances regeneration and increased public support for development¹.

Accordingly, Carmona describes how the focus till now has been on the zoning outcomes of largely private sector led development processes. Some of the highly valued parts of cities are instances of good quality-based urban design by private development companies. Such types of developments have been able to produce areas which have delivered good investment returns and an attractive built environment.

Hence, Carmona questions if the public sector can legitimately influence design for the better and if so whose design and how? And, as an answer he highlights the need to develop an understanding of how the public sector can remedy the problems mentioned before.

¹ Carmona, 2001: 29-32.

BIBLIOGRAPHY

- Carmona, M. 2009. *Design Coding and the Creative, Market and Regulatory Tyrannies of Practice*. *Urban Studies*, 46(12). 2643-2667. November 2009.
- Carmona, M. Punter, J. 1997. *The Design Dimension of Planning: theory, content, and best practice for design policies*. Oxford: Taylor & Francis.
- Carmona, M. 2001. *The Value of Urban Design: A Research Project Commissioned by CABE and DETR to Examine the Value Added by Good Urban Design*. London: ICE Publishing.
- Ben Joseph, E. 2005. *The code of the city: standards and the hidden language of place making*. Massachusetts: MIT Press.
- Tiesdell, S. David, A. 2011. *Urban Design in the Real Estate Development Process*. Oxford: Blackwell Publishing.
- Gosling, D. Maitland, B. 1985. *Concepts of Urban Design*. New York: St. Martin's Press.
- Frem, S. 2009. *Nahr Beirut: Projections on an Infrastructural Landscape*. Cambridge, Massachusetts: MIT, Department of Architecture.
- Frederix, L. 2010. *Reclaiming Beirut's Marginal landscape: Cultural Infrastructure as Urban catalyst*. Lebanon: NDU, Faculty of Architecture, Art and Design.
- Corner, J. 2003. Landscape Urbanism, pp: 58-63 In *Landscape Urbanism: A Manual for the Machinic Landscape*, eds. Mostafavi, M. Najle, C. 2003. London: Architectural Association Pp: 60.
- Corner. J. 2006. Terra Fluxus. In *The Landscape Urbanism Reader*, pp: 21-33 ed. Waldheim, C. New York: Princeton Architectural Press. Pp: 28.
- Ellin, N. 2006. *Integral Urbanism*. United States of America: Routledge, Taylor & Francis Group.
- Lang, J. 2005. *Urban Design: A Typology of Procedures and Products*. Burlington: Elsevier.
- Khayat, B. 1999. *Land Zoning (Stated Land Use), and its Effect on the Development of the Urban Sector (Case Study: Lebanon)*, Paper Delivered at: Oxford Brookes University, School of Planning.
- Nasr, J. Volait, M. 2003. *Urbanism Imported or Exported? Native Aspirations and Foreign Plans*. Great Britain: Wiley-Academy.

Davie, M. 2001. *Beyrouth 1825-1975, un Sicle et Demi D'urbanisme*. Beyrouth: Ordre des Ingenieurs et Architectes.

Fawaz, M. Zein, P. 1965 *L'aménagement du Nahr Beyrouth*. In *Horizons Techniques du Moyen Orient*, no 5. Pp.24-36.

Gerard, P. 2000-2001. *Les Transformations de l'Hydro-Systeme Fluvial de la Partie Aval du Nahr Beyrouth*. In *Geospheres, Annales de Geographies*. Universite Saint-Joseph, Beyrouth, Vol. 21-22, pp.135-147.

Georg, Simmel. 1994. *The Bridge and the Door*. In *Qualitative Sociology* 17, no. 4. Pp: 411-412.

APPENDIX 1

Syllabus: Vertical Studio ‘Water Water’

Fall 2004-05 FEA Department of Architecture and Design Arch304/406 Vertical Design Studio “B” (7cr), Instructors: Stephen Campbell & Abdul-Halim Jabr in parallel with FAFS Landscape Design and Eco-management LDEM204 Ecological Landscape Design I (6cr), Instructor: Jala Makhzoumi

“Water, water...” Recreation in Lebanon

Integrated design in architecture and landscape development

The Studio will have “water” as its thematic focus, and its goal is for projects that can be eligible for the International Architecture Biennale Rotterdam: The Flood (May 26 to June 19, 2005). The two studios will continue to be informed about the Biennale, by direct contact, and through the website: <http://www.1ab.nl/>

Underlying the overt themes of the studio is integrated design, the cornerstone of sustainable development. This course will model the integrated design process – with the benefits and problems that come with it – in the studio setting. Students from Architecture and Landscape disciplines will work together in professional ‘teams’, consulting with each other.

OBJECTIVES

Students are to perform site analysis, develop a sustainable program, fully developed schematics integrating architecture and landscape features, and then develop comprehensive design development documents. The studio is to closely model an interdisciplinary role of the design professional in society, as well as a dynamic design process that is responsive to place and local community needs and aspirations. The student will acquire numerous skills, including but not limited to:

- Site and program analysis, including existing conditions, land use, and research related to tourist and recreation precedents;
- Verbal, written and graphic presentation of such analysis of information and data;
- Program and mission development and visioning
- Schematic Design integrating landscape, mechanical engineering and sustainable components in the process
- Design Development, focusing on the more detailed execution of a sub-element of a project
- Project Management, including prioritization of issues, resources and deliverables requirements on tight deadlines.

SITES

The Beirut River and Damour will be the two key site venues. Damour, with the unique coastal stretch of banana plains and Oceana Beach, overlooked by a hillside town, abandoned by its inhabitants following inter-communal fighting in the 1980s. Beirut River is comprised of two segments: the upper part in Mkalles-Dashuniyyeh is suburban, hilly, green, ravaged by industry and speculative development; the lower part between the City of Beirut and the Municipalities of Burj Hammoud, Nabaa, and Furn-el Shebbak is urban, flat, primarily a sewage overflow, and is very polluted. All three locations, despite their apparent malaise, offer fantastic development opportunities for their immediate communities as well as for a broader context.

As per ‘Objectives’ above, and details of ‘Logistics’ below, each group will analyze and program one of these venues, develop a sustainable program, goals, specific subsite programs and initial strategies. These subsites will become the key projects developed over the course of the semester.

METHODOLOGY AND LOGISTICS

The semester will begin with a brief orientation of issues – recreation/tourism, sustainable design/development and the Rotterdam Biennale. Students will be introduced to these key issues through utilization of a 'non-site' at Enfeh, where issues of rising sea level, ancient sites, salt harvesting, and location will challenge the students to think about recreation in several dimensions. Enfeh will be a site that can be a 'foil' to discuss sticky issues without being saddled with context, an opportunity to look afresh at problematic ideas.

The 'parallel' format is designed to maintain an integrated/interdisciplinary approach. The semester will be divided into the four phases described below. After the initial class, Mondays and Fridays will be studios held separately by LDEM and ArD. These sessions are designed to allow each of the two groups to meet separately for desk crits and work sessions, with an optional lecture/discussion by one of the instructors in studio. Wednesdays will be held jointly, alternating at Landscape and Architecture teaching spaces. These sessions aim to maximize interdisciplinary thinking and to fulfill "core teaching goals" shared by both disciplines, offering opportunities for talks or presentations by outside consultants, fieldtrips, and joint team and studio discussions of issues and design concerns. Wednesdays will also be the dates of major juries.

The seafront town of Enfeh will be used as a sketch site, to explore ideas without project specific constraints. 'Case study' sites will be presented and available as reference during the term. The City of Tyre, the town of Batroun, and Ecotourism at Hermel are among these sites. There will also be topical lectures related to various focuses for the studio.

The work will be organized into four stages:

Part I: Site Analysis and Program Development – Sept 27 – Oct 20

Part II-a: Preliminary Schematic Design – Oct 22 – Nov 24

Part II-b: 'Schematic Development' – Nov 26 – Dec 22

Part III: Design Development – Dec 24 – Jan 18

Part I: Site Analysis and Program Development – Sept 27 – Oct 20

The sites are to be analyzed to cover but not be limited to existing conditions, land use, and research related to tourist and recreation precedents, with a dynamic framework for resource conservation. This phase is a period that allows for holistic understanding of the site in all its complexities. History, both natural and cultural, community needs and aspirations, architecture and urban setting, shall be explored, as well as examples of sustainable existence and efficient utilization of land, energy, water, etc. Students should keep an eye to how/where they can intervene/contribute – Program. Feedback from the case studies and theoretical input in the studio will steer the groups towards a comprehensive analysis of the site and issues/areas of intervention.

In Program Development, areas of special focus may include:

- Landscape – Selection of Intervention Site: identifying specific locations within the study area that present the most beneficial opportunities for intervention. This may include restoration or augmentation of natural habitat/ecosystems, remediation of adverse natural characteristics (destruction of biodiversity, storm-water management, soil erosion, etc.), consideration of building material and labor resources and transportation access, as well as opportunities for optimal recreational experiences and cultural and environmental education opportunities.
- Architectural Design Program development: Includes analyzing case studies of the component building types likely to be included in a recreation/tourism development, i.e., recreation or sports facilities, camping, swimming facilities, convention and/or meeting facilities, residences – for visitors, staff and supporting local community, as well as retail and

office functions. Should include indigenous Lebanese and regional models, as well as other successful models worldwide. It should consider those uses that can be supported in part by the existing local population, as well as uses that can compliment or not be in opposition to existing land uses. Where inevitable conflicts are evident, explore how the conflicts can be mitigated or avoided. Suggest critical mass of new program, as well as key links to potential water management concerns/

- Sustainable Development Analysis: Identification of sustainable opportunities, including: environmental – (in addition to issues addressed in Site Selection) energy and indoor environmental quality issues; employment, both construction and service; and possible opportunities to address pressing housing, health service, education or retail needs, as well as understanding cultural, or other special issues that might affect the program. Special consideration and study shall go into understanding the implications of rising sea levels, how natural sources of water can be affected – positively and negatively – at the site. Understanding of traditional and contemporary rural landscape practices/components to assess their contribution, both positive and negative, at the local/regional levels. For example, multifunctional use of land and water resources, specifically in addressing the seasonal change in the water flow/shortages in both rivers). Water flow/flooding is a means to link to the Biennale.
- Rotterdam Biennale. Clear identification of the issues the studio wants to address related to Rotterdam; clear understanding of intent of the competition, design goals and submission requirements; and identification of opportunities at these sites to best realize those goals.

This research and presentation of findings can be done by the students in teams – the primary goal is to get the most and the best information in a form that is usable to all the students in both the landscape and architectural class.

Presentation content: Diagrams, presentation boards and summary reports that describe the analysis and findings. Finally, each individual (or design team) shall represent their specific site, program, and a vision statement of the goals that should be pursued for each site, or site sub-area over the remainder of the semester.

Presentation medium: Base documents, maps, and other presentation materials may be generated using electronic media and resources, but must ultimately be printed to scale for the end of this stage.

Part II-a: Preliminary Schematic Design – Oct 22 – Nov 24

In the Preliminary Schematic Design phase, issues/areas of intervention identified in previous phase are developed. The analysis student groups break up into smaller 'clusters' of about 3 students each, comprised of at least one LDEM student each. A specific site sub-area of intervention will be identified and pursued by each design team. The aim of this phase is to develop alternative design concepts that address the goals established for each sub-area. In this phase, three preliminary schematic design approaches shall be developed, that address the stated goals of the site-sub-area.

- Landscape: Compile (a) define aims and objectives of intervention concept; and (b) preliminary overlay of natural and cultural features of site/subsite with a view to collapse overlays to form Ecological Landscape Associations (ELA's as the building blocks for the ecological concept)
- Architectural Design: Each preliminary schematic shall have clear parts, site massing and programmatic organization, consistent with the goals, and sensitive to the objectives of passive sustainable development.
- Sustainable Development: Further development of sustainable strategies, for energy, indoor air quality, materials selection, etc., by illustrating passive sustainable prototype diagrams,

minimizing/optimizing mechanical systems and directly addressing the stated goals for potable and stormwater management.

- Rotterdam: Each preliminary schematic will highlight its specific response to the goals and implied submission requirements for the Rotterdam Biennale.

Presentation content: 3 schematic layouts – diagrammatic plans and sections, and statement of sustainable goals.

Presentation medium: As one key aspect of this phase is the integration and development of ideas, the work in Preliminary Schematic Design shall NOT be of electronic media. Hand drawings, sketches, basic drafting ability, etc. shall constitute presentation.

Part II-b: 'Schematic Development' – Nov 26 – Dec 22

One alternative (which might be one of the 3 schematics, or a combination of the most appropriate ideas from the 3) is further developed along the lines of the previous phase. The alternative is developed by the same 'teams'.

- Landscape: development of a schematic 'master plan' (site plan, plans, sectional elevations) and 3D visual representations that reflects the landscape design concept
- Architectural Design: Further development of one schematic approach, focusing on developing the schematic design, and (ideally) complete development of plans, sections, elevations and 3D representations (whether by CADD, rendering or model).
- Sustainable Development: Mutually beneficial nature of sustainable strategies emphasized, and the details of implementing sustainable strategies. Special consideration to design and represent water and stormwater management strategies integral to landscape and architectural solutions.
- Rotterdam: Each schematic development project will highlight its specific response to the goals of the Rotterdam, and will illustrate the 'Flood'-related aspects of their solution. All implied submission requirements for the Rotterdam Biennale will be identified, and at the very least each of the submission requirements for the competition will be blocked out.

Presentation content: Schematic drawings, including plans, sections and elevations, and treatise of sustainable components of the project. This culminates in major jury just before Christmas vacation.

Presentation medium: All submission materials to be in the medium required for the Rotterdam – even if at this moment those materials are not complete.

Part III: Design Development – Dec 24 – Jan 18

This phase is the opportunity to take 'to the next level' the work that has been completed to date. In this phase students will have the option of changing teams, changing projects and/or working individually. As mutually agreed by team and instructor, this phase allows a project to be redesigned to address concerns of the jury, or to proceed into greater detail of 'design development', including materials selection, or economic development, or even taking one aspect of the project and designing it to a higher level, which may also include material selection, design details and cost estimating.

- Landscape: As mutually determined by instructor and designer/team. Design development includes phasing of implementation as well as long term landscape management guidelines.
- Architectural Design: As mutually determined by instructor and designer/team. Each student or team will define clear design development goals for the remainder of the semester.

- Sustainable Development: As mutually determined by instructor and designer/team. This phase can also get into community and administrative aspects of sustainable implementation – politics, stakeholder development, code constraint strategies, etc.
- Rotterdam: As mutually determined by the instructor and designer/team. This can be an opportunity to fine tune the December submission into a full fledged Rotterdam submission

Presentation content: As appropriate to adequately address the goals of this segment of the semester. The primary/final presentation will be in mid-January.

Presentation medium: Final drawings, as agreed to by respective instructors, will be submitted by the end of the semester – February 2.

STUDIO INFORMATION AND RESOURCES

The fact that we are in a “parallel” studio format is a precious learning resource. Broadly speaking, the shared pool of information and research among ArD and LDEM is wider and richer by definition, because participants come from two geographically separate sets of students registered in two different courses. This helps maintain an interdisciplinary approach which is fundamental to sustainable thinking while allowing each course to fulfill its curriculum objectives. But there are also a couple of other benefits. Inter-disciplinary work teams working on a given site over a given phase are expected to develop a heightened understanding of the location and/or issues at hand- they will, in a way, become resident experts of that location or issue. Another dynamic that hopefully will pick up is the informal network of discussions and exchange that will take place outside the time and place of the Studio, thereby fostering continuous dialogue and cooperation between studio participants.

To the extent practical, WebCT will be utilized to share basic administrative data, such as syllabus, submission requirements, references that students should be aware of, and (to a limited extent) case study materials. WebCT will also be where site analysis and program data generated by the students will reside. WebCT will be the data of record, and all students are responsible for reviewing and confirming requirements posted there. If practical, progress and record documents of the students will be posted there, too.

SEMESTER SCHEDULE

Week of	Subject	Mon	Wed	Fri
Sept 27	Project Intro, Enfe Sketches, Site Visits, Research	Intro, lecture	Site Visit	Research
Oct 4	Preliminary site analysis	Research	Case Studies: Tyre, Batroun, Hermel	Research
Oct 11	Analysis Presentation	Research	Analysis Presentation.	Program Desk
Oct 18	Program Development	Desk Crit	<u>20/10/04</u> Program Presentation	Desk Crit
Oct 25	Parti and Strategy	Desk Crit	Discussion/ Informal Pinup	Desk Crit
Nov 1	Preliminary Schematic	No Class	Mech E Lecture/ Discussion	Desk Crit
Nov 8	Preliminary Schematic	Desk Crit	Discussion/Crit	Desk Crit
Nov 15	Preliminary Schematic	No Class	No Class	Desk Crit
Nov 22	Preliminary Schematic	No Class	<u>24/11/04</u> Prelim Sch. Presentation	Desk Crit
Nov 29	Schematic Development	Desk Crit	Discussion/ Crit	Desk Crit
Dec 6	Schematic Development	Desk Crit	Discussion/ Crit	Desk Crit
Dec 13	Schematic Development	Desk Crit	Discussion/ Crit	Desk Crit
Dec 20	Schematic Development	Desk Crit	<u>22/12/04</u> Schem Dev Presentation	VACATION
Dec 27	VACATION	VACATION	VACATION	VACATION
Jan 3	Design Development	Desk Crit	Discussion/ Crit	Desk Crit
Jan 10	Design Development	Desk Crit	Mech E Lecture/ Discussion	Desk Crit
Jan 17	Design Development	Desk Crit	<u>19/01/05</u> Des Dev Presentation	No Class
Jan 24	Design Development	Desk Crit	Desk Crit	Presentation Docs
Jan 31	Presentation Docs	Presentation Docs	<u>02/02/05</u> Final Submission	

APPENDIX 2

Mkalles Land-use Policies

وزارة الأشغال العامة والنقل
المديرية الإدارية المش
ورد في ٢٦ تموز ٢٠٠٥
الرقم ١٥٨٠٣

تعديل قسم من التصميم التوجيهي والنظام التفصيلي العام للمنطقة الصناعية في منطقة المكلس العقارية (قضاء المتن)
المصدق بالمرسوم رقم ١٠٢٨٠ تاريخ ١٩٩٧/٥/٢٠

إتّ رَيْسُ الْجُمْهُورِيَّةِ بِنَاءِ عَلَيِّ الدِّسْتُورِ

بناء على المرسوم الاشتراعي رقم ٦٩ تاريخ ١٩٨٣/٩/٩ وتعديلاته (قانون التنظيم المدني)،
بناء على المرسوم الاشتراعي رقم ١١٨ تاريخ ١٩٧٧/٦/٣٠ وتعديلاته (قانون البلديات)،
بناء على المرسوم رقم ١٠٢٨٠ تاريخ ١٩٩٧/٥/٢٠ (التصميم التوجيهي والنظام التفصيلي العام للمنطقة
الصناعية في منطقة المكلس العقارية (قضاء المتن))،
وبعد الإطلاع على قرار بلدية المنصورية - المكلس - النيشونية رقم ٤٠ تاريخ ٢٠٠٥/٣/٢،
وبعد الإطلاع على قرار المجلس الأعلى للتنظيم المدني، المحضر رقم ٤٨ تاريخ ٢٠٠٤/١١/١٧
والمحضر رقم ٢٥ تاريخ ٢٠٠٥/٦/١،
بناء على اقتراح وزير الأشغال العامة والنقل،
وبعد موافقة مجلس الوزراء في جلسته المنعقدة بتاريخ ٢٠٠٥/١٠/٢٧.

يرسم بما يأتي :

المادة الأولى :
صدق تعديل القسم من التصميم التوجيهي والنظام التفصيلي العام للمنطقة الصناعية في منطقة
المكلس العقارية المحدد بالأحرف (أ - ب - ج - د - هـ - و - ز - ح - ط - أ) والمبين على
الخريطة المرفقة بهذا المرسوم والموضوعة بمقياس ١/٢٠٠٠.
بحيث يخضع القسم المحدد بالأحرف (أ - ب - ز - ح - ط - أ) لنظام المنطقة T1
وشروطها العامة والخاصة المصدقة بالمرسوم رقم ١٠٢٨٠ تاريخ ١٩٩٧/٥/٢٠.
ويخضع القسم المحدد بالأحرف (ب - ج - د - هـ - و - ز - ب) لنظام المنطقة B11 (سكن
وتجارة) التالي:

مساحة الإفران = ٢م٨٠٠ (٢٠م X ٢٠م)

مساحة القطع الموجودة الصالحة = ٢م٥٠٠ (١٥م X ١٥م)

التراجعات الجانبية والخلفية = ٤,٥ م وفي حال كانت مساحة القطع الموجودة دون ١٥٠٠ م
يحدد هذا التراجع بثلاث أمتار.

التراجع عن حدود التخطيط والطريق = وفقا لمرسوم التخطيط والتراجع مع حد أنسى قدره

ثلاثة أمتار.
والنظام التفصيلي بالإنابة

الوزير المهندس حبيب

معدل الاستثمار السطحي = ٥٠%

معدل الاستثمار العام = ١,٦٥

عدد الطوابق = ٤

علو أقصى = ١٣,٥٠م

كما يسمح للمؤسسات القائمة بتجديد الترخيص بالاستثمار وبإجراء التعديلات على البناء القائم.

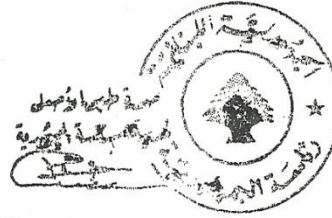
المادة الثانية : ينشر هذا المرسوم ويبلغ حيث تدعو الحاجة..

بعيدا في ٢٤ تشرين الثاني ٢٠٠٥
الامضاء: اميل لحود

صدر عن رئيس الجمهورية
رئيس مجلس الوزراء
الامضاء: فؤاد السنيورة

وزير الاشغال العامة والنقل

الامضاء: محمد الصفدي

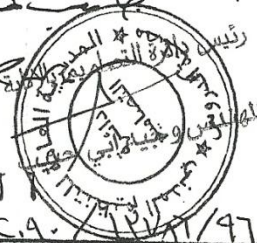


المديرة العامة لتنظيم المدن

وزارة الاشغال العامة والنقل
مدير الإدارة المشتركة

خايل كحره

٢٠٠٥



CC.٩٠/١١١/٩٦/١
المديرية العامة لتنظيم المدن
البيروت
رقم ٢٢٠٩
تاريخ ٥/١١/٥٩

جاءه دائرة التصاميم
في ١١/١١/٥٩

رئيس ديوان
المديرية العامة لتنظيم المدن
احمد حمزة

د. المهندس ابو حسان

لأستاذ العلم واحمد البليغا
رئيس دائرة التصاميم بالإنابة

المهندس وجيه ابي حبيب

المكس											
المنطقة	الافراز			القطع الموجودة الصالحة للبناء			التراجع		معدل الاستثمار		العلو
	المساحة الدنيا	الواجهة الدنيا	العمق الأدنى	المساحة الدنيا بعد التخطيط	الواجهة الدنيا بعد التخطيط	العمق الأدنى بعد التخطيط	التراجع الحائسي	التراجع الخلفي	السطحي الاقصى	العام الاقصى	
G	٤٠٠٠	٥٠	٥٠	٣٠٠٠	٥٠	٥٠	٤,٥	٤,٥	(٢)٥٠	١,٥٠	١٢
	١٥٠٠	٣٠	٣٠	٥٠٠	١٥	١٥	٤,٥	٤,٥	(٢)٤٠	١,٢٠	١٢
O	٤٠٠٠	٥٠	٥٠	٤٠٠٠	٥٠	٥٠	٤,٥	٤,٥	(٢)٤٥	٠,٩٠	١٠
	٢٠٠٠	٣٥	٣٥	٢٠٠٠	٣٥	٣٥	٤,٥	٤,٥	(٢)٣٥	٠,٧٠	١٠
T1 و T	١٠٠٠	٢٥	٢٥	٥٠٠	١٥	١٥	(٣)٤,٥	(٣)٤,٥	٥٠	١,٦٠	١٤

* العلو الاقصى للبناء من اوطى نقطة من الارض الطبيعية عند واجهة البناء، لا يسمح بتجاوز هذا العلو إلا لمنشآت تقنية خاصة لضرورة لطبيعة الاشغال داخل المعمل. هذا التجاوز يجب ان لا يحتوي على مساحات للمشاة او للسكن.

* لا يحق لطالب الرخصة بطلب المر.

* الطابق المشار اليه في الفقرة ٨ من المادة ١٤ من المرسوم الإشتراعي رقم ١٤٨ تاريخ ١٦/٩/١٩٨٣ من قانون البناء لا يدخل في معدل الاستثمار و يسمح باستعماله بكامله كمساحة مخصصة للصناعة.

* يدخل طابق الاعددة في عامل الاستثمار العام.

* تستثنى هذه المنطقة من احكام مواد المرسوم رقم ١٧٩٩ تاريخ ١٩٧١/١١/١٩٧١

* يمنع إنشاء شرفات للمباني داخل كافة المناطق الإرتقافية.

(١) وفقاً لمرسوم التراجع والبراح المبين على خريطة شبكة الطرق مع حد ادنى ستة امتار عن حدود الطريق او التخطيط.

(٢) يسمح بإضافة ٥٪ الى عامل الاستثمار السطحي في حال كان المبني لا يزيد علوه عن ٧,٥٠م.

حال كانت مساحة القطع الموحدة دون ١٥٠٠ م.م ، يحدد هذا التراجع بثلاث امتار.

المادة الاولى - الاستثمارات

١-١. الاستثمارات المسموح بها للاراضي

المناطق الإرتقافية	الفئات والاستثمارات المسموح بها
G	جميع أنواع الاستثمارات المسموح بها وفقاً للقوانين و المراسيم المرعية الإجراء.
O	مؤسسة صناعية واحدة داخل العقار جميع أنواع الاستثمارات المسموح بها وفقاً للقوانين و المراسيم المرعية الإجراء. يجب أن تكون الأبنية ذات مظهر هندسي جيد، ويجب أن يقترن بموافقة المدير العام للتنظيم المدني. يحظر إنشاء أكثر من مؤسسة صناعية واحدة في كل عقار.
T	يسمح ضمنها ببناء المؤسسات المصنفة من الفئة الثالثة. و يسمح ضمنها أيضاً بالمؤسسات المصنفة من الفئة الثانية الغير مزعجة أو المضرة وفقاً لللائحة المرفقة ربطاً
T1	يسمح ضمنها بإنشاء: مكاتب، تجارة، خدمات، وصلات للعرض أو البيع. يمنع ضمنها إنشاء المؤسسات الصناعية من الفئة الاولى والثانية.

APPENDIX 3

Legend: Classification of Industrial establishments according to the ministry of industry (Decree 8018 – 2002)

The industrial enterprises, before the issue of a decree classification, were divided into three categories. However, the new decree, adopted a more elaborate classification based on the following five categories:

1. Level one: Level one which results in a direct risk to the environment, its surroundings, and to the general public health, and hence should be kept away from housing to prevent damages.

**Division 14 –
Other mining
and
quarrying**

141 Quarrying of stone, sand and clay

1410 Quarrying of stone, sand, and clay



Quarrying (mining of gypsum and anhydrite, mining of chalk and uncalcined dolomite, and extraction and dredging of industrial sand and clays, sand for construction and gravel).



Breaking and crushing of stone, gravel and sand (raw materials).

**Division 15 –
Manufacture
of food
products**

151 – Production, processing, and preservation of meat, fish, fruit, vegetables and oils

1513 Processing and preserving of fruit and vegetables.



Roasting, grinding, packaging, and distribution of all kinds of nuts (manufacture of nut foods and pastes).

153 Manufacturing of grain mill products, starches and starch products

1531 Manufacturing of grain products.



Flour mills (manufacture of flour mixes, corn, and prepared blended flour and dough for bread, cakes, biscuits or pancakes).


154 Manufacturing of other food products

1541 Manufacturing of baked products.




- Manufacture of rusks, biscuits fresh, frozen or dry bakery products, and Arabic sweets.
- Manufacture of bread and rolls.


**Division 17 –
Manufacture of
textiles**


1543 Chocolate industry.


- Manufacture of pastry goods.

 Manufacture of cocoa, cocoa butter, cocoa fat, cocoa oil and chocolate and sugar confectionery.

1549 Manufacturing of other food products n.e.c.

 Canned and frozen manufactured food products (canned vegetables and fruits and jams).


 Beans, spices, and seasoning.



- Coffee and Tea
- Production of coffee products and coffee substitutes.
- Packing and blending of tea.


171 – Spinning, weaving, and finishing of textiles.

1711 Preparation and spinning of fabrics; weaving of textiles (fabric and textile products).

 Sewing factory.


172 Manufacture of other textiles.

1721 Manufacture of made-up textile articles, except apparel.

 Fabrics for curtains and upholstery (carpets and floor coverings).

173


1730 Manufacturing of knitting and crocheted fabrics and articles.

 Manufacture of socks.


**Division 19 –
Tanning and
dressing of leather
and footwear**

191 – Tanning and dressing of leather, manufacture of luggage, and handbags

1911 Leather industries (tanning and dressing of leather).

 Manufacture of composition leather (scraping and tanning leather).

1920 Manufacture of footwear.

 Manufacture of footwear for all purposes, of any material (manufacture of rubber, plastic, and leather shoes and slippers.), by any process (men's, women, and children), including molding.

2. Level two: Level two also results in a direct risk to the environment, its surrounding, and to the general public health, however it is not imperative to keep it away from residential buildings provided it complies with specific damage control measurements.

**Division 20 –
Manufacturing of
products of wood
except furniture**

**Division 22 –
Publishing,
printing, and
reproduction of
recorded media**

**Division 24 –
Manufacture of
chemicals and
chemical products
(production and
trade of chemicals)**

**Division 25 –
Manufacture of
rubber and plastic
products**

**Division 26 –
Manufacture of
non-metallic
mineral products**

202 Manufacture of other products of wood

2029 Manufacture of other products of wood.
Manufacture of coffins.



222 Printing and service activities related to printing

2221 Printing (types of printing).

Printing of cards and other types of publications (postage stamps, personal stationery and other printed matter by letterpress, offset, photogravure, flexographic, screen printing and other printing presses).



241 Manufacture of basic chemicals

2413 Manufacture of plastic in primary forms and synthetic rubber.

Plastics as raw materials (manufacture of plastics in primary forms).

Manufacture of synthetic industrial rubber in primary forms.



242 Manufacture of other chemical products

2422 Manufacture of paints, varnishes and similar coatings, printing ink, and mastics for tanning and painting.

- Manufacture and distribution of paints and varnishes, enamels or lacquers.
- Manufacture and distribution of prepared paint or varnish removers and sealants.



2424 Cosmetic industry (manufacture of all types of soaps and detergents, cleaning and polishing preparations, perfumes and toilet preparations).

Fragrances and cosmetics (beauty and make-up preparations).



2429 Manufacture of chemical products or flammable materials

- Paste and gelatin (industrial glues and adhesives).
- Chemical products or flammable materials used for cleaning car seats and vehicles.



251 Manufacture of rubber products

2511 Manufacture of car tires and rubber tubes; retreading and rebuilding rubber tires.

- Manufacture of rubber tires
- Manufacture of tires for vehicles and trucks.
- Manufacture of rubber tubes.
- Manufacture of tire treads, tire flaps, camelback, etc.



269 Manufacture of non-metallic mineral products

2691 Manufacture of non-structural non-refractory ceramic ware.

Manufacture of ceramic tableware and other domestic or toilet articles or tubes (ceramic sanitary ware).



2692 Manufacture of refractory ceramic products.

Manufacture of refractory goods (refractory bricks, blocks, mosaic cubes, and tiles etc).



2695 Manufacture of articles of concrete, cement, and plaster

**Division 28 –
Manufacture of
fabricated metal
products, except
machinery and
equipment**



Concrete mixing (manufacture of ready-mix and dry-mix concrete and mortars and its derivatives -- chemicals and additives for concrete).



Manufacture and supply of gypsum boards -- gypsum products for Concrete, sheets, panels etc.



Manufacture of concrete stone units and Limestone.

281 Manufacture of structural metal products, tanks, reservoirs and steam generators

2811 Manufacture of structural metal products.



Manufacture of industrial metal frameworks (furnaces, lifting and handling equipment, wrought iron for scaffolding and formworks).



Manufacture of metal accordion doors.



Manufacture of metal blinds.

2812 Manufacture of tanks, reservoirs, and metal containers.



Manufacture of reservoirs, steel and aluminum tanks and similar containers of metal, of types normally installed as fixtures for storage or manufacturing use.



Manufacture and assembly of central heating boilers and radiators for vehicles (heat exchangers).

289 Manufacture of other fabricated metal products; metalworking service activities (Contracting for general metal works)

2891 Forging, pressing, stamping and toll-forming of metal; metallurgy.



Blacksmithing – metal lathe (facilities for iron, steel, lead, and metal and metal works) and metal contacts (iron – all types of metal casting services, casting light metals services -- bronze, copper, forging, pressing, stamping, cutting, bending, and roll forming of metal).

2899 Manufacture of other fabricated metal products n.e.c.



Steel tubes and accessories.



Manufacture of silver, stainless steel, and aluminum utensils and kitchen equipment and metal springs.

**Division 29 –
Manufacture of
machinery and
equipment n.e.c.**

291 Manufacture of general-purpose machinery -- industrial machinery and electrical equipment

2912 Manufacture of electrical supplies and hardware (pumps, compressors, taps, and valves).



Manufacture and assembly of industrial and vertical pumps and compressors.

Manufacture and assembly of electronics.

3. Level three: Level three which results in a limited risk to its immediate surroundings and hence should be subject to specific measurements to limit its damages.

Division 31 – Manufacturing of electrical machinery and apparatus n.e.c.

311

3112 Manufacture general wood products and assembly.



- Manufacture of formica and veneer sheets.
- Manufacture of veneer sheets thin enough to be used for veneering smoothed, dyed, coated, impregnated, reinforced.
- Manufacture of laminated wood boards and sheets.

315

3150 Manufacture of electric lamps, and lighting equipment.



Manufacture of industrial lighting and electric advertisement boards.

Division 36 – Manufacturing of furniture; manufacturing n.e.c.

361

3610 Manufacturing and repair of furniture / furniture and different equipment and interiors.



Carpentry:



Manufacture of mattresses and bed accessories (mattresses fitted with springs or stuffed or internally fitted with a supporting material uncovered cellular rubber or plastic mattresses).

3699 Other manufacturing n.e.c.



Whittled frames for doors and windows (wood).

4. Level four: Level four includes types of investments that result in a minor risk to the environment and hence should be subject to specific measurements to limit their

damages.

**Division 45 –
Construction**

452

4520 Building of complete constructions or parts and civil engineering work.
False ceilings systems (manufacture and supplies).



5. Level five: Level five is limited to types of industries that do not cause any damage to their immediate context or to the public health.

**Division 57 –
Recycling**

570

3710 Waste management / recycling.
Dump site (Metal and iron scrapes).



**Division 58 –
Electricity, gas,
steam, and water
supply**

581

4010 Production, transmission and distribution of electricity.
Power generation plant.



Tension electric poles zone.



**Division 58 –
Collection and
distribution of
water**

590

4100 Collection, purification, and distribution of water
Purification and distribution of water for water supply purposes.

