Beyond the Backyard

Rethinking Karantina as an urban engine for Beirut's port–city transition

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Abstract

This thesis explores Karantina, a neighborhood located on the northeastern edge of Beirut, as a layered urban landscape shaped by conflict, coexistence, and repeated cycles of rupture. Positioned between the port, the river, and the city, Karantina historically has been defined by what Beirut rejects; the city's backyard. Through a combination of research, spatial mapping, field observations, and community narratives, the thesis traces how cycles of struggles, displacement, industrial expansion, and governance fragmentation have produced a neighborhood that is simultaneously central to the city's functioning yet marginalized in planning. The research argues that the neighborhood cannot be understood solely through its vulnerabilities. Karantina functions as a micro-city that mirrors the patterns of resilience, fragmentation and coexistence concentrated in Beirut. The 2020 explosion intensified these patterns and revealed the deep inequalities that shape Beirut's recovery landscape. Today, the neighborhood stands at a crossroads: It can either evolve as part of Beirut's future vision, or slip deeper into neglect and marginalization.

The thesis argues that the future of Beirut's port and the future of Karantina are inseparable. As the boundaries of the Port of Beirut shift and evolve, Karantina becomes a strategic asset linking the existing industrial landscape to potential civic transformation. The project proposes a layered framework built on a careful understanding of the land's inherent potential, choosing to reinforce the systems and communities that already function rather than erase them, a risk made evident by past development practices in Beirut. In this vision, Karantina becomes the starting point for reconnecting Beirut with its port and its coast. Its transformation from an overlooked industrial backyard into an urban engine is imagined as a healing landscape that supports a resilient and connected future for the city.

Acknowledgments

To Professor Sampieri, thank you for always being generous with your time, effort, and patience. None of this would have been possible without your guidance and support.

To my mom, thank you for nurturing in me the love and respect for architecture. Thank you for being my inspiration, and for pushing me to always be better and go further.

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To my friends and family, thank you for bringing joy into my life and for standing by me through every chapter.

To my community in Lebanon, thank you for all the love and strength you continue to give me. And to my community in Italy, thank you for making Torino feel like home.

To Yana, thank you for being by my side through everything. I am very grateful to have lived this experience with you.

And to you, thank you for being the brightest light in my life.

Abbreviation

ACUA	Association des Commerçants et Usagers de l'Abattoir
ACTED	Agency for Technical Cooperation and Development
AFD	Agence Française de Développement
AUB	American University of Beirut
BCD	Beirut Central District
BMA	Beirut Metropolitan Area
BRT	Bus Rapid Transit
CAS	Central Administration of Statistics
CDR	Council for Development and Reconstruction
EDL	Électricité du Liban
ESCWA	Lebanese Center for Energy Conservation
LCEC	Lebanese Palestinian Dialogue Committee
LINORD	Liaison Nord (North Link Project)
LPDC	Ministry of Public Works and Transport
MoPWT	Non-Governmental Organization
NGO	Norwegian Refugee Council
NRC	Office des Chemins de Fer et des Transports en Commun
OEA	Order of Engineers and Architects (Beirut)
OCFTC	United Nations
UN	United Nations Development Programme
UNDP	United Nations Economic and Social Commission for Western Asia
UN-Habitat	United Nations High Commissioner for Refugees
UNHCR	United Nations Human Settlements Programme
UNOPS	United Nations Office for Project Services
UNRWA	United Nations Relief and Works Agency for Palestine Refugees
WB	World Bank

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00. Preface

Beirut is a city marked by profound contrasts, an example being vibrant everyday life unfolding within spaces shaped by infrastructural and political neglect. Among its many districts, Karantina stands out as a place where these contradictions converge with complexity. Framed by the port, the river, and large-scale infrastructure, Karantina has long functioned as an area that absorbs functions and populations the city pushes to the side. Its evolution reveals how Beirut has developed, governed, and reimagined itself in the past. This thesis turns to Karantina to understand how places long kept at the margins can become central to reimagining new pathways and connections for urban regeneration.

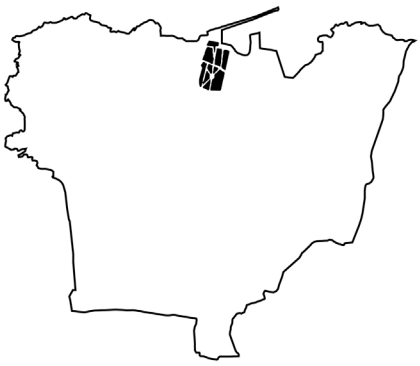
The research focuses on the neighborhood's internal systems, its spatial logic, the coexistence of communities, and the small-scale mechanisms that sustain daily life. Through historical investigation, multi-scalar mapping, analysis and observation, the thesis seeks to provide a portrait of Karantina that recognizes it as a functional, complex, and adaptive landscape. This approach allows to determine how to interact with existing structures, left-over spaces and lived practices in order to define a new relationship between the district, the port, and the wider city. Ultimately, the thesis aims to propose a framework in which Karantina becomes a ground for reconnection rather than an obstacle, and shifting the district's role from Beirut's "backyard" to a potential driver for reconnection.

The thesis structure follows a layered logic, moving from the city to the district and to the neighborhood. The first chapter introduces the broader context of Beirut's historical transformations, governance patterns, and spatial ruptures. It examines how conflict, planning decisions, and infrastructural expansion have shaped the city's contemporary forms and divisions. The second part shifts focus to the scale of Karantina's district then neighborhood, presenting a detailed spatial mapping survey. This section highlights the physical, environmental, and demographic characteristics that define Karantina's realities. The third chapter traces the events that shaped the district, the governance landscape that influences it, and the perceptions and identities formed through lived space. Finally, the fourth part proposes strategies to prepare Karantina for the future evolution of the port and defining how the neighborhood can serve as the starting point for a much needed transition to a more connected and accessible city.

Photographic breaks between the chapters offer a way to read the territory not only through analysis and maps, but through a visual encounter with a time and a place that otherwise would be too unfamiliar. It is a way to from a connection with the walls, the streets and the faces that characterize Karantina and get a deeper understanding of the dynamics that shape it.

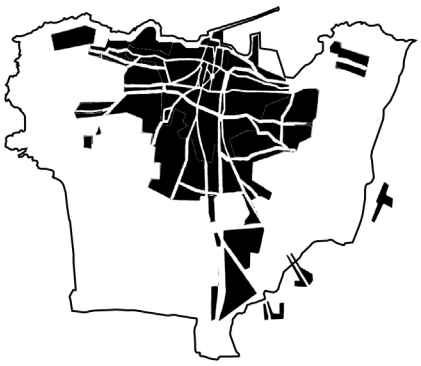
01. Beirut: Fragmentation and Memory

01.1. The city shaped by conflict: Beirut's urban transformation



1840

1876



1921

1935

1950

1967

1920 to 1943: The birth of a capital

When Lebanon was placed under French Mandate in 1920, Beirut was named the capital of the newly created State of "Greater Lebanon". The arrangement was a partnership meant to guide the new state toward independence, while also allowing France to imprint its administrative, educational, cultural, and spatial models on the city. At that time, Beirut became not only a national capital but also a testing ground for modern planning in the eastern Mediterranean. French administrators used the city as a showcase of their "civilizing mission," seeking to demonstrate the order, hygiene, and efficiency associated with European urbanism.

Under the direction of planners and architects like Joseph Danger, Gaston Jaussely, and Michel Ecochard, the city center was reorganized according to Beaux-Arts and early modernist principles. The medieval street network was replaced by a geometric plan centered on Place de l'Étoile, a plaza modeled after the Parisian model. From this civic center, broad avenues extended toward the port, the river, and the hills, linking the parliament to the commercial and administrative zones that the French were developing around it.

The Mandate also invested in infrastructure. The port was expanded to accommodate large vessels, consolidating Beirut's role as the port capital of the Levant. The railway and tramway systems were the early mobility corridors that still affect today's spatial structure in some areas.

Along the peripheral area, new residential and industrial quarters began to appear, often populated by migrants from Mount Lebanon or Syria. They who were drawn in by work opportunities in the growing maritime economy and various industries of the capital. These peripheries were left unplanned.

Spatially and socially, the Mandate period left a double legacy. In the center, a carefully painted image of modernity was put in place. Monumental buildings and wide boulevards that reflected the ideals of modern governance and progress. Around this center however, the city expanded in an organic and fragmented way, without any proper infrastructure, planning

1 Place Charles de Gaulle and the Arc de Triomphe, Paris. Source: Yann Arthus-Bertrand.

2 Place de l'Étoile (Nejmeh Square), Beirut Central District. Source: Solidere Archives.

or regulation. Unfortunately, this period set the stage for future fragmentation and uneven growth.

By 1943, the year Lebanon gained its independence, Beirut had doubled in size and population. These early stages of development established the principles of centralization, imbalance, and layered identity that continued to define Beirut's evolution over the next century.

1943 to 1975: The (not so) golden age

After Lebanon gained independence in 1943, the end of French administration provided a moment of optimism and economic expansion. In the 20 years that followed, Beirut was one of the region's leading financial, cultural, and educational centers. It was home to the Arab world's most active publishing houses, major universities, and lively lifestyle that drew traders, artists, and professionals from across the Middle East.

This new prosperity, however, brought heavy demographic pressure. Between the 1940s and the 1970s, Beirut's population tripled, due to internal migration accompanied by waves of regional displacement, including Palestinian refugees after the mass expulsion that followed the creation of the Jewish state, which led to over 700,000 people seeking refuge in neighboring countries, also known as the 1948 Nakba. As a result the city struggled to accommodate this influx.

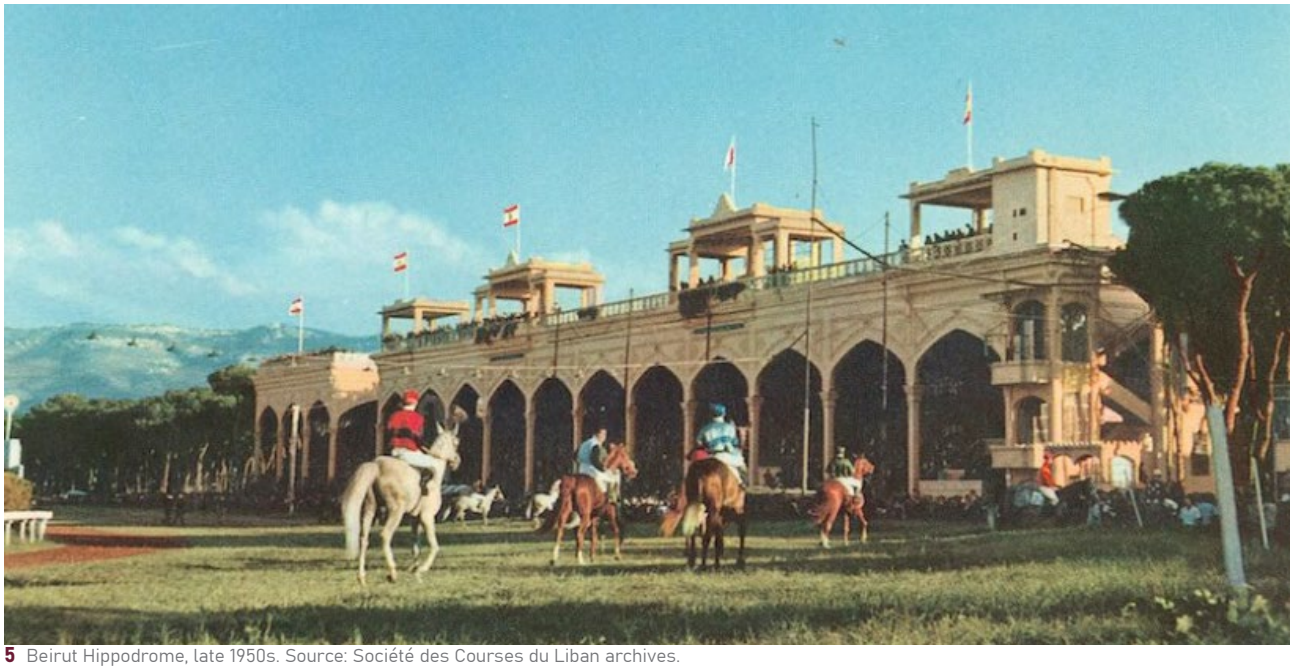
The Lebanese government commissioned French urban planner Michel Ecochard to conceive a new master plans for Beirut, first in 1954 and again in 1963 - 1964. These plans envisioned a metropolitan system based on a hierarchy of centers linked by roads and coastal highways. The objective was to distribute housing and employment more evenly and to integrate the port, airport, and industrial zones in a coherent network. However, the Lebanese state did not have the institutional capacity to fully implement Ecochard's vision. While certain infrastructure projects were completed like the Chales Helo highway, the airport expansion, and parts of the arterial road system, many of the reforms remained on paper.

Beirut's post-independence expansion led to a polarized capital. It was modern and planned in the west, but informal and under-planned in the eastern and southern districts. The built fabric reflected these contradictions; architectural modernity without corresponding social infrastructure.

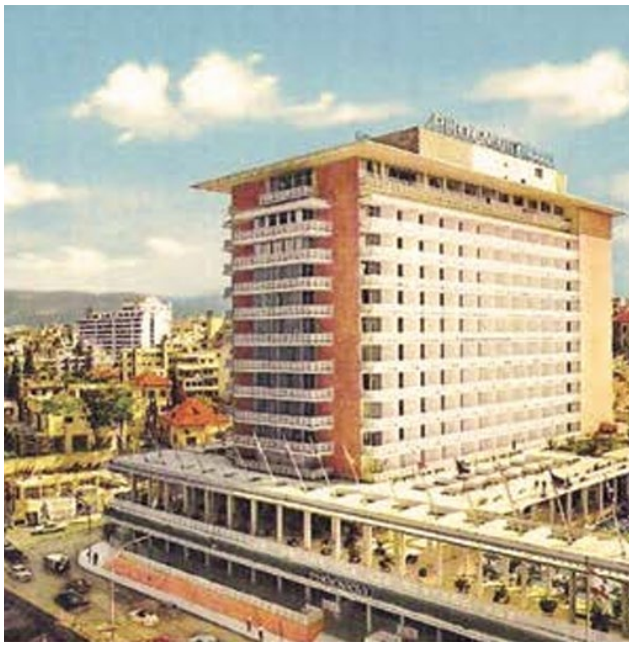
The post-independence period reshaped Beirut's urban structure. High-rise construction, expanding road networks, and continuous coastal urbanization gave the impression of modernization. However, infrastructure and public services failed to match population growth, leaving sharp contrasts between well-serviced and under-equipped districts. These differences became embedded in the city, and continued laying the groundwork for Beirut's fragmentation.

3 Beirut tramway along the Corniche, early 1950s. Source: Beirut Municipality Transport Department archives.

4 Saint Georges Hotel and Yacht Club, Beirut waterfront, 1960. Source: Photo Jack/Studio A. Dagher collection.

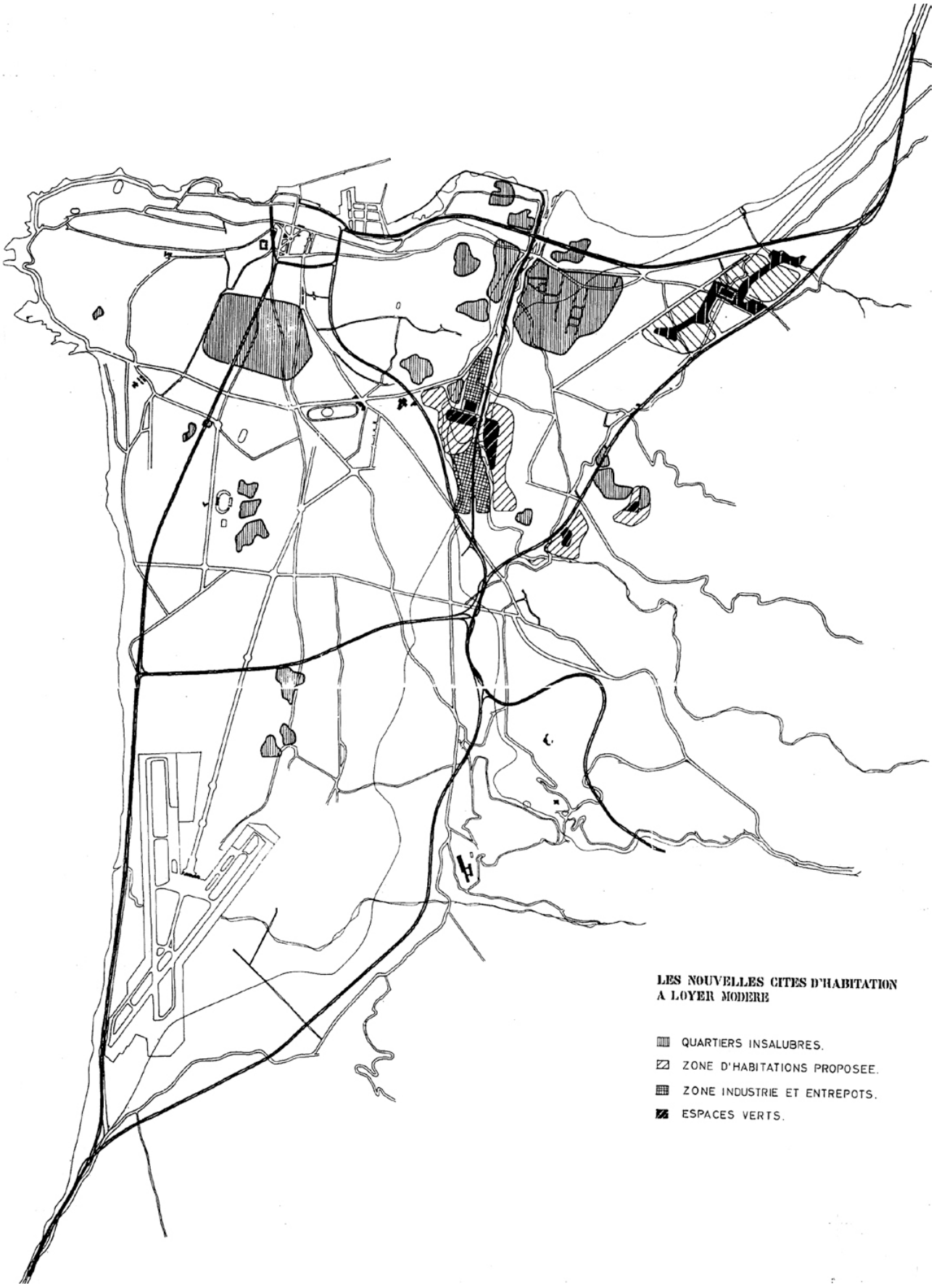


5 Beirut Hippodrome, late 1950s. Source: Société des Courses du Liban archives.

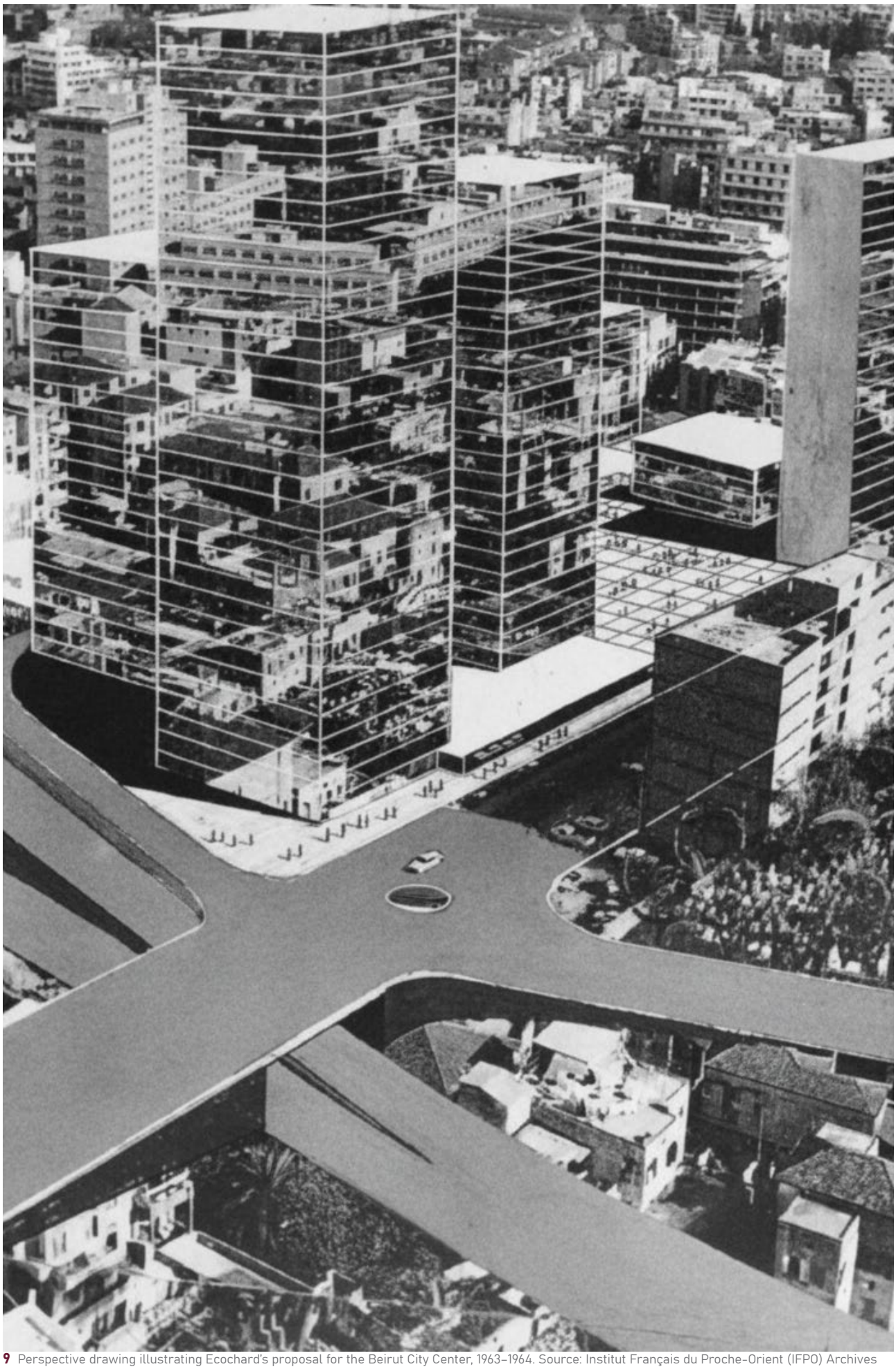


6 Phoenicia Intercontinental Hotel, Beirut, 1960s. Source: Intercontinental Hotels promotional archive.

7 Holiday Inn Hotel, Beirut, early 1970s. Source: Holiday Inn Beirut promotional archive.



8 Masterplan for Beirut and its suburbs by Michel Ecochard, 1963,1964. Source: Institut Français du Proche-Orient (IFPO) Archives



9 Perspective drawing illustrating Ecochard's proposal for the Beirut City Center, 1963–1964. Source: Institut Français du Proche-Orient (IFPO) Archives

1975 to 1990: Civil war and divided Beirut

The Lebanese Civil War in 1975 stopped Beirut's post-independence growth. The capital's economic and cultural center was transformed into a battlefield that mirrored the political and sectarian divisions of the nation. During the fifteen years of conflict, the city was physically, socially, and institutionally destroyed.

The most visible manifestation of Beirut's division during the Civil War was the Green Line, the frontline that cut through the city from north to south. It separated predominantly Christian-controlled East Beirut from Muslim-controlled West Beirut, turning what had once been the city's central axis into a "no-man's-land". Over the years of conflict and neglect, vegetation began to overgrow the abandoned streets and ruined buildings, which is how the line got its name. This physical and symbolic boundary disrupted urban continuity; transport, trade, and social exchange. It also transformed the city center into a buffer zone of destruction. The Green Line thus represented not only a military demarcation but also the fragmentation of Beirut's social fabric. Even after the war ended, its traces remained embedded in the urban landscape.

The Beirut central districts was devastated. The commercial souks, civic buildings, and public spaces around Martyrs' Square and Place de l'Étoile were either destroyed or abandoned. The port and industrial areas were also destroyed, entire neighborhoods were erased and populations were displaced. Infrastructure networks collapsed, electricity, water, waste management, and transportation systems stopped operating. Each side became increasingly autonomous. Control became defined by sectarian affiliation and military power.

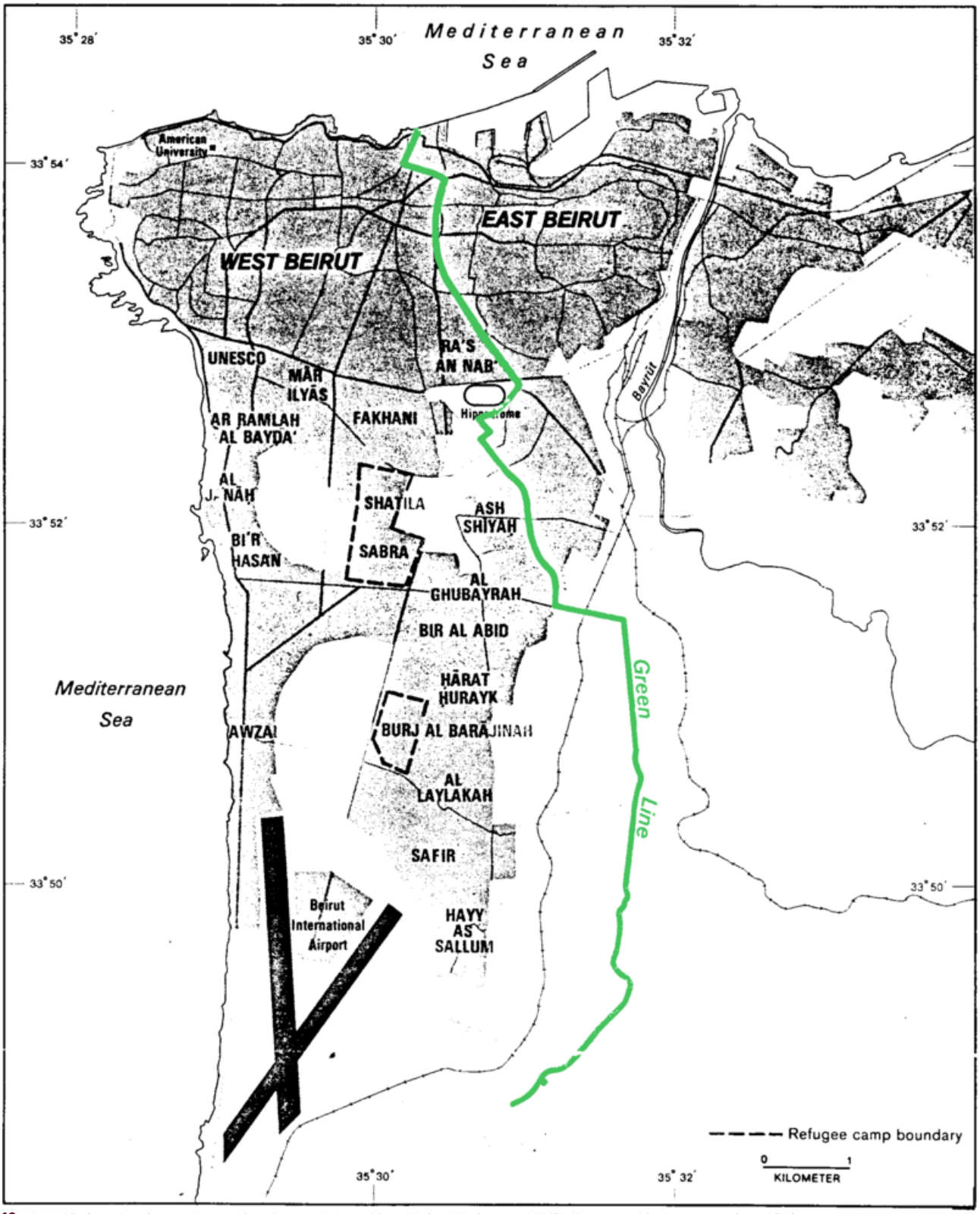
As violence persisted, large segments of the population were displaced, both within and beyond Beirut. Thousands fled to the peripheries or to rural regions, while others migrated abroad, contributing to a major demographic reconfiguration. Informal construction expanded in zones considered relatively safe, particularly in the southern suburbs and parts of East Beirut, producing unplanned urban growth even in the midst of destruction. The resulting landscape combined ruins and new improvisations—buildings patched, extended, or fortified to adapt to conditions of siege and uncertainty.

By the end of the 1980s, Beirut had become a mosaic of disconnected zones rather than a single unified city. Economic activity operated locally inside each sector, and infrastructure was mostly improvised. The war didn't just cause physical destruction but also the erasure of the city's shared identity. The green line's voids, the destroyed downtown, and the edges between neighborhoods determined the fragmentation that would later shape post-war reconstruction and development.

This conflict thus redefined Beirut's condition: a city no longer unified by a common center but held together by survival, memory, and adaptation.

10 Martyrs' Square, Beirut, before the Civil war. Source: Studio Photo Jack.

11 Marty'rs Square, Beirut, during the civil war in 1978. Source: Gaby Bustros.



12 Map of Beirut showing the Green Line. Source: Adapted from United Nations and UNRWA geographic documentation of Beirut.

13 View of Beirut's Green Line during the Civil War. Source: Samir Kassir's Beirut.

1990 to 2019: Rebuilding Beirut: Recovery and Inequality

The Lebanese Civil War ended after the creation of the Taif Agreement in 1990, also known as the National Reconciliation Accord, which was a political agreement that redefined the country's political system. This marked the beginning of an ambitious and uneven process of reconstruction. In Beirut, the post-war period was characterized by a dilemma between the urgency to rebuild fast and the absence of a unified large-scale metropolitan vision. The state handed most of the rebuilding process to private actors, which resulted in a fragmented development driven not by long-term sustainable strategies but by personal interest and economic opportunities.

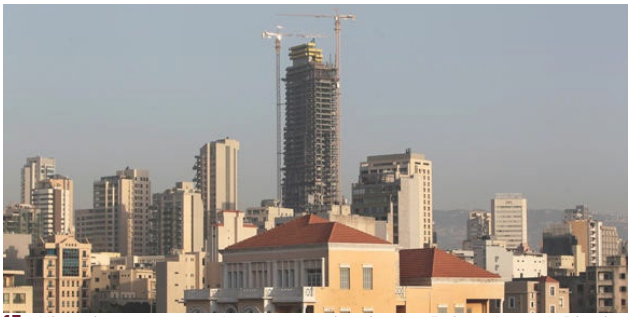
The most visible outcome of this approach was the redevelopment of the city center by the private company Solidere, created in 1994. The reconstruction remained confined to select zones instead of than addressing the city as a whole which resulted in severe differences and contrasts between neighborhoods that border each other.

Throughout the 1990s and 2000s, Beirut's urban expansion continued regardless of the absence of coordinated metropolitan planning. Infrastructure investments prioritized highways and road networks, reinforcing car dependency and neglecting public transport. Informal settlements became denser, while high-rise developments multiplied along the coastline and in richer neighborhoods. The city's economic and physical recovery was selective.

By the 2010s, Beirut had regained its image of a vibrant regional hub but it remained administratively fragmented, with overlapping jurisdictions and minimal coordination between the municipality, ministries, and private developers. Social inequalities deepened due to the rising cost of living.

Periodic crises like the 2006 war, the 2015 garbage crisis, and the 2019 revolution, revealed the fragility of the post-war order. Despite the physical reconstruction, Beirut never recovered as comprehensive urban project. The city was rebuilt, but not planned: a mosaic of investments and neglect that mirrored the political fragmentation of the country itself.

14 Picture of a protest in Mar Mikhael, 2010. Source: Mona Fawaz and Abir Saksouk



15 High-rise towers under construction in the Beirut Central District. Source: Joseph Eid.

2020: Beirut in ruins: Economic/Infrastructural collapse

The years after 2019 marked a new phase of crisis for Beirut that combined physical devastation, financial collapse, and institutional paralysis. On August 4, 2020, a massive explosion at the Port of Beirut destroyed the surrounding area, killing more than 200 people, injuring thousands, and displacing over 300,000 residents. The blast was the outcome of decades of governmental negligence and corruption. Beyond the physical destruction, the explosion exposed the fragility of Beirut's urban governance and the complete erosion of public accountability.

This catastrophe in the midst of a national economic collapse, one of the most severe in modern history. Since late 2019, Lebanon's financial system imploded: the currency has lost over 95% of its value, banks have frozen deposits, and poverty rates have more than tripled. The crisis made purchasing power drop, halted construction, and caused a mass migration of skilled labor, professionals and youth. Public services like electricity, waste collection, water supply, have deteriorated further, and are no longer provided by the public sector, but mostly by private actors and companies.

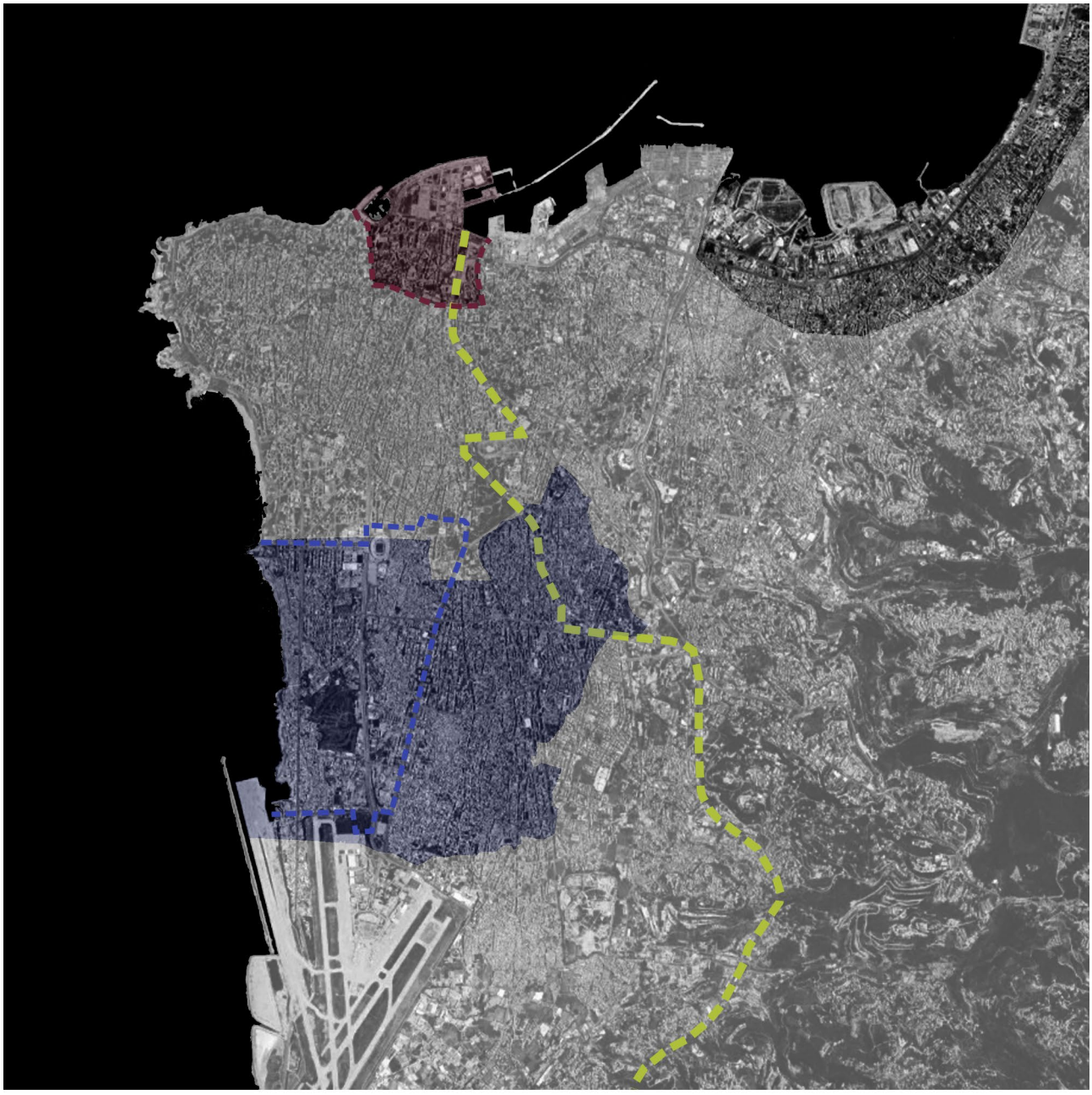
The overlapping crises of governance, economy, and infrastructure have transformed the city into a landscape of uncertainty, where survival replaces planning as a quick solution to restore urban life. The explosion did not simply destroy buildings; it exposed the accumulated consequences of decades of unregulated reconstruction, economic dependence, and institutional negligence. The future of Beirut, and of Lebanon more broadly, will be determined on whether recovery can move further than quick emergency relief and instead imagine a new model for urban resilience, grounded not in speculation and project based interventions but in equitable and sustainable regeneration that treats and heals not covers up.

01.2. Planning weakness and project-based development

After the end of the civil war, urban development in Beirut has not been driven not by a coherent metropolitan plan but by a project-based model of reconstruction, where individual initiatives were created to address specific territories, independently from one another. Instead of strengthening public planning institutions, the state relied on exceptional decrees and private agencies that operated outside the framework of national or municipal planning. This approach privileges private capital, political negotiation, and fragmented governance over long-term vision, resulting in redevelopment that affects the city unevenly. As a result, Beirut's post-war transformation was shaped by large, stand-alone projects, each with its own laws, financial mechanisms, and political alliances, instead of an integrated strategy for the capital as a whole.

Two significant initiatives are going to be considered: Solidere, which reconstructed the Beirut Central District, and Elyssar, which was designed to redevelop the city's southern periphery. Both of those projects reveal the sharp contrasts embedded in Lebanon's planning system. Solidere became the state's reconstruction project headline that transformed the city center into a high-value investment zone. Elyssar, conceived just a few years later, wanted to improve living conditions in densely populated and underserved areas of the southern suburbs. Despite its ambitious plans for infrastructure upgrades, public housing, and coastal redevelopment, it stalled due political conflicts, financial constraints, and contested land ownership.

The map illustrates the physical separation between these two projects and the historical path of the Green Line that used to divide the city. Their locations demonstrate how post-war planning continued to reflect Beirut's internal boundaries and reinforce inequality. By analyzing Solidere and Elyssar side by side, project-based redevelopment are shown not only redefined key parts of the capital but also exposed the limits of Lebanon's urban governance and the challenges of re-building equitably.



Legend:

- Solidere area
- Solidere masterplan limit
- Elyssar area
- Elyssar masterplan limit
- The Green Line

16 Location of Solidere and Elyssar redevelopment areas in Beirut.

01.2.1. Solidere: The reconstruction of Downtown Beirut

The reconstruction of central Beirut after the civil war is the most controversial urban project in Lebanon's modern history. The plan was implemented by Solidere (Société Libanaise pour le Développement et la Reconstruction du Centre-Ville de Beyrouth), a private joint-stock company established in 1994 under Decree No. 2537/1992. In other words, it is a corporate structure in which ownership is divided into shares owned by investors. The initiative was promoted by, at the time, Prime Minister Rafic Hariri, who imagined the project as the centerpiece of Lebanon's economic recovery and the symbol of the post-war modernization.

Solidere was an exceptional mechanism that joined private capital with state authority. The Council for Development and Reconstruction (CDR) initiated the post-war master plan, but control got transferred to Solidere, which was given powers of expropriation, planning, and development in the central district. Officially, Solidere's plan said that property owners in the downtown area would be compensated by getting company shares instead of cash. However, in reality, this system benefited only large landowners. Small business owners, tenants, and shopkeepers did not receive fair compensation. The payments offered were usually very low, and people were forced to leave their homes and businesses behind without enough money to start over elsewhere. This arrangement privatized ownership and decision-making, allowing Solidere to operate independently of public planning institutions such as the Directorate General of Urban Planning (DGUP) and Beirut Municipality.

The redevelopment area covered 1.91 square kilometers of Beirut's central district. The project also included 0.73 square kilometers of reclaimed land from the sea. So the total area under Solidere's authority was approximately 2.64 km². The master plan was prepared by Dar al-Handasah, a major Lebanese engineering and architectural consulting firm, and approved in 1994. It divided the district into zones: commercial and financial quarters, residential areas, heritage preservation areas, and waterfront extensions. Solidere's was creating a modern business center, integrating wide boulevards, public squares, underground infrastructure networks, retail zones, hospitality complexes, and high-end residential and office buildings. More than 900 buildings were expropriated and 265 historic structures were identified for restoration. By the early 2000s, the reconstruction had produced over 1.8 million square meters of built area.

Solidere's financial model was based on real-estate speculation and the capitalization of Beirut's land values. When it was created, the company's capital was set at $1.65 billion US dollars, making it the largest private real-estate corporation in the Middle East at the time. The value of expropriated land was calculated at around US $1.2 billion. This model relied on the anticipated rise in real-estate prices to fund reconstruction. Revenues came from land sales, leasing, and joint ventures with developers. The reclaimed coastal area, known as The Waterfront District, was reserved for large-scale projects such as Zaitunay Bay and high-end residential and commercial complexes.

Solidere thus operated as a parallel, independent planning authority, replacing the role of the state in land management, infrastructure, and urban design. Its operations bypassed the authority of the municipality and ministries. The company coordinated directly with the CDR, which acted as a technical and financial middle-man for government loans and donor funding.

The reconstruction physically reconnected East and West Beirut, erasing the wartime Green Line, but it also redefined the city center's social function. The pre-war downtown, once a dense commercial and social hub accessible to all income groups, was replaced by a high-value district taken over by banks, luxury retail, and international firms. The displacement of former residents and small businesses produced a new form of exclusion: a rebuilt city center with minimal permanent population.

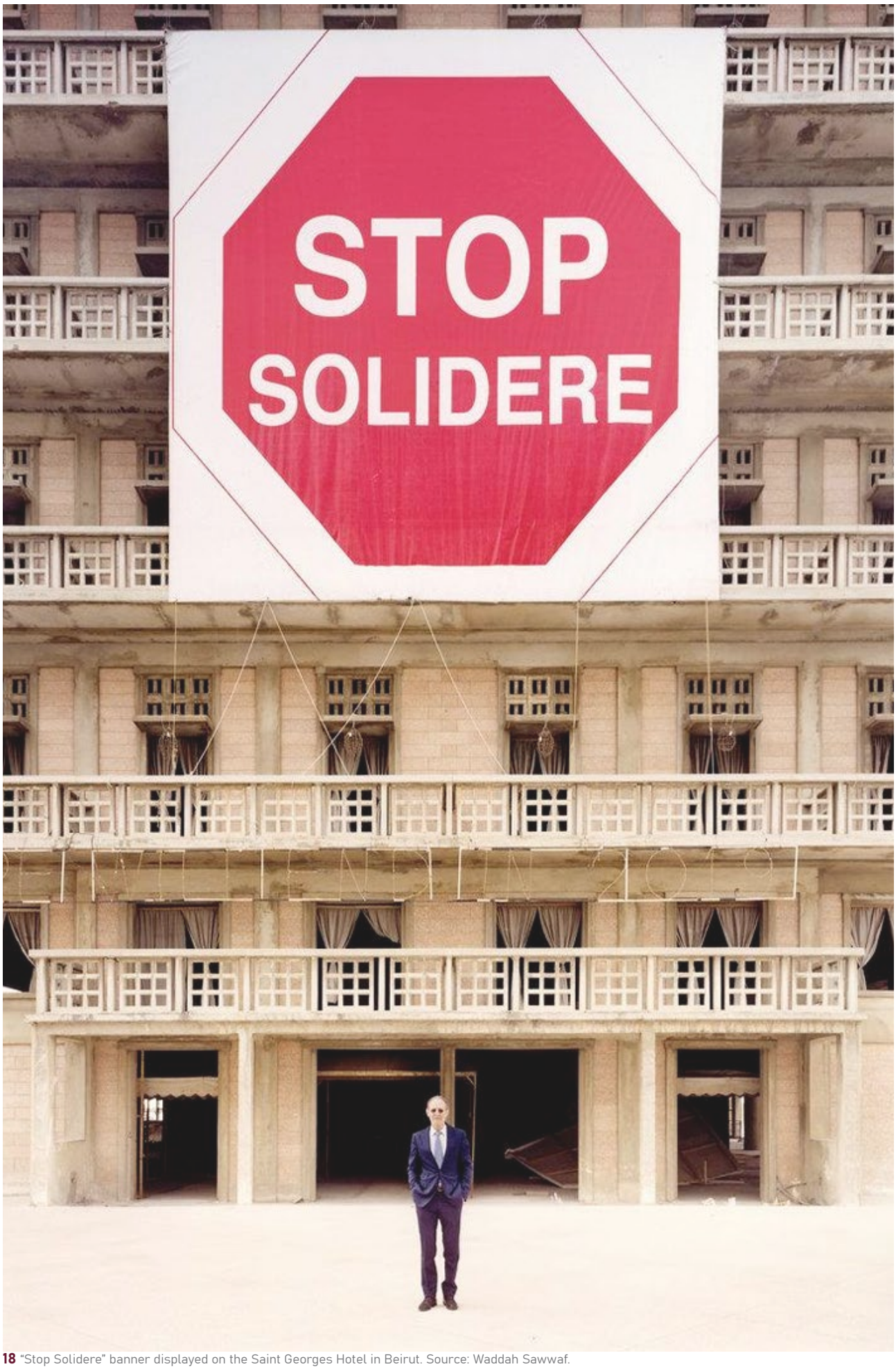
The new urban landscape symbolized modernity and order but lacked the diversity and public accessibility that had used to characterize Beirut's downtown. Many of its high-rise apartments and offices remain partly unoccupied, reflecting the speculative logic of its financing model. The central district became a city for long-term investment and assetsrather than habitation. At the same time, Solidere's success in implementing large-scale infrastructure, underground utilities, restored public spaces, and high-quality streetscapes, demonstrated capacities that the state simply did not have.

Solidere became both a model and a warning for post-war reconstruction. Its corporate planning model influenced subsequent projects like Elyssar and Linord.

While its interventions physically transformed Beirut's image and re-established its commercial reputation, they also deepened the divide between the rebuilt center and the neglected periphery. This contrast between a polished financial district and surrounding zones of decay remains one of the defining and most criticized outcomes of post-war planning in Lebanon.

Today, Solidere still manages the Beirut Central District but most of its potential new projects in Lebanon have been stopped due to the heavy backlash it has received. The long-standing dispute over the St. Georges Hotel, whose owner resisted expropriation and displayed the "Stop Solidere" banner, became emblematic of public opposition to the project's privatization of the city's core.

17 Master plan of the BCD by Solidere. Source: Solidere



18 "Stop Solidere" banner displayed on the Saint Georges Hotel in Beirut. Source: Waddah Sawwaf.

01.2.2. Elyssar: Failure of public redevelopment

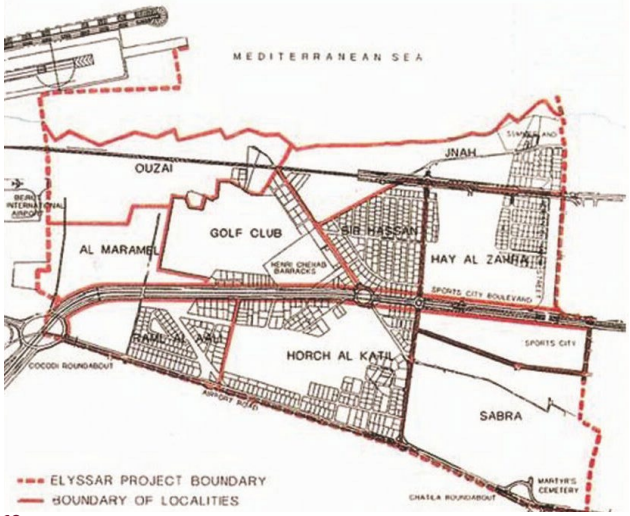
While Solidere reshaped Beirut's city center, the Elyssar project (Entreprise Libanaise pour le Développement et la Reconstruction) was conceived in 1995 to address the city's southern periphery, Ouzai, Jnah, Hayy el-Sellom coastal strip near the airport. This area was heavily affected by war destruction and informal urbanization and became home to thousands of displaced Lebanese families and Palestinian refugees living in self-built settlements. Elyssar was attempting to extend reconstruction outside the elite downtown and improve conditions in districts in need.

The project's master plan, developed with the Council for Development and Reconstruction (CDR) and French consultancy IAURIF, proposed a e redevelopment of approximately 5.8 square kilometers of land. It aimed to combine infrastructure rehabilitation, public housing, coastal road upgrades, and new residential and commercial zones. The vision was to adress informal settlements, relocate households into planned housing units, and open up Beirut's southern coast to public use through a continuous coastal area.

However, unlike Solidere, Elyssar faced major political, financial, and institutional challenges from the start. The area's land tenure was more complex. A large portion of the land was illegally occupied or subject to conflict. Disagreements emerged between government agencies, local communities, and political parties over compensation, relocation, and control of the redevelopment process. Elyssar lacked both a clear financial model and political backing, unlike Solidere.

By the beginning of the 2000s, the project had mostly died down. Although some infrastructure works were completed, including partial road improvements and sewage networks, the proposed housing solutions and coastal redevelopment never happened. Political divisions between political parties and the government fully paralyzed implementation. Over time, Elyssar became a symbol of the state's inability to achieve any sort equitable urban development, revealing a deeply flawed system in which political and institutional actors placed self-interest above the needs of half of Beirut's population.

Today, the southern periphery of Beirut has been compromised by conflict again and is still marked by dense, informal urban fabric, inadequate infrastructure, and exposure to environmental risks. The project's stagnation reflects a broader structural problem in Lebanon, where urban initiatives don't move forward unless they align with the interests of both the state and the country's powerful political networks, which is very rare. In this environment, state planning decisions are never guided by public priorities, leaving large segments of the population excluded from meaningful reconstruction and urban improvement.



19 Elyssar Project masterplan in the Southern Suburbs of Beirut. Source: Collective for Architecture Lebanon.

01.3. Current conditions, uneven development, and socio-spatial pressure

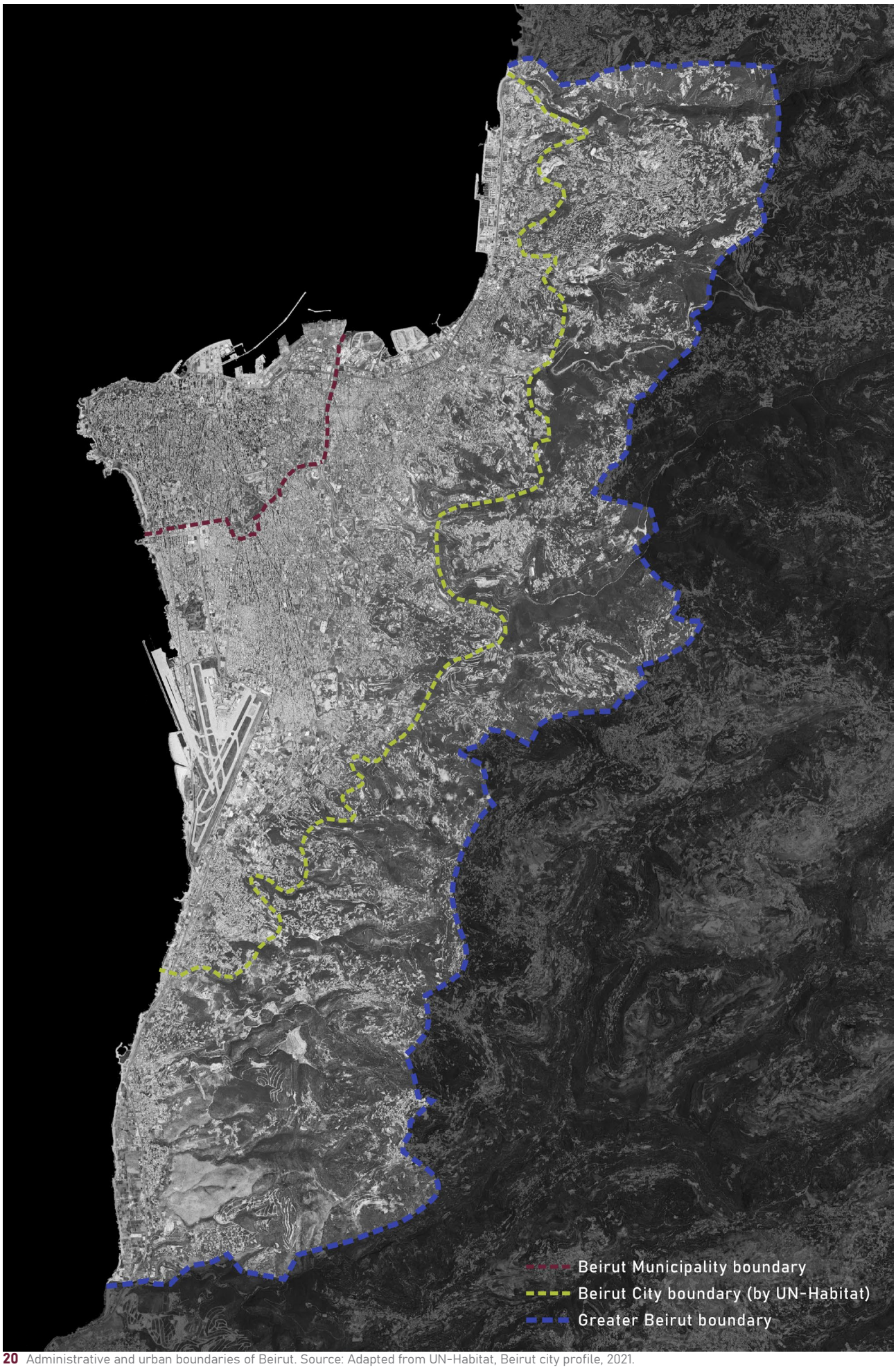
01.3.1. Demographic and Refugee Profile

Beirut's current population is the result of a century of migration, war displacement, and post-war suburbanization, all within a compact coastal city. In the absence of an up-to-date national census, official statistics are usually politically sensitive.

Before going into Beirut's population numbers, it is important to understand its administrative and spatial boundaries. The Beirut Municipality covers 19.8 square kilometers, almost equal to the historic city core within the pre-war municipal perimeter. It includes about 430,000 to 450,000 residents, according to the most recent estimates by the Central Administration of Statistics (CAS) and UN-Habitat. It accounts for less than 10% of the city's built footprint. The Beirut Governorate coincides with the same area, making it Lebanon's only single-municipality governorate. However, this administrative boundary does not reflect the functional reality of the city.

To better represent that functional reality, UN-Habitat defines "Beirut City" as the continuously built-up area that extends beyond the municipal limits and into Mount Lebanon. This statistical unit covers around 111 square kilometers, includes thirty-one municipalities, and is approximately 77% of the built footprint. It captures the continuous urban fabric that links the city center with its eastern and southern suburbs.

Beyond this, the term Greater Beirut or Beirut Metropolitan Area (BMA) describes the wider region that stretches from Dbayeh and Antelias in the north to Khalde and Choueifat in the south, and to the east toward Baabda and Aley. This larger metropolitan area, which doesn't have unified administrative authority, houses an estimated 2.2 to 2.5 million people. This represents almost half of Lebanon's total population. It is divided across two governorates, Beirut and Mount Lebanon, and more than 24 municipalities, resulting in overlapping jurisdictions and fragmented service provision, amongst other issues.



20 Administrative and urban boundaries of Beirut. Source: Adapted from UN-Habitat, Beirut city profile, 2021.

Using these boundaries, UN-Habitat (2021) estimates approximately 1.26 million residents within the "Beirut City" boundary and about 2.3 million within Greater Beirut. The center is one of the densest urban areas in the Mediterranean. Neighborhoods such as Mazraa, Basta, and Bourj Hammoud exceeding 30,000 inhabitants per square kilometer.

Beirut's demographic composition is the most affected by displacement and migration. The first major wave of displacement followed the 1948 Nakba, when Palestinian refugees settled around the capital in camps and informal gatherings. According to the joint census in 2017 by the Lebanese-Palestinian Dialogue Committee (LPDC), Central Administration of Statistics (CAS), and the Palestinian Central Bureau of Statistics, there were 174,422 residents living in Palestinian camps and gatherings across Lebanon. Between 13% to 14% of those were located in Greater Beirut. UNRWA's most recent data indicate that between 222,000 and 232,000 registered Palestine refugees currently reside in the country.

The second major displacement began after 2011, with the arrival of Syrians fleeing the war. UNHCR records approximately 636,000 registered Syrian refugees in 2025, but the Lebanese Government states that the number, including unregistered individuals, exceeds one million. In Greater Beirut, around 300,000 Syrians live mainly in low-cost and industrial peripheral areas such as Bourj Hammoud, Nabaa, Karantina, and Dahieh.

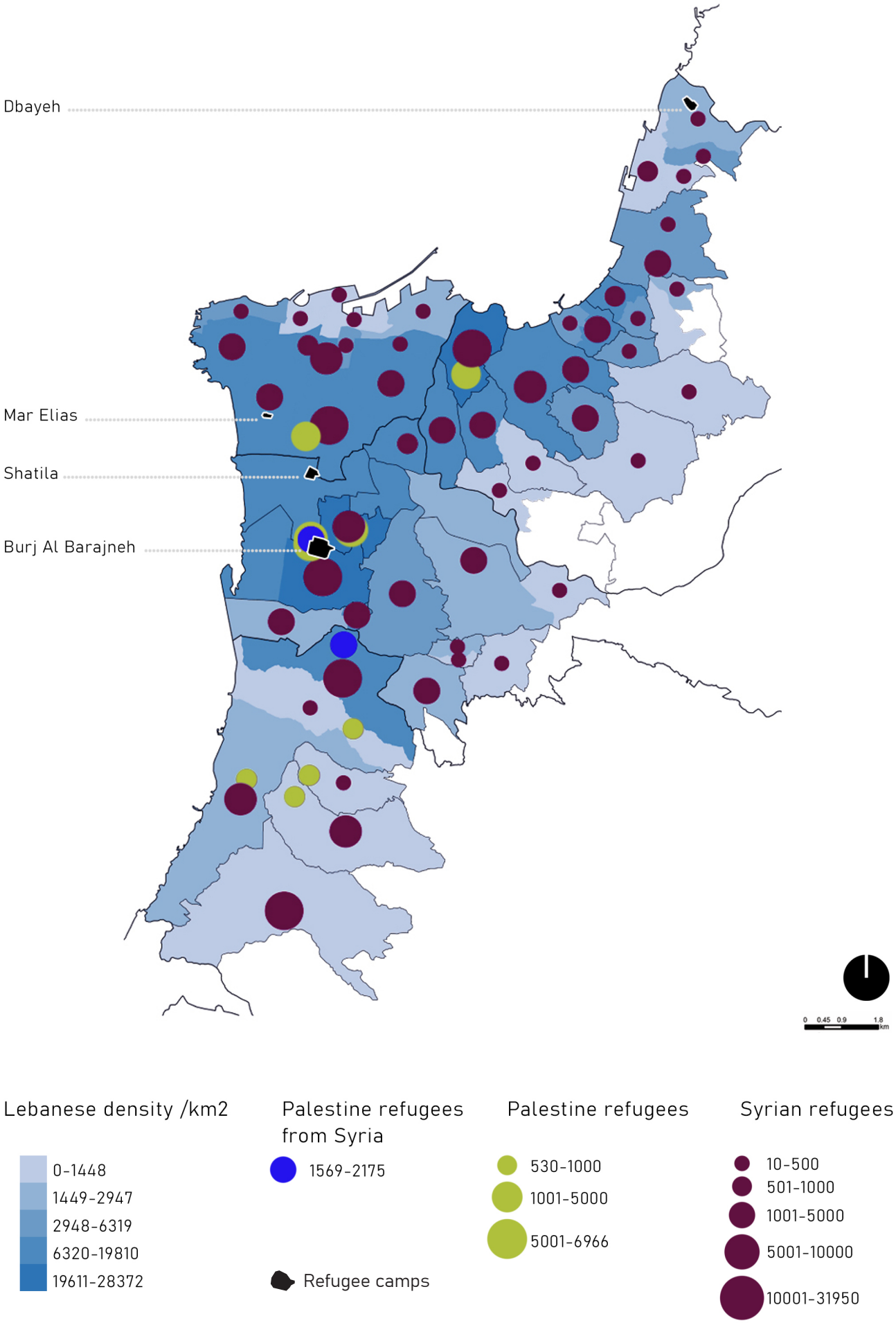
According to UN-Habitat's consolidated dataset, Beirut City contained 1,263,332 inhabitants in 2020, which represents 22.6 % of Lebanon's total population. This corresponds to an average population density of 11,423 persons per km² when both built and unbuilt areas are included, and 19,568 persons per km² when considering only built land. Lebanon's national average density is just 600 persons per km², underlining the Beirut's extreme concentration.

Within Beirut, however, density is not uniform and this uneven pattern reflects deep social and economic contrasts. The eastern and southern sectors of the city, where large concentrations of Palestinian and Syrian refugees are apparent, display densities four to eight times higher than the metropolitan average. Meanwhile, the western and northers area have witnessed dropping population levels over the past 20 years as more financially stable residents and expatriates moved to the periphery or abroad.

The absence of a national census since the one conducted during French mandate in 1932, complicates demographic accuracy. Instead, population estimates rely on a mix of administrative registries, the LCRP Population Package, and international databases; UNHCR for Syrians and UNRWA for Palestinians.

Spatially, this means that population density peaks in low-income and mixed-use districts where affordable rents and access to informal labor can be found. Refugee households often occupy subdivided apartments, basements, or industrial structures converted for housing, producing an estimated overcrowding rate of up to 53 % among non-Lebanese households

In conclusion, Beirut today is a capital that accommodates nearly a quarter of Lebanon's population within less than one per cent of its territory. Its urban density is both a resource and an issue; it indicates economic centrality but also critical social vulnerability. It is important to note that these figures are not static: Beirut's demographic composition continues to shift dramatically each day, as the ongoing conflict affecting Lebanon drives new waves of displacement from the south toward the capital and within Beirut itself. That said, all of the available data confirm the same trend: a very concentrated urban population living in spatially unequal conditions.



21 Population density and refugee distribution in Greater Beirut. Source: Adapted from UN-Habitat, Beirut city profile, 2021.

01.3.2. Governance structure and institutional fragmentation

The governance system of Beirut complex and fragmented, just like its social and urban fabric. Even though the city functions as a single metropolitan entity of more than two million inhabitants, it lacks a unified authority capable of planning or managing it as a whole. Governance is distributed to overlapping municipal, regional, and national institutions, each exercising partial control.

Administratively, Beirut Municipality and Beirut Governorate form a single political entity that covers only the historic urban core of 19.8 square kilometers. The Mayor of Beirut is also the President of the Municipal Council. The Governor of Beirut, a position that is appointed by the Council of Ministers, is the person with executive authority. The elected municipal council is responsible for planning, budgeting, and local development, but the governor has the power of approval and oversight. As a result, the municipality's decision-making capacity is heavily limited by government control, limiting its autonomy.

The wider Greater Beirut Area is divided into 57 municipalities. Each municipality operates independently, with its own council, mayor, and limited resources. There is no metropolitan council or coordinating entity that manages issues that surpass boundaries like transportation, waste management or housing for example. Public services such as electricity, water, telecommunications, and solid waste, are administered through national agencies like Électricité du Liban (EDL), the Council for Development and Reconstruction (CDR), and the Water Establishment of Beirut and Mount Lebanon, each reporting to different ministries. This results in a mix of overlapping responsibilities and coordination failures.

Beirut's governance structure also reflects Lebanon's broader confessional power-sharing system. Any service provided by a public entity is prone to be influenced by political and sectarian alignments. Infrastructure provision and planning decisions are often negotiated through networks and political parties that privilege certain groups of people over others. This nation-wide issue make homogeneous urban management almost impossible and contributes to the deep spatial inequalities currently visible in the city.

The fiscal weakness of local government is a central factor behind Beirut's governance issues. Municipalities are legally entitled to get revenue from property taxes, building permits, and transfers from the Independent Municipal Fund, but these funds are delayed or diverted by the central government. As a result, Beirut Municipality operates with an annual budget much lower than the scale of its responsibilities and spends a disproportionate share on salaries, contracts, and maintenance rather than planning or service improvement.

The Council for Development and Reconstruction (CDR), created in 1977 to coordinate post-war recovery and later to manage donor-funded projects, has taken the role of a national planning agency. However, it operates under the Prime Minister's office and reports to the cabinet rather than to the municipalities. CDR's project-based model favors large infrastructure and real-estate schemes over long-term sustainable metropolitan planning.

This system deprives Beirut of any framework capable of addressing shared urban challenges. Transport, housing, waste management, and environmental protection are uncoordinated across municipal boundaries. The result is a governance in which accountability is diffused, planning is temporary and reactive, and citizens frequently turn to NGOs and private providers to fulfill their service needs.

Beirut's governance structure thus mirrors the city's physical and social fragmentation: a mosaic of disconnected authorities, each responsible for part of the system. The absence of metropolitan coordination prevents coherent spatial policy, and the politicization of local governance has transformed the management of the city into a reflection of Lebanon's broader and always ongoing institutional crisis.

01.3.3. Infrastructure and environmental crisis

Beirut's infrastructure systems have always struggled due to structural weakness, but the crises since 2019 have made the almost collapse. Most of the physical networks that serve the city were built during the post-war reconstruction of the 1990s and have, since then, suffered from under-investment, fragmented governance, and poor or even absent maintenance. Today, infrastructure failure has become one of the clearest expressions of the state's institutional failure, directly affecting the daily life and health of Beirut's residents.

- Electricity and Energy

Lebanon's national electricity company, Électricité du Liban (EDL), used to supply Beirut with almost continuous power. By 2023, the city received 1 to 3 hours of grid electricity per day on average. Fuel shortages, financial difficulties, and political interference have all slowed down production, forcing most households, businesses, and hospitals to rely on private diesel generators. Everywhere in Beirut, and Lebanon in general, these generators form a parallel, unregulated energy market estimated to provide more than 70% of Beirut's power consumption. The very high fuel cost related to these generator deepen social inequality, since only wealthier households and commercial districts can afford full-day coverage. They also contribute to a persistent layer of pollution over the city.

In response to electricity grid failures and prolonged power outages, households and businesses in Beirut have turned to solar photovoltaic (PV) systems. According to data from the Lebanese Center for Energy Conservation (LCEC), the country had installed around 690 MW of solar capacity by the end of 2022, a number equal to almost 40% of the peak demand for the Beirut region. By early 2024, the total reported solar capacity had reached approximately 1,000 MW. Most of these systems are off-grid solutions, the most common being rooftop panels paired with batteries installed by residences, commercial buildings and NGOs. While this solution demonstrates the city's resilience in front of a infrastructure collapse, it also underscores the absence of an integrated and functioning electricity grid. These decentralized and private systems lower demand from the state grid but are very unevenly distributed across the metropolis, naturally unavailable for everyone but wealthier households in central districts.

- Water, sanitation, and waste

Water supply and sanitation are managed by the Water Establishment of Beirut and Mount Lebanon. This system operates below capacity. Intermittent pumping and electricity cuts mean that most households receive water for only a few hours every two to three days and have to depend on private tanker delivery, especially in summer. Water everywhere, no matter the region, is not drinkable since contamination from aging pipes is widespread. Sewage treatment is very limited. Although the Ghadir plant, south of Beirut, was designed to serve the metropolitan area, it still discharges untreated water into the sea.

Solid-waste management has very clearly revealed, in the past few years, the consequences of institutional shortcomings. After the closure of the Naameh landfill in 2015, garbage accumulated across the city, pushing the people to initiate the "Toleet Rihetkon" (You Stink) protest movement, referring to the politician and policy makers that let that crisis happen. Temporary coastal dumps at Bourj Hammoud and Costa Brava were opened as emergency measures and remain in operation to this day. These coastal sites leak toxic waste into the Mediterranean and emit methane visible from nearby residential districts. Waste collection and street cleaning are carried out by private contractors under the supervision of the Council for Development and Reconstruction (CDR), but contract delays and under-payment have interrupted service in multiple instances.

- Mobility and transport

Beirut's transport network showcases the dominance of private cars and the almost total absence of public transport. The pre-civil war tram system was never rebuilt, and decades of highway focused investment only created almost permanent congestion. Around 1.5 million vehicle enter or leave the city every day, using a road system that was not designed for such volumes in the first place. With fuel shortages after 2019 and the collapse of the Lebanese currency, commuting costs have multiplied, reducing

access to jobs and services. Informal shared taxis and buses fill some gaps, but there is no metropolitan transport authority to coordinate routes or fares. Pedestrian infrastructure is minimal and bike lanes don't exist, a shame since cities across Lebanon are compact and stacked right next to each other.

In response to the city's mobility crisis, several small-scale initiatives have recently begun to reintroduce public transport to Beirut after years of neglect. In 2022, the French Development Agency (AFD) and the European Union, in partnership with the Ministry of Public Works and Transport (MoPWT), launched a project to revive the Beirut transport network by donating fifty new public buses. These buses, operated by both the ministry and the Railways and Public Transport Authority (OCFTC), began service in 2023 on key east–west and north–south corridors connecting Ain el-Mreisseh, Hamra, Downtown, Dora, Bourj Hammoud, and Hadath. The initiative is the first formal public bus operation since the civil war era and is a step toward a project called Bus Rapid Transit (BRT) network planned with World Bank support. Complementary efforts by local cooperatives and NGOs, such as Riders' Rights, have mapped informal minibus and shared-taxi routes to integrate them into a more coherent system. Although limited in scale and reach, these projects represent a significant attempt to formalize Beirut's transport system and provide an affordable mobility option in the middle of an economic crisis.

- Environmental degradation

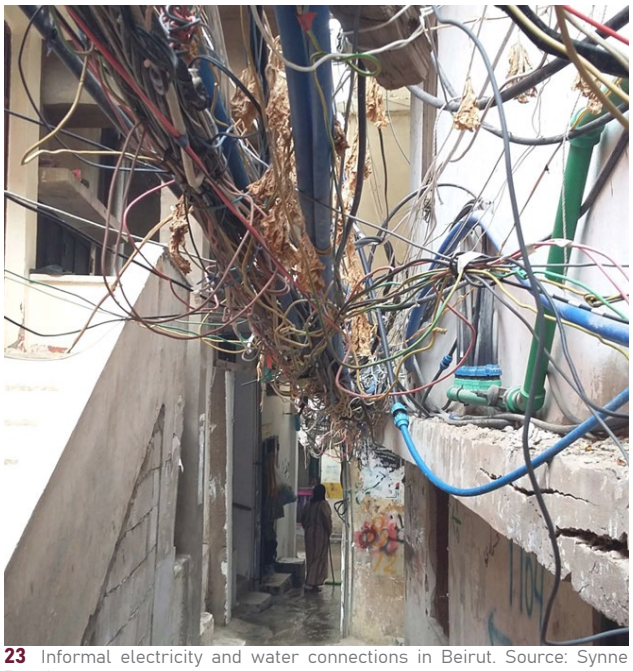
The cumulative effects of these infrastructural failures is an escalating environmental crisis. Air pollution levels in Beirut exceed five times the World Health Organization's limits, due to traffic exhaust and generator emissions. The Beirut River that was once an ecological corridor, now functions as an open concrete drain carrying industrial waste and sewage. Urban green space represent around 0.6% of the city's area, one of the lowest ratios in the region. Heat-island effects are intensifying, with surface temperatures in dense eastern districts registering 6 to 8 °C higher than along the seafront during summer months.

- Infrastructure inequality and adaptation

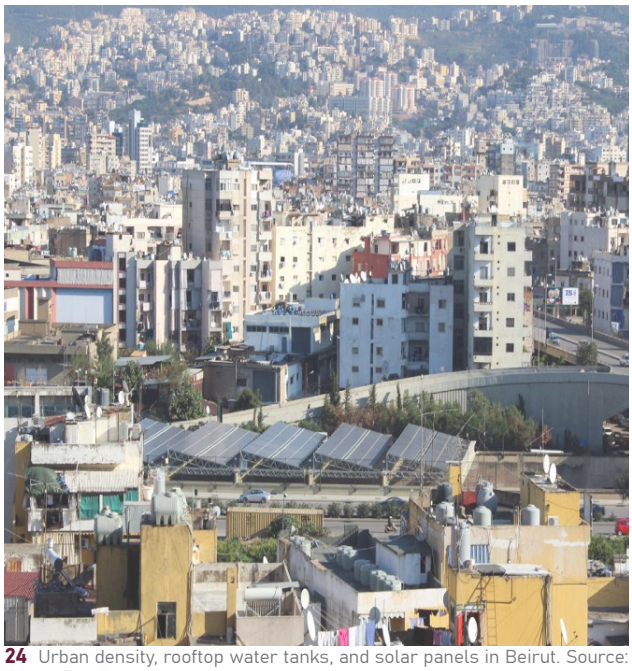
Infrastructure and environmental burdens are not evenly distributed. Central and western neighborhoods, Hamra, Verdun, and Downtown, benefit from more reliable private networks along with the capacity to purchase alternative services. Eastern and southern districts like Bourj Hammoud, Karantina, Nabaa, Chiyah, and Dahieh experience chronic shortages of electricity and water, poor waste collection, and higher exposure to pollution.

Beirut's infrastructure and environmental systems are the result of technical failure, economic crisis, and political neglect. The same capital that once symbolized modernization now functions through improvisation; generators instead of grids, tankers instead of pipes, landfills instead of proper waste management. The result is a city serviced by informal and unequal infrastructures that reinforce social division and environmental degradation.

22 Residents of Beirut next to uncollected garbage, during the 2015 trash crisis that set off protests. Source: Mohamed Azakir.



23 Informal electricity and water connections in Beirut. Source: Synne Bergby.



24 Urban density, rooftop water tanks, and solar panels in Beirut. Source: Synne Bergby..

01.3.4. Segregation and growth

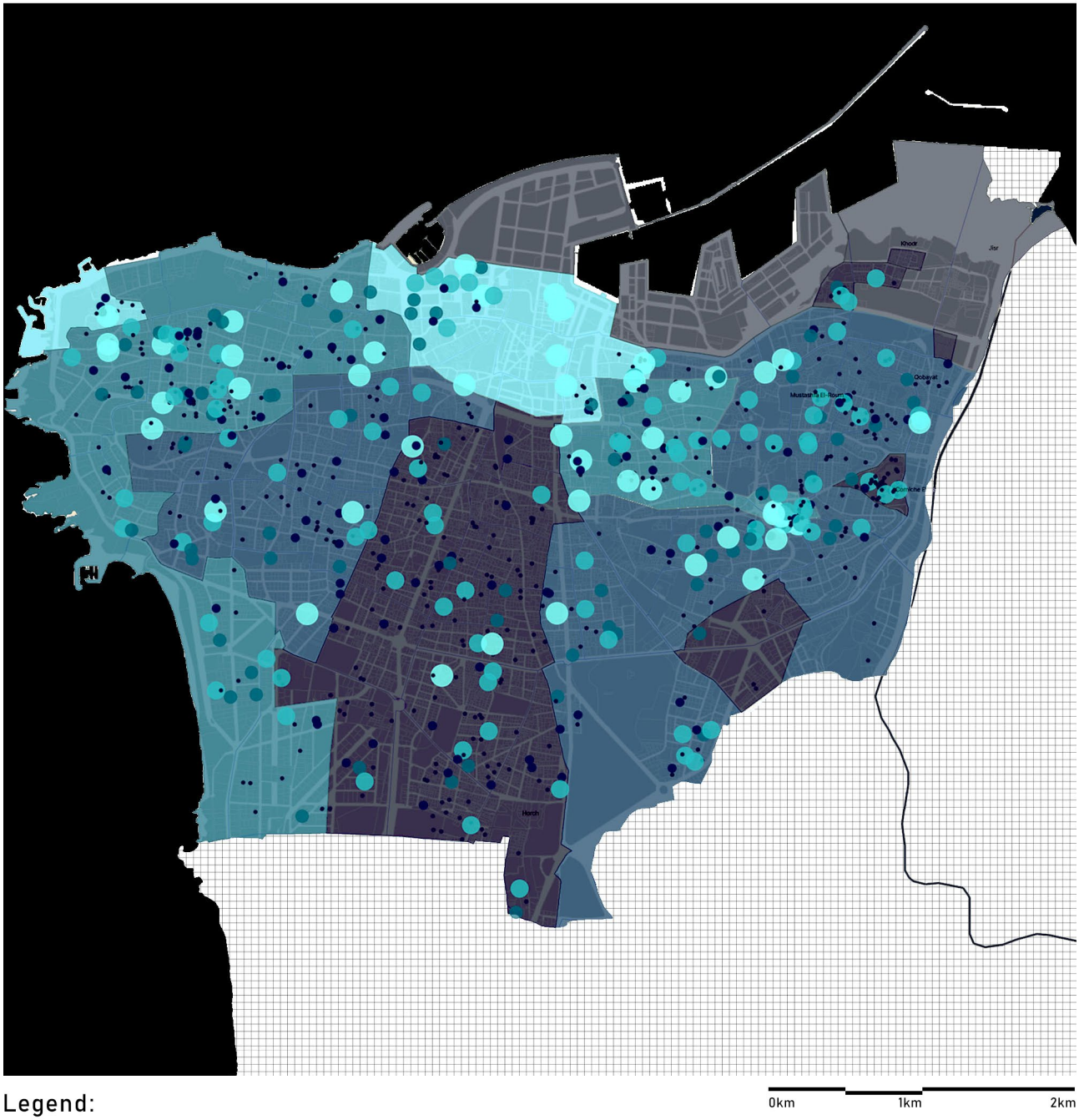
Beirut's urban form contains one of the most striking cases of spatial and social inequality in the Mediterranean. Within a small territory, areas of extreme wealth border districts affected by overcrowding and infrastructural decay. Unfortunately, these contrasts are not accidental but are the product of decades of uneven development and uncoordinated planning.

- Divided urban geography

The city's structure is organized around a sharp east–west and center–periphery divide. The western and central districts, Ras Beirut, Verdun, Ain el-Mreisseh, and Achrafieh, are characterized by clean streets, high-rise apartment towers, and access to relatively stable services. In contrast, the eastern and southern neighborhoods, Bourj Hammoud, Nabaa, Mazraa, Tariq el-Jdideh, Chiyah, and Karantina, are among the densest urban areas in the region, often exceeding 30,000 inhabitants per square kilometer. These areas rely heavily on self-built housing and informal connections to water and electricity networks. The result is a dense urban fabric where density and neglect increase the further away the area from the coastline and the central business districts.

- Vacancy and speculative real estate

Recent data show how Beirut's real-estate market reinforces this fragmentation. The 2023 vacancy map reveals that luxury and high-priced housing areas along the waterfront, show vacancy rates exceeding 50%, while low- and middle-income areas in the eastern and southern peripheries are almost fully occupied. This imbalance illustrates the contradictions of Beirut's housing market: an excess of empty high-end apartments built for investment right next to a persistent shortage of affordable housing for residents.



25 Residential vacancy and housing market in Beirut (2023). Source: Adapted from Beirut Urban Lab, Beirut Built Environment Database (BBED)

· Construction freeze and urban production

Another layer of contrast appears in the distribution of construction activity. Recent data indicate that after the 2019 financial collapse, most large-scale projects in central Beirut were either suspended or cancelled. On the other hand, smaller ongoing projects (continue in peripheral municipalities such as Bourj Hammoud, Chiyah, and Hadath. This shows a shift from speculative development to reactive and survival-based construction. Beirut's built environment thus mirrors the fragmentation of its economy: the formal real-estate sector has stalled, while local or informal construction persists on the margins.

· Services and access

The distribution of services also amplifies inequality. Post-blast assessments show that residents of Beirut's outer districts are twice as likely to live more than a ten-minute walk from a functioning school or health facility compared to those in the city center. This shows the unequal distribution of essential services across the city and highlights how geography responds to social inequality. Wealthier central areas are well-serviced, while peripheral neighborhoods face reduced access to education and healthcare. Public green space remains critically scarce and most open areas are privately controlled and restricted. For many residents in lower-income districts, the amount of accessible green space is under 0.5 m² per person.

· Infrastructure as division

Beirut's infrastructure is one of the city's most visible instruments for fragmentation. Rather than connecting neighborhoods, many of the city's major infrastructure like the highways and the port have reinforced separation between districts. The Charles Helou highway, for example, forms a hard boundary along the northern waterfront, cutting Karantina off from the city. It isolates one of Beirut's most vulnerable neighborhoods from access to public amenities. The port isolates the whole city from access to the sea. The Emile Lahoud and Ring highways, originally designed to improve mobility, now function as hard urban barriers that divide East and West Beirut. These instances result in networks that consolidate inequality.

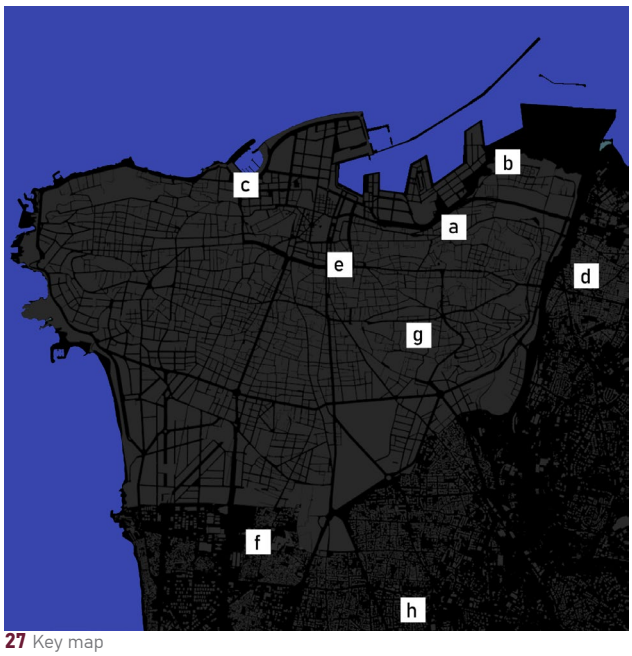
Taken together, these layers produce a city of proximity without integration. Luxury towers, abandoned construction sites, and dense informal blocks coexist within the same city but operate under different economic and infrastructural systems. Fragmentation in Beirut is a result of conflict and a structural feature of its post-war urban development.

Legend:

- Under construction
- Construction on hold
- Cancelled construction

26 Construction status in Beirut (1996–2023). Source: Adapted from Beirut Urban Lab, Beirut Built Environment Database (BBED)

01.3.5. Beirut's contrasts in picture



27 Key map

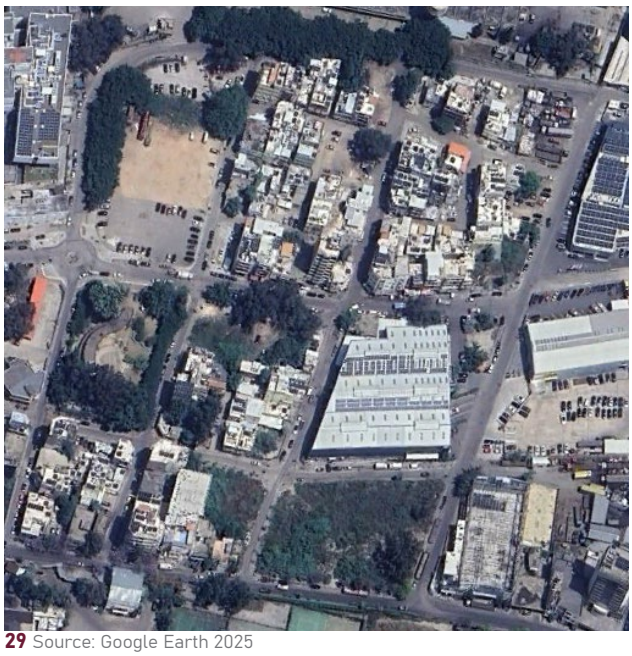
a. Mar Mikhael

Mar Mikhael is a mixed-use neighborhood located east of central Beirut along the old railway line. The area is characterized by narrow streets lined with mid-rise buildings containing ground-floor shops, workshops, and restaurants. Residential units occupy the upper floors, housing a mix of young professionals, artisans, and service workers. In the evening, bars and cafés create high pedestrian activity. The population density is moderate to high, with a combination of long-term residents and newer occupants working in nearby commercial and creative sectors.

28 Source: Google Earth 2025

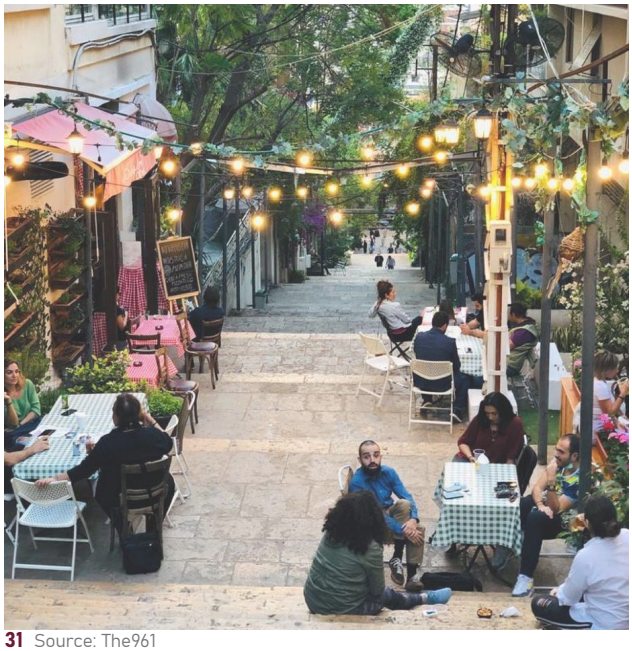
b. Karantina

Karantina is located between the Beirut River and the port area on the city's northeastern edge. It combines industrial and residential functions within a dense, irregular street layout. The neighborhood includes warehouses, factories, small workshops, and clusters of low-rise housing. Streets are narrow and often shared by trucks and pedestrians. Residents include local workers, migrant laborers, and small-scale business owners. The population is low to medium in density, with most daily activity concentrated around logistics, recycling, and other port-related industries.

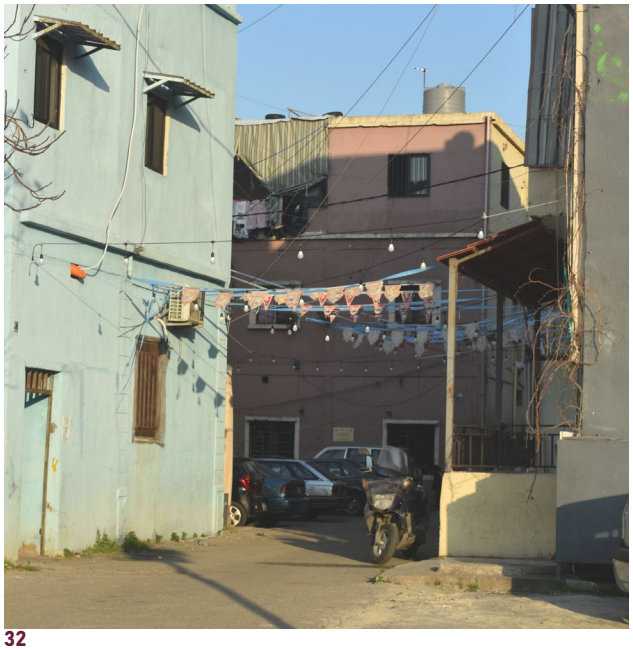


29 Source: Google Earth 2025

30 Source: Dezeen



31 Source: The961



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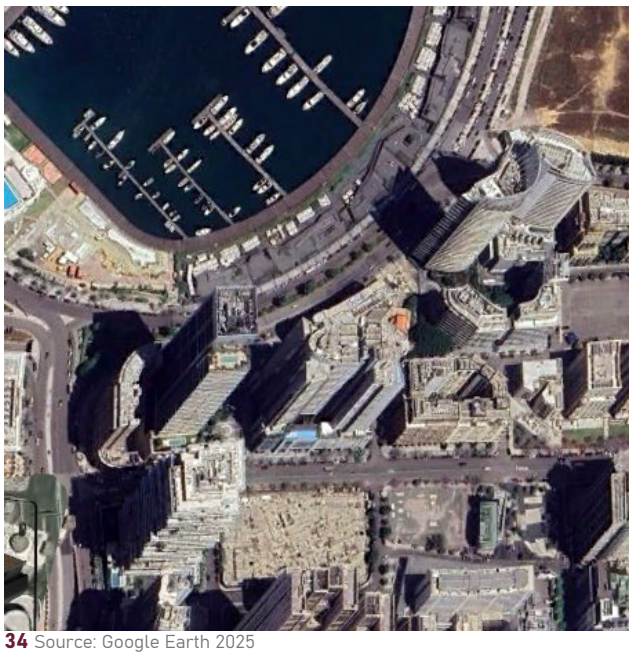
c. Zaitounay Bay

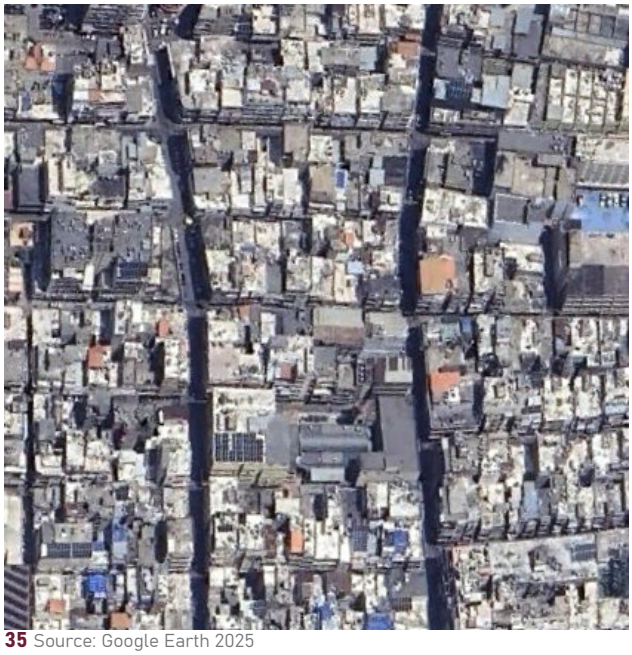
Zaitunay Bay is a waterfront development located at the western edge of central Beirut. The area consists of a marina, pedestrian promenade, restaurants, cafés, and mid- to high-rise residential and hotel buildings. It functions primarily as a leisure and tourism zone, attracting visitors from across the city and abroad. Streets are wide, paved, and well-maintained, and public activity is concentrated along the promenade and surrounding open spaces. The resident population is low, with the majority of users being transient visitors or employees.



34 Source: Google Earth 2025

d. Burj Hammoud

Bourj Hammoud is a high-density urban district located immediately east of Beirut's municipal boundary. It is organized on a grid of narrow streets lined with mixed-use mid-rise buildings. The ground floors accommodate small industries, workshops, and retail stores, while upper floors serve as apartments. The population density is very high, with continuous pedestrian movement and active street commerce throughout the day. The area's land use is compact and vertical, with limited open space and infrastructure serving a large number of residents and workers.

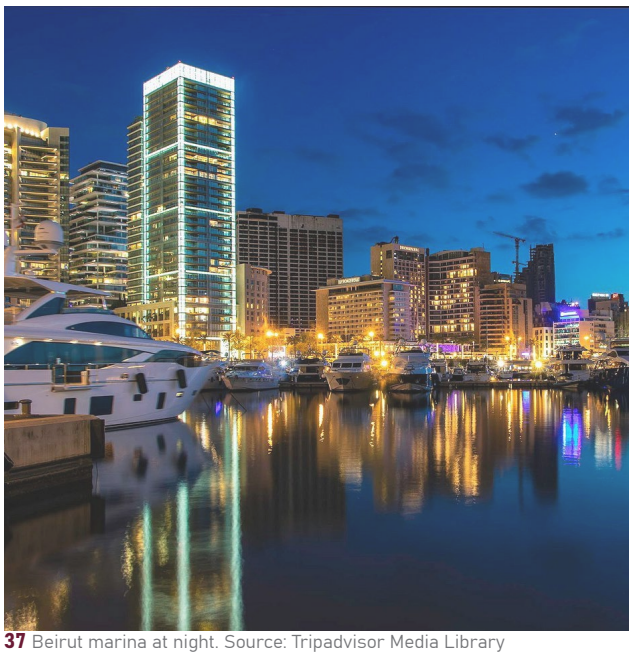


35 Source: Google Earth 2025

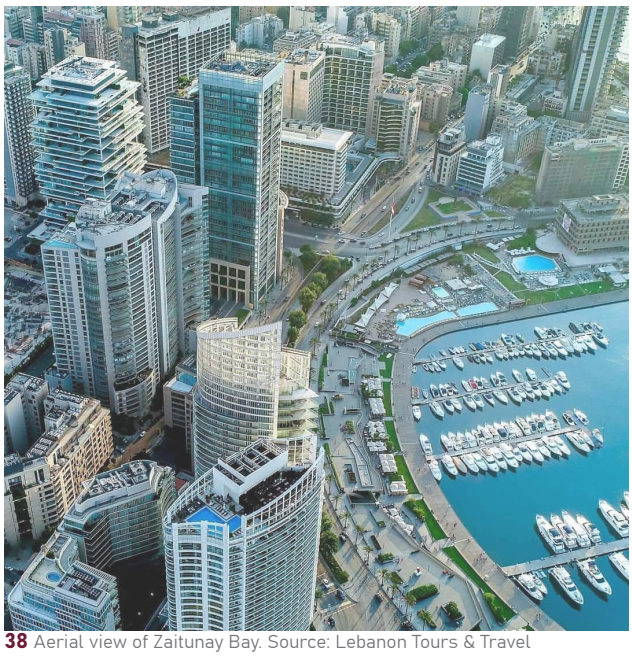
e. Saifi

Saifi is a central Beirut neighborhood situated between Downtown and Gemmayzeh. It is composed of low- to mid-rise residential and commercial buildings arranged on a regular street grid with tree-lined sidewalks and small public squares. The area includes art galleries, cafés, offices, and boutique apartments. Streets are relatively calm compared to surrounding districts, with controlled vehicular traffic and moderate pedestrian movement. The population density is medium, consisting mostly of professionals and small business operators working or residing in the central urban zone.

36 Source: Google Earth 2025



37 Beirut marina at night. Source: Tripadvisor Media Library

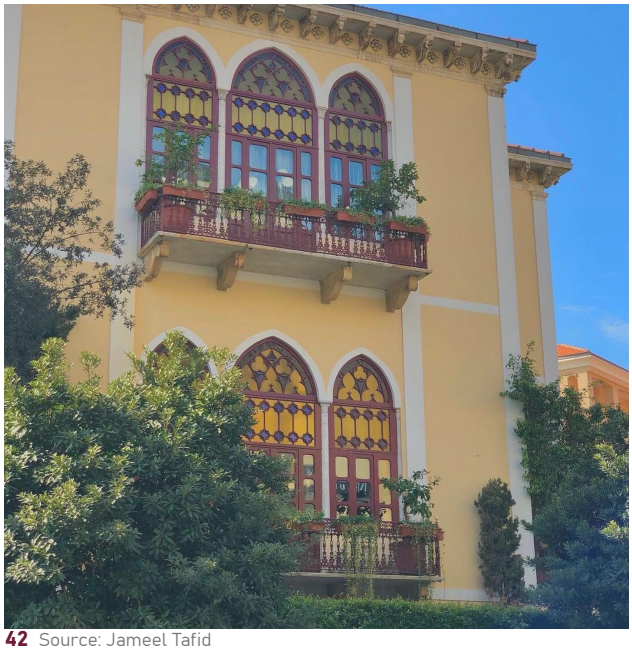


38 Aerial view of Zaitunay Bay. Source: Lebanon Tours & Travel

39 Source: Simon McNorton

40 Source: Lara El Hajj

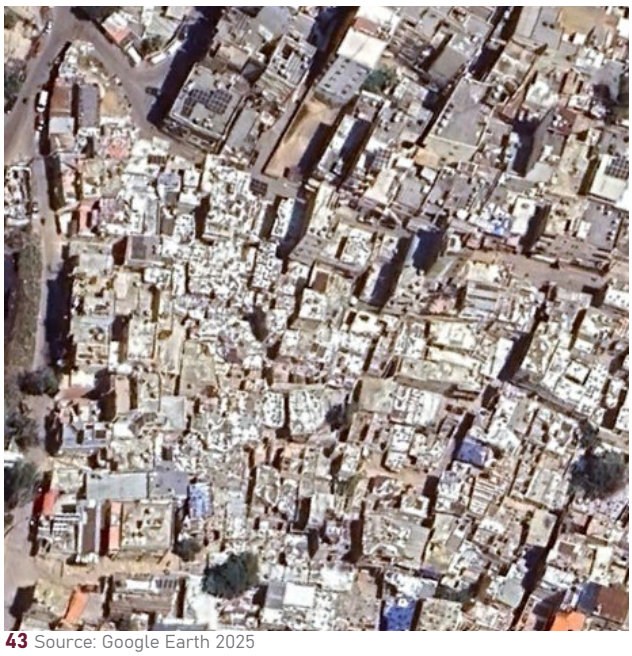
41 Source: Jack Harb



42 Source: Jameel Tafid

f. Shatila

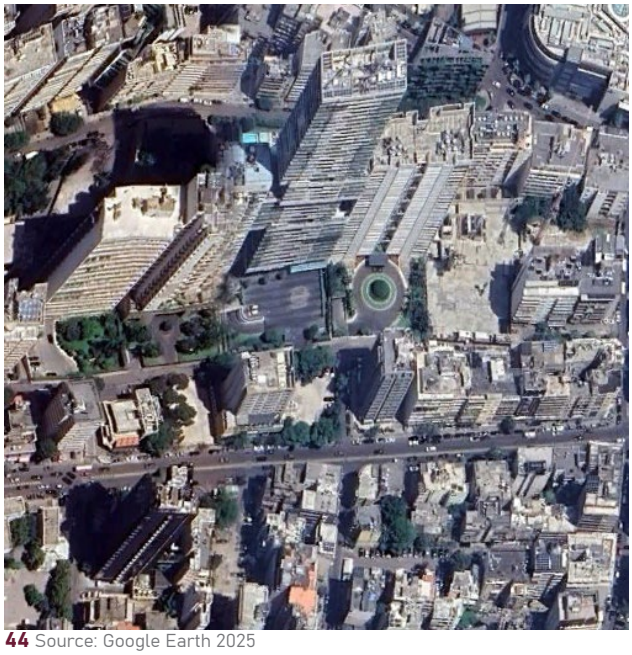
Shatila is a compact residential settlement located southwest of central Beirut. The neighborhood consists of tightly packed multi-story buildings separated by narrow internal passageways. The built fabric is continuous, with minimal open space and visible rooftop extensions. Ground floors are used for small retail, workshops, and domestic activities. The population density is very high, with residents including families, laborers, and refugees. Daily life is concentrated in shared alleys and small commercial nodes, creating constant movement throughout the area.



43 Source: Google Earth 2025

g. Achrafiyeh

Achrafieh is a large residential and commercial district situated on a hill east of Beirut's city center. The area features a combination of older low-rise buildings and newer mid- to high-rise apartment blocks. Streets are relatively wide, with a mixture of local retail, cafés, and professional offices at ground level. The population density is moderate, and the district accommodates a broad range of income levels, from middle-class families to upper-income residents. The built environment is orderly, with consistent building alignment and established infrastructure.



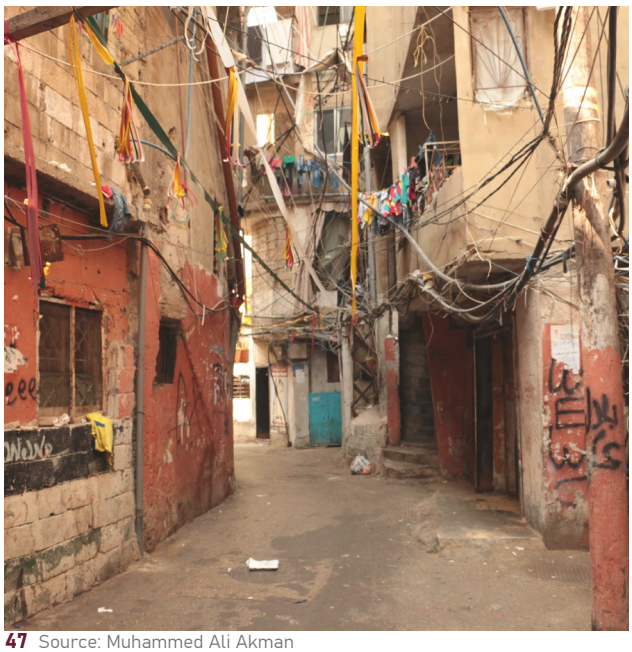
44 Source: Google Earth 2025

h. Dahieh

Dahieh occupies a broad urban zone south of the airport road, forming a dense and continuous extension of the city. The area consists mainly of mid- and high-rise residential blocks with small shops, schools, and community facilities distributed throughout. Streets are narrow and heavily used by both pedestrians and vehicles. The population density is very high, with large households and mixed residential and commercial occupancy. The neighborhood functions as a self-contained urban area, with active street-level commerce and strong internal connectivity.

45 Source: Google Earth 2025

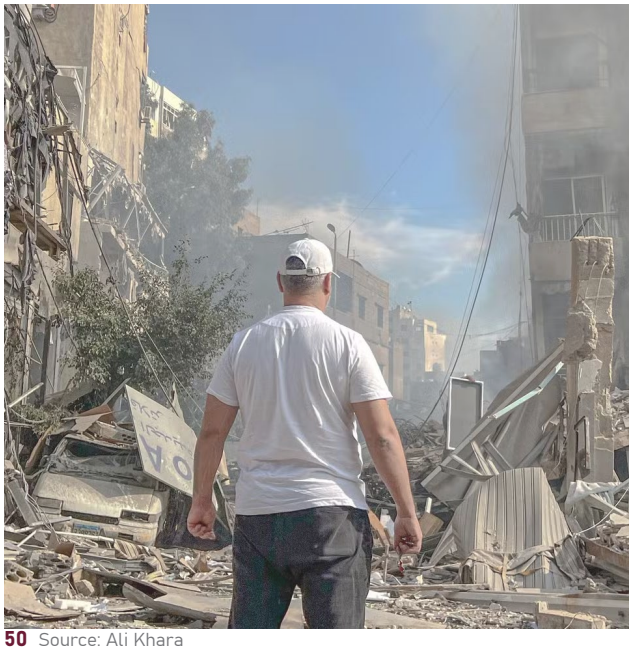
46 Source: The New York Times



47 Source: Muhammed Ali Akman

48 Source: A.R. Hourie

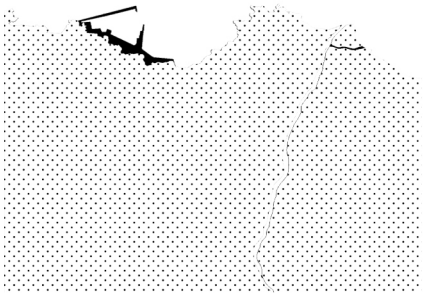
49 Source: Edeyrn87



50 Source: Ali Khara

51 Source: Joel Gunter

01.4. The Port: Infrastructure and rupture



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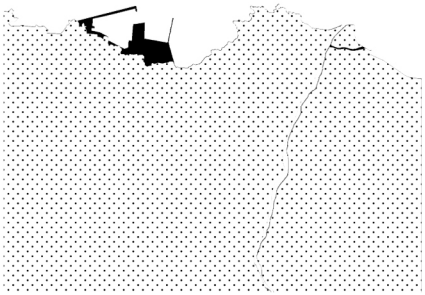

1935

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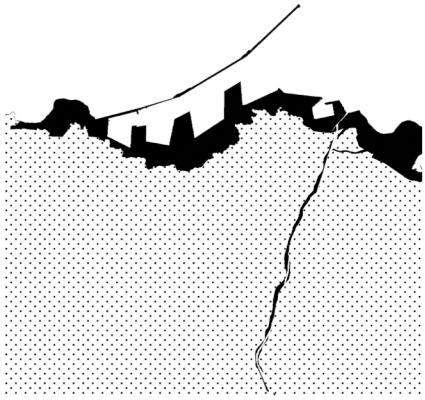

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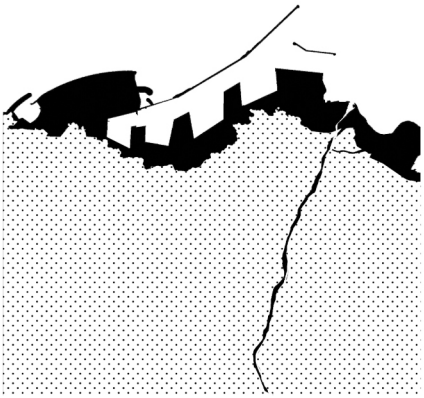


2005

2020

01.4.1 The historical evolution of Beirut's port

The history of Beirut's port consist of more than a century and a half of transformations that reshaped, not only the coastline, but also the structure of the capital. Its development followed the political and economic shifts that marked Lebanon's eras. During these periods, the port grew from a modest regional harbor into the country's primary logistical artery. However, this growth also produced a separation between the port and the surrounding city, setting the stage for the spatial ruptures that define it today.

1850–1920: Ottoman Beirut: From Natural Anchorage to Structured Harbor

Before 1850, Beirut was a roadstead; a sheltered stretch of water near the shore where ships can safely anchor, but without built harbor infrastructure like quays or docks. In the mid-nineteenth century, Beirut began transitioning from a traditional Mediterranean roadstead into a modern harbor capable of supporting the growing need for regional trade. The port's early development was driven by Beirut's rising importance as a commercial center linking Mount Lebanon's silk production to the expanding European markets. Ottoman authorities initiated the first systematic improvements, constructing breakwaters, deepening docking areas, and formalizing customs operations. These works were added on a small scale but were fundamental in establishing Beirut as a reliable maritime trade node. The port's spatial footprint began near the city center and later started extending to the east toward Karantina, an area used for quarantine facilities, livestock markets, and early storage structures. By the end of the Ottoman period, Beirut had transitioned from a natural roadstead to an emerging infrastructural harbor integrated into the economic networks of the Eastern Mediterranean.

52 Dock and port of Beirut in 1867. Source: Maison Bonfils.

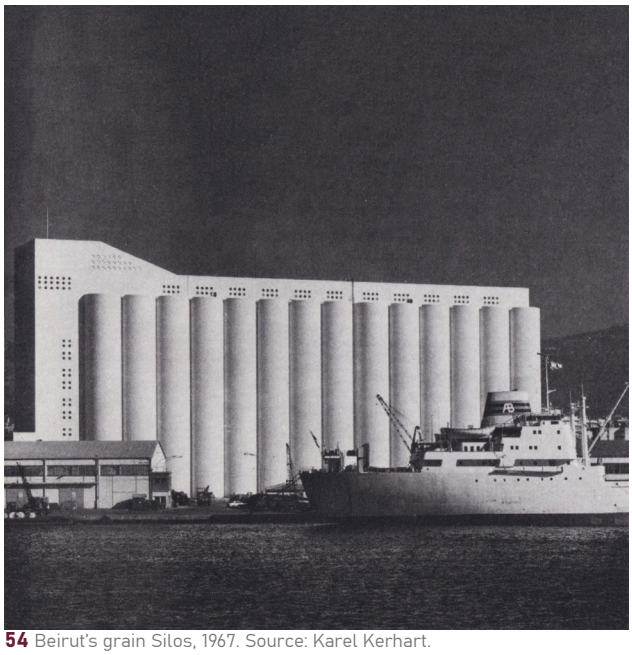
53 Railway cart unloading goods at the dock in 1910. Source: Levantine Heritage Foundation.

1920–1943: French mandate modernization

Under the French Mandate, the port experienced its first major technological and spatial development. Mandate engineers implemented modern harbor features that significantly expanded capacity and improved the efficiency of the port. The changes included the extension of the main breakwater, the addition of deep-water quays, and the creation better circulation systems for goods and labor. The port was linked to cities through road and rail connections, which reinforced Beirut's growing presence as a principal gateway for Syrian, Lebanese, and Mediterranean trade. The Mandate period also established more specialized port functions like warehousing, customs logistics, and passenger services, that required additional land reclamation and structured waterfront planning. By the beginning of 1940s, the port had been transformed into a fully engineered and functioning maritime gateway capable of supporting larger commercial flows and promoting Beirut's role within regional economic networks.

1943–1975: Post-Independence expansion

After independence in 1943, port activity expanded in response to Lebanon's position as a regional financial and service hub. The state invested in new quays, storage facilities, and cargo-handling equipment to support the new and increasing imports. The most significant infrastructure addition of this era was the construction of the grain silos in the 1960s. It is a reinforced concrete structure that provided national grain storage and became one of the port's most recognizable landmarks. During these years, the port became the backbone of Lebanon's consumer-oriented economy, with the majority of goods entering through its facilities. This period also marked the beginnings of more intense industrial and logistical activity around Karantina and Medawar, where manufacturing, food processing, and warehousing clustered in direct relation to the port. By the mid-1970s, Beirut's port had become both the primary entry point for national imports and a major spatial landmark that affected the surrounding districts functionally.



54 Beirut's grain Silos, 1967. Source: Karel Kerhart.

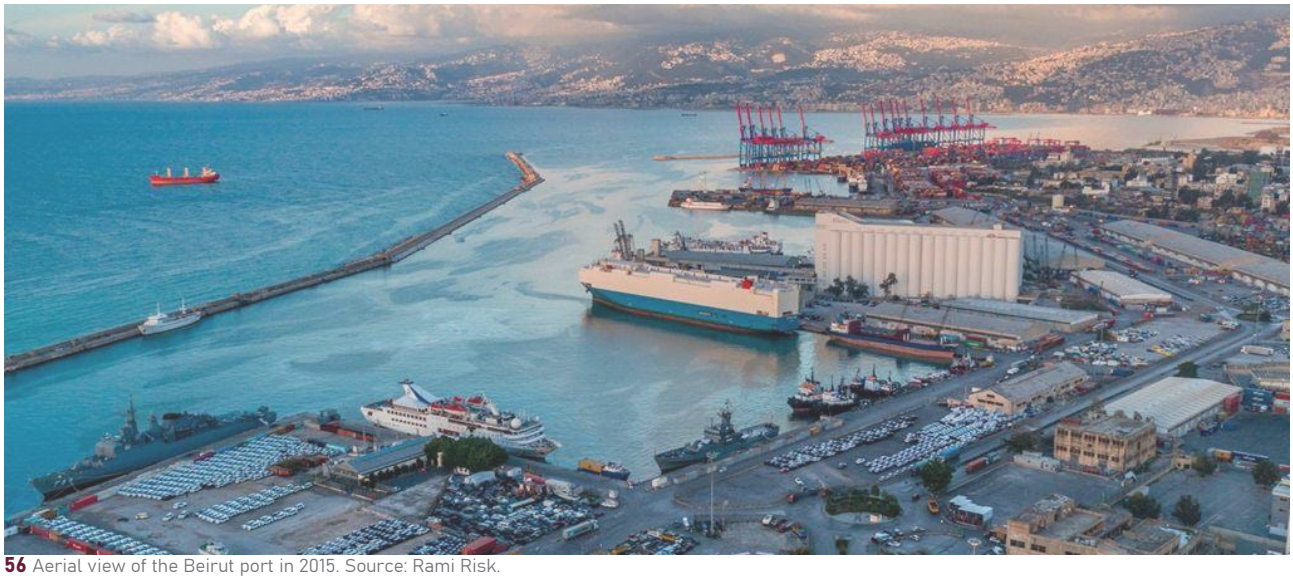
1975–1990: Civil War, damage, and strategic Control

During the civil war in 1975, the port was at the center of a frontline. Its position aligned directly with the Green Line that split East and West Beirut, so the port became a site of conflict, occupation, and shifting control. Trade operations continued in an unstable way and the port suffered from extensive damage to equipment, warehouses, and transport connections. Surrounding neighborhoods including Karantina, Medawar, and the edges of Mar Mikhael, were militarized, depopulated, and destroyed, further depriving the port from its services. The war years also led to weakened public institutions unable to maintain normal regulation or safety oversight of the port. By the end of the conflict, Beirut's port was physically damaged, administratively fragmented, and embedded in a landscape of rupture.

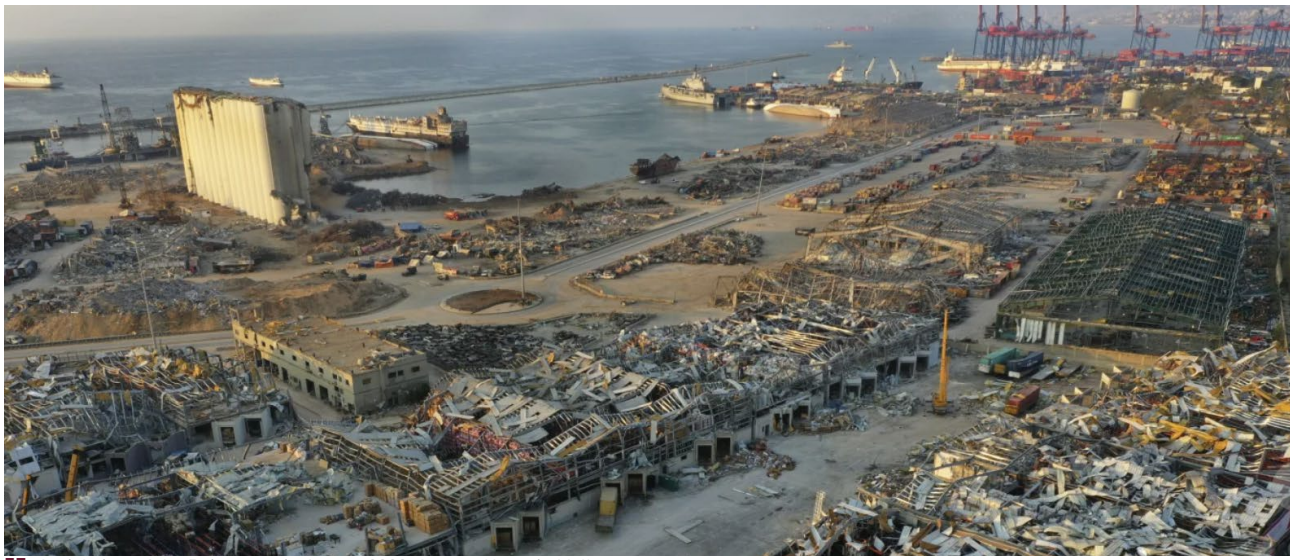
1990–2020: Post-War rehabilitation and increasing rupture

Following the end of the civil war, the port saw a gradual process of rehabilitation and modernization in order to restore its national economic role. Damaged infrastructure was replaced, new docks were constructed, and container-handling operations were expanded significantly in the early 2000s to accommodate global shipping demands. At that time, the port handled the majority of Lebanon's imports , which was overwhelming. It also served as a critical logistics hub for the national economy. Despite these improvements, the post-war period also deepened the port's physical and institutional isolation from the city. The construction of security walls, restricted zones, and expanded logistical areas created a continuous barrier along the waterfront, completely separating Beirut from its coastline. Governance was divided between several agencies, and serious issues of oversight, safety, and coordination were increasing. By 2020, the port was a highly productive economic engine and a symbol of increasing institutional neglect at the same time. Those conditions would be violently exposed by the catastrophic explosion of August 4, 2020.

55 Aerial view of the Beirut port in 1943. Source: Aga Khan Documentation Center MIT



56 Aerial view of the Beirut port in 2015. Source: Rami Risk.



57 Aerial view of the Beirut port in August 2020. Source: Hussein Malla.

01.4.2 Economic functions, spatial influence, and recovery of Beirut Port

Since its construction, the Port of Beirut has functioned as one of Lebanon's most important infrastructural assets, supporting the country's trade, logistics, and industrial activity. The port is the main entry point for national imports, and it handles a large share of the goods that supply households, businesses, and manufacturing sectors. Its position on the eastern Mediterranean and its direct access to major road corridors have made it the logistical backbone of the Lebanese economy.

The Chamber of Commerce, Industry, and Agriculture of Beirut and Mount Lebanon conducted a c foreign trade report showing that the Port of Beirut handled approximately 64% of Lebanon's total imports by volume in 2011 and around 62% in 2020, confirming its dominant role in the national supply chain. More recent figures indicate that by mid-2025 the port was processing over 3.06 million tonnes of goods and more than 405,000 standard 20-foot shipping containers in just six months, marking a notable increase compared to the previous year.

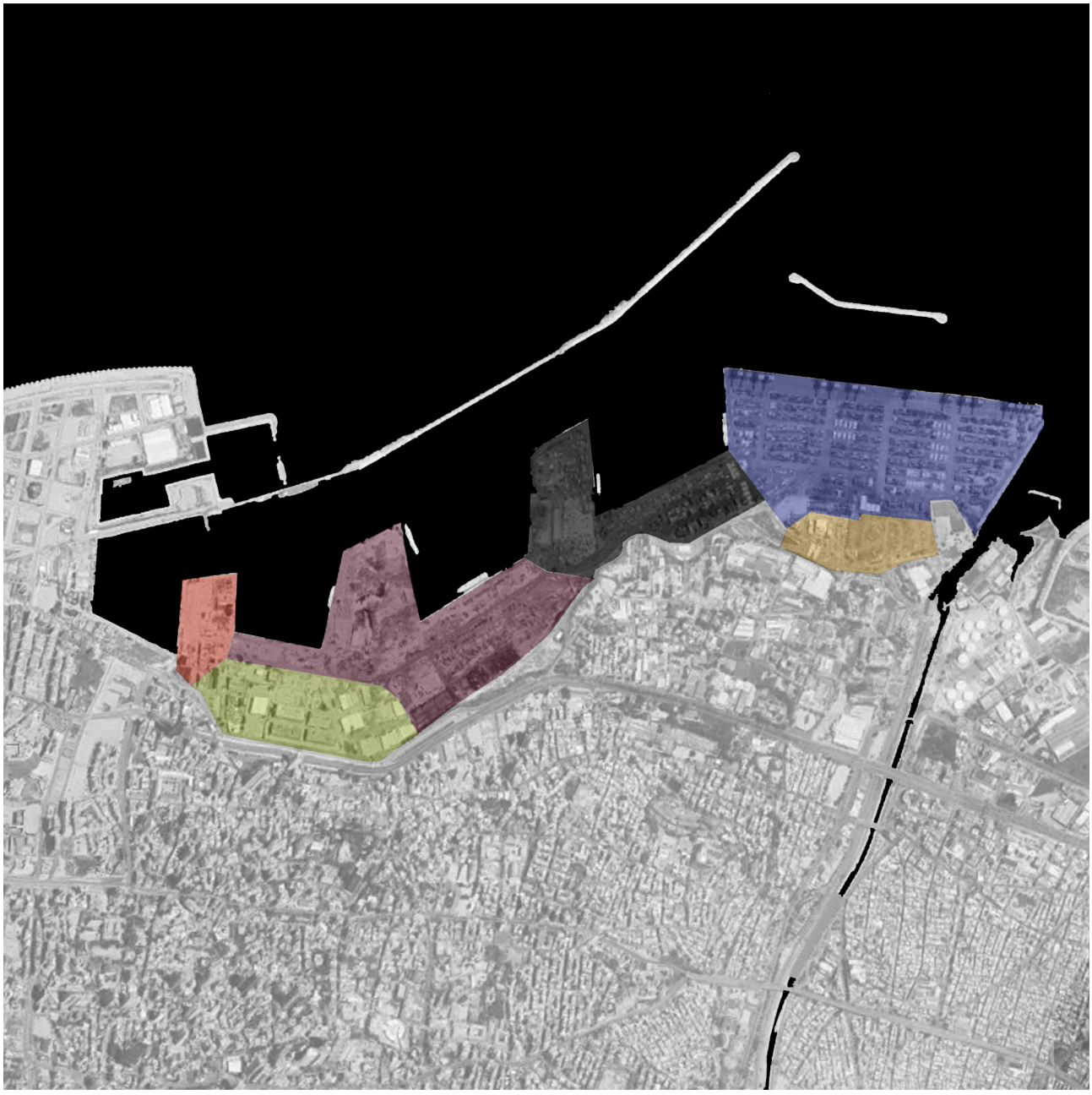
Thousands of workers, dockworkers, handlers, truck drivers, customs agents, inspectors and shipping agents depend on its daily operation. This demonstrates its role not only as an economic engine but as a central node in Beirut's employment.

Spatially, the port acts as a structural axis that organizes Beirut's eastern waterfront. Major road networks, industrial clusters, and commercial zones radiate from it. It has shaped the development and land-use patterns of Karantina, Medawar, and parts of Mar Mikhael. The Charles Helou corridor and Emile Lahoud highway were designed around port access, delivering goods into the urban center and toward regional transport routes. In this sense, the port functions not only as an economic facility but also as a spatial backbone of the city, shaping its surroundings regardless of whether its impacts are positive or negative.

- Port zones and functions

The internal organization of the port is composed of several functional zones that support its logistical and operational needs. The container terminal occupies the northern part of the port and serves as its most mechanized and internationally connected section, equipped with cranes, container yards, and dedicated inspection areas. To the east and south are the general cargo zones, where bulk materials, machinery, textiles, food products, and other goods are unloaded. Adjacent to these areas are storage warehouses, cold rooms, and free-zone spaces that facilitate processing, packaging, and distribution.

The grain silos, prior to their partial destruction in 2020, served as a major node for national food security and were directly linked to milling and distribution networks. Other sections of the port include the roll-on/roll-off (RoRo) area for vehicles, the passenger terminal, and administrative buildings used by customs and port authorities. This functional diversity allowed the port to accommodate a wide range of cargo types and support the continuous flows of merchandise into Lebanon. The arrangement of these zones also reflects the layered nature of the port: a highly secured core dedicated to logistics and commerce, surrounded by urban neighborhoods whose economies and land uses historically depended on proximity to the port.



58 Map of port functions before the blast. Source: Adapted from The Beirut Urban Lab

· Governance and management of the Port

The Port of Beirut has long been managed through a fragmented system. Rather than operating under a single unified authority, responsibility is divided among several public institutions whose duties intersect. The Ministry of Public Works and Transport sets general policy and oversees the port's regulatory framework. The Customs Administration manages inspections, tariff collection, and the circulation of goods, making it one of the port's most influential actors. Before 2022, daily operations, maintenance, and revenue management were handled by the Temporary Committee for the Management and Investment of the Port of Beirut, a body established after the civil war and renewed in the absence of a permanent port authority.

This layered arrangement allowed the port to function, but it also produced coordination gaps, limited long-term planning, and slowed modernization efforts. The 2020 explosion exposed these structural weaknesses, revealing significant deficiencies in oversight, safety regulation, and institutional accountability. In the years following the blast, the government initiated partial administrative reforms.

A major shift occurred in 2022 with the arrival of the French shipping and logistics group CMA CGM, which won a 10-year concession to operate and rehabilitate the container terminal through its CMA CGM Terminals. While Lebanese authorities retain regulatory and customs control, CMA CGM is now responsible for running the terminal, upgrading equipment, improving digital systems, and increasing operational efficiency. This shift added a new governance model. A global private operator manages one of the port's most strategic sections, while the state continues to supervise policy, security, and revenue flows.

· Operational breakdown and gradual recovery

The explosion of August 4, 2020 caused the most severe disruption in the port's history. Large sections of the container terminal, the general cargo area, warehouses, administrative buildings, and support infrastructure were destroyed. The grain silos and the surrounding districts suffered extensive devastation. In the immediate aftermath, port operations were paralyzed. Only emergency cargo could be handled, and logistical flows were redirected.

At the same time, the question of what to do with the destroyed port became a national debate: should it be rebuilt, relocated, or reimagined as part of a new urban vision for Beirut's waterfront?

Despite these conditions, the port gradually resumed activity over the following months. Damaged areas were cleared, temporary offices were set up to replace destroyed administrative buildings, and functional cranes were returned to service. Shipping companies reorganized routing schedules, and improvised storage areas were created to maintain supply chains for essential goods. By late 2021, cargo had recovered to its pre-blast capacity.

Since the introduction of CMA CGM's management of the container terminal, operational performance has improved further. Investments in digital tracking and new loading equipment have contributed to faster handling times and increased container volumes. Although the port still operates without a comprehensive reconstruction plan, its core functions have stabilized, and it remains the country's primary entry point for goods.

59 Partially-collapsed Beirut grain silos, damaged in the August 2020 port blast. Sources: REUTERS/Mohamed Azakir.

60 Container vessels operated by CMA CGM docked at the Port of Beirut's. Source: CMA CGM Group .

01.4.3 The Port as a barrier

While the Port of Beirut has always served as a logistical and economic backbone, it has acted simultaneously as one of the city's most persistent and opaque urban barriers. It is a vast, fenced, and inaccessible land occupying around 3.2 kilometers of the waterfront in additions to landfill. Its physical footprint breaks the continuity of the urban environment and restricts public access to the sea. This spatial separation is reinforced by heavy infrastructure such as the Charles Helou highway, security zones, and high-perimeter walls, which creates a rigid boundary between the port and the neighborhoods around it. It not only separates the city from the sea physically, but also visually especially from non elevated areas like Karantina and lower Mar Mikhael.

The port's enclosure has also reinforced uneven development patterns within the city. The port's logistics generate intense flows of goods, capital, and traffic, however, these benefits don't extend into the surrounding districts. Instead, these neighborhoods experience the consequences of the port: noise, congestion, pollution, limited public space and separation from the port. The waterfront, which in many port cities serves as a civic asset or mixed-use interface, is completely inaccessible to Beirut residents, functioning exclusively as an operational zone reserved for cargo, storage, and logistics. This condition provides limited opportunities for urban continuity. In sum, the port has contributed to the long-term fragmentation of Beirut's eastern districts.

The 2020 port explosion amplified these structural divides. The blast destroyed large area of the city. Reconstruction efforts in nearby neighborhoods were uneven, with many residents and small businesses facing prolonged displacement.

Since the explosion, the Port of Beirut represents not only a physical rupture in the city but also a profound emotional barrier for many of its residents. For communities in Beirut, especially those who were directly affected by the blast, the port has become a constant reminder of the violence and neglect that shattered their lives. The damaged silos, now standing like a monumental memorial, fenced perimeters, and exposed ruins reinforce a sense of distance, and unresolved grief. Reconnecting Beirut to its waterfront therefore requires more than infrastructural redesign. It demands a process of emotional and collective healing.

In the years since the explosion, the port's spatial boundaries have not changed. Fences, restricted zones, and security-controlled access were rebuilt, and the large operational footprint still separates the city from its coastline. Temporary logistic areas created after the blast occupy large tracts of land, further limiting public access. Meanwhile, the surrounding districts still deal with the consequences of disrupted mobility, heavy truck presence, damaged infrastructure, and the absence of coordinated planning between the port and the city.

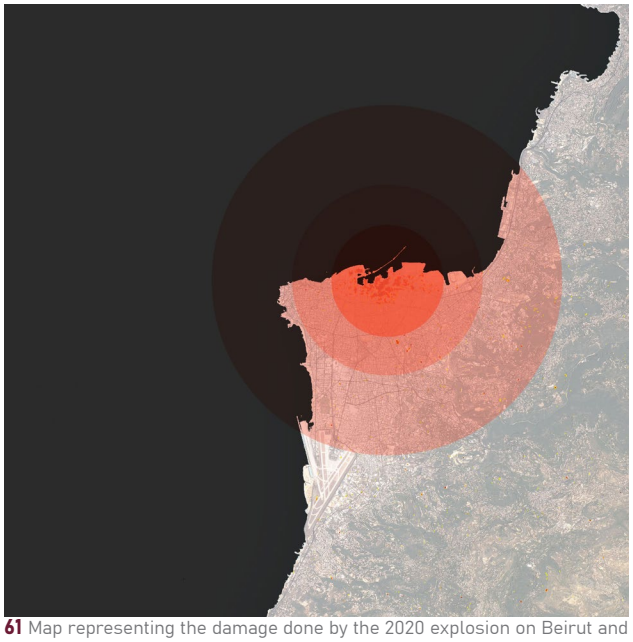
Today, the Port of Beirut is indispensable and isolating. It is a core infrastructural asset whose daily operations sustain the national economy, yet its physical presence fractures the urban environment. Its role as a barrier is not only spatial and visual but also institutional. Fragmented governance, absence of transparency, and the lack of a shared vision between port authorities and municipal actors prevent eventual and impactful integration or transformation.

Beirut already faces economic, social, and environmental pressures every day, so the challenge is reconciling the port's operational needs with the city's need for connectivity, safety, and access. The port's future depends on overcoming this long-standing rupture and redefining its relationship with the city it both sustains and separates. Any future vision for the port must address its psychological weight, transforming a site of rupture into a space that can be approached, understood, and eventually reintegrated into the city's lived memory.

01.4.4 Visions for the future of the Port

Today, the fragmented state of Beirut's Port opens an unprecedented opportunity to rethink its future role, spatial footprint, and relationship with the city. Several visions were proposed, ranging from large-scale renewal within the existing site to the partial or full relocation of port functions to alternative coastal locations.

One of the proposals was presented by the World Bank. It calls for redefining Beirut's port in the context of a national port-sector strategy. Under this scenario the port retains its core container and high-value cargo functions but reduces its surface area significantly. The freed-up land would be redeveloped into mixed-use public waterfront, innovation zones, ecological open space and light manufacturing, reconnecting the city to its coastline. Some operations and low-value cargo would be diverted to secondary ports, such as Tripoli Port and Sidon Port, to alleviate industrial burdens on the metropolitan area. The study states that only about 50 % of the current footprint is needed to meet future trade volumes.



61 Map representing the damage done by the 2020 explosion on Beirut and its surroundings. Source: Adapted from NASA Earth Observatory

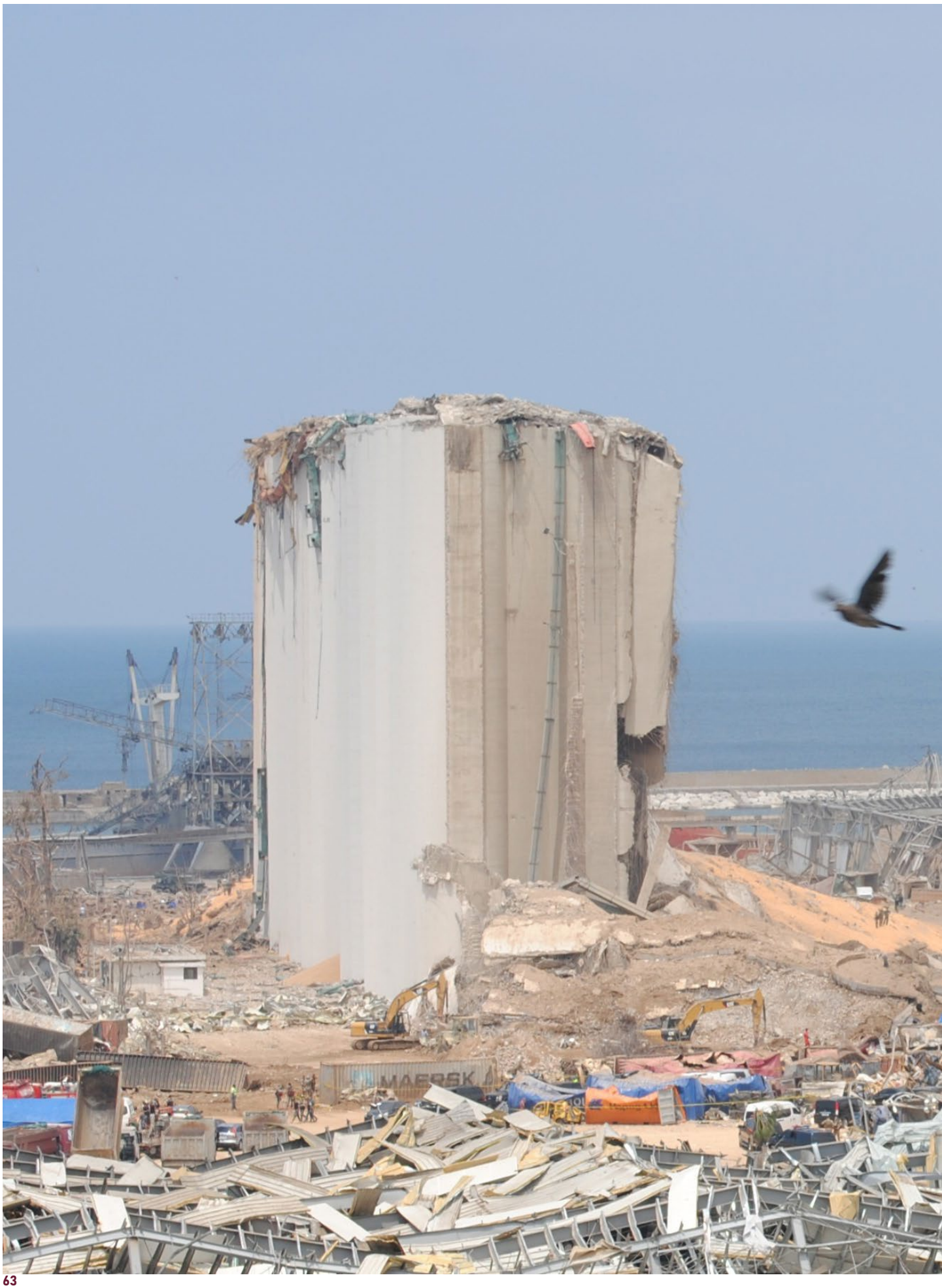
Another vision, by the French government through engineering firms Egis and Artelia, focuses on the modernization of the existing port area. Instead of relocating major functions, this plan proposes rebuilding damaged quays, installing photovoltaic panels, reorganizing traffic flows and creating new grain-silo infrastructure. The plan wants to maintain continuity, leverage the existing logistics networks, and avoid the long disruption of relocation. However, it preserves the port's current perimeter, meaning the spatial barrier between city and sea will not be solved or even addressed.

What is certain is that the future of the port is not about rebuilding infrastructure. It is about rethinking the port-city relationship in a city that is in dire need of connectivity, resilience and healing. The next few year will determine whether Beirut's waterfront remains cut off or becomes re-connected, and whether the port continues as a sealed and inaccessible infrastructure or transforms into a mixed-use urban edge.

“The city shattered”: An urban landscape reshaped by catastrophe

August 2020


DON'T
LET


MAERSK


K S L


I HEAR, I FORGET
I SEE, I REMEMBER
I DO, I UNDERSTAND
Tell me & I forget,
Teach me & I remember,
Involve me & I learn!
WE DO NOTE HOPE...
WE DO NOT WISH...
WE DECIDE!

65

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FL
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70

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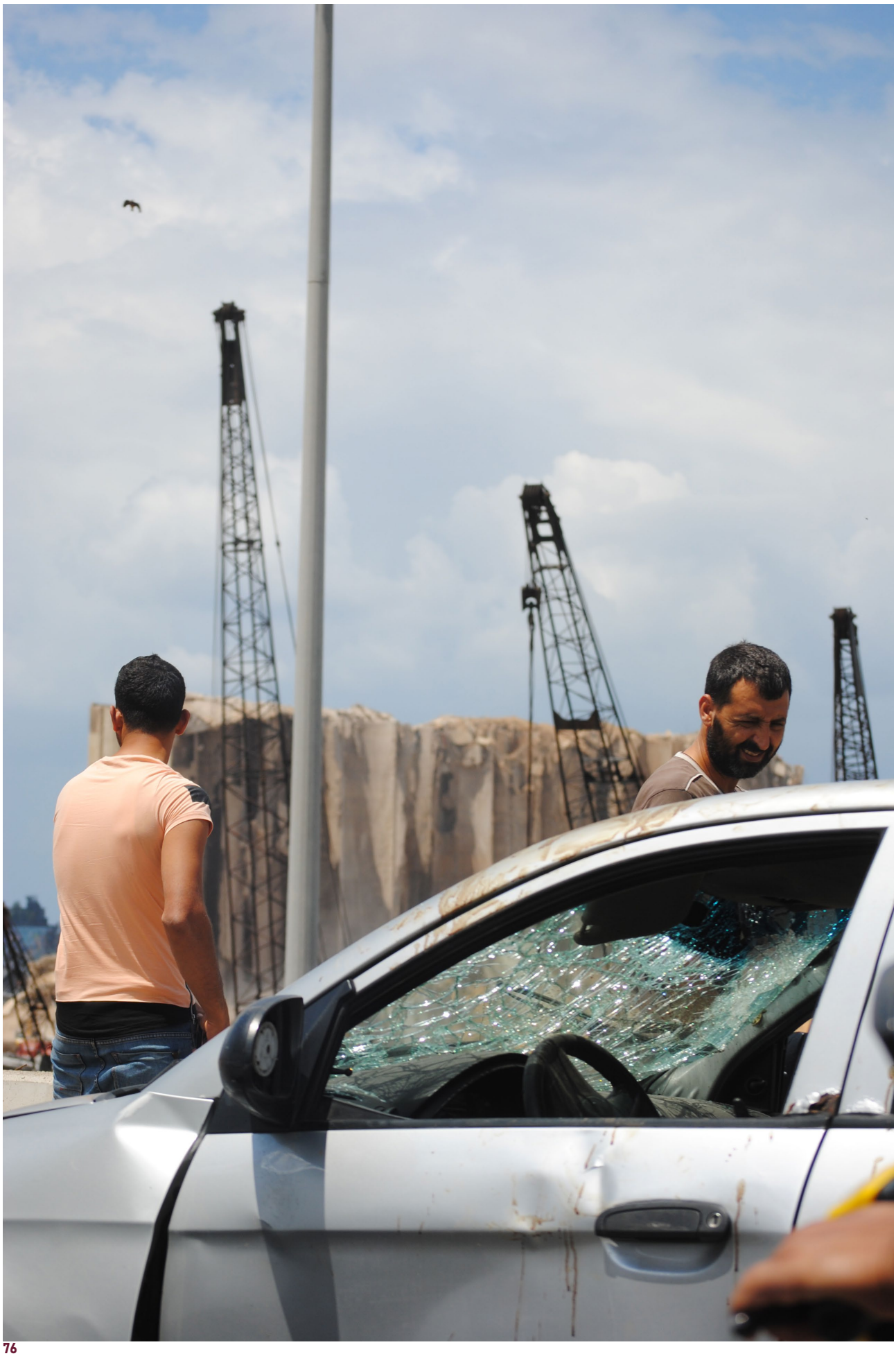


02. Karantina mapping survey

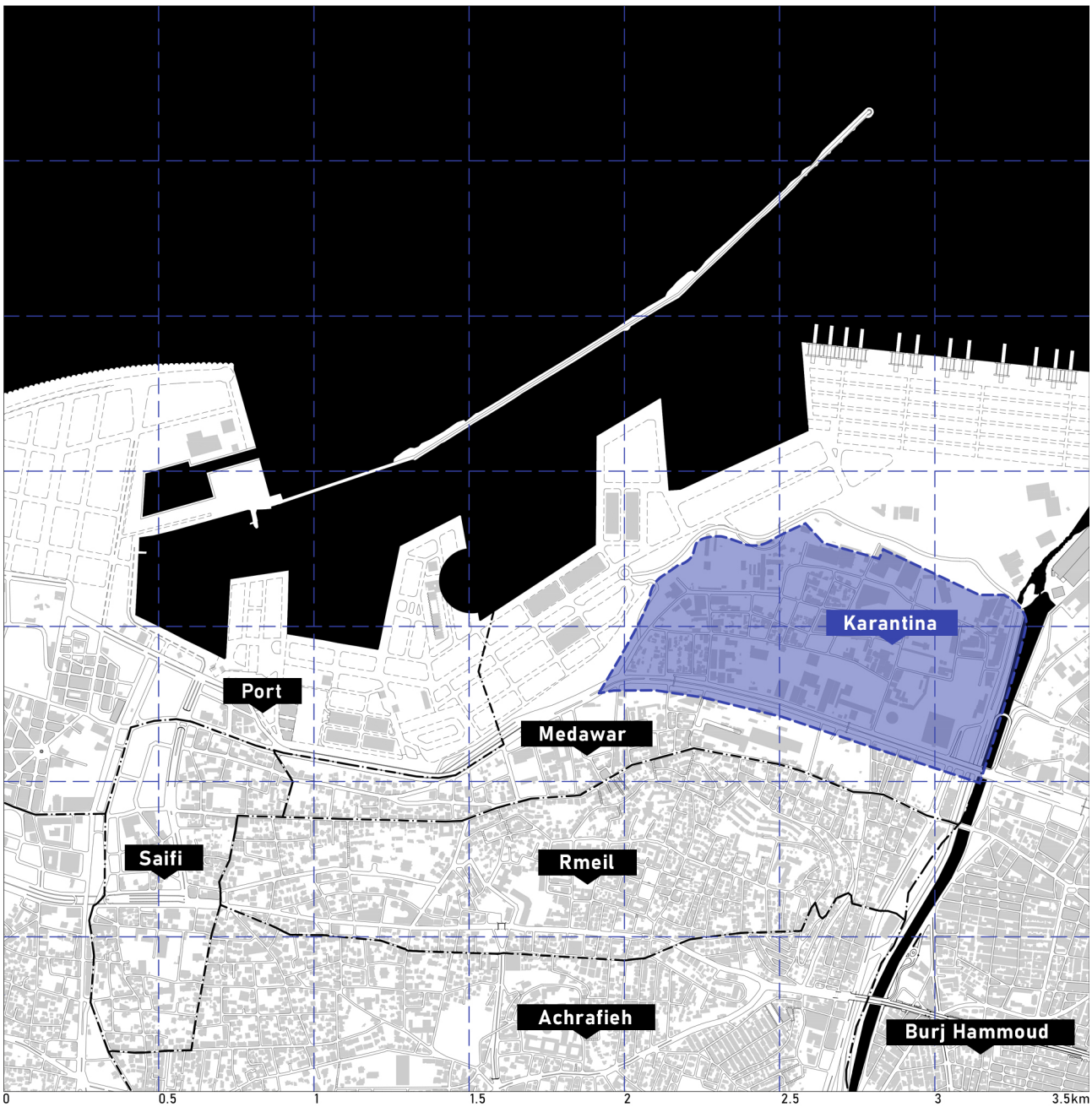
02.1. The district

02.1.1. Administrative and spatial structure

- District divisions

This map shows Karantina inside the larger structure of Beirut and its place within the Medawar district. It also shows its neighboring districts: Saifi, Rmeil, Achrafieh, and Burj Hammoud, and its relationship to the Port of Beirut.

This position gives Karantina an important strategic value. It stands at a key junction between the port, the river, and major districts, which means it has strong potential for future urban regeneration. This map therefore illustrates both sides of Karantina's reality: a central location in Beirut's geography, but a disconnected and marginalized part of its urban structure.



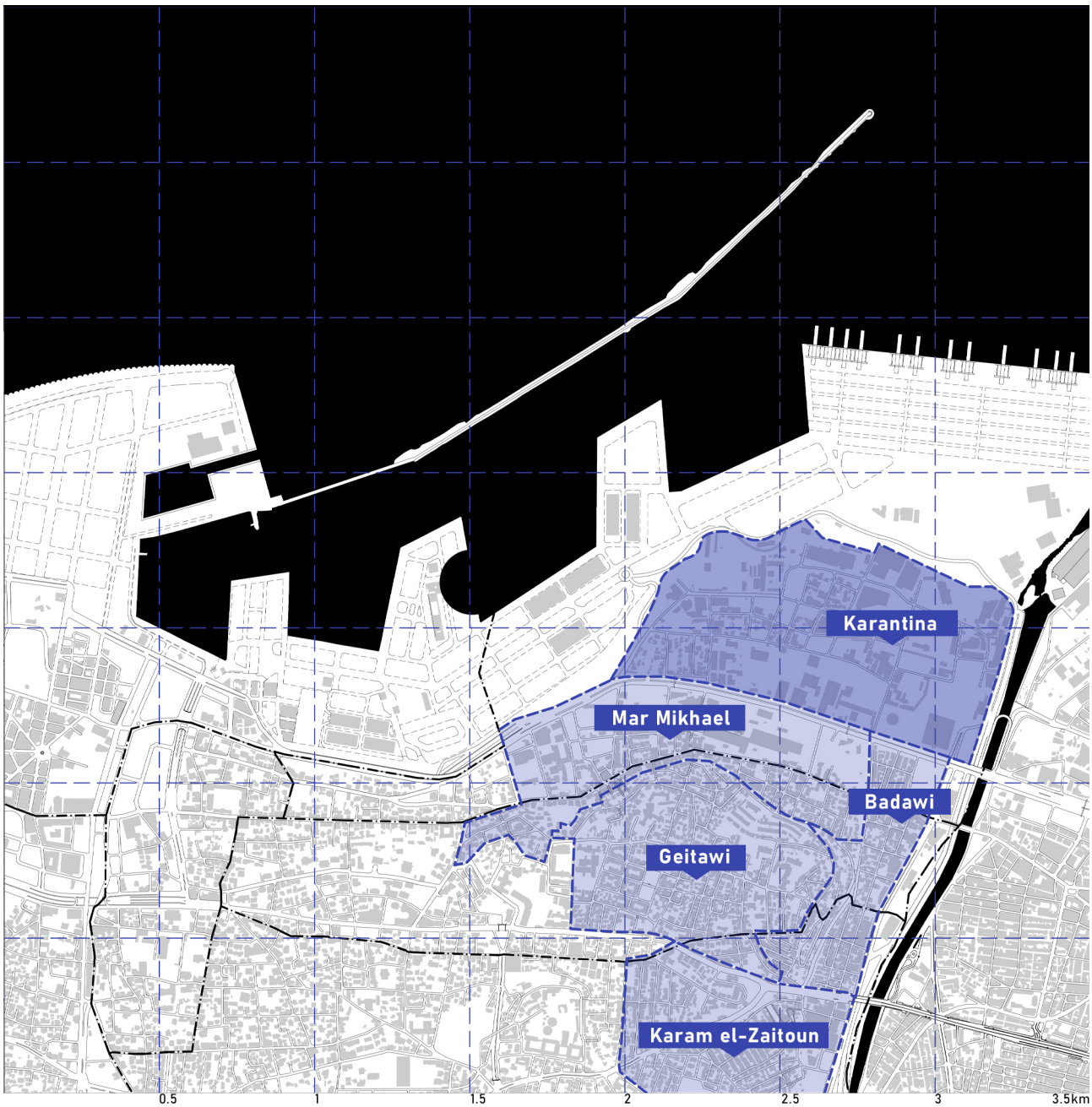
Legend:

- District borders
- District name
- Neighborhood name
- Karantina limit

78

- Neighborhood limits

This map shows the smaller neighborhoods that surround Karantina; Mar Mikhael, Badawi, Geitawi, and Karam el-Zaitoun. These areas together form Beirut's northeastern belt, where the city meets the port.
Each neighborhood has a different form, character, and community and economic status. **Karantina** is very industrial, with large plots, storage areas, and small residential clusters. It was heavily damaged by the port explosion and is still a fragile environment.
Mar Mikhael is a mixed-use area that combines workshops, small industries, concept stores, creative spaces, and cafes. It acts as a transition between Karantina and the denser urban fabric of Achrafieh.
Badawi and **Geitawi** are mostly residential, with compact buildings and health facilities. They host a mix of long-term residents and working-class communities.
Karam el-Zaitoun, located higher on the slope, is mainly residential and connects to the upper part of Achrafieh.
Although these neighborhoods are next to each other, they are divided by sharp physical and social boundaries. The highway interrupts the natural flow between them. Together, these neighborhoods reflect the contrast and complexity of Beirut: dense and historic on one side, industrial and infrastructural on the other.



Legend:

District borders
Neighborhood name
Karantina limit

79

- Road networks

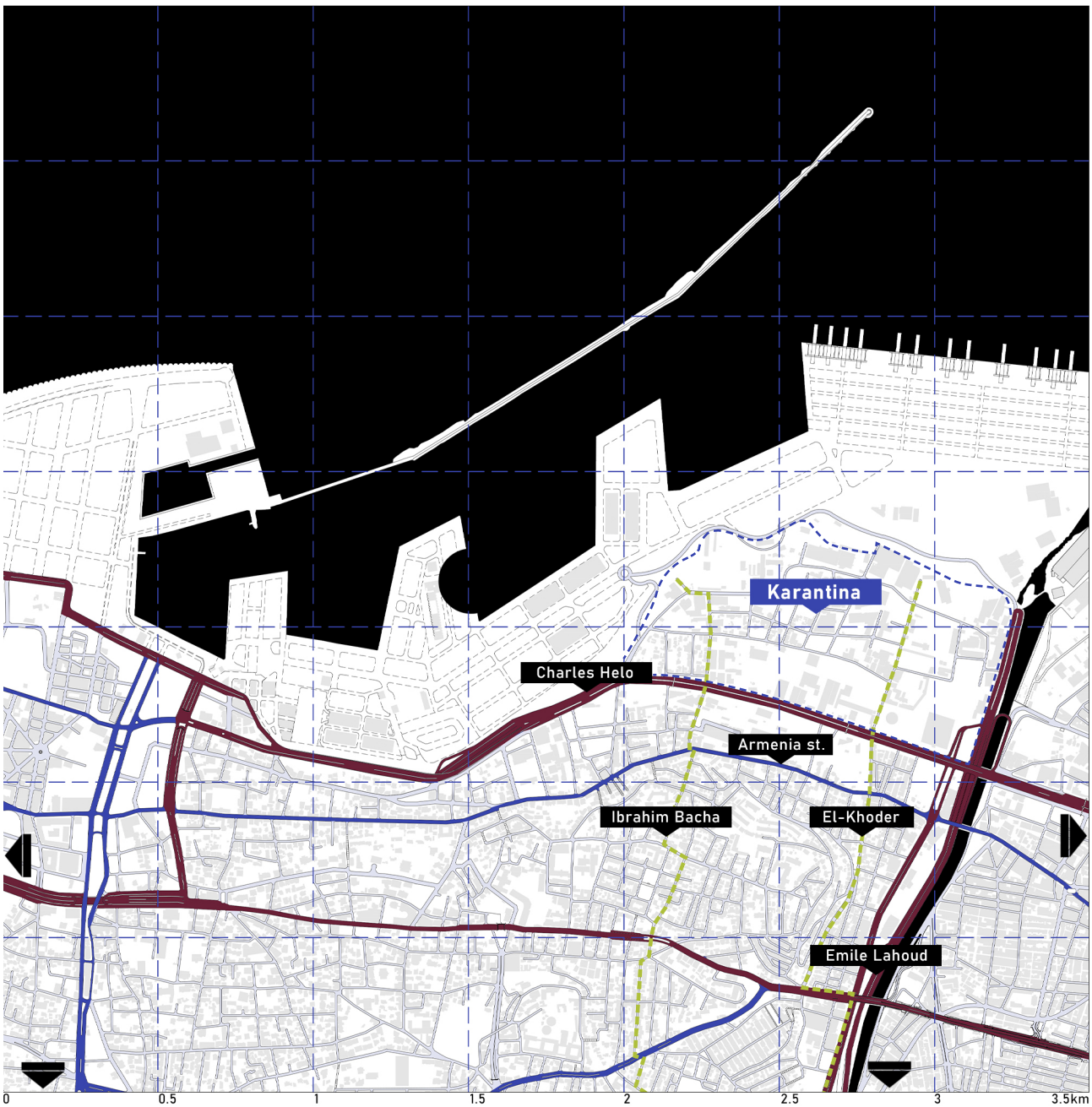
This map illustrates the main road network around Karantina and shows the hierarchy of movement in the area. Primary routes carry fast regional traffic along the coast, while secondary roads connect the neighborhood to adjacent districts, and smaller internal streets provide local access within the area. This current system shows how circulation is structured around large-scale infrastructure and not local mobility.

The Charles Helou Highway, built in the middle of the 20th century as part of Beirut's modernization and growing infrastructural needs, became the dominant east–west corridor linking the port to the northern suburbs. While it improved vehicular flow across the city, it also created a strong physical barrier between Karantina and the neighborhoods that lead to the rupture of the north-south connection.

Before the highway was built, Ibrahim Bacha Street and El-Khoder Street served as the main local routes connecting Karantina to the central parts of Beirut, like Achrafiyeh, Sodeco and Chiyah. In the past these streets were part of a continuous urban grid that linked the industrial waterfront to surrounding residential areas. The construction of the highway and later port expansion disrupted these connections.

80


81



Legend:

- Ibrahin Bacha / El-Khoder Street
- Primary roads
- Secondary roads
- Internal roads
- Direction to major cities

82

- Access to Karantina

This map analyzes the main points of entry to Karantina and illustrates how the existing road infrastructure shapes vehicular access. Several key surrounding locations were selected to represent the current movement conditions at different edges of the neighborhood. These routes demonstrate how major infrastructural barriers affect local travel behavior and accessibility.

Although the physical distance between Karantina and adjacent neighborhoods such as Mar Mikhael or Rmeil is relatively short, the lack of direct crossings transforms these connections into long detours. This situation highlights the spatial discontinuity created by high-speed infrastructure, where limited permeability and few pedestrian interfaces force local trips to be absorbed into the regional, almost always heavy, traffic network.

The map therefore highlights the contrast between proximity and functional accessibility. It provides a spatial understanding of how the highway redefines daily movement patterns and contributes to the fragmentation of the urban network.

Legend:

- From Achrafieh to Karantina
- From Karantina to Mar Mikhael
- From Beirut Central District to Karantina
- From Metn to Karantina
- From Burj Hammoud to Karantina

83

· Public transportation

Public transport in Beirut primarily operates through a combination of informal minibuses, shared "service" taxis, and regular buses. This sector, like many others in Lebanon, lacks full formal institutional control, which means there are no universal fixed routes, schedules, or fare-governance.
The routes in this map belong to the Lebanese Commuting Company (LCC) and Ministry of Public Works and Transport (MoPT) bus network, which is the only partially formalized public bus system currently operating in Greater Beirut.
In recent years, a project known as the Bus Rapid Transit (BRT) system was proposed and developed by the Council for Development and Reconstruction (CDR) in collaboration with the Ministry of Public Works and Transport (MoPTW) and financed by the World Bank. Its aim is to modernize mass mobility along Beirut's major transport corridors.
However, the status of the BRT in Beirut remains uncertain. While feasibility studies, environmental and social impact assessments, and institutional design work were conducted, progress has slowed down due to significant implementation delays and funding issues.

The routes shown on the map and their key stops:
B stands for Beirut and **ML** for Mount Lebanon.

B1: Nahr El Mot, Dora Roundabout, Ain El Mreisseh, AUB Seaside, Military Club, UNESCO, Cola, Barbir, Adlieh.

B2: Nahr El Mot, Dora, Isharet Naher, Adlieh, Cola, UNESCO, Raouche, Military Club, AUB Seaside, 4 Seasons Hotel, Dora Roundabout.

B3: Antelias, Jal El Dib, Zalka, Nahr El Mot, Jdeideh, Mar Youssef, Dora, Karantina, Mar Mikhaël, Akkawi, Sassine Square, Bechara El Khoury, Basta, Mar Elias, Druze Council, Bristol.

B5: Nahr El Mot, Jdeideh, Isharet Etihad, Jesr Achrafieh, Sassine, Sodeco, Basta, Druze Council, Concord.

B7: Mar Mikhaël Station, Al Nahr Crossroads, Adlieh, Lebanese University Hadath, Saida Old Road.

ML3: Dora, Bourj Hammoud, Nabaa, Saloumi, Habtour, Chevrolet, Gallery Semaan, Hadath, Antonine University, Baabda Hospital.

Legend:

- Bus line B1
- Bus line B2
- Bus line B3
- Bus line B5
- Bus line B7
- Bus line ML3

- Bus stops
- Main bus parking and depot

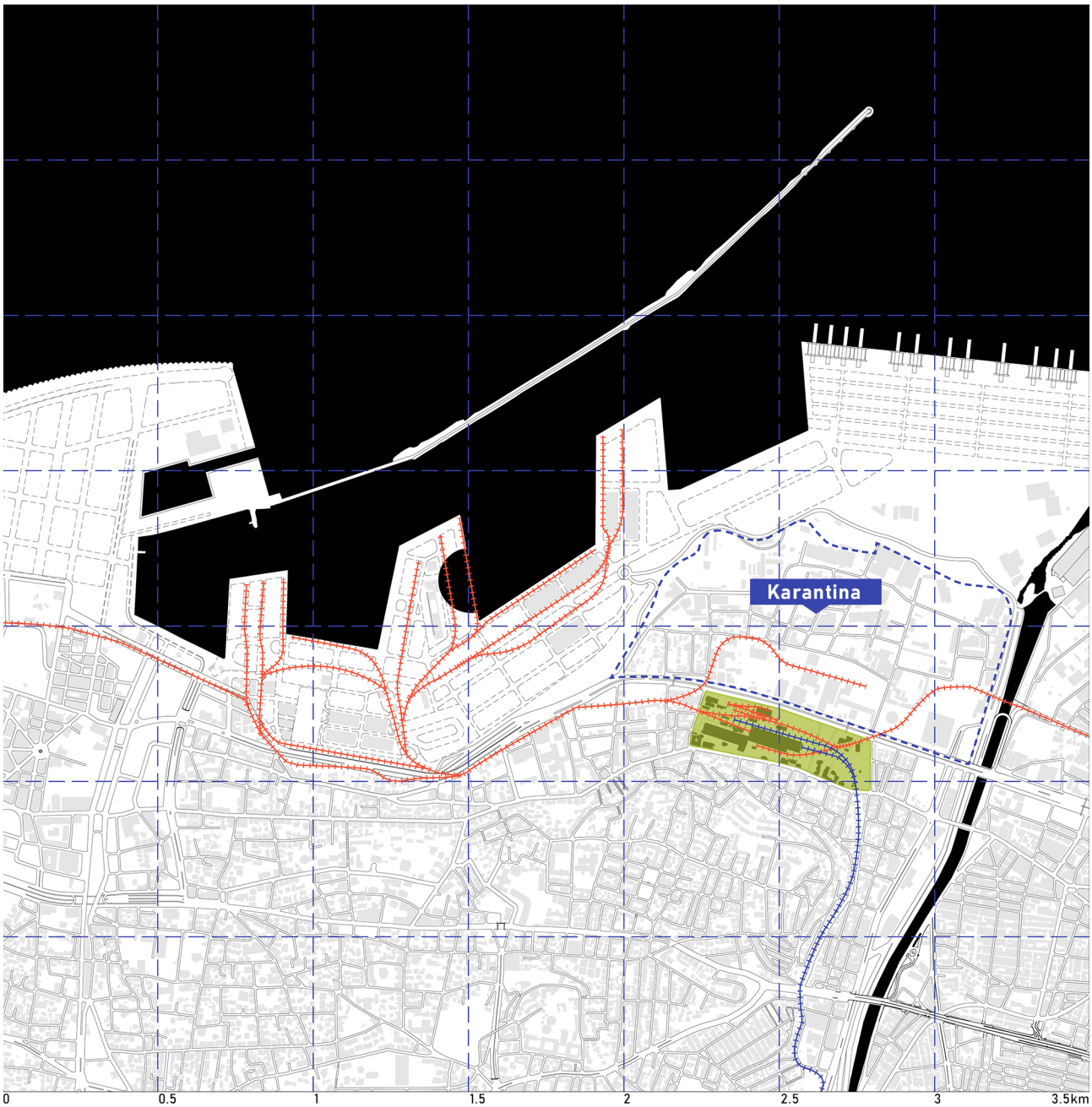
· Railway traces

This map identifies the remains of Beirut's historical railway infrastructure that originally ran from the Port of Beirut toward the north along the coast to Tripoli, and toward the east through Karantina, Mar Mikhael, and Furn el-Chebbak, linking to the Damascus railway that crossed the mountains to the Bekaa Valley. Constructed in the late nineteenth and early twentieth centuries under the Ottoman and French mandates, the system was one of the earliest regional rail networks in the Levant.

The railway corridor passes directly south of Karantina, parallel to the port's southern boundary and the current Charles Helou Highway. Following the civil war and the shift toward road-based transport, operations ceased and the tracks were gradually dismantled or built over.

Today, the traces of the railway that runs towards the south remains physically present in the urban fabric as a linear vacant strip. However, the east-west rail network was completely built over and leave no traces. The Mar Mikhael train station still exist as a bus central.

85 Traces of the Mar Mikhael railway. Source: AramcoWorld



Legend:

- Old railway (Completely disappeared)
- Old railway (Still visible)
- Old Mar Mikhael train station

86

· Pedestrian flow

This map shows pedestrian circulation patterns across Beirut's eastern districts, focusing on Karantina and its surroundings. The highest levels of foot traffic are found in the Beirut Central District (BCD) and along Mar Mikhael and Armenia Street, where cafés, bars, and creative spaces attract constant movement throughout the day and night. A second concentration appears in Bourj Hammoud, whose dense commercial network condone continuous activity.

In contrast, pedestrian movement within Karantina remains limited, mostly represented by the locals' movement. The Charles Helou Highway, the Beirut River, and the port fence create major barriers that restrict walkability and disconnect the area from nearby neighborhoods. Two pedestrian bridges carry locals from Karantina to Mar Mikhael and the surrounding neighborhoods.

The map also highlights several stair connections linking Mar Mikhaël, Rmeil, and Geitawi, which bridge differences in elevation and remain essential for daily movement on foot. All stairs flow toward Armenia street and historically towards Karantina and the sea.

87

88

Legend:

Lowest pedestrian flow

Highest pedestrian flow

Stairs

Pedestrian bridges

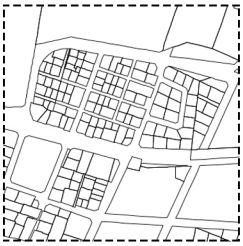
89

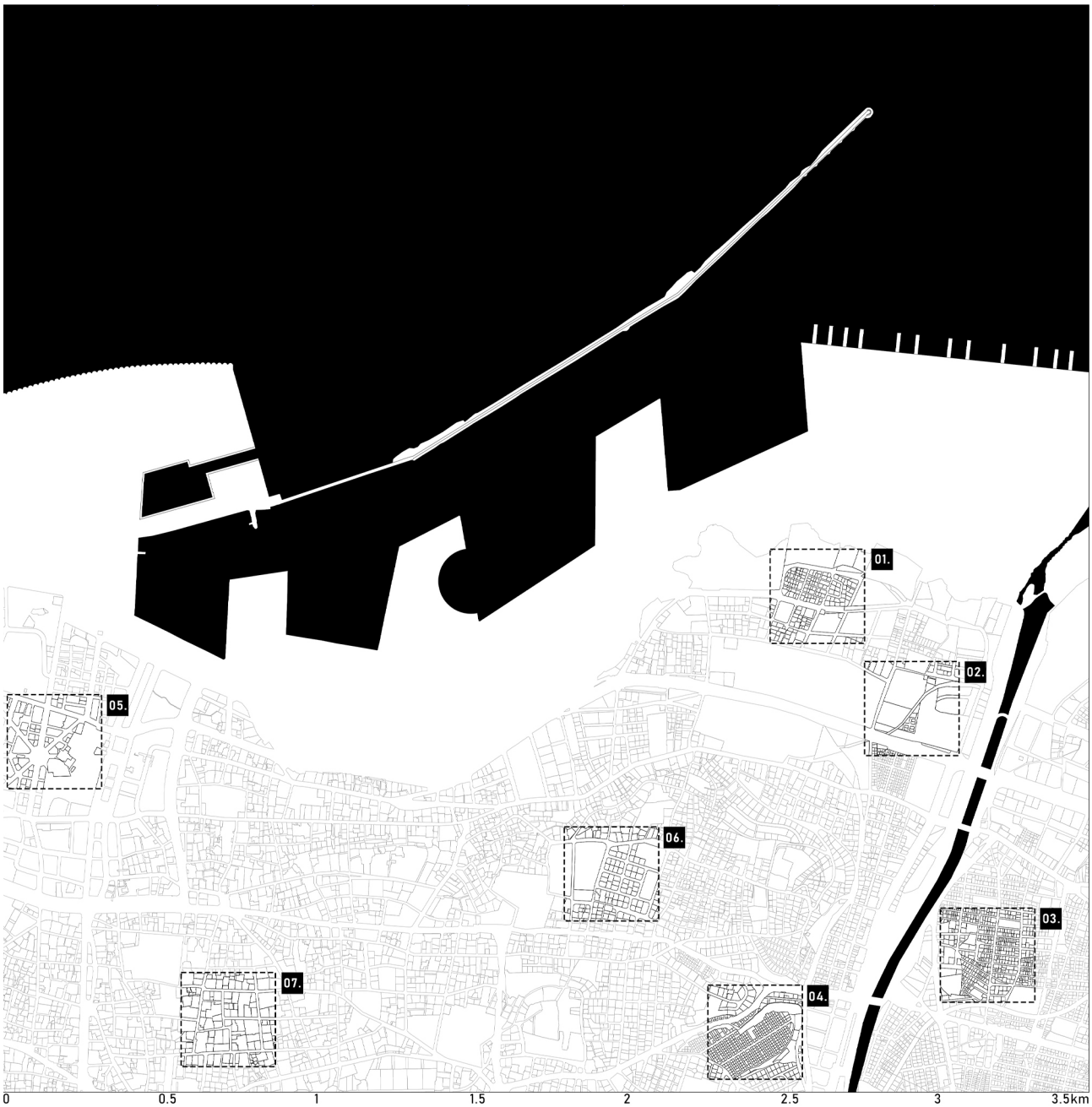
02.1.3. Urban form typologies

- Parcel divisions

This map illustrates how land parcels differ in size, organization, and subdivision across seven representative sites. The patterns reflect Beirut's contrasting urban histories and land uses, from large monofunctional plots to small, irregular residential parcels.

01. El Khoder neighborhood
Small and irregular parcels, many of which are undevelopable, combining commercial and residential uses. The pattern reflects informal subdivision and limited street connectivity.
02. Forum de Beyrouth
Very large consolidated plots with minimal subdivision; event halls and open parking dominate the reclaimed industrial land.
03. Bourj Hammoud area
Small, narrow, and regular parcels forming a dense grid with mixed commercial and residential ownership.
04. Mar Mikhael slope
Small, irregular parcels adapting to steep topography linking Achrafiyeh to the Beirut river; fine-grained, mixed-use character.
05. Place de l'Étoile (BCD)
Geometric, formally planned subdivision radiating from the central square, created during the French mandate and reminiscent of Parisian urbanism
06. Achrafieh grid
Regular rectangular parcels; large institutional plots next to smaller residential divisions within a clear grid.
07. Geitawi residential core
Small, compact, irregular parcels reflecting older incremental development and high ownership fragmentation.



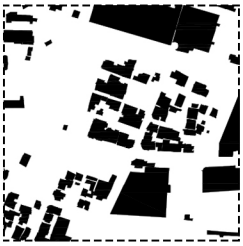


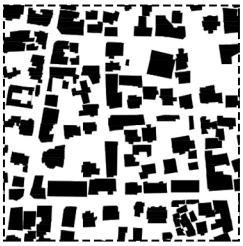
90

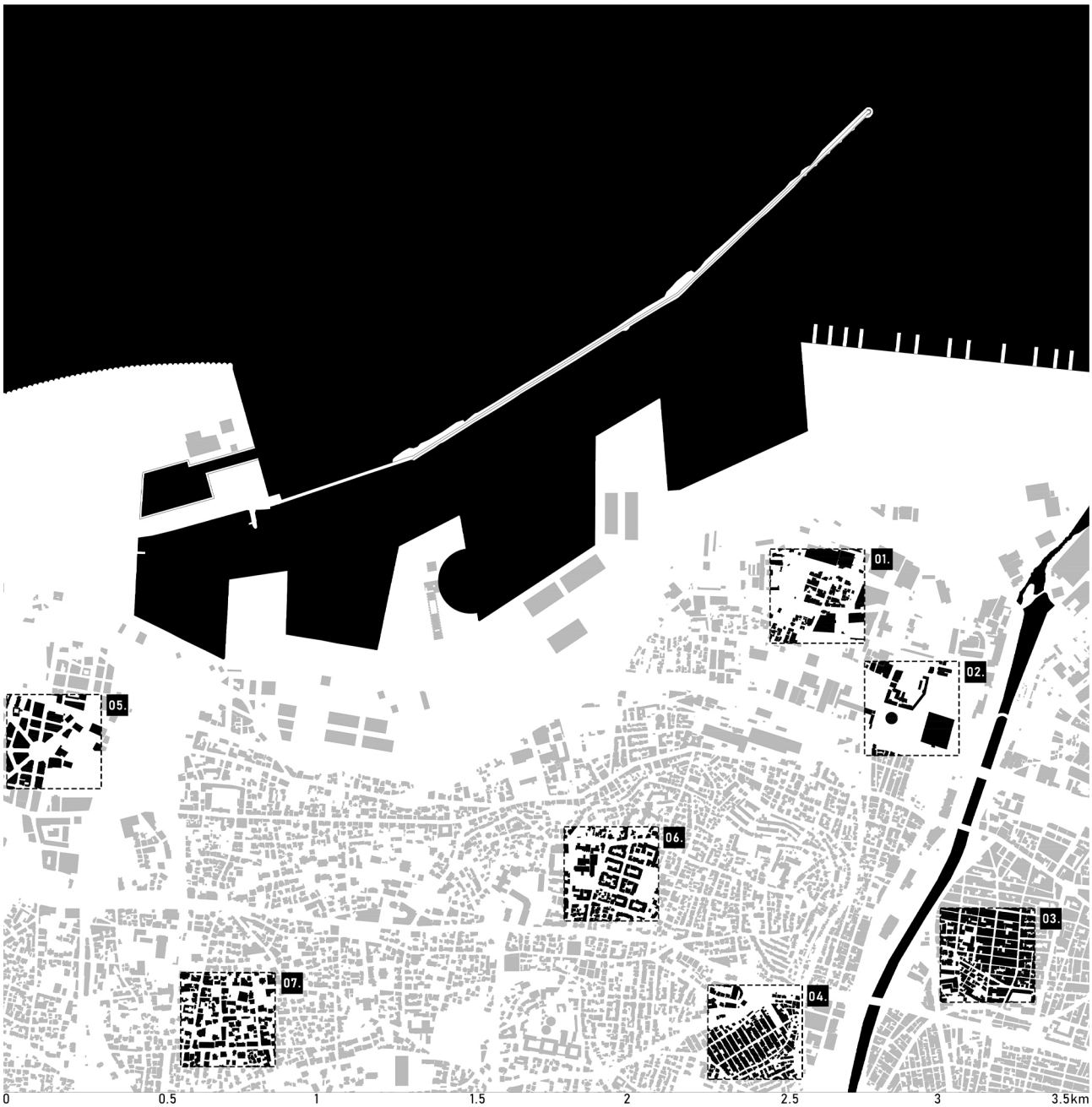
- Building footprint

This map shows the variation in building footprint and density across the same seven locations. The contrast between open, large-scale structures and compact residential blocks illustrates Beirut's diverse spatial typologies.

01. El Khoder neighborhood
The built fabric is discontinuous and low in density. Buildings are irregularly placed within plots, leaving open yards and vacant land between structures.
02. Forum de Beyrouth
Built form consists of large single-purpose buildings set within expansive open areas. The Forum complex and its parking zone occupies most of its plot.
03. Bourj Hammoud area
The area is densely built, with minimal open space. Narrow plots generate compact mid-rise buildings with active ground floors used for commerce.
04. Mar Mikhael slope
The built form is medium to high density, following irregular parcel lines and sloping terrain, human-scale streetscape
05. Place de l'Étoile (BCD)
Buildings are regular, symmetrical, and continuous, arranged in radial blocks around the central square, producing a cohesive and monumental civic space.
06. Achrafieh grid
Built density is moderate, combining the large footprint of educational buildings with compact adjacent housing.
07. Geitawi residential core
The built form is dense and continuous, composed of small residential buildings and minimal setbacks tightly aligned along narrow streets.





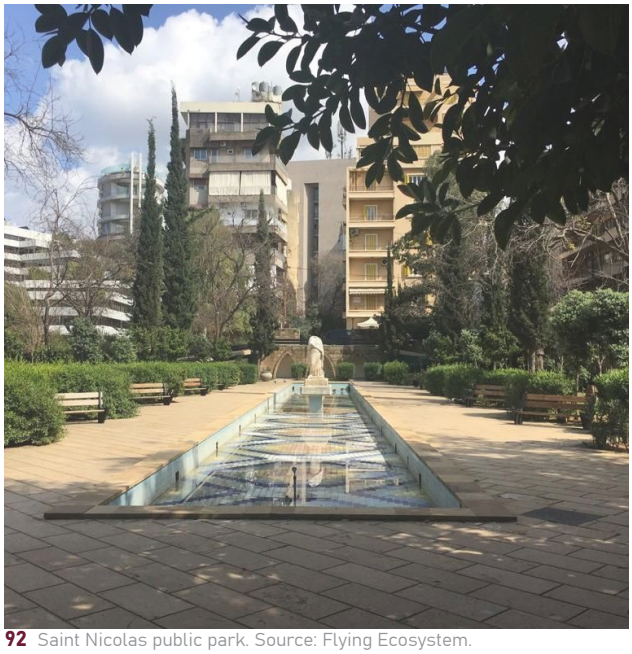


91

- Green coverage

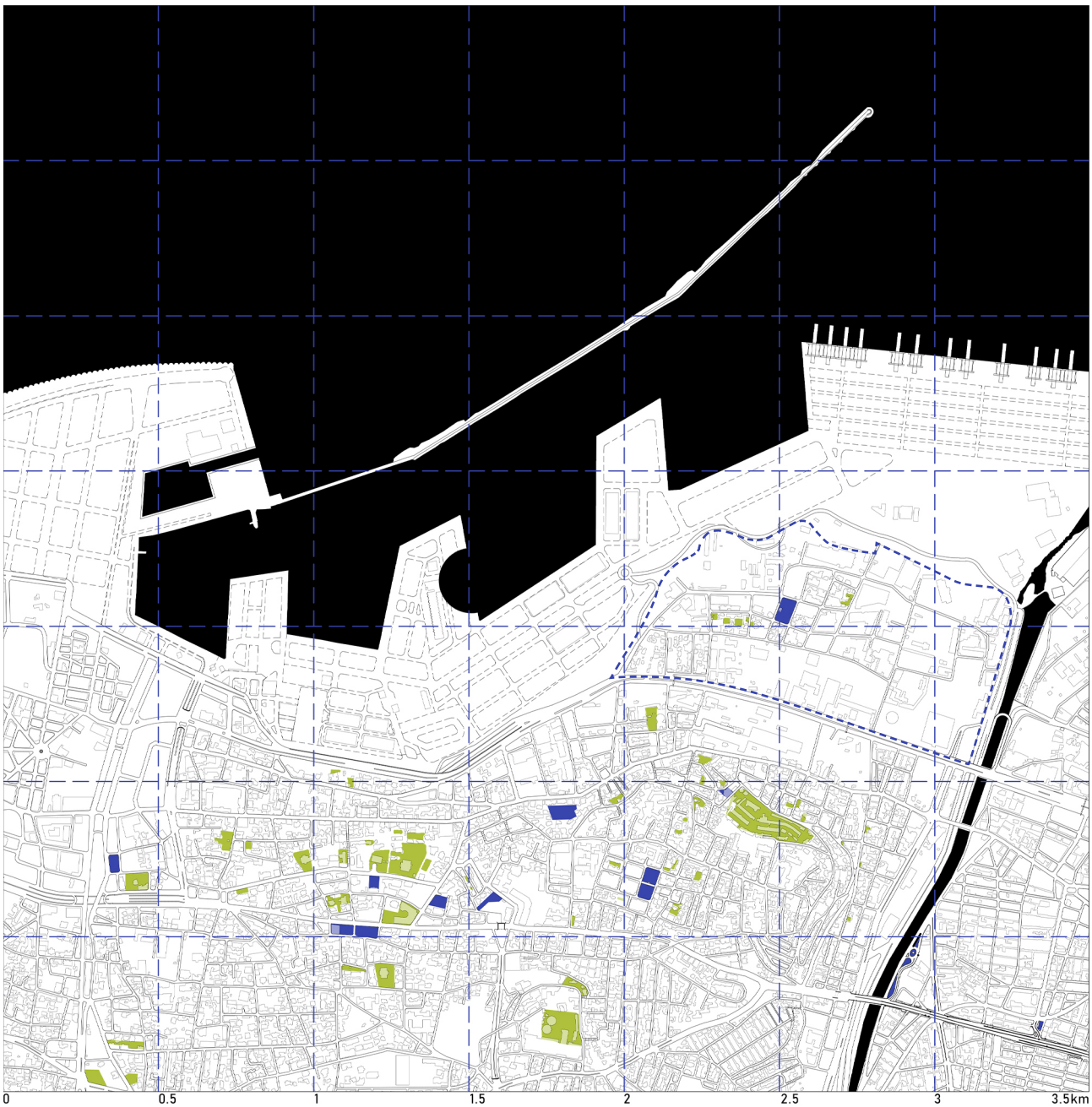
This map shows the distribution of vegetation and open green areas in and around Karantina. The lower coastal zone, including Karantina and the port, contains very limited greenery, mostly found as spontaneous vegetation on vacant plots, roadside strips, and along the Beirut River and the port. Institutional compounds, such as the Karantina Hospital and nearby facilities, include small planted areas but remain isolated from the public realm.

In contrast, the upper neighborhoods of Rmeil, Geitawi, and Achrafieh display a pattern of private gardens and tree-lined streets, where continuous public green space is still scarce. The fragmented nature of green coverage emphasizes the absence of connected ecological corridors, particularly across the highway and river.



92 Saint Nicolas public park. Source: Flying Ecosystem.

93 Jesuit garden Geitawi. Source: Mia Arawi.



Legend:

- Public garden
- Private garden

94

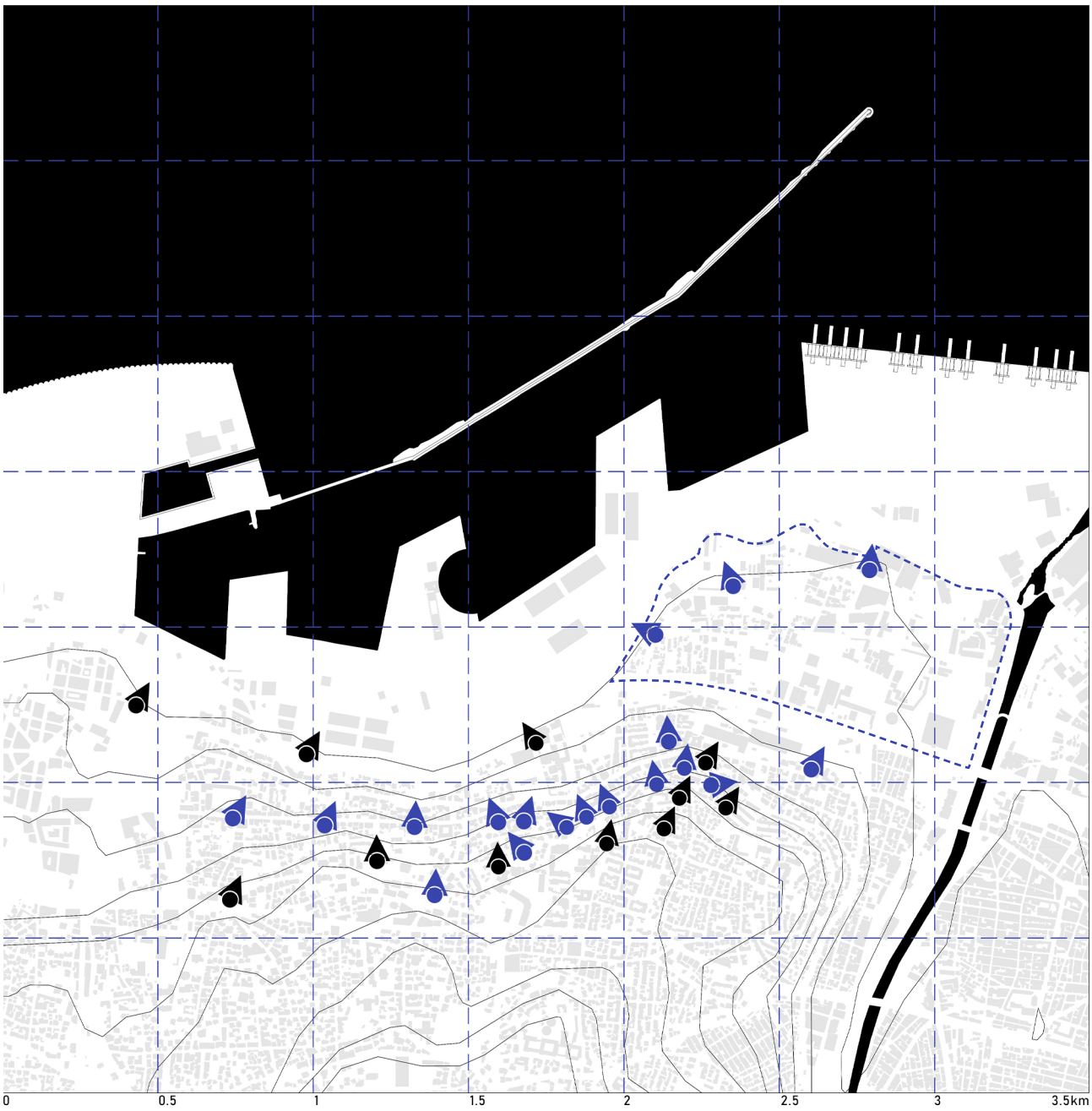
· Topography and visual connection

This map illustrates the elevation gradient from the flat reclaimed coastal land of the port to the slopes of Mar Mikhael and Achrafieh. The ground level in Karantina lies close to sea level, gradually increasing toward the east, where steep streets and stairs connect the upper neighborhoods. This slope not only defines a physical connection but also a visual relationship between the port and the city.

From higher areas such as Geitawi and Achrafieh, there are a few panoramic, street level views over the port, the industrial zone, and the waterfront. In contrast, the lower elevations of Karantina have limited visibility and enclosure due to buildings and infrastructure. The topography therefore shapes urban experience and spatial hierarchy, linking the city visually to its coast, a relationship that can be hindered especially for pedestrian.

From these elevated districts, the port cranes emerge as strong visual landmarks. Their distinct vertical silhouette marks the edge of the city. With time, they became a reference point within Beirut and a recognizable sign of its location from more distant parts of Lebanon. The cranes' visibility reinforces the port's presence in the collective image of the city, making it one of the few infrastructural elements that can be seen from above the solid boundaries of the port.

95

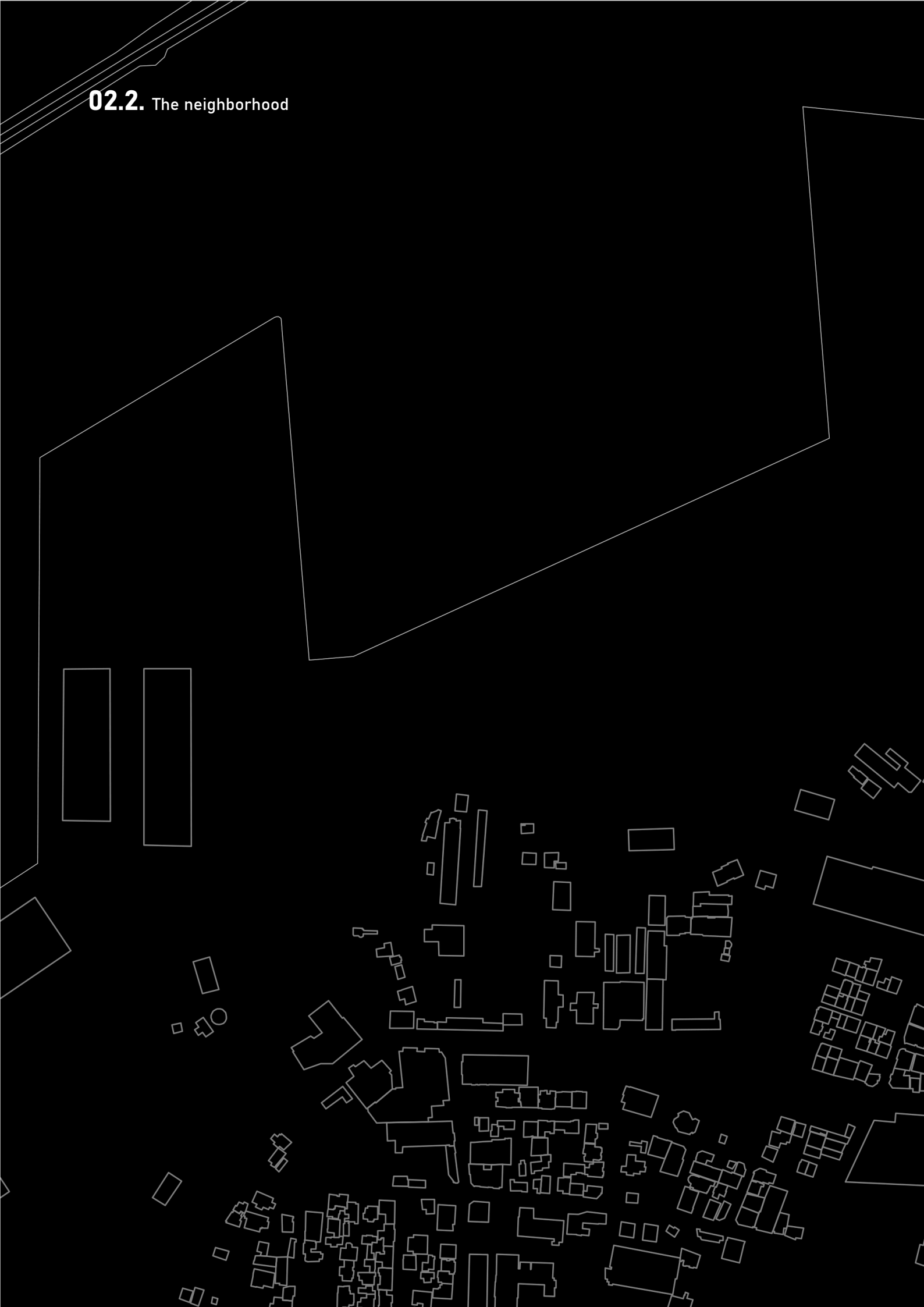


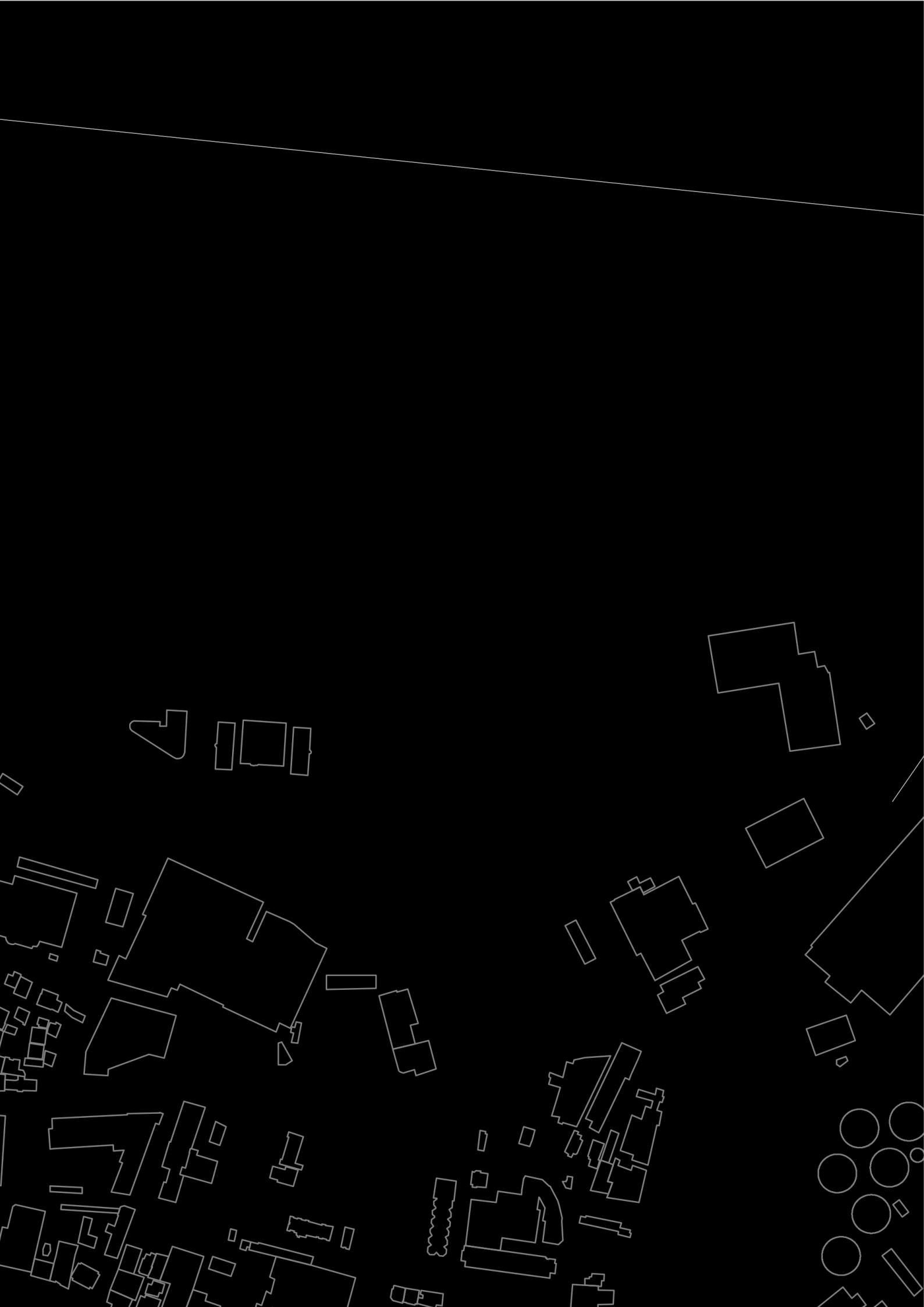
Legend:

- Urban balcony with visual connection to the sea blocked
- Urban balcony with visual connection to the sea

96

02.2. The neighborhood





02.2.1. Internal neighborhood structure and land control

- Karantina sub-neighborhoods

This map defines the three sub-neighborhoods that form the core of Karantina: Al-Saydeh, Al-Senegal, and Al-Khodor.

Al-Saydeh, on the western edge, is the most residential neighborhood of Karantina. It consists of small plots, and mixed-use buildings surrounded by ruins of old industrial structures. The area is characterized by its close proximity to the port fence and the Charles Helou highway. Despite its small size, Al-Saydeh hosts a stable community with long-term residents.

Al-Senegal, in the center, is a transition zone between the residential fabric of Al-Saydeh and the industrial plots. It is surrounded by large institutional and infrastructural sites, including the Karantina Governmental Hospital, waste sorting facilities, and municipal service yards. It is the part of Karantina with the most open, underused surfaces.

Al-Khodor, to the east, represents the most fragmented and hybrid sector. It combines small industrial workshops, garages, and scattered residential clusters built on irregular parcels. The proximity to the river and highway has attracted logistics, which led to it being surrounded by heavy and impactful industrial uses.

Together, these three sub-neighborhoods reflect the layered and uneven residential Karantina. Their boundaries are shaped more by land use and social differences than by administrative lines, revealing how different forms of occupation coexist within the same bounded territory.

Legend:

- Al-Saydeh neighborhood
- Al-Senegal neighborhood
- Al-Khodor neighborhood

97

- Parcel devision and challenges

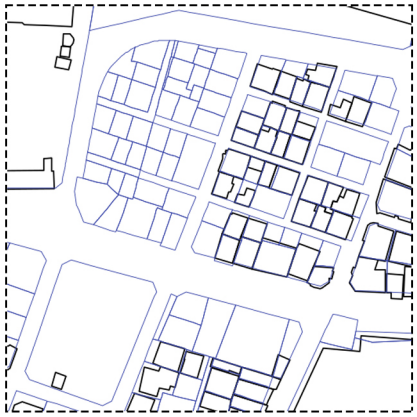
01. Al-Saydeh neighborhood
Parcels are small, irregular, and densely subdivided, following narrow internal streets. The layout results from long-term, phased development and informal extensions over time. This small scale structure supports mixed residential and minor commercial uses.

02. Al-Khodor neighborhood
Parcels here are extremely small and irregular, many of which are built informally due to unresolved ownership among descendants and inheritance disputes. This situation prevents new construction or formal consolidation. The subdivision reflects historical fragmentation of family-owned land combined with informal extensions.

03. Forum de Beyrouth area
This area consists of large, consolidated parcels formerly used for industrial functions. Although the railway tracks that once served the port are no longer visible, their alignment remains legible in the shape of the parcels. The current land division preserves traces of this industrial past while accommodating the large building.

01.

02.



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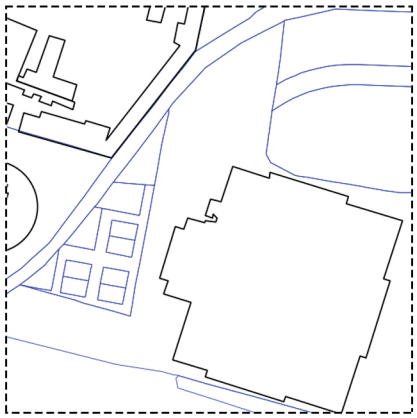
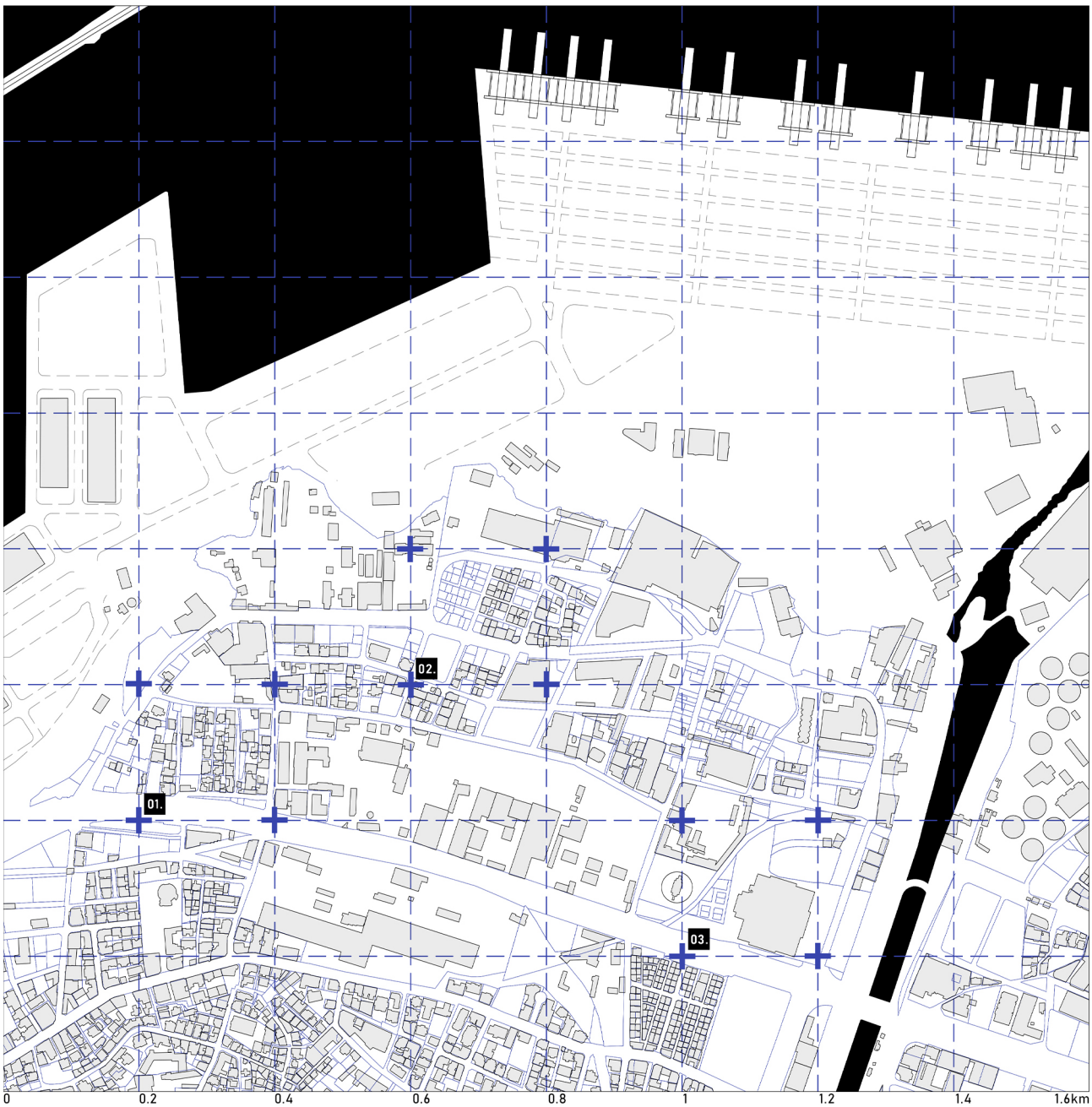




Legend:

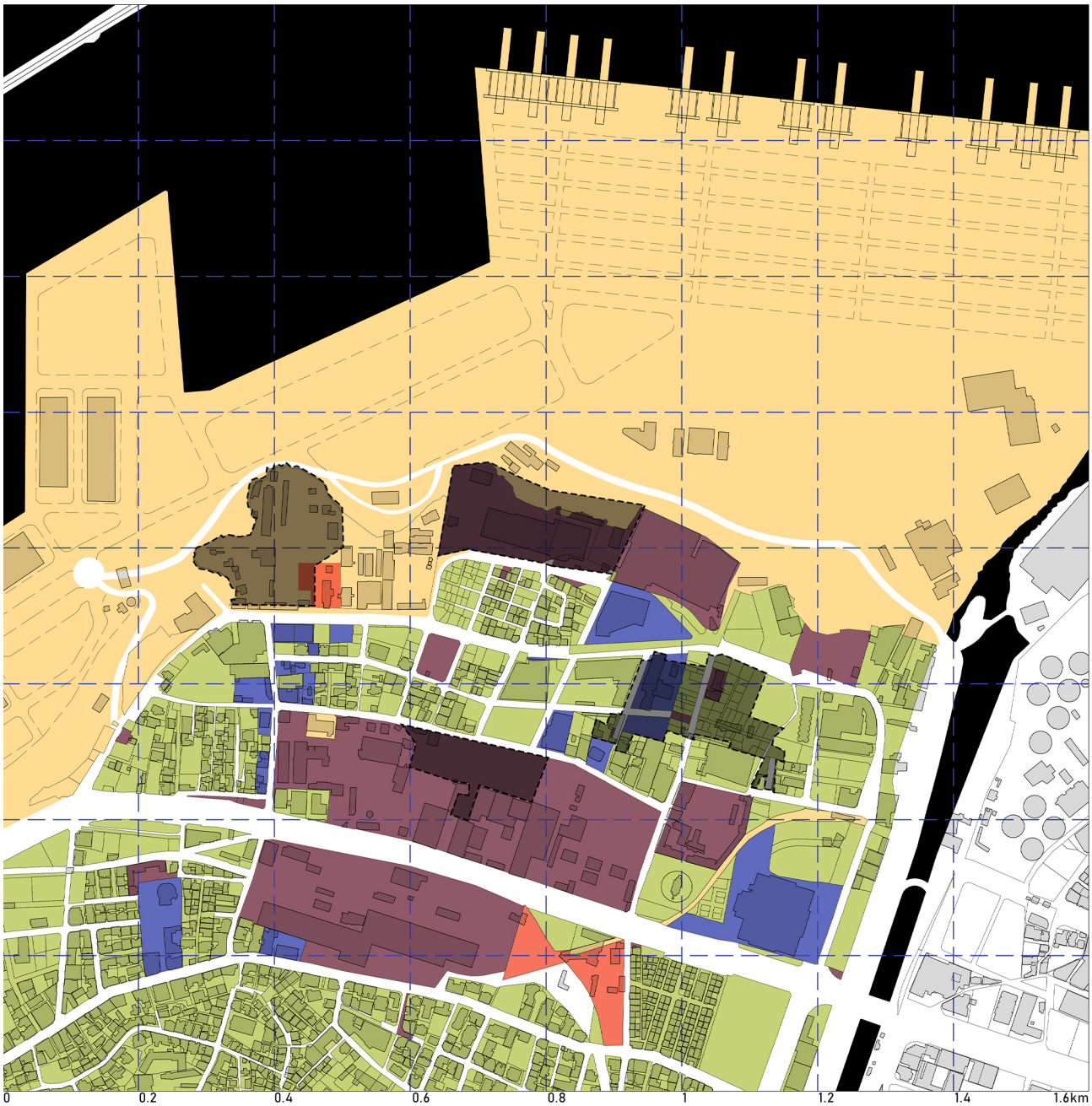
- Buildings
- Parcel divisions

98

- Land ownership

This map shows the complex mosaic of land ownership in Karantina, where overlapping institutional, religious, and private holdings define much of the neighborhood's spatial and social structure. Large parts of the area are publicly owned, with governmental and municipal lands occupying the central and northern sectors. These include the Karantina Hospital, waste treatment facilities, and infrastructure related to the port and municipal services. Significant portions of land are also held by religious institutions (Waqf), Maronite and Sunni. These Waqf lands are concentrated along the main roads and near community clusters such as Al-Khodor and Al-Saydeh. Private ownership is fragmented and irregular, mostly concentrated in the southern and eastern parts of Karantina. Much of this land suffers from legal ambiguity, where the ability to build, sell, or redevelop is limited without external funding.

Additionally, parts of the western edge are occupied by temporary military bases and service compounds, restricting public access and further dividing the neighborhood. The overall ownership pattern demonstrates how institutional control, religious institution, and fragmented private property intersect to create a highly constrained and limited urban environment, where governance and redevelopment depend on multiple, often uncoordinated, stakeholders.



Legend:

- Temporary military bases
- Municipal
- Governmnetal
- Maronite Waqf
- Sunni Waqf
- Private

99

02.2.2. Mobility and accessibility constraints

- Road hierarchy

The road system in Karantina is organized around a clear hierarchy dominated by large infrastructural highways that disconnect the neighborhood from its surroundings. The Charles Helou highway, on the southern border of Karantina, is the main east–west artery of Beirut, but acts as a physical barrier separating Karantina from Mar Mikhael and Rmeil. The district is also bordered to the east by the Emile Lahoud highway that interrupts the connection to Burj Hammoud.

A network of secondary internal roads provides circulation within the neighborhood yet remains fragmented. Many streets are blocked by army security barriers or abandoned plots, limiting vehicular and pedestrian flow. The port access road channels the most heavy truck traffic along the northern edge of Karantina, and is off-limits for civilians.

Two pedestrian bridges connect Karantina to Mar Mikhael. However, they are poorly integrated, difficult and dangerous to access, and in extremely poor condition. Overall, the road hierarchy prioritizes transport systems built for regional connectivity rather than local accessibility. This reinforces Karantina's spatial isolation within the city, and raises the issue of ruptures and dead ends in the district.


100


101


102

Legend:

- Highway
- Internal roads
- Port access road
- Pedestrian bridge
- Blocked

103

· Parking zones

This map highlights the distribution of parking areas in Karantina, highlighting the neighborhood's double function as a residential and industrial/logistics zone. Informal truck parking zones occupy large surfaces along the northern edge. These areas are primarily used for long-term parking related to nearby warehouses, waste management facilities, and most commonly the port. The truck also often park on the side of the road, especially around the eastern industrial part of Karantina. Their presence creates continuous heavy traffic and obstructs local circulation.

Car parking areas are scattered irregularly across the residential sections of Al-Sayde, Al-Khodor, and central and southern Karantina. Most are informal and unpaved lots occupying vacant parcels and street edges. The lack of organized parking infrastructure leads the loss of precious open spaces to cars and vehicles.

104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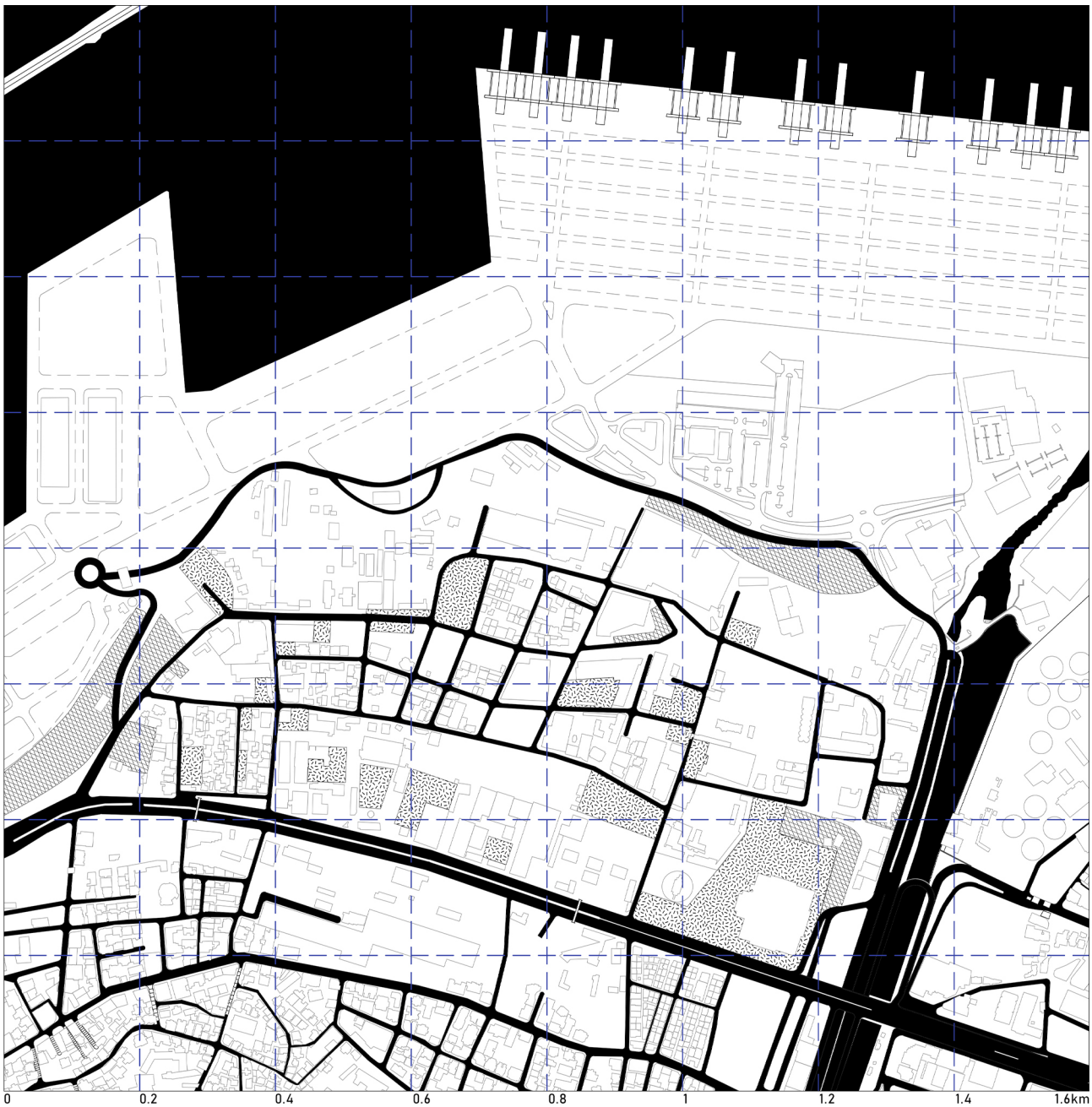
105



Legend:

- Truck parking
- Car parking

107

· Inaccessible areas and physical barriers

This map illustrates the inaccessibility and fragmentation of Karantina caused by infrastructure, land use, and security restrictions. The port of Beirut area forms a solid and impenetrable northern edge that separates the neighborhood from the coast and blocks public waterfront access. Several industrial and institutional compounds occupy large parcels that remain closed to the public, reinforcing the separation between the port zone and the residential areas.

Physical barriers include the Charles Helou highway edge, the Beirut river embankment, and numerous walls and perimeter fences surrounding warehouses, service yards, and military compounds. These structures severely limit permeability not only between Karantina and surrounding districts, but also within the district itself.

The resulting reality is a neighborhood physically enclosed on all sides by infrastructure, dominated by large inaccessible plots, and ruptured by security walls and fences.

108

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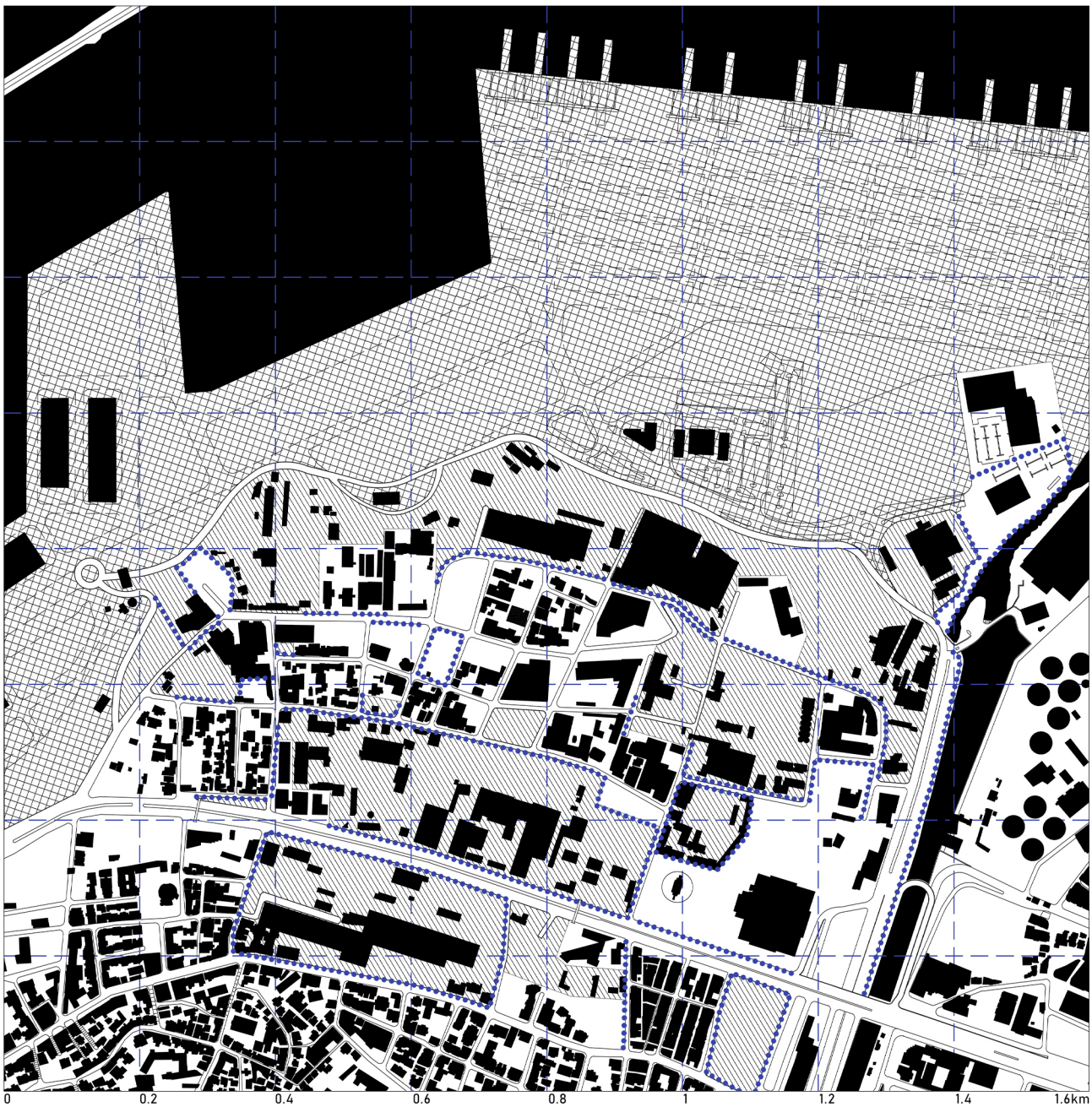
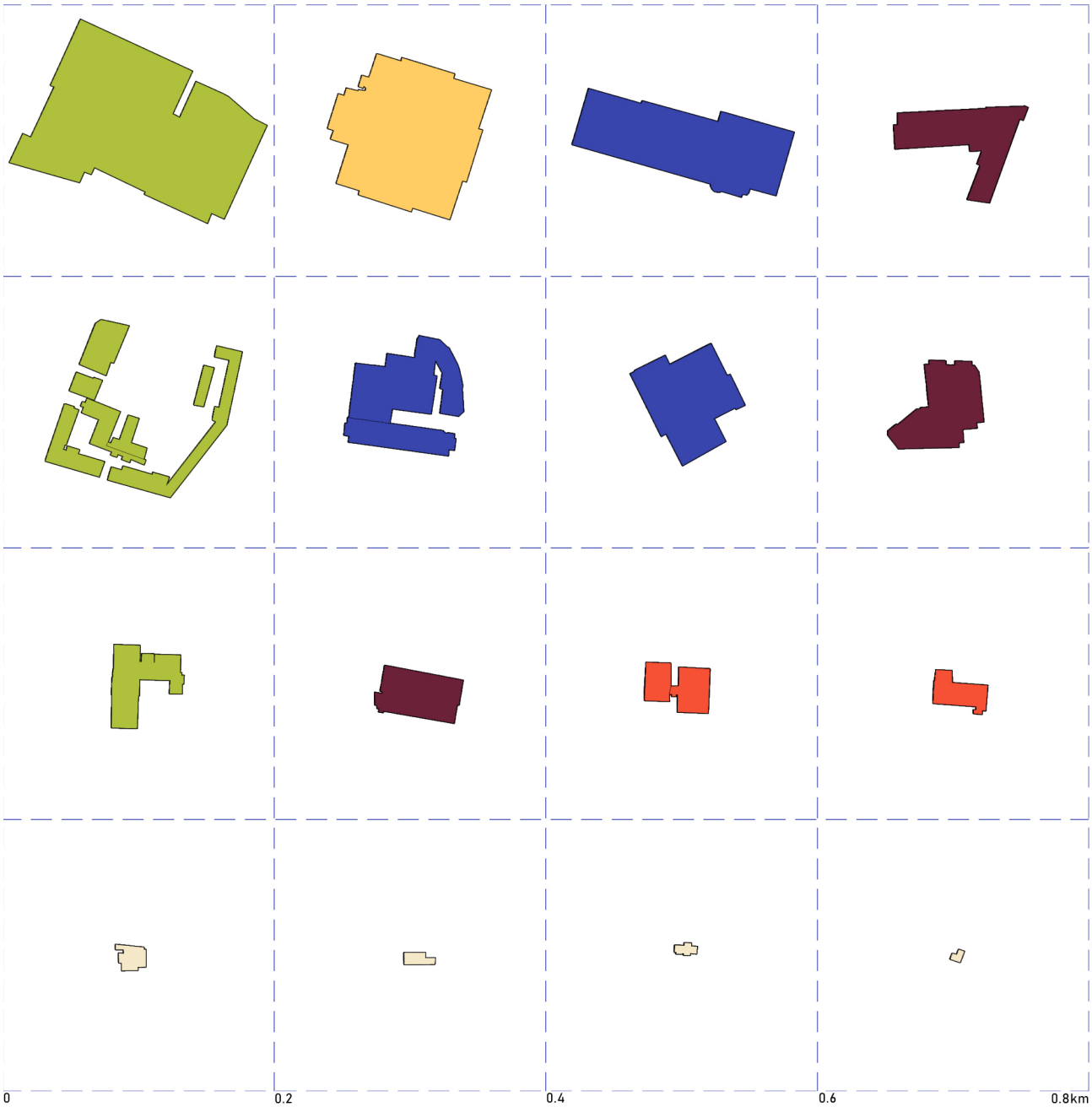
109



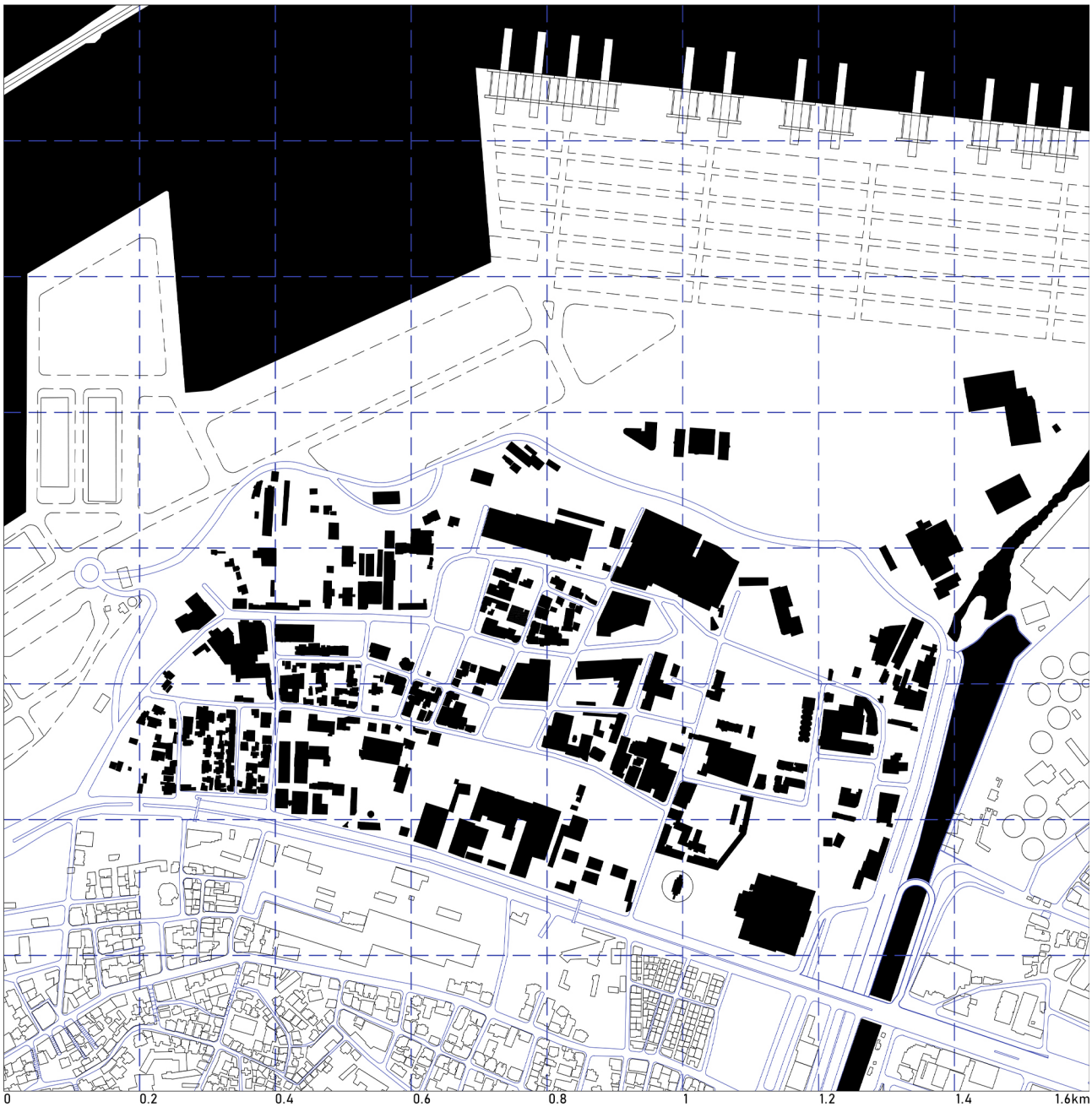
Legend:

- Port (inaccessible)
- Inaccessible and closed areas
- Phyical barriers (Walls and fences)

111


0
0.2
0.4
0.6
0.8km
Industrial
Offices
Entertainment
Waste treatment
Logistics
Residential

112



Legend:

- Building footprint
- Roads

113

- Building age

The building stock in Karantina, much like the rest of Beirut, represents a layered urban history shaped by industrial growth, war destruction and reconstruction, and post-blast decline. Most of the existing structures date from 1940 to 1970, to respond to the neighborhood's development around industrial and port-related functions at the time. These mid-century buildings define a significant part of of the built environment in Al-Saydeh and some of central Karantina.

Later construction between 1972 and 1997 introduced a mix of residential, commercial and mixed-use buildings, while post 1998 additions are limited and mostly industrial. A few buildings remain that date before 1940, and most of them are either altered or abandoned. These can be spotted by looking for the traditional Lebanese architecture features, like the three arches, that can be also found in the construction in Mar Mikhael.

114

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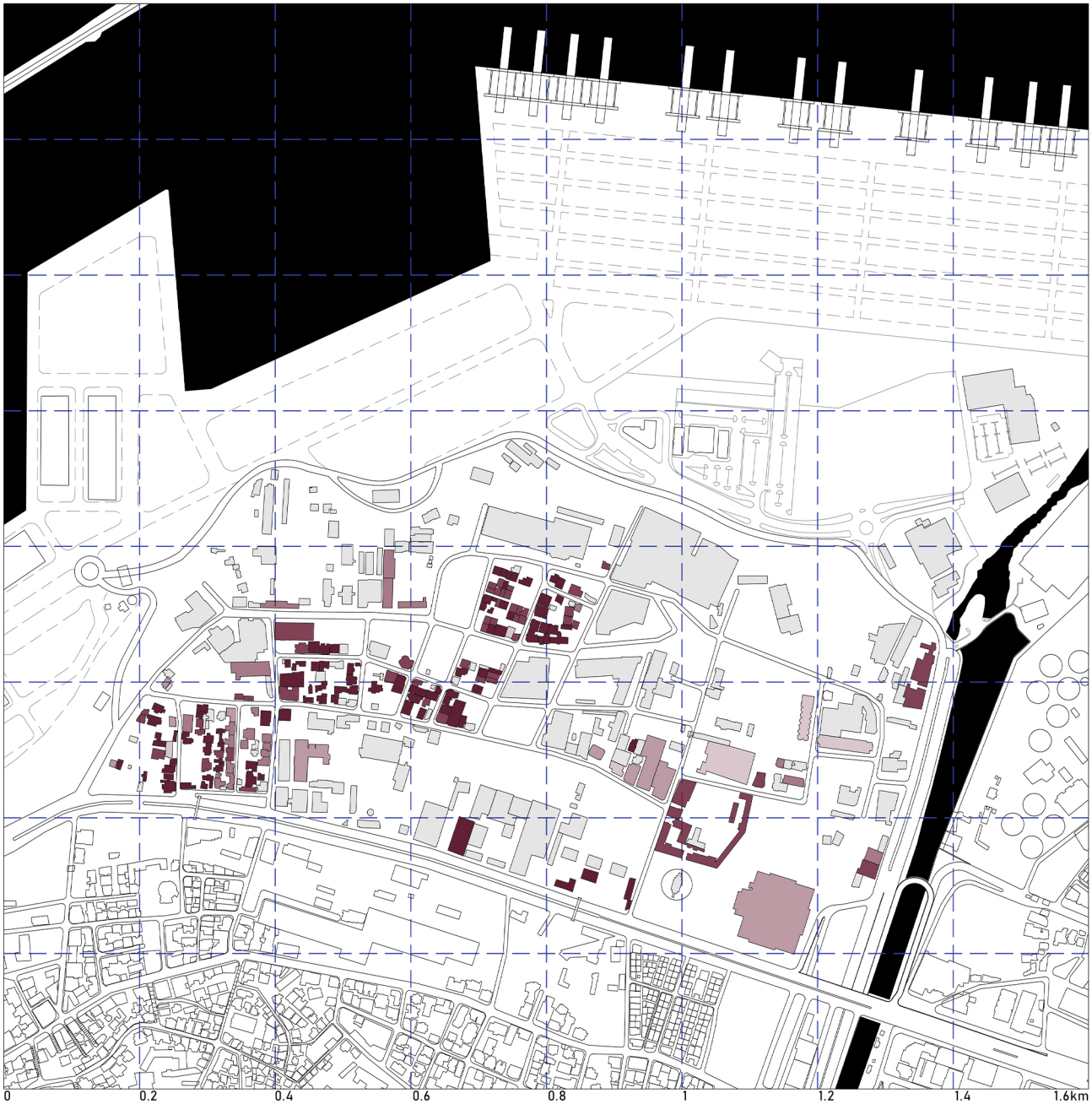


Legend:

- -1940
- 1941-1954
- 1955-1971
- 1972-1997
- 1998-2020

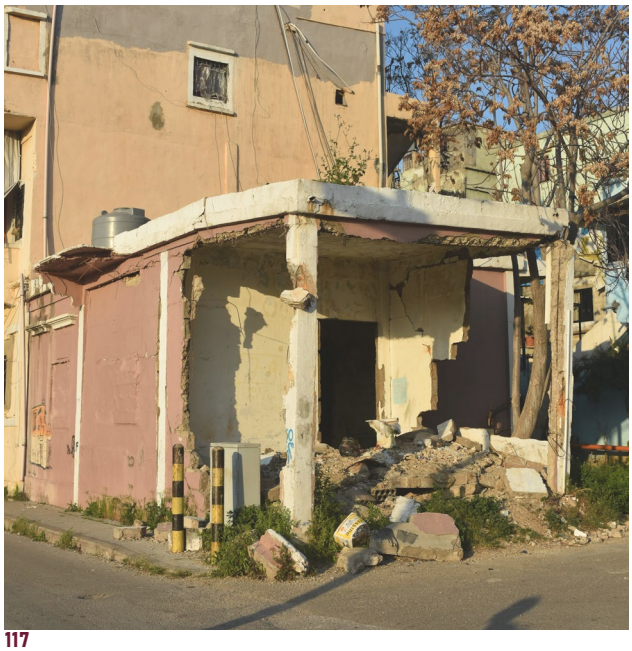
116

· Building condition

Overall, the physical condition of Karantina's buildings reveals significant deterioration across the district. More than 50% of the structures are in a state requiring major intervention, either complete renewal or demolition, while about 25% need moderate to high maintenance. Buildings in good condition represent less than one-fifth of the total and are in most cases newer constructions and recently rehabilitated facilities.

The highest concentration of damaged and decaying structures are located in Al-Khodor and central Al-Senegal, where pre-war and mid-century buildings suffer from structural wear, poor materials, and the effects of the 2020 port explosion that were taken care of temporarily. Another big part of those buildings is located in the municipal lot, where many of the abandoned buildings and warehouses are deteriorating, but remain hidden from public view by high walls and barriers.

By contrast, better-maintained properties survive in Al-Saydeh, where long-term residential occupation is more stable and permanent. This map highlights the dangers of physical vulnerability in Karantina and showcases the urgency for coordinated rehabilitation instead of isolated reconstruction which caused these inequalities in the first place.



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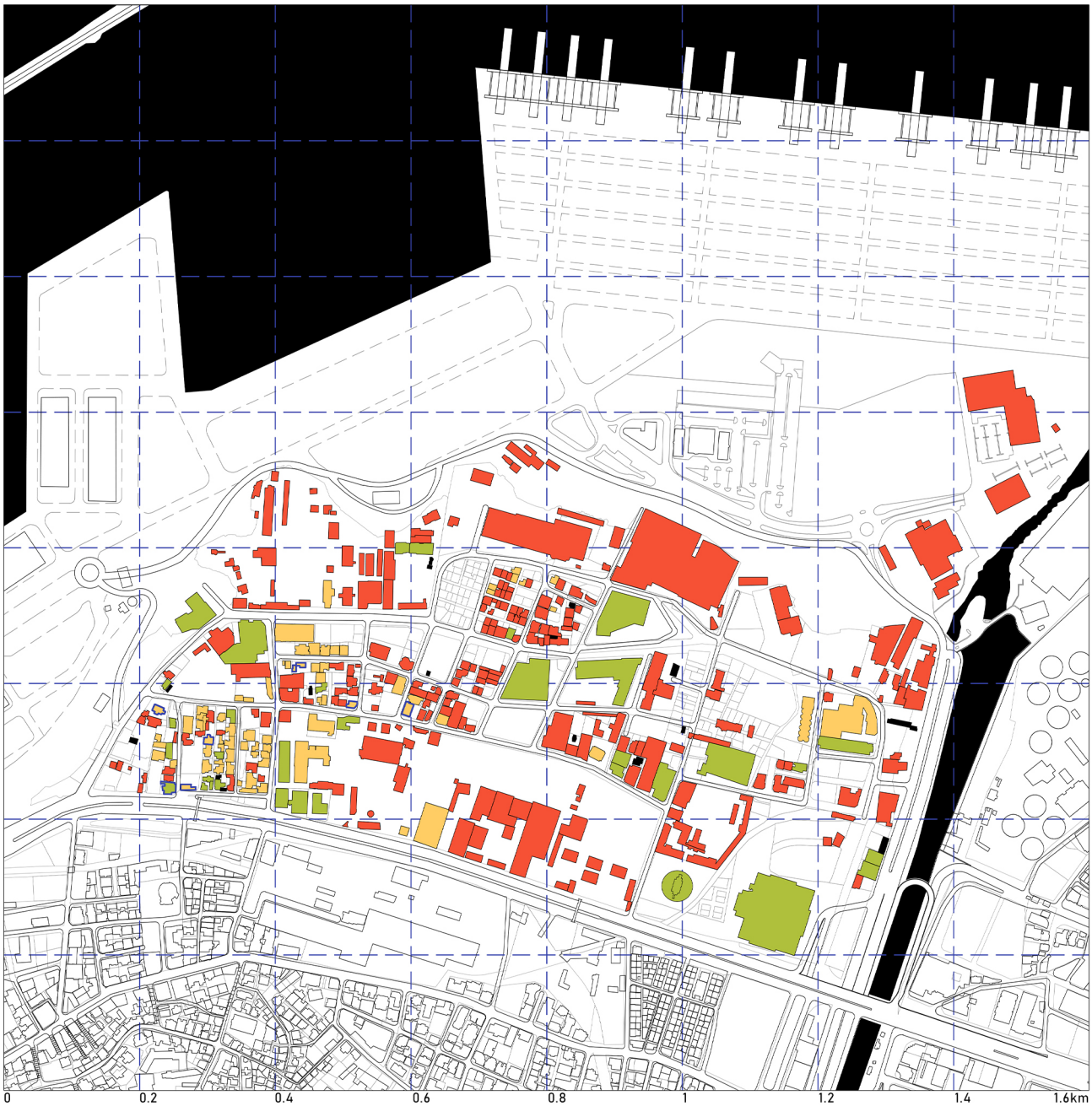


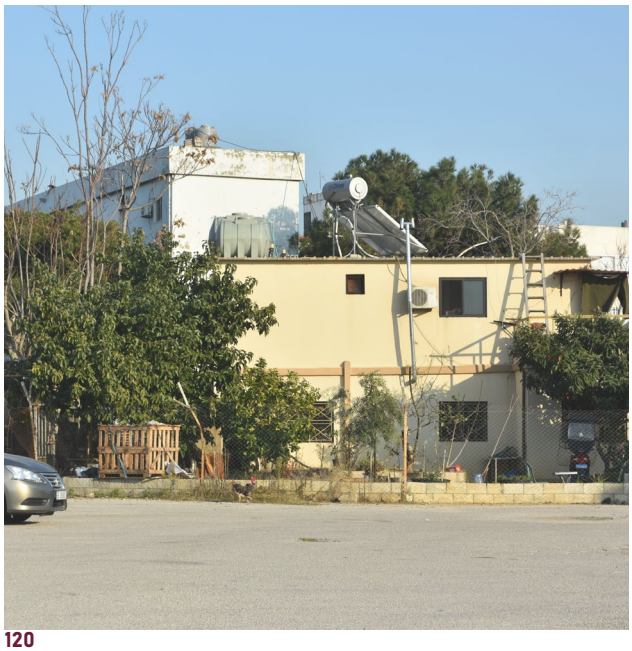
Legend:

- To be renewed or dimolished
- Needs mainteinance
- Good condition
- Building not surveyed
- Historical building

119

- Building height

Karantina is characterized by low-rise construction reflecting its mostly industrial origins. Around 80% of buildings are one to three storeys high, forming a predominantly horizontal morphology. Mid-rise structures from four to seven floors are usually new construction and appear along the southern edge near the Charles Helou highway and some within Al-Saydeh and Al-Senegal, usually associated with post-war residential reconstruction. Buildings that exceed seven floors, usually office buildings and hotels, are rare and mostly located at the east and west peripheries. This distribution reveals a persistent industrial scale that dominates the neighborhood.



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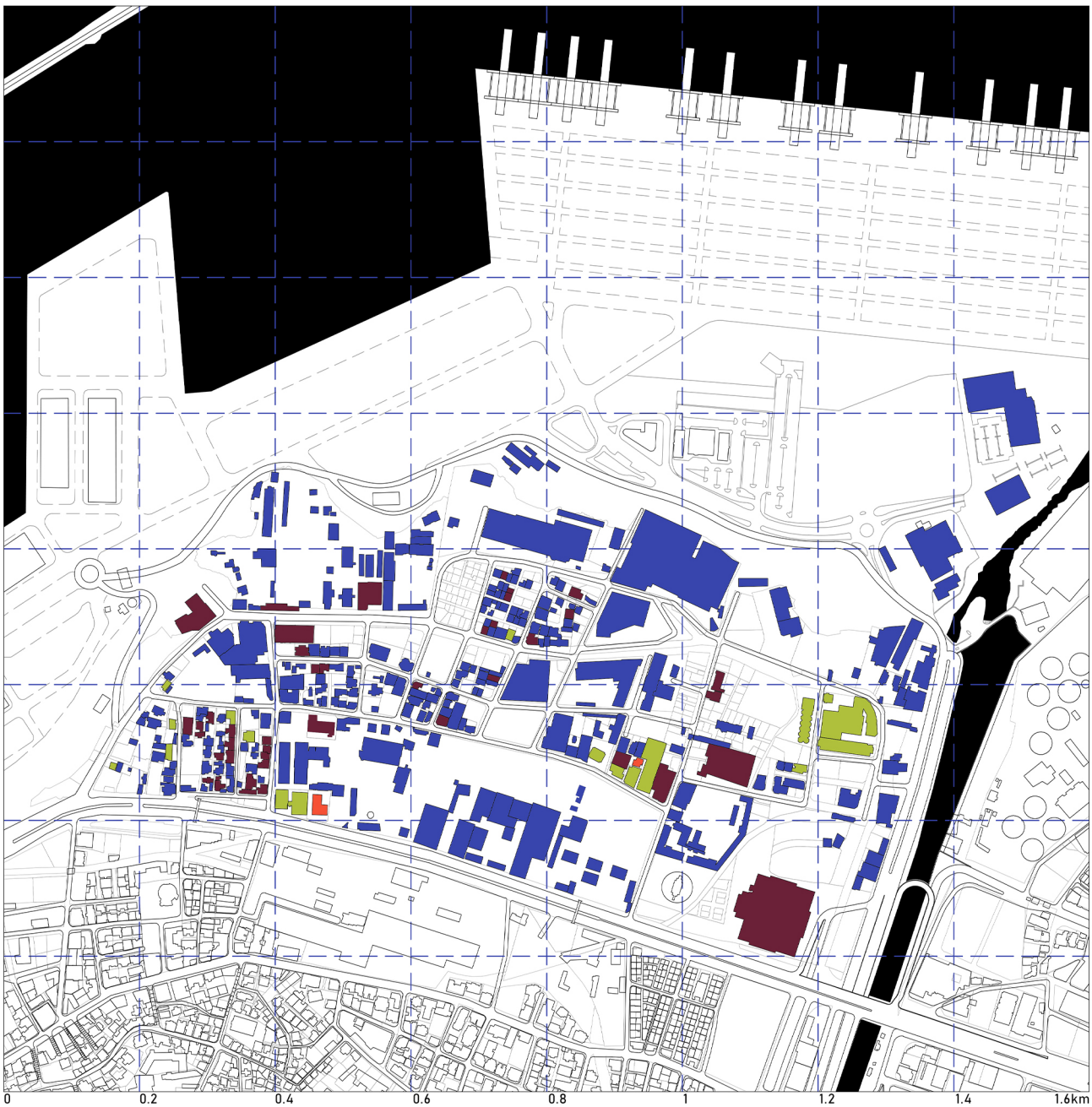


Legend:

- 1-3 floors
- 4-7 floors
- 7-13 floors
- +14 floors

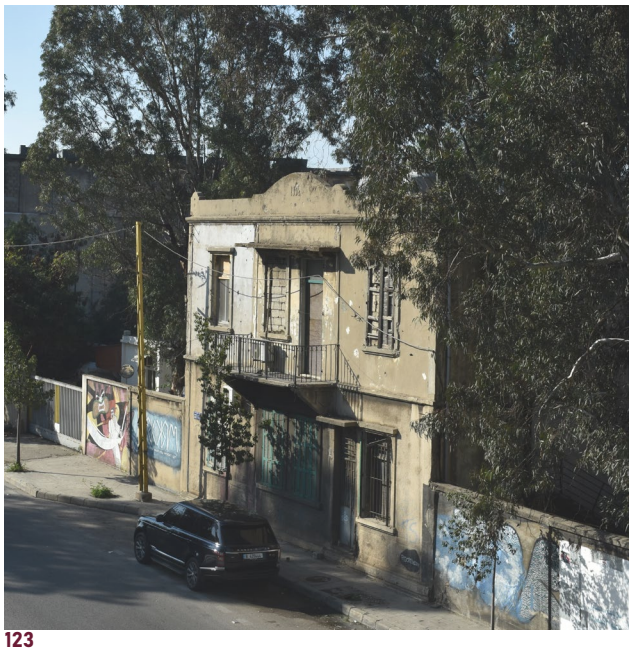
122

- Abandoned and modified buildings

The map identifies the extent of building abandonment and transformation in Karantina, revealing the effects of long-term disregard and post-blast decline. A significant number of structures are currently abandoned or unused, reflecting the area's weak real-estate demand. Many of these buildings were damaged during the 2020 port explosion and were deemed not useful enough to re-build. The largest clusters of vacant structures appear near the Beirut river and the northern industrial belt, where warehouses and workshops have been left either empty or partially collapsed.

The map also highlights several cases of modified building use, usually conversions from residential to commercial or industrial functions. These shifts occurred gradually as small-scale industries expanded into former housing units, especially along El-Khodor and Ibrahim Bacha streets. A smaller number of buildings have been completely demolished, and are replaced in some cases by temporary storage areas or parking lots rather than new construction.

This combination of abandonment, informal reuse, and demolition illustrates a layer of physical decay and functional shift. Karantina's therefore continues to lose residential density and architectural coherence because of the declining quality of life and rising neglect and marginalization.



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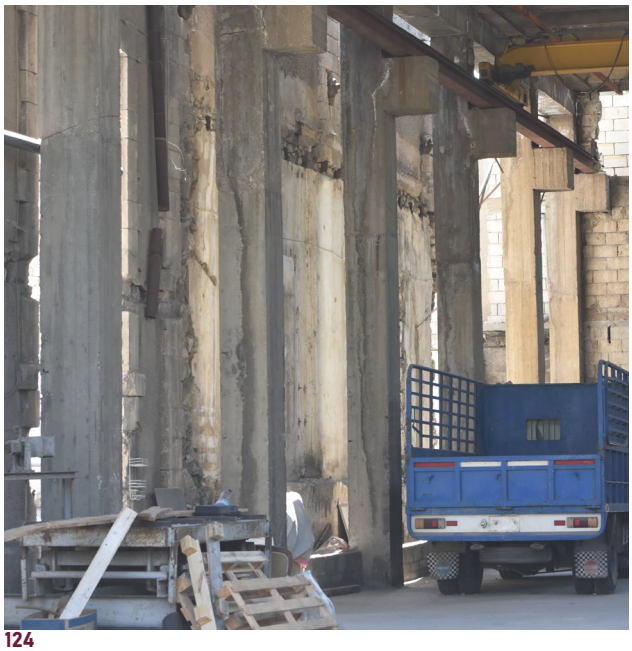

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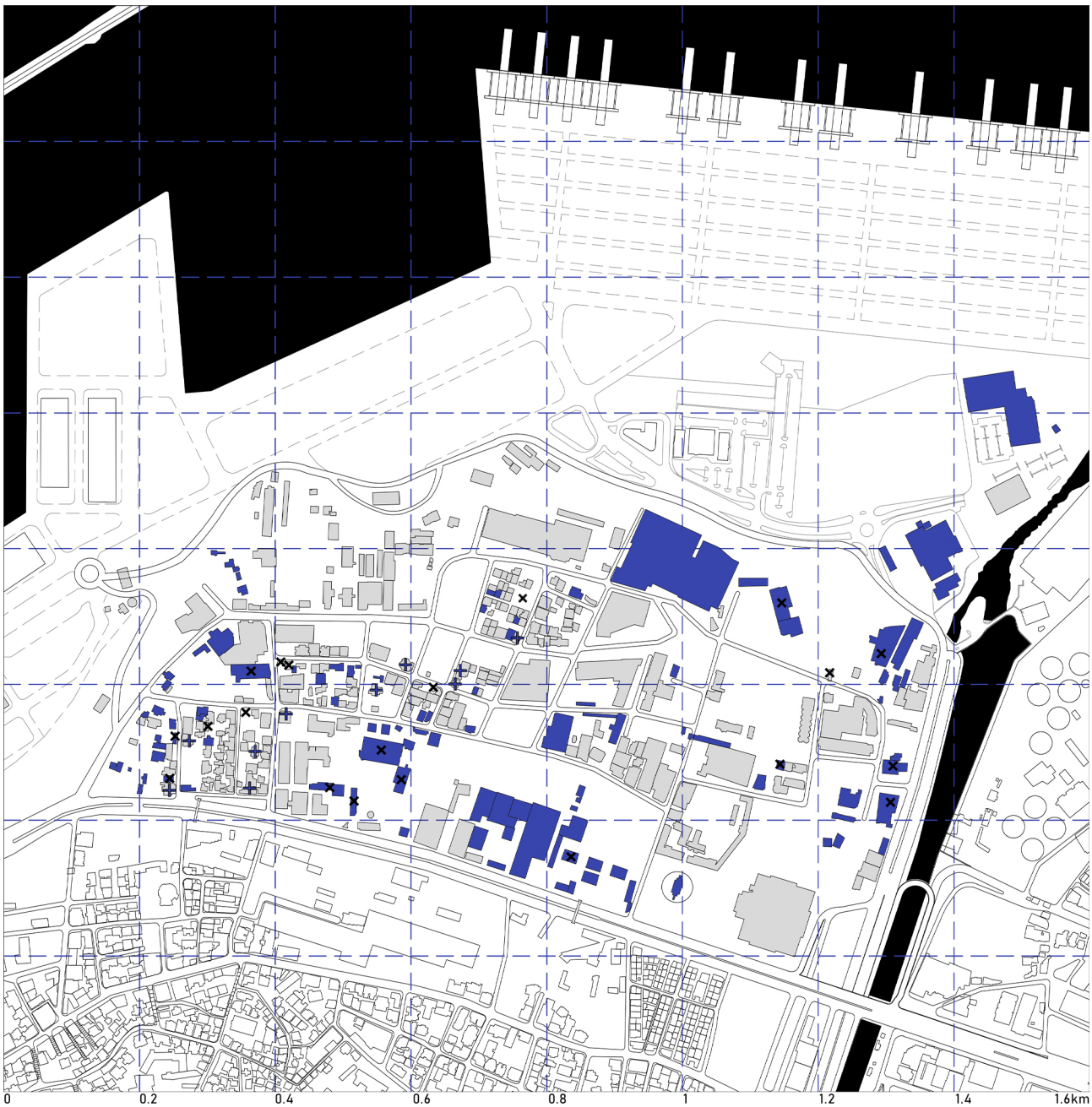


Legend:

- Abandoned building
- Modified buildind use (from residential to commercial or business)
- Demolished buildingd

125

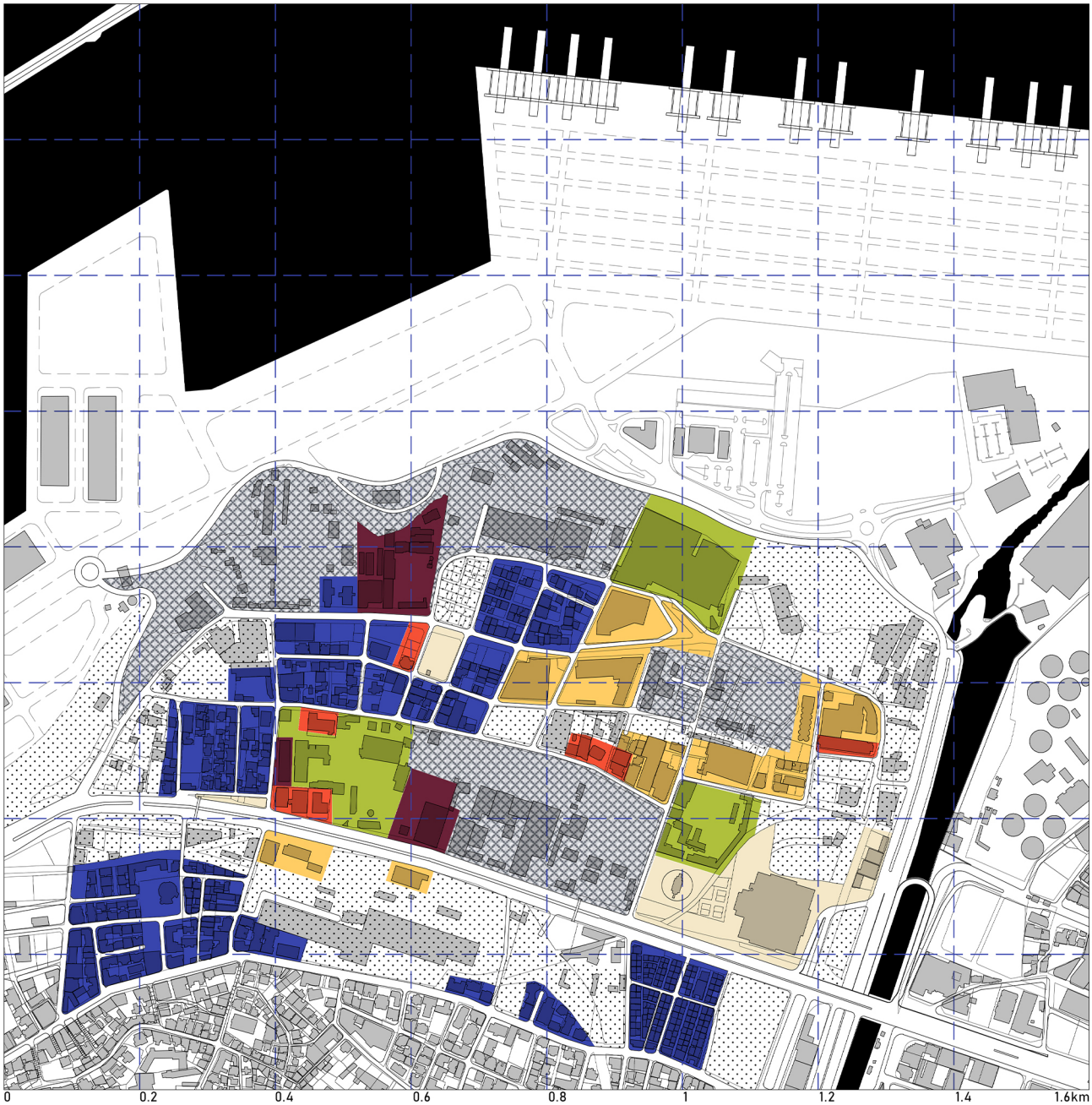
02.2.4. Functions, land uses and landmarks

- Functional distribution

This map illustrates the mosaic of land uses that defines Karantina. Industrial and commercial activities occupy around 30% of the total built area, concentrated mainly toward the Beirut river. Residential and mixed-use buildings, also covering roughly 30% of the district, are clustered in Al-Saydeh, Al-Khodor and the southern edge of Al-Senegal, where density and social activity is concentrated.

Public facilities, such as governmental offices, are found along the Charles Helou highway, and the governmental hospital is located in the northern belt of Karantina. Waste management plants and temporary military bases dominate the northern edge near the port and a big part of the southern border.

Overall, this map highlights the absence of functional zoning and the sharp and unhealthy contrasts between living areas, heavy infrastructure, and underused land, which deepen the environmental and social vulnerability of the neighborhood.



Legend:

- Residential and mixed-use
- Offices
- Industrial/Commercial
- Waste management facilities
- Public facilities
- Entertainment and recreation
- Temporary military base
- Abandoned structures

126

- Neighborhood landmarks

This map identifies the main landmark types in Karantina. Despite its small size, it accommodates a diverse range of civic, religious, and industrial facilities. Governmental and municipal buildings, including the Beirut fire brigade and public works department, are concentrated in the central municipal plot. Religious facilities such as Al-Saydeh Church, and Al-Khodor Mosque act as important landmarks for Karantina's diverse communities. The area also hosts businesses and industrial landmarks, including the Porsche Center, Bakalian Flour Mills, and Bernard Khoury Architects' office, which represent the still functional presence of large-scale private enterprises. Entertainment venues, like Forum de Beyrouth, B018 nightclub, and KED comedy club, are located in the south-west corner. Their presence at the forefront of Karantina unintentionally masks what's happening inside the neighborhood, and many people often visit these landmarks without knowing they are located in Karantina. NGO facilities, such as Borderless Karantina Community Center and La Cuisine de Mariam, played a important role in ongoing social recovery and post-blast support.

Together, these landmarks highlight Karantina's contradictory and heterogeneous identity: a coexistence of industrial, civic, and cultural landmarks in an area that it still struggling to recover from a series of destructive events.

Legend:

- Governmental facilities
- Religious facilities
- Entertainment facilities
- Public parks
- Business facilities
- Health facilities
- Educational facilities
- NGOs

127

128 Forum de Beirt

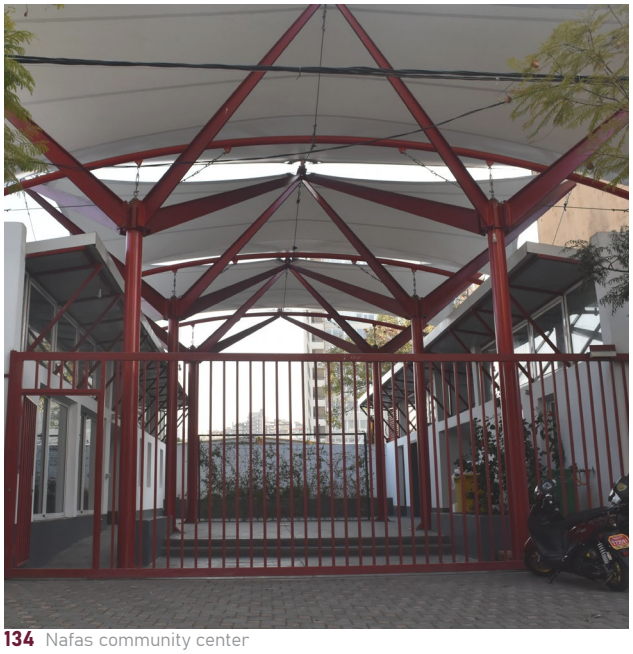
129 Bernard Khoury Architects office

130 Old slaughterhouse water tower

131 Fish Market

133 Unit Hotel Karantina

132 Al Saydeh Church



134 Nafas community center

135 Karantina public park

- Wastelands and green spaces

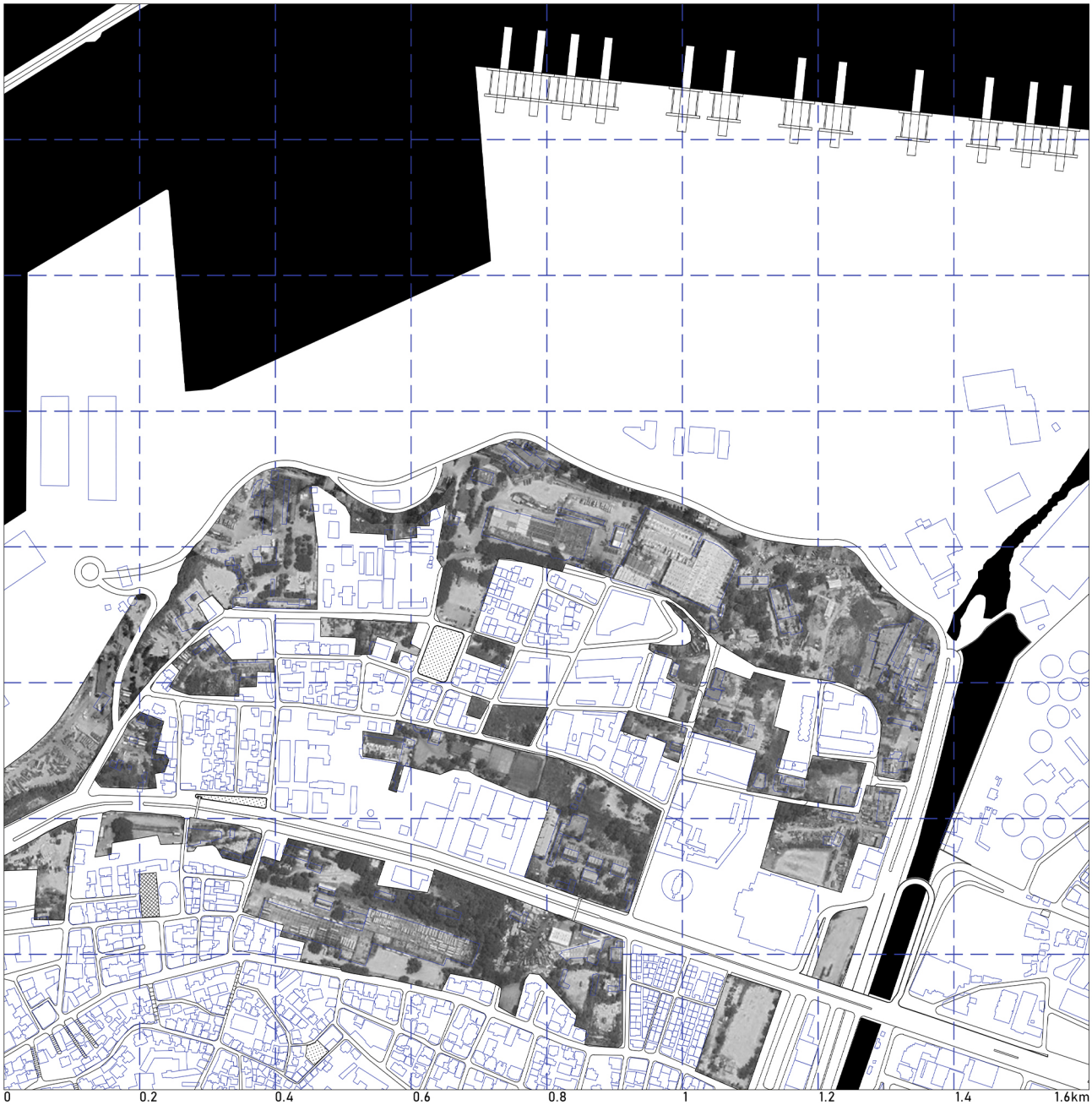
This map reveals the empty layer of Karantina where large portions of land remain unbuilt, abandoned and unprogrammed. Wastelands and leftover spaces cover more that 30% of the neighborhood's surface, particularly along the Northern port edge, the Beirut river, and the municipal plot. This is the result of war destruction, post-blast damage, industrial decline and conflict of interest. Most of these zones are fenced or inaccessible and include open degraded yards, vacant industrial parcels, and residual plots divided between roads and infrastructural boundaries.

Public accessible green areas are extremely limited and contribute to less than 1.5% of the total land area. Outside Karantina, the cemetery, located to the south, in Mar Mikhael, is one of the few publicly accessible green space near the neighborhood. The issue of underutilized land reflects a long history of conflict, where destruction, informal occupation, and institutional neglect have gotten in the way of the reintegration of vacant land into the neighborhood's spatial and social mechanisms.

In a city as dense and busy as Beirut, the presence of such vast unused land in Karantina stands in contrast to the chronic shortage of space elsewhere. This raises an issue: the rarity of space makes every square meter of land valuable, yet, Karantina holds a reserve of open land that is disconnected from the city's needs.

136 Source: Google Earth 2025

137 Source: Google Earth 2025



Legend:

- Wastelands and left-over spaces
- Cemetery
- Accessible public green area

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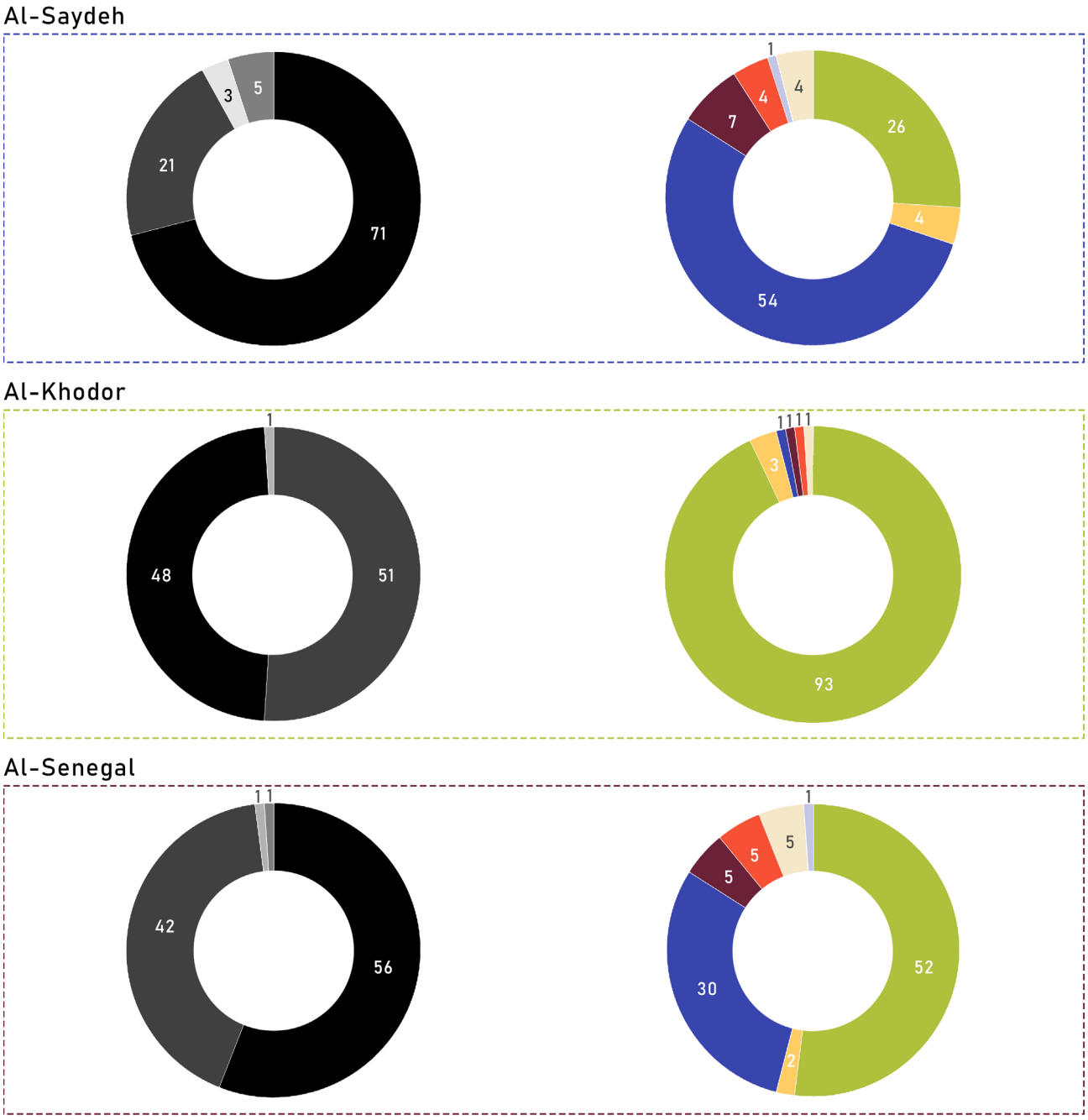


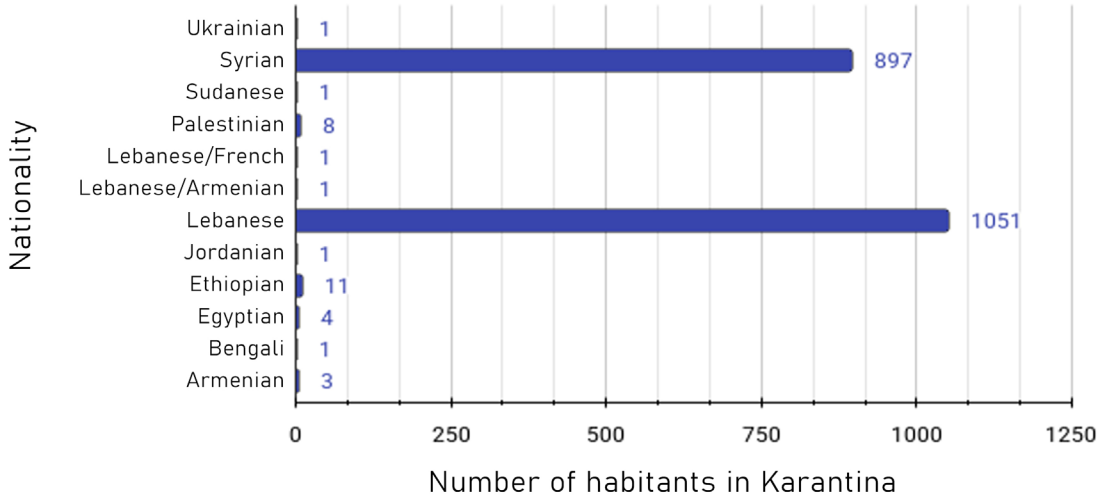
139 Social composition of the residents. Source: Adapted from The Beirut Urban Lab, 2021.

Legend:

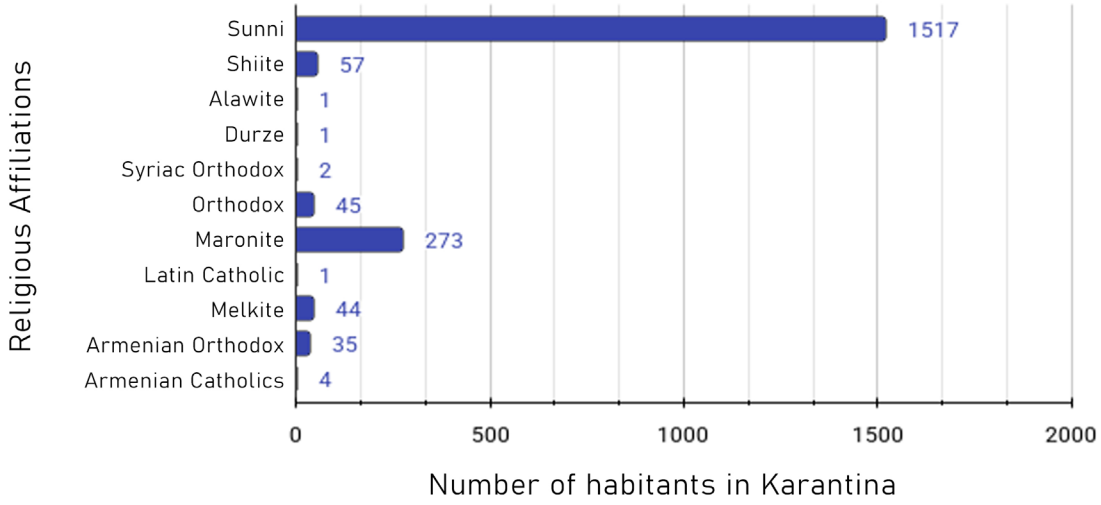
- Al-Saydeh neighborhood
- Al-Senegal neighborhood
- Al-Khodor neighborhood
- Religious facilities

Karantina's population displays a very diverse social composition shaped by decades of labor-related migration, displacement, and civil wars. Lebanese habitants represent around 53% of residents, while Syrians account for approximately 45%, accompanied by small groups of Palestinian, Ethiopian, and Egyptian residents. These numbers vary significantly between the three sub-neighborhoods. Al-Saydeh has the highest share of Lebanese residents (71%) and the most stable households, while Al-Khodor is almost evenly divided between Lebanese (51%) and Syrians (48%), reflecting its role as a concentration of low-income migrant workers and temporary housing. Al-Senegal presents a similar mix, with 56% Lebanese and 42% Syrians.

Religious composition also demonstrates the neighborhood's diversity and coexistence. Sunni Muslims form the largest group (around 1,500 individuals, or 55%), followed by Maronites (20%), Greek Orthodox (8%), and smaller Shiite and Armenian Orthodox minorities. Like nationalities, religious affiliations also differs depending on the neighborhood. Sunni residents cover the majority of Al-Khodor and Al-Senegal. Christian communities (Maronite, Greek Orthodox, and Armenian) remain more concentrated in Al-Saydeh, near Mar Mikhael, which is also in majority Christian. This diversity is reflected in the distribution of nearby religious landmarks, Al-Khodor Mosque, Al-Saydeh Maronite Church, and Saint Kevork Armenian Orthodox Church, which serve distinct, coexisting and overlapping communities. Karantina represents one of Beirut's most demographically mixed areas compared to its size. This data underlines how long-term residents live alongside newer populations within a confined and environmentally stressed urban setting.



141 Distribution of nationalities in Karantina. Source: The Beirut Urban Lab, 2021.



142 Distribution of religious affiliation in Karantina. Source: Beirut Urban Lab 2021.

- Uneven post-blast recovery

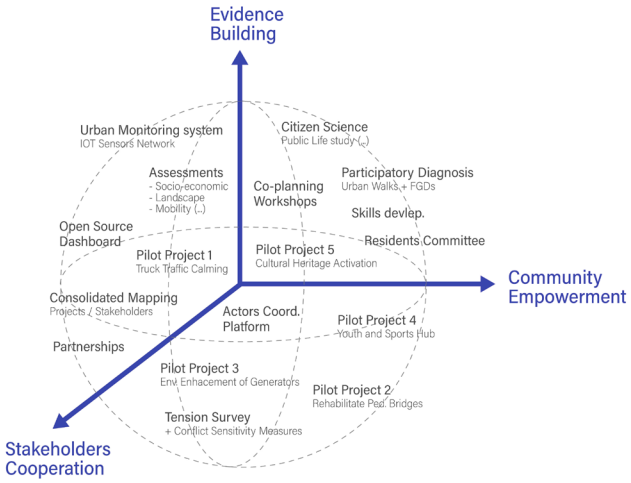
The 2020 port explosion was a turning point for Karantina that exposed the already existing social and physical fragility of the neighborhood. The blast left almost every building either damaged or completely destroyed, with the most severe impact concentrated along the northern and eastern edges. All workshops and low-rise residential blocks in Al-Khodor and Al-Senegal were left structural stability. In Al-Saydeh, although many buildings remained standing, their structural integrity was heavily affected, forcing residents to evacuate temporarily. The explosion did not affect all areas in the same ways since industrial buildings and newer construction only sustained non-structural damage.

While the reconstruction of neighboring districts like Mar Mikhael and Gemmayzeh were well-funded reconstruction, Karantina received minimal and fragmented support. In the weeks after the blast, international agencies like the UNESCO "LiBeirut" initiative and the French Development Agency (AFD) and Solidarités International, directed millions of dollars toward the rehabilitation of heritage buildings and commercial facades in the historic zones. Beirut Heritage Initiative (BHI) restored several landmark structures along Armenia Street and Pasteur Street in Mar Mikhael, dedicating up to 10,000 US dollars per building for structural and architectural repairs.

In contrast, Karantina was left outside the main reconstruction perimeter. Assistance in the district was mostly emergency relief provided by NGOs such as ACTED, Borderless, and Beirut Relief Coalition, which provided food parcels, basic medical supplies, and preliminary shelter repair. Structural reconstruction was rare and underfunded. Most homes received only minor repairs covering windows and doors, with estimated spending rarely exceeding 1,000 to 1,500 US dollars per building. Public utilities were restored late, and damaged infrastructures such as lighting, drainage, and sidewalks, are still not fully repaired to this day.

The unequal distribution of reconstruction funding also reflected social divisions. In Karantina, most households are renters or informal occupants. Industrial and commercial owners were usually prioritized, allowing them to rebuild workshops and storage areas quickly. This imbalance produced a visible contrast since large warehouses and factories in the western zone were the first to reopen, while residential buildings continued to decay. Many landlords used the opportunity to evict tenants or sell damaged buildings for demolition to convert them into parking areas.

Five years later, recovery remains incomplete, and traces of the blast are still visible, not only in Karantina but also all over Beirut. The explosion not only destroyed buildings but also accelerated social displacement and accentuated inequalities. The slow pace of rehabilitation and the lack of institutional support have left the neighborhood patched up instead of healed.



143 The Neighborhood Recovery Framework: Three Interconnected Tracks
Source: UNDP

- Vulnerability

The assessment of socio-economic and physical indicators highlights contrasts between Karantina's three sub-neighborhoods. In the district, more than 70% of residents live in rented housing, less than 15% own their homes, and the rest occupy informal units. Al-Khodor is vulnerable since tenure insecurity is combined with the lowest income levels and the poorest housing conditions. The area hosts a high concentration of migrant and refugee workers, mainly Syrian, usually employed in industrial and service jobs. Over 60% of the buildings are in critical condition, and many parcels are too small or legally unbuildable because of inheritance disputes, preventing any formal reconstruction.

In Al-Senegal, vulnerability is shaped by the presence of vacant and unactivated plots that limit community stability. 35% of the land in this central zone is either empty, underused, or occupied by temporary functions, creating a landscape of discontinuity and low activity. The sub-neighborhood sits between Al-Saydeh and Al-Khodor, and function as a transition zone, which cause this area to have weak identity and limited residential density. The combination of empty parcels, declining housing stock, and environmental struggles, makes Al-Senegal vulnerable to neglect and further degradation.

Al-Saydeh also experiences physical and environmental vulnerability. The area mostly houses long-term working-class Lebanese families in dense residential blocks but remains categorized as one of Beirut's poor zones. Its location on the edge of the Charles Helou Highway and its proximity to one of the port's truck parking exposes it to high levels of noise and air pollution. This also lead to restricted pedestrian movement and neighborhood community connectivity.

The industrial belt that stretches along the port's southern boundary and around the Forum de Beyrouth area, is exposed to structural and environmental vulnerability. The majority of this zone consist of underused and abandoned industrial plots, parking lots, and storage yards with almost no permanent residents. High levels of pollution, permanent truck circulation, and a lack of green and public spaces contribute to critical environmental conditions and a sharp physical separation from the rest of the city.

Overall, vulnerability in Karantina forms a clear gradient. Al-Khodor concentrates the highest levels of social and economic fragility, Al-Senegal represents a neglected and hybrid central zone with limited residential use and poor identity and Al-Saydeh endures environmental pressures despite better social stability. The industrial belt showcases structural and ecological deterioration due to large abandoned and forgotten spaces. These overlapping vulnerabilities highlight Karantina's fragmented condition and its marginal position within Beirut.

“Anatomy of spaces”: The lines, textures, layers and colors of Karantina

March-August 2025


MAERSK
SEALAND
CMA CGM

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CMA CGM
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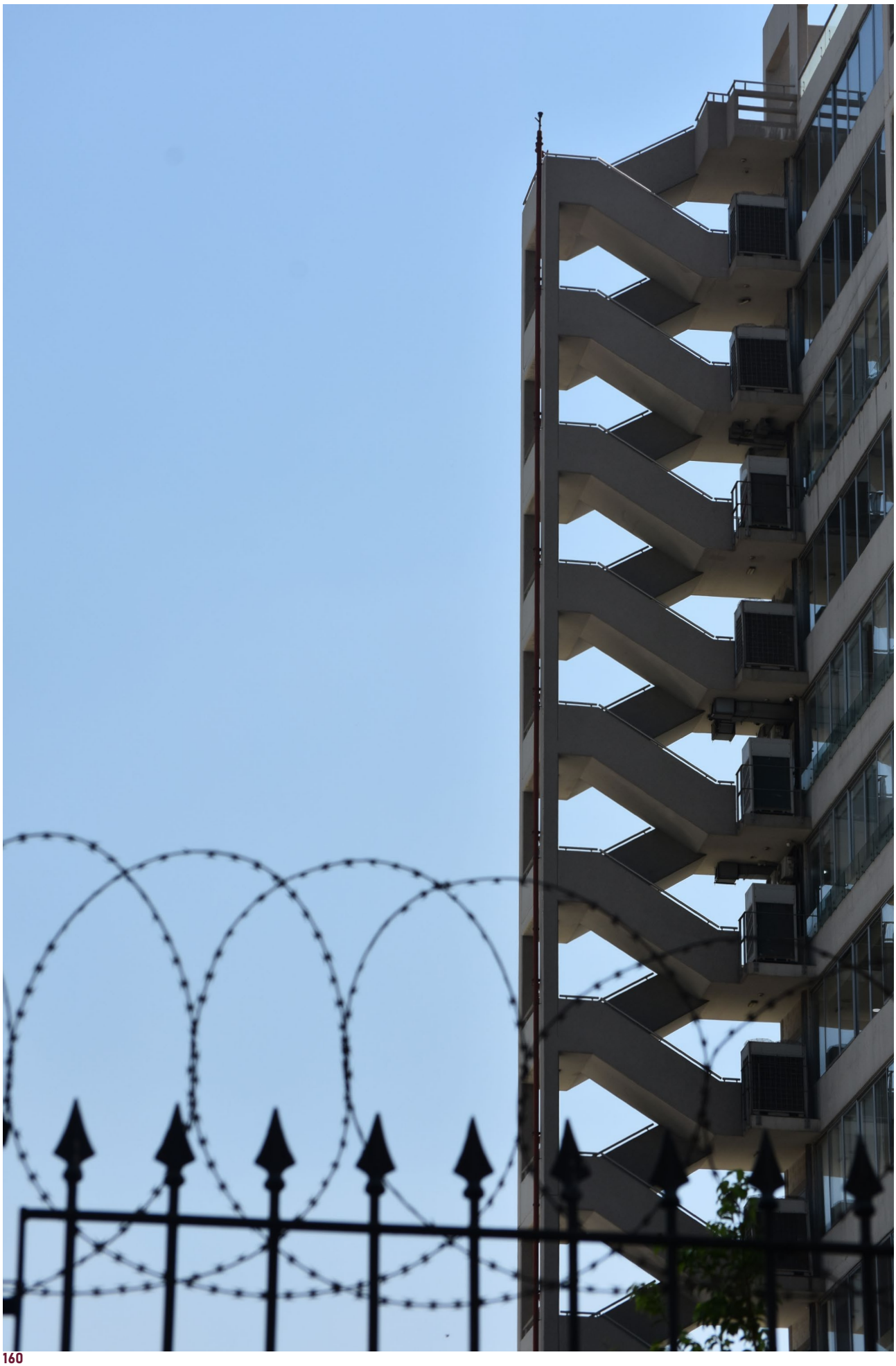

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03. Beirut's backyard: Conflict and coexistence

03.1. The events that shaped Karantina

1834 – The city's first frontier

In 1834, during the Egyptian occupation of Beirut under Ibrahim Pasha, a new maritime quarantine station, the lazaretto, was built on the city's northern shore. A lazaretto was a complex designed to prevent the spread of epidemics such as plague and cholera through maritime trade and during prolonged sailing periods. Ships arriving at Beirut were required to dock offshore until passengers, goods, and crew completed a forty-day isolation period. This is where the name Karantina came from, referring to the Italian word "karantina". The facility included inspection rooms, dormitories, disinfection courtyards, and storage areas for goods awaiting clearance.

Its placement outside the city was intentional; close enough to control trade, but far enough to contain disease. This would determine the area's future identity: a zone of exclusion and service, functioning for the city but not included in it.

162 Map from 1862 showing settlements and lazaretto in Karantina. Source: The National Archives, Kew.

163 Karantina in 1876 showing the quarantine facility and growing cluster in Al-Saydeh. Source: Löytved, Julius.

1920s - The port of passage

Following the establishment of the French Mandate in 1920, Beirut's lazaretto was renovated into a modern medical and logistical hub. The French authorities expanded the facilities by building medical laboratories, vaccination halls, and a mosque to accommodate pilgrims traveling to Mecca, who were required to undergo sanitary inspection before continuing by sea. The site became one of the most important health checkpoints for maritime routes crossing the eastern Mediterranean. During that time, Karantina also temporarily received Armenian refugees displaced by the genocide of 1915 to 1917. The French High Commission used the area's existing quarantine and health infrastructure to host and process thousands of arrivals before their relocation to Bourj Hammoud across the Beirut River.

Thus, by the end of the 1920s, Karantina had already combined the roles of border, refuge, and infrastructure, a space defined by both humanitarian and logistical functions.

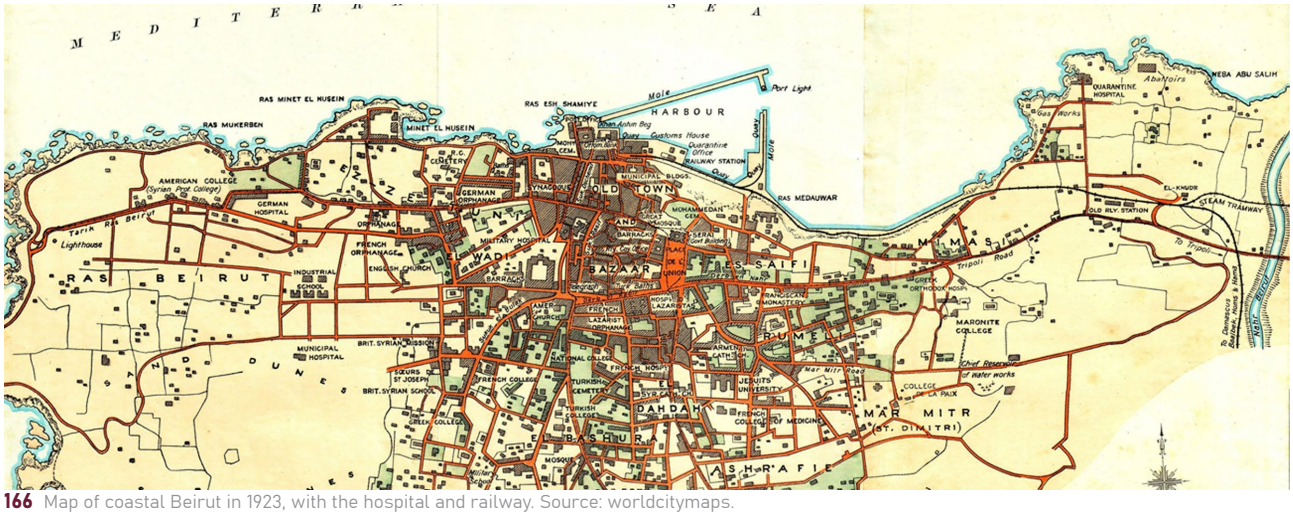
164 Armenian refugee camp in Karantina, early 20th century. Source: George Granthan Bain Collection, Library of Congress.

1930s to 1940s - The industrial turn

As Beirut grew into a commercial capital during the 1930s and 1940s, Karantina's role shifted from medical isolation to industrial support for the port. Its flat terrain and direct access to the shoreline made it ideal for warehouses, tanneries, and grain mills, creating a cluster of productive facilities dependent on the port. The Beirut River, then still open and clean, provided water for cooling, cleaning, and waste discharge. Gradually, the lazaretto's medical pavilions lost their functions and were re-purposed for storage or low-cost housing.

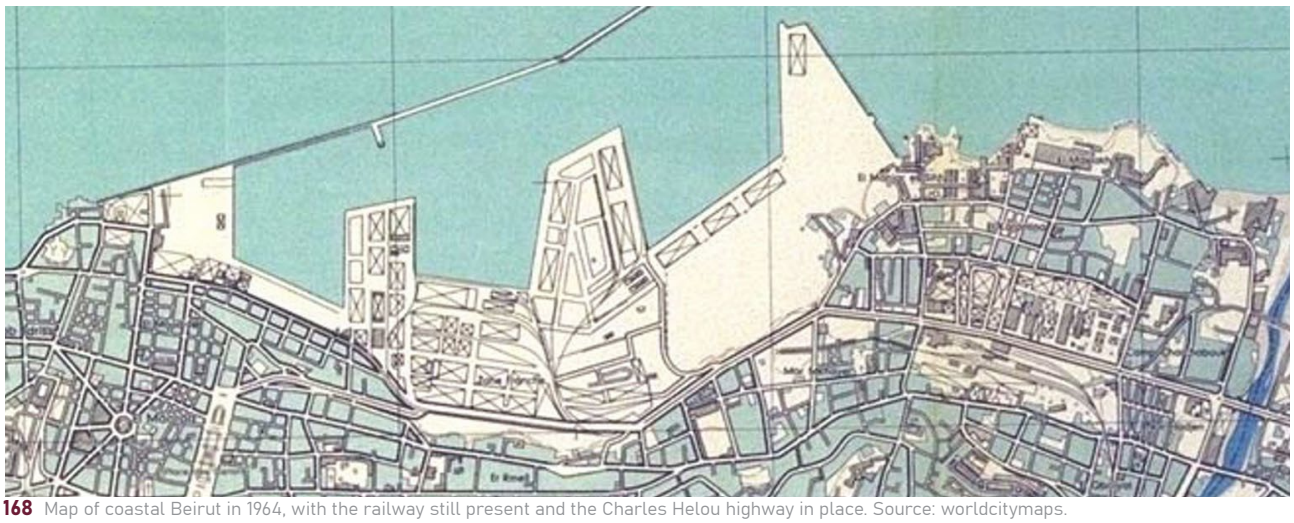
This is when Karantina, that began as a frontier of protection for the city was transformed into Beirut's industrial backyard, the place where the city's vital but undesirable operations could occur out of sight.

165 Aerial photo of Karantina in 1931 showing tanake settlements and the municipal lot before the Charles Helou Highway. Source: The Lebanese Army.



166 Map of coastal Beirut in 1923, with the hospital and railway. Source: worldcitymaps.

167 Map of coastal Beirut in 1936, Karantina with military and refugee camps. Source: worldcitymaps.



168 Map of coastal Beirut in 1964, with the railway still present and the Charles Helou highway in place. Source: worldcitymaps.

1943 to 1960s – Infrastructure, isolation and coexistence

After Lebanon's independence in 1943, state attention focused on modernizing infrastructure to serve the growing port city. Karantina became central to this process. The slaughterhouse was rebuilt with concrete halls and cold-storage rooms in 1969, signaling Beirut's ambition to modernize its food supply chain. Around it grew grain silos, workshops, and warehouses, while the Bakalian Mill expanded into a major flour-processing facility. The Charles Helou Highway that was constructed during the 1960s as a high-speed corridor linking east and west Beirut, sliced through the southern edge of Karantina. The road was meant to improve access to the port but instead formed a physical and social boundary, cutting the neighborhood off from Mar Mikhael and Gemmayzeh. By the late 1960s, Karantina had become a fully operational industrial engine, essential to Beirut's metabolism.

Parallel to its industrial growth, Karantina's social landscape took shape between the 1940s and 1960s. Its inexpensive land and proximity to jobs attracted working-class families and successive waves of displaced populations. Lebanese families of different sects like Shia and Sunni Muslims as well as Christians, settled beside Palestinian refugees, Kurdish families, and Syrian workers. Housing was informal: many people built one-room shelters of metal sheets, also known as tanaké, while others occupied old warehouses and former administrative buildings from the Mandate period. Amenities like water and electricity were irregular and sparse, but the neighborhood offered proximity to employment in the port, the slaughterhouse, and nearby factories. By the end of the 1960's, Karantina was a lively, mixed working-class quarter where daily coexistence thrived.

1970 to 1975 - The preludes of collapse

By the 1970s, Karantina was an extremely dense and overburdened neighborhood, caught between Beirut's port industries and the social neglect of the state. According to a 1971 survey by the Direction Générale de l'Urbanisme (DGU), it had the highest residential density in Beirut, with only 4.9 square meters of living space per person and an average of 6.5 persons per dwelling.

Two distinguishable sub-neighborhoods had formed in Karantina. Al-Saydeh, to the west, was centered around Notre Dame Al Sayde church and composed mainly of Lebanese Christian families. Al-Khodr, to the east, extended toward the Beirut River and contained a mix of Lebanese Shia and Sunni Muslims, Palestinians, Kurds, and Syrians. Despite social differences, the two zones remained spatially intertwined through work dynamics and shared streets. Karantina at that point represented a small scale versions of Lebanon's demographic diversity.

The neighborhood's built form combined slum typologies and semi-industrial structures. Many dwellings doubled as workshops or small commercial units, a pattern typical of Beirut's informal settlements. Along Rue des Abattoirs, a vibrant street market had formed, with around 290 small businesses. The ground floors of buildings hosted livestock or small-scale production, while upper floors housed families. But tension was rising due to frequent clashes between Palestinian militias and Christian armed groups in nearby neighborhoods. Within Karantina, armed checkpoints began to appear, and the area became a militarized pocket at the northern gate of East Beirut.

169 The Karantina bridge in 1975. Source: L'Orient-Le Jour archive.

170 A Karantina street view in 1975. Source: L'Orient-Le Jour archive.

171 Civilians escorted by Lebanese fighters. Source: Al-Nahar archives

172 Men lined up on a wall by Lebanese fighters. Source: Al-Nahar archives.

173 Family bring escorted. Source: Al-Nahar archives.

174 Civilian being escorted by Lebanese fighters. Source: Al-Nahar archives.

175 The aftermath of the Karantina massacre. Source: Al-Nahar archives.

176 The aftermath of the Karantina massacre. Source: Al-Nahar archives.

1975 to 1976 – The civil war massacre

In April 1975, armed conflict erupted in Lebanon, the Lebanese Civil War. Karantina's strategic location at the entrance to East Beirut, next to the Port of Beirut, placed it directly on the conflict line between competing armed groups. The area was controlled by Palestinian organizations affiliated with the Palestine Liberation Organization (PLO), supported by allied Lebanese Muslim groups. Surrounding districts came under the influence of Christian militias, particularly the Kata'eb or Phalange, a Maronite-led political movement founded in 1936 that became highly influential in Beirut's governance and militias, and the Tigers, the armed wing of the National Liberal Party.

After months of escalating clashes and blockade, these militias launched a full assault on 18 January 1976. The attack led to what became known as the Karantina Massacre. Hundreds of Palestinian, Lebanese Shia and Sunni, Kurdish, and Syrian civilians were killed, and , more fled across the river to Bourj Hammoud and West Beirut. Nearly all of Karantina's structures were demolished. The area was then occupied and later handed to the Lebanese Army, effectively erasing the pre-war neighborhoods from the city's map.

1980s – The militarized edge of the port

Throughout the 1980s, Karantina remained largely a military and logistical zone. The port's operations, army compounds, and municipal facilities occupied the vast majority of the cleared land. Few civilians were allowed to return, and the territory functioned as a buffer strip separating the port from the unstable city. The slaughterhouse, warehouses, and waste depots resumed limited activity under state control, but the social fabric that used to animate Karantina was gone.

1990s to 2000s – Rebuilt, but not reconnected

After the war ended in 1990, Beirut entered a period of reconstruction. However, Karantina was excluded from these efforts. It remained a patchwork of municipal, military, and port-owned lands, where heavy industry and storage replaced housing. The slaughterhouse continued to operate, employing a small number of workers, while recycling plants and waste treatment stations multiplied around it. Gradually, Lebanese families, Shia and Sunni Muslims, and some Christians returned to rebuild simple houses on vacant plots. Syrian migrant workers and a small number of Palestinian families also resettled, forming a new and fragmented population. Karantina was inhabited again.

177 In 1992, the army recovers Lebanese Forces bases in Karantina. Source: Al-Nahar archives.

178 In 1992, the army recovers Lebanese Forces bases in Karantina. Source: Al-Nahar archives.

2010s – New pressures and persistent margins

In the 2010s, Beirut's real-estate growth intensified around Mar Mikhael and Gemmayzeh, while Karantina continued to host heavy infrastructure. The Syrian conflict from 2011 brought another wave of Syrian refugees, some renting in al-Khodr or near the industrial areas. Environmental and infrastructural risks started to rise: truck congestion, air pollution, and waste odors became defining features of some areas of Karantina. Despite occasional cultural or nightlife venues appearing on its southern edges along the highway, Karantina remained characterized by industrial tenacity and social vulnerability. In 2014, the municipal slaughterhouse permanently ceased operations, leaving its large concrete halls abandoned.

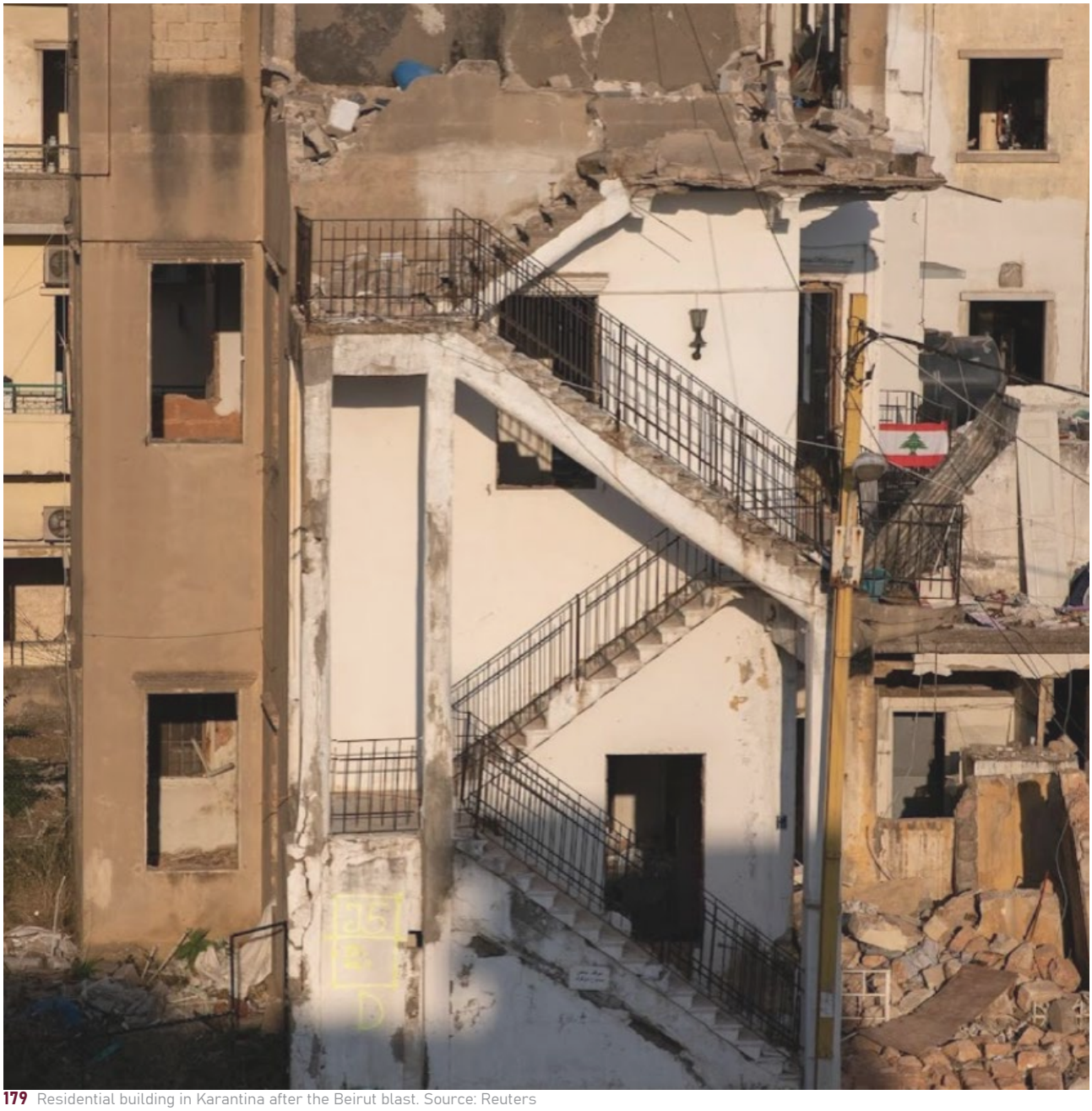
August 4th 2020 - The Port Explosion

On 4 August 2020, the explosion of the Port of Beirut devastated the city's northern districts. Karantina, located 400 meters away, was among the most affected neighborhoods. Residential buildings, schools, and community centers were destroyed; dozens were killed and hundreds injured. The explosion exposed the neighborhood's fragile structures, unclear land ownership, and lack of institutional support, compounding a history of neglect. Reconstruction was slow and uneven, relying mostly on NGOs and community initiatives, and international interventions.

2020s to present - Rebuilt, but not reconnected, again.

In the absence of a coordinated state-led response, reconstruction was slow and uneven, relying mostly on NGOs and community initiatives, and international interventions. In Al-Saydeh, NGOs such as Offre Joie and Association des Commerçants et Usagers de l'Abattoir (ACUA) rebuilt around 34 buildings and the church, providing structural and interior rehabilitation of relatively good quality. In Al-Khodr, the repairs were slower and more fragmented and reconstruction began months later under the Norwegian Refugee Council (NRC) and the United Nations Development Programme (UNDP).

In 2023, during the regional war on Lebanon and Palestine, Lebanese Shia families displaced from Dahye, Beirut's southern suburbs, took refuge inside the abandoned slaughterhouse. This event added another chapter to Karantina's cyclical story of displacement and adaptation. The neighborhood continues to embody landscape of conflict that mirrors Lebanon's pattern of crises and enduring resilience and coexistence.



179 Residential building in Karantina after the Beirut blast. Source: Reuters

180 Same building in Karantina 5 years after the blast.

181 Man standing in front of his demolished house. Source: Atlantic Council

182 Empty land around the man's old house, still not rebuilt 5 years after the blast.

03.2. The Governance Landscape of Karantina

03.2.1. The network of actors

In the absence of a unified governmental reconstruction policy, the neighborhood's trajectory has been shaped through overlapping and in some cases clashing efforts of public institutions, international organizations, non-governmental and community actors, and private and economic stakeholders. Together, these efforts form a fragmented system of governance that defines Karantina's current situation and identity.

- Public institutions

Karantina falls under the administrative jurisdiction of the Municipality of Beirut, which formally owns and manages a large share of public properties in the area. It acts as the main public authority responsible for issuing permits, managing land use, and coordinating with international donors. However, its operational capacity has been limited by economic and political crises.

The Council for Development and Reconstruction (CDR), the Ministry of Public Works and Transport, the Ministry of Social Affairs, and the Ministry of Economy and Trade are the national agencies that maintain formal jurisdiction over infrastructure, housing, and economic development. Almost every public project in the area, from the reconstruction of the hospital to the rehabilitation of the drug and medical warehouses, has relied entirely on external funding and technical execution from international agencies and donor programs.

- The Lebanese army

The Lebanese Army continues to control several strategic parcels of land along the port, the river, and within neighborhoods. These plots are designated as security zones, limiting access and hindering redevelopment in adjacent neighborhoods. Since these are not official military zones, but rather temporary bases, the release of these areas has been a recurring demand among local actors.

International agencies and donor organizations

Following the 2020 explosion, most reconstruction and relief activities were driven by international agencies that filled the void left by the state. Among the most active actors are the United Nations Development Programme (UNDP), the United Nations Human Settlements Programme (UN-Habitat), and the United Nations Office for Project Services (UNOPS), each contributing to different aspects of urban recovery.

These agencies work in partnership with donor-funded non-governmental organizations and development programs such as the Norwegian Refugee Council (NRC), Agency for Technical Cooperation and Development (ACTED), and Cités Unies Liban, which financed or implemented specific projects in housing, legal aid, or neighborhood facilities. Their interventions were generally project-based, responding to urgent needs rather than a long-term strategic framework.

- Non-governmental and community Actors

The absence of a strong municipal system has elevated the role of non-governmental and community organizations, which became the main providers of social, health, and educational services in Karantina. Both international NGOs and local associations operate on the ground, addressing issues of vulnerability, livelihood, and basic welfare.

Local civil organizations including the Association des Commerçants et Usagers de l'Abattoir (ACUA) represent networks of traders, butchers, and small business owners linked to the nonfunctional municipal slaughterhouse. These groups form the neighborhood's social infrastructure and often coordinate informally with residents and small businesses.

- Private and Economic Stakeholders

Karantina's economic life is maintained through a combination of small enterprises, workshops, and market-based activities. Local butchers' unions, livestock traders, and industrial operators continue to represent key interest groups.

Private landowners and landlords also have influence through control of developable plots. Small businesses and artisans contribute the most to everyday economic continuity but often operate without formal registration.

· Residents

The population is composed of a mosaic of people from various backgrounds, nationality and religion. This diversity reflects decades of layered displacement and labor migration that have unceasingly reshaped the district since the end of the 19th century.

Religious institutions like the Church of Our Lady in al-Saydeh and the al-Khodor Mosque serve as central points of communication, mediation, and aid distribution. These spaces substitute for the absent state and imitate a form of everyday governance grounded in social networks.
Today, the residents of Karantina stand as both beneficiaries and managers of recovery. Their daily practices sustain the neighborhood's social life, while their collective memory preserves its sense of place in the midst of cyclical conflict.

· Towards collaborative governance structures

A collaborative governance model recognizes Karantina's reality and seeks to formalize it. It proposes a framework in which decision-making, resource allocation, and accountability are shared among public institutions, international partners, and the community itself. Rather than reproducing a top-down hierarchy, the new structure would rely on horizontal coordination. For Karantina, and for similar neighborhoods in Beirut and other areas in Lebanon, this approach redefines reconstruction as a multi-scale process, where authority is distributed rather than centralized. It redefines resilience from having the capacity to withstand crisis to having the ability to govern through cooperation, learning, and adaptation.

03.2.2 LINORD: Fragmentation through planning

- Overview and context

The Liaison Nord de Beyrouth (LINORD) project is a state-led coastal development and transport initiative conceived in the mid-1990s by the Council for Development and Reconstruction (CDR) as part of a broader plan to restructure Beirut's northern waterfront. Its purpose was to connect the capital to the Metn and Keserwan coasts through a continuous coastal highway and a system of reclaimed land platforms supporting industrial, logistical, and urban uses. Formally approved by the Council of Ministers in 1995 and accompanied by the creation of a land company in 1996, the project was tendered in 1997.

- Objectives and components

LINORD was designed as an integrated coastal infrastructure system. Its components included:
A multi-lane expressway linking Charles Helou Avenue to Dbayeh, easing congestion at Beirut's northern entrance.
Reclaimed coastal platforms for light industry, mixed-use development, and port-related logistics.
A sea-passenger terminal and upgraded wastewater treatment facility.
And urban design measures to modernize the northern gateway of Beirut.
Together, these elements positioned LINORD as a northern extension of Solidere and Elyssar post-war reconstruction projects, relying on land valorization and real-estate development to finance infrastructure.

- Partial implementation and current status

Although the project was never executed as planned, segments of the envisioned coastal transformation materialized in the Waterfront City Dbayeh development north of Beirut. They are independent, market-driven projects, disconnected from the original public infrastructure vision.
As of 2024, official reports describe LINORD as dormant, with no construction activity or financing mechanisms in place.

- LINORD in Karantina

LINORD's alignment passes directly through Karantina, designating a new highway and interchange that would physically divide the neighborhood and expropriate several residential and industrial plots. The proposed corridor cuts between al-Saydeh, al-Khodr and the slaughterhouse area. If executed, it would deepen the spatial fragmentation already imposed by the Charles Helou Highway, the Port of Beirut, and the Beirut River.
The proposed expropriation and re-zoning along this corridor freeze the development on many residential and industrial parcels, discouraging local investment. For decades, residents have lived under the threat of possible displacement, unable to legally build, sell, or rehabilitate their properties due to the project's dormant yet active legal status.
Furthermore, the project's design disregards the human scale and social structure of Karantina. It envisions a transport corridor through a dense, mixed-use, and socially fragile area, prioritizing regional connectivity over neighborhood continuity.

- Critical assessment and implications

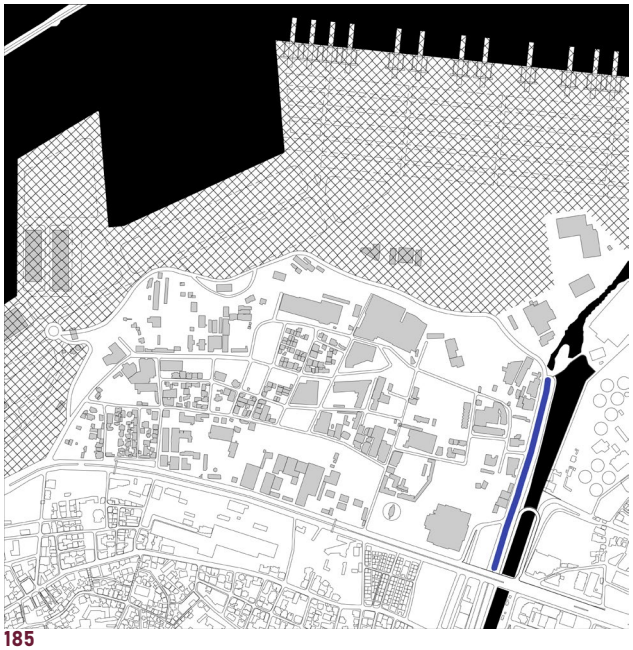
In planning terms, LINORD embodies the tensions that characterize Lebanon's approach to urban development: the reliance on large-scale, top-down projects to drive modernization, coupled with the persistent absence of participatory or social safeguards. While the project promises regional benefits such as reduced congestion, enhanced coastal infrastructure, and improved access, it fails to address the urban, social, and environmental consequences imposed on local communities.
Ultimately, LINORD reveals a planning paradigm that privileges national-scale visibility over local resilience which is a continuation of a post-war logic that equates progress with infrastructure and land value rather than with healthy repair and healing strategies.

183 First LINORD proposal extending from Antelias to the Beirut river. Source: Le Commerce du Levant.

184 LINORD planning proposal in Karantina. Source: Journal of planner and development.

03.3. Perception, identity and lived space

03.3.1. The neighborhoods up close



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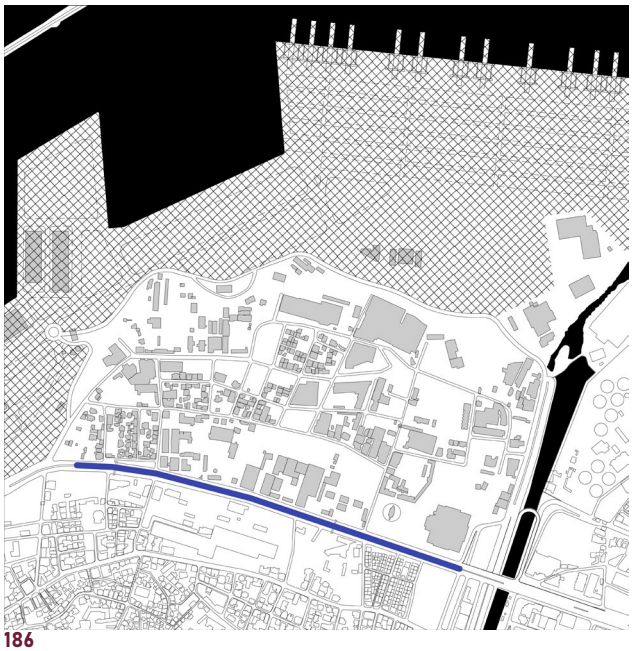
- Emile Lahoud road

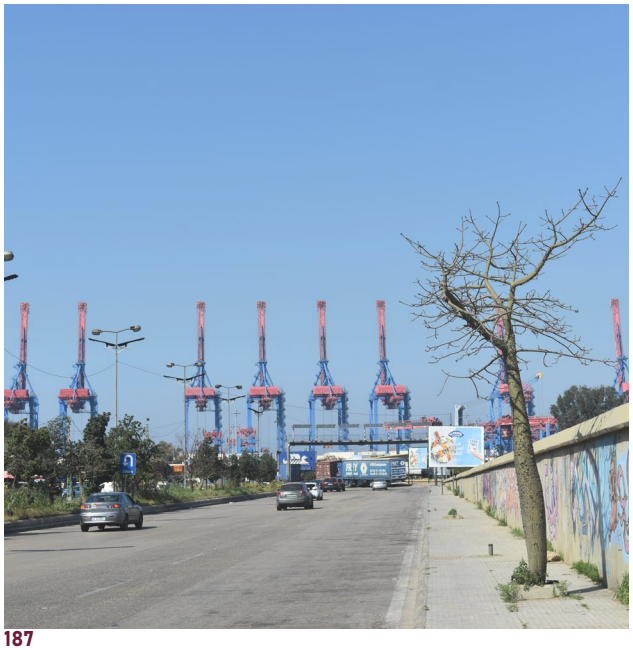
The Emile Lahoud Road runs along the eastern edge of Karantina beside the Beirut River. It is a wide arterial corridor dominated by heavy traffic, logistics yards, and the visual presence of port cranes rising beyond its western edge. The landscape is infrastructural, defined by concrete surfaces, retaining walls that block river view, and sporadic vegetation that offer little relief from the industrial scale of the surroundings. This road functions as a metropolitan connector, emphasizing movement over inhabitation and reinforcing Karantina's separation from the riverfront.



186

- Charles Helo highway

The Charles Helou Highway is Karantina's southern boundary. It cuts across the urban fabric and carries the main flow of vehicles entering Beirut from the north. The highway's continuous noise and fast-moving traffic create a sharp contrast with the smaller internal streets of Karantina, turning what could have been a point of access into a barrier. From the two pedestrian bridges, one can spot the city's skyline to the west and the mountains to the east, revealing Karantina's in-between condition: central within Beirut's geography and peripheral in its lived experience.



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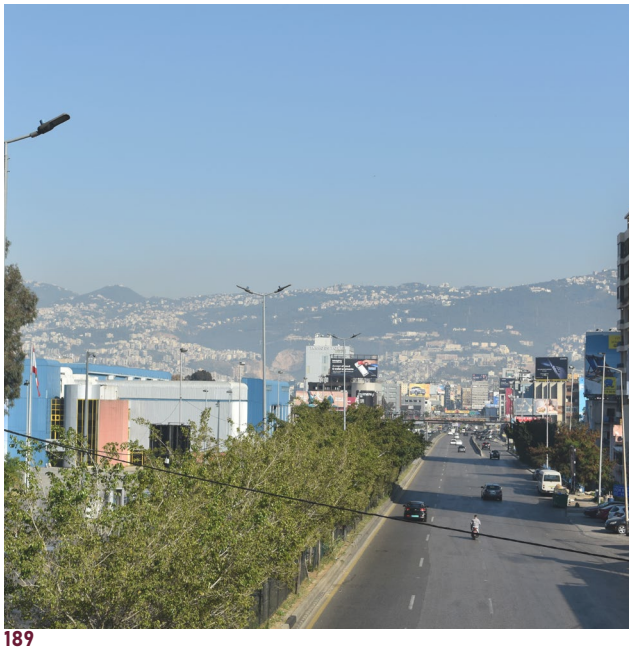

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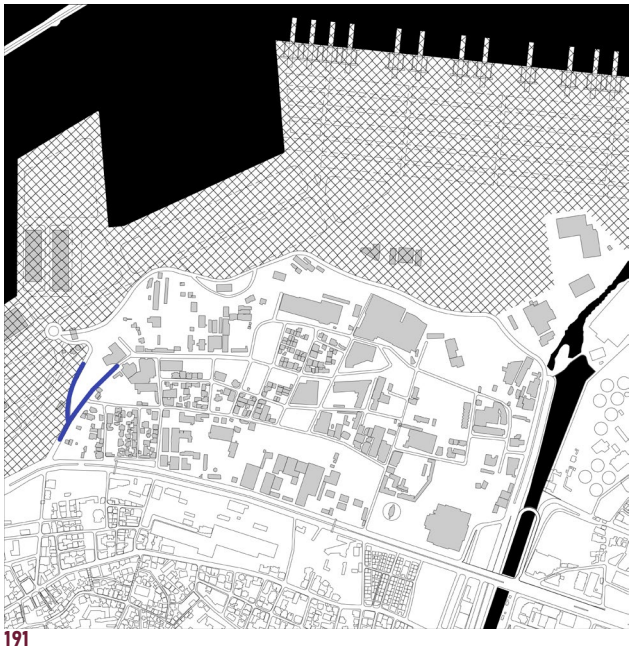
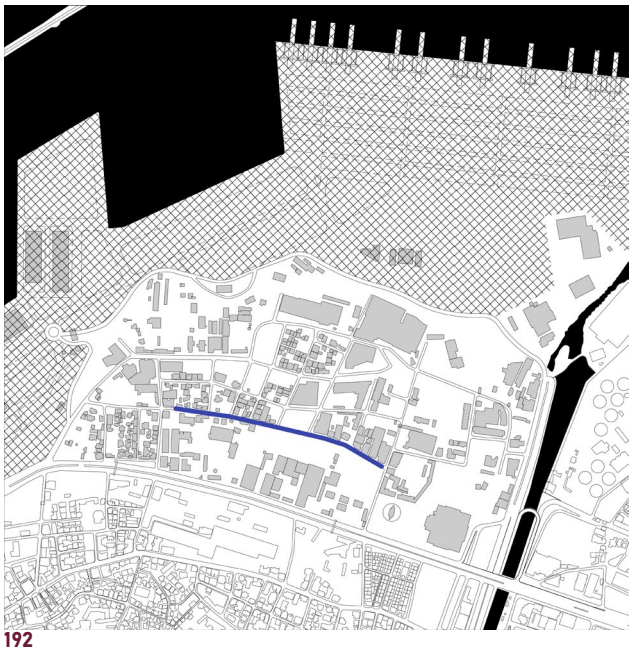


191

· The western edge

The western edge of Karantina forms a hard infrastructural boundary that separates the neighborhood from the industrial waterfront. This area is characterized by wide roads, logistics yards, and port-related facilities. The environment is transitional and shaped by movement and storage rather than habitation. Large retaining walls and vacant lots obstruct visual access to the sea and port. Along this boundary are found many abandoned buildings like old factories, but also heritage buildings like traditional house. The juxtaposition of industry and heritage is highlighted the most on this edge.



192

· Rehban street

Rebhan Street runs through the middle of Karantina, connecting the inner neighborhoods to the highways while concentrating many of the district's essential functions. Along the street, small workshops mix with larger industries such as Sleep Comfort, closed municipal lot to the north, NGO offices, the electricity building, army bases, and warehouses. This diversity of uses along the same street embodies very well the essence of Karantina, which is a space where industry, work, governance, residence and daily life intersect within the same city.

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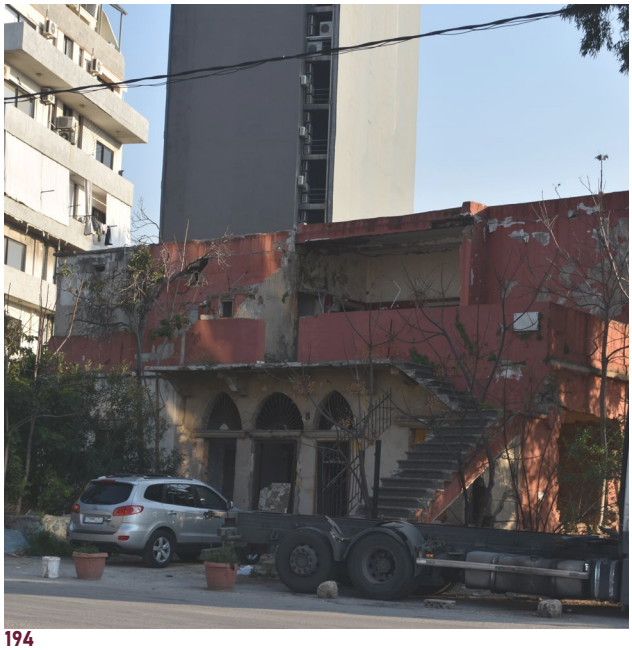

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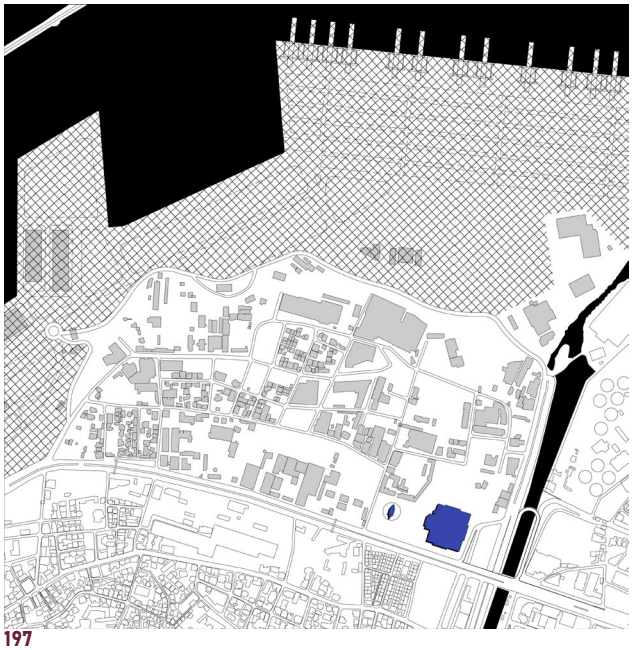
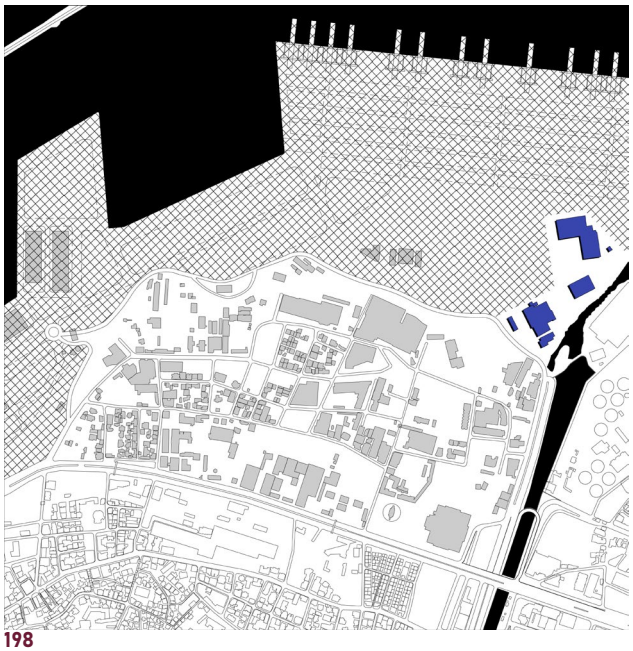


197

- The Beirut Forum

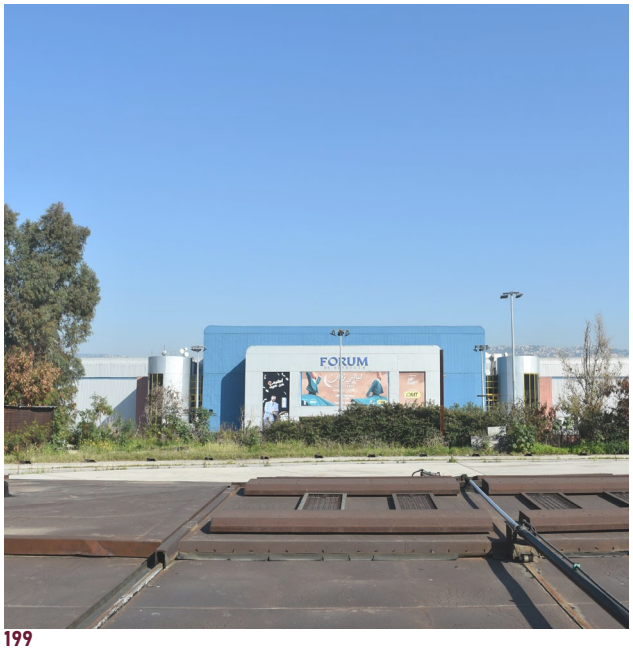
On Karantina's western edge lies the Beirut Forum area that forms a wide infrastructural buffer. The open spaces function mainly as parking lots and service yards, punctuated by the former B018 nightclub, now closed. Once a site of nightlife and cultural energy, it now stands inactive, surrounded by the noise of traffic. The mixture of disused venues, warehouse operations, and empty asphalt surfaces gives this edge a transitional atmosphere, between industrial function and urban vacancy, illustrating how temporary uses and neglect coexist along Karantina's boundary with the port.



198

- The fish market

At Karantina's northern limit, the fish market anchors an area long defined by production and waste. The cluster includes the abandoned municipal slaughterhouse and, across the Beirut River, the waste-sorting facility, both dominant landmarks in the district's industrial landscape. Around them, storage buildings, vendors, and workshops operate amid heavy truck circulation. The environment is shaped by the constant movement of goods and workers. This concentration of infrastructure and trade encapsulates Karantina's role within Beirut's urban metabolism.



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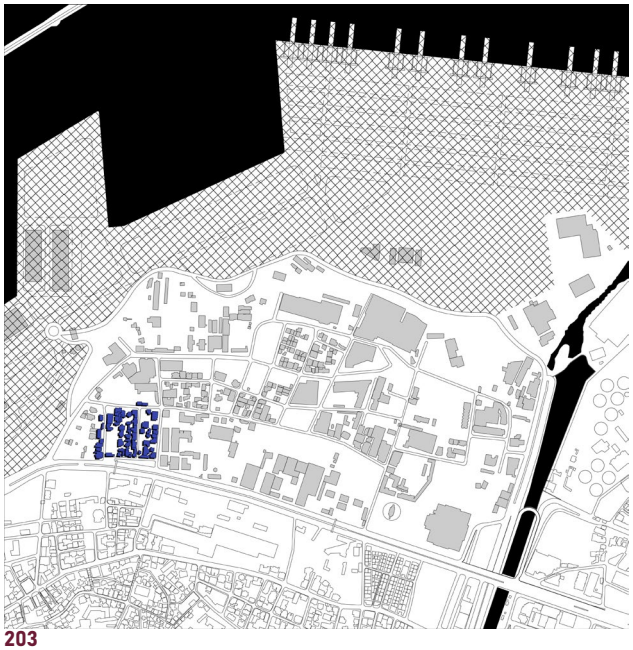

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204 Source: Google Earth 2025

- Al-Saydeh neighborhood

Located on the western edge of Karantina, Al-Saydeh borders the highway. Traces of Mar Mikhael's architecture are still visible, tracing back to the time before the construction of the Charles Helou highway. Modest post-war concrete buildings stand next to a few surviving heritage structures, including three-arched traditional houses with thick stone walls, rare remnants of pre-war residential Beirut. These older buildings, though weathered and partially repurposed, give the area a distinctive architectural texture that contrasts with the more utilitarian surroundings. The majority of structures are low-rise concrete blocks from the 1960s to 1990s, often adapted to accommodate both living and working space, with visible repairs, extensions, and improvised additions.

At the center of the neighborhood lies the Church of Our Lady (Al-Saydeh), from which the neighborhood takes its name. Around it, small workshops, a school, and local stores are interwoven with family homes, creating an everyday rhythm of activity and familiarity. Socially, Al-Saydeh is inhabited mainly by Lebanese Christian families with deep roots in the district, many of whom have maintained family properties through successive waves of conflict. The Kata'eb (Phalange) Party retains organizational presence in this area and some their flags along with Lebanese forces flags can be spotted in the streets. Despite infrastructural isolation and slow physical decline, Al-Saydeh retains a strong sense of continuity, architecturally through its few surviving heritage buildings, and socially through the persistence of long-standing residents who maintain the area's collective memory in the midst of surrounding transformation.

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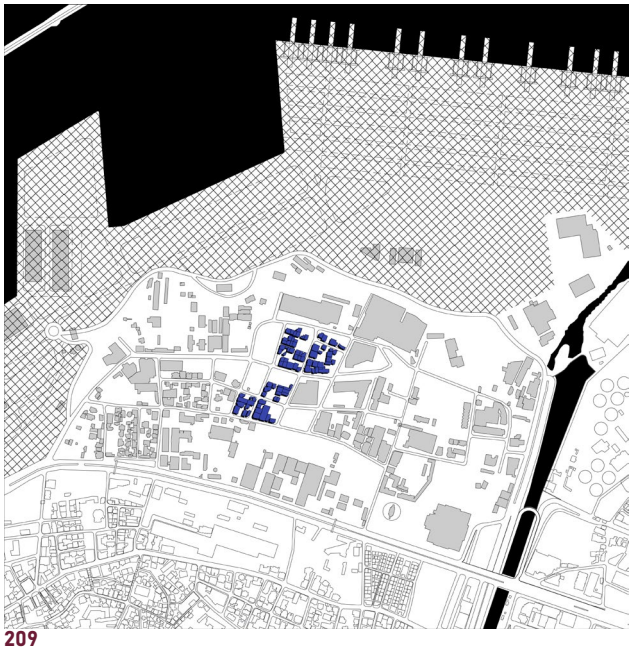

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210 Source: Google Earth 2025

· Al-Khodor neighborhood

Situated in the northern-central part of Karantina, Al-Khodor, also known as Arab el Maslakh area, occupies the area between Al-Saydeh to the west, extending toward the former municipal slaughterhouse. Its name, meaning "Arabs of the slaughterhouse," originates from the community's historical association with the municipal abattoir, which employed many residents as butchers and workers. Over time, these families settled permanently around the site, forming strong communities in Karantina.

The urban fabric is compact and irregular, characterized by narrow alleys, self-built concrete houses and a few courtyards. A public park, the only one in Karantina, is situated right next to the neighborhood. Most houses were constructed by residents without formal permits and are currently in very bad condition. Their facades reveal decades of adaptation, patched walls, added balconies and metal awnings on top of aging and cracking concrete.

The streets are lively and narrow, filled with small workshops, grocery stores, and repair shops, giving the area a dense, active atmosphere. The streets see more motorcycles, bikes, and pedestrian flow than cars and trucks, unlike the rest of Karantina.

Socially, the neighborhood is composed primarily of Lebanese and Syrian Sunni families, along with smaller numbers Palestinian households. The community's identity is strongly tied to its working-class history and its proximity to the port and industrial zones. Despite economic struggles and deteriorating infrastructure, Arab el Maslakh maintains a strong sense of solidarity built on history, familiarity, and shared struggle.

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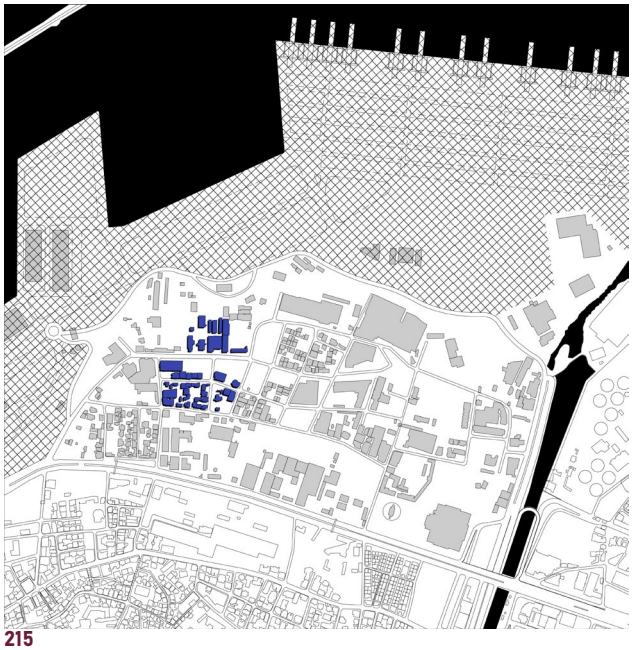

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216 Source: Google Earth 2025

· Al-Senegal neighborhood

Located in central Karantina, Al-Senegal extends between the abandoned municipal slaughterhouse, and the military compound that encloses its northern limit. It is a mix of institutional and residential fabrics: access roads and fenced compounds intersect with smaller, active streets lined by low-rise concrete houses, converted warehouses, and service buildings. The Karantina Governmental Hospital dominates the area, while a network of NGO offices and aid facilities, mostly established after the 2020 explosion, operates within older structures and temporary additions.

Before the arrival of these newer institutions, Al-Senegal was already a settled community. Lebanese families, migrant workers, and displaced households had long occupied the area, drawn in by affordable rents and proximity to the hospital and industrial zones. Many of these residents display Christian religious symbols on facades and balconies, a reminder of the area's population layers and coexistence of faiths.

The neighborhood is animated by an abundance of small local businesses like mechanics, mini-markets, cafés, and informal workshops, that sustain daily life and interaction between residents and workers. This mix of housing, commerce, and institutions produces a hybrid urban condition where community and service overlap. Al-Senegal today embodies the dual character of Karantina itself: a functioning neighborhood with deep-rooted inhabitants existing within a landscape increasingly shaped by humanitarian activity.

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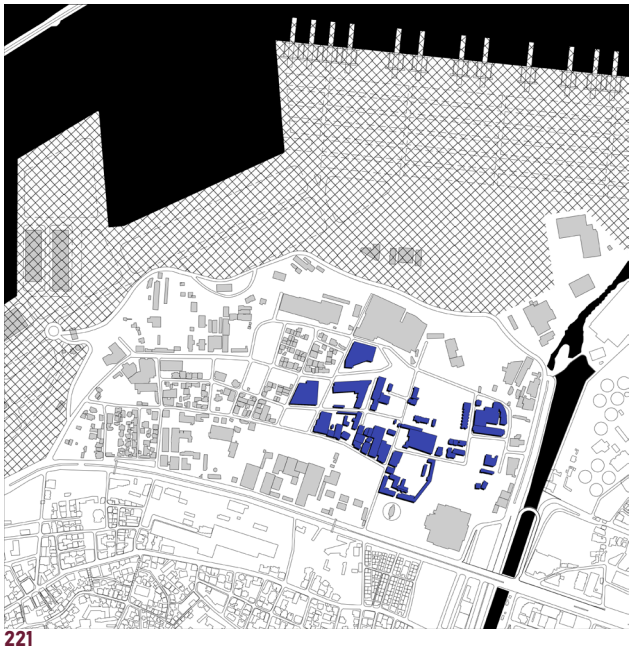

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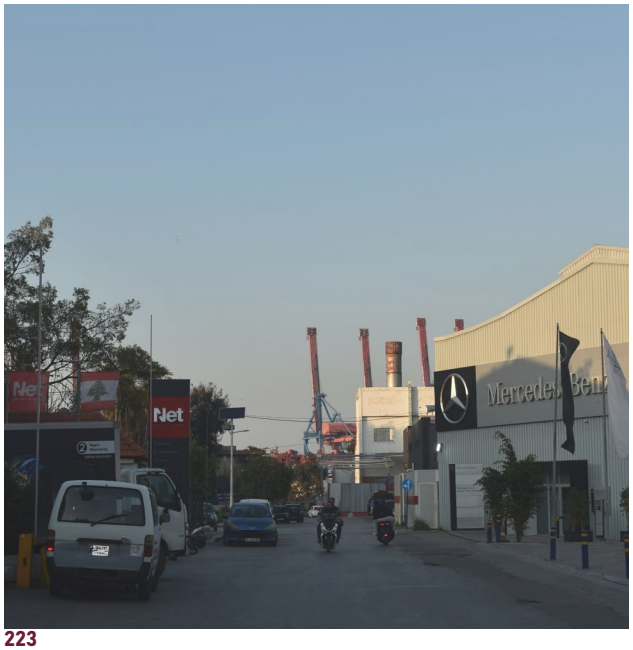
222 Source: Google Earth 2025

· The industrial neighborhood

Situated along central and eastern Karantina, the industrial district forms the neighborhood's most infrastructural areas. Integral to the city's production and logistics network, this zone is now marked by abandonment and partial ruin. Concrete warehouses and storage buildings, many damaged by the 2020 port explosion, stand empty or half-collapsed. Vacant lots filled with construction debris and overgrown vegetation break the continuity of the built edge, giving the area a fragmented, unfinished appearance.

This neighborhood is characterized by large private plots of land, more often than not fenced in by very high concrete walls. The district is animated by the constant circulation of heavy trucks that use Emile Lahoud Road as a main artery connecting the port to Bourj Hammoud and the Metn. Large trailers and container carriers dominate the streets, stopped at loading zones or parked for hours along the side of the road, leaving no space for pedestrians. A few industrial and commercial landmarks persist: the Bakalian Mills and grain silos that are still operational, several car dealerships and mechanical workshops, the architectural office of the international Lebanese architect Bernard Khoury, and a new office block, which introduce contemporary uses into an otherwise declining industrial fabric.

Despite these scattered reactivations, the area remains largely defined by neglect. The emptiness of the abandoned buildings contrasts with the continuous flow of trucks and machinery, producing an environment where activity and decay coexist. The industrial district today stands as Karantina's most infrastructural and noisy landscape.



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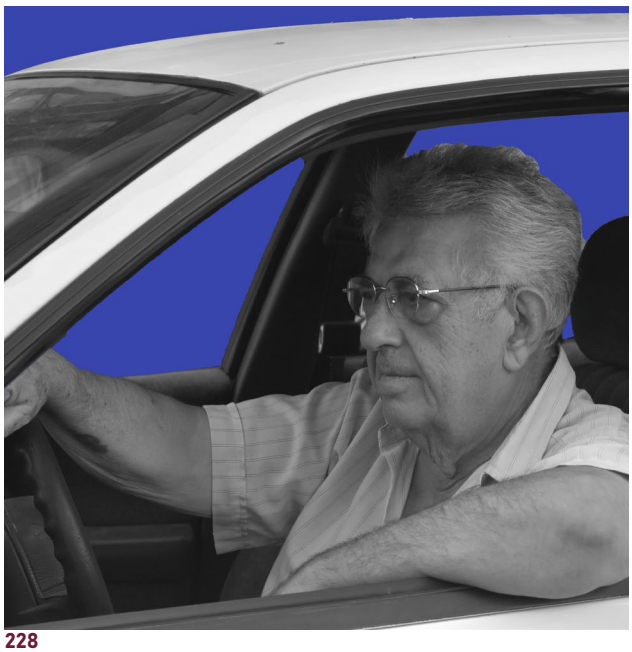
Three girls, around ten years old, were playing in the small public park in Al-Khodor, a space that serves as the only organized playground in the neighborhood. They live in nearby streets, and belong to the Sunni community. The girls explained that they come to the park every afternoon after school, meeting there with cousins and friends. It is, "the only place with games and playgrounds."

They described Karantina as a place where "everyone knows everyone." Their families have lived there for generations, and many of their parents or relatives work nearby, either in small workshops, at the port, or in the surrounding industrial district. The girls attend the same public school in Karantina, that they will have to leave when they get older because no school in Karantina offers high-school education. They often help their mothers with errands in local shops or groceries. They said that during the day the area feels safe and familiar, but "There aren't many lights at night," one of them added.

Despite the lack of amenities, they expressed affection for their neighborhood and a sense of belonging to it. They spoke about the people they know, the shop owners, and neighbors who look after the children while they play. When asked what they would change, they wished for a "bigger park, trees for shade and a place for bikes." Their comments reflected a simple but clear understanding of their environment.



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An older Lebanese man of Armenian roots was driving through Al-Saydeh in his personal car through the narrow streets he has known since childhood. He explained that his family moved to Karantina decades ago, when the area was still an active community tied to the port. "My father worked nearby and we stayed. Back then, Al-Saydeh was full of families, children playing in the alleys, the church bells ringing every Sunday, it still does."

"You still find some of us here" he said, "but it's not the same. Many of the houses are rented to workers now, and the old buildings are falling apart." He also talk about the explosion of August 4th, saying "I would have died if I was home". He said that many houses where destroyed, and many families that left either lost their home, or were too scared to come back after what happened in 2020.

When asked what Karantina needs he said the neighborhood "doesn't need big projects or fancy plans, just maintenance, lighting, and basic respect." He then mentioned his main concern: the threat of expropriation due to new development and infrastructure projects. "They say they want to improve the city, but we know what that means," he said, referring to rumors of future highway expansions and the revival of large-scale waterfront plans.

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A teenage Syrian boy, about sixteen years old, was riding his bicycle near Al-Senegal area, delivering groceries from his cousin's small mini-market. He has lived in Karantina for several years with his family, who arrived from Syria during the early years of the war. "We came to stay with relatives," he explained. "It wasn't planned to be long, but we stayed. Work is here, but school is not."

He works most days from morning until evening, delivering goods to homes and workshops across the neighborhood. "I know every turn. I can get anywhere faster than cars." He described his routine plainly, picking up orders, making deliveries, and returning to help in the shop during slower hours. "It's not hard work," he said, "but it never stops. Sometimes I eat while riding."

When asked what Karantina needs, the boy answered without hesitation: "A faster way to reach Mar Mikhael." Some of his deliveries are to shops and customers across the Charles Helou Highway, but he explained that crossing is difficult. "I either have to carry my bike up the pedestrian bridge or ride all the way around by the long road near the port and come back." Both options take time and effort, especially when carrying goods. He mentioned that during busy hours, the traffic and trucks make it even more dangerous.

230

Two girls in their early twenties were sitting outside an office building in Karantina's industrial district, taking a short break from their internship at a design firm located there. One is studying design in Italy, while the other is enrolled in a university in Beirut. They explained that they had chosen this firm because they admired its work long before realizing it was based in Karantina. "We applied because we liked their projects," one of them said, "and only later we found out where the office actually was."

They described the neighborhood as unexpected. "You don't expect design offices here," one of them noted, pointing toward the surrounding warehouses and car repair garages. Yet both agreed that the setting adds to the experience. "It's not the clean or organized environment like Downtown" referring to the area near her university. Both agreed that the environment can feel uncomfortable. "We wish it felt safer," the student from Italy explained, "especially when we leave after sunset. There's little lighting and very few people around." The other added, "It's also very noisy, the trucks, the machines, the constant traffic. Sometimes you can't even hear yourself think."

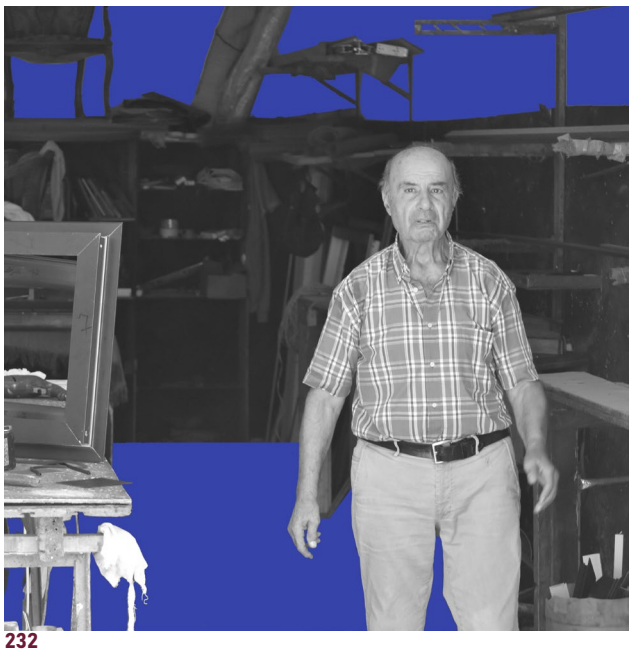
When asked what Karantina needs, they said "It doesn't need to become something else, just calmer and safer so people can actually enjoy being here", and they also mentioned, "Maybe add something interesting thing to do."

231

A Syrian truck driver in his early fifties was sitting on a chair on the side of a parked truck in the parking of the Fish Market in Karantina, drinking coffee and smoking arguileh with a friend. A few other drivers were renting around them beside their vehicles, the market mostly quiet after the busy morning hours. “Work here starts before the sun,” he said. “We load fish at three in the morning, deliver, and then wait. By noon, it’s calm again.”

He has been working in Beirut for more than twelve years, driving between the port, warehouses, restaurants and distribution centers across the city. He said “Karantina is the same every day, noise, dust, and the smell of fish”. He spoke about the area and describing how little had changed over the years except for more traffic and fewer workers. “Before, there were more factories. Now, most buildings are empty or broken, but the trucks are still here.”

When asked what Karantina needs, he replied directly: “Clean roads and a proper place for drivers to park and rest.” He explained that drivers spend hours waiting without facilities, shade, or organization. “We bring food to the city,” he said, “but we have nowhere decent to sit.” Despite the rough conditions, he said he prefers Karantina to other places in Beirut because “at least there’s work and people you know.”



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An older Sunni Lebanese man was sitting inside his small aluminum and steel workshop in Al-Khodor. He has worked in this same spot for more than forty years, continuing the craft his father started before him. The workshop once stood fully equipped, but much of it was destroyed by the 2020 port explosion. “The blast broke everything,” he said while showing the cracked ceiling and patched walls. “The doors were ripped off, the machines fell, the windows shattered and everything was on the floor.”

In the days that followed, he and a few neighbors cleared the debris and slowly rebuilt the shop with salvaged materials. “It’s not what it was, but it’s enough to work,” he explained. The shop opens directly onto an internal neighborhood courtyard, doubling as a social space where neighbors stop to chat. He said that a lot of people from the Mar Mikhael area come to him because his prices are cheaper than anywhere else.

When asked what Karantina needs, he replied without hesitation: “Electricity, clean streets, and someone to care.” He claims that the only way to get help for the neighborhood is to be affiliated with a specific powerful political party. “I rebuilt this place with my own money after it was destroyed”. Despite everything, he refuses to leave. “This workshop is my history. If I close it, it’s like I was never here.”

03.4. Why Karantina is worth addressing

Karantina is in a unique position within Beirut's urban landscape. It is geographically marginalized but functionally central. The district is cut off by solid and infrastructural borders: the port, the river, and the highways. Over time, this isolation has created an internal system of its own: a neighborhood that functions as a micro-city, with its own systems of production, housing, and social/communal organization.

Historically, Karantina was shaped by waves of displacement, conflict, and reconstruction. Over the years, it has hosted many different populations, and these communities have developed livelihoods and systems to sustain their daily life. Workshops, repair shops, grocery stores, markets, NGOs, and religious institutions provide the essential services and independence that elsewhere would be handled by the state.

This internal mosaic gives Karantina the complexity of a miniature city. Each sub-neighborhood, and the industrial zone, plays a distinct role within the district. They form a flawed but functional network of residential, communal, productive, industrial, and humanitarian functions. Adding that to its very diverse population, Karantina represents a city within the city.

This dysfunctional autonomy was not intentional and was born due to neglect and marginalization. Karantina's self-organization fills the void left by decades of fragmented governance and selective investment. The same conditions that make it resilient also make it vulnerable: infrastructure is weak, land tenure uncertain, and public services nearly absent.

Karantina therefore embodies a condensed version of Beirut's contradictions and fragmentation. To address Karantina is to confront the city's wider failures of planning. Regeneration does not mean deleting the existing flawed district and transforming it into something else. It means recognizing its existing systems of life and integrating them into the city's future. With thoughtful planning that develops existing assets instead of erasing them, Karantina could evolve from the city's backyard to an urban engine that demonstrates how inclusive, layered, and respectful interventions can produce long-term city-wide benefits. Transforming Karantina from backyard to urban engine therefore means recognizing it as a starting in Beirut's recovery.

Yet despite this potential, Karantina remains at significant risk. Its fragmented land ownership, environmental exposure, weak infrastructure, and high concentration of vulnerable populations make it one of Beirut's most exposed districts. Without clear planning guidelines or protective policies, Karantina faces the danger of either uncontrolled industrial intensification or aggressive redevelopment that could displace its long-standing communities. Its fragile autonomy could easily collapse under external pressures. This moment is therefore critical: Karantina can either be safeguarded and integrated into Beirut's future, or further marginalized and eroded by neglect and short-term interests.

“Faces of Karantina”: Portraits of resilience, belonging, and connection

March–August 2025


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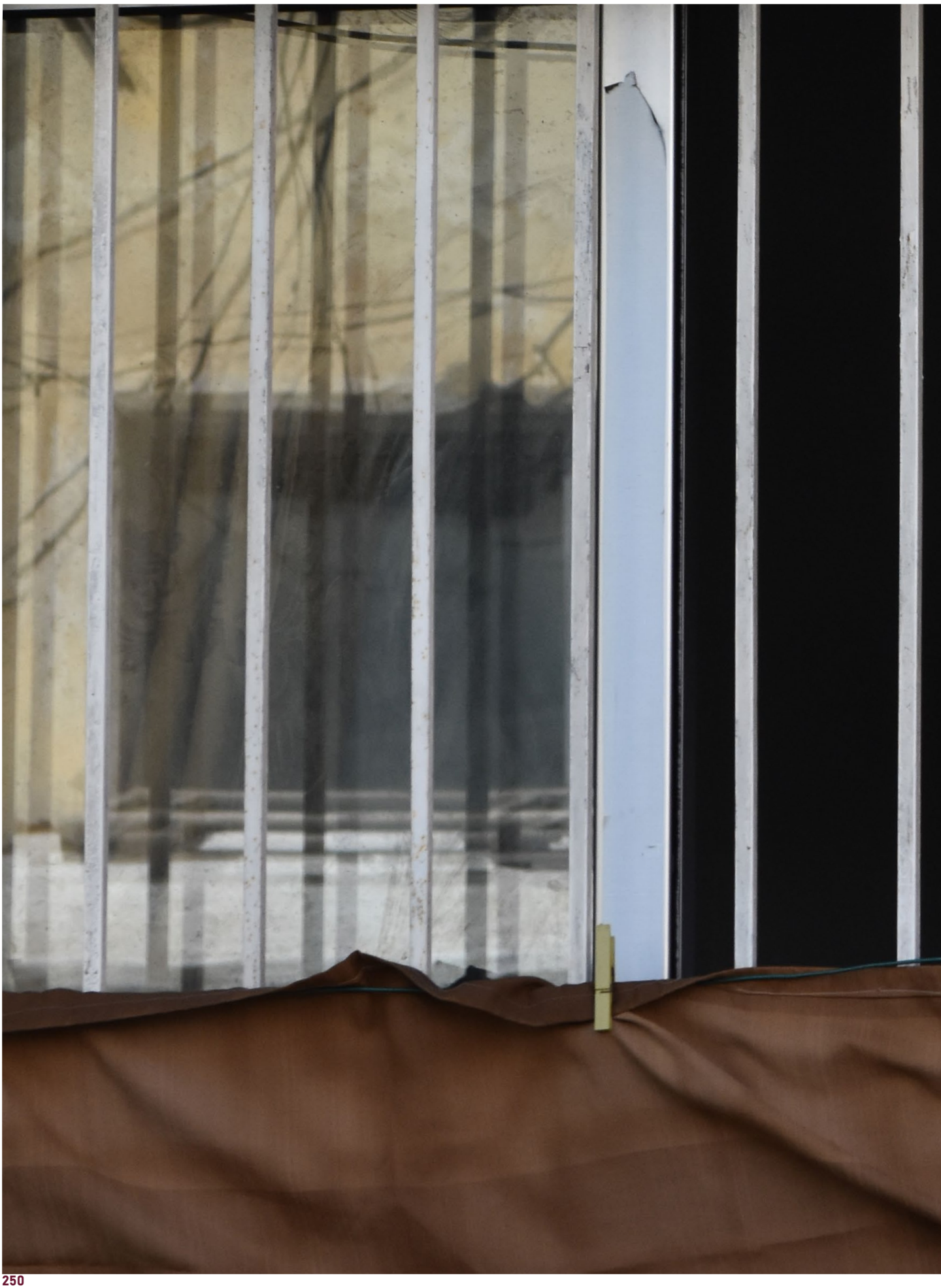



THE LOST

04. From backyard to urban engine

252

04.1. A new civic landscape: The port vision

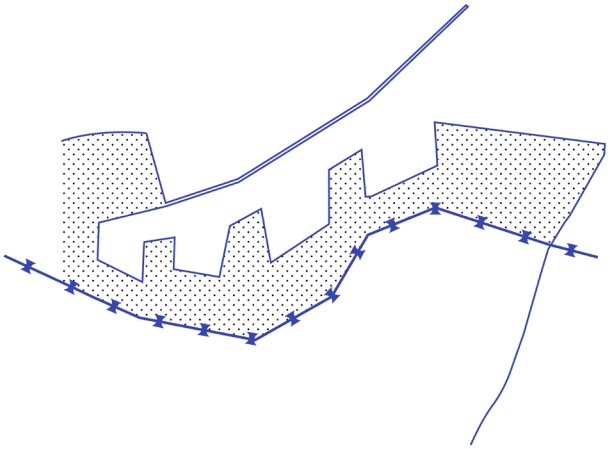
04.1.1. Reclaiming the port

Throughout the course of history, when the boundaries of port activity shift or move outward, port cities have gone through major transformation. In those cases, industrial port areas that were once heavily restricted and infrastructural, can eventually become the most dynamic and meaningful parts of the city.

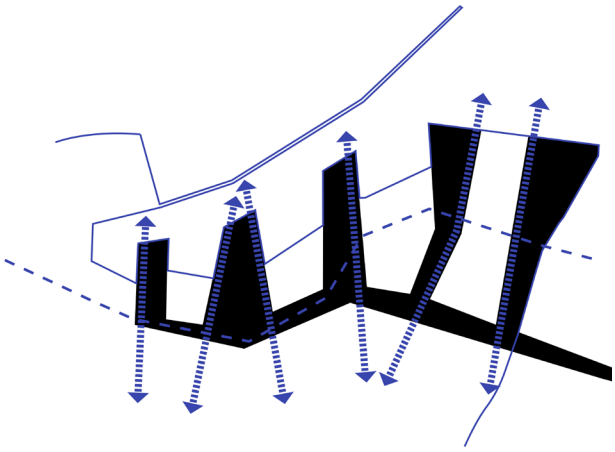
The Port of Beirut is responsible for fragmentation and marginalization due to heavy, impenetrable infrastructure that completely confiscated the sea from the city. But that damage is not irreversible. The gradual relocation of port functions opens the possibility to reclaim this large area, reintegrating it into the city. The same port that was the epicenter of the disastrous explosion, that left the city completely shattered, can also be the starting point of a healing landscape, not only for Karantina but for the whole city. However, for it to be effective, such a transformation cannot be left to large speculative developments or profit hungry developer. The proposed vision defines these guidelines as a set of development principles for transition, rather than a fixed masterplan. Their purpose is to guide the city's long-term development.

The public spine and the active connectors are the backbone of this vision. The spine is formed by a sequence of extensions that follow the shape of the old port extrusions and it's purpose is to extending the city's public and green space toward the waterfront. The active connectors branch out from the city, and extend towards the spine and towards the sea. They precisely weave through the very dense urban environment of west Beirut, utilizing the wastelands and empty plots, not only to house new active functions, but also to reconnect the city to the port grounds, the sea, and Karantina.

In sum, the transformation is a process of reconnection, linking sea, city, neighborhood and community. And it begins in Karantina, where the first spatial and social ties between Beirut and its reclaimed waterfront take shape.



254 Current port boundaries



253 Future public spine and active connectors

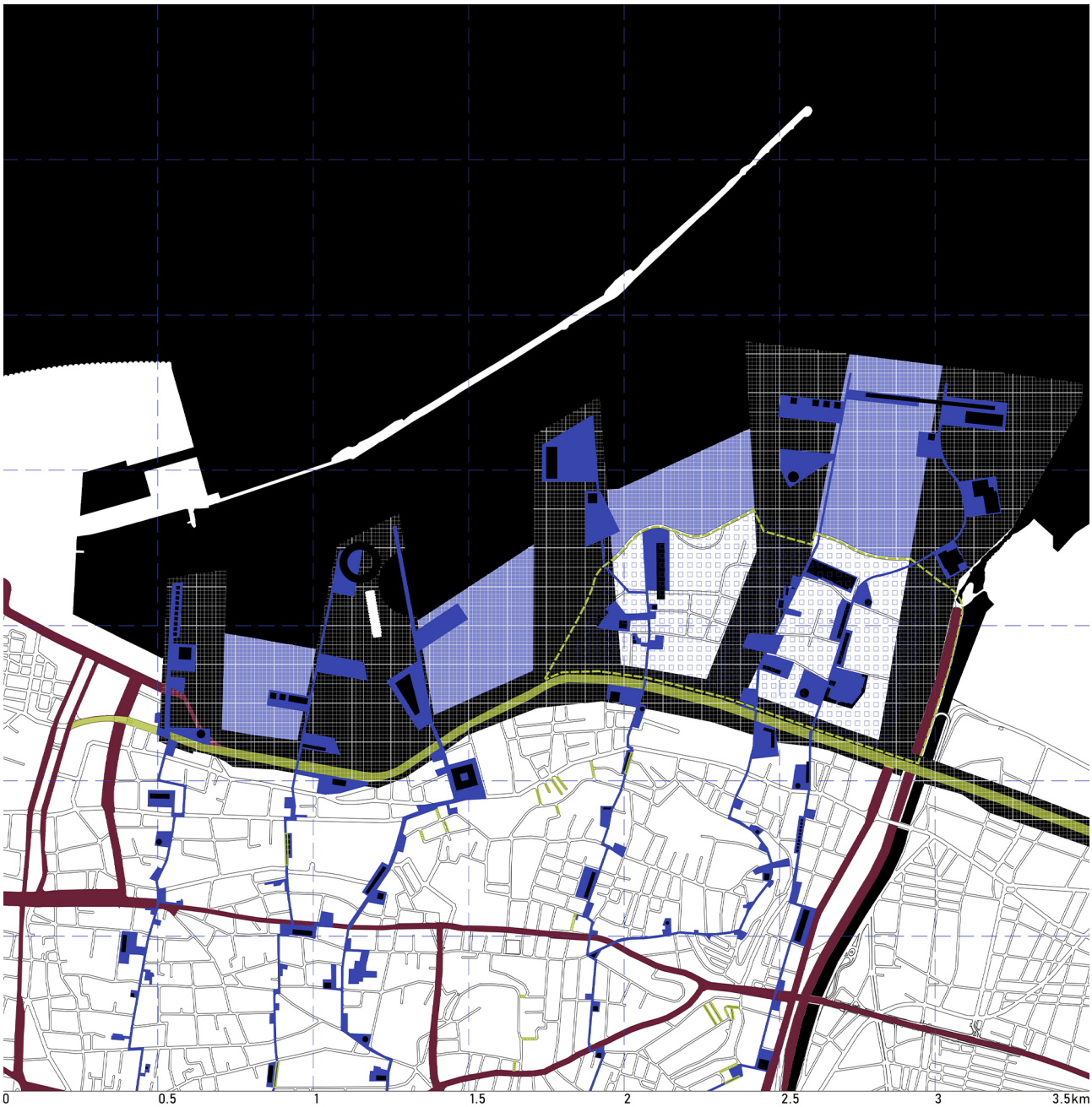
04.1.2. Vision for the post-port transition

The transformation of the Port of Beirut requires a strategic framework to avoid repeating the fragmented, disconnected urban interventions that have long shaped the city. Setting clear guidelines before redevelopment is essential to ensure that this transformation becomes an opportunity for accessibility, continuity, and civic asset rather than another isolated coastal project.

The public spine is formed by elevating the Charles Helou highway and reclaiming the ground beneath it. This linear system of public spaces creates a continuous sequence of green open spaces that reconnect Beirut with its waterfront. The transition ground includes two distinct conditions. On one hand, inside the former port, development parcels occupy vacant land between the sequences of the public spine and represent the spaces into which the city can extend. On the other hand, within Karantina, the transition ground is treated with a different logic. The existing fabric is reinforced, resident communities are supported, and the neighborhood is prepared for the surrounding changes without displacing its identity or memory.

A network of active connectors ties these layers together. They restitch the connection disappeared after the highway rupture, by restoring historic paths and creating new connections. These lead the circulation into Karantina and host the new functions that will help the neighborhood's transitions from backyard to driver for urban activities.

By initiating the transformation from within Karantina, the project ensures that the district does not become a passive recipient of future redevelopment or expropriation but an active driver of change. The goal is to use this moment of transition to redefine the waterfront as an open, inclusive, and productive mechanism. A healing landscape that restores continuity between Beirut, its people, and the sea through the reactivation of Karantina as the engine for transformation.



Legend:

- The public spine
- Transition ground
- Development parcels
- Elevated highway
- Main roads
- Secondary roads
- Active connectors
- Stairs

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Layers

The approach is fundamentally layered, building the transformation of the port and Karantina through a sequence of interdependent spatial systems rather than a single, imposed plan. The territory is also understood through its existing layers; topography, water, roads, parcels, and buildings. The approach does not replace these underlying structures; it works with them. The main roads organize larger flows, the secondary roads distribute movement within neighborhoods and connect the intervention axes together. On top of these inherited systems, the project introduces new layers: the public spine and the active connectors and the functions that activate them. Rather than functioning independently, they rely on the existing layers to operate. Roads guide the placement of connectors, parcels shape potential buildings, and topography leads the flux of people toward Karantina and the waterfront. Together, the original and new layers merge into a coherent framework where each element supports the others, ensuring that the transformation builds on what already exists rather than overwriting or erasing it.

Buildings

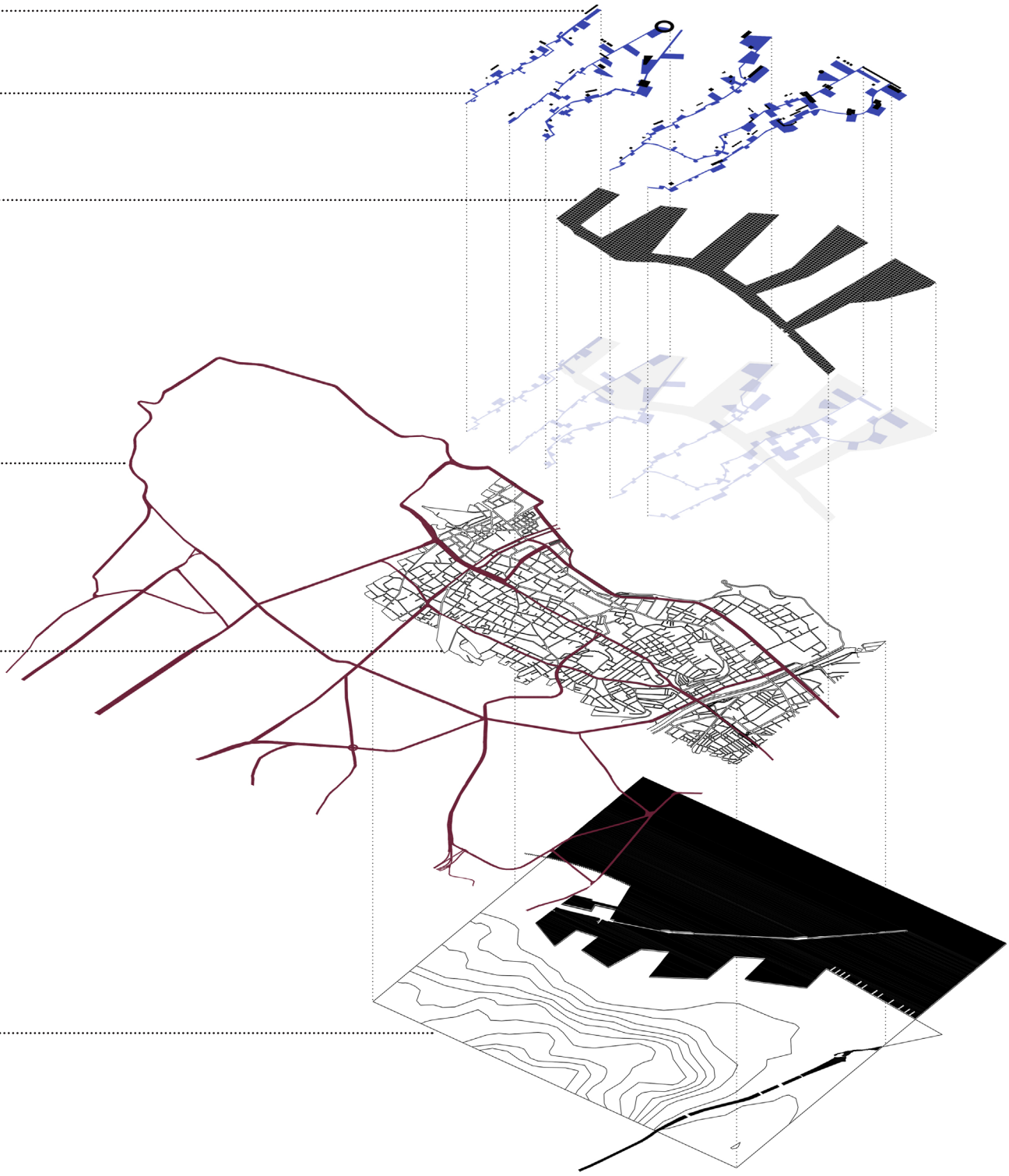
Active connectors

The public spine

Main roads

Secondary roads

Topography lines and water



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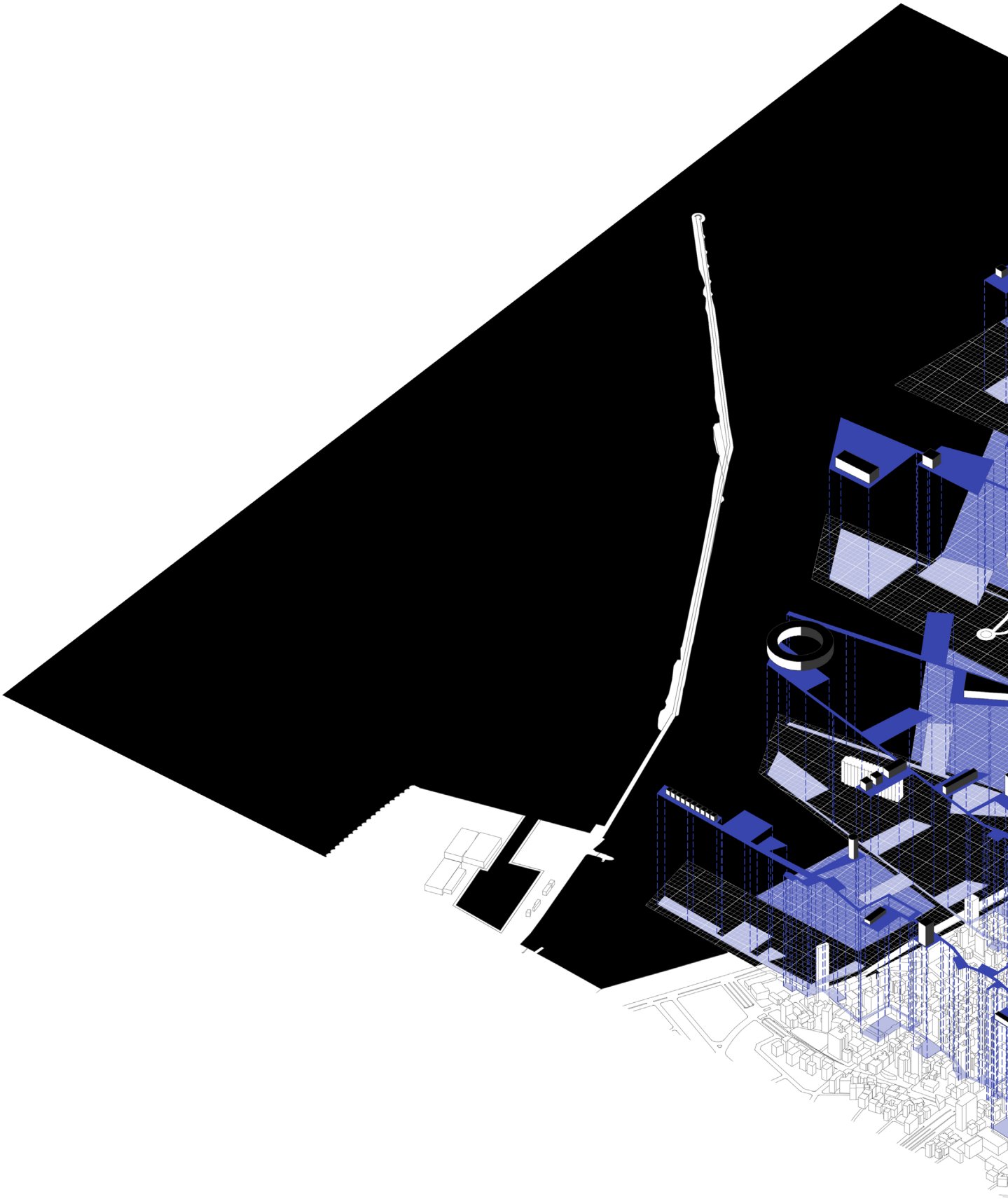
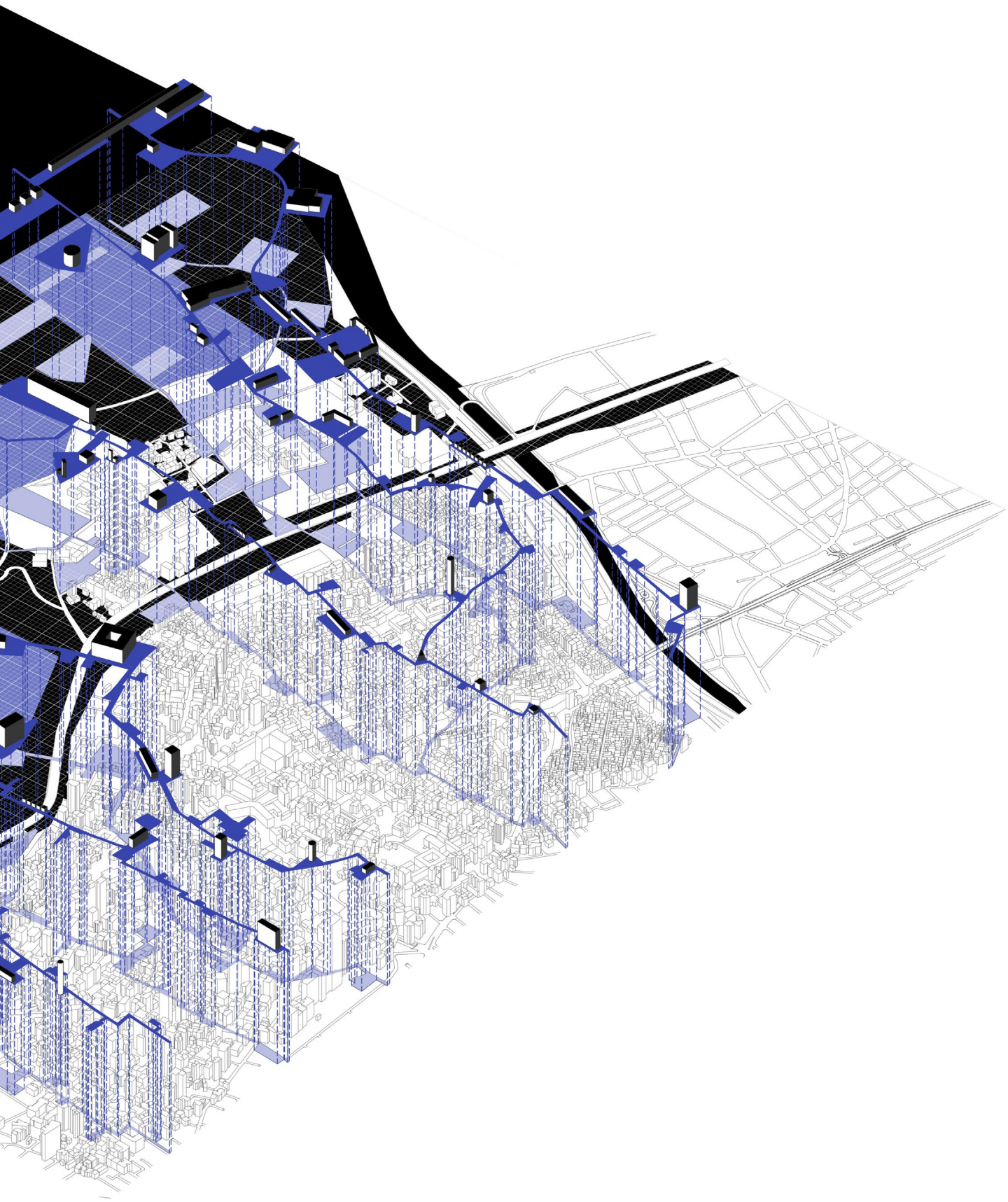


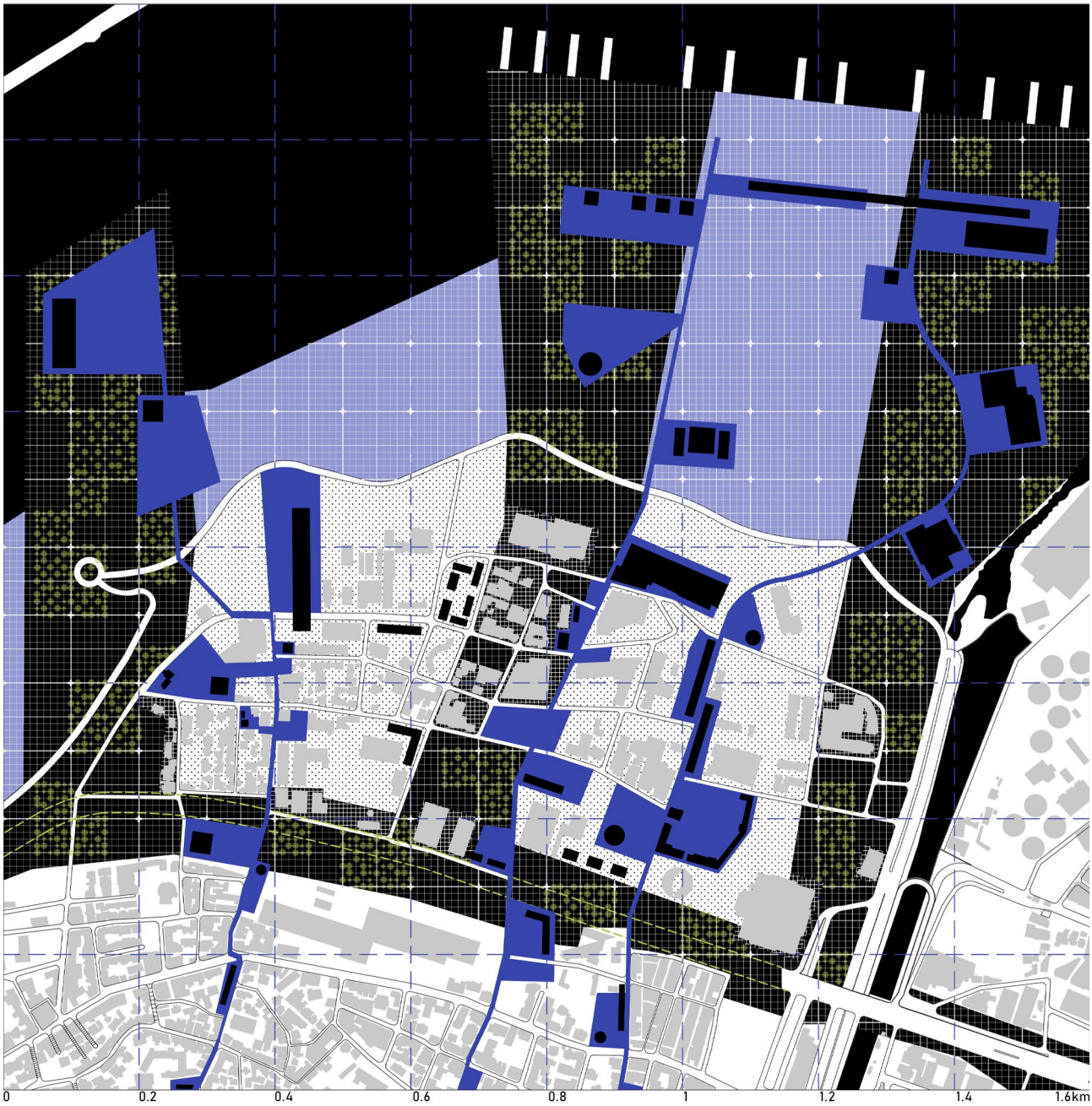


04.2. The transition ground: Protecting and preparing Karantina

Since its emergence in the early 19th century, Karantina has functioned as Beirut's backyard; an area shaped by infrastructures that served the city while remaining detached from its civic life. Heavy transport routes, logistical facilities, and later the Charles Helou highway and port expansion all prioritized regional function over local connection, gradually isolating the district. Yet despite this marginalization, Karantina has continuously welcomed diverse communities who built their own social and cultural presence within its fragmented fabric.

With the construction of the highway and the port, porosity in Karantina was impossible. The intervention reverses this condition by introducing active connectors that restore historical paths, creates new ones, reopen blocked routes, and link the city and the waterfront. These connectors hold the new civic and commercial functions, creating a network of active sites that strengthen Karantina's role and support its integration in the city and the reclaimed port.

The public spine, formed by elevating the Charles Helou highway, creates a continuous civic park. This new linear public space becomes a green, open landscape that offers accessibility, visibility, and a shared ground for cultural, social, and physical activities.



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Site-specific intervention logic

Layered onto the spatial interventions, this framework clarifies how each part of Karantina should be approached according to its existing condition, potential, and community value. It ensures that transformation is not uniform or imposed, but responsive to the lived realities of the neighborhood. This method becomes a tool for respecting, protecting, and strengthening Karantina, ensuring that change supports its identity rather than erasing it.

The areas to preserve refers to the zones where existing buildings, activities, and social life should stay intact. Their current character is essential to Karantina's identity and requires protection. The intervention here is minimal, like maintaining structures, supporting residents, and upgrading elements to improve comfort and safety.

The areas to multiply apply to places where existing functions are needed and play an important role, but unused land surrounds them. Here, growth is encouraged: additional buildings will be introduced to expand the same functions, increase capacity, and complement existing uses, to strengthen the district's productive and social life.

The areas to develop address zones that are mostly vacant, underused, or no longer functional, especially in the municipal lot and along the edges. These areas offer an opportunity for new programs, new buildings, and new forms of public life. Development fills the gaps, activates empty land, and introduces functions.

The areas to rebuild are the zones where the functions are essential and must remain, but the buildings themselves are damaged, informal, and unable to support future needs. Here, demolition and reconstruction ensure that the same activities can continue in healthier, safer, and more resilient structures.

Together, these four actions form a mosaic of adaptive strategies that guides transformation without imposing homogeneity. By responding to the specific needs of each place, the project protects Karantina's character while preparing it for the changes in and around it.

Legend:

- To preserve
- To multiply
- To develop
- To rebuild

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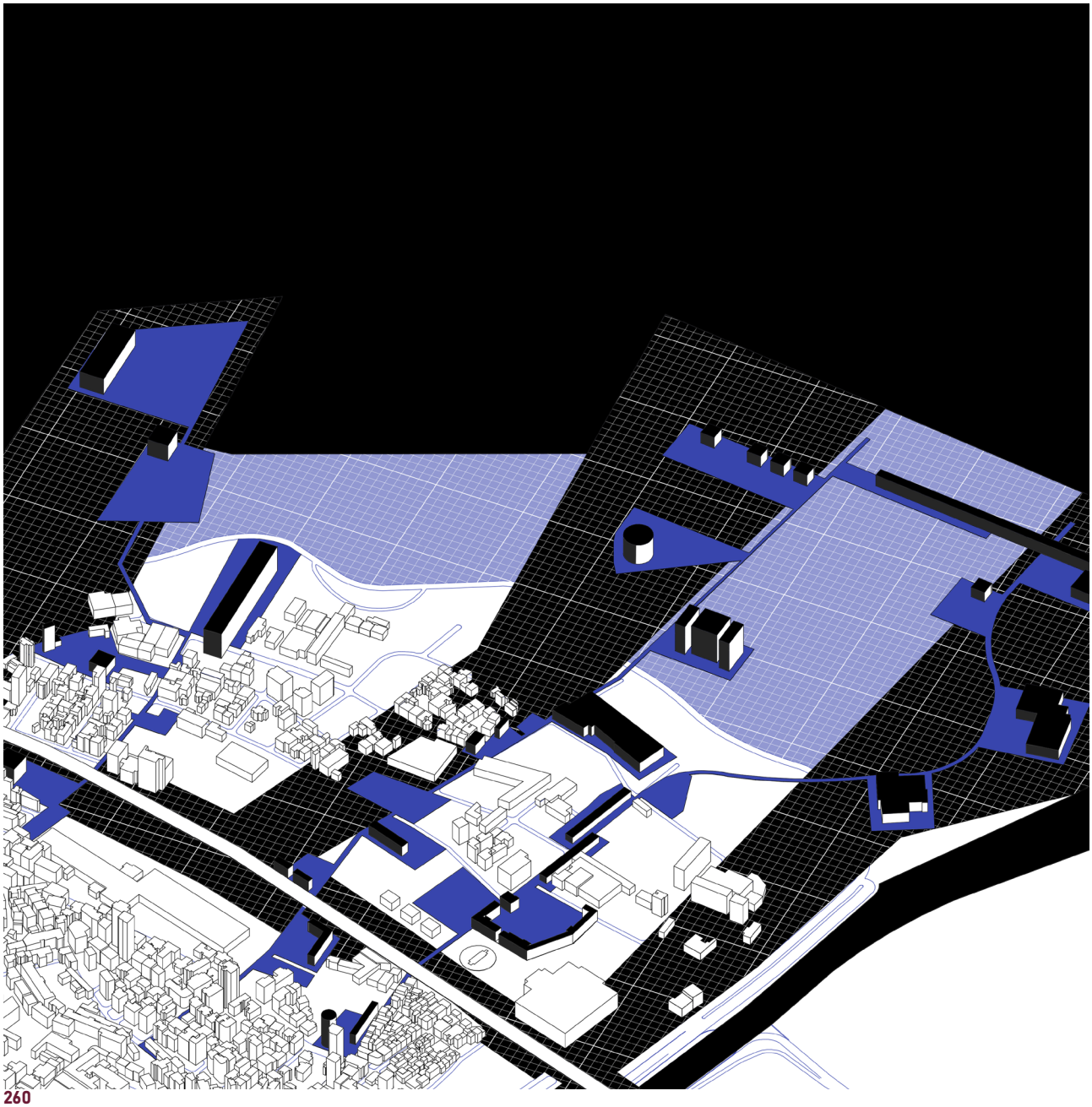
Three main connectors structure the intervention in Karantina; the West Axis, the Central Axis, and the East Axis. These axes run from the city toward the port, forming the routes through which movement and activity are organized.

Cross-programming plays a key role in defining how these axes operate. The social, cultural, educational, and commercial functions placed along them respond directly to the needs of their immediate surroundings, the conditions of each part of Karantina, and the landmarks that anchor the neighborhood. Rather than distributing programs uniformly, each function is placed where it can best serve local residents, support existing activities, and strengthen connections to adjacent districts. This ensures that every axis becomes a responsive and context-driven corridor that meets the specific needs of the areas it passes through.



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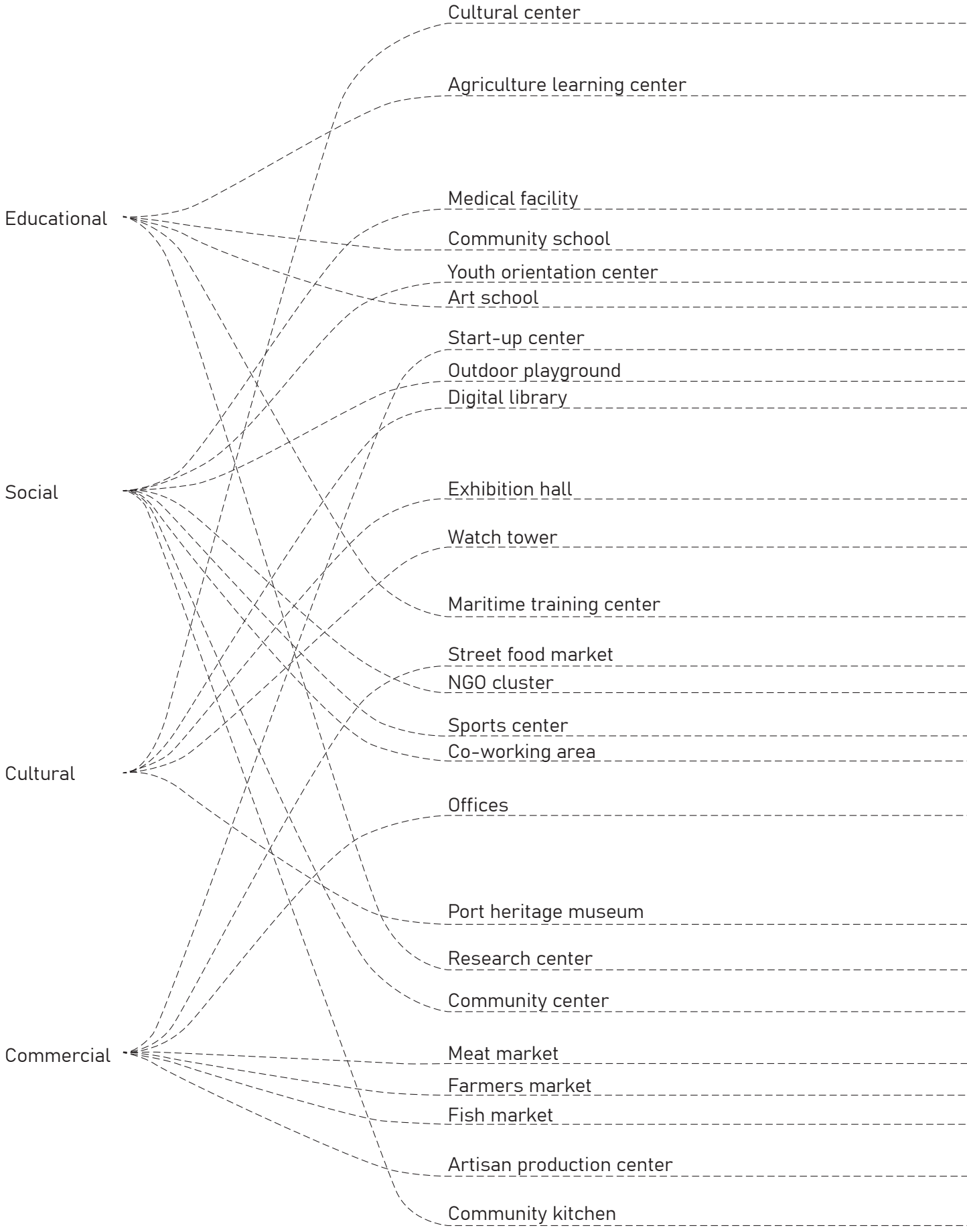
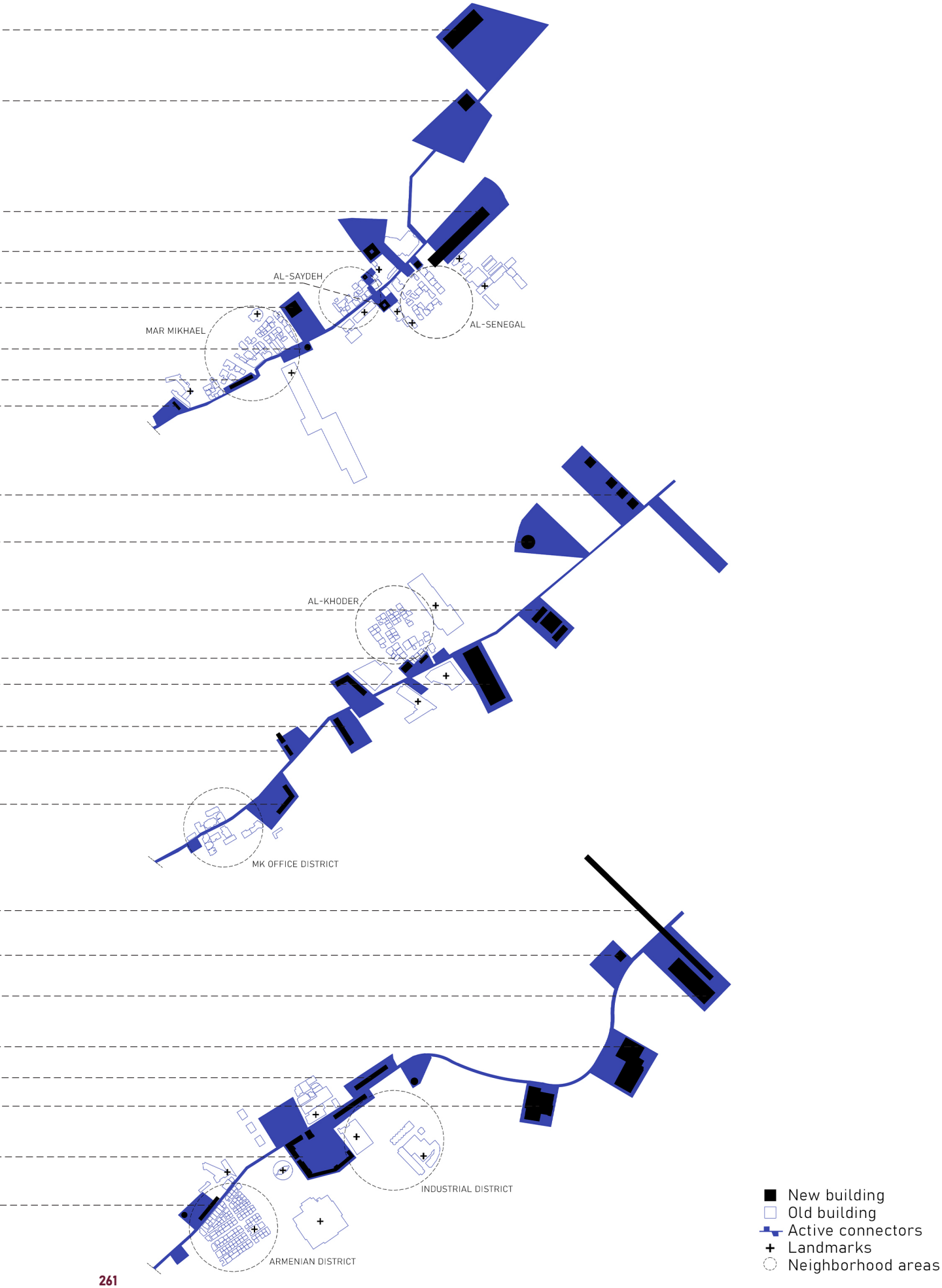
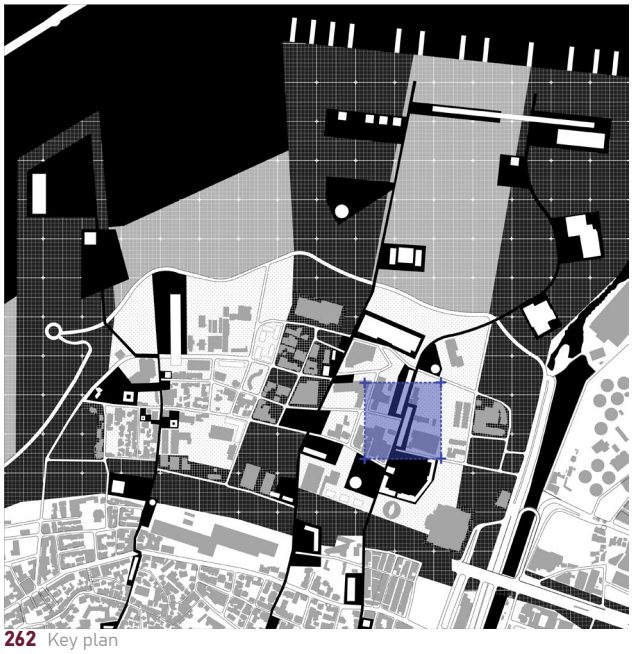
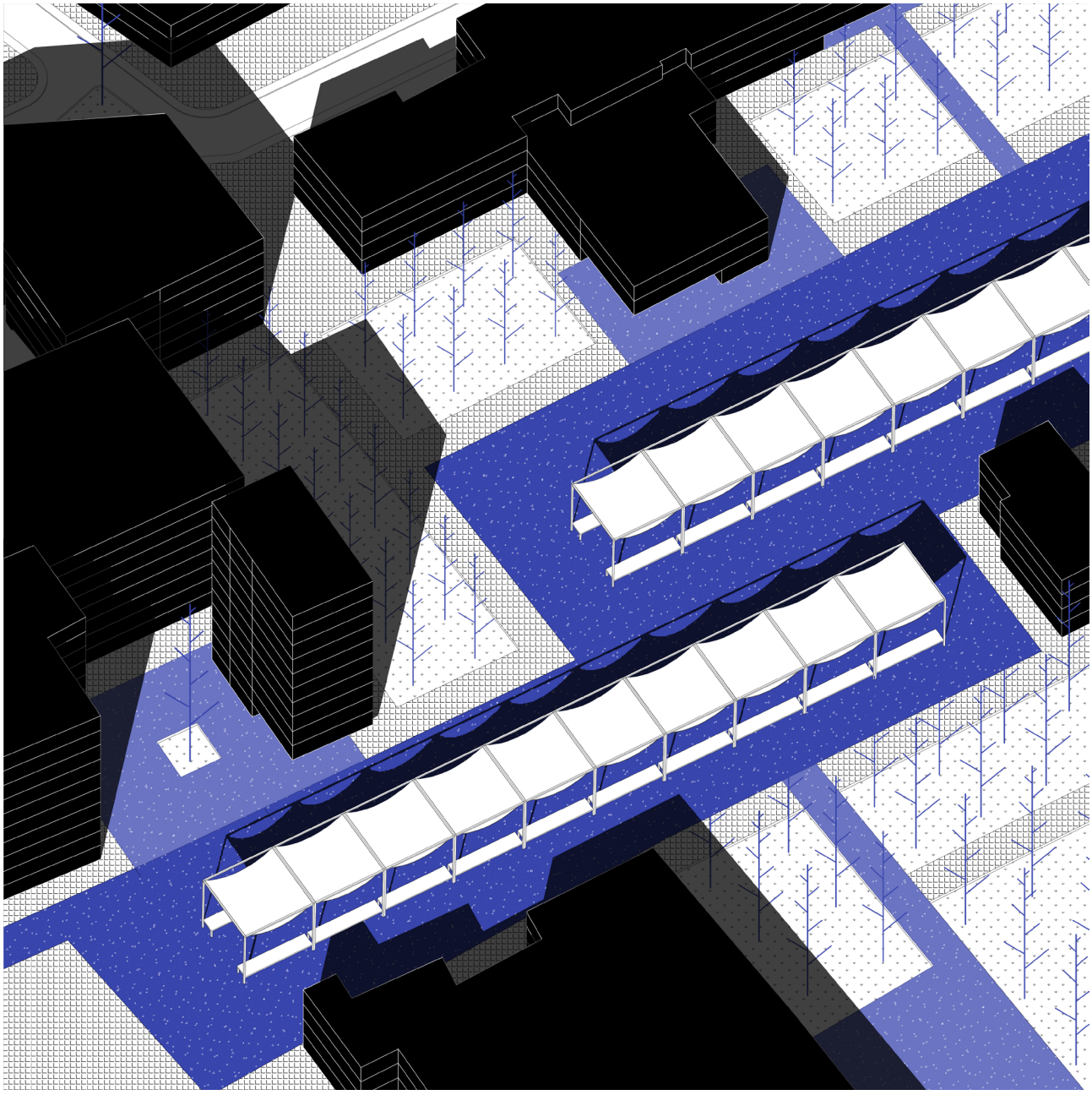

Educational
Social
Cultural
Commercial
Cultural center
Agriculture learning center
Medical facility
Community school
Youth orientation center
Art school
Start-up center
Outdoor playground
Digital library
Exhibition hall
Watch tower
Maritime training center
Street food market
NGO cluster
Sports center
Co-working area
Offices
Port heritage museum
Research center
Community center
Meat market
Farmers market
Fish market
Artisan production center
Community kitchen

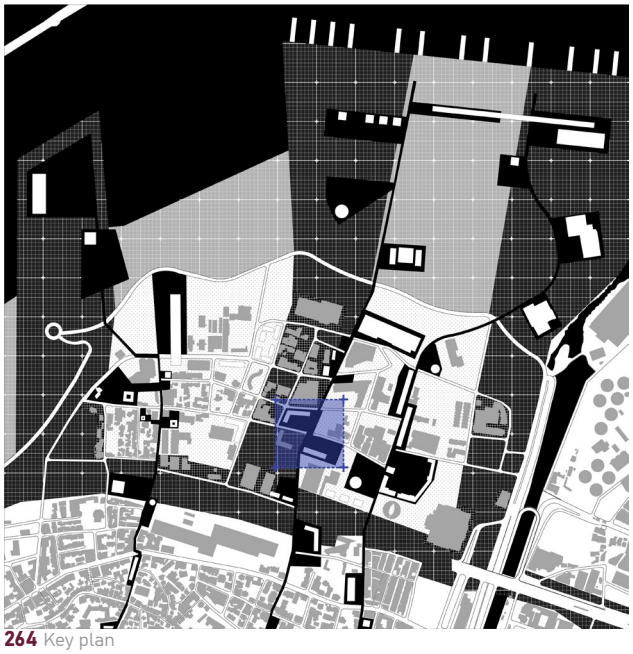

AL-SAYDEH
MAR MIKHAEL
AL-SENEGAL
AL-KHODER
MK OFFICE DISTRICT
INDUSTRIAL DISTRICT
ARMENIAN DISTRICT
New building
Old building
Active connectors
Landmarks
Neighborhood areas



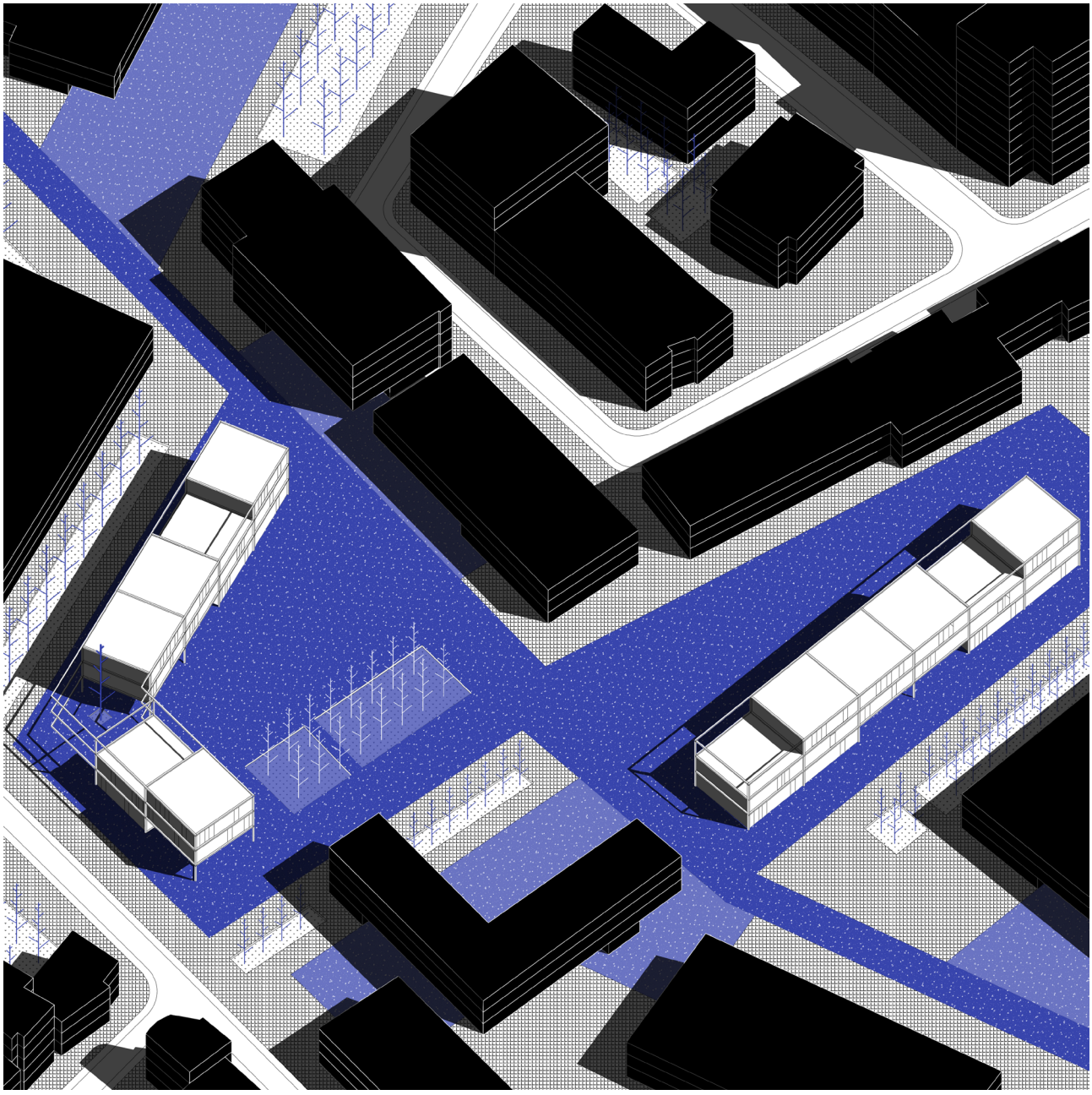
262 Key plan



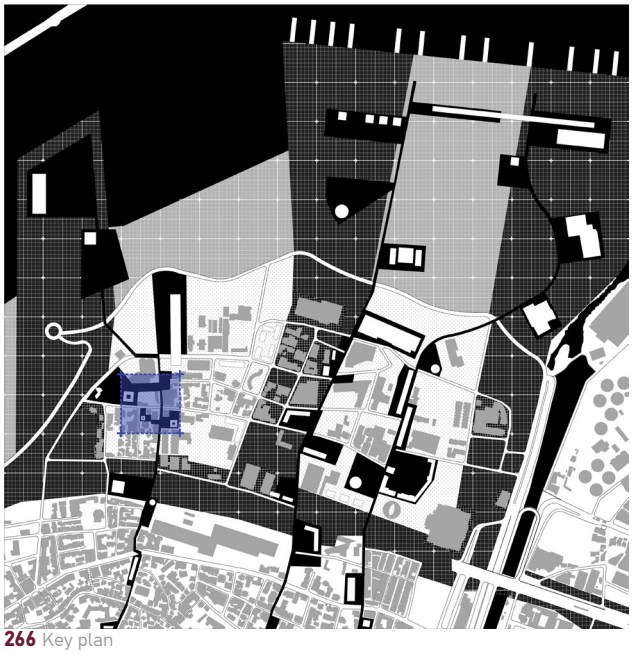
263 A farmers' market for everyday commerce and exchange in the east active axis.



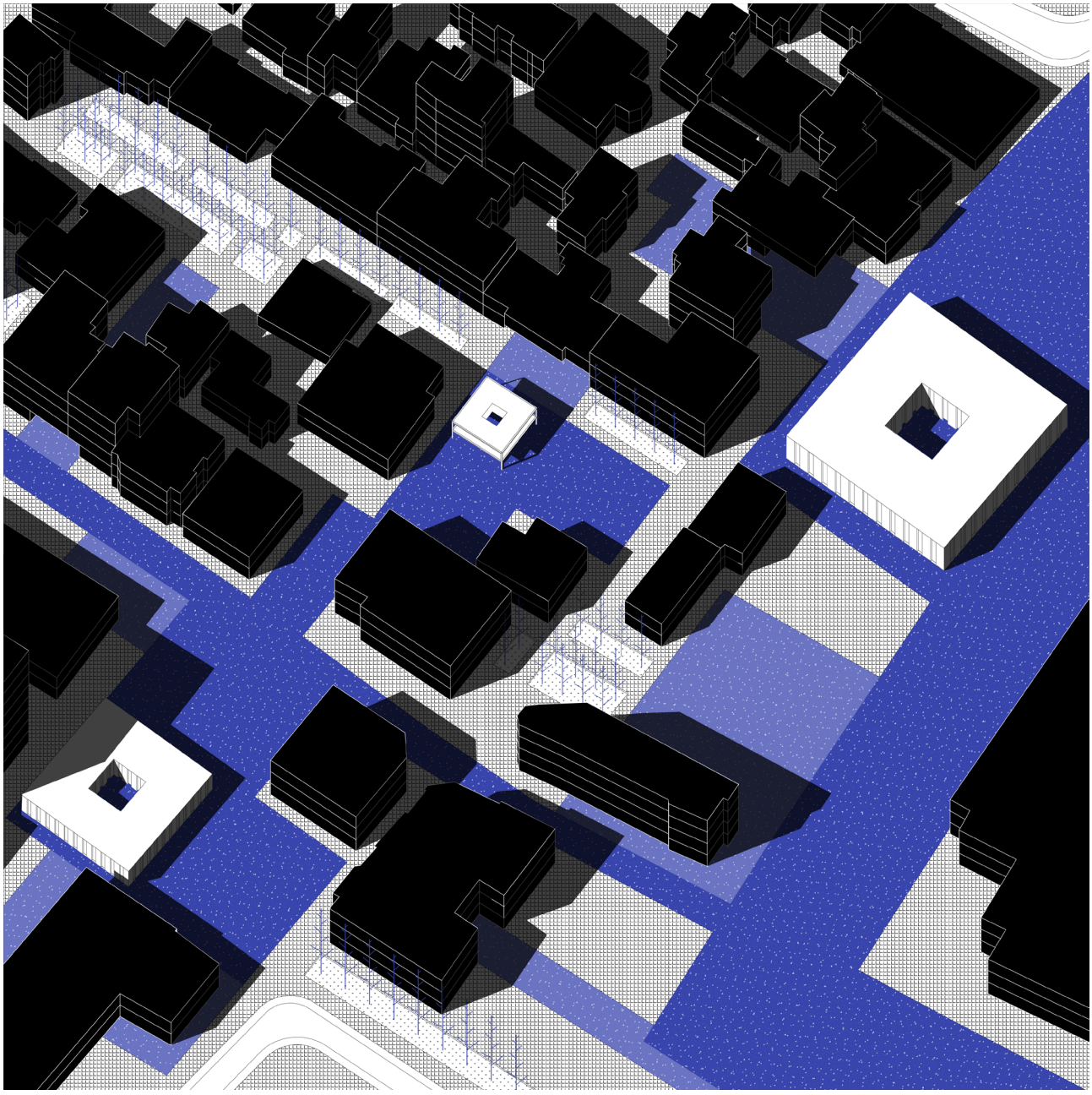
264 Key plan



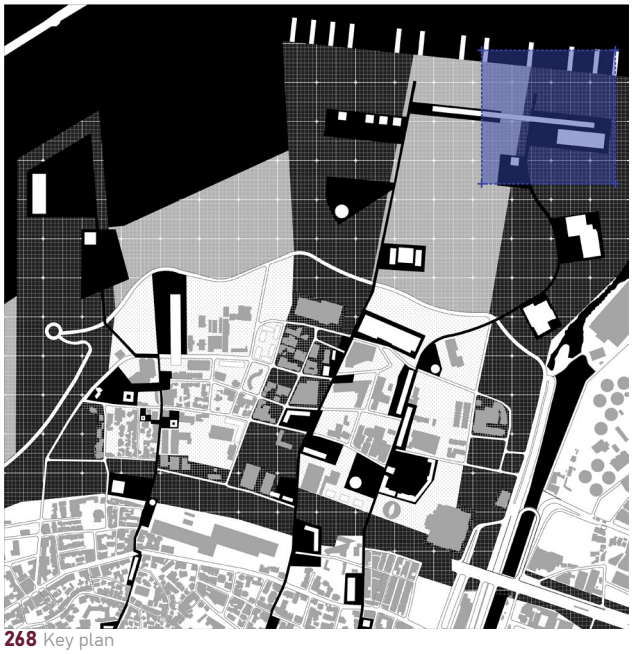
265 A sports center for recreation along the central axis.



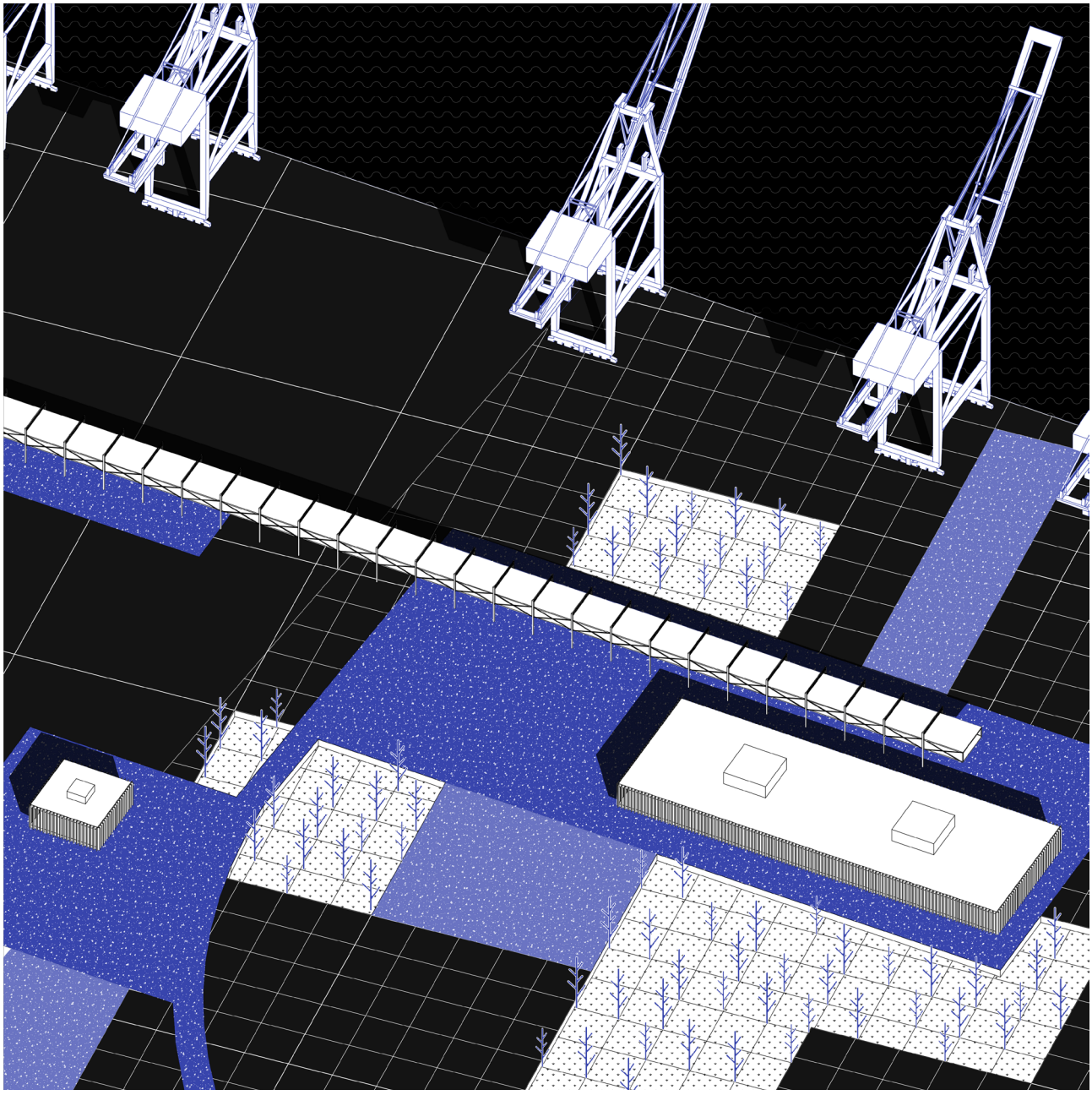
266 Key plan



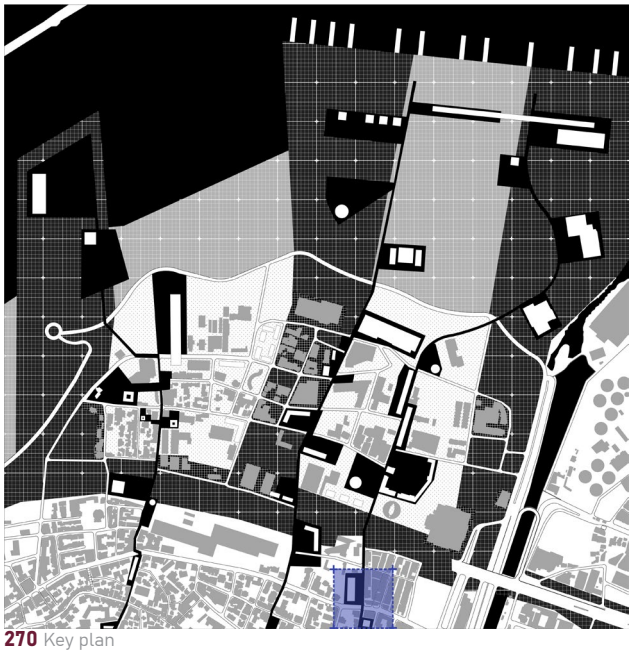
267 A community school and youth center as social infrastructure in the west axis.



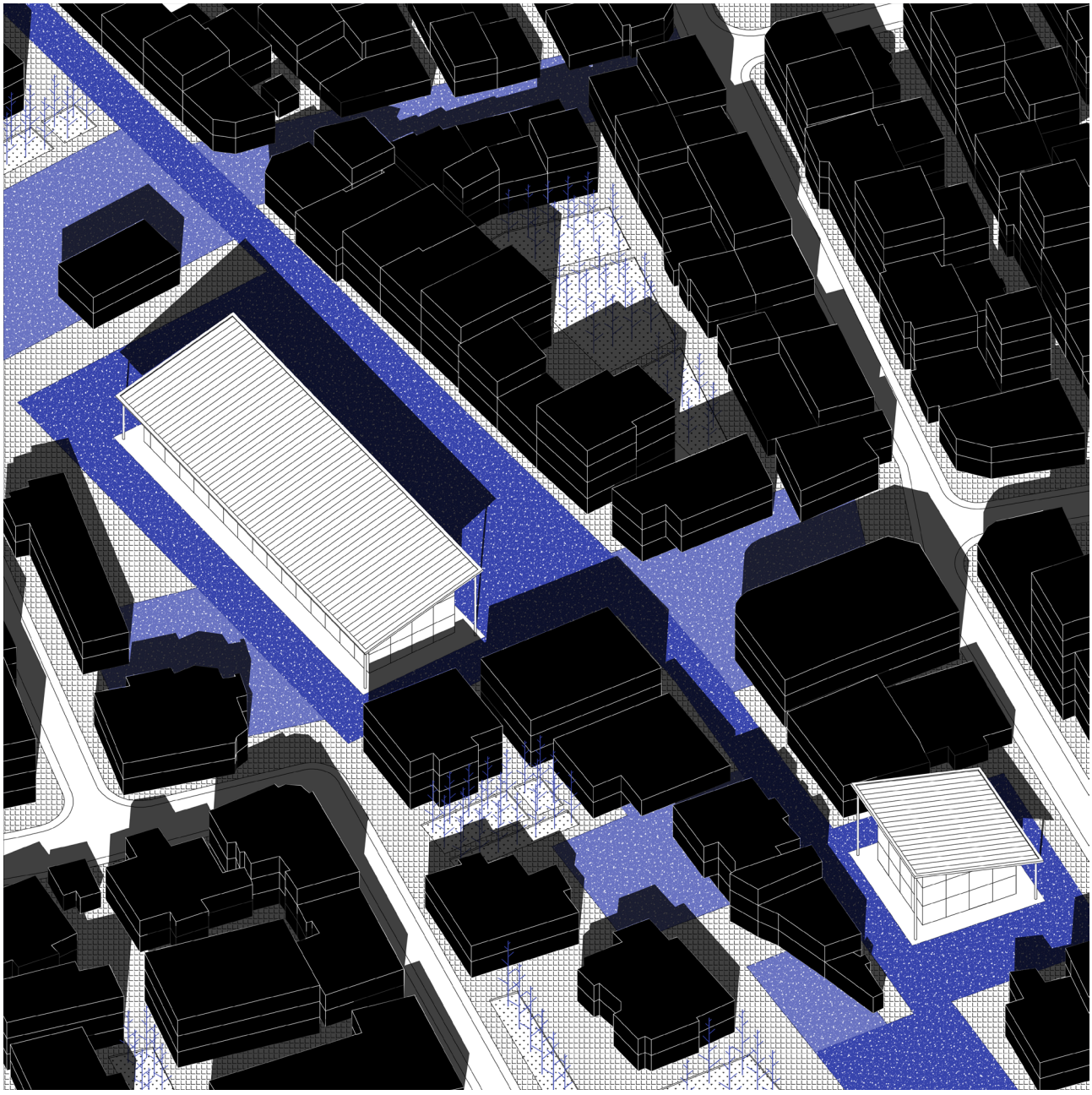
268 Key plan



269 A community-research center and maritime museum for industrial heritage on the east axis.



270 Key plan



271 A community kitchen and restaurant in the east axis.

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