Sustainable Beirut City Planning Post August 2020 Port of Beirut Blast: Case Study of Karantina in Medawar District

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Abstract: The 4 August 2020 Port of Beirut blast caused material damage to an estimated 77,000 apartments located across 10,000 buildings within a 3 km radius of the blast, impacting around 300,000 people predominantly in the municipality of Karantina, which is situated adjacent to the Port of Beirut. The blast shed light on the instability and unsustainable development approach of the city of Beirut since well before the French mandate circa 1921–1940. The impact of the blast provides an opportunity to reassess the relationship between many relevant aspects of the city planning including but not limited to: the relationship of the city to its suburbs, waterfront, and city center; the lack of local planning and cross sectorial master plans; the preservation of the heritage versus the complexity of its urban development; the city growth and increased haphazard urbanization; the infrastructure/service systems that have over the years become increasingly deficient; the lack of public spaces; impacts on urban climate; and the urban divide and inequality that have only grown deeper since the blast, all of which have a combined and adverse impact on the quality of city life. This paper analyzes the most suitable indicators that one must highlight within the context of Beirut city to propose a better and sustainable quality of life with a focus on areas that were significantly impacted by the recent POB blast, namely Karantina. Examples of indicators which were analyzed include sustainable urban design, open spaces, heritage, infrastructure, and urban fabric. The results indicated that the following four main urban design features help improve the quality of life in Karantina, including: (i) connecting areas of Karantina and Mar Mikhael through the reactivation of vacant lots; (ii) reactivation of Ibrahim Bacha and El-Khodr Streets; (iii) redefining the historical El Khodr Mosque boundary and reclaiming its role as an urban landmark; and (iv) integration of classified built heritage. These parameters are necessary to improve the quality of life. The benefits of community participation are also assessed in the improvement and sustainable planning of the city of Beirut.

Keywords: Beirut; sustainable urban design; Karantina; port of Beirut blast; stakeholder participation

1. Introduction

The rapid rate of urbanization as a result of changing social, political, economic, and environmental factors has created new opportunities, along with a set of critical challenges in the development and sustainability of the city of Beirut. Rising levels of urban poverty and inequality, unemployment, and a critical shortage of affordable housing have led to the rapid growth of informal settlements, leaving Beirut with inadequate capacity to provide basic services. The institutional capacity necessary to oversee the transition to sustainable urbanization is also deemed lacking.

These combined factors have led to the rapid influx of settlements into Karantina, the subject of this paper, resulting in its haphazard urbanization and lack of the essential sustainable elements that allow for a final strategic development plan for the city that will integrate various priority projects and actions to improve and sustain a better quality of life for inhabitants according to their needs and preferences where local stakeholders’
opinion regarding the relative weight of categories is of utmost importance [1]. The recent devastating Port of Beirut (POB) blast of August 2020 has further highlighted the many factors that play a deteriorating role in the unsustainable state we find Karantina in today. The Figure 1 below shows the extent of damages following the blast.

Figure 1. Extent of damages in Karantina following the blast [2] Credit: Rebecca El Badawi (student—Lebanese American University).
Lebanon has been facing multiple crises over the past years including the economic crisis which has been fast deteriorating since the eventful October 2019 revolution, the global COVID19 pandemic, and the more recent August 2020 Port of Beirut (POB) blast. The latter was the final blow to the already crumbling state which left many people destitute, homeless, and ever more vulnerable. According to the Beirut Rapid and Damage Needs Assessment [3], the POB resulted in approximately US$ 3.8–4.6 billion in physical damages. This paper aims to study the effects of the haphazard urbanization of the Karantina area, which was hardest hit by the POB, to assess those indicators that play the most critical role in the development of a sustainable city while improving the overall quality of life, a general well-being which comprises objective descriptors and subjective evaluations of physical, material, social, and emotional well-being [4], of its urban dwellers while using the recent devastation as an opportunity to adopt these changes. One such example can be seen in the case of Gleisdreieck park where waste land was transformed into recreational green spaces and corridors between 2001 and 2011 and this created a continuous system of paths throughout the city resulting in overall improvement in social and emotional well-being [5].

Located on the edge of the port, isolated from Mar Mikhael area by the Charles Helou Highway built in 1958, and bounded from the East by the Beirut river, Figure 2, Karantina’s urban role changed throughout its history. The neighborhood, which is situated within administrative Beirut area, is named after its original purpose as an Ottoman quarantine facility, built in the 1830s. In the early 1900s it became a work destination for rural-urban migrants and workers from nearby countries. It was also a destination for Armenians, Kurds, and Palestinians seeking refuge after the Armenian Genocide of 1915, World War I, and the 1948 Nakba [6]. Over time, Karantina grew into a working-class neighborhood providing labor to the local trade, weaving, and handicrafts industries in the 1960s. During the Lebanon civil war (1975–1991), the area was a site of confrontation between fighting factions. Since 2011, the area has become home to migrant workers and a Syrian community that fled the war. Karantina, which is adjacent to the Port of Beirut, was amongst the areas hardest hit by the blast of August 2020, Figure 3, Table 1. All data included in Table 1 were based on surveys conducted by the Order of Engineers and Architects [7] and respective figures were redrawn and recalculated accordingly.
Karantina is the oldest and largest squatter settlement in Beirut, and occupies a large part of the Medawar locality. It is a transit town, occupying inner-city land of high and rising commercial value. The land previously belonged to a cement factory which moved to the north of the country, and which was later sold to private individuals and institutions. The settlement started by an emigration of people from Turkey, Syria, Palestine, and the rural areas of Lebanon. Between 1932 and 1947 there was a progressive increase in the number of immigrants and between 1952 and 1962 there was a constant flow of immigrants from the South of Lebanon due to unstable political conditions. The choice of settling in Karantina is in view of different factors and namely due to: proximity to workplaces, availability of public schools, efficient public transportation, the presence of the main industrial area of Beirut, and the Port of Beirut [6]. That being said, the Port of Beirut zone creates a high sense of insecurity due to the strong presence of military and fencing that prevailed even before the blast. Karantina is also considered a poor area. Its poverty status is historically closely intertwined with its history as a quarter in which sea travelers were quarantined to curb the spread of diseases including cholera and tuberculosis during the 1800s. Presently, the neighborhood is still one of Lebanon’s poorest and is predominantly home to working-class Lebanese, Syrian, and Palestinian refugees, among other migrant workers and displaced groups [8].

This paper shows the importance of implementing sustainable urban planning practices in the design of a city that has been devastated as a result of numerous natural as well as man-made factors. The more recent POB blast offers an opportunity to adopt these sustainable interventions in an inclusive manner taking into consideration the feedback and participation of citizens and all other stakeholders.
2. Materials and Methods

This section will describe the methodology which will be adopted to assess and analyze selected parameters that aim to improve the sustainable development of the city with focus on the Karantina case study area which was recently devastated by the POB blast. The parameters which will be considered include urban fabric, open spaces, heritage, infrastructure, and vacant lots with an emphasis on the impact of participation of key stakeholders, including NGOs and CSOs, for a participatory approach to ensuring an improved quality of life. The latter will be assessed further in the discussion section of this paper.

The typo-morphology of the urban fabric of Karantina is unique and stems from its historical background described above. The urban elements that are intricate parts of the city are, through the recognition of existing urban forms, supplemented by existing or desired functions in the adjacent neighborhoods. The morphological studies are predominantly scrutinized under the analysis of the building/plot or lot, street/city block, and city and region.

The study of the typo-morphology of the urban fabric of Karantina is used in this paper as part of the methodology to introduce new sustainable urban planning tools within the context of Beirut city planning. This paper therefore assesses the urban fabric of Karantina based on the following parameters:

1. A high number of vacant parcels.
2. Mixed fabrics with a predominantly large-scale industrial environment and footprint.
3. Unorganized, small-scale, semi-detached individual residential fabric, residual of the Armenian camps of 1936 and other settlements.
4. Severely damaged buildings.
5. A numerous number of parcels and lots are classified as heritage.
6. Predominantly poor social classes.
7. Isolated from its surrounding neighborhoods.
8. Undefined character/identity.

To carry out this work, the analysis of the characteristics of the urban fabric will mainly rely on the use of available data in Karantina, namely the background cadastral and aerial views from search engines, as well as on the field visits and research. The available data presented in Tables 2–5 below were compiled using ArcGIS based on base maps prepared by the Lebanese Army, the Lebanese Red Cross, the Order of Engineers and Architects of Beirut, and the Beirut Urban Lab which was also responsible for the preparation of the Beirut Built Environment Database.

Although within the Karantina area there are many vacant parcels, small parks, and the presence of the old Mar Mikhael train station which has not been operational since the early 1900s, its relationship to public space is unclear. There is a high number of unbuilt vacant lots in Medawar (36% of the total parcels area) which are present within the urban fabric, Figure 4, Table 2. Non-constructible parcels (3.16% of the total parcels area) are small area parcels (less than 200 sqm) and create certain gaps in the urban fabric. They are often derelict spaces, private or public, used mostly as parking lots and generator platforms [9] but which can be put to better use and particularly in the form of green spaces.

Table 2. Vacant land and non-constructible parcels in Medawar adopted from Beirut Built Environment Database.

<table>
<thead>
<tr>
<th>Type</th>
<th>No.</th>
<th>Sqm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vacant land</td>
<td>274</td>
<td>155,137</td>
</tr>
<tr>
<td>Non-Constructible parcels</td>
<td>265</td>
<td>18,170</td>
</tr>
</tbody>
</table>

1 Total area of the parcels.
Table 3. Land use in Medawar adopted from Order of Engineers and Architects Beirut.

<table>
<thead>
<tr>
<th>Type</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>390</td>
<td>45.4</td>
</tr>
<tr>
<td>Civic</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Commercial</td>
<td>84</td>
<td>9.7</td>
</tr>
<tr>
<td>Hospital</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Industrial</td>
<td>151</td>
<td>17.34</td>
</tr>
<tr>
<td>Offices</td>
<td>60</td>
<td>6.98</td>
</tr>
<tr>
<td>School</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Mixed use</td>
<td>63</td>
<td>7</td>
</tr>
</tbody>
</table>

Percentage is calculated for the numbers of buildings and not the areas.

Table 4. Heritage buildings in Medawar adopted from Order of Engineers and Architects Beirut.

<table>
<thead>
<tr>
<th>Type</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heritage</td>
<td>223</td>
<td>26</td>
</tr>
<tr>
<td>Not Heritage</td>
<td>636</td>
<td>74</td>
</tr>
</tbody>
</table>

1 From total number of the buildings.

Table 5. Poverty by residential sectors in Medawar [7].

<table>
<thead>
<tr>
<th>Status</th>
<th>Karantina</th>
<th>Mar Mikhael</th>
</tr>
</thead>
<tbody>
<tr>
<td>All poor</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Half Poor/Half not poor</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Majority poor</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Minority poor</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 UN Habitat classification after the blast.

Figure 4. Vacant land and non-constructible parcels in Medawar.

The parcels’ sizes vary from 21 sqm to 14,600 sqm for an average parcel size of 567 sqm and a total area of 155,134 sqm. The total area of parcels in Medawar is 807,765 sqm.

The parcels in Karantina differ in size and shape Figure 5; on its western and eastern edges there are small scale parcels that are used to host immigration camps and housing for labor, while the core of the area is occupied by large scale parcels that host industrial facilities.
Mar Mikhael train station is occupied by few historical buildings and two large scale hangars. The area has become a graveyard for old buses and train skeletons.

Figure 5. Parcels sizes and shapes in Medawar.

On Charles Helou Highway, we find a series of high buildings, mostly recent office spaces, the Beirut fire station, and a series of small buildings on its western edge, residues of the old dense St. Michel camp. Inside the area, what used to be a dense Armenian camp back in 1936 has now given way to large scale industrial facilities (Figures 6 and 7). The Mar Mikhael train station is occupied by few historical buildings and two large scale hangars. The area has become a graveyard for old buses and train skeletons.

Figure 6. Land use in Karantina/Medawar.

The residential buildings, although higher in numbers, consist of only 8.5% of the total building footprint of the area with an average footprint of 174 sqm.

After the blast, UN Habitat had surveyed poverty zones in the areas of Medawar and Rmeil Figure 8, and it is important to note that within residential areas of Karantina most were identified as all poor or half poor, which depicts a social fabric in desperate need for intervention of some kind. One of the poorest areas in the middle of Karantina is Arab
El-Maslakh. The area consists of four blocks that are currently isolated within a larger area with industries and unused plots.

Figure 7. Land use in Medawar.

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Figure 8. Poverty levels by sector in Medawar.

In Karantina, the largest parcel to hold the most heritage buildings is the one facing the Mar Mikhael train station; it holds 46 classified buildings Figure 9.

The methodology in this paper aims to merge the various parameters that have shaped the typo-morphology of the urban fabric of Karantina over the past years through ArcGIS. This exercise helps to better understand the intricate link between these selected parameters including, among others, vacant lots, non-constructible parcels, heritage buildings, land use, and poverty pockets, and identifies potential opportunities to build back a better, more sustainable, and improved quality of life in the Beirut city planning.
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3. Results

The recommended urban planning parameters mentioned above were presented in ArcGIS map in order to simulate a sustainable development of Karantina with the aim of improving the quality of life.

3.1. Connect Karantina and Mar Mikhael

Sustainable urban planning can be partly achieved through small scale interventions such as the reactivation of vacant lots and non-constructible parcels through connected paths and the re-use of heritage buildings. Available data show that there are a high number of unbuilt vacant lots (36% of the total parcels area) which are present within the urban fabric of Medawar. Non-constructible parcels (3.16% of the total parcels area) are small area parcels (less than 200 sqm) and create certain gaps in the urban fabric [9]. Most of the time they are derelict spaces, private or public, used mostly as parking lots and generator platforms. Those lots should be integrated within the mobility plan and should play an important role in connecting different ends of the area to the proposed urban park.

One of the main stakeholders in driving change should be municipalities. They hold within their realm numerous resources, unused or misused for most of them.

This fabric was severely damaged after the August 4th blast; a strategy for the re-use of existing industrial amenities, heritage buildings, and residential buildings in decay needs to be developed. Figure 10 below presents how the establishment of a common platform can connect both areas.

Reactivating public life through the elaboration of neighborhood scale urban strategies, engaging residents in improving their built environment, should be a priority. Karantina holds within its realm a non-negligible number of vacant land and non-constructible parcels. Linking those parcels into an informal public space, integrating the identified heritage parcels leading to a network of open community spaces connecting neighborhoods and fostering the sense of community, belonging, and improving inclusion.

3.2. Reactivate Ibrahim Bacha and El-Khodr Streets and Link through Karantina

As far as 1936, Ibrahim Bacha and El-Khodr streets were stretching all the way to the port (Ibrahim Bacha is seen on maps dating back to 1876). The Charles Helou Avenue broke that connection. Today these areas are witnessing high level of gentrification due to the growing urban developments. This paper proposes to reconnect those two ends of the streets which will help reactivate them and create seamless connections and mobility.
from the southern end to the northern end of the area. These important historical axes will play a crucial role in defining the commercial ground floors of the area and their land use Figure 10. One of the most important objectives of this intervention is to revitalize the economy of the area and improve the social dynamics and the pedestrian experience, which all combine to help in the rediscovery of the sustainable development of the city at eye level.

![Figure 10. Sustainable urban interventions in Karantina/Medawar.](image)

### 3.3. Redefine El-Khodr Mosque Boundary/Reclaiming Its Role as Urban Landmark

The El-Khodr Mosque dates from around 1664 and is located today at the edge of the highway along El-Khodr street. Over time, some unsustainable additions were made to this valuable religious building and other structures were implemented next to it. We propose to revert to the 1915 situation where the Mosque was exposed from all sides. By redefining the boundaries of this Mosque, this allows for a clear understanding of the open space surrounding it, creating a public piazza connected to the station and to the southern entrance from Armenia street. Moreover, and according to the National Physical Master Plan for the Lebanese Territory of 2009 [10], the local urban plans should identify protection perimeters around these sites and define valorization methods adapted to the situation of every site and endowed with adequate valorization regulations.

Since its introduction in 1958, the Charles Helou isolated the Medawar/Karantina area from the rest of the city. It is worth investigating different scenarios for the future planning of the highway and considering its removal, making better use of the topographical situation of the adjacent area (more specifically the port). This paper proposes to cancel out the effect of that infrastructure by either tucking that strip underground or relocating it further North towards the port, as shown in the proposed Linord scheme Figure 11. An old engraving, “Porto della cita di Barutti”, dating from 1675 [11]. Figure 12 shows an inspiring view of Beirut gate surrounded by landscape and greenery. The idea of the Western gate stems from that image and proposes to establish a common green platform linking Mar Mikhael train station to Medawar Figure 13. Thus, by redefining the boundaries of this historical landmark, we are not only reclaiming its role as an urban landmark, but also safeguarding its presence against a hostile environmental setting. This ensures a resilient and sustainable intervention.
Figure 11. Proposed Linord project impact on Medawar.

Figure 12. Porta Della Cita di Bairutti, 1675.

Figure 13. Green platform and Mosque boundary redefinition.
3.4. Integrate Classified Built Heritage

Built heritage is an important part of the cultural heritage of towns and cities. However, current definitions of built heritage are narrow and rely on conventional conceptions of architectural and historical value. In many countries, these values are enshrined in legislation that defines what constitutes “built heritage.” However, the protection of individual buildings and monuments is rarely a problem, because they are addressed directly by existing legislation [12]. Similarly, an entire district or town can be designated a conservation area to prevent significant development.

The most pressing problem is therefore how to address areas within towns and cities that are not considered worthy as conservation areas and yet form an essential part of the urban character. These urban fragments often epitomize a unique population density, historic nature, street pattern, or other urban morphological or cultural feature. They provide the context in which the more obvious heritage assets are located, but should not be treated as mere context, because it is often the ensemble of objects and their context that create value. There is a need, therefore, to broaden the current definition of built heritage to embrace less obvious examples [12].

In order to achieve a better integration within the urban fabric, these heritage buildings should be refurbished, and land-use rethought. Karantina has already attracted several firms and organizations looking for cheap rents and industrial spaces. This could become part of an extended plan for the re-definition of the identity of the area making it a hub for creatives and a cultural melting pot reflecting the dynamics of the city.

By combining the above-mentioned interventions to our area of study, including (i) connecting areas of Karantina and Mar Mkhael through the reactivation of vacant lots; (ii) reactivation of Ibrahim Bacha and El-Khodr Streets; (iii) redefining the historical El Khodr Mosque boundary and reclaiming its role as an urban landmark; and (iv) integration of classified built heritage, it is found that this part of the city which was severely damaged after the POB blast can indeed be rejuvenated, better connected to the rest of the city, while creating opportunities for open and green spaces, which, combined, provide the necessary ingredients to a sustainable city and improved quality of life. Table 6 below presents a summary of these findings for our area of study.

### Table 6. Proposed interventions for an improved quality of life in Karantina.

<table>
<thead>
<tr>
<th>Current Problems</th>
<th>Proposed Interventions</th>
<th>Merits/Defects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social isolation, economic degradation, lack of sustainable urban development</td>
<td>Connecting areas of Karantina and Mar Mkhael through the reactivation of vacant lots</td>
<td>Integration of Karantina within overall urban scheme of city</td>
</tr>
<tr>
<td>Inactive commercial ground floors, splitting of street due to highway presence</td>
<td>Reactivation of Ibrahim Bacha and El-Khodr Streets</td>
<td>Injecting economic dynamism into city, recreating missing urban link</td>
</tr>
<tr>
<td>Diffusion of Mosque as a landmark within haphazardly constructed structures</td>
<td>Redefining the historical El Khodr Mosque boundary and reclaiming its role as an urban landmark</td>
<td>Redefining boundary of once lost important religious landmark</td>
</tr>
<tr>
<td>Potential loss of heritage buildings to modern construction</td>
<td>Integration of classified built heritage</td>
<td>Integration of isolated structured into a sustainable urban planning of the city</td>
</tr>
</tbody>
</table>

4. Discussion

Lack of housing, overconsumption of natural resources, poverty, inequality, pollution, and instabilities in social and cultural values are all urbanization challenges which should be addressed by refining the urban planning of sustainable neighborhoods and cities. In order to support the urban future development and to build a sustainable relationship between urban citizens and urban spaces, UN-Habitat has recommended adequate space for streets and an efficient street network; efficient land use to accommodate more urban
dwellers, provide social equity, increase energy efficiency, and reduce pollution; mixed land use to provide local jobs, promote the local economy, minimize car dependency, and support mixed economies; a good social mix that aims to ensure urban equity in terms of housing and promote the interaction between social classes in a community; and limited land use specialization that aims to limit or adjust the zoning policies.

Amid unclear public policies, vague decision-making process, missing planning institutions and uncoordinated planning actions and implementation, Lebanon faces many challenges to achieve a more sustainable and inclusive role. Developing a regional planning framework is one of the tools that can successfully contribute to shifting this trend from a stagnant situation to a more interactive and forward driven mechanism.

“One of its central goals is to overcome the different fragmentation processes that cut into the social fabric, leading to the exclusion of individuals and social groups from access to different common goods that are considered essential today, such as elementary social rights, education, basic services, housing and employment” [13].

This paper shows that by reactivating the vacant lots and non-constructible parcels in Karantina as identified in the above sections, reactivating the northern and southern ends of Ibrahim Bach and El Khodr streets which has presently been cut by the Charles Helou Avenue, and reclaiming the role of El Khodr mosque as an urban landmark with surrounding open spaces, the Karantina area will be relinked to the city, will have more opportunity for open and green spaces, and will ease the transport and commute times between Karantina and the main city. These all allow for the sustainable development of the Karantina area, thus improving the overall quality of life of residents and thereby contributing to diminishing commute time, improving air quality, mitigating urban overheating [14], and transforming loose spaces into public spaces within neighborhoods which families and the community can enjoy.

While the repurposing of urban vacant land will not redress the causal roots of systemic inequalities, such interventions can still be pertinent for daily public life in cities. While Lebanon experiences multiple crises and its people struggle more every day, solidarities are direly needed, and spaces where people can meet and connect would play a key role in nurturing these solidarities. Vacant parcels can be such spaces, where playgrounds, food banks, and basic infrastructure can emerge, and where new forms of communal life can be experimented with [15].

However, achieving this reform requires connecting different actors and stakeholders. Politicians, planners, sociologists, anthropologists, technicians, economists, and civil activists must be included in the urban development process, working on spaces, construction materials, and building tools combining this knowledge with a set of legal, administrative, managerial, conceptual, scientific, literary, and negotiation tools. This bottom-up approach is essentially based on building on many small development initiatives, each focused on a specific topic of interest, reacting to problems that are preventing the instauration and development of sustainable planning.

Thus, social inclusion and the role that citizens play in a sustainable development strategy can be beneficial through a voluntary contribution to neighborhood development. Similar such successful cases have been seen in neighboring countries such as Jordan and UAE as discussed above. Integrating adequate programs, like meet, play, work, gather, plant, and introducing initiatives in urban vacancies can respond to the needs of the neighborhood, ranging from infrastructure to agriculture, and thus generate a sense of collective ownership while at the same time improving the quality of the surrounding environment. Such initiatives usually do not require much capital investments or maintenance, can be managed communally, and operated temporarily, yielding fast results.

Other cities with similar contextual and economic backgrounds which have implemented sustainable urban planning practices as per the United Nations Sustainable Development Goal 11 (Sustainable Cities and Communities) [16] to improve the overall quality of life were also referred to in this paper. As noted, Beirut is a divided city, and case studies of divided cities like Berlin, Belfast, or Jerusalem indicate that contemporary planning
interventions in divided cities rarely address the root causes of division. Beirut, Belfast, and Berlin are cities torn between war and peace, with strong city memory, with unique contexts and contested spaces. Difference and diversity as a prominent feature of the city should hence be incorporated in any planning approach, even if the consequences on the ground may differ. Considering that planning could change the spatial, economic, social, and political dimensions of a defined urban space, it would be crucial to depict which of these dimensions can be used to intensify or lessen contestations over space in divided cities [4]. Beirut has always functioned as a multicultural city where religious groups coexisted, but lived in separate enclaves, with few mixed neighborhoods [17]. This is strongly evident in Karantina, an area that experienced intense political conflict during the Lebanese civil war which has left strong marks in the neighborhood social fabric.

Since its reunification, Berlin has adopted “Green city for 2030” as an action program and pursuing the long-term goal of making Berlin a climate-neutral city by 2050. It contains specific projects, measures, and instruments to meet the challenges formulated in the document and to achieve its objectives. The socio-economic reality of Berlin in 2020 is of a city that is strongly socially segregated between a wealthy and very well-off population on the one hand and a growing number of urban poor on the other—an inequality that has been on the rise since the double coronavirus crisis [18]. Although Berlin is way ahead today in its quest for sustainability, from 2001 till 2011, Berlin was, similarly to Beirut, going through difficult political, economic, and social crisis. A spatially targeted program that sought to solve social problems at the neighborhood level was set up introducing the “neighborhood management” as a main tool. By introducing a small-scale governance structure, the “neighborhood manager”, it created an intermediate level between the municipality, citizens, and other local actors [18]. Abandoning large-scale foreign investment, understanding the city demographics, transforming industrial facilities into cultural and creative hubs, and developing affordable living and working spaces were at the core of this strategy. Landscape projects such as the Gleisdreieck park Figure 14 were inaugurated, focusing on the north-south green corridor that creates a continuous system of paths throughout the city in a decision to dedicate this former wasteland into green and recreational spaces.

![Gleisdreieck park.](image)

Mending emotional, spiritual, and socio-cultural connections becomes critical for any process of recovery—with cultural heritage, that includes sites of social significance and shared memories—serving as a catalyst for a successful recovery process. In this
sense, cultural recovery operates beyond the limited definition of heritage tied to the physical and historical and goes beyond the urgent recovery process that is people-centered, heritage-led, and place-specific to address post-disaster basic needs. Crucially, it attends to socio-spatial practices that are part of the intangible heritage, and rebuilds, over the long-term, undermined cultural practices, social ties, and economic networks. Such industrial neighborhoods and informal settlements as Karantina, characterized by a deep social, cultural, and economic history, are therefore as deserving as any other neighborhood of a recovery process that is people-centered, heritage-led, and place-specific [14].

5. Conclusions

The above development interventions in the Karantina study area selected for the purpose of this paper show that sustainable growth can be possible if these simple, yet necessary, changes are implemented. The POB blast which devastated the Karantina area offers a window of opportunity to set into motion these recommendations and build back an even better Beirut [3]. Special attention will be made to include stakeholders, communities, citizens, relevant NGOs, and CSOs who will help in a participatory approach to the successful development of the study area. Stakeholders would feel a sense of belonging and may be incentivized to make additional efforts to help achieve an improved quality of life in their communities.

The purpose of this paper is to highlight the importance of implementation of sustainable urban planning best practices in Beirut to interconnect different physical areas that were disconnected due to haphazard urban planning designs to serve suturing of the dismantled urban fabric in Karantina, reactivate a once flourishing community, and to integrate different social classes in the decision making processes resulting in the overall desired objective for an improved quality of life for the citizens of Beirut.

It is recommended that future research zooms in on each of the interventions discussed within this paper to develop a sustainable methodology that deals with the individual user and the perception of the city at eye level.

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