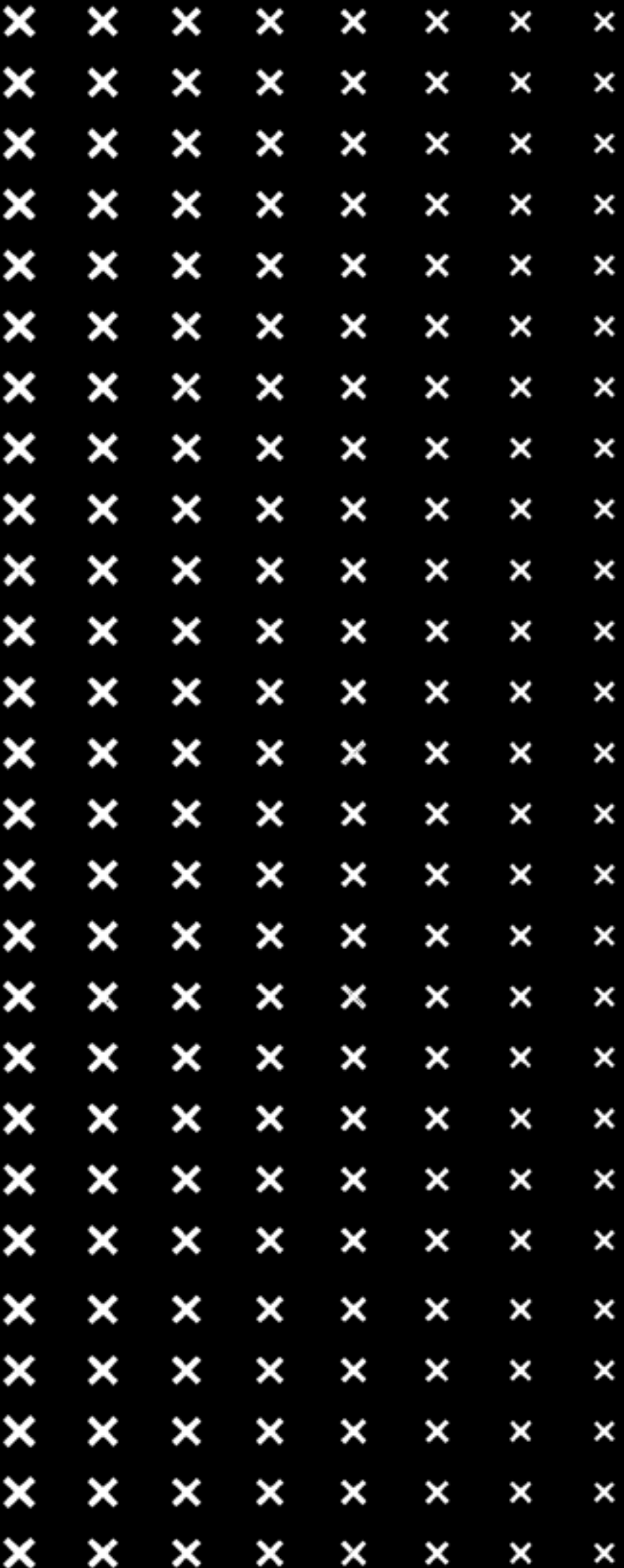


Three Level Connection

Renovation of Maritime Transport Hub in Odessa, Ukraine
Bohdan Yepur | ARCHIP2021



Three Level Connection

Renovation of Maritime Transport Hub
in Odessa, Ukraine

Master thesis in Architecture and Urbanism

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ABSTRACT

The thesis topic is aimed to find connections between local urban and architectural problems and global development. The design is based on the search for universal principles and assumptions analyzed in the global scale, in the scale of the city and its “sleeping” districts. And eventually the design is focused on development of the local area in front of the historical monument – The Potemkin Stairs.

The regeneration of ports reflects a unified strategy for the competitive development of port cities in the 21st century. The globalization of the economy, focused on the service sector, shows that port cities are becoming major players in the struggle for economic leadership. As a rule, seaside towns turn into laboratories for waterfront renovation processes. The coastal lines of leading port cities are evolving from 20th-century industrial estates and port terminals to residential, commercial, tourist, and recreational facilities. These cities offer new opportunities for innovative ideas and exploitation of the most valuable coastal area of the city center.

The port of Odessa is located in the center of this large city with a population of over a million people. The cargo capacity of the Odessa port agglomeration was designed to serve the Soviet Union with a population of 250 million, while the population of modern Ukraine is less than 42 million.

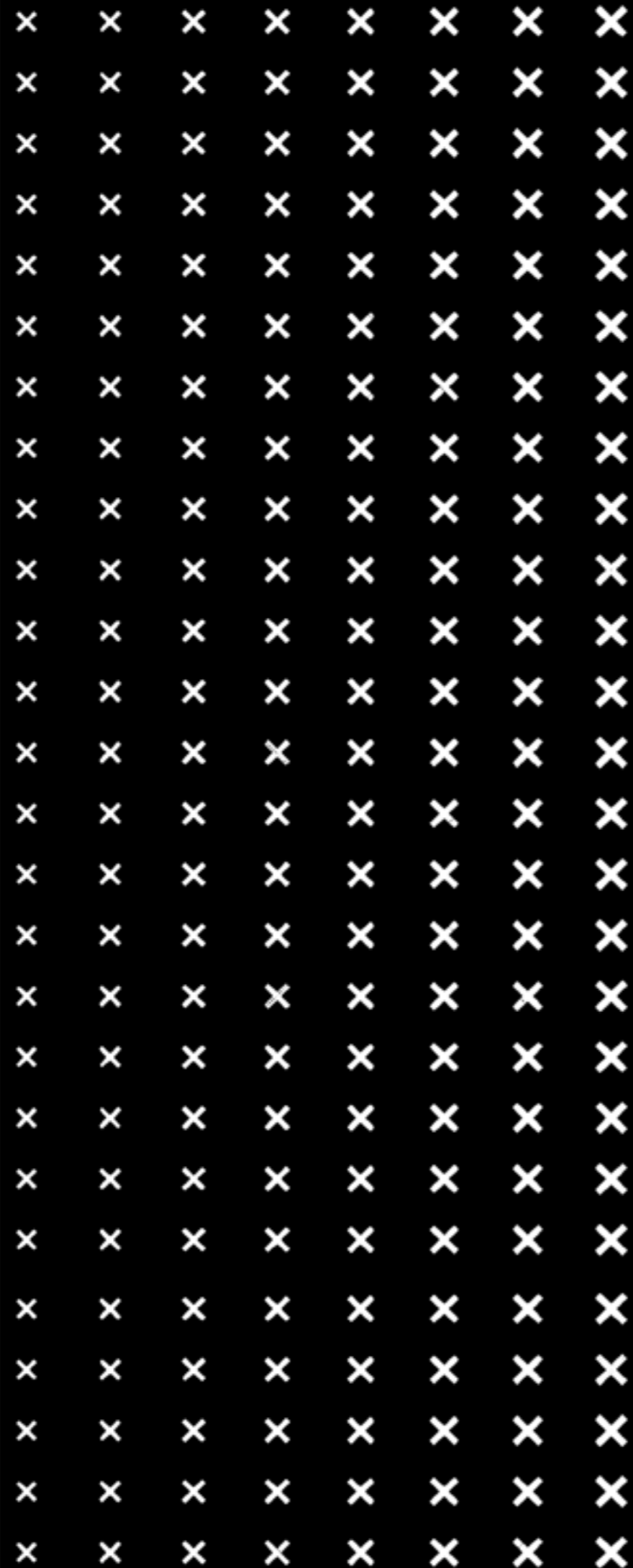
Failure to develop an effective strategy for the maritime industry and align it with urban planning has led to the large-scale construction of grain terminals in the historical city center, which caused traffic overload and environmental pressure in Odessa city center. Such interference in the planning structure of the city will have irreversible consequences and lead to the degradation of the historical center. The accumulation of large cargo projects in the port of Odessa contradicts the global trends in the movement of cargo terminals outside the city center, which does not allow changing their functional purpose for the city and, therefore, does not open the port to serve public interests.

Despite the vast territory that occupies the entire northern coast of the historical center, the actual load of the cargo terminal is currently less than 10% of the total capacity. At the same time, the total contribution to the city's economy is even less – less than 2% of the city's total income.

In my project, I propose the first stage for connecting port terminals to the city structure. It is assumed that the integration of this part of the coast into the structure of the city will begin from the territory of the current tourist terminal and the transport interchange leading to it. In the structure of this site, there is also an abandoned hotel “Odessa” and a sea restaurant, which will also be revised during the project.



Demolished Structure



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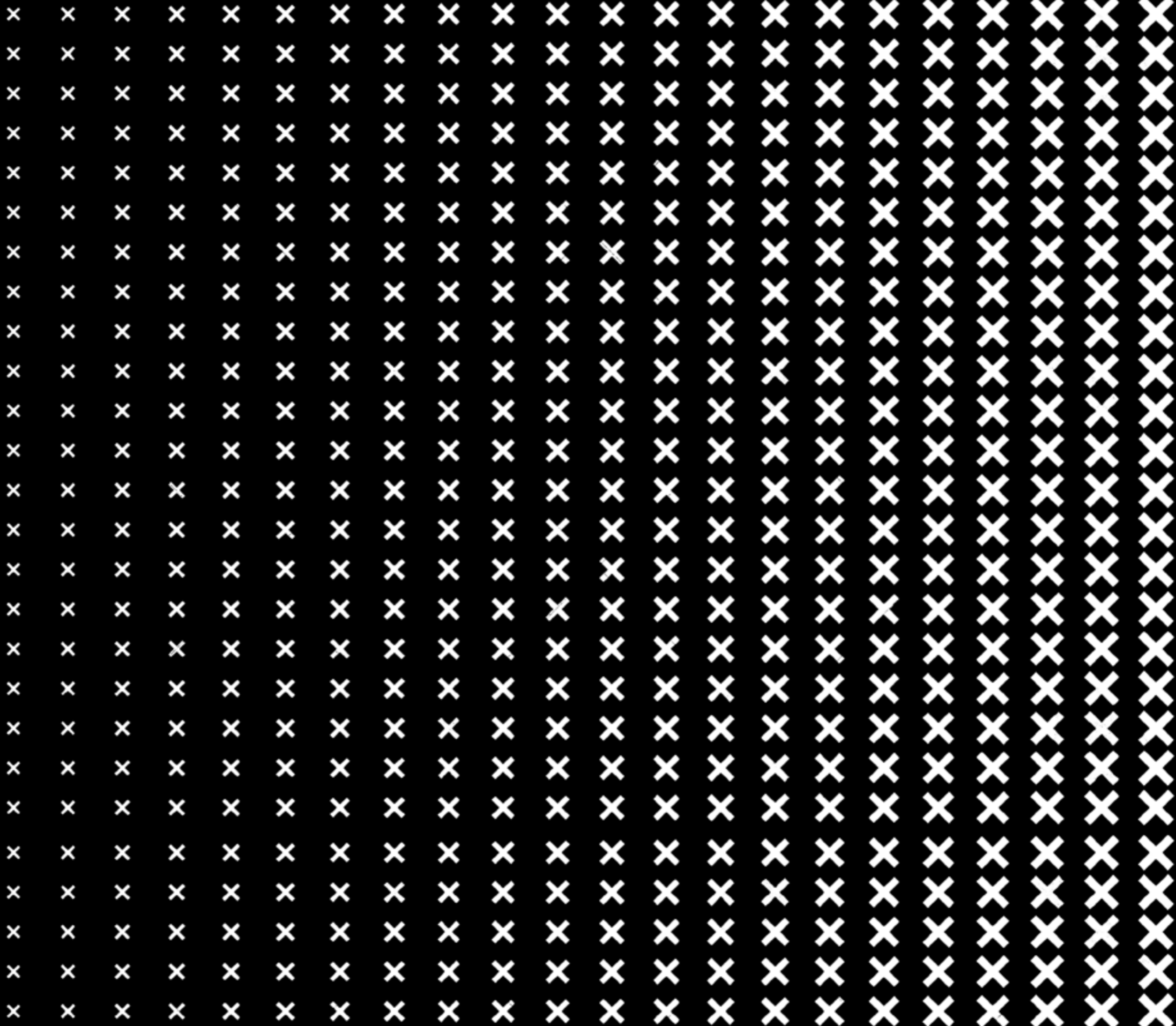
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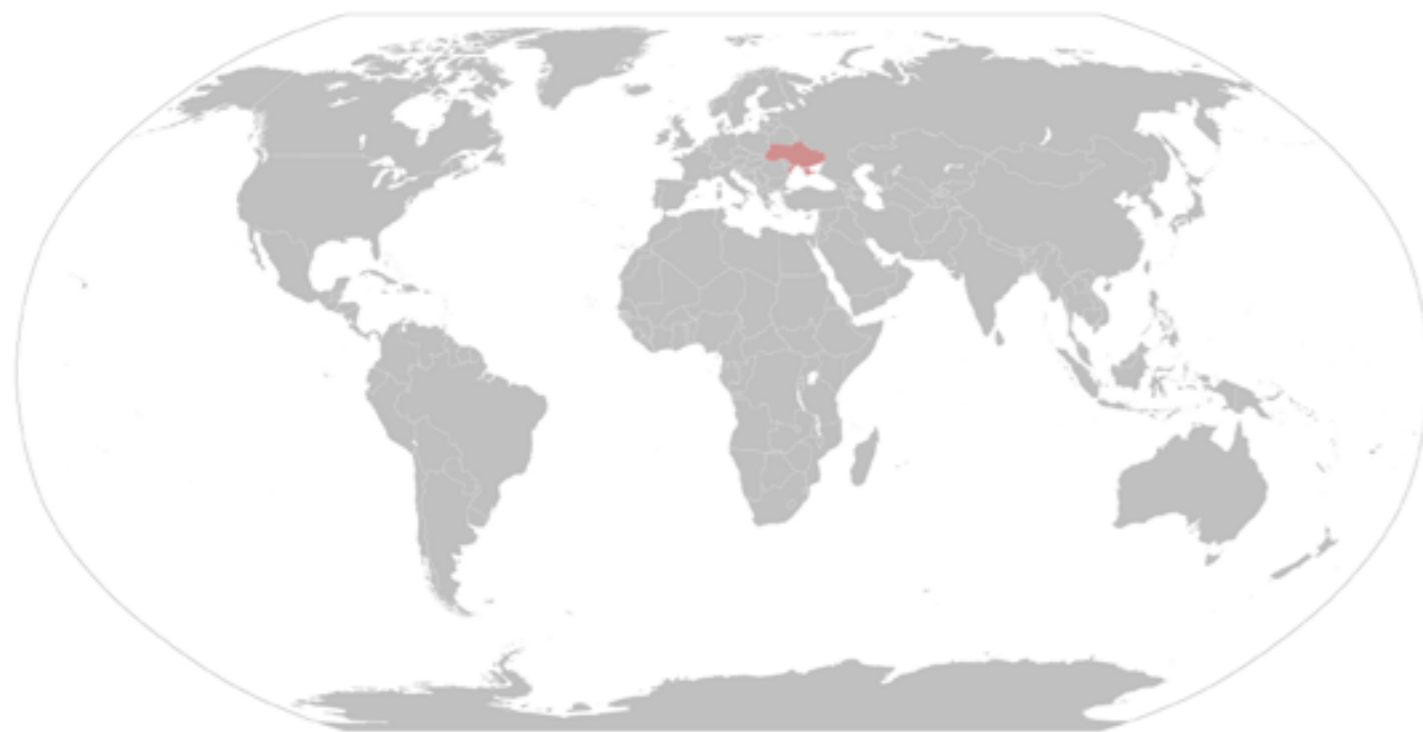
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PART I - Introduction



General Information COUNTRY



Ukraine was chosen as the country for the graduation project. Ukraine is located in the central part of eastern Europe, at the intersection of the main transport routes from Europe to Asia as well as from the Scandinavian countries to the Mediterranean region. The country's territory is the largest among European countries and has more than 600 thousand square kilometers (as an example, the territory of the Czech Republic is 7 times smaller). The coastline of Ukraine along the Black Sea has a length of more than 1,500 kilometers and is the main connection to the world ocean for the entire country. Also, two large rivers adapted for cruising ships pass through Ukraine – the Dnieper and Dniester. These reservoirs pass through a significant part of the country's territory and are still used today as routes for river cargo transportation.

At the time of the Soviet Union, Ukraine was an agricultural center with all the necessary facilities for the production, processing, and transportation of agricultural products. But in addition to the main function in the form of growing agricultural products, Ukraine was also one of the main ports of the Soviet Union. Both a powerful military fleet and one of the largest commercial ports were based in Odessa and Sevastopol.

Nowadays, most of the industrial, agricultural, and transportation hubs are in decline due to the decreased demand for a large volume of products after Ukraine became an independent state. This allows at the present time to reorganize the territories of former industrial enterprises and on their basis create new residential and business districts. In each region, this is happening at different rates and different development options. According to the constitution, the territory of Ukraine has 27 regions – 24 regions (2 regions are currently in a combat zone), the Autonomous Republic of Crimea (currently illegally annexed to the territory of the Russian Federation) as well as two cities with a special status – Kiev and Sevastopol (located on the territory of the Autonomous Republic of Crimea). The regions are also divided into 136 districts, which in turn are divided into urban, settlement, and rural united territorial communities. The largest cities in Ukraine are Kiev, Kharkiv and Odessa, their total population exceeds 5 million people.



General Information CITY

Odessa was chosen as the city for the graduation project. This city is the regional center of the southern part of Ukraine. In addition to being an administrative center, the city is also the core of the southern coastal port agglomeration and has two satellite cities, Yuzhnoye and Chernomorsk, which were also founded to increase the capacity of cargo ports on the coast. The official territory of the city is 236.9 square kilometers with a population of over one million.

During its foundation, the city was planned as a territory for the deployment of a military fleet, but two years later the function was revised and changed to a trade one, which in turn gave a powerful impetus for further development. The historical center of the city was mainly designed by French and Italian architects, thus creating an architecture that was radically different from other cities in Ukraine. The development of the commercial port and the city around it continued to evolve, but during the Soviet period, the city began to reorganize as an industrial city with transportation facilities. This gave a strong impetus to the development of industrial buildings around the historical center, as well as the immediate main exit to the sea on the north side of the center. During the industrial development of the city, the Odessa cargo port as part of the South Black Sea port agglomeration became the main sea transportation hub, which further attracted investments in its expansion. After the collapse of the Soviet Union and the formation of Ukraine as an independent state, the need for the capacity of the sea freight agglomeration decreased, which entailed a gradual degradation of the territory around the historical center.

General Information

SITE

The territory, which is located in the central core of the cargo port, was chosen as a site for the graduation project. The territory of the selected site slightly exceeds 90,000 square meters and is the starting point for the reorganization of the port function, according to the concepts of Odessa architects. Since the founding of the city, this part of the northern coast of the historical city center has been the main sea “gateway” to Odessa. All the sailors who arrived were greeted by an incredible staircase, which consisted of 200 steps, and also gradually expanded towards the base, thereby creating an impression of even greater massiveness with the help of an enhanced perspective. At the present time, the staircase has been restored and today it is an architectural monument of national importance, but, despite the preservation of the monument, its historical function is currently in decline. The historical monument is cut off from the coast by a road, by a cargo port railway from, and by a road for freight transport. Thus, the main symbol of the “gateway” to the city was lost. This approach was due to the primary goals of creating a powerful sea cargo port during the Soviet Union and the historical heritage at that time was not taken into account. But, as was mentioned earlier, the capacities of the cargo port have decreased and at the moment only about 10% of all capacities are being used. The rest of the territory is built up with storage tanks, and the railway tracks, which have 12 lanes near the stairs, are currently used as a parking area for freight cars. Several buildings are currently located directly on the territory of the selected site – the first level is occupied by warehouses, some of which have been converted into an exhibition space and are used every few months. Also on the site there is the current tourist terminal, which includes several restaurants and conference areas. Nowadays, the sea terminal has reduced its capacity from 14 cruise ships per year to 1, which has resulted in the desolation of restaurants and conference rooms, which today are used about 1 time per year for the graduation ceremony for schools. Also on the territory there is the building of the Hotel “Odessa”, which was built in the early 2000s and since then has functioned only for half a year, and today is completely abandoned. This entire territory of the tourist sea terminal is connected to the city by a bridge and a series of unremarkable staircases and underground passages, which completely cuts it off from the structure of the city. Thus, all this territory is unnecessary for the functions of the cargo terminal and inappropriate for the current functions of the tourist terminal.

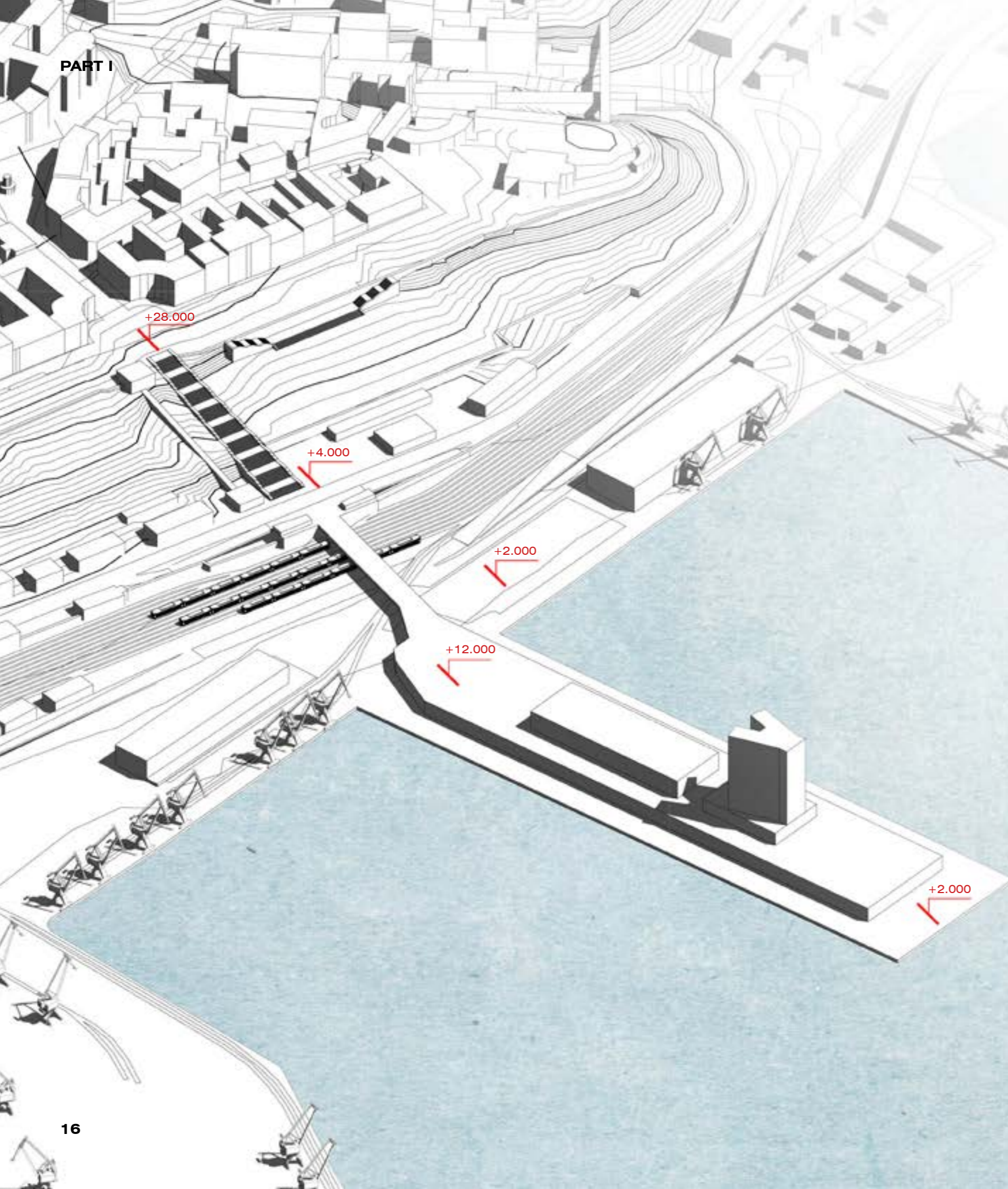


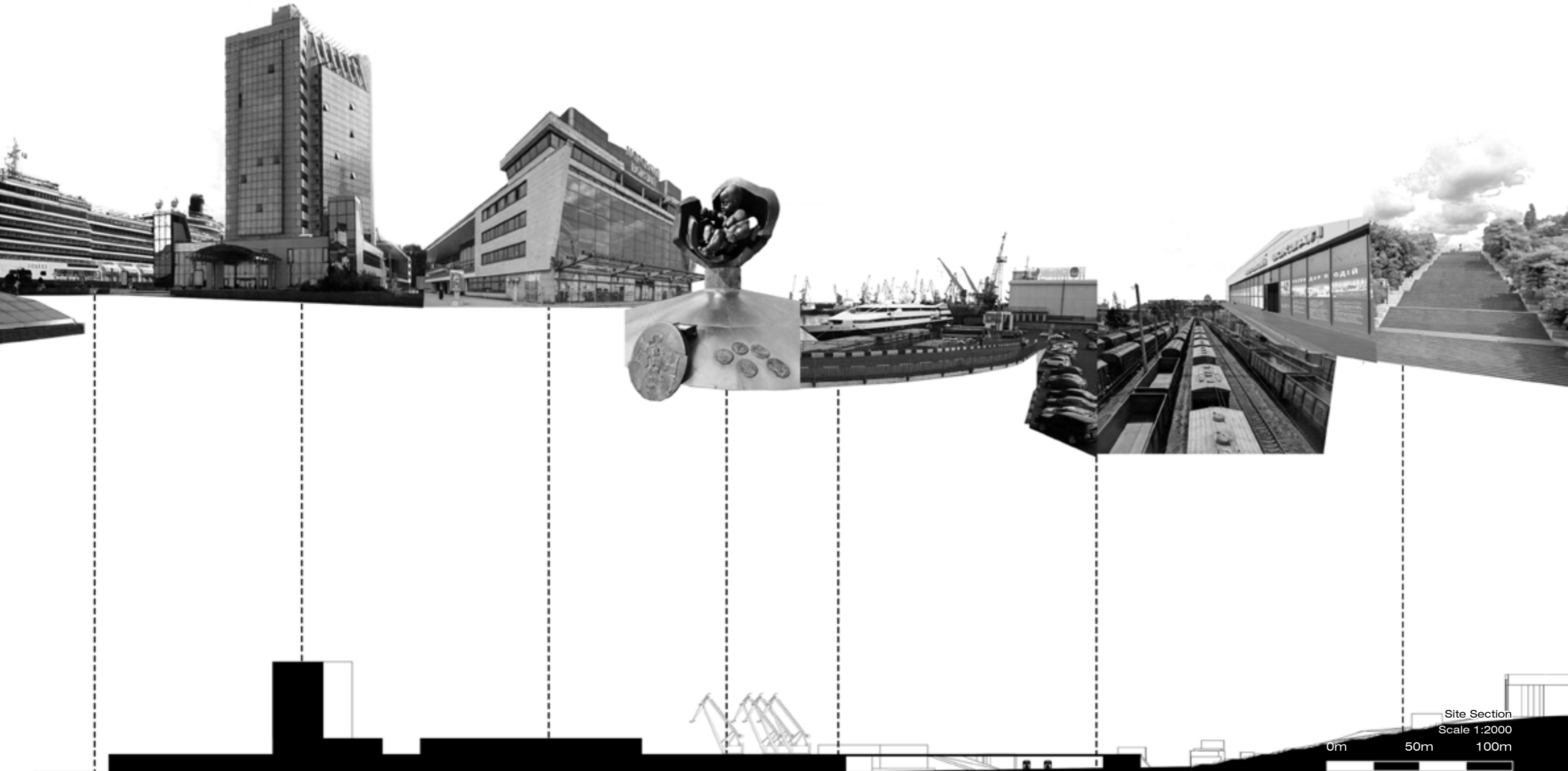
Existing Site Plan
Scale 1:4000

0m 100m 200m

General Information SITE

The designed site is located on the lower plateau and has a project height of +2,000 millimeters above sea level. The structure of the lower level used for warehouse functions has a height of 10 meters and is connected on the same level with the bridge over the railway tracks, thus the design height of the plateau is +12,000 millimeters. Subsequently, the bridge turns into ramps for cars, and pedestrians go down the stairs to the territory in front of the historical monument to the project height of +4,000 millimeters. The historic core of the city is located at an altitude of +30,000 millimeters and the lower level is connected to this plateau by a funicular and the Potemkin Stairs itself. At the intermediate level, there are two parks – Greek and Istanbul, which have been reconstructed in the last 4 years. Vertical connection with these two parks from the lower level is carried out only through the stairs, which makes them inaccessible to people with limited mobility.







Panorama of The Bay



Entrance to the Istanbul Park



Entrance to the Greek Park



Primorskaya Street (Entrance to the Port Territory)



Railroad Tracks with the Hotel "Odessa" and the Tourist Terminal on the Background



Entrance to the Funicular/Entrance to the Underpass



Bridge Structure Across Railways



Structure with the Staircase to the Bridge



Panorama of the Potemkin Stairs



Square in front of the Marine Station



Hotel "Odessa"



Entrance to the Hotel "Odessa"

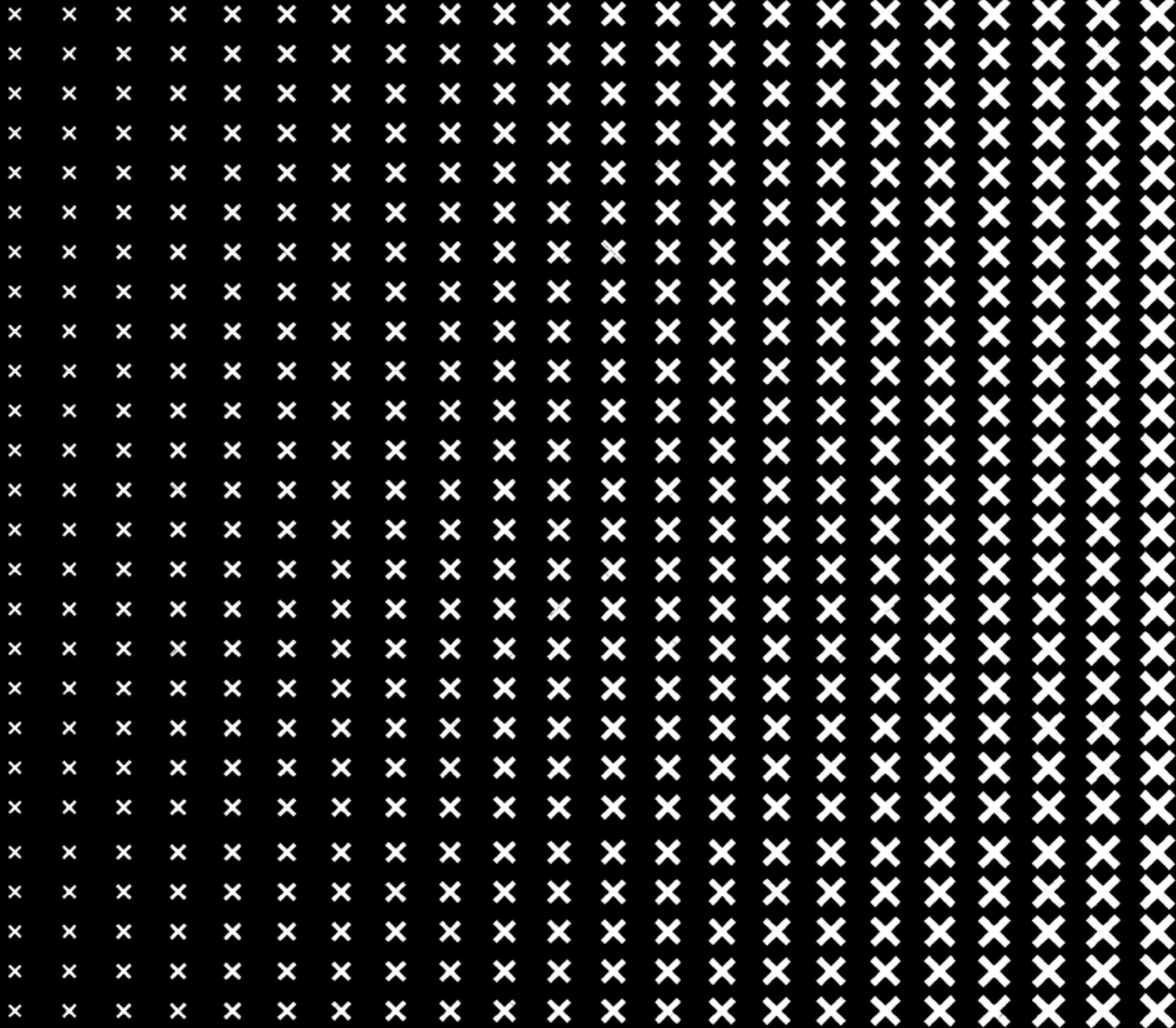


Back Facade of the Marine Station



Lower Plateau of the Pier

PART II - Research



HISTORY

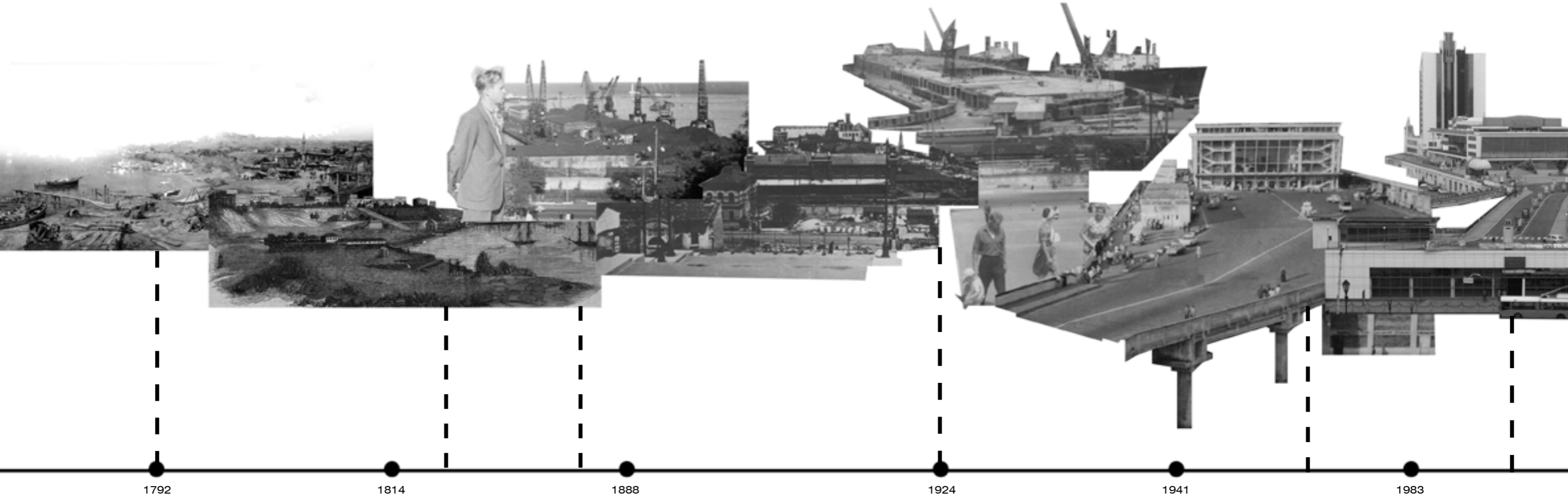
This section examines the formation of the city and the development of the site itself near the Potemkin Stairs. It also shows how the section of the current tourist sea terminal has changed, from which it becomes clear at what point in time the main symbol of the architectural monument has undergone a gradual modification and, as a result, a complete disruption in the structure of the city-port concept. This section also examines the historical heritage of the old city center and which structures/buildings are currently national and local architectural monuments, thereby further reinforcing the significance of the city's main historical heritage. This study helps to fully understand the significance of the historical path leading from the sea coast to the heart of the city, and also helps to determine one of the main axes for the formation of a further proposal for a graduation project.



Photo of the Odessa Bay of the Late 19th Century



Photo of the Construction of the Current Tourist Terminal



1792

1814

1888

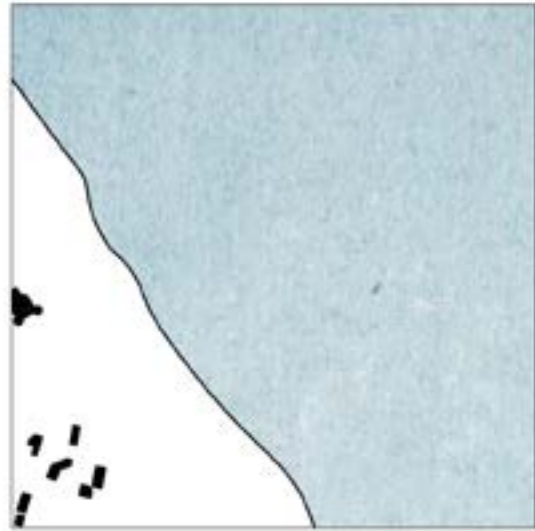
1924

1941

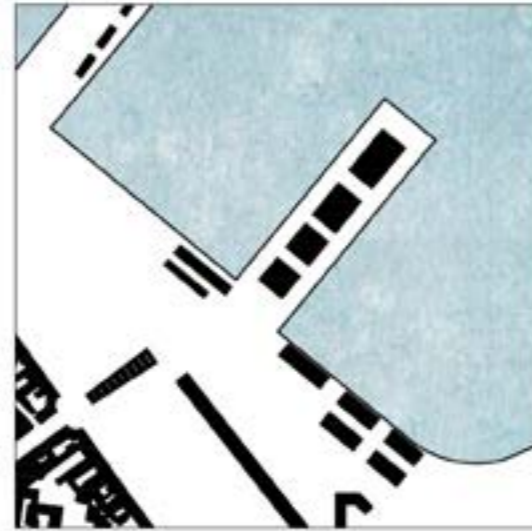
1983



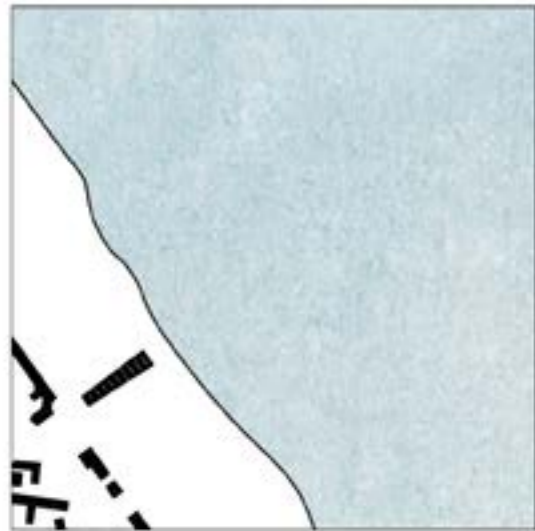
Development through the Time



1792



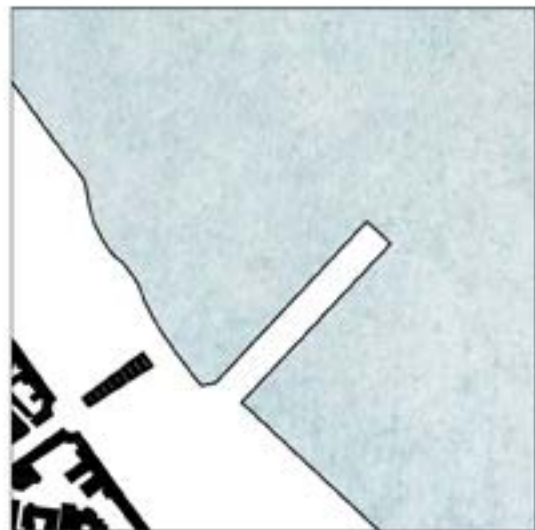
1924



1828



1965



1881



2020

Until the beginning of the 19th century, the Turkish settlement Khadzhibey was located on the territory of the present city Odessa (which was the original name for the later developing city, but two years later the city was renamed to its current name). By 1794, the settlement was captured by the Russian Empire and it was decided to create a defensive structure in this area and form a military fleet, but after a while, it became clear that the location of the military fleet in the Odessa Bay was inexpedient and the city began to develop in a commercial direction.

Already at the beginning of the 19th century, the city received the status of "Porto Franco", which made it possible to conduct trade with zero taxation, thus the city received the main impetus for development. By 1928, the main attraction that meets all traders from other countries – the Potemkin Stairs – was built. Near it, the architectural ensemble of Primorsky Boulevard, known throughout the country, began to form with semicircular houses on both sides of the main historical axis of trade routes.

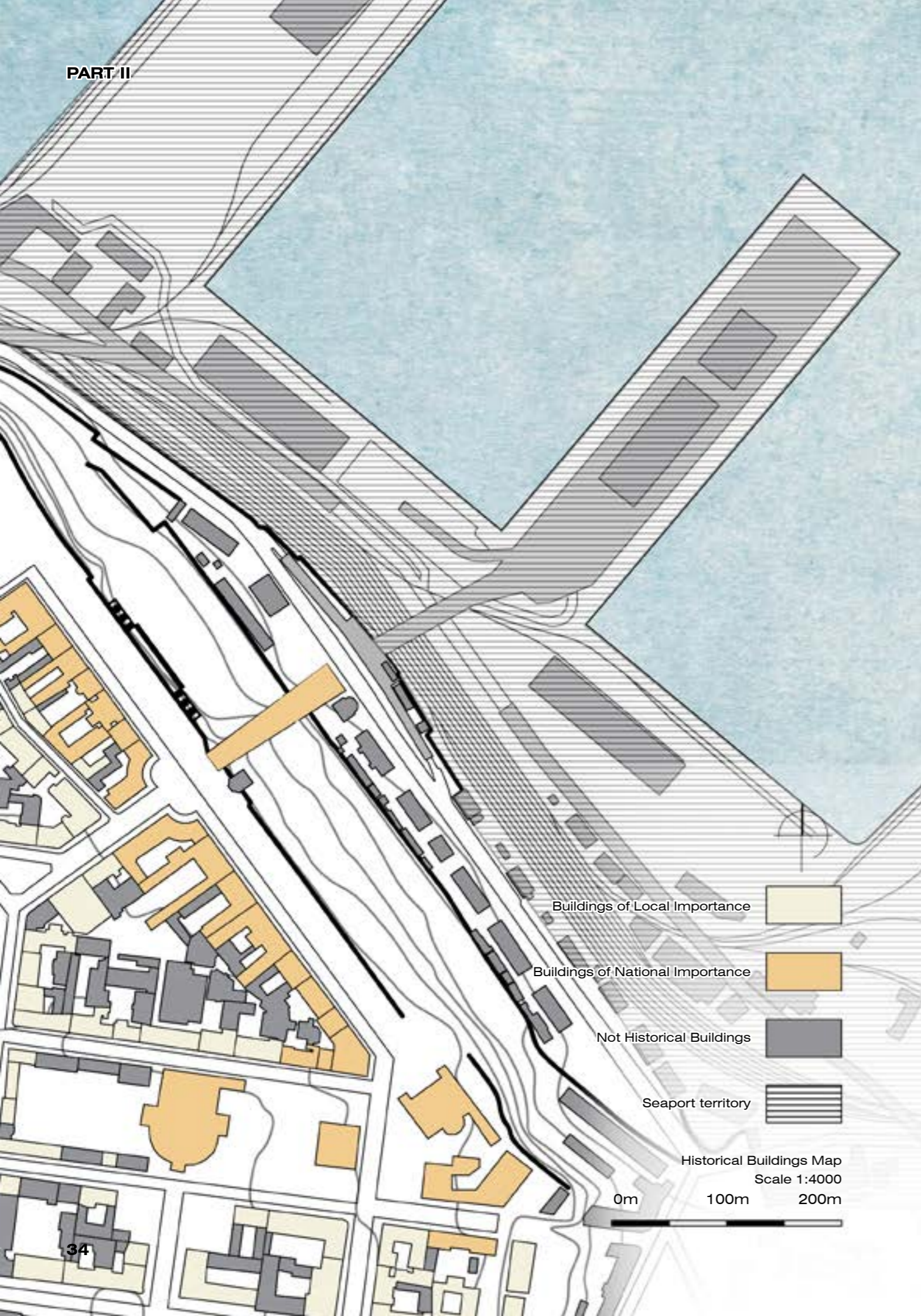
Towards the end of the 19th century, the architectural ensemble was formed, and the boundaries of the historic center became clearer with buildings along the steep slope of Odessa Bay. The coastline of the city began to gradually increase by an artificial method and the stairs, once leading to the water itself, were already gradually moving away from the coastline. The main berths of the city began to form, near which merchant ships moored.

During the Soviet period, Odessa began to develop gradually as an industrial city with one of the main cargo ports in the country. The coast was further removed from the base of the Potemkin Stairs and was gradually built up with warehouses in the port. And once, meeting traders from all over the world, the pier began to be used as a transshipment point for coal. After the Second World War, the Soviet Union tried to restore its industrial capacities, for this reason, the Odessa Bay began to be built up even more with cargo berths, and wooden barracks were built on the lower plateau near the port to provide housing for the port workers.

By the time Ukraine was declared an independent state, the cargo port had the capacity to provide cargo transportation services for the entire Union, but in the context of a decrease in state investment of money, the port territory began to gradually wither. In 2000, the notorious Odessa Hotel was built, which finally removed the view of the Odessa Bay and the architectural ensemble of Primorsky Boulevard from the UNESCO list. The hotel itself was in operation for less than six months, after which it was closed for reconstruction due to gradual destruction since the construction technology was violated. Since then, the hotel has opened for a short period two more times, but in the end, it became completely abandoned. The port territory, in turn, began to gradually build up with storage tanks for grain, as at the moment only 10% of all territories are used. The Port Authority of Odessa states that it is planning to build a number of other reservoirs and by 2030 their number will exceed 50 units.

The Current Buildings and Constructions of Historical Heritage

Today, the entire architectural ensemble of Primorsky Boulevard is an architectural monument of national importance. It includes Buildings along Primorsky Boulevard, semicircular houses on both sides of the main historical axis, and the Potemkin Stairs itself. The monuments of architecture of national importance also include the City Hall, the Historical Museum, and the Opera House, which are located in the southeastern part of the boulevard. Most of the buildings on the outside of the quarters are also architectural monuments, but of local significance, which cannot be said about buildings and structures inside the quarters. Most of them are chaotic and sometimes illegal, which diminishes the cultural significance of the neighborhoods themselves. The territory of the seaport is completely deleted from the historical heritage since all buildings were built during the Soviet period or later – thus the territory of the port does not even belong to the boundaries of the historical center and it is in no way protected by the state from destruction.



MORPHOLOGY

This section deals with the proportional ratios of streets and buildings on the projected site and in the territory adjacent to it. The scale and proportions of the stairs are considered for the further formation of architecture on the territory, in order to emphasize, and not overlap, the main historical monument, which should become not only a visual landmark, but also the main formative part of further areas of the port territory. The section also examines the main visual landmarks, which at the moment form the typology of the district as well as the typology of the territory of the historical heritage and architecture of the central district. As a result, a comparison of the proportions of the site with the areas and main public spaces from different parts of the world is used for the concept of scale. This section will further serve as a guideline for the formation of the morphology and typology of the projected site and buildings/structures on it.

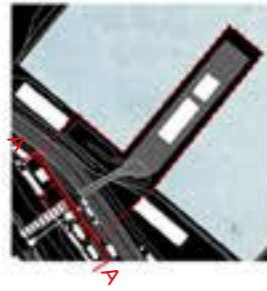
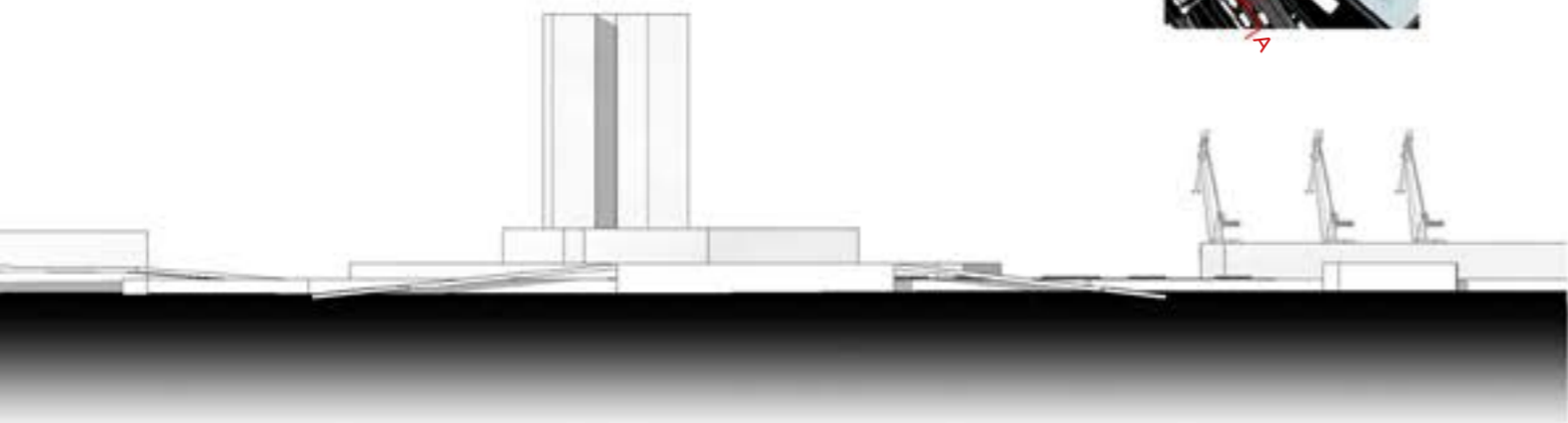


Main Monument of the Greek Park

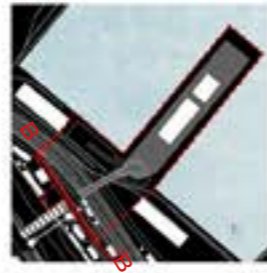
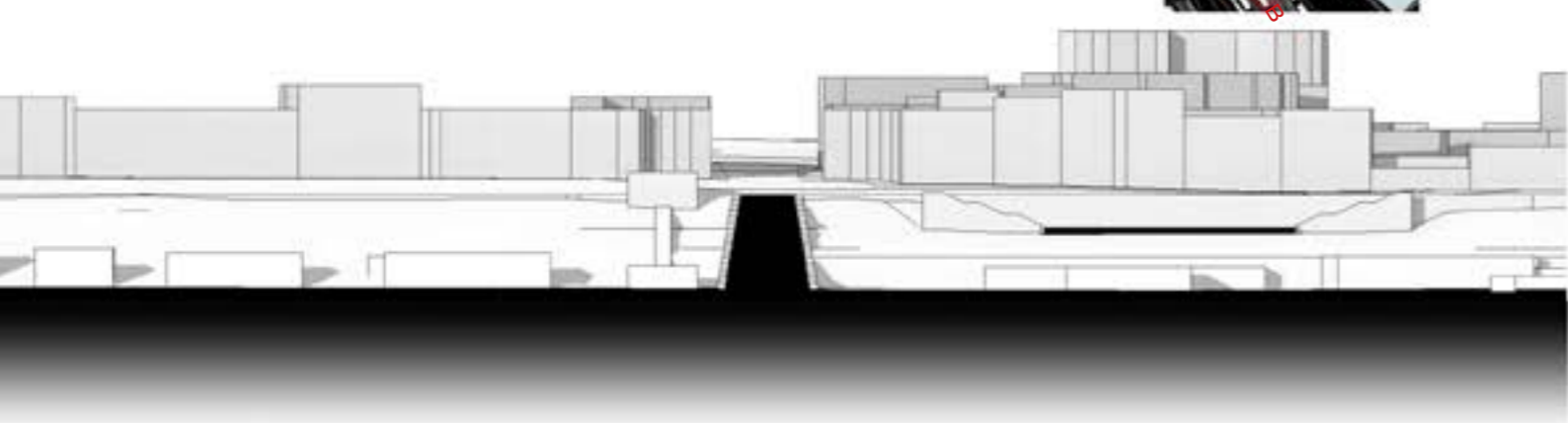


Lower Plateau of the Pier

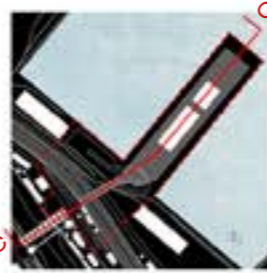
Section A-A
Scale 1:2000



Section B-B
Scale 1:2000



Section C-C
Scale 1:2000



Position Relation to Landform

These sections show the main ratios of the volumes of buildings/structures to the relief. It can be seen from them that the historical center located on the upper plateau has a number of stories proportional to the relief (not exceeding 5-6 stories). From this, we can conclude that the historical development of the “gates” of Odessa is a reference point for the formation of the surrounding territory, not only historically, but also proportionally. At the same time, the structures on the lower plateau do not carry a special morphological idea but are used only as functional connections for the territory. The very same building of the hotel “Odessa” is an absolute dominant, exceeding in height even the buildings located on the upper plateau. The structure of the bridge and the subsequent construction has no morphological connection with the surrounding area, and its volumes are dictated only by the organization of passages for freight transport.





Skyline and Landmarks of the Bay Panorama

This image shows that the hotel “Odessa” is an absolute visual Landmark on the panorama of the sea bay from the height of the upper plateau. The flat terrain surrounding the structure, as well as the absent surrounding buildings, do not give a chance for a correlation of the view or its gradual softening relative to the relief of the entire coast. The building acts as a point dominant, partially blocking the view of the historical bay. The building of the marine tourist terminal is also a landmark on the horizon, its proportions are also taken out of the context of the surrounding space. As an undeniable dominant, both buildings are a symbol of an abandoned territory.



Landmark of The Potemkin Stairs Panorama

Skyline and Landmarks of The Potemkin Stairs Panorama

Undoubtedly, the main visual landmark of the panorama from the sea to the historical center of the city is The Potemkin Stairs, which connects the lower and upper plateaus. It acts, as it was intended in the original city plan, as a “gateway” to the historical center. This advantage of the panoramic view should be fully exploited in further design. Also in this photo we can see the residential buildings of the upper plateau and the architectural ensemble of Primorsky Boulevard, which do not break out of the general view and are part of the morphology of the entire panorama. Also in the background of the panoramic view is the spire of the temple at another historical node of the city plan. This landmark also makes it clear that the city center is quite compact and the main tourist routes are in the immediate vicinity.



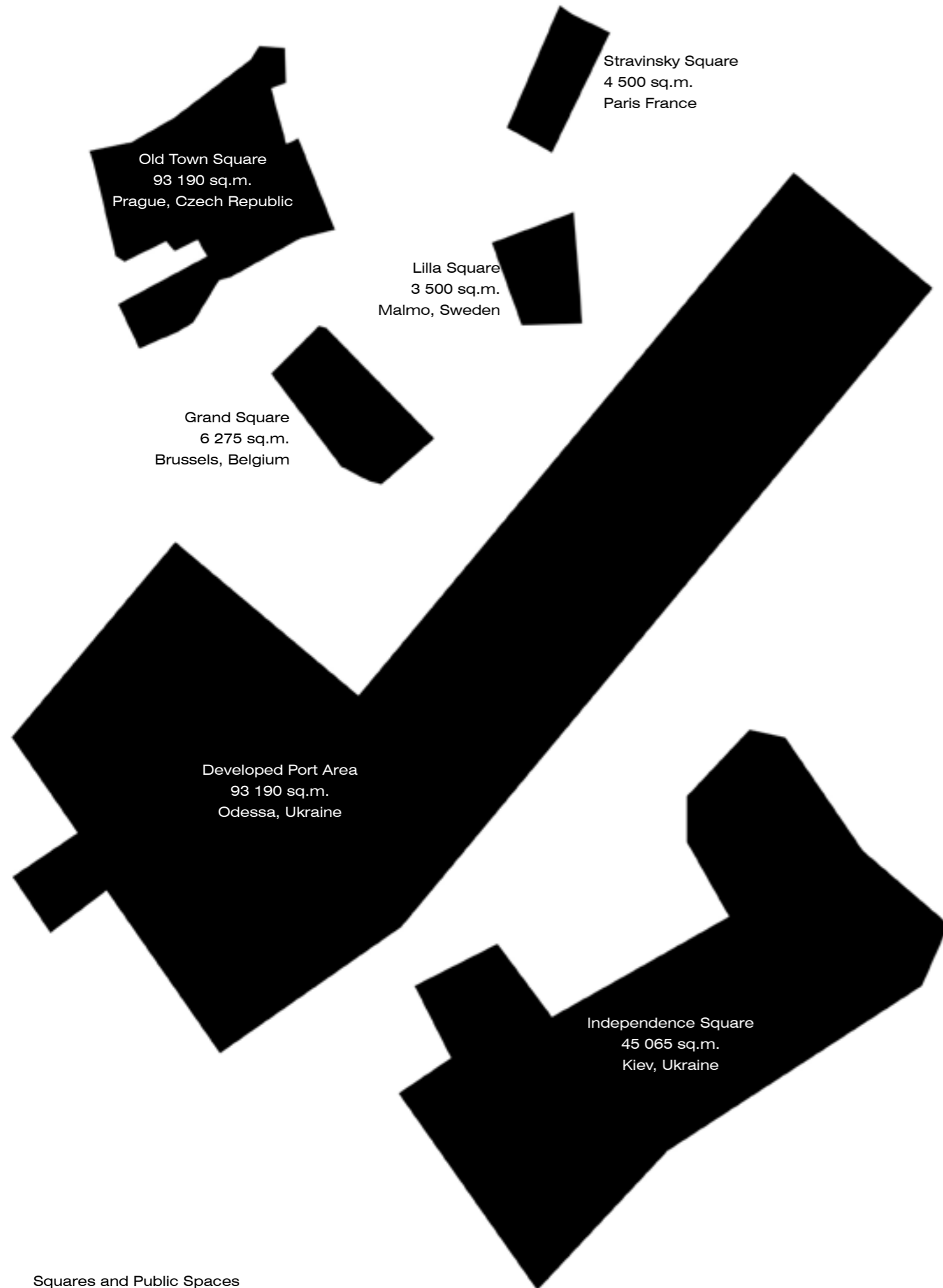
Historical Architecture of the City Center



Soviet Union Architecture of the City Center

Local Context

The buildings of the historical city center dictate their architectural context and create the image of the main tourist flows through the heart of the city. Potemkin Stairs can act as the beginning of the path of exploring the city, and its final point. This collage reflects the diversity of the development of the center along the tourist routes from the architecture of the 19th century to the Soviet factories, which parasitized on the structure of the city plan, thereby forming gaps in the city's quarterly buildings and destroying the morphological context. The main point of the path, ending with the Potemkin Stairs, leads to a place without an image and context, surrounded by chaotic buildings of warehouse and industrial premises. Thus, the parasitic architecture not only penetrated into the laconic historical buildings but also destroyed the starting/ending point of the historical/touristic path.

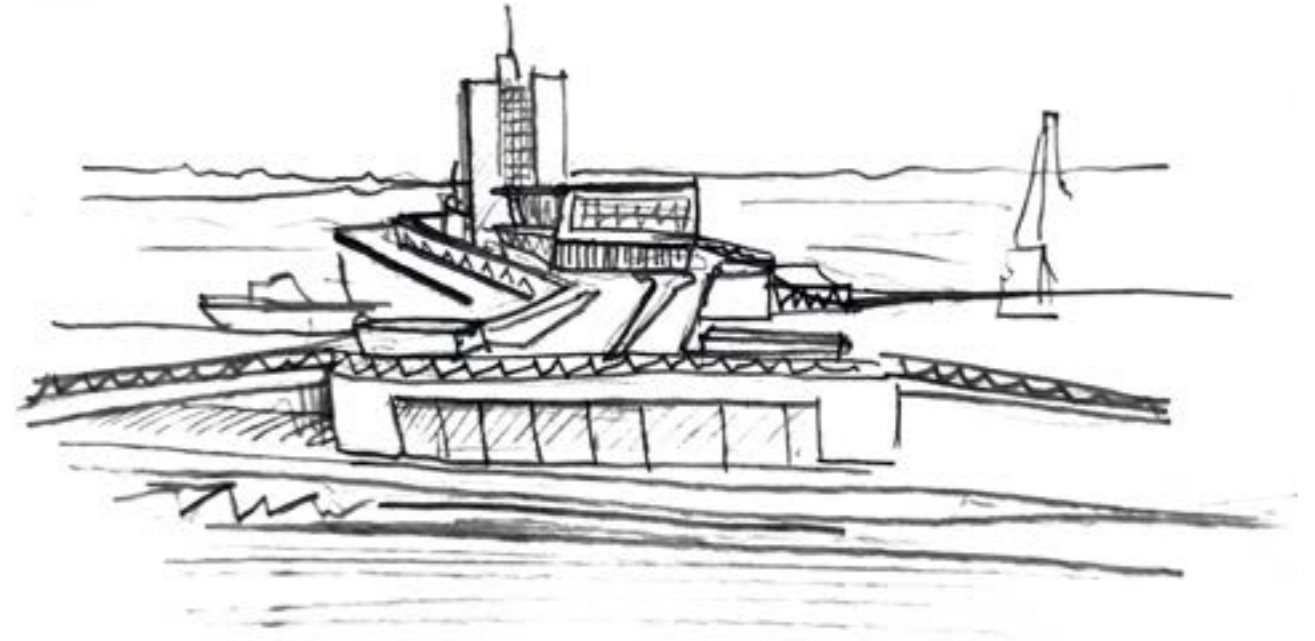


Scale Comparison

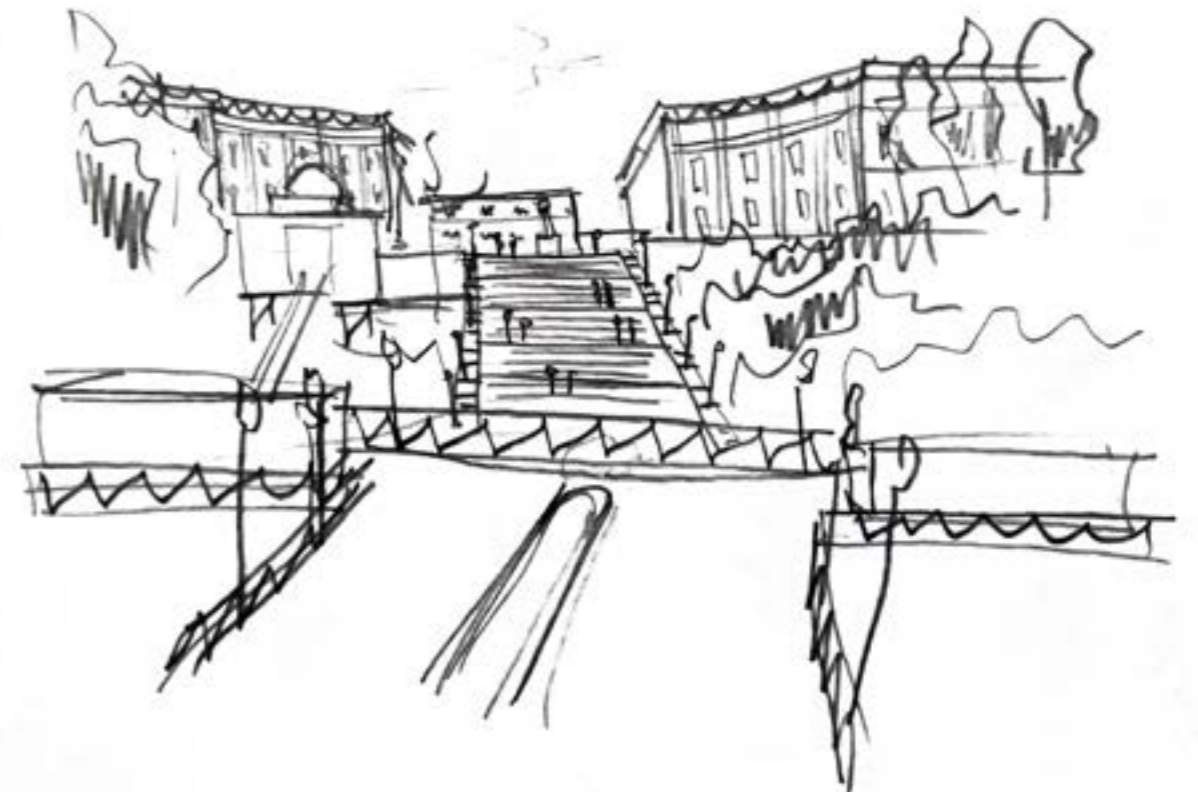
Here is the collage of comparing proportions. We can see that the space that is being designed in this project is disproportionate to more than one square in other cities and countries. Even in comparison with Kiev Independence Square, which is one of the largest in the proposed comparison, the space in Odessa is several times larger. From this, it can be understood that space should be divided into segments with integrated public spaces commensurate with the nearby typology and development. Thus, several areas can be created within the boundaries of the site, which will function as independent units in the general structure of connections. It can also be seen in the proposed comparisons that the space of the square is defined by boundaries with clear corners and edges that dictate the shape of the square. This method should also be integrated into the design of the space in a given territory, which in turn will allow giving the area not only boundaries but also an individual context.

PERCEPTUAL

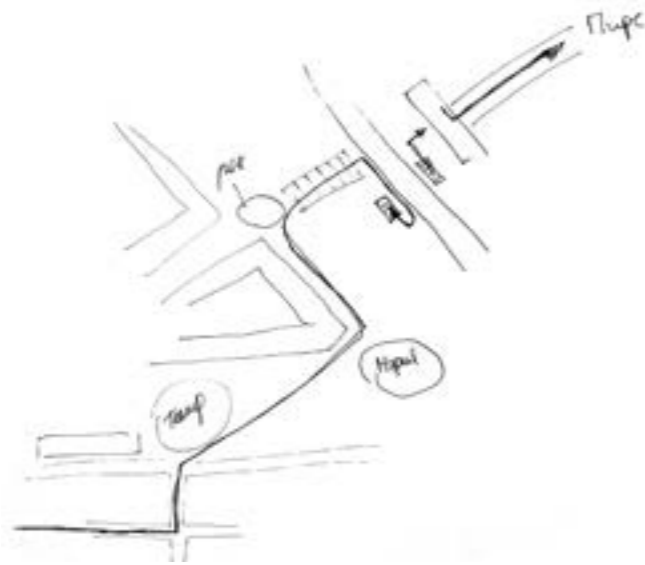
This section shows examples of how the direct users of the space react to the surrounding architecture and typology. Using surveys of people in the historical center, it is proposed to determine the main visual landmarks in space, as well as the nodes of pedestrian paths. From the survey data, it is possible to understand what serves as the main guiding elements in the typology of a particular section of the city and how residents/guests of the city can navigate in the context of the city.



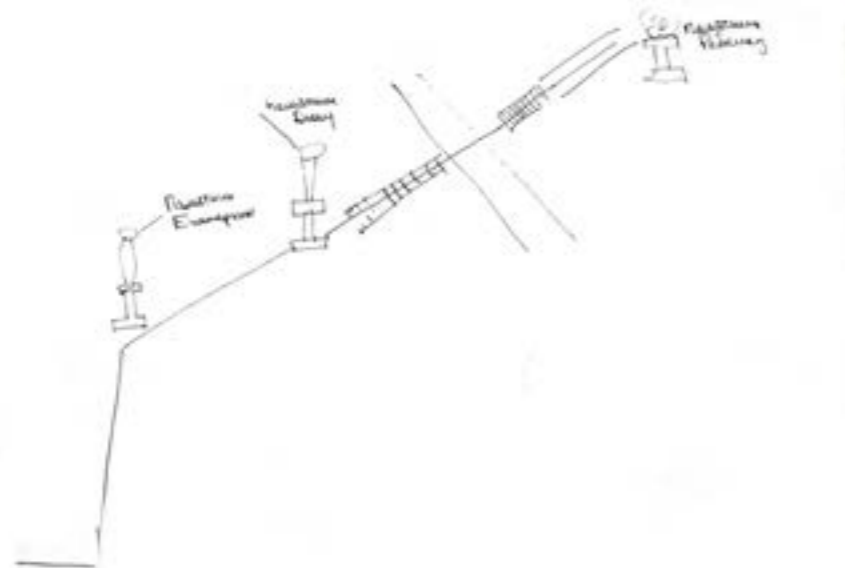
Sketch of the Bay Panorama



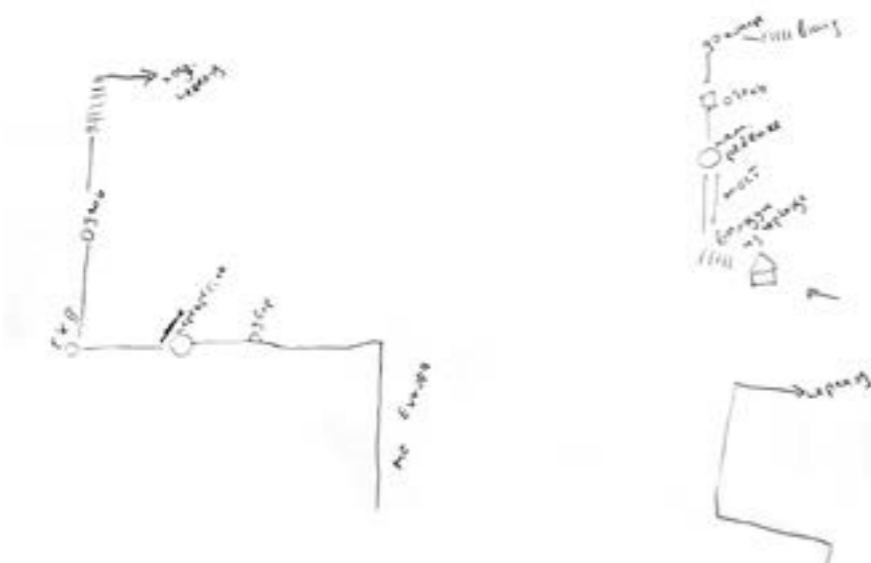
The Potemkin Stairs Panorama



Path from the Main Tourist Street to the Coast (Resident)



Path from the Main Tourist Street to the Coast (Tourist)



Path from the Main Tourist Street to the Coast (Tourist Guide)

Mental Maps

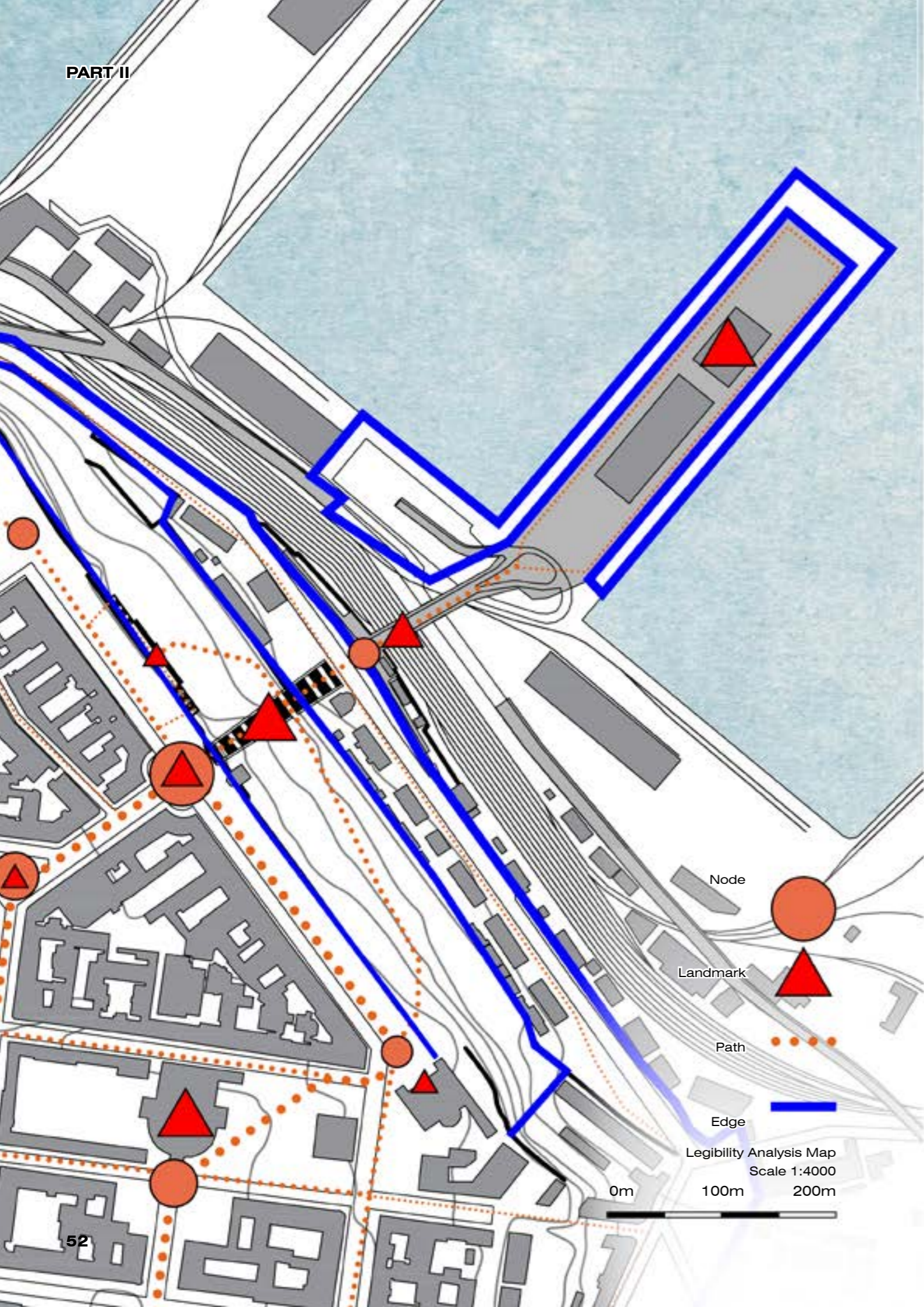
In this study, respondents were asked to indicate the path from the main tourist street (Deribasovskaya) to the nearest connection to the sea.

The first diagram shows an option proposed by a resident of the city. He chose three architectural monuments as the main landmarks – the Opera House, the City Hall, and the Potemkin Stairs. Also were mentioned the Duke Monument in front of the Stairs and the Hotel “Odessa” as a final landmark.

The second scheme was proposed by a tourist from Kiev, who suggested a slightly different route through Ekaterinenskaya Street, which is also one of the main tourist routes. Thus, his main landmarks were the monument to Catherine II, the monument to Duke, the Potemkin Stairs, and the monument to the Golden Child at the sea pier.

The third respondent was a tourist guide who suggested a road similar to a tourist but noted more landmarks on his way. He named all the same landmarks, but also added a food court on the path, an underground passage on the path, and the Hotel “Odessa” as the final landmark for the path.

The respondents were not told to indicate any specific endpoint of the route, it was necessary to indicate the direct access to the sea. The endpoint was not specified so that the interviewed participants had the opportunity to also specify the east coast of the historical center as the endpoint, which is the only equipped public place near the seashore (this place is located far from the point where the survey was conducted, about a 40 minutes walking path). But in the study process, only one person (a resident of the city) mentioned this option of the path as more preferable for rest and then – after drawing the road to the tourist terminal – as the closest outlet to the sea. Thus, in the study process, it was found that even despite the inaccessibility of the place and the unfavorable environment for recreation on the territory of the tourist terminal, it is still considered the main and closest access to the sea.



Legibility Analysis

In this analysis, the visual landmarks noted by the respondents were taken into account, and the main pedestrian hubs for tourists and residents of the city were identified. Also on this map are indicated the edges of the spaces that have to be overcome and which act as edges for certain spaces. Thus, the retaining walls of the Primorsky Boulevard as well as the Greek and Istanbul parks, acted as the edges of the spaces. The Potemkin Stairs acts as a vertical connection between these spaces, although, on the other hand, it is also the border between the parks. Despite these boundaries, the most important is Primorskaya Street, located on the lower plateau and blocking access to the entrance to the tourist terminal. Railroad track can also be taken into account as an edge, although it, in turn, acts more like a separate space with a specific function. Also, the undoubted boundaries are the edges of the pier itself and its first level with storage facilities.

FUNCTIONAL

This section examines the functional characteristics of the space, such as the intensity of pedestrian paths, the nature of public spaces, public and private transport flows, and other functions that, in my opinion, are considered as relevant to the study. This information will help to assess the nature of spaces and the relationship with each other, thereby determining a strategy for further reorganization or, on the contrary, increasing the significance of these characteristics. This section also discusses the issue of greenery in the projected site and the area around it, since the pier structure is solid concrete with missing areas of landscaping.



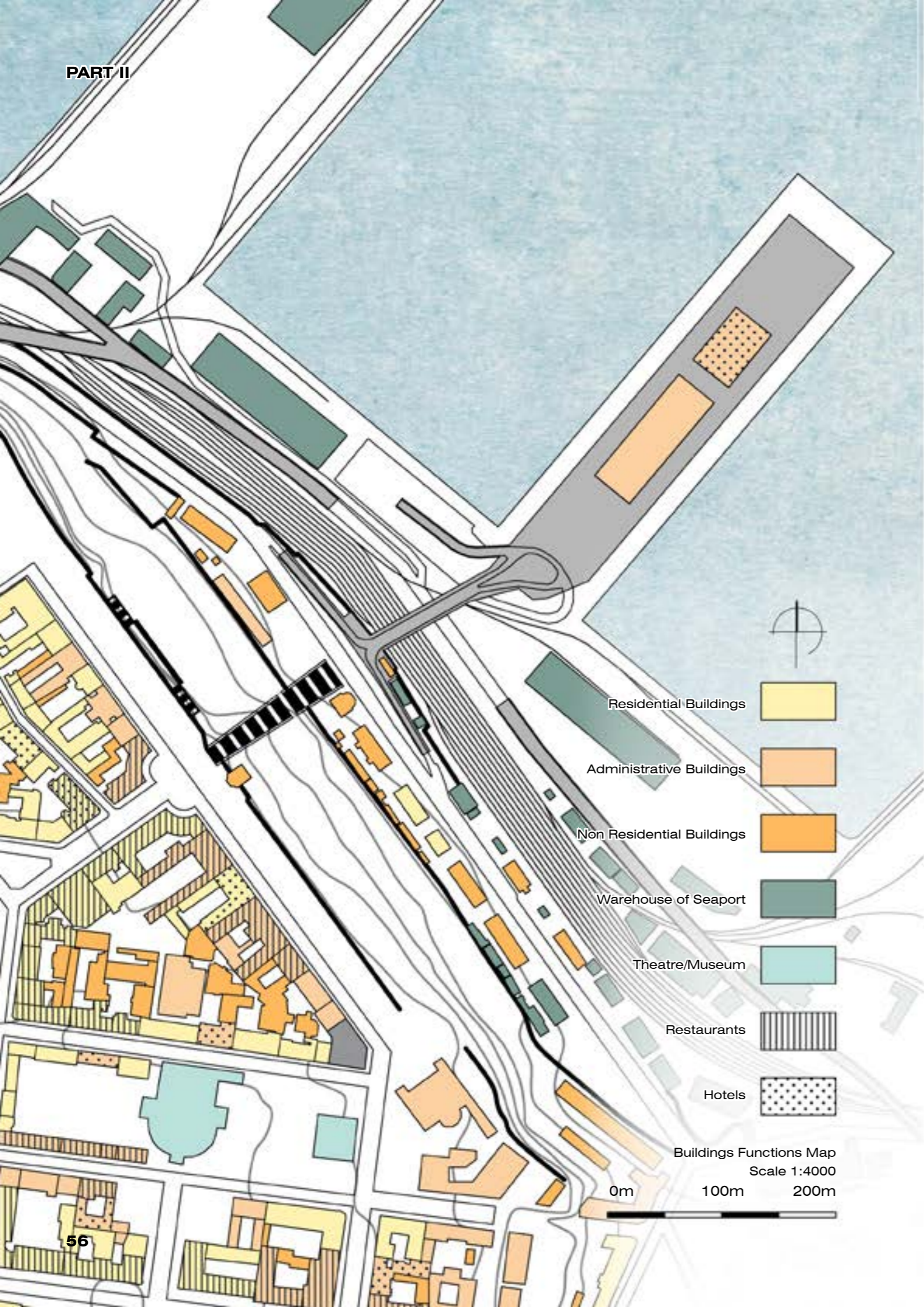
Primorskaya Street

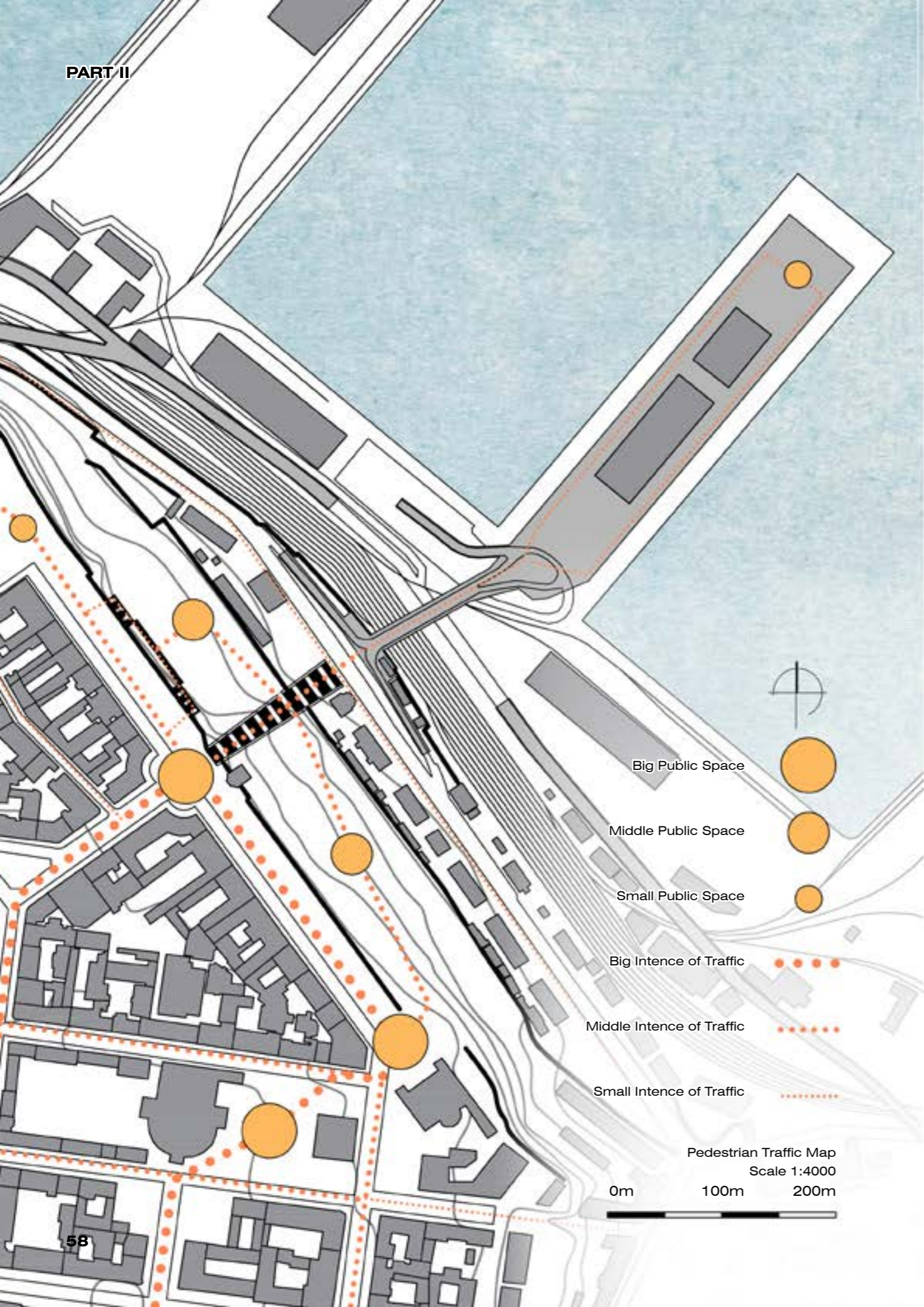


Parking near Potemkin Stairs

Buildings Function Analysis

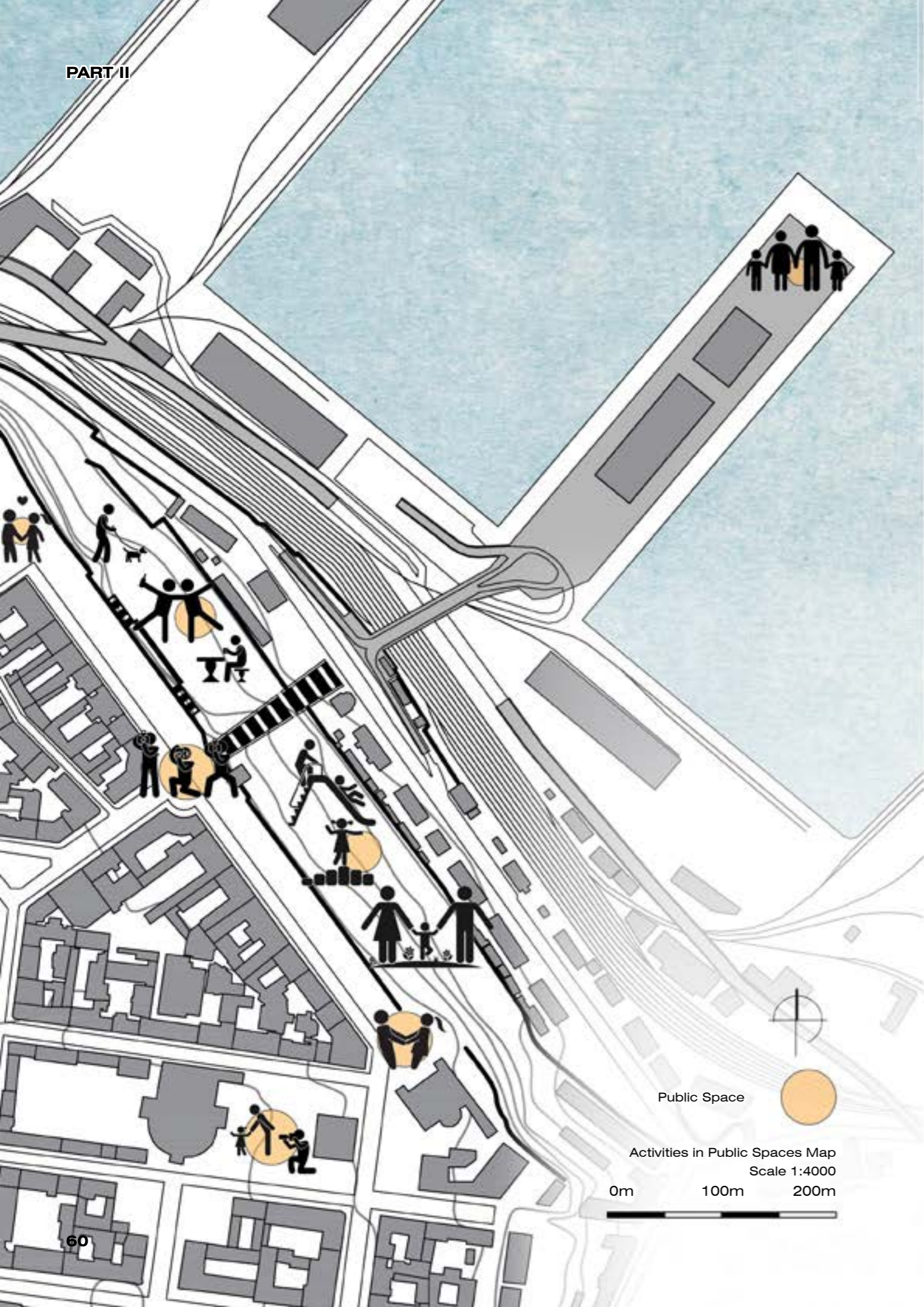
In this analysis, it was studied what are the main functions of buildings in the immediate vicinity of the site. Since all buildings on the territory of the port have the function of warehouses or spontaneous small industries, for a more detailed study buildings located on the upper plateau of the city were also taken into consideration. It can be seen from this study that most of the buildings on Primorsky Boulevard are administrative buildings, performing the function of either office space, or are partially used as hotels/restaurants. Residential buildings are located more inland, but along the tourist routes, there are also restaurants/cafes on the ground floors of the buildings. The building of the tourist terminal on the pier is currently partially used for administrative functions since some of the premises are rented by small companies. The building of the hotel "Odessa" is currently empty and the function of the hotel has been assigned to it mostly formally since it is still listed as a hotel complex in the state register.





Pedestrian Traffic Analysis

This analysis shows pedestrian paths of varying intensity and also the public spaces they form. Public spaces are also categorized according to the degree of overcrowding. Thus, based on the data obtained during the survey (mental maps), the main pedestrian paths through Ekaterininskaya Street and through Primorsky Boulevard were identified, which end at the approach to the Potemkin Stairs. Then the pedestrian traffic is divided into people moving towards the Greek and Istanbul parks, as well as into a small number of people moving towards the pier. On the way to these streams, three main public spaces are formed near the Opera House, near the City Hall, and also directly near the Potemkin Stairs. Two fewer accent spaces are two parks on the sides of the Potemkin Stairs. It follows from this that the space of the historical center is cut off from the further development of the path towards the coast, without offering further opportunities for the development of pedestrian flows and public spaces due to its unattractiveness and remoteness.

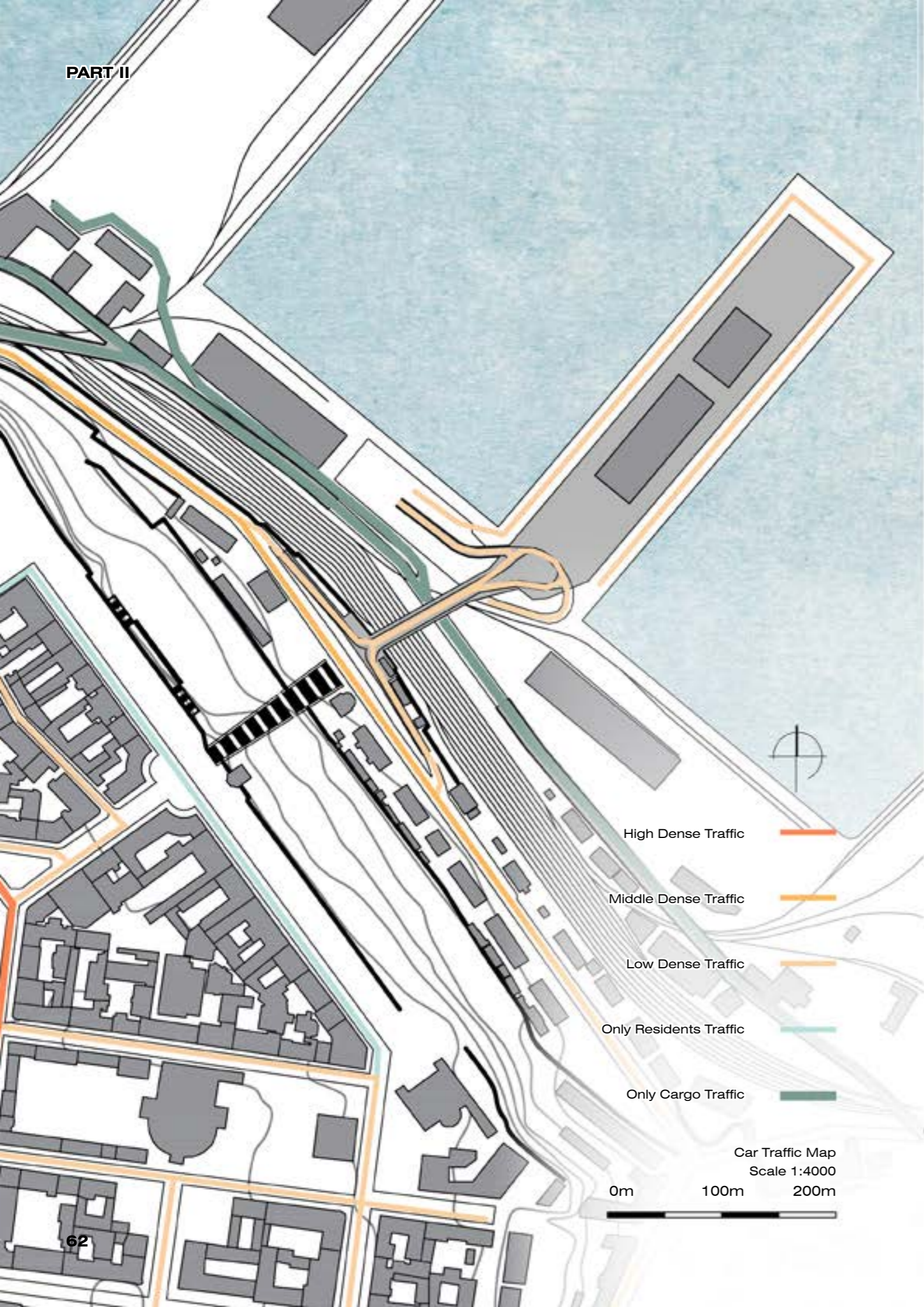


Activities in Public Spaces Analysis

From the previous research, become clear the main directions of pedestrian traffic and their intensity. From this, the public spaces that they form can be identified. This study shows the main activities that shape the character of these public spaces. Thus, the space near the Opera House is mainly a place for walking with children, since there are a number of fountains that attract children to play. As a consequence, another character of this space is constant photo/video shooting. The second public space is the area near the City Hall, which is often used as a dance floor/stage for street musicians and dancers, thus the main character of this place is a different kind of performance. The public place near the Potemkin Stairs is characterized by a lot of photography, as this place is the main tourist magnet. Also, due to the large concentration of restaurants/cafes in this area, many people spend time on summer terraces. Two parks on the sides of the Potemkin Stairs are the only greenery in this area and have a completely different character. Istanbul Park is a family-friendly destination with a large number of playgrounds. While the Greek Park is a place for recreation for older companies and walks with pets. The weakest public space is the space behind the Hotel "Odessa", which is mostly used for quiet walks and exploration of moored ships/yachts.

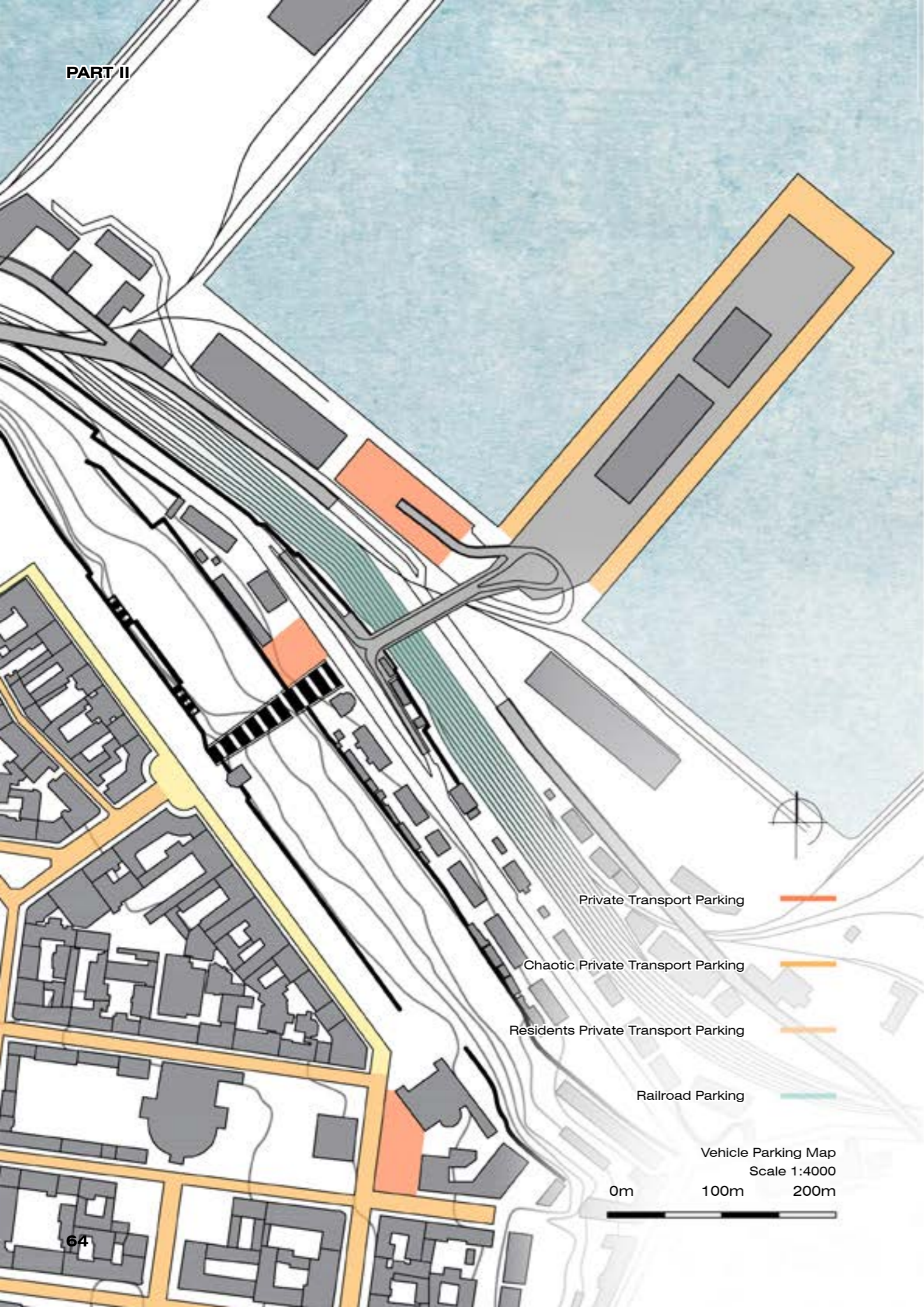
Car Traffic Analysis

In this analysis, traffic intensity is considered. The upper plateau was also taken as the study area in order to examine the traffic congestion of the historical city center on a wider scale. The main object of the study is Primorskaya Street, located on the outskirts of the Potemkin Stairs and separating the old city center from the access to the coast. According to the information received, car traffic in the central area of the city is low-intensity, with the exception of Ekaterininskaya Street, which is considered as one of the two optimal options for accessing the central part of the city from two sleeping areas. This street, according to the study, is the busiest in this area. Primorsky Boulevard, which is the last street on the upper plateau, is closed to traffic except for residents of the buildings located on Primorsky Boulevard. Primorskaya Street, in comparison with Ekaterininskaya Street (as well as in comparison with the general traffic intensity in the city), is moderately busy, since the main traffic flow falls on morning and evening rush hour, when people move from the northern part of the city to the southern (and visa versa) bypassing the historic center. The rest of the time this street is little used by personal transport. Also interesting for research is the road passing through the port territory, which in turn is an overpass for freight transport with a transition to the ground level in the area of the Potemkin Stairs. This road traffic project was relevant during the full load of the cargo port, while now, with 10% of the port capacity utilization, this overpass is empty and is used for a short period of time. Another reason for the irregular use of the overpass is that the warehouses of containers that are transported along it are located outside the city, which is the reason for its use only when the ship is unloading. Also the interesting fact is that personal cars have free access to the entire area of the pier, thereby creating a danger for pedestrians.



Vehicle Parking Analysis

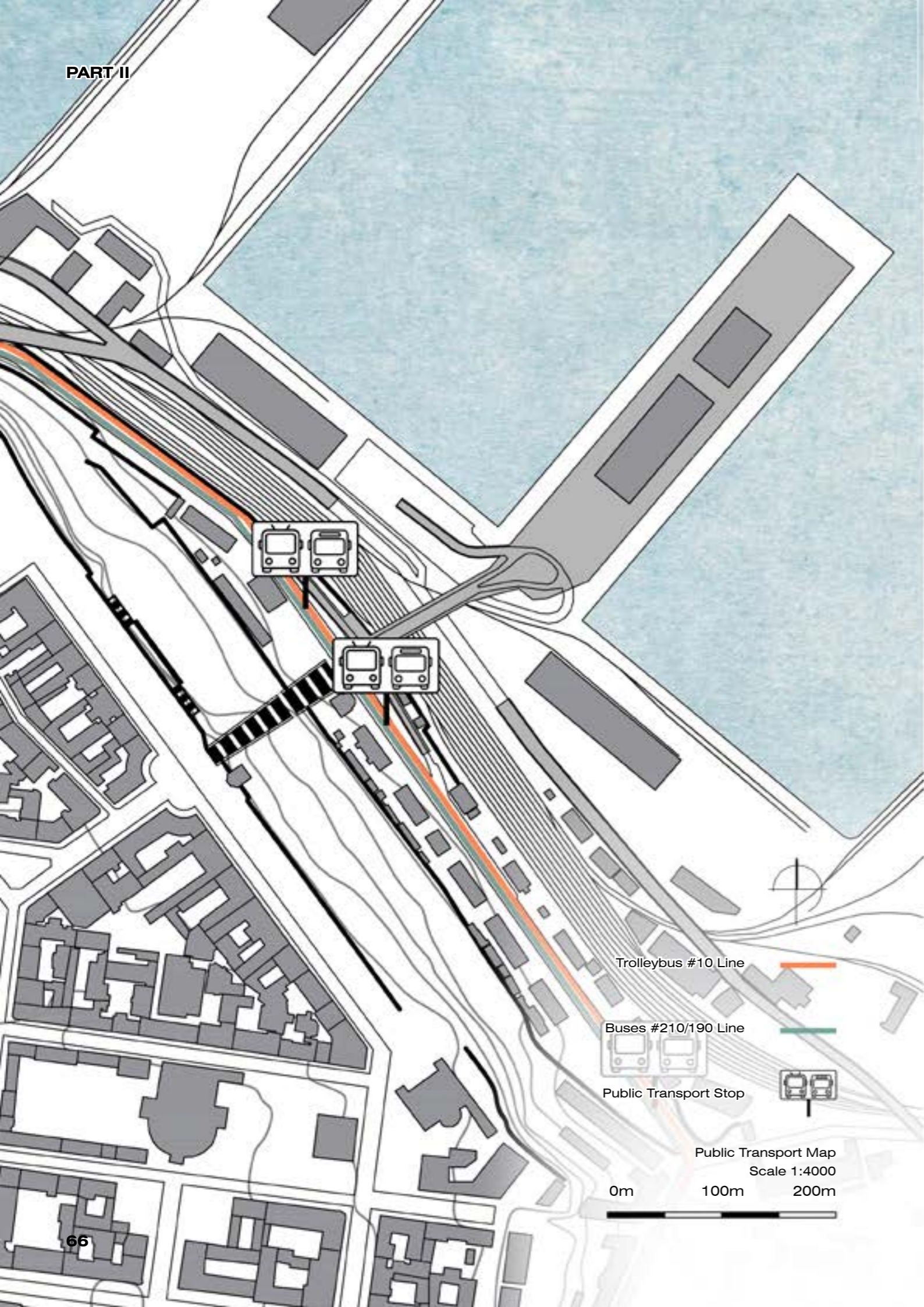
In the analysis of the vehicle parking, the space in the vicinity of the projected site is mainly considered, at the same time, the situation on the upper plateau of the city is shown for the study. Thus, on the upper plateau, the main problem is the spontaneous parking of personal vehicles along the roadway. This is one of the main problems of the old city center, as there are very few organized parking lots with a lot of office space around the city. Among the organized parking lots on the upper plateau that are the points of research, there is one place near the City Hall, which is mostly used by the staff of this institution. Primorsky Boulevard is also often congested with personal transport since guests of hotels that have a front entrance from this street can also temporarily enter this territory. On the lower plateau the situation is different. Chaotic parking on Primorskaya Street is not often due to its uselessness, as there is a small number of residential/office buildings. However, organized parking in the immediate vicinity of the Potemkin Stairs seems to be out of place. Also, an additional row of parking spaces is located near the coast, which is accessed through a bridge (passing over the railroad). From this parking you can also drive to the pier itself and park your car anywhere in this area, which again causes spontaneous parking along the entire pier. This scheme also indicates the parking of railway wagons, which is also a problem for this area. Due to the absence of the need to use a large number of freight wagons, they are in a "temporary" parking lot near the Potemkin Stairs for a whole year.



Public Transport Analysis

In the analysis of public transport in this area of the city it is shown that only a small number of routes pass near the projected area. Thus, in the study area (including the upper plateau) public transport passes only one street. On Primorskaya Street there are 2 lines of Odessa public transport, which is called a marshrutka (minibus) and one trolleybus line. One of the marshrutka lines connects the north of the city (northern sleeping area) with the central part, while another marshrutka line and trolleybus line runs from the southern part of the city (southern sleeping area) and ends its route in close proximity to the projected site. Based on this information, it can be assumed that public transport in this part of the city has a poor connection with other areas of the city and does not offer the possible potential for attracting passenger traffic to this area. Also, the existing railway lines, which have the potential to offer an overground metro in the city, are not used in any way, although they connect absolutely all areas of the city.

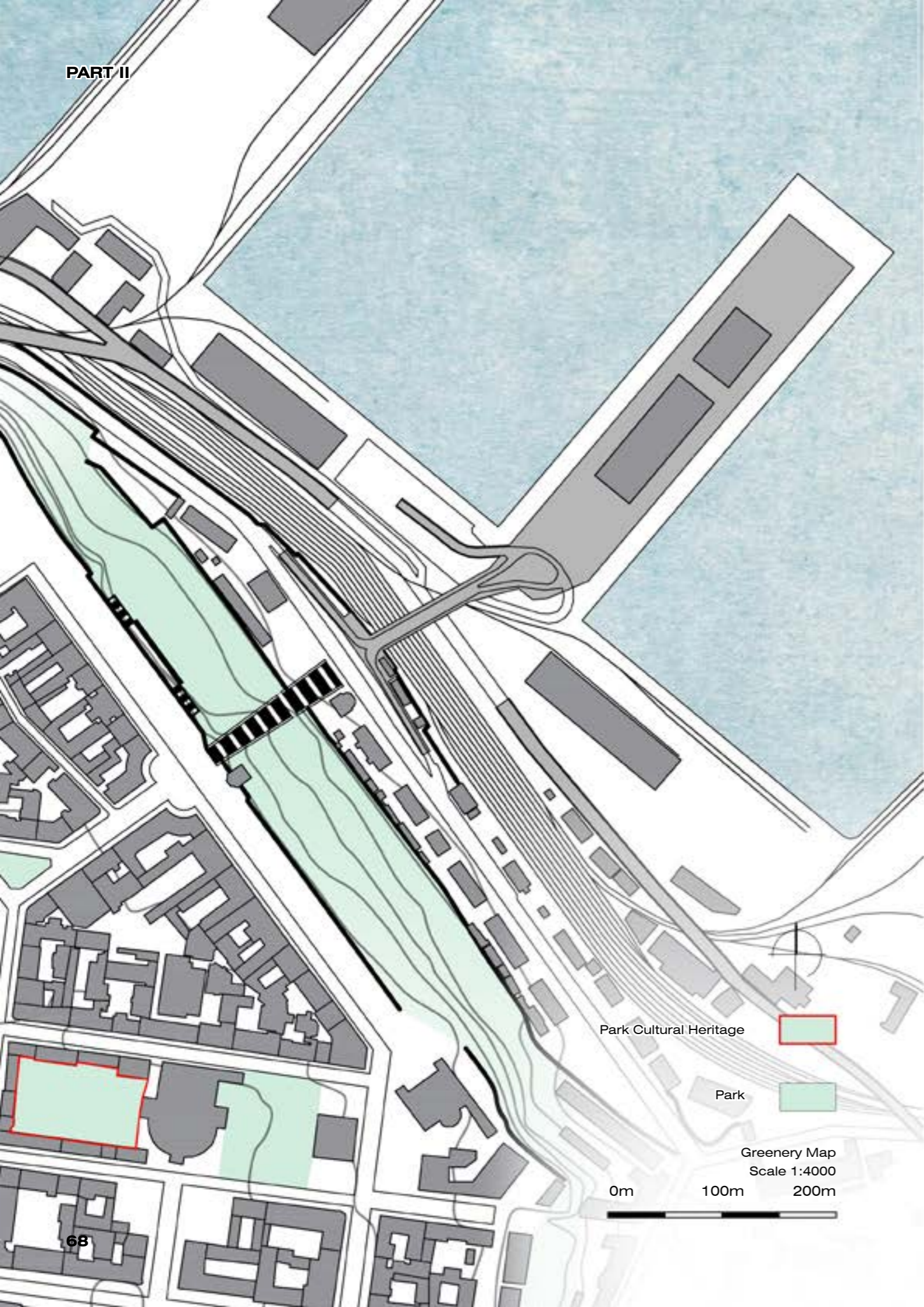
In addition to land transport in Soviet times, a sea tram ran in this area, which had more than 16 stops along the entire coast of the city - but with the collapse of the Soviet Union this type of transport fell into decay and is currently used as a weekend excursion route without additional stops near the coast in other parts of the city.



Greenery Analysis

As mentioned in previous analyzes, there are Istanbul Park and Greek Park in this area, which have the potential for further development along the entire coast of the city. However, at the moment, both parks are the border of the historical center and do not have the opportunity to extend the territory with greenery towards the coast. Also, these parks have poor vertical communication for people with limited mobility with the upper and lower plateaus. People with limited mobility have the opportunity to get only to the Greek Park, since there is an elevator in the structure of the vertical connections of this park, while the Istanbul park has connections with the upper plateau only through stairs. There are no connections with the lower plateau for people with limited mobility, which is a significant problem for visiting these recreational areas.

Also in this area there are two small gardens near the Opera House, one of which is a cultural heritage park. This park is mostly used as a territory for summer terraces of restaurants located in nearby buildings and is not a frequently used public space, as it creates the impression of a private space due to a large number of cafe tables.



Park Cultural Heritage

Park

Greenery Map
Scale 1:4000

0m 100m 200m



Wider Greenery Analysis

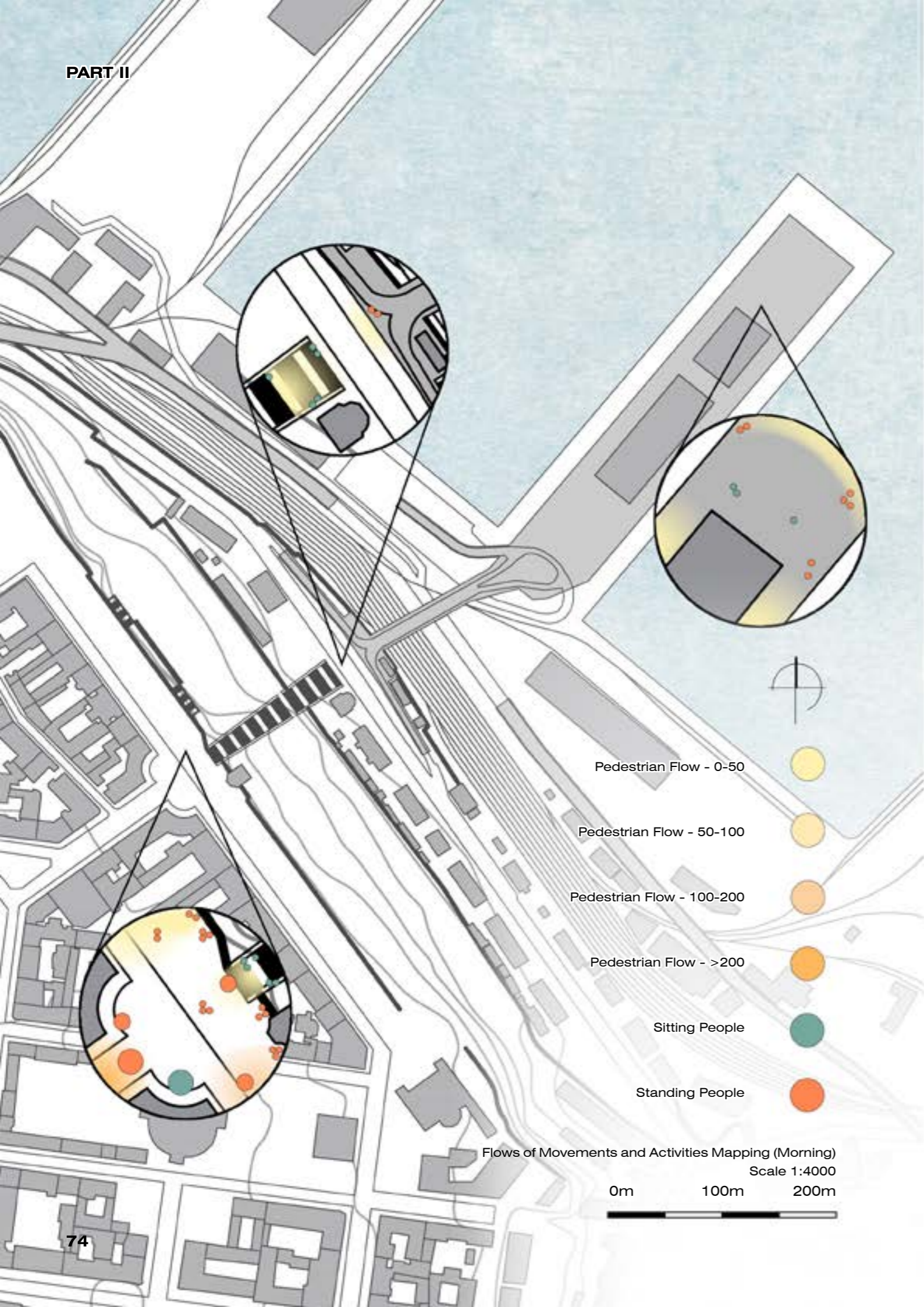
As mentioned earlier, the Greek and Istanbul parks have the potential for further development and the opportunity to become part of the green belt concept around the historical city center. This concept is possible in the case of reorganization of a number of city quarters, most of which are currently partially or completely destroyed. This concept is also possible due to the large number of conserved green areas on the east coast, which essentially encircle the historical center along the entire coast. There are also several large parks located on the north and west side of the city, which can become part of the greening chain. Based on this proposal, in the further design of the port area, it is possible to anticipate integration into the concept of a green belt and an ongoing public space. Thus, it is possible to create an attractive appearance not only around the city center, which in the future will further cut off the historical center from the northern coast. But also to offer potential development to the north and, as a result, the accession of the port territory to the green belt concept.

SOCIAL

This section examines the behavior of people in space, how they interact with the surrounding public space and move within its boundaries. The main areas for the study of this category were again the space of Primorsky Boulevard in front of the Potemkin Stairs, as well as the space on the pier behind the Hotel “Odessa”, which has the potential for further development. This section also presents data obtained during a survey of residents/guests of the city directly at the site. In the course of the surveys, opinions were obtained regarding the quality and function of space, which provides an opportunity for a more detailed understanding of the sensations of people in the structure of the city.



Photo of the Potemkin Stairs on a Weekend



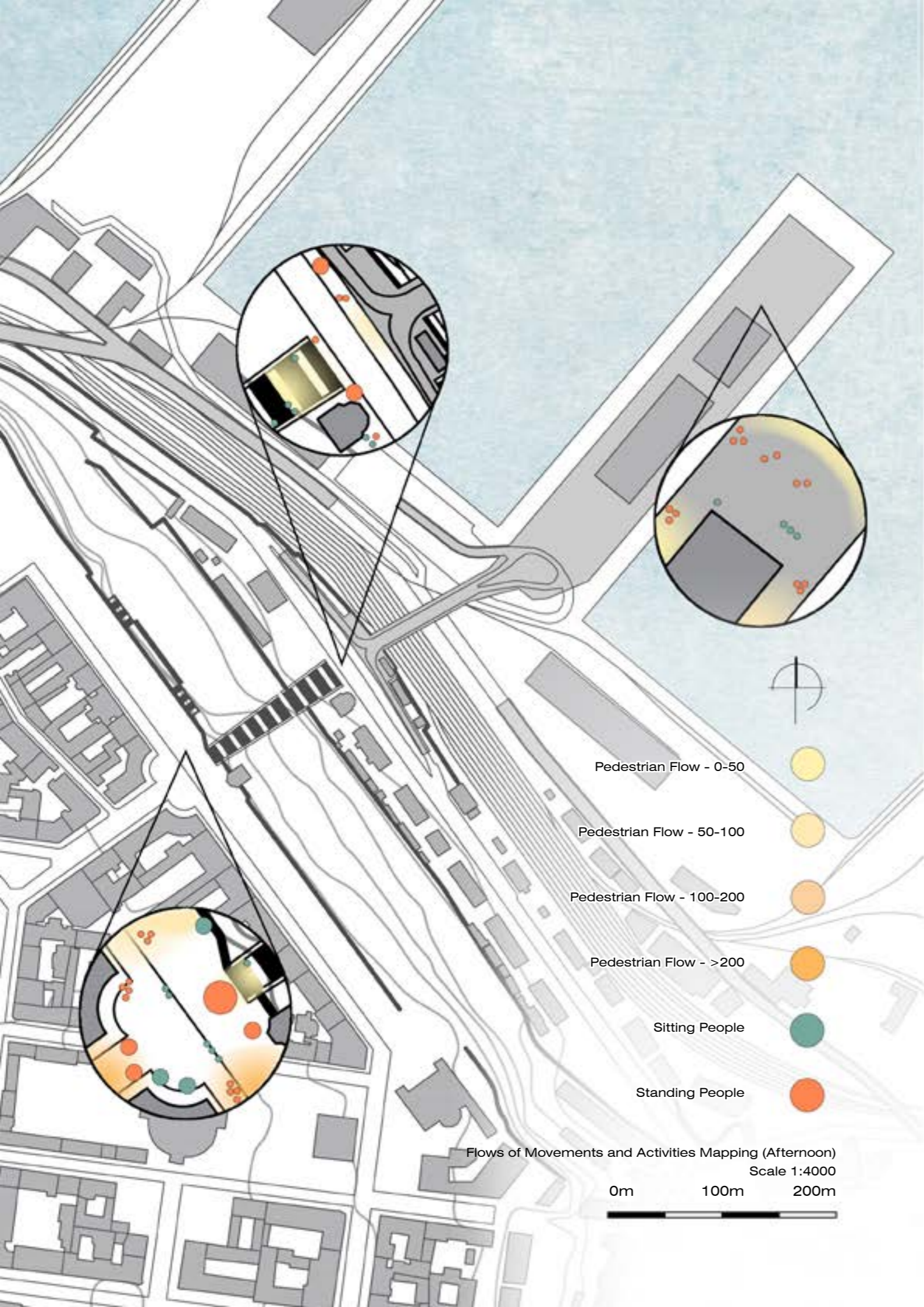
Activity Mapping in the Morning

In the morning there were not so many people on Primorsky Boulevard, most of whom were near mobile coffee shops and on the summer terrace of a restaurant in a semicircular house. Most of the people were employees of nearby hotels/offices, and a significant part were tourists from other cities. Also, a small number of people were photographing the view from the Potemkin Stairs or waited for the launch of the funicular. At the bottom of the Potemkin Stairs (on Primorskaya Street) there were a minimum number of people. Some were sitting on the steps, while others were standing and waiting for public transport.

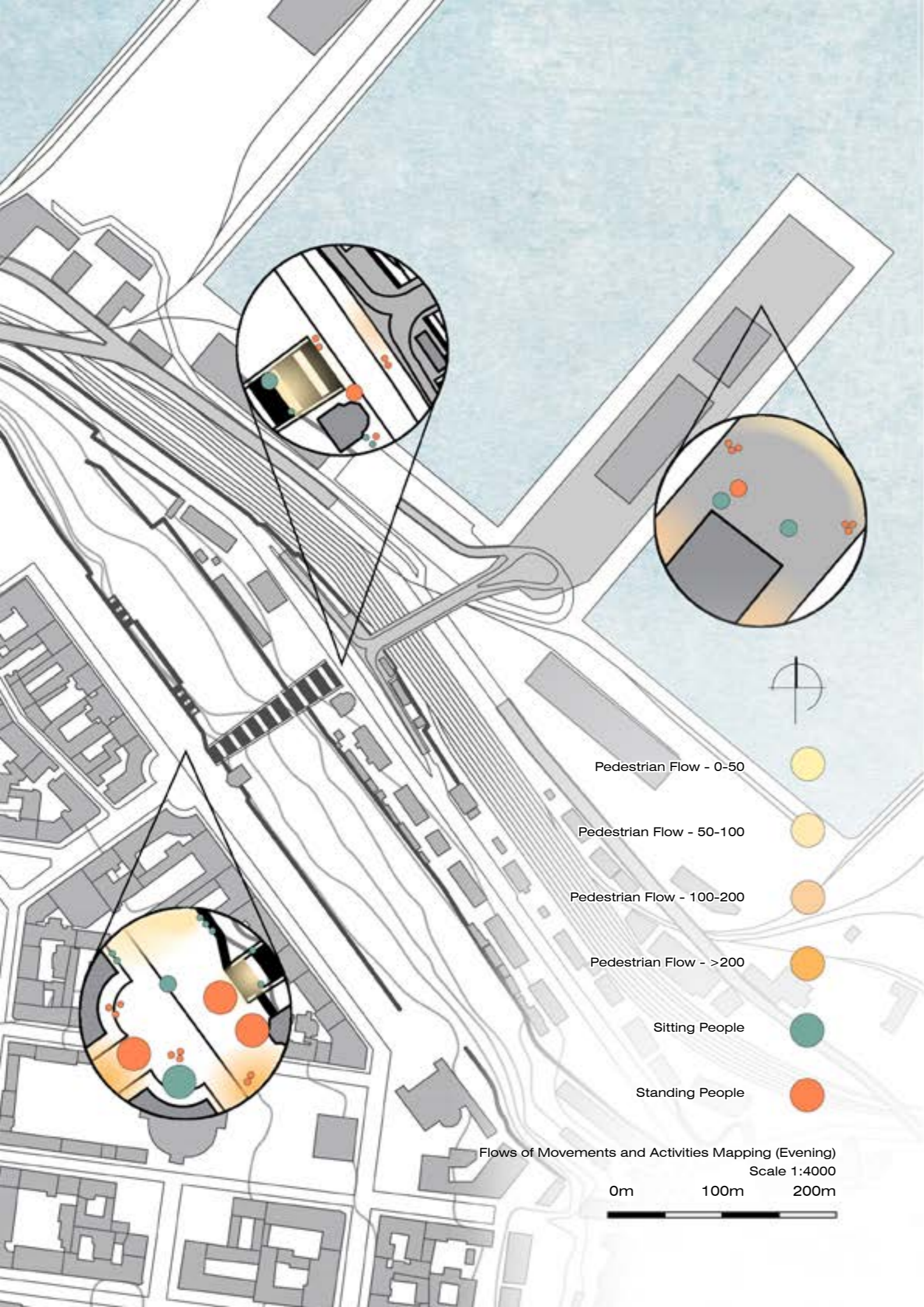
There were slightly more people on the pier, but also the flows of people were minimal. Most of them were tourists, and no large groups of tourists were seen in any of the locations.

Activity Mapping in the Afternoon

During the daytime, the number of people increased in all locations. On Primorsky Boulevard, there were still crowds of people standing near mobile coffee shops, and the summer terrace was also partially filled with people. The number of people near the Potemkin Stairs who were taking photographs has increased significantly. A number of small tourist groups appeared, which were also near the entrance to boarding the funicular. The flows of people from the side of Ekaterinskaya Street and from the side of the City Hall (which, according to the previous research, are the main pedestrian flows) also increased. On Primorskaya Street, small crowds have appeared near the entrance to boarding the funicular, and the number of people waiting for public transport to the north has also increased. The flow of people on the surveyed section of the pier also remains minimal. People are located in about the same places as in the morning.



Activity Mapping in the Evening



In the evening, the number of people on Primorsky Boulevard increased significantly, people gathered near the Potemkin Stairs as well as near the entrance to boarding the funicular. There were also groups of people near the mobile coffee shops and on the restaurant terrace, as was observed in the morning and afternoon. Traffic from the main walking routes remained high, while traffic from the northern part of the boulevard remained minimal.

A number of crowds are also observed on Primorskaya Street. One group of people is near the entrance to the funicular building. This group was waiting for the rest of the group at the top. Also, one group of people were sitting on the steps of the Potemkin Stairs. Crowds of people at the public transport stop were not observed, since the minibuses ran quite often, preventing people from lingering at the stops.

On the pier the groups of people became larger, but localized in certain places. Also, the flow of people from the historical center has slightly increased.

ОПРОСНИК // QUESTIONNAIRE
 Для определения потребностей посетителей Морского Терминала
 To identify the needs of Sea Terminal users

Кто Вы?
Who are you?

местный житель
local resident

Одессит
Odessa resident

житель пригорода
commuter

турист
tourist

Куда вы направляетесь?
Where are you going?

Оцените насколько вы довольны качеством общественного пространства Морского Терминала
Rate your satisfaction of the quality of Sea Terminal public space

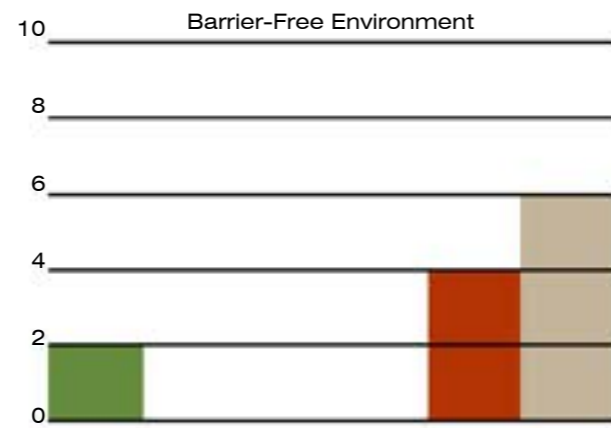
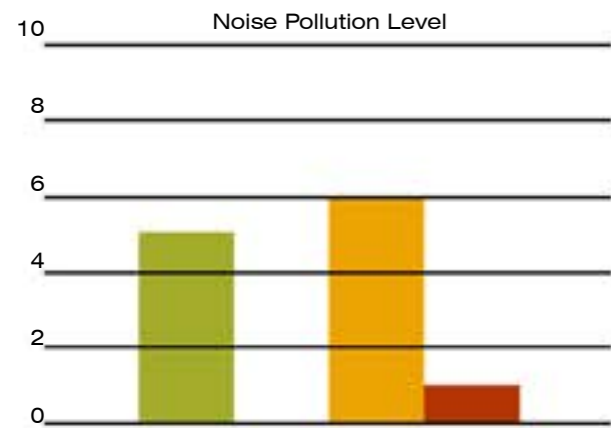
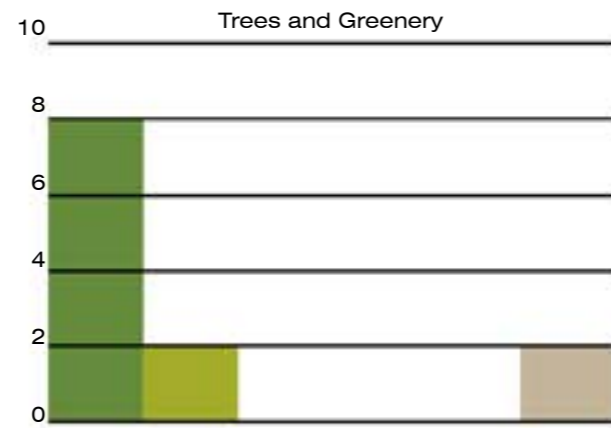
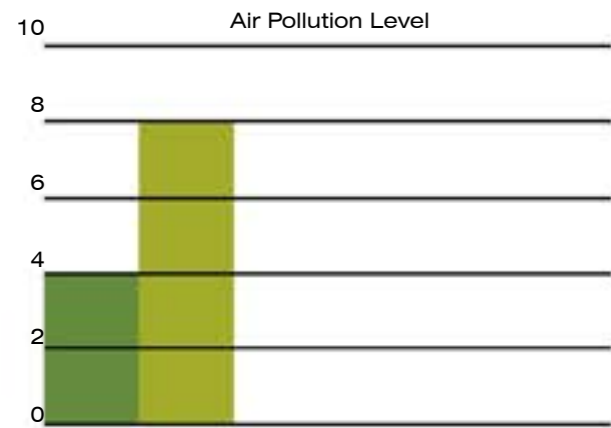
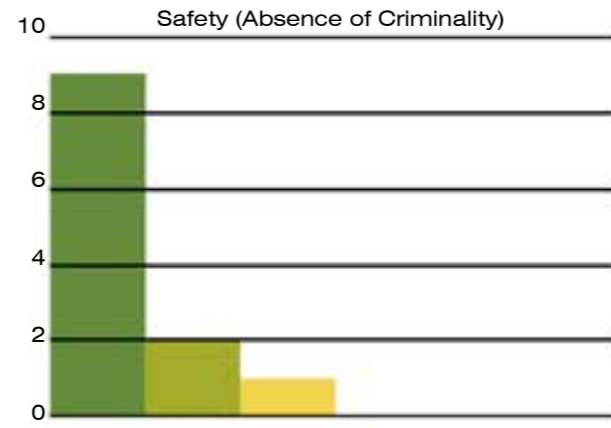
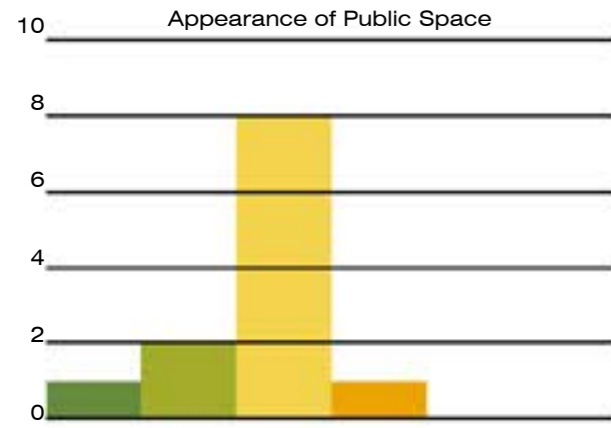
	абсолютно доволен fully satisfied	почти доволен almost satisfied	нейтрально neutral	не совсем доволен slightly not satisfied	не доволен not satisfied	не уверен not sure
Вид общественного пространства Appearance of public space	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Места для сидения Sitting places	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Уровень загрязнения воздуха Air pollution level	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Уровень зашумления Noise pollution level	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Безопасность (отсутствие преступности) Safety (absence of criminality)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Качество уличного освещения Quality of street lightning	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Деревья и озеленение Trees and greenery	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Безбарьерная среда Barrier-free environment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Назовите 3 главных преимущества пространства:
Name 3 main values of the space:

Назовите 3 главные проблемы пространства:
Name 3 main issues of the space:

Rates of Satisfaction

Between the time intervals of mapping the activities on the site, some people were asked to take a survey regarding the quality of public space. It was proposed to assess the level of lighting, the level of pollution and noise of the space, the quality of seating places and greenery. In addition, respondents were asked to indicate three problems of this site as well as three advantages. The research was carried out on Primorsky Boulevard and on the territory of the sea pier. The site at the bottom of the stairs near Primorskaya Street has not been investigated, since in fact it is a transit zone and cannot be objectively assessed according to the proposed criteria. The majority of the respondents were residents of the city from different sleeping areas, several guests of the city from other regions of Ukraine, and also students from Turkey. For a more simplified perception of the study, the information obtained was transformed into graphs, which are presented on the following pages.



Rates of Satisfaction on Primorsky Boulevard

According to the study, the majority of respondents considered the appearance of public space to be neutral, and some of the respondents rated the space above average.

Seating positions were rated as high, some respondents found it difficult to answer, as they do not view the space from this side.

The level of air pollution satisfies all respondents. Among the comments, it was said that the lack of cars in the area and the proximity of the park fully contribute to a positive assessment on this criterion.

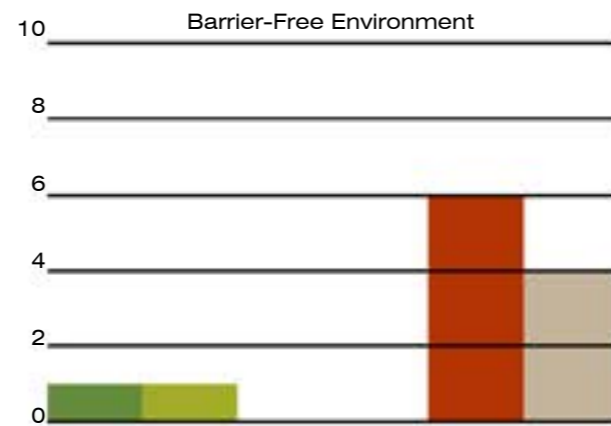
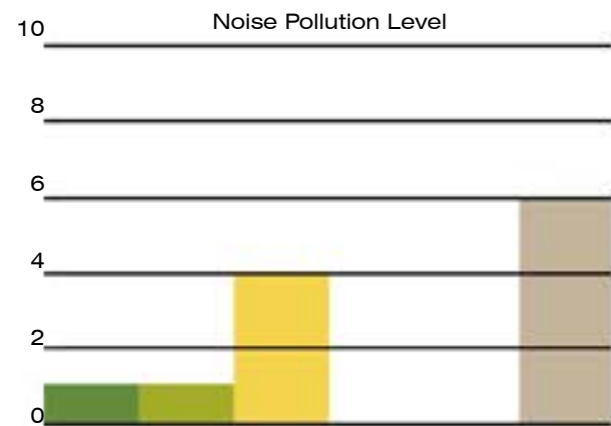
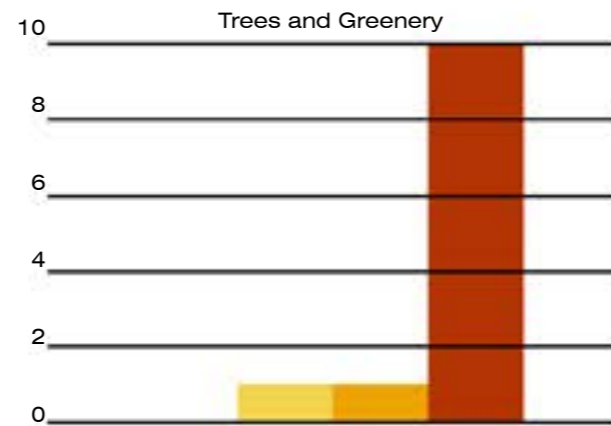
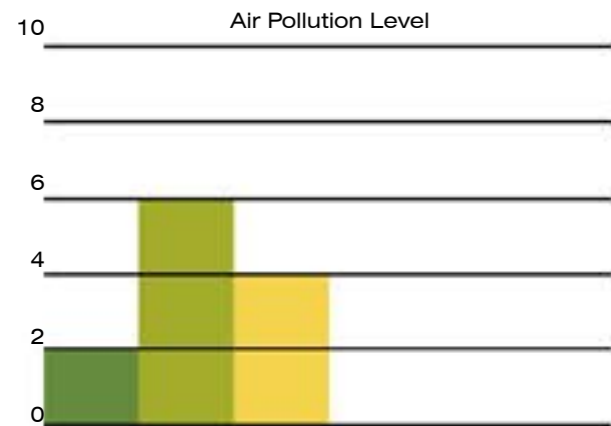
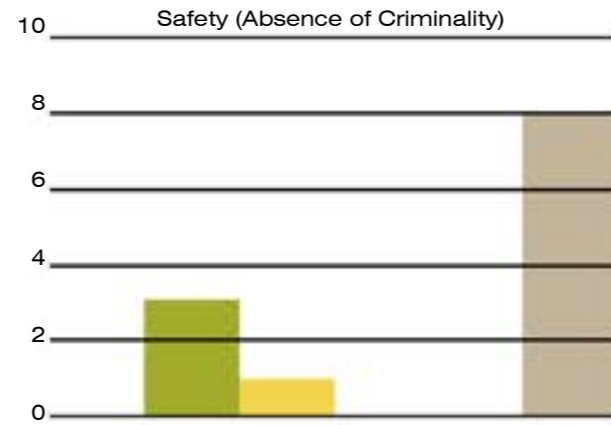
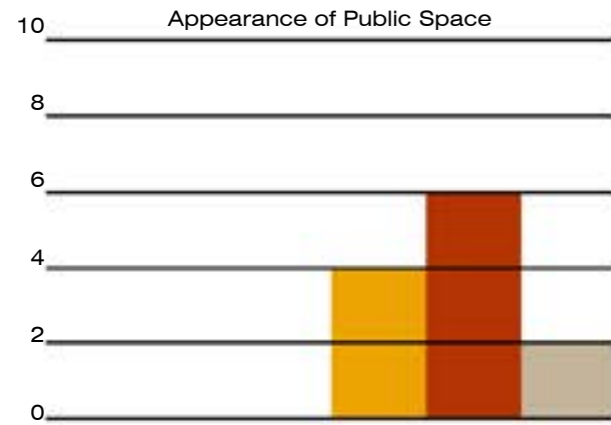
The answers regarding the noise level caused controversy, as on one side the noise level was satisfactory for the younger respondents, but on the other side it was higher than desired for the older population.

The safety level almost all respondents rated at the maximum level. The survey participants commented that this figure was achieved due to frequent patrolling by police officers as well as guarding nearby restaurants and hotels that are interested in creating security near the establishments.

The coverage was rated very positively, but no further comments were received on this issue.

Landscaping has also been rated high due to the nearby parks. Some of the respondents, in turn, noted that they are not interested in this criterion.

Regarding the issues of the barrier-free environment, most of the respondents could not answer the question, since they did not consider the space from this side. Part of the adult generation noted the poor accessibility to the parks, as it is difficult for them to access the proposed stairs. For that reason they rarely visit them.



Rates of Satisfaction on the Pier

Respondents' answers regarding all assessment criteria at the pier were fundamentally different from those on Primorsky Boulevard. The results are immediately visible on the graph.

The appearance of the space was assessed mostly negatively. Comments on this section of the assessment included remarks regarding the footpaths leading to the site as well as the almost complete absence of shadows.

Seating is also rated negatively, as most of the space is completely absent. Some people noted a slightly higher rating, as they considered the fences to be some sort of seating places.

The level of air pollution was assessed above average, as most of the respondents noted the close proximity of seawater.

Regarding the noise pollution of the space, some respondents found it difficult to answer because they were embarrassed by the close proximity of the functioning cargo terminal of the port, which, according to their impression, sometimes creates excessive noise.

The safety of the space was not assessed by most of the people who participated in the survey, since, according to them, they rarely visit this location and cannot assess this criterion. However, those who responded rated safety as above average.

The quality of the lighting was assessed negatively since in the evening in some parts of the pier there is no lighting at all, some of the respondents refused to answer since they do not visit this place in the evening. Landscaping was rated negatively. According to the respondent, "how to evaluate something that is absent?".

Some of the respondents answered that a small number of flowerbeds matches the neutral level.

Difficulties arose again with questions regarding the barrier-free environment, since many of the respondents answered it without paying special attention. But still, the majority left negative feedback on this issue.

Назовите 3 главных преимущества пространства:
Name 3 main values of the space:

Качество, озеленение, движение

Назовите 3 главные проблемы пространства:
Name 3 main issues of the space:

Лужи с мусором, недостаточное благоустройство
мусорные контейнеры

Назовите 3 главных преимущества пространства:
Name 3 main values of the space:

море, корабли

Назовите 3 главные проблемы пространства:
Name 3 main issues of the space:

Машины, нет тени, нет кафе

Назовите 3 главных преимущества пространства:
Name 3 main values of the space:

Свежий воздух, море, чайки

Назовите 3 главные проблемы пространства:
Name 3 main issues of the space:

Нет туалета, катера, нет где сидеть

Issues and Values of the Space

It was rather difficult to get answers to specific questions from the respondents; many simply could not come up with answers to what they like or evoke negative emotions in space.

But among the responses received – cafe, trees and evening lighting were noted as advantages of Primorsky Boulevard. Among the disadvantages of the place, many called the lack of bike paths due to which cyclists ride in the same place where people walk, as well as people who walk with dogs without leashes. There were few comments on the space itself.

There were a few more answers to the same questions on the pier. Among the positive criteria were the sea, fresh air, and boats, which are interesting to watch with children. At the same time, the presence of boats along the entire pier was noted by another respondent as a negative factor. The lack of public toilets and the lack of benches with shade were also cited as disadvantages of the space.

VISUAL

This section examines the proportions of architectural/urban forms, the ratio of the width of streets to the height of buildings. How a person is proportionate to a given space and how he can feel in it. Also, in addition to the volume of architecture, this section discusses the variability of road paving, the material that is used for this, and how it defines the space, zoning it and dividing it by function.



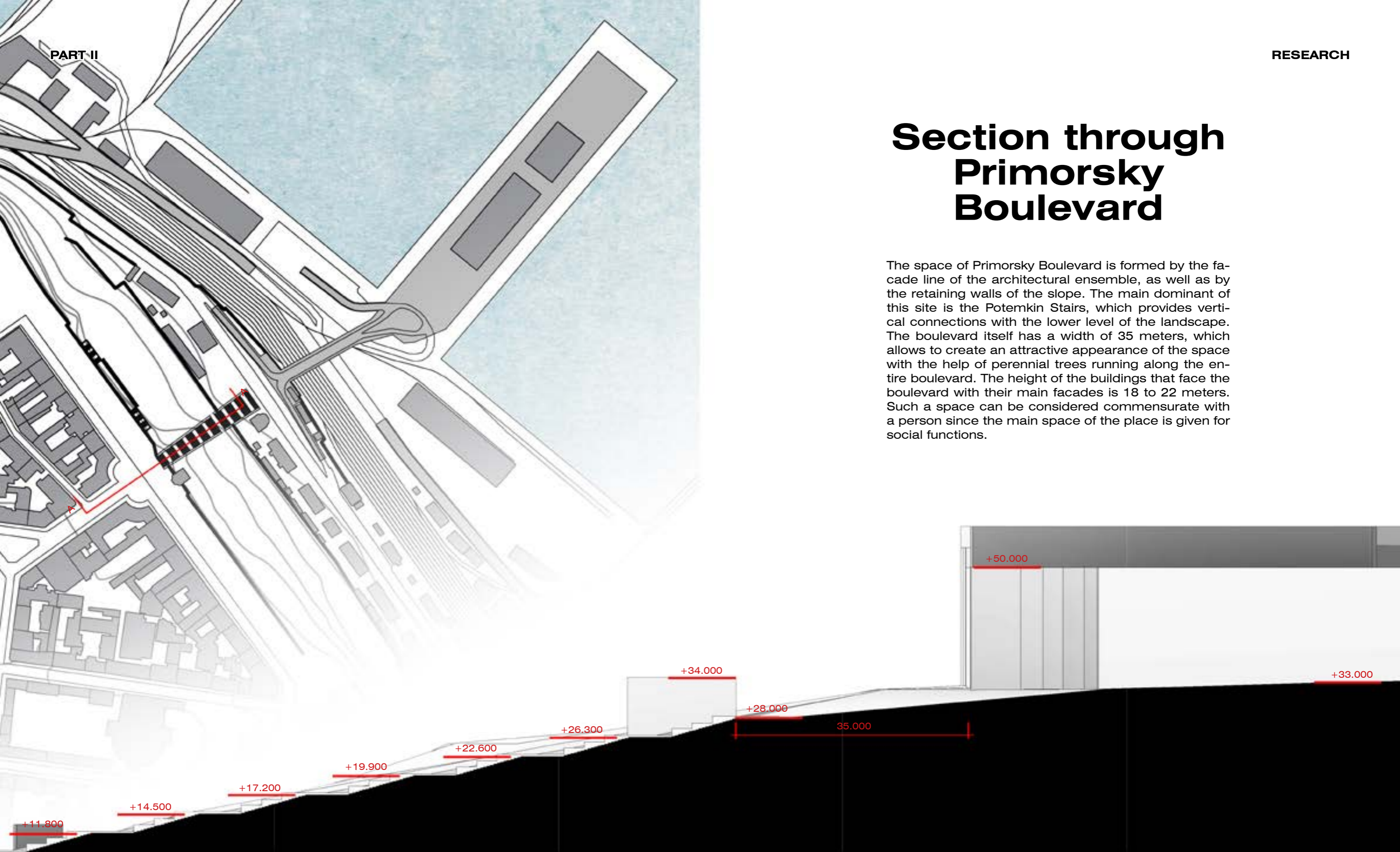
Primorskaya Street



Building of the Marine Station

Section through Primorsky Boulevard

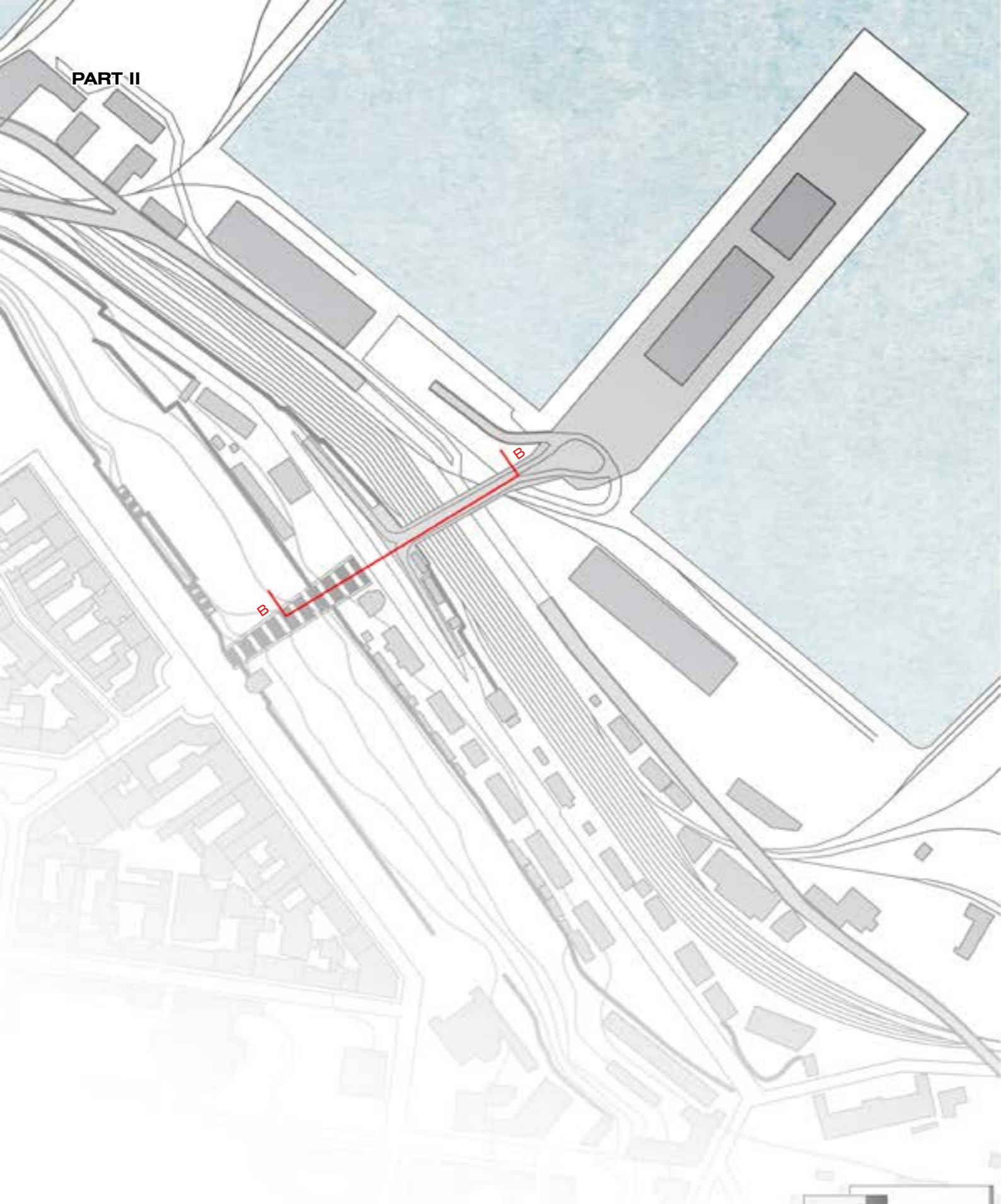
The space of Primorsky Boulevard is formed by the facade line of the architectural ensemble, as well as by the retaining walls of the slope. The main dominant of this site is the Potemkin Stairs, which provides vertical connections with the lower level of the landscape. The boulevard itself has a width of 35 meters, which allows to create an attractive appearance of the space with the help of perennial trees running along the entire boulevard. The height of the buildings that face the boulevard with their main facades is 18 to 22 meters. Such a space can be considered commensurate with a person since the main space of the place is given for social functions.



Section A-A
Scale 1:500

0m 10m 20m





Section through Primorskaya Street

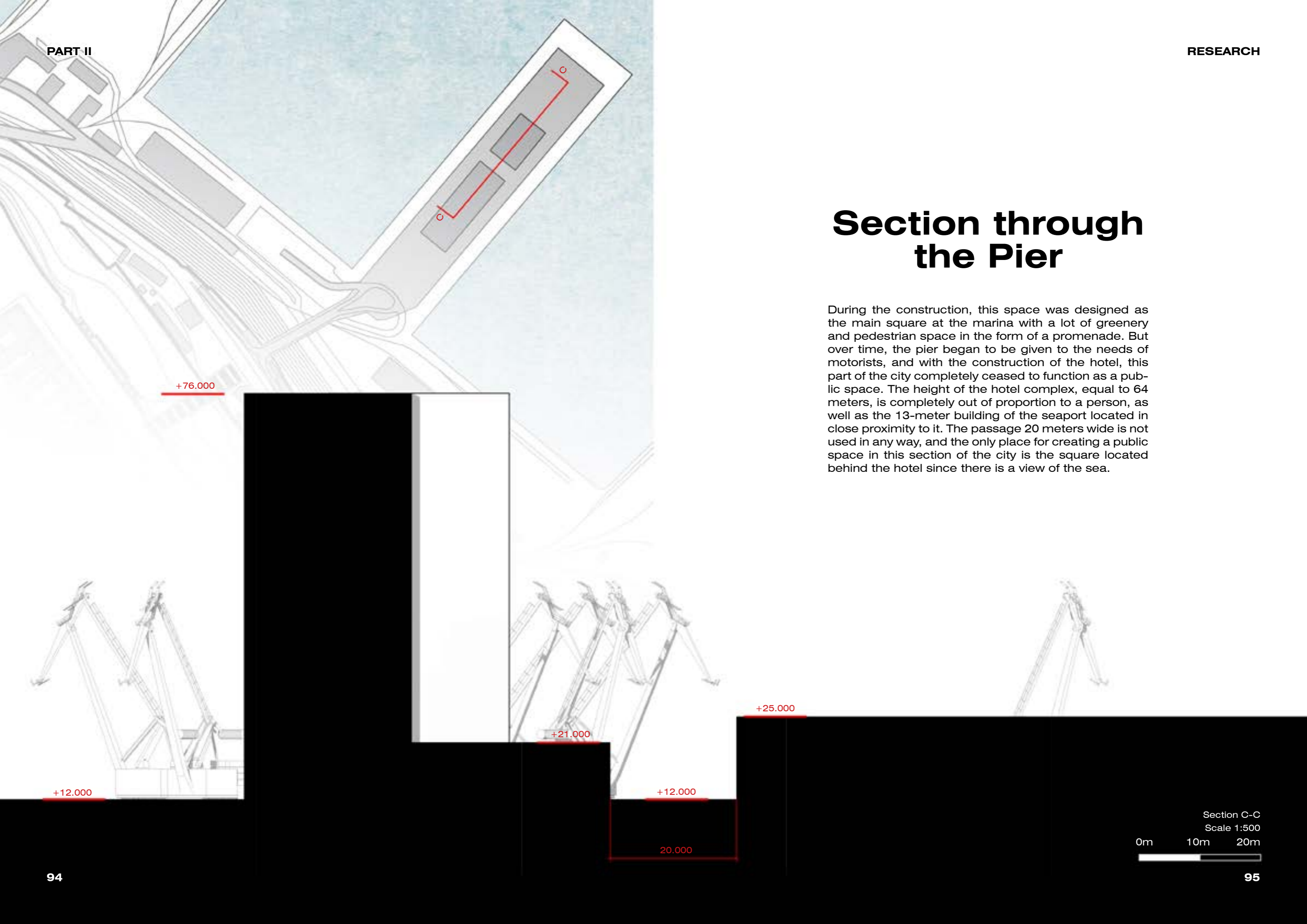
The space of Primorskaya Street is largely dictated by the road for cars since there are no social functions for pedestrians in this section of the city. Visually, this space can be limited by a fence separating the rail-ways/entrance to the bridge structure, as well as by the landscape that rises significantly in this location. Such a space can hardly be called commensurate with a person since a small section of the sidewalk has been given for the needs of pedestrians and a person must use underground to cross the road.

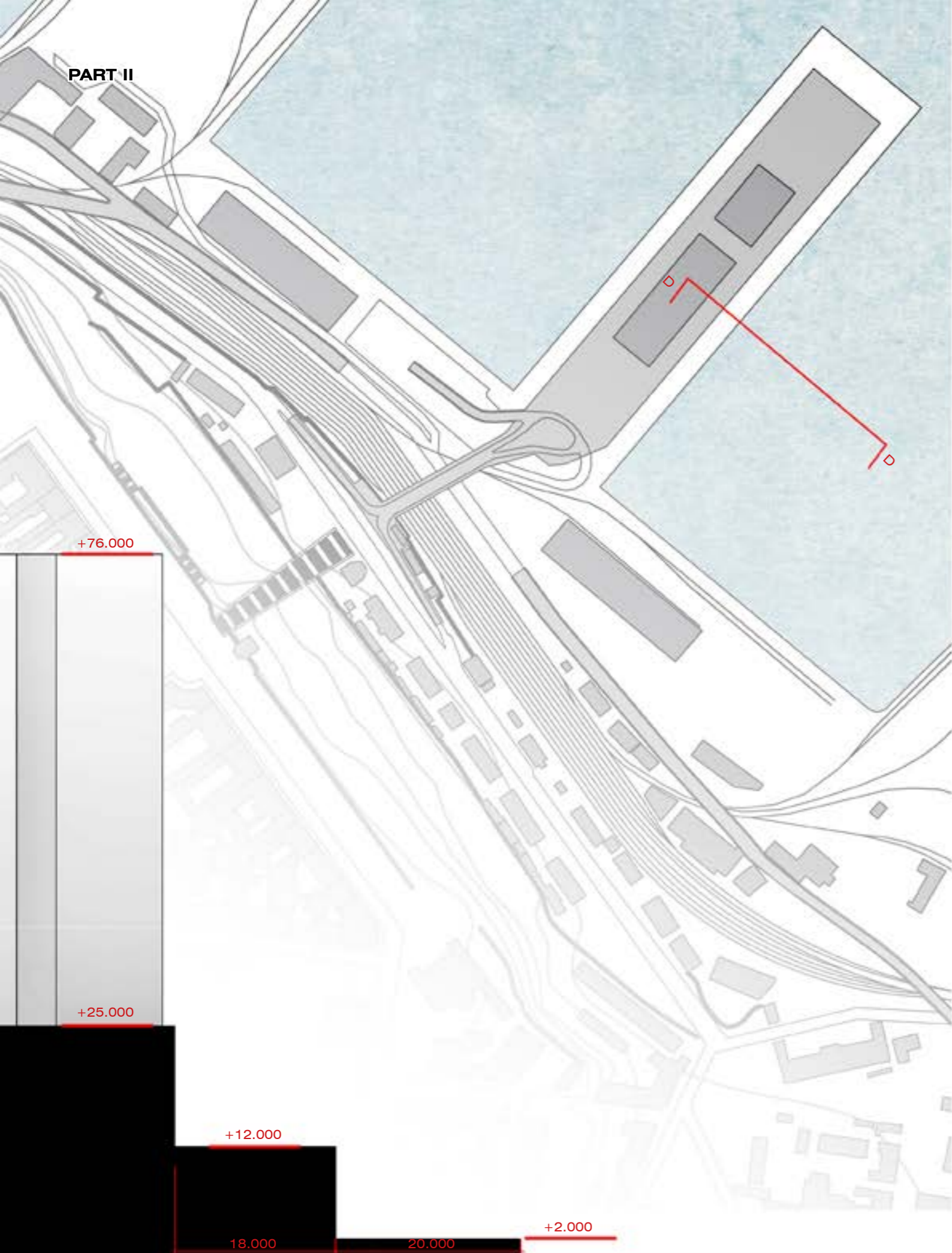


Section B-B
Scale 1:500

Section through the Pier

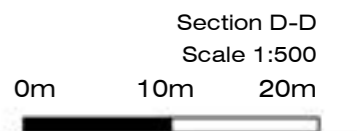
During the construction, this space was designed as the main square at the marina with a lot of greenery and pedestrian space in the form of a promenade. But over time, the pier began to be given to the needs of motorists, and with the construction of the hotel, this part of the city completely ceased to function as a public space. The height of the hotel complex, equal to 64 meters, is completely out of proportion to a person, as well as the 13-meter building of the seaport located in close proximity to it. The passage 20 meters wide is not used in any way, and the only place for creating a public space in this section of the city is the square located behind the hotel since there is a view of the sea.

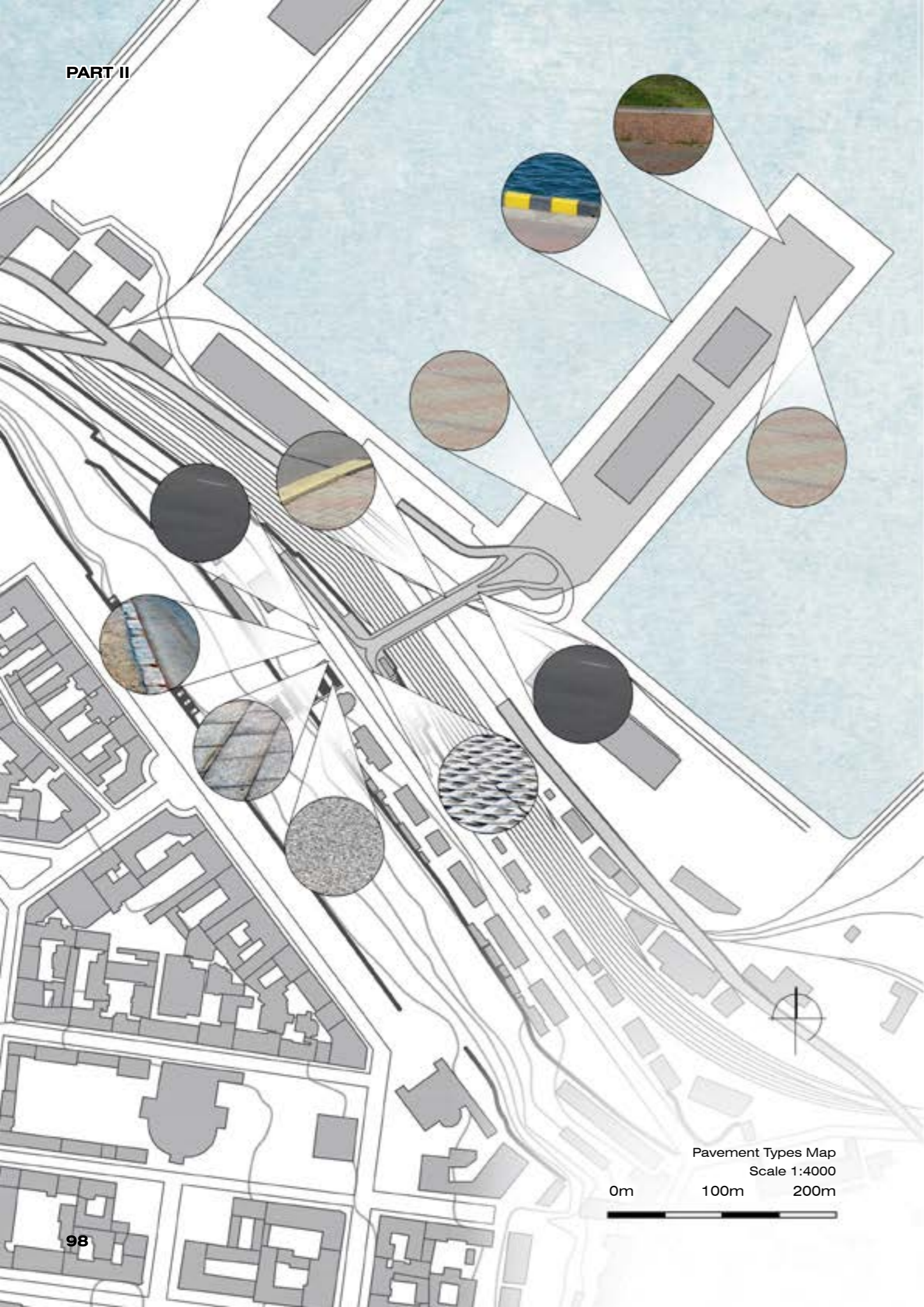




Section through the Marine Station

The space on both sides of the sea terminal is completely symmetrical and equal to 18 meters. This section of the pier does not have any small architectural forms in the form of seating areas and awnings for shading. The lower level of the pier is completely dedicated to the movement of cars, and vertical connections for pedestrians are possible only at the end of the pier. The lack of greening and beautification makes this place unattractive for recreation.

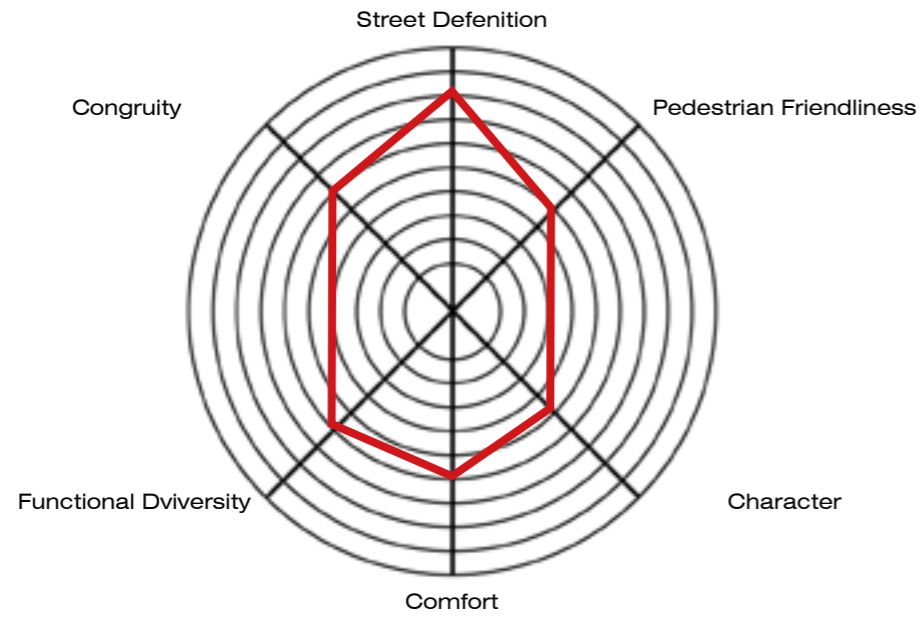




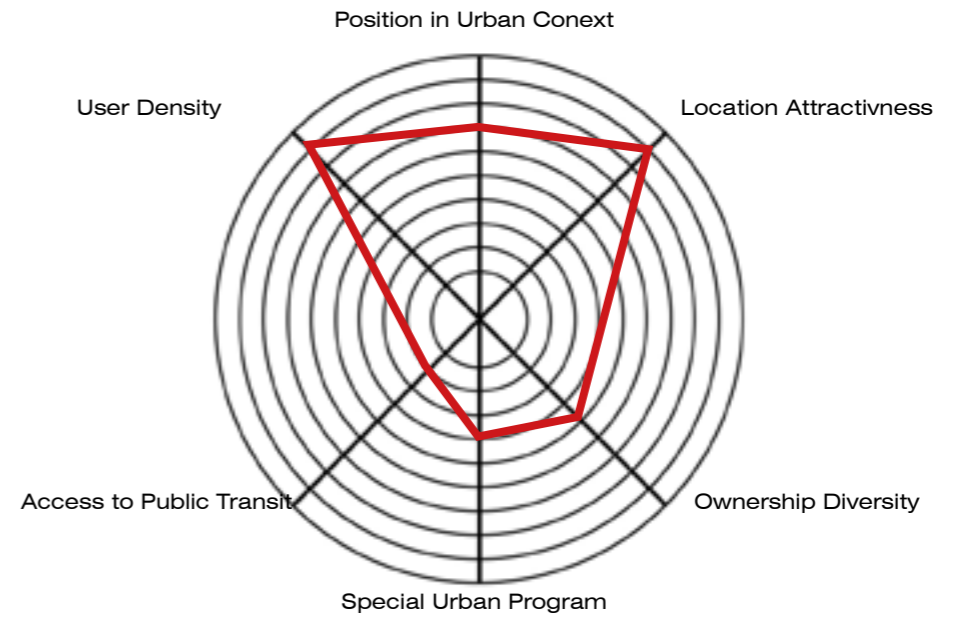
Pavement Types Analysis

The analysis of the types of paving along the entire path from the pier to the Potemkin Stairs is aimed at understanding how the texture of the paving determines the space and whether it affects the formation of public space in certain areas of the space. As you can see on the diagram, most of the pier is paved with paving slabs, which parasitize the entire city space (historical paving stones are dismantled and replaced with asphalt or paving slabs). At the pier this material is used both at the upper level, where pedestrians move and at the lower level, where motorists' traffic intersects with pedestrian flows. Thus, the space of the pier is in no way delimited by the types of paving. The pier also uses asphalt pavement along the northwest edge and a brightly colored curbstone that draws attention to the pier's edges. Towards the Potemkin Stairs, the paving is gradually being modified and modern materials are used, which are similar to historical paving. Granite slabs are used and historical paving stones appear in places. The space in this section is not delimited by the type of paving, but by ubiquitous fences along the road. The reconstructed Potemkin Staircase also lost its historical facing material and modern slabs were used for its facing. On the upper plateau granite slabs are also used, but there are also areas with historical paving stones from that time. Only in this section of the area can be noticed the division of functions by the type of paving. Historical cobblestones have been used on the road, intended for occasional transport use, the cafe's summer terraces use temporary wooden surfaces, and the pedestrian areas are paved with granite slabs. The method of dividing functions by using different types of paving can be used in the future to create an attractive appearance of the space in all areas of the study site.

Primorsky Boulevard



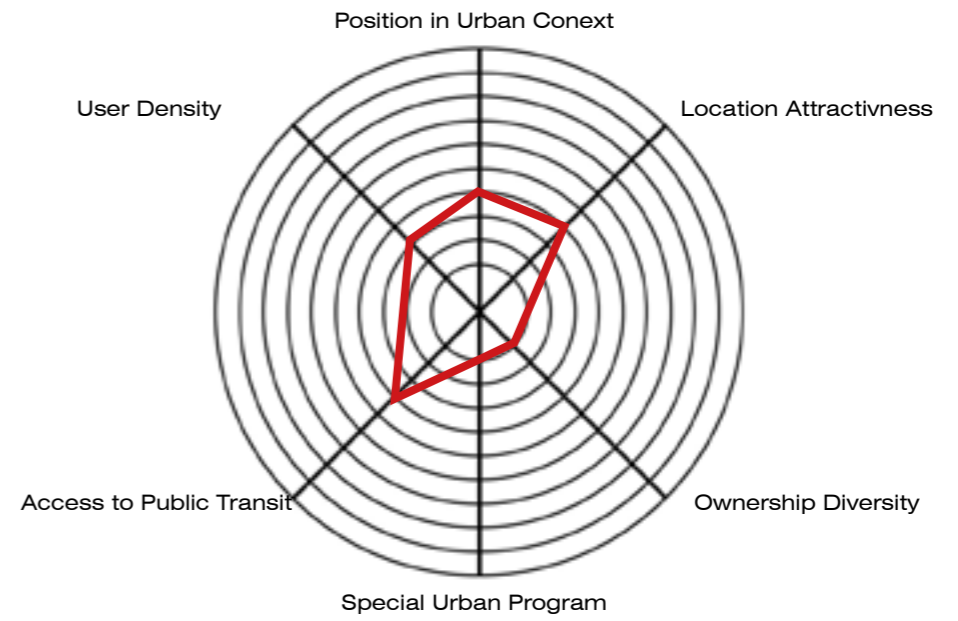
Primorsky Boulevard



Primorskaya Street



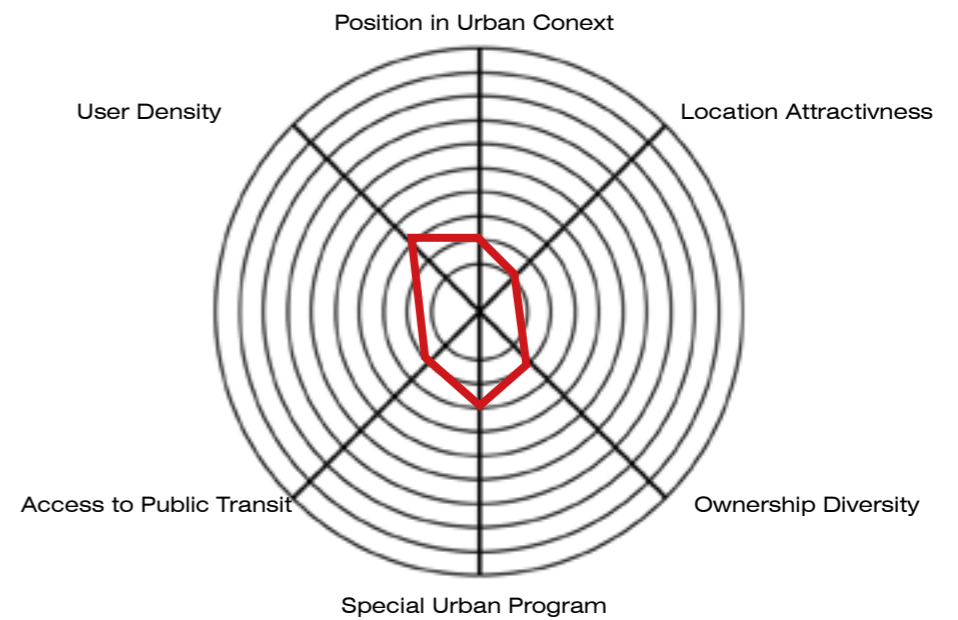
Primorskaya Street



Sea pier



Sea pier



TEMPORAL

This section is intended to assess the use of space at different times during the day, the difference in use between the day and night function, and to assess space in different seasons of the year. Thus, it is possible to understand whether the space is universal in use in all periods of time, or whether the main function is performed at specific intervals.



Pier of the Marine Station (Day View)



Pier of the Marine Station (Night View)



Primorsky Boulevard (Summer Period)



Sea Pier (Summer Period)



Sea Pier (Winter Period)



Primorsky Boulevard (Winter Period)



The Potemkin Stairs (Summer Period)



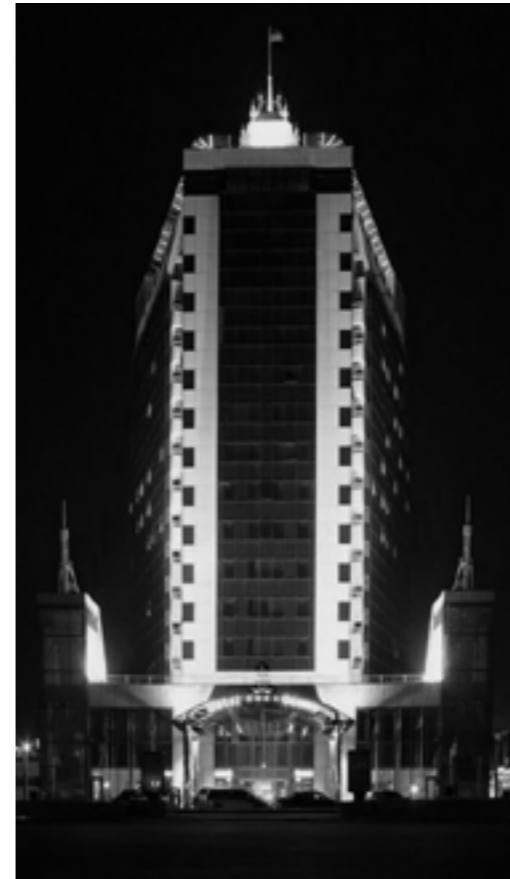
The Potemkin Stairs (Winter Period)



Primorsky Boulevard (Day View)



Hotel "Odessa" (Day View)



Hotel "Odessa" (Night View)



Primorsky Boulevard (Night View)



Square in front of the Marine Station (Day View)



Square in front of the Marine Station (Night View)

Primorsky Boulevard

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

STUDENTS

STUDENTS

STUDENTS

DENTAL CLINIC

RESTAURANTS

BUSINESS

BUSINESS

BUSINESS

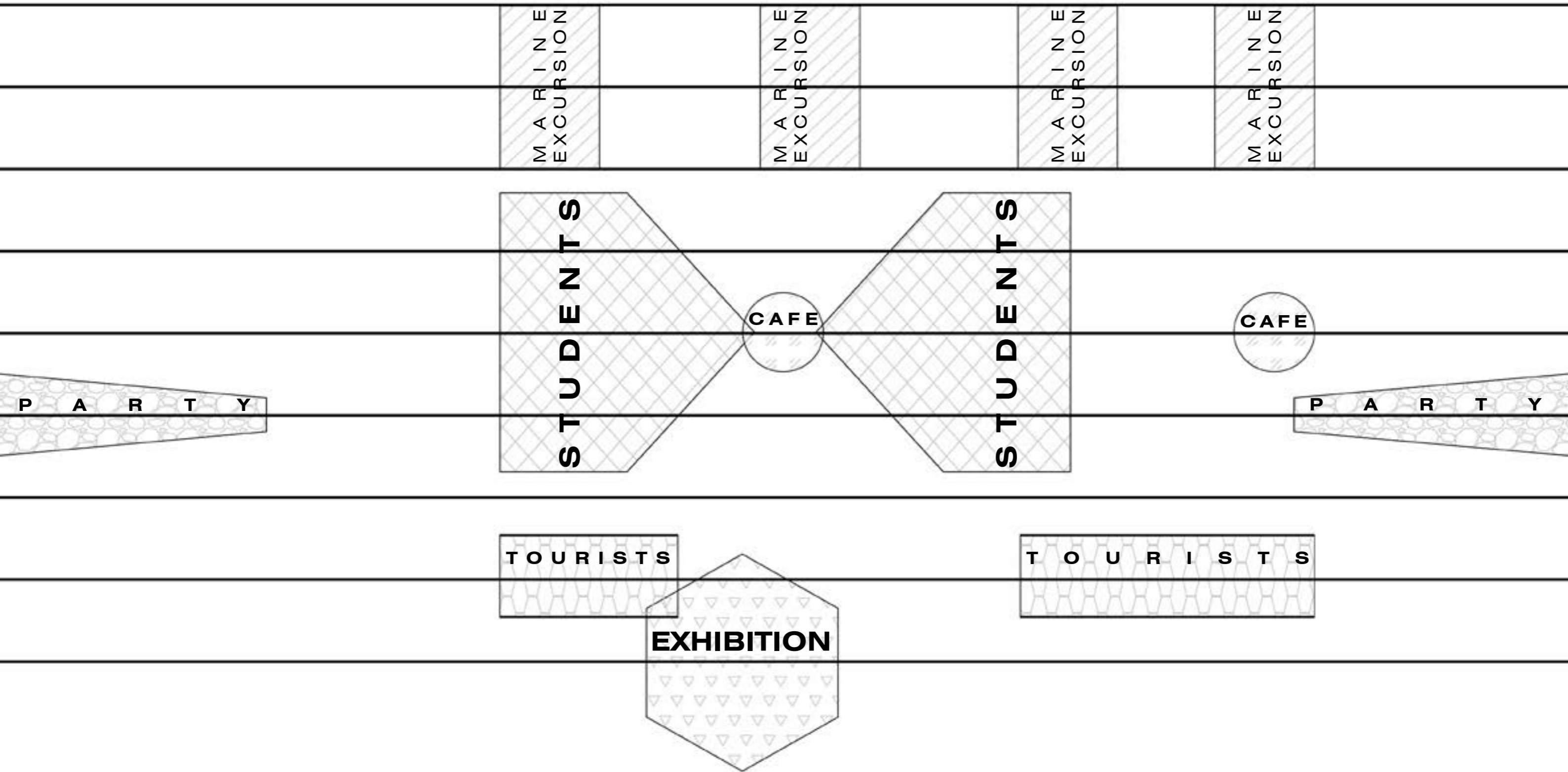
TOURISTS

THEATRE

THEATRE

Marine Pier

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24



CASE STUDIES

This section examines world examples of architectural and urban solutions in order to determine the stages of a possible design of the marina area, as well as to determine functional links for interaction between buildings of various orientations.

For example, it was taken the project of the embankment quarter in Kiev, which is used to determine the methodology for designing large areas, as well as for an example of solving similar problems in another city of Ukraine.

Also it is considered the renovation of the port area in Denmark, which is proposed by the well-known company SOVA, in order to determine the strategy for the development of the port area in the Scandinavian countries.

A number of architectural projects for office and residential buildings are also being considered, which serve as a way for the further design of a vast territory. In addition, a number of Taiwan Sea Terminal Competitions are being used to study the structure of the station building.



New Podol

Project of New Residential Area in Kiev, Ukraine by Zotov&CO

The designers promise that the development of the area will be compact, cars will be able to park only underground, and the local embankment will become a bicycle and pedestrian promenade. Today, according to the architect, the territory of the port is more like Pripjat - it is so cluttered, deserted and almost never used. It is also impossible to talk about free access to water for citizens. There is practically no embankment on the right bank of Kiev. Naberezhnoe highway completely cut off the people of Kiev from the river, and this is a big problem for the whole city. It was because of the transport issues that the design of this area was a daunting task. A new metro line should run along the planned area. They are going to build it for many years, but the project is still at the development stage. Therefore, developing this concept, the architects left a separate forty-meter corridor for the future line. It should be admitted that this design will seriously change the traffic flow: at each intersection, the architects planned regulated ground crossings. The project is focused on pedestrians and the connection between Podil and the Dnieper, therefore, priority is given to pedestrians. As for the internal roads in the residential complex itself, the passages here will be dead-end so that cars would not have the opportunity to drive to the embankment. The optimal number of stories of houses in the old Podil is five floors. This height is the most comfortable for the townspeople. Therefore, the height of the facades facing the inner streets in the new district will not exceed 18 meters and will be from five to seven floors. The building itself will be quarterly, and the passage through the territory of the houses will be open to all citizens. Also, in this project, the stages of designing the territory of the river port are quite clearly shown, which is conceptually related to the diploma project of the Odessa territory.



Demolished Structure



Quarters Sealing



Metro Line



Roads



Boulevard



Inter-Quarter Driveways



Coast Promenade



Pedestrian Areas



Quarter segmentation



Bus Stops



South Axonometry of the Project



North Axonometry of the Project

NORDHAVN

Masterplan for New City District
in Copenhagen, Denmark
by COBA

Architects: Future environmental challenges must be solved through a sustainable approach to city planning. The transformation of Nordhavn (North Harbour) – the largest metropolitan development in northern Europe – continues Copenhagen’s historic strategy of a step-by-step expansion into the surrounding sea. The new Nordhavn is conceived as an urban archipelago or a series of dense neighborhoods on the water. Planning one island at a time, the Nordhavn master plan is not an ideal city vision, specifying every last detail, but rather a robust and flexible guideline intended to inspire future generations of urban planners. It is a way of addressing one of the great challenges of city planning: Designing for the needs and demands of today while trying to predict and address the major environmental challenges shaping our future. As the first DGNB platinum-certified urban area in Denmark, the Nordhavn project takes a holistic approach to urban planning.



Existing Site Plan



New Site Plan



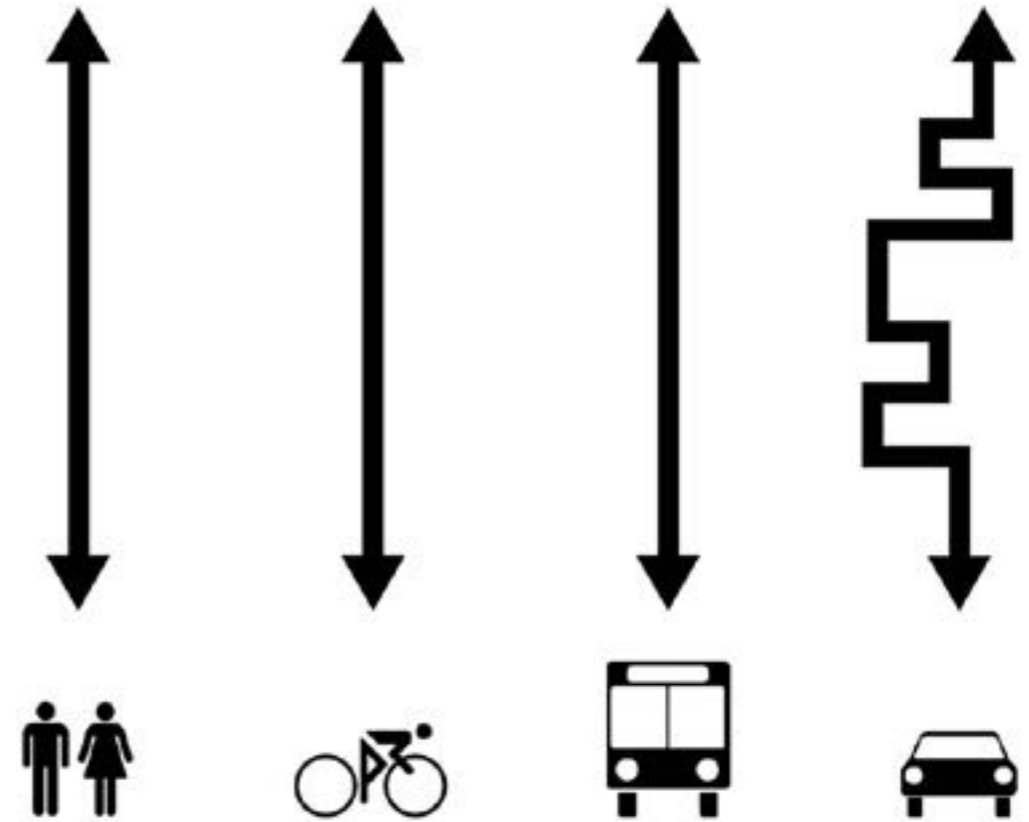
Existing Situation



New offer


Movement Flow

Nordhavn is a city of sustainable mobility, where it is easier to walk, bike or use public transport than it is to drive. The green loop is an expressway for bikes, connecting the individual neighborhoods with each other and with the rest of Copenhagen.



KAOHSIUNG

Port and Cruise Service Terminal
Competition proposal
by HMC Architects

The image shows a large, modern architectural rendering of a port terminal. The building features a prominent, curved, glass-enclosed upper section that is illuminated from within, creating a warm glow. Below this, there is a lower, more solid structure with horizontal bands of light. The entire building is reflected in a body of water in the foreground. In the background, a city skyline is visible under a twilight sky, with a tall, slender skyscraper standing out. The overall atmosphere is one of a futuristic and iconic gateway.

The proposal by HMC Architects envisions an iconic gateway to the City of Kaohsiung, and a lens into the outer-world visualized from within. It creates a new urban datum—an inviting gesture—to allow a new connection between visitors, citizens, and the City of Kaohsiung. This gateway is designed to serve as a physical and economical impetus to the City's goal of transforming its waterfront from its industrial past into an inviting future. The proposed 300,000-SF, eight-story terminal is efficient, adaptive, and lucid while fostering a poetic and interactive space that embraces a vibrant urban serendipity. The program consists of cruise and international ferry terminals, 700-space subterranean parking garage, and a Port Bureau office. In a quest for calmness on the occasion of traveling, interior spaces are bathed with comfortable natural light and vistas to the ocean and city to create an uplifting experience to maritime travelers and commuters. Its transparency optimizes way-finding, a key element in mitigating people movement, allowing the building to effectively embrace its users' constant motion and accommodate occasional sudden influx of massive cruise passenger volume.





CONCLUSION

After conducting research on 7 different dimensions, certain conclusions can be drawn about the strengths and weaknesses of the space, which will further help to organize the proposal for an urban project properly. The study identified both the weaknesses of the fading port area and access to it, as well as the strengths of the historical center and the promenade located on Primorsky Boulevard, which can be actively continued towards the sea coast.

In the **History** section of the site, a very important heritage of the architecture of the city on the upper plateau was revealed. The symbolic side of the sea “gate” to the city at the Potemkin Stairs, lost through time, was also identified. The territory of the port, in turn, showed a cardinally opposite side of the historical heritage, having lost all its significance in the context of the historical context over the past 100 years. Thus, we can conclude that the reorganization of the port territory should carry the function of increasing the importance of the main axis of the entrance to the city and by all means, give a continuation for future development towards the northern coast.

The **Morphological** analysis provided information that the shape of structures on the port territory is out of the landscape context of the territory. The buildings located on this territory are great landmarks, which draws attention from the natural bay of the city and from the historical monuments of architecture, which are the main context of the area. The existing typology differs significantly from the examples of architecture presented around, thus the Odessa hotel and the building of the sea station are a kind of monument to the parasitic architecture of the Soviet era, as well as the inexpediency of construction at the beginning of the 21st century.

The **Perceptual** analysis showed that despite the unattractiveness and low landscaping of the territory, the pier is still the preferred access to the sea for most of the surveyed residents/guests of the city. But at the same time, a small number of people use this opportunity for recreational purposes. Thus, it can be assumed that the territory has great potential for further development and joining the structure of the city.

The **Functional** analysis also supported this claim. Information regarding the use of existing buildings made it clear that most of the buildings in the port area are abandoned or serving as a warehouse in the central area, while the upper plateau of the city has many public functions that attract residents/visitors to the city. Traffic analysis also reinforced the image of the lower plateau being separated not only from the typology of the center but also from other parts of the city, as it is actually a transit zone between north-south directions. The chaotic parking of vehicles, which is typical for the central part, is practically absent on Primorskaya Street, but the organized parking located in the vicinity of the Potemkinskaya Staircase is a factor that reduces the historical value of the structure. Also, chaotic parking is typical for the pier itself. Despite the existing nearby organized parking for vehicles, the preferred option for motorists is parking at the end of the pier in close proximity to the sea. The landscaping analysis also showed great potential for further development in the existing Greek and Istanbul parks, which may in the future become part of the concept of a green belt around the city.

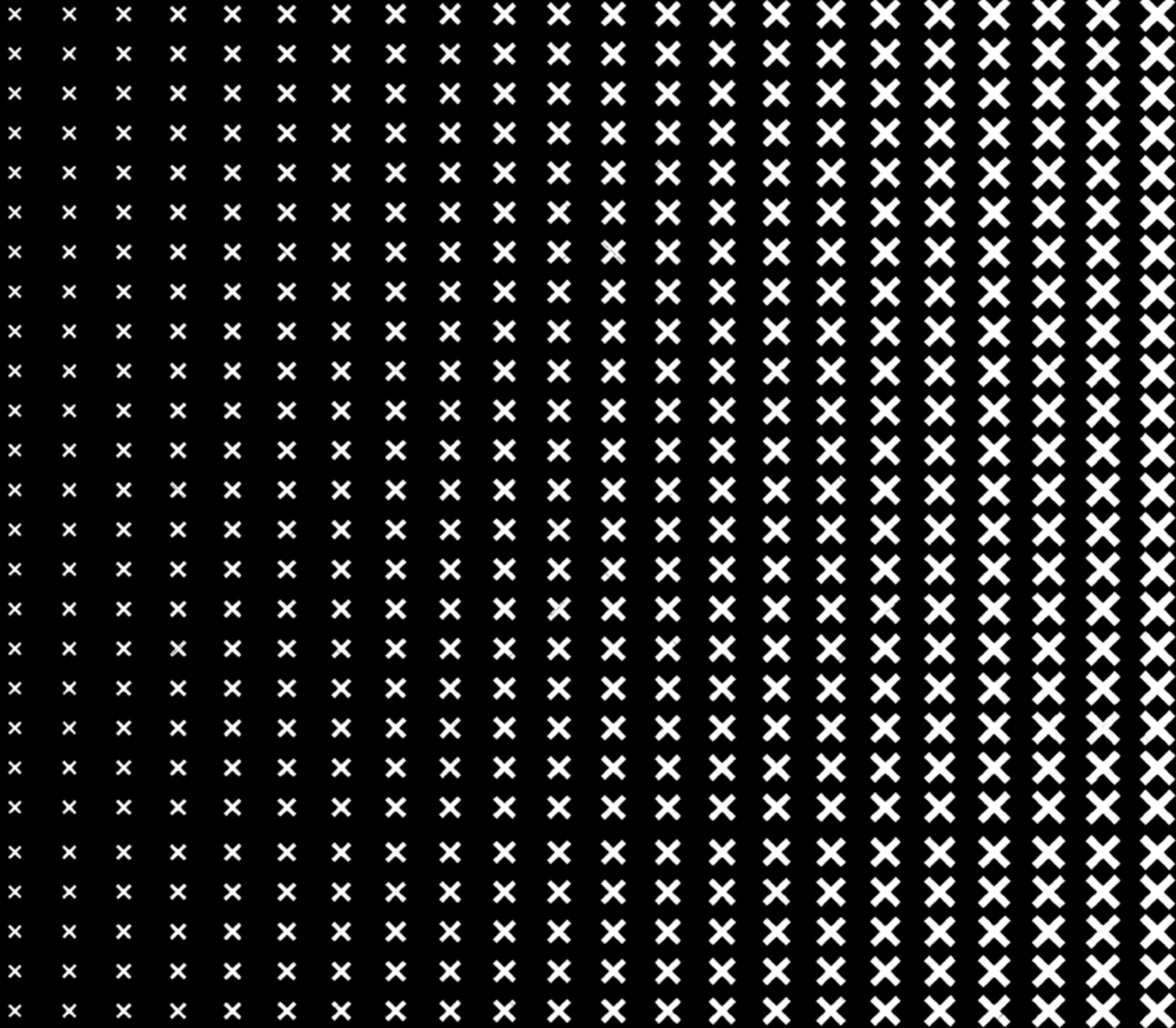
The **Social** analysis provided more information on the liveliness of the upper plateau of the city and confirmed the analysis on the emptying of the quay space. During the day, large crowds of people formed near mobile coffee shops, restaurants, as well as on the outskirts of the Potemkin Stairs, while in other areas studied, only small groups were observed chaotically walking along the coastline. Also, the conducted polls provided information regarding the opinions of residents/guests of the city regarding the improvement of spaces, which made it possible for further analysis of the development of the territory.

The **Visual** analysis helped to determine the disparity between architecture and space in the area of the port area, while on the Primorsky Boulevard section, the height of the buildings is optimal for the boulevard, not exceeding 21 meters at the highest points. Analysis of the types of paving gave similar results. On the territory of the berth, one type of paving is mainly used, which in no way divides the space. Also, the division between the space intended for the passage of cars and the space for the movement of pedestrians is not indicated in any way.

The **Temporal** analysis helped to determine the period of active use of spaces at different time intervals, as well as in different seasons. Thus, the space of the upper plateau and the Potemkin Stairs turned out to be actively used, both in summer and winter. The same results were obtained for the daytime and evening time intervals. In the warm season, this space is used not only for recreational / tourist purposes but also for organizing mass events/celebrations. While the area of the pier is used mainly in the summer for one-time concerts.

The **Case Study** will help in the future to develop a universal design system for the port territory, both in the Potemkin Ladder zone and in the further territory of the port. The concepts proposed by ZOTOV & CO, as well as COBA, can become the main reference for the creation of sustainable architecture, connected to the typology of the city. It can also become an example for organizing a space that functions throughout all seasons of the year.

PART III - Design





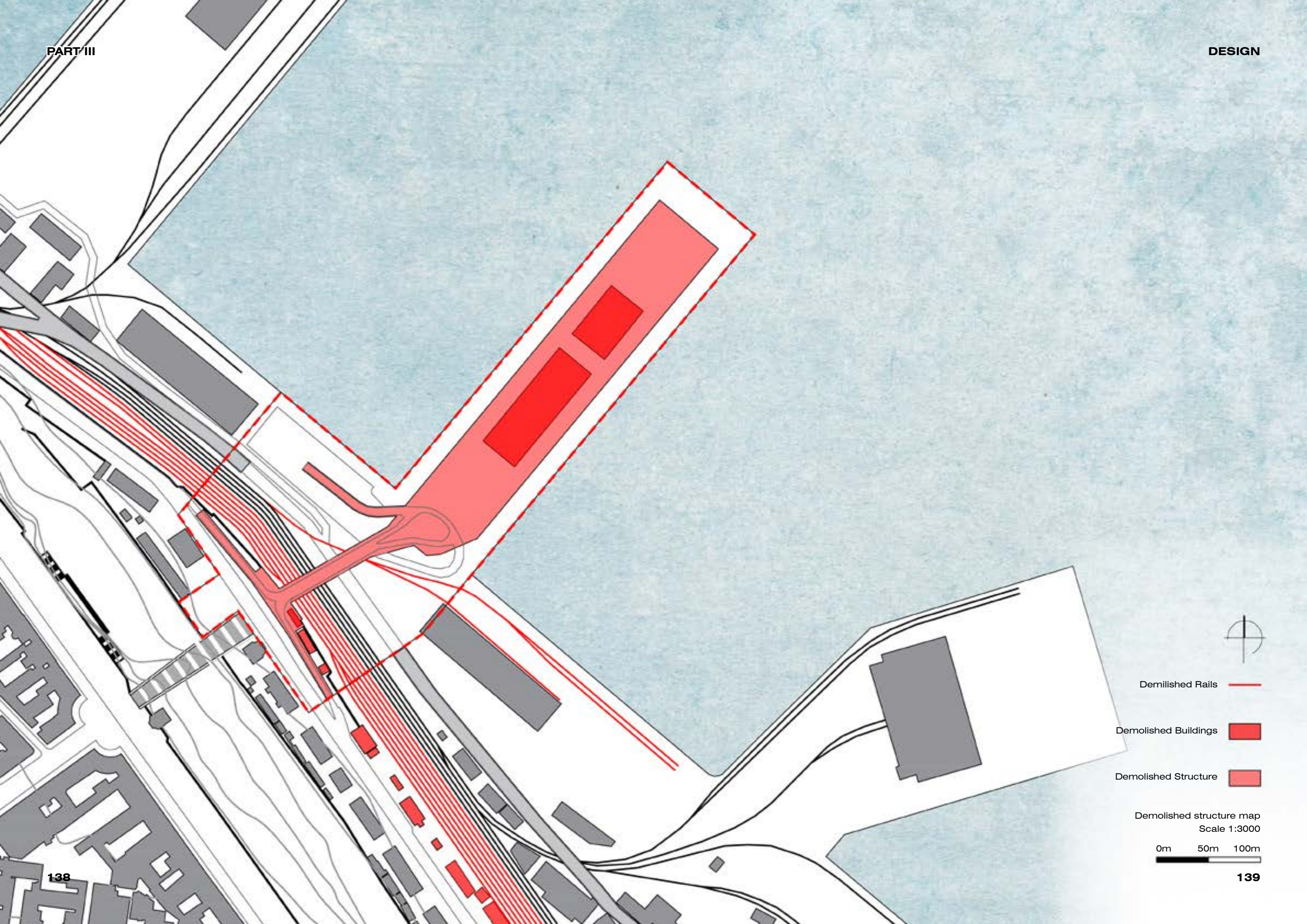
Concept

The main concept of the projected territory, based on the research carried out, is to create several levels of connection, which will contextually reinforce each other, as well as reinforce the symbol of the “sea gate to the city” at the Potemkin Stairs. Under the three levels of communication, it is proposed to create transport/pedestrian communication at the level of the world/city/site. For each individual level of communication, different solutions will be proposed, reinforcing each other and combining into one common axis. The main axis around which the development of the territory will be carried out is the historical axis of the Potemkin Stairs, which sets the typology for the surrounding area.

At the world level of communication, it is proposed to create a new sea terminal, which will be able to serve cruise liners arriving in the city and direct the flow of tourists straight to the main axis of the project.

For the city level of connection, it is proposed to create/renew the currently unused modes of public transport, thus the sleeping areas of the city will be able to get a direct and fast transport connection with the city center.

At the site level, it is proposed to organize the space in such a way that Primorskaya Street is not a segment cutting off the coast from the city center. Thus, pedestrian flows from the historical part of the city will receive further options for movement in the developed area. Thus, this concept can become the starting point for the redevelopment of the port territory, which will ultimately lead to its full joining the city typology.

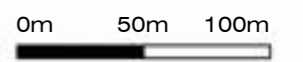


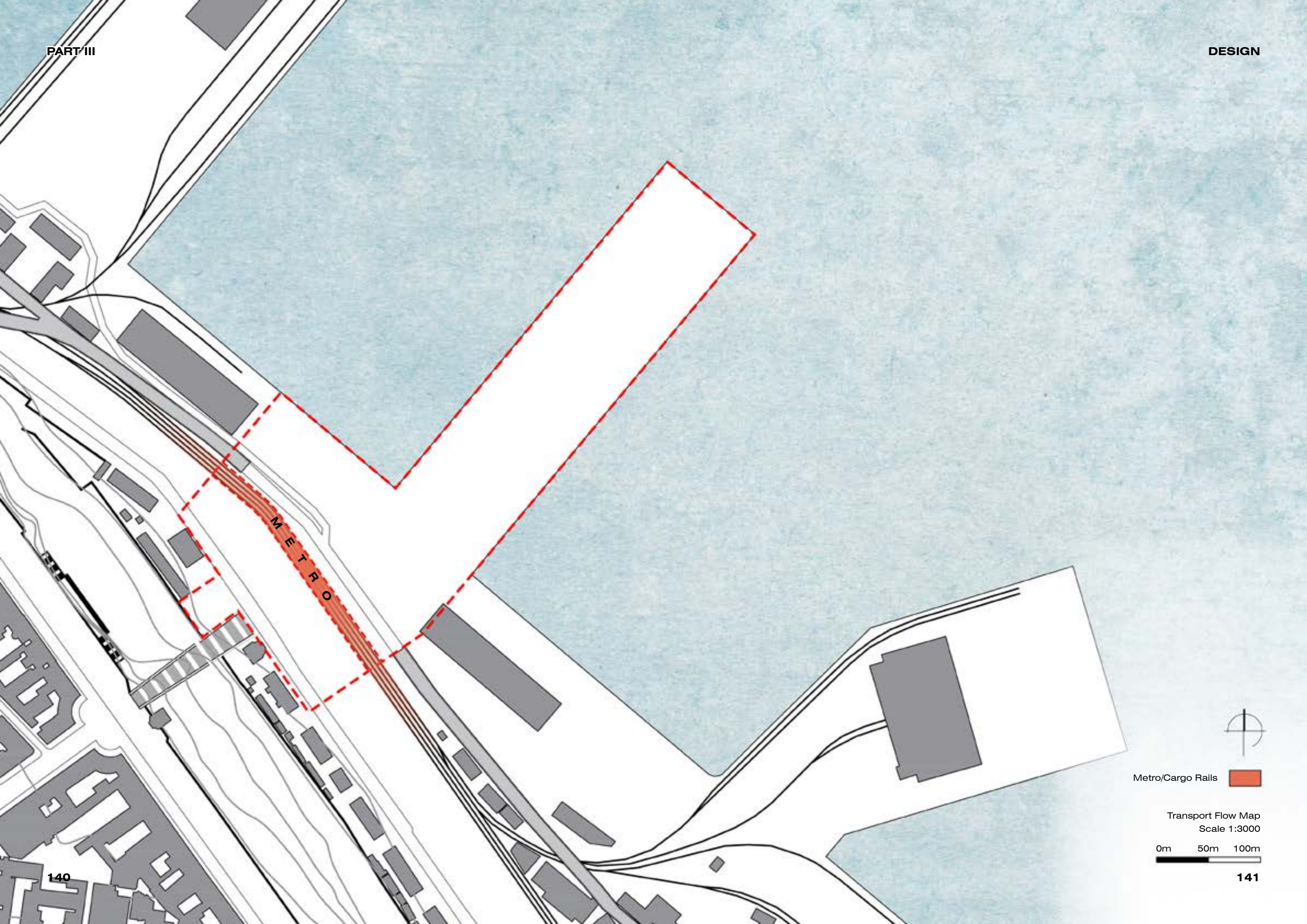
Demilished Rails ———

Demilished Buildings ■■■

Demilished Structure ■■■

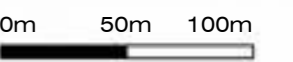
Demilished structure map
Scale 1:3000

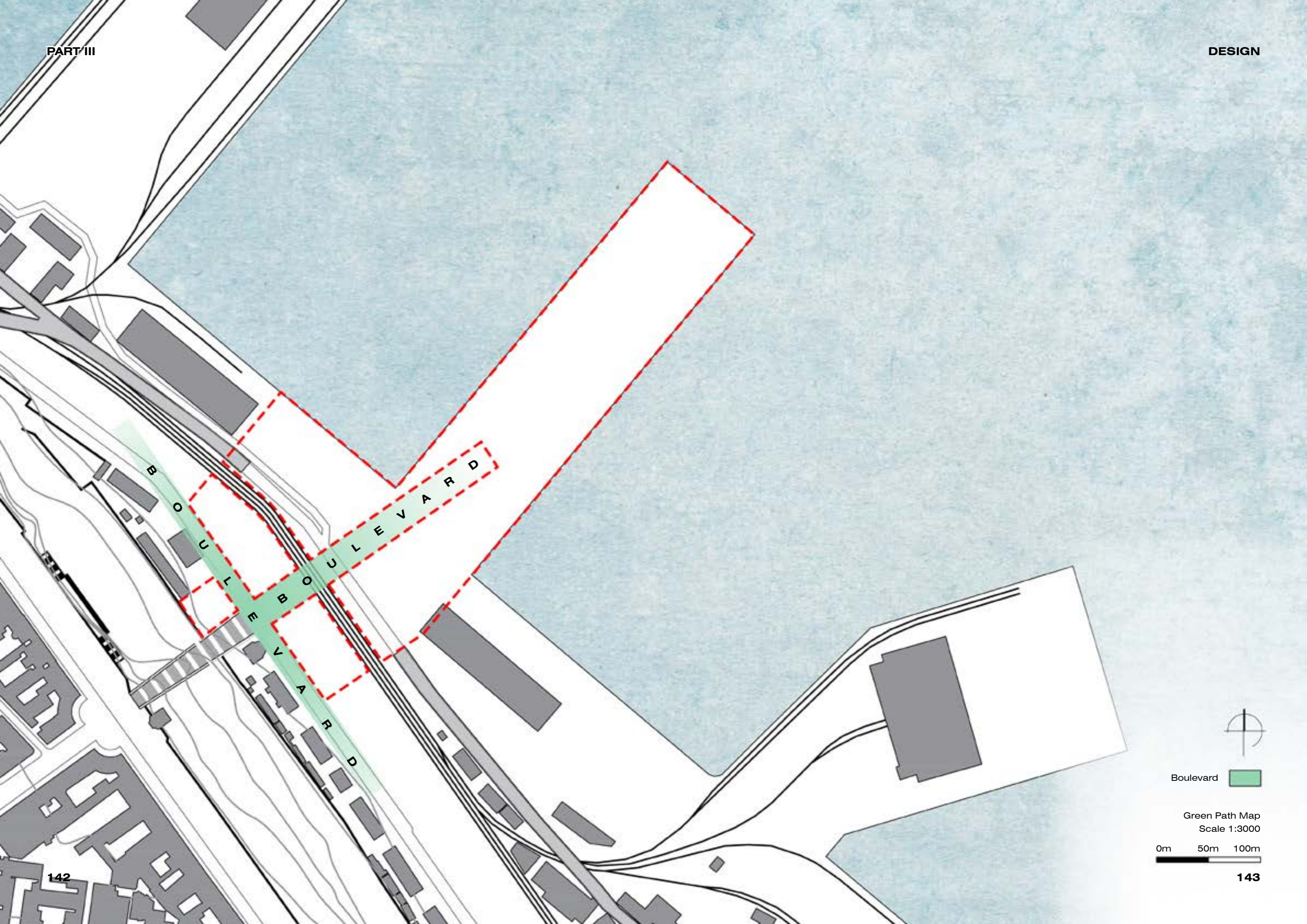




Metro/Cargo Rails 

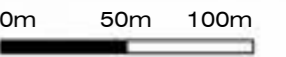
Transport Flow Map
Scale 1:3000

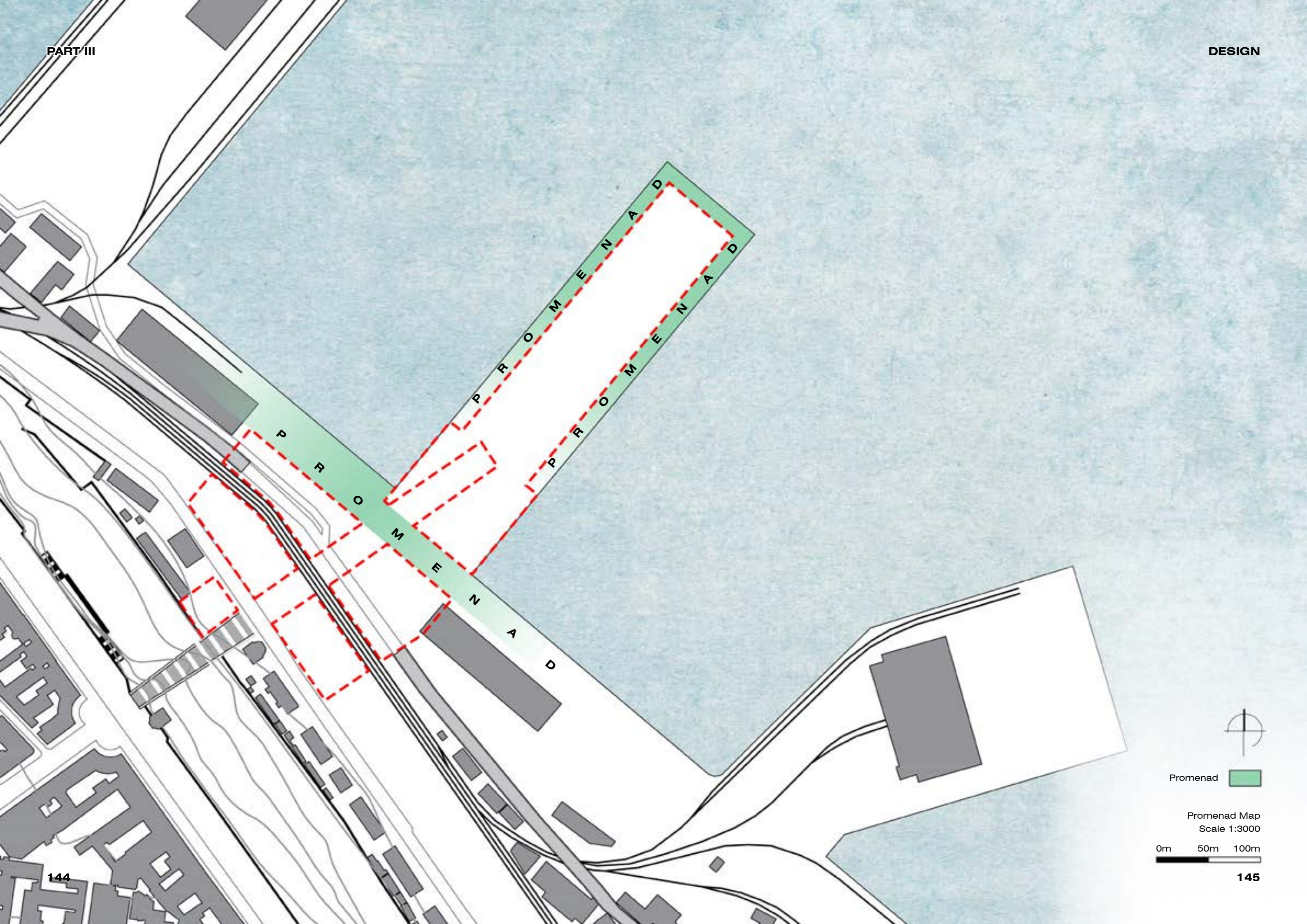




Boulevard 

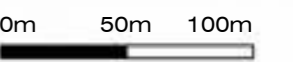
Green Path Map
Scale 1:3000

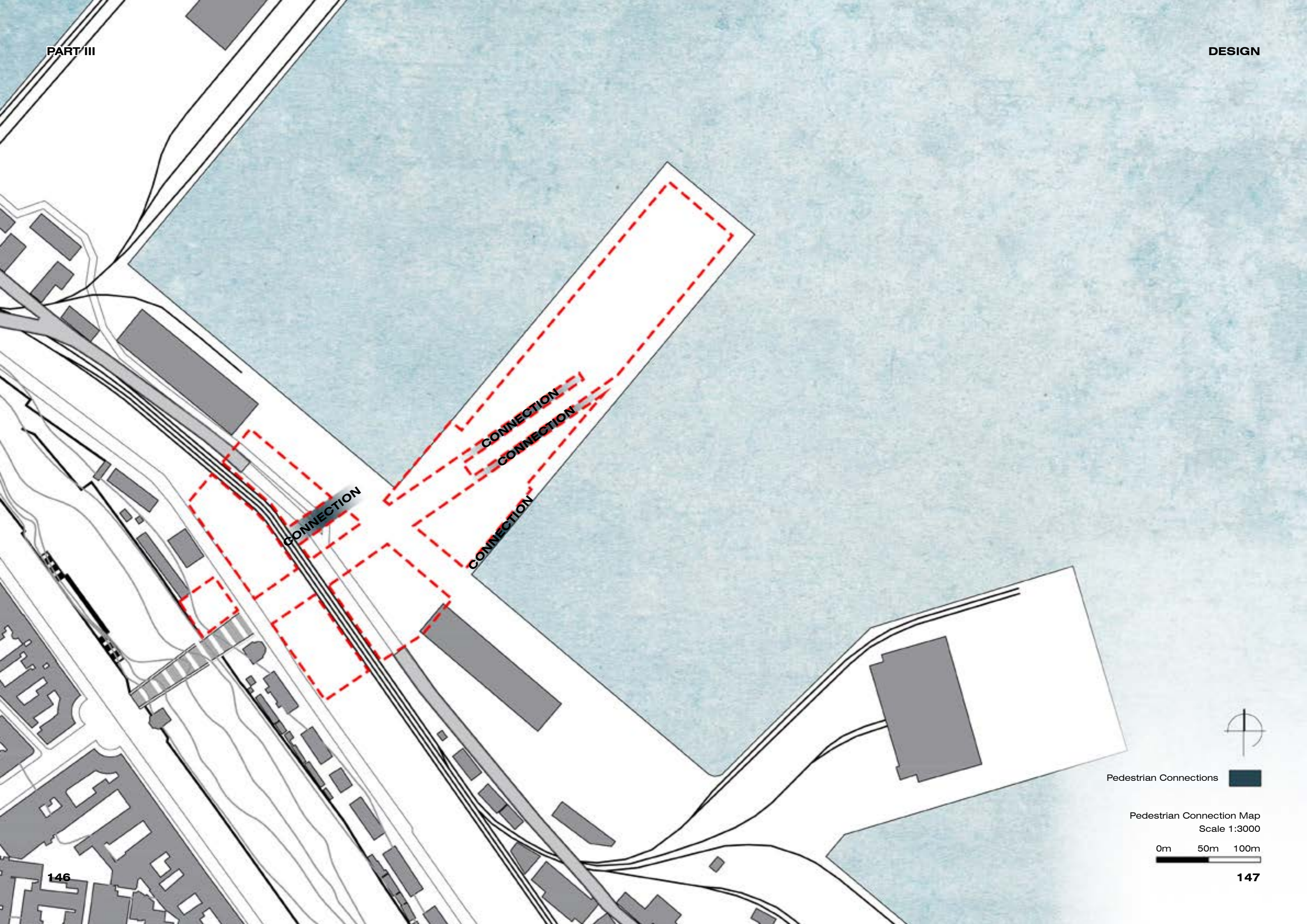





Promenad 

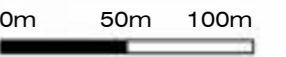
Promenad Map
Scale 1:3000

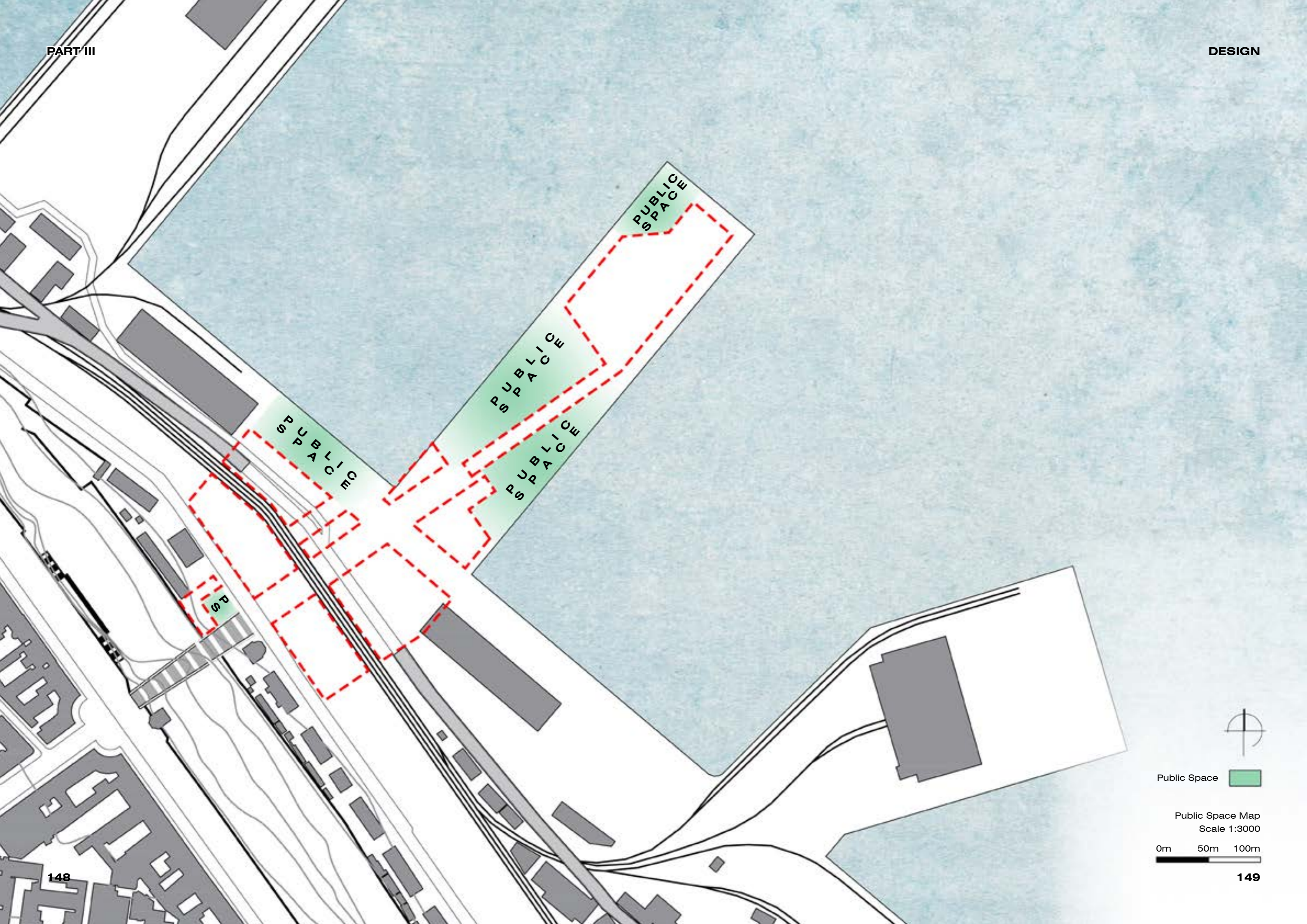




Pedestrian Connections 

Pedestrian Connection Map
Scale 1:3000





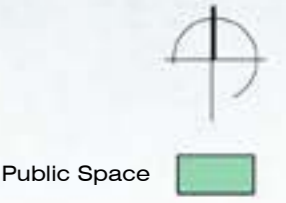
PS

PUBLIC SPACE

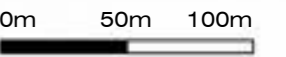
PUBLIC SPACE

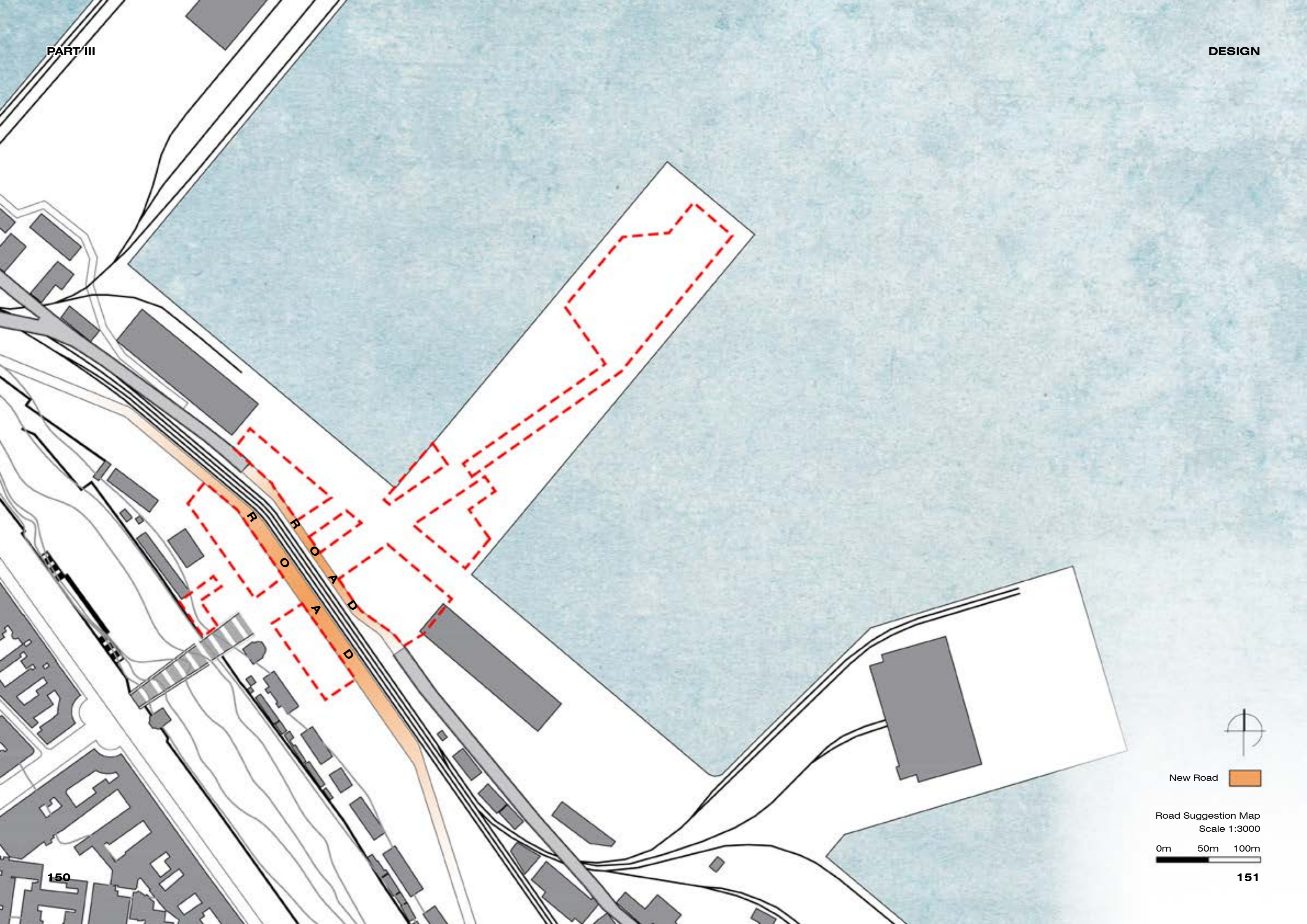
PUBLIC SPACE


PUBLIC SPACE




Public Space Map
Scale 1:3000

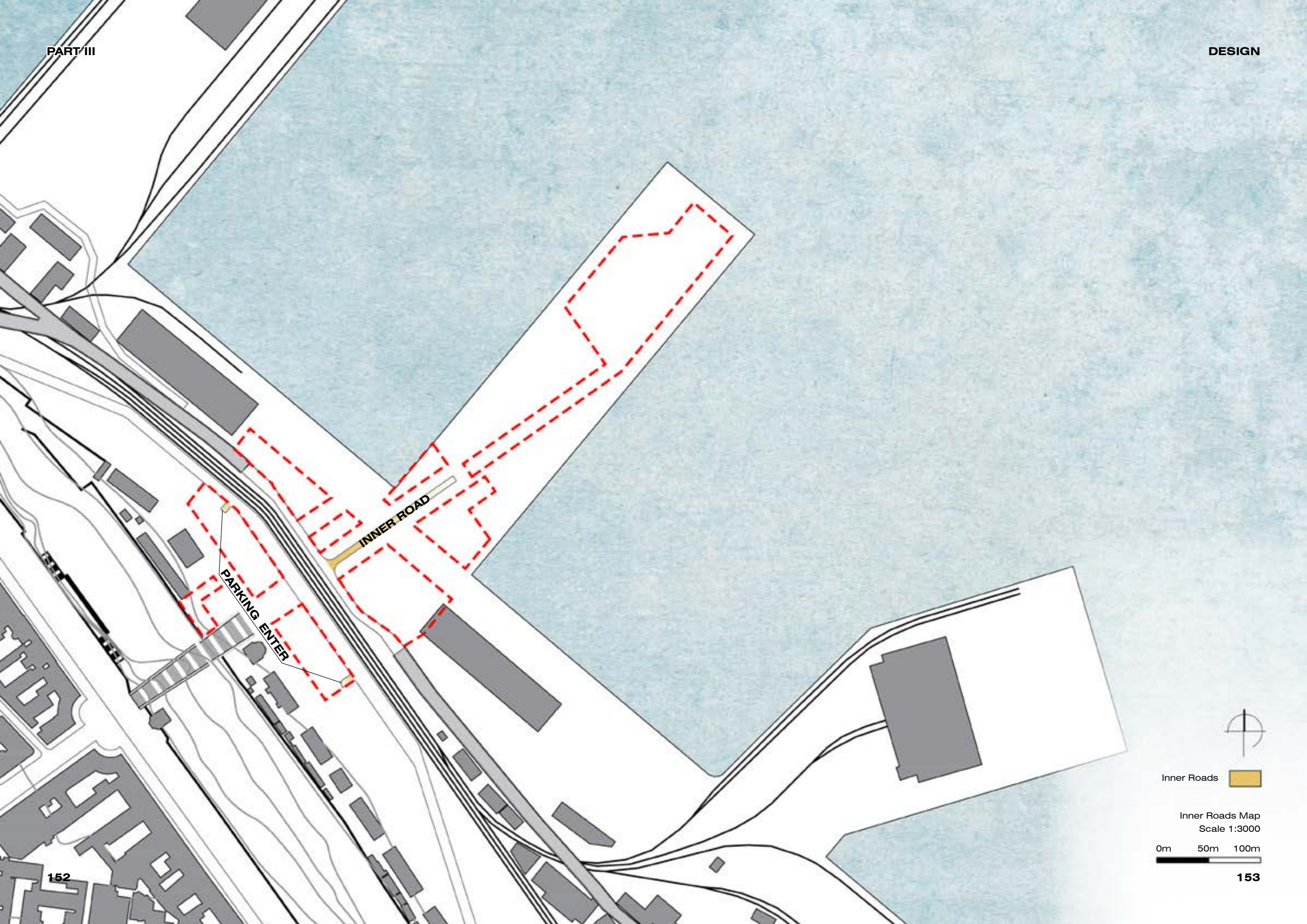




New Road 

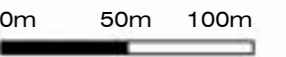
Road Suggestion Map
Scale 1:3000

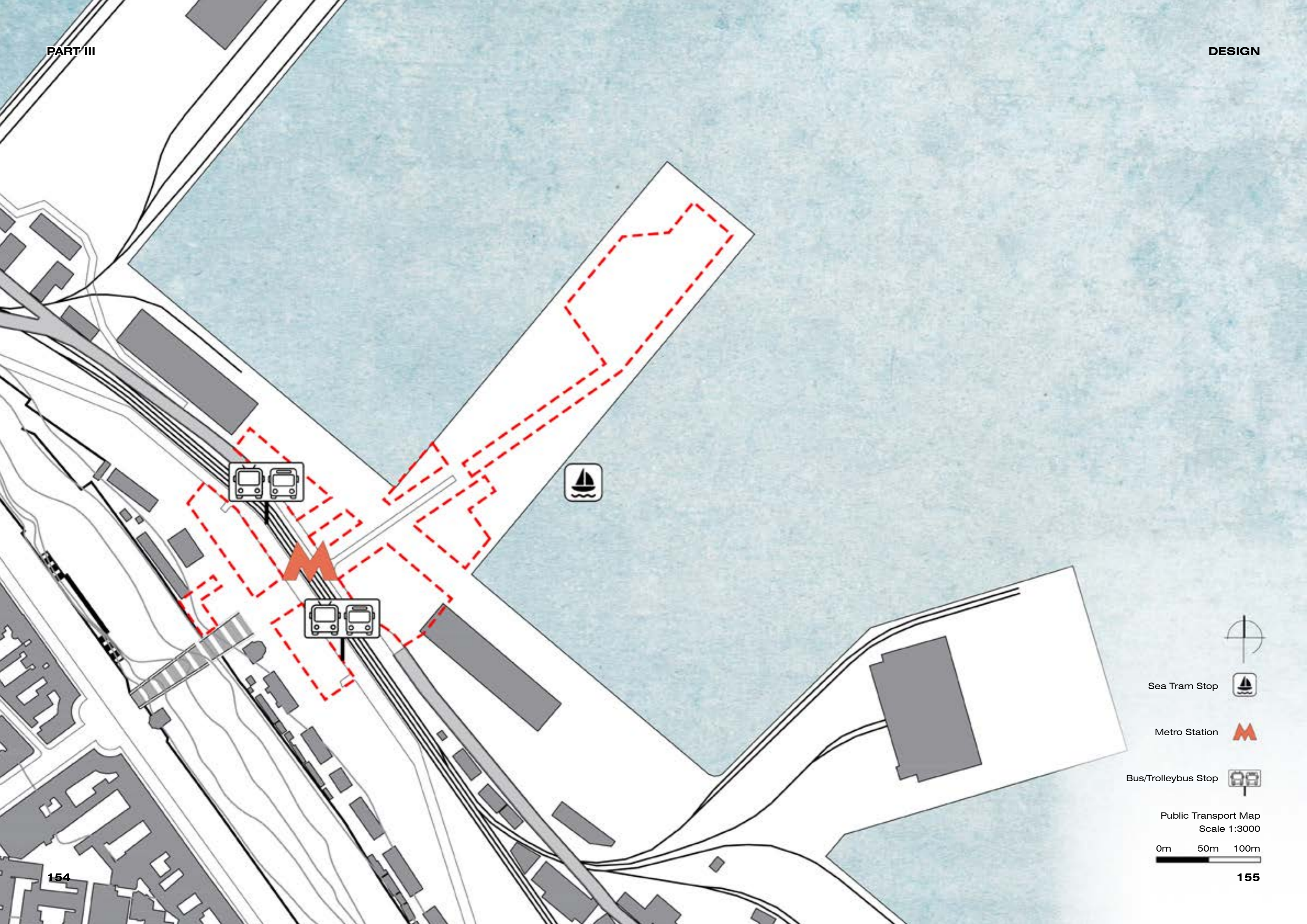
0m 50m 100m 



Inner Roads 

Inner Roads Map
Scale 1:3000





Sea Tram Stop



Metro Station



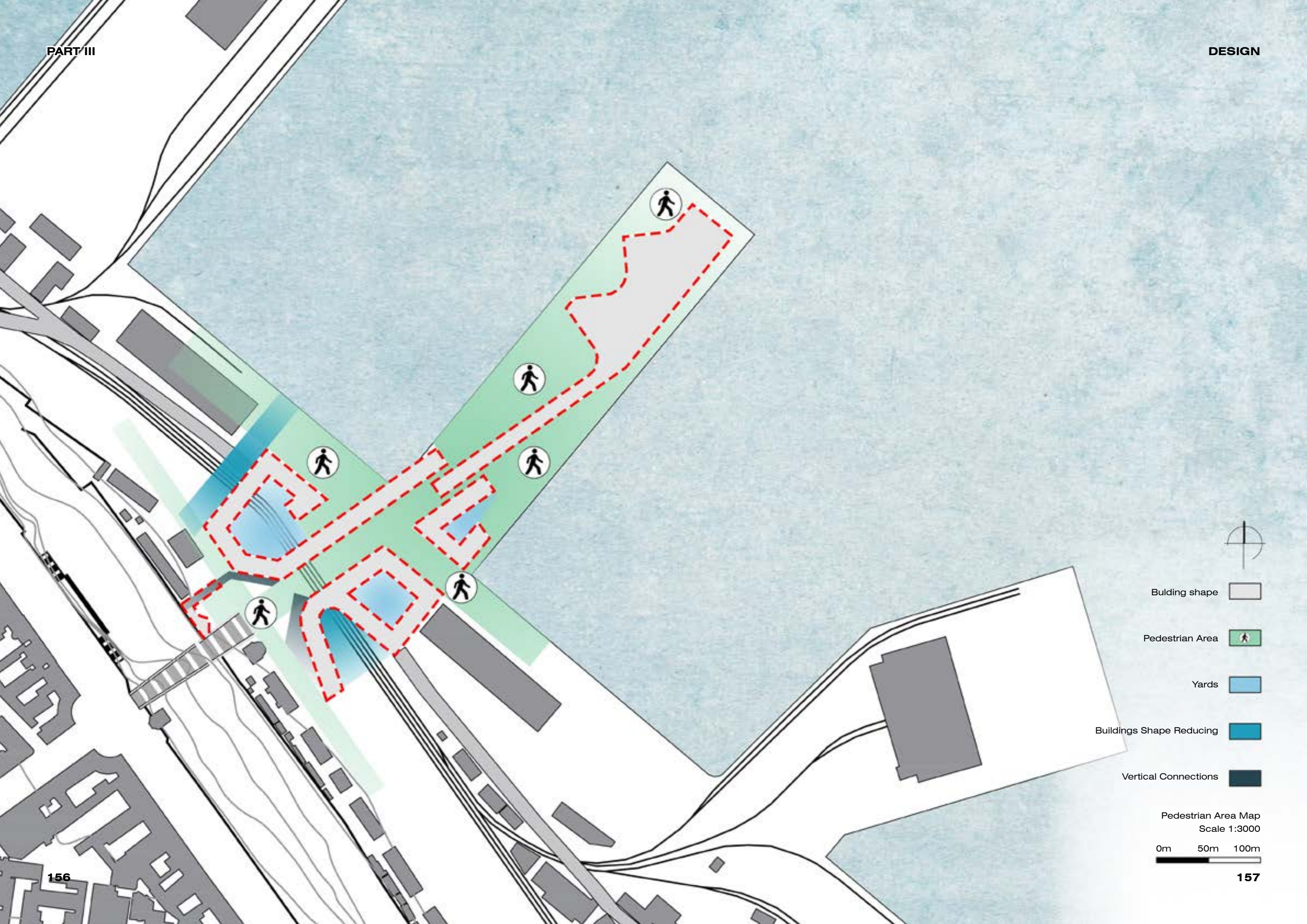
Bus/Trolleybus Stop



Public Transport Map
Scale 1:3000

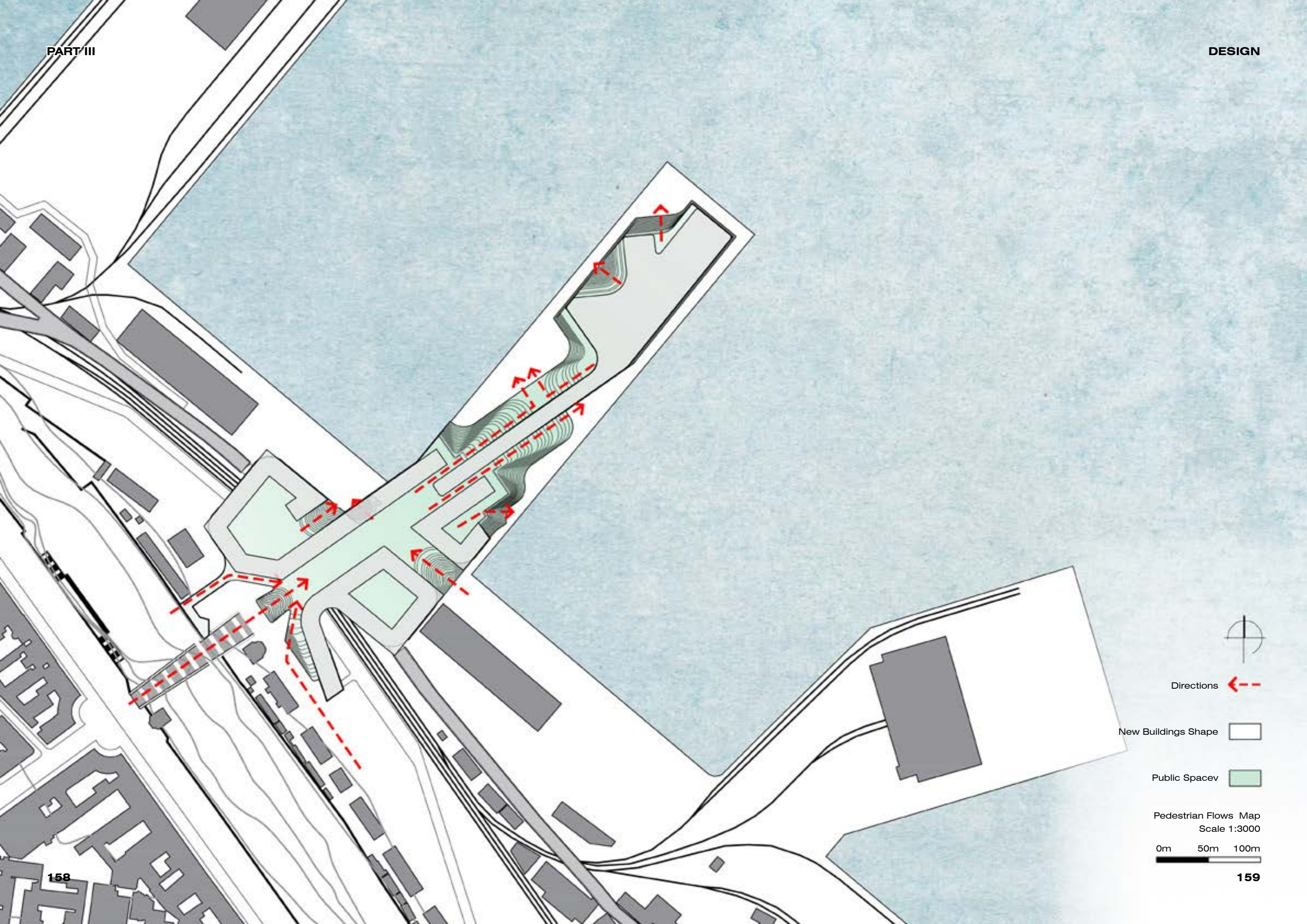
0m 50m 100m





- Building shape
- Pedestrian Area
- Yards
- Buildings Shape Reducing
- Vertical Connections

Pedestrian Area Map
Scale 1:3000
0m 50m 100m




Directions 

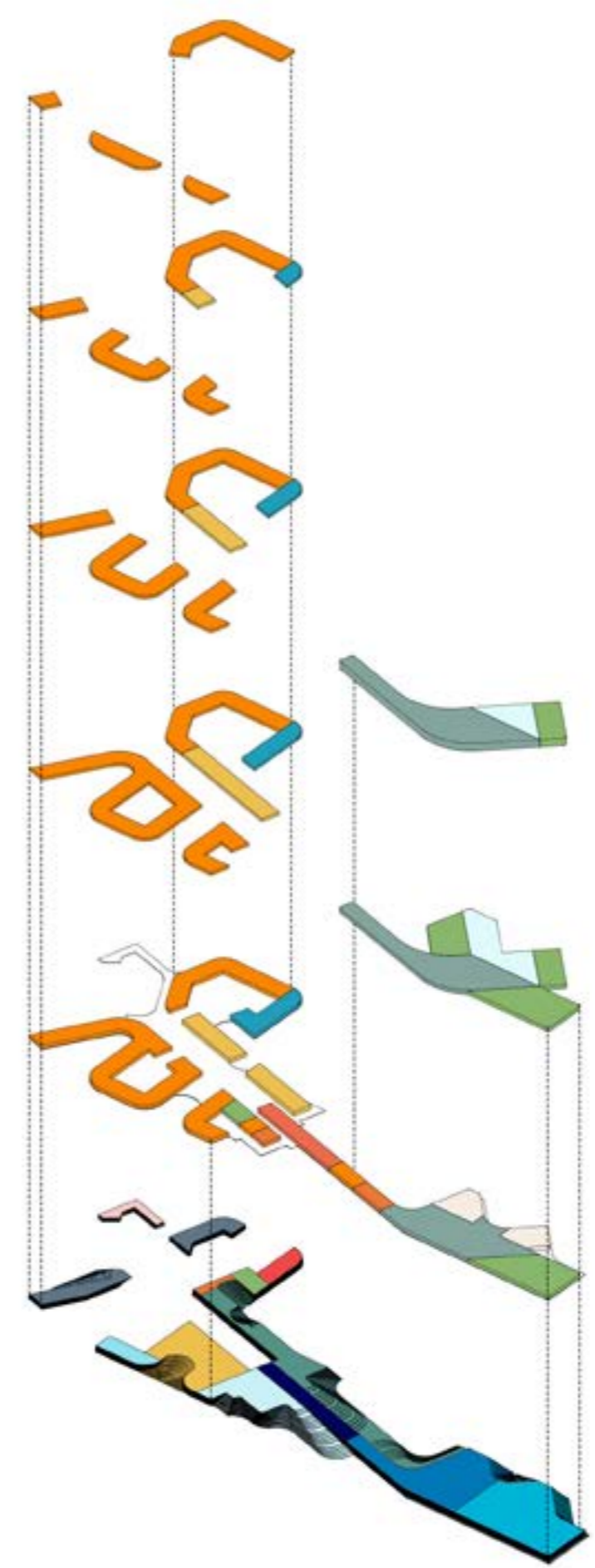
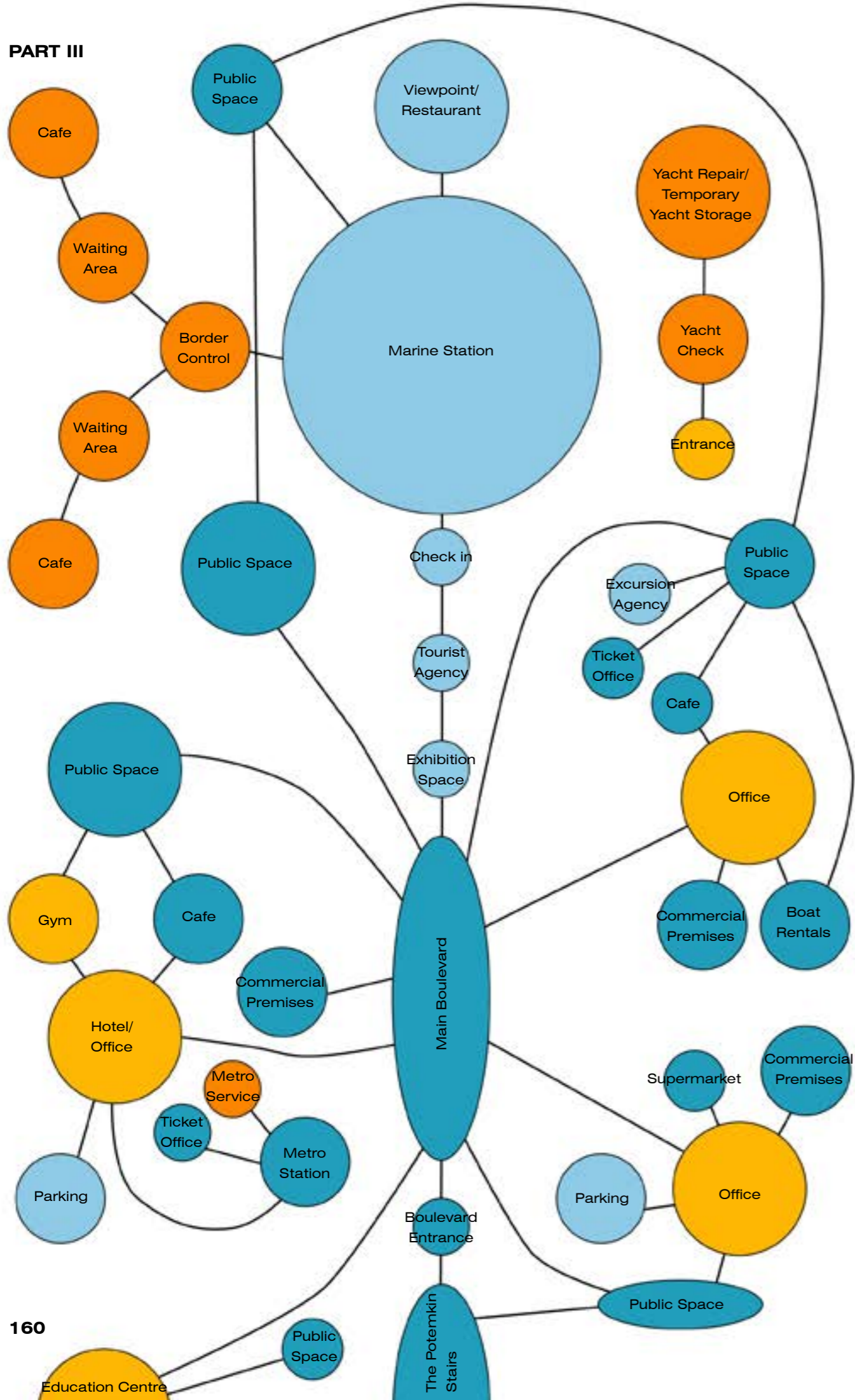
New Buildings Shape 

Public Space 

Pedestrian Flows Map
Scale 1:3000

0m 50m 100m 

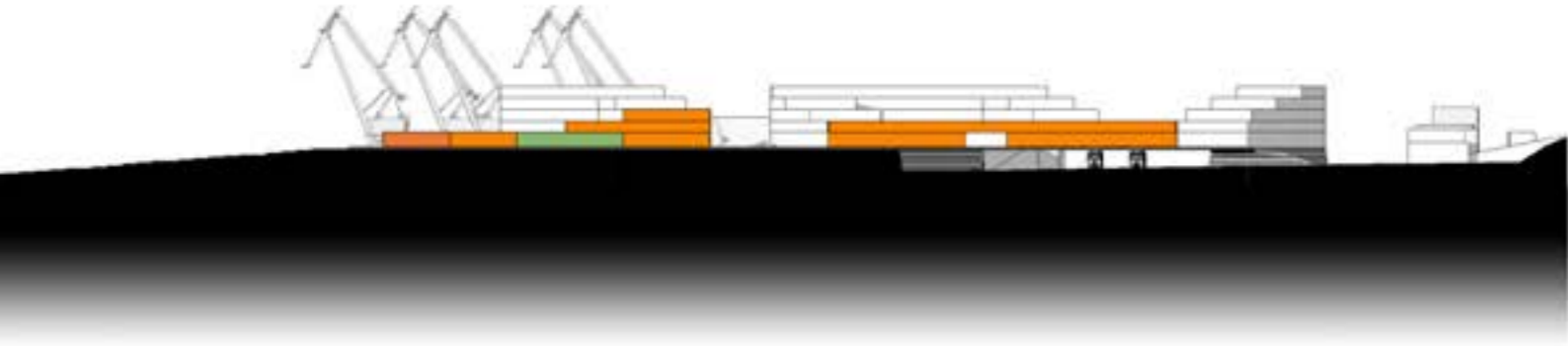
PART III



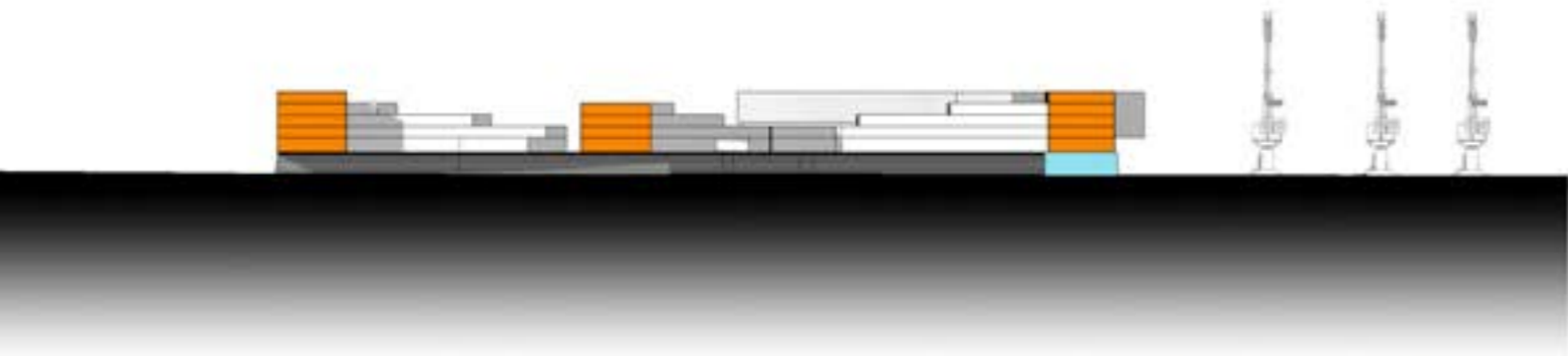
- Offices
- Commercial
- Hotel
- Gym
- Restaurant
- Ticket Office
- Parking
- Supermarket
- Entrance to the Yacht Club
- Yacht Check
- Yacht Repair
- Boat Rental
- Education Centre
- Technical Rooms
- Border Control
- Waiting Area
- Exhibition Space
- Marine Station Main Hall

PART III

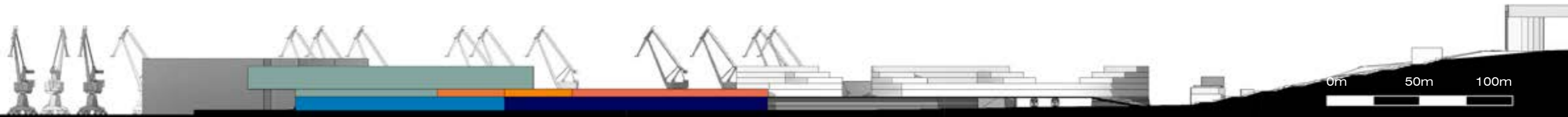
Section A-A
Scale 1:2000




Section B-B
Scale 1:2000

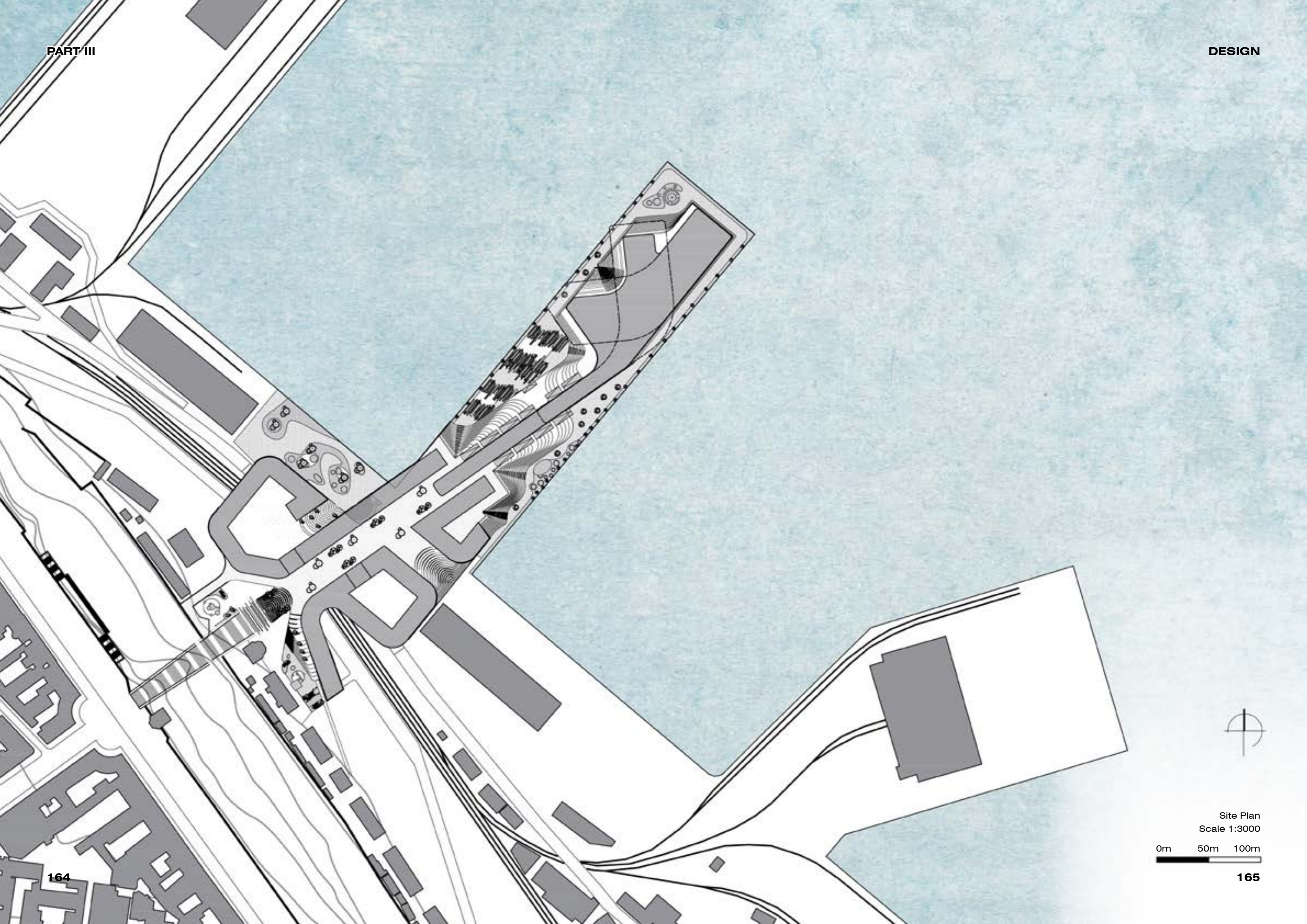


Section C-C
Scale 1:2000



DESIGN

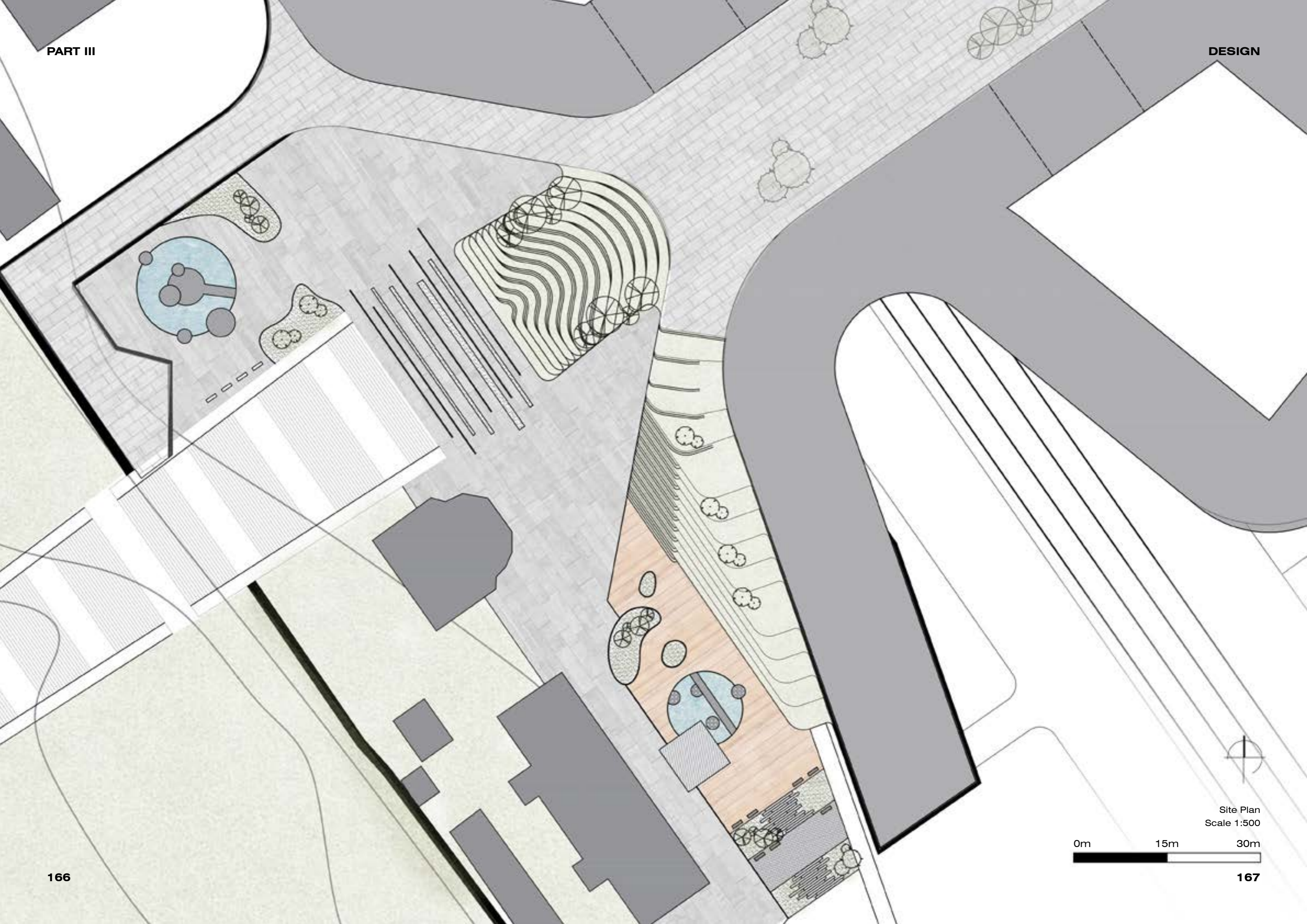
- Offices 
- Restaurant 
- Ticket Office 
- Supermarket 
- Marine Station Main Hall 
- Ticket Office 
- Exhibition Space 
- Yacht Check 
- Entrance to the Yacht Club 

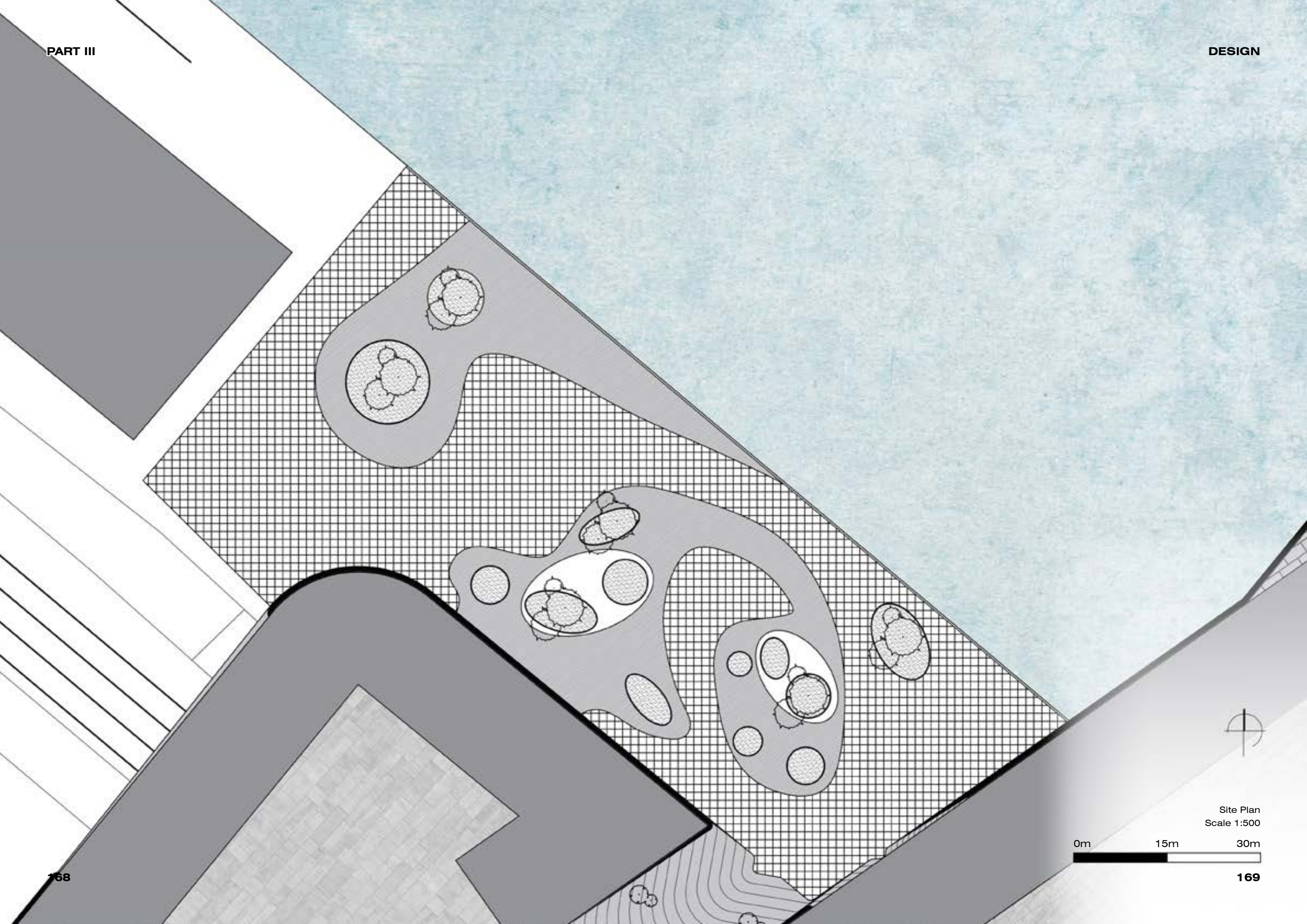


Site Plan
Scale 1:3000

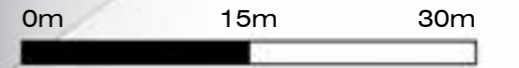
0m 50m 100m

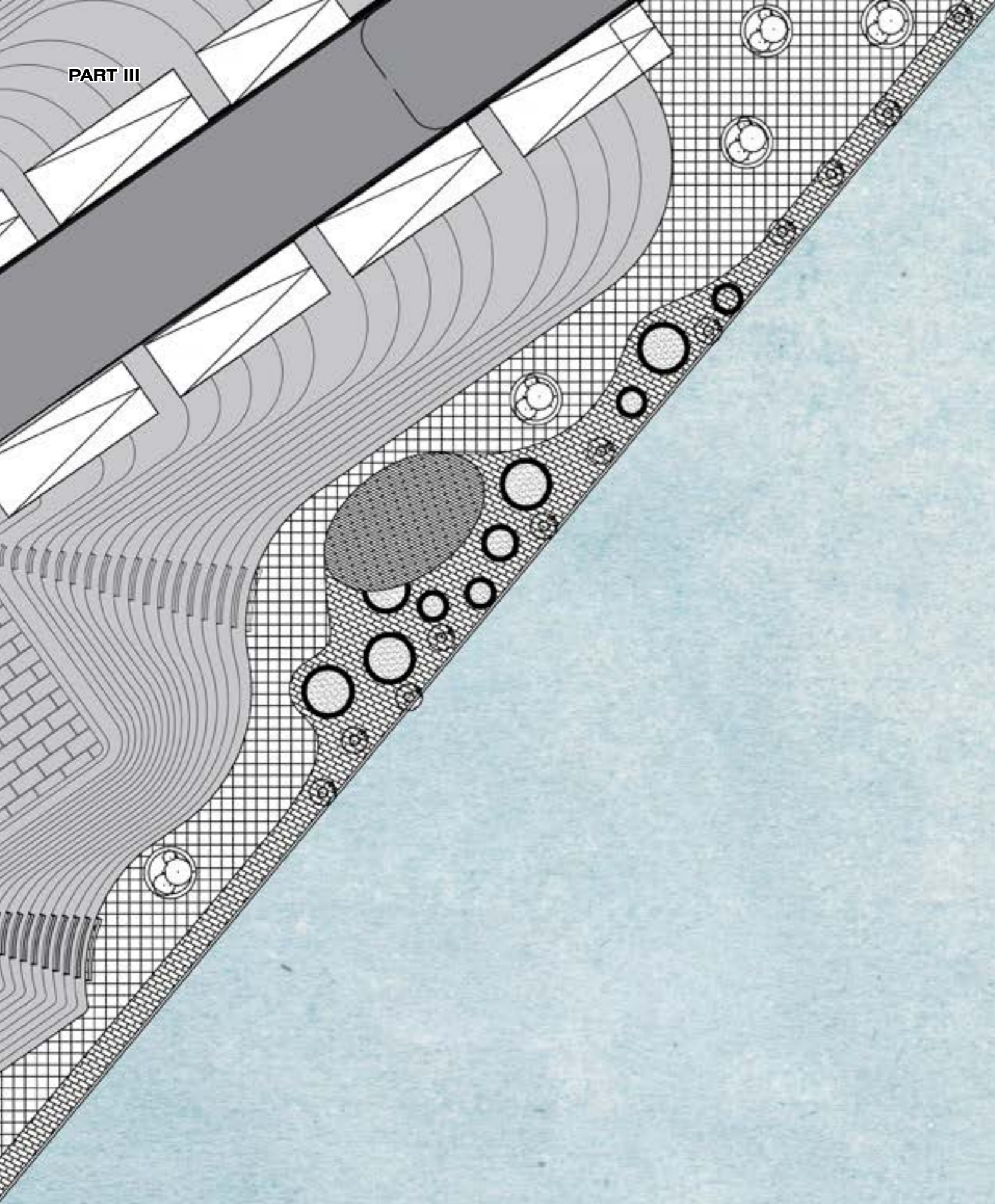




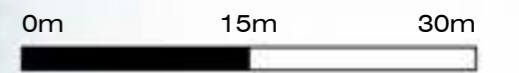


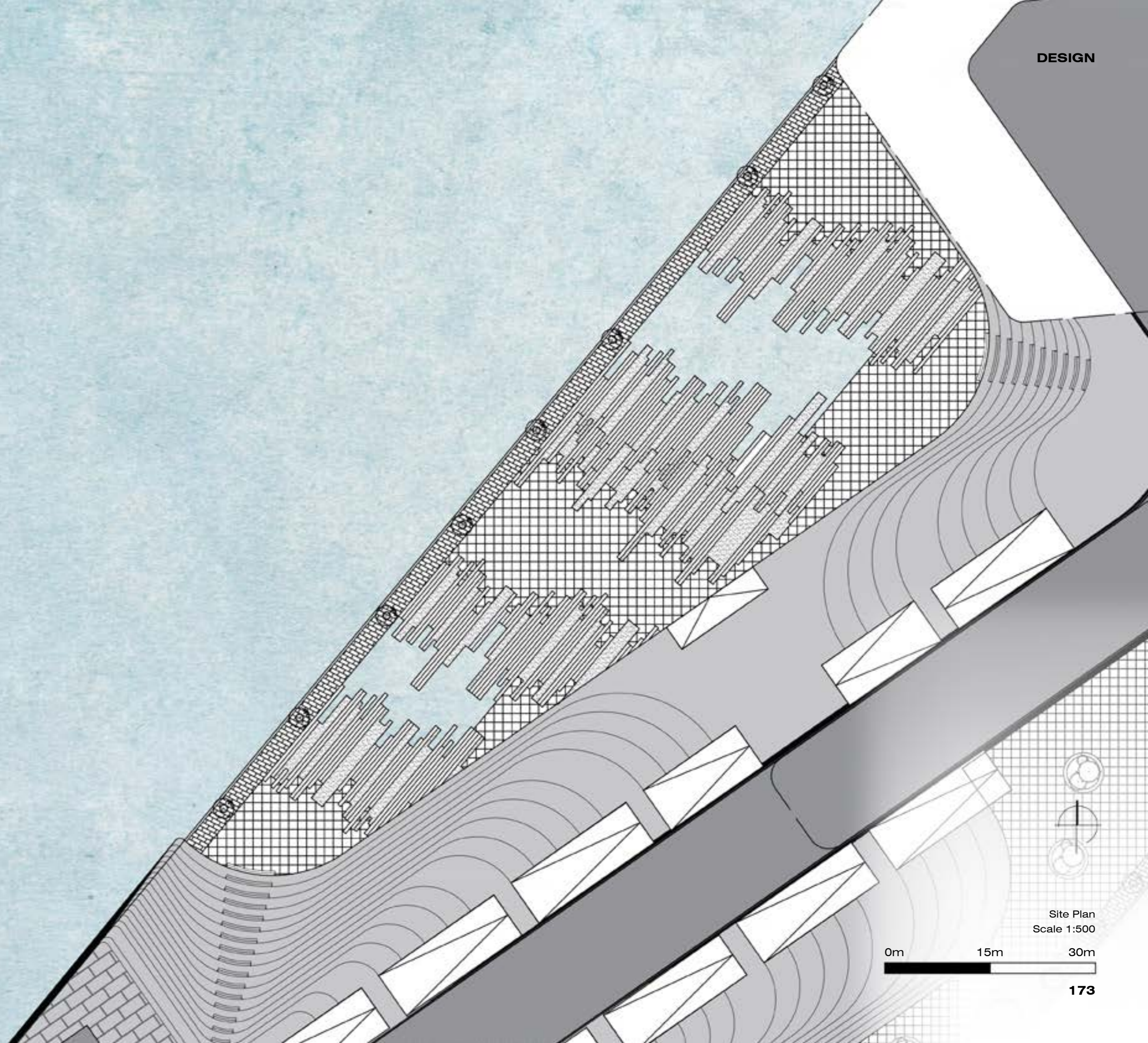
Site Plan
Scale 1:500



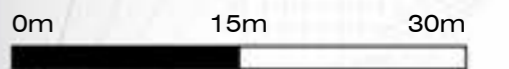


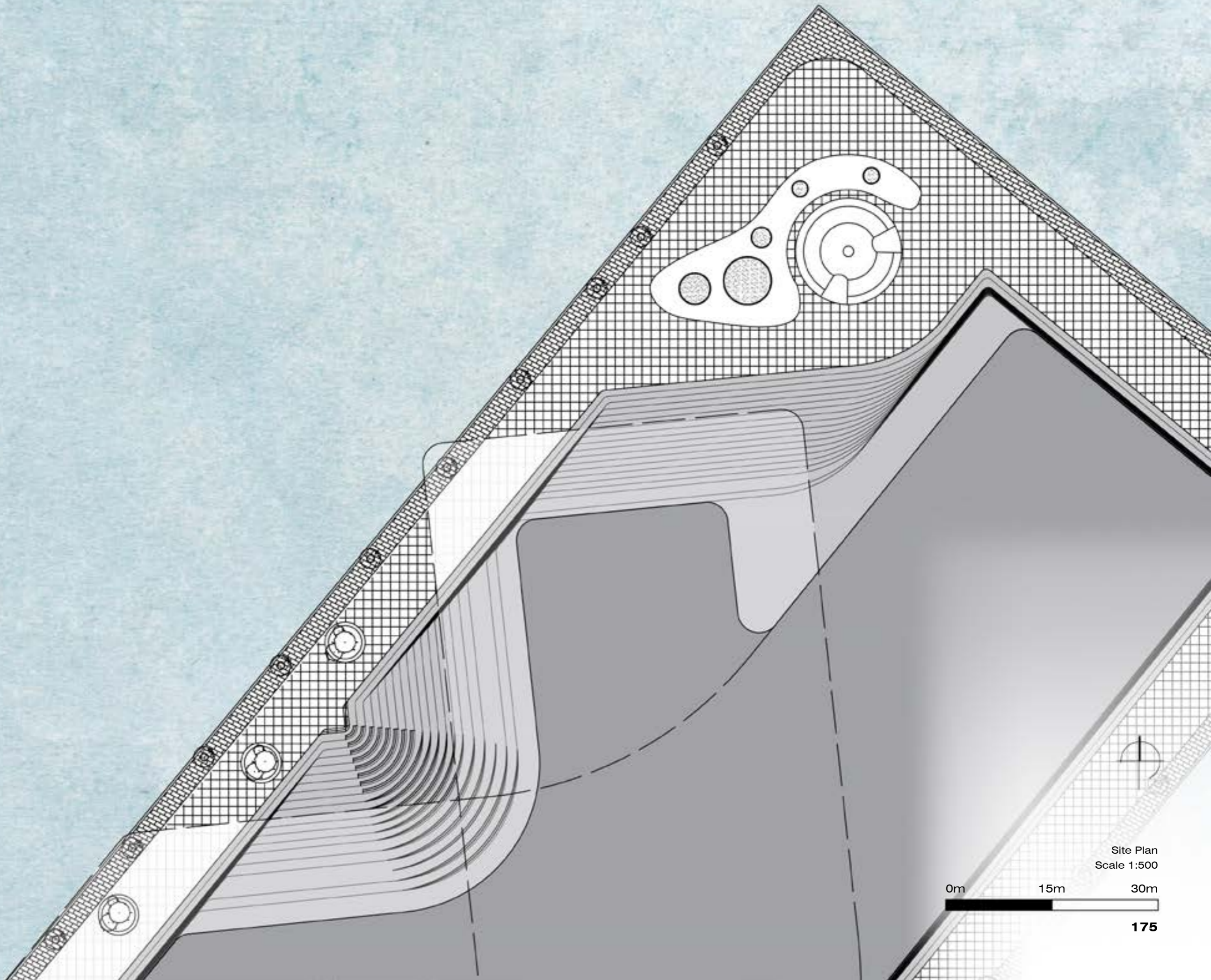
Site Plan
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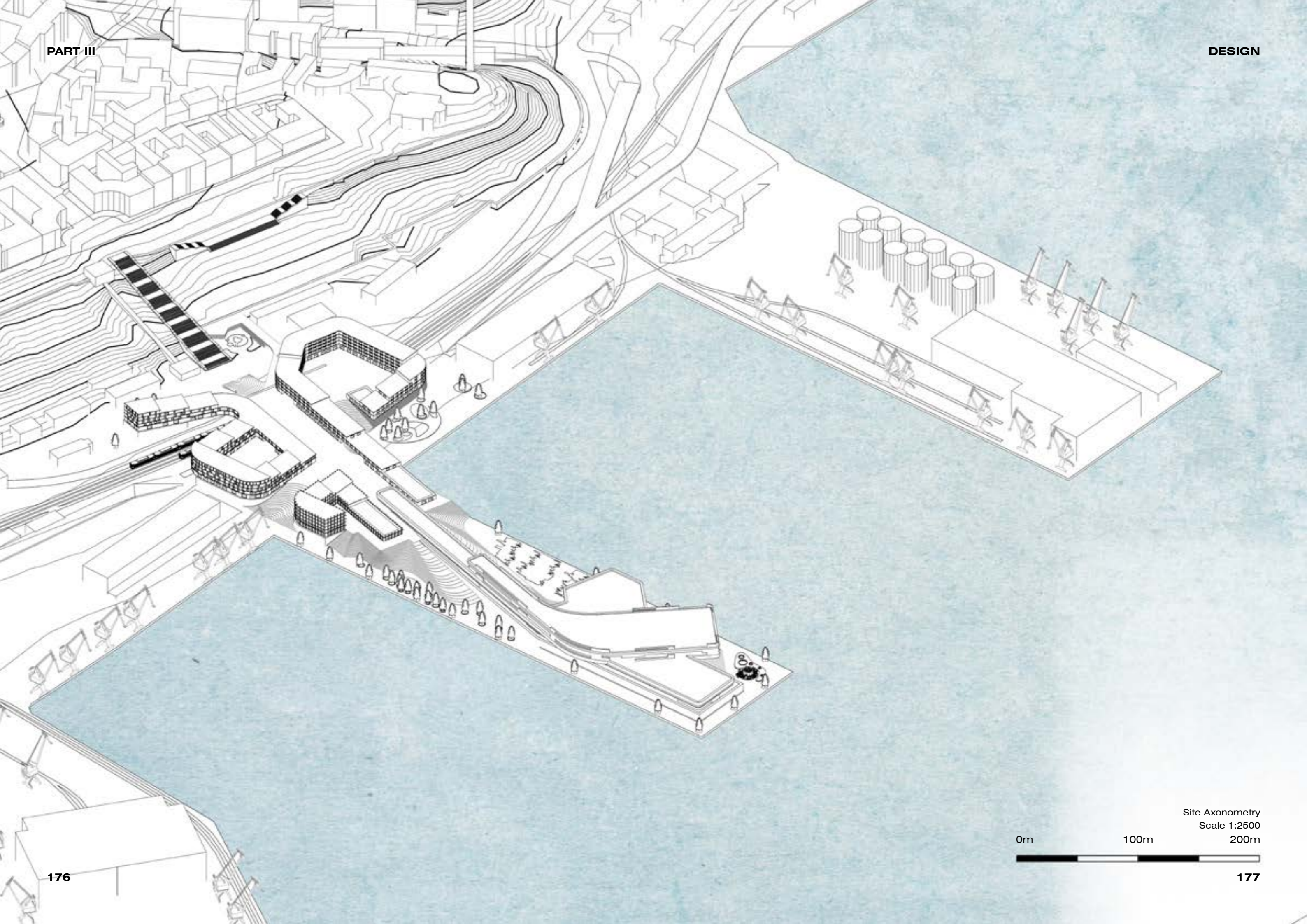
Site Plan
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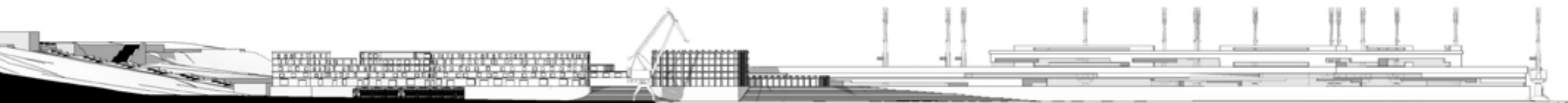


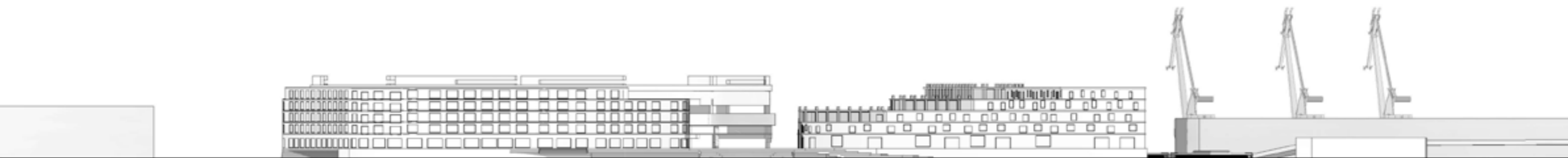


Site Plan
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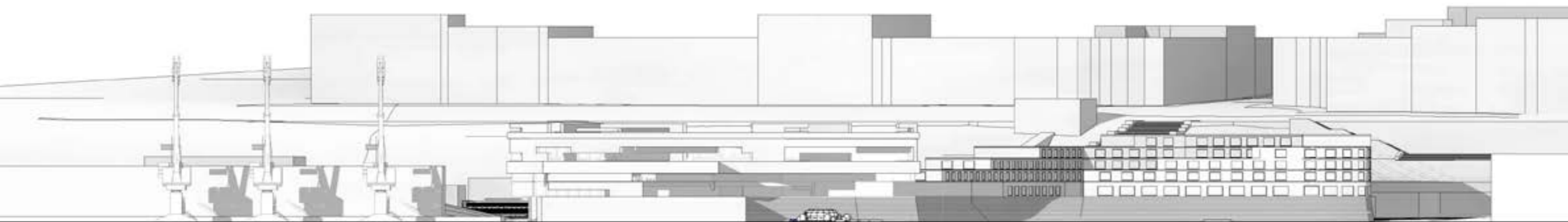
0m 15m 30m

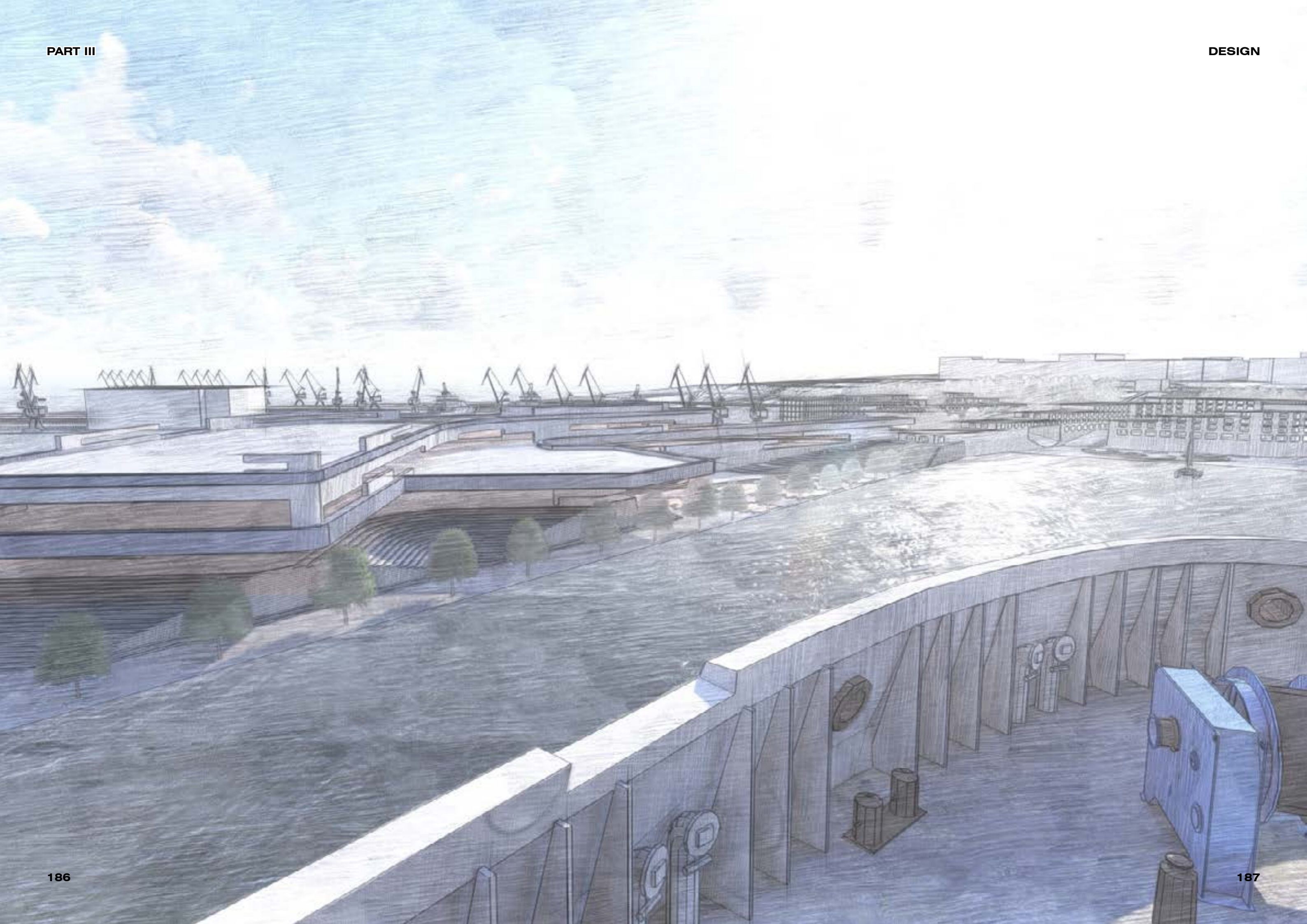


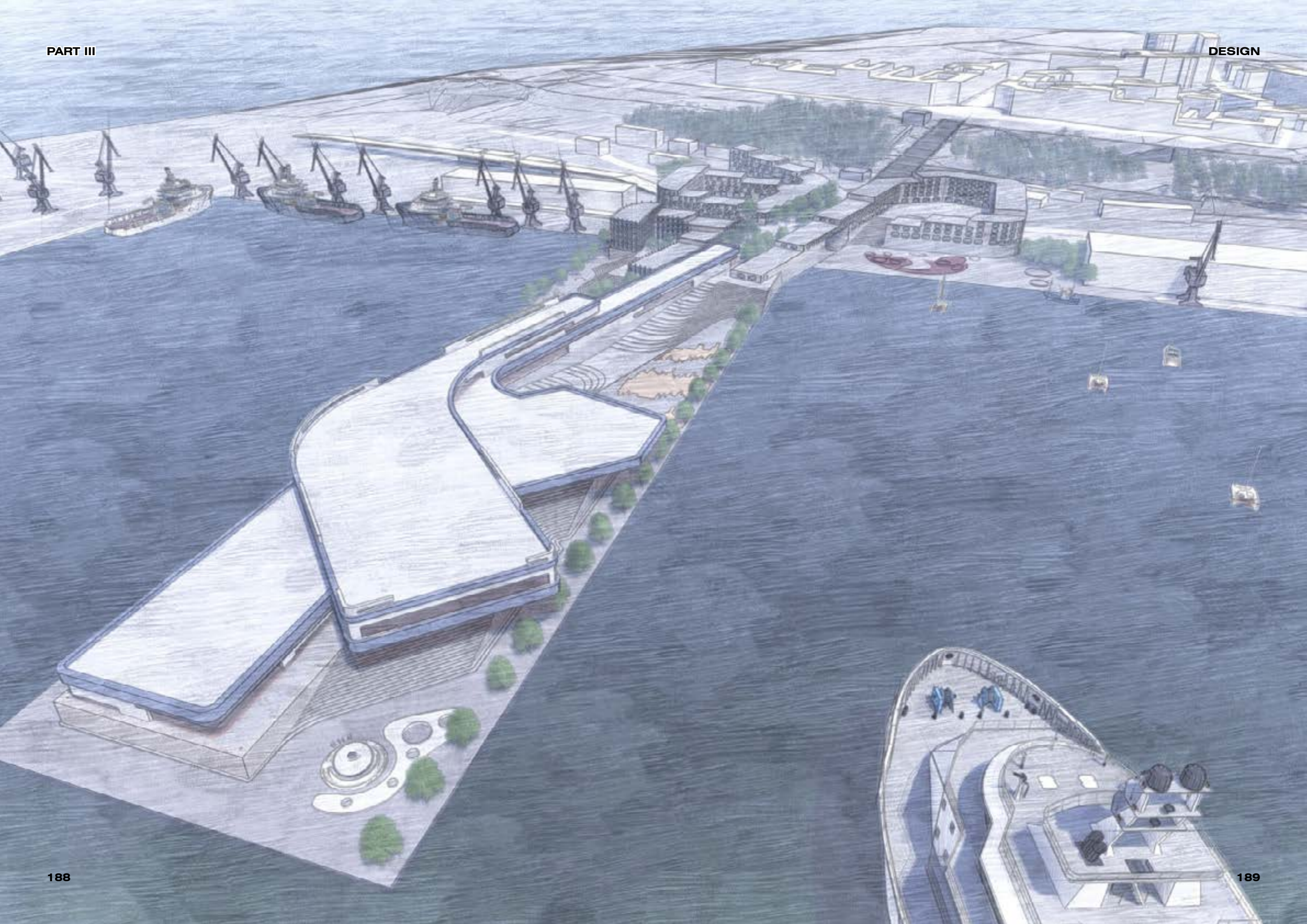










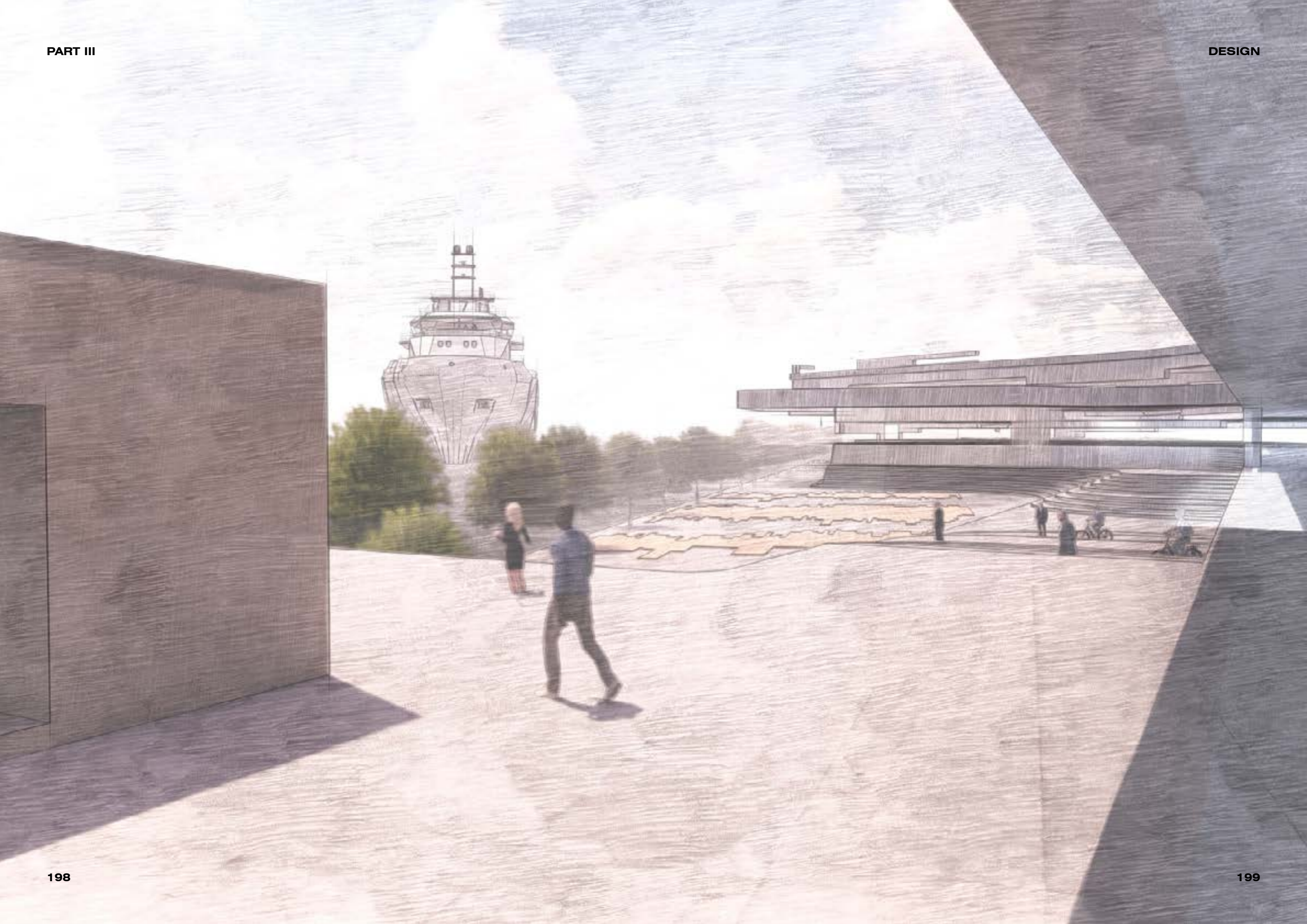






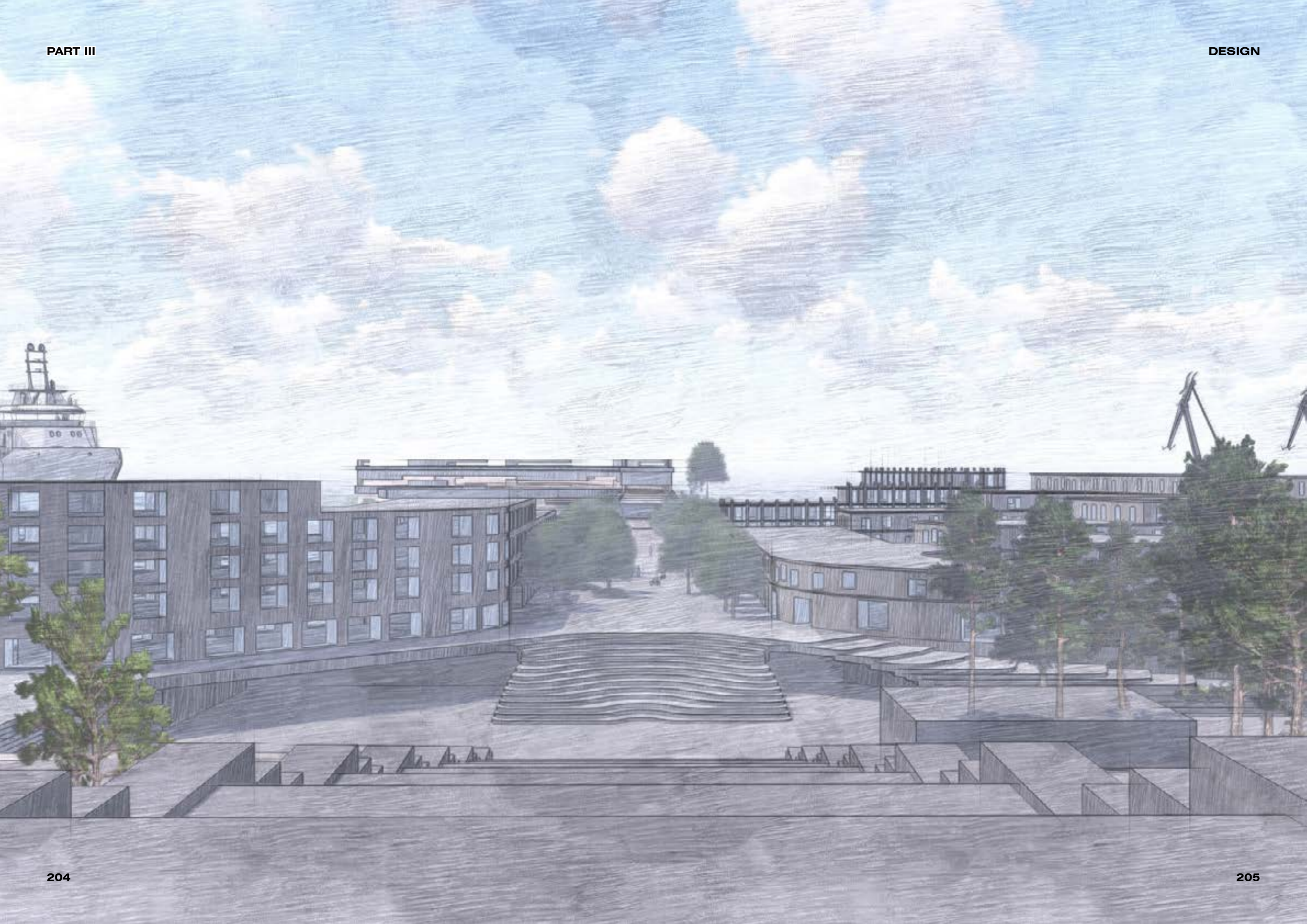




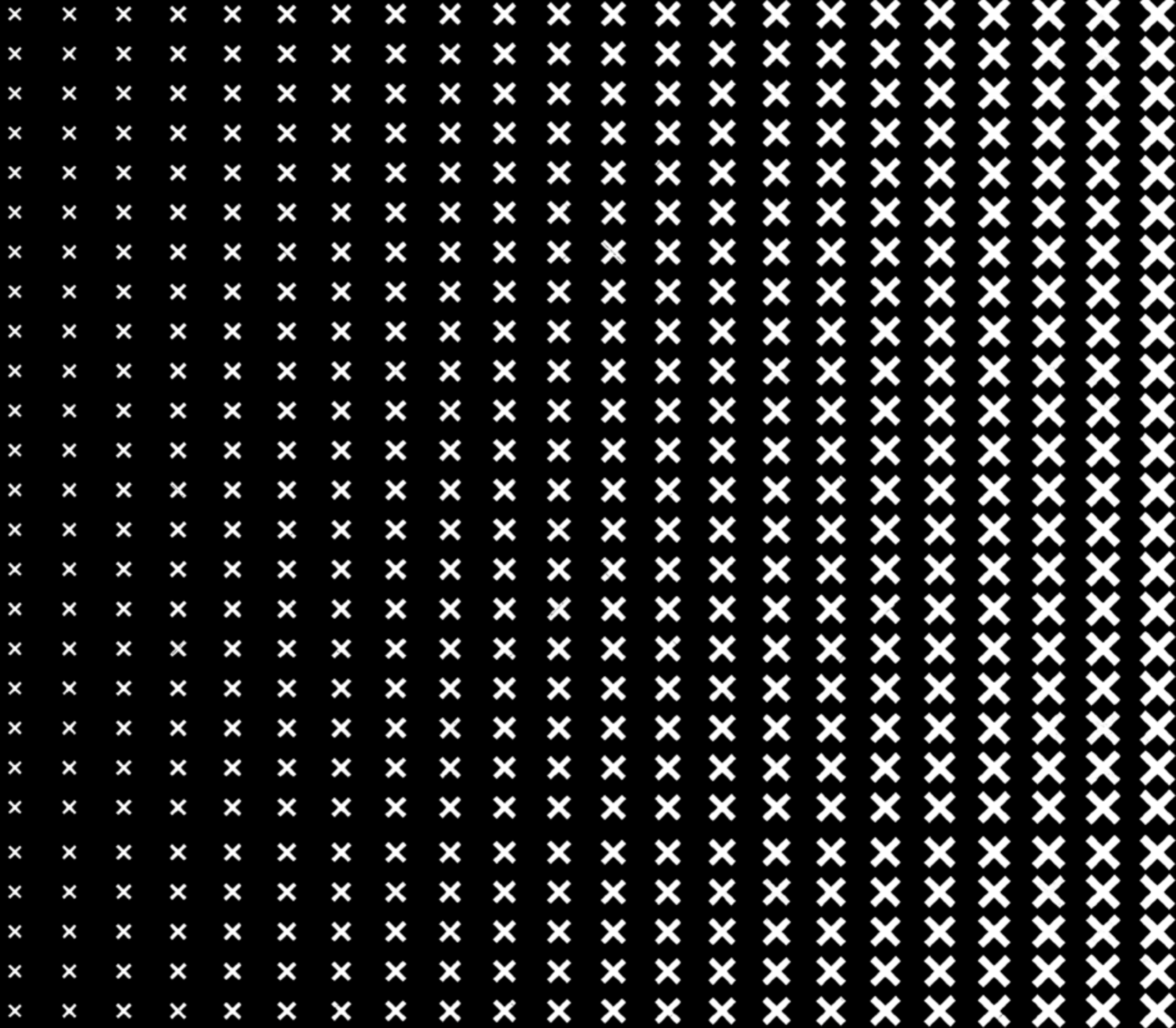








PART IV - Details



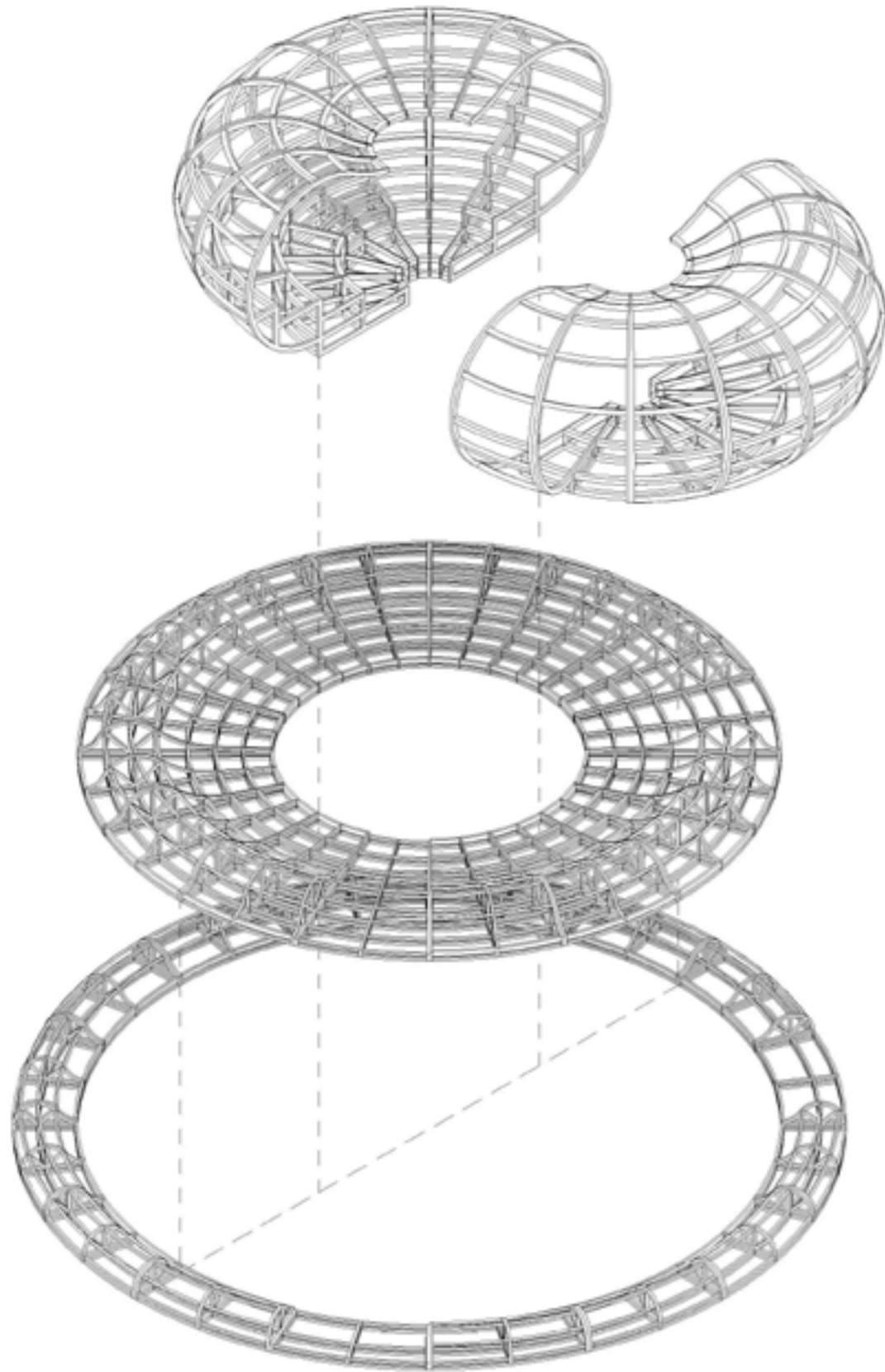


STREET CINEMA/ PUBLIC SPACE

For the subject «Architectural Details» we were asked to develop a detailed drawing of a part of the project (detail) that could reflect the whole idea/concept and convey the atmosphere of the project. The main focus of attention in this work was directed to the aesthetic part of the structure, however, the constructive part was also schematically solved in this work.

For this work, like a detail, I've chosen and designed a street cinema/public space. This structure can be disassembled and transferred to absolutely any part of the city. This design has compact dimensions and can act as an interior architectural form, as well as an exterior one.





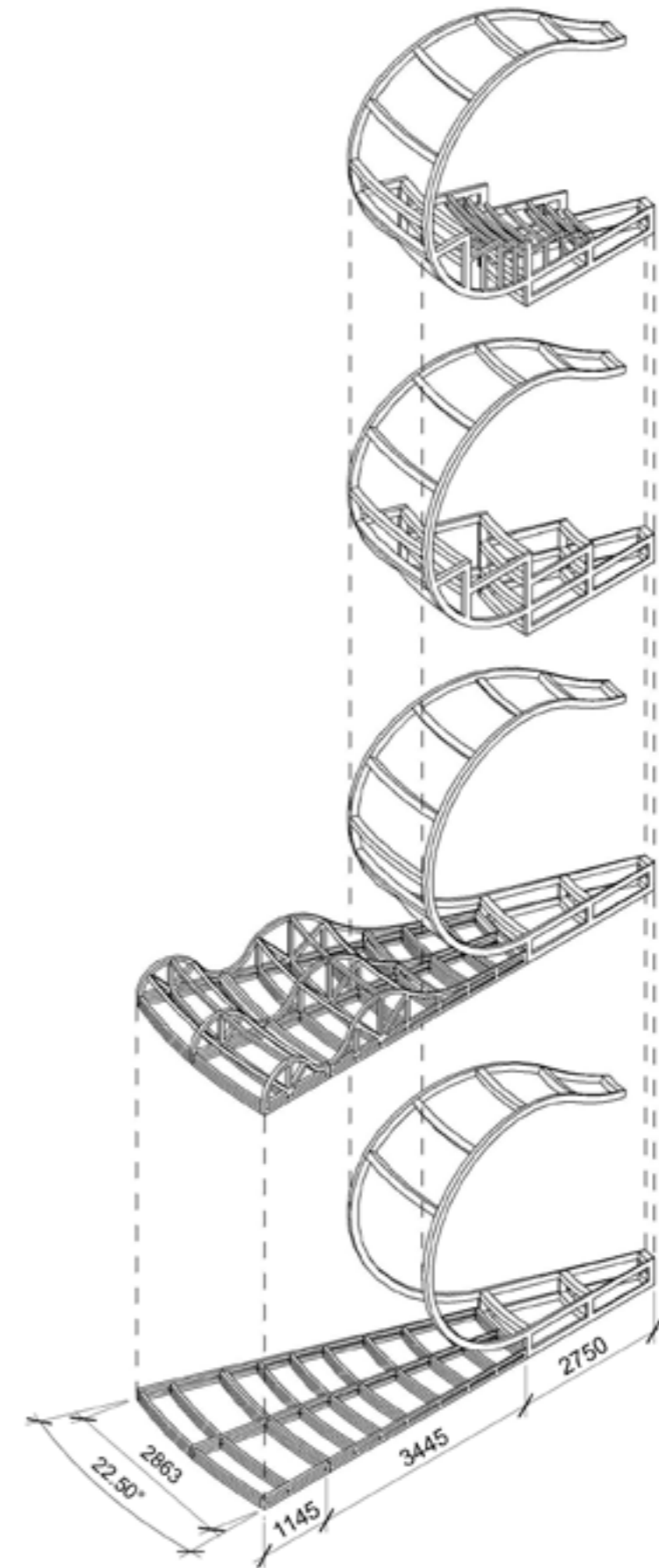
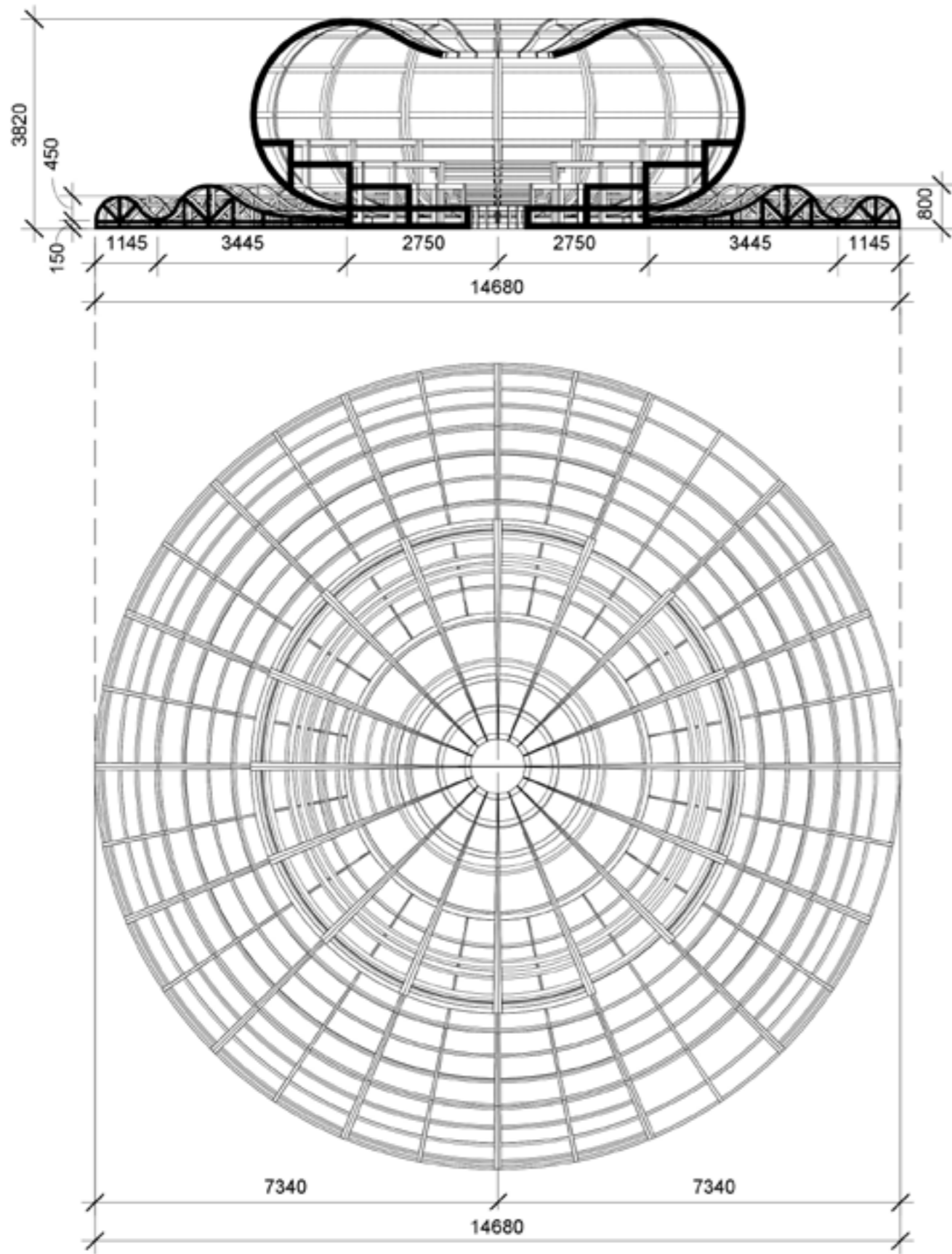
STRUCTURE

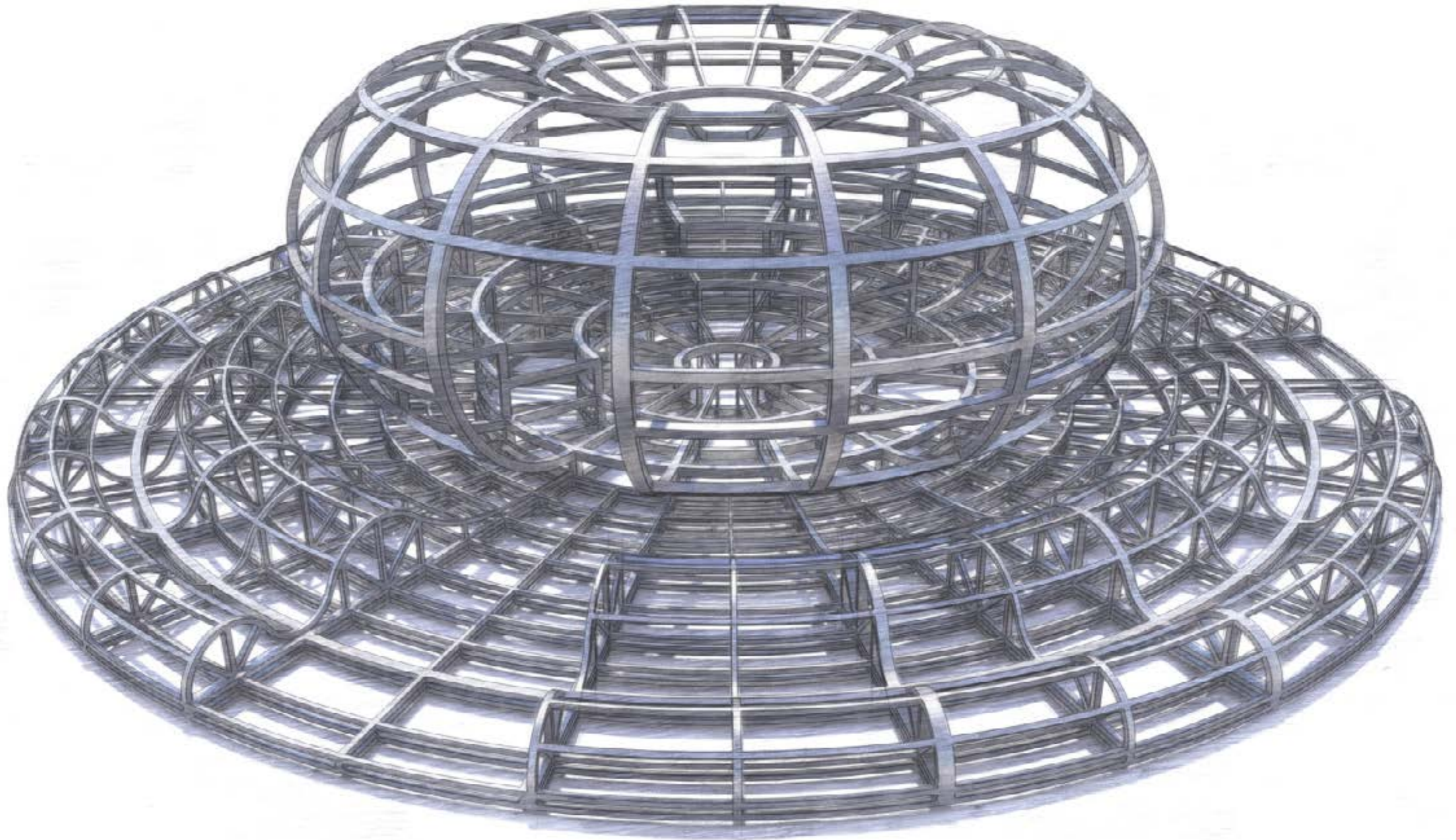
As the main structural element of my construction, I used metal structures, which are divided into small segments. Metal structures are used to create load-bearing frames of buildings, sheathing of roofs and walls, and erection of staircases. Today, not a single building object can do without the use of metal structures of various configurations, sizes, and principles of operation. The manufacture of structures is based on preliminary careful calculations of a metal structure and its design, taking into account the design features of the future structure and areas of the main power loads. This stage determines the most suitable grade of metal and the optimal cross-section of all elements.

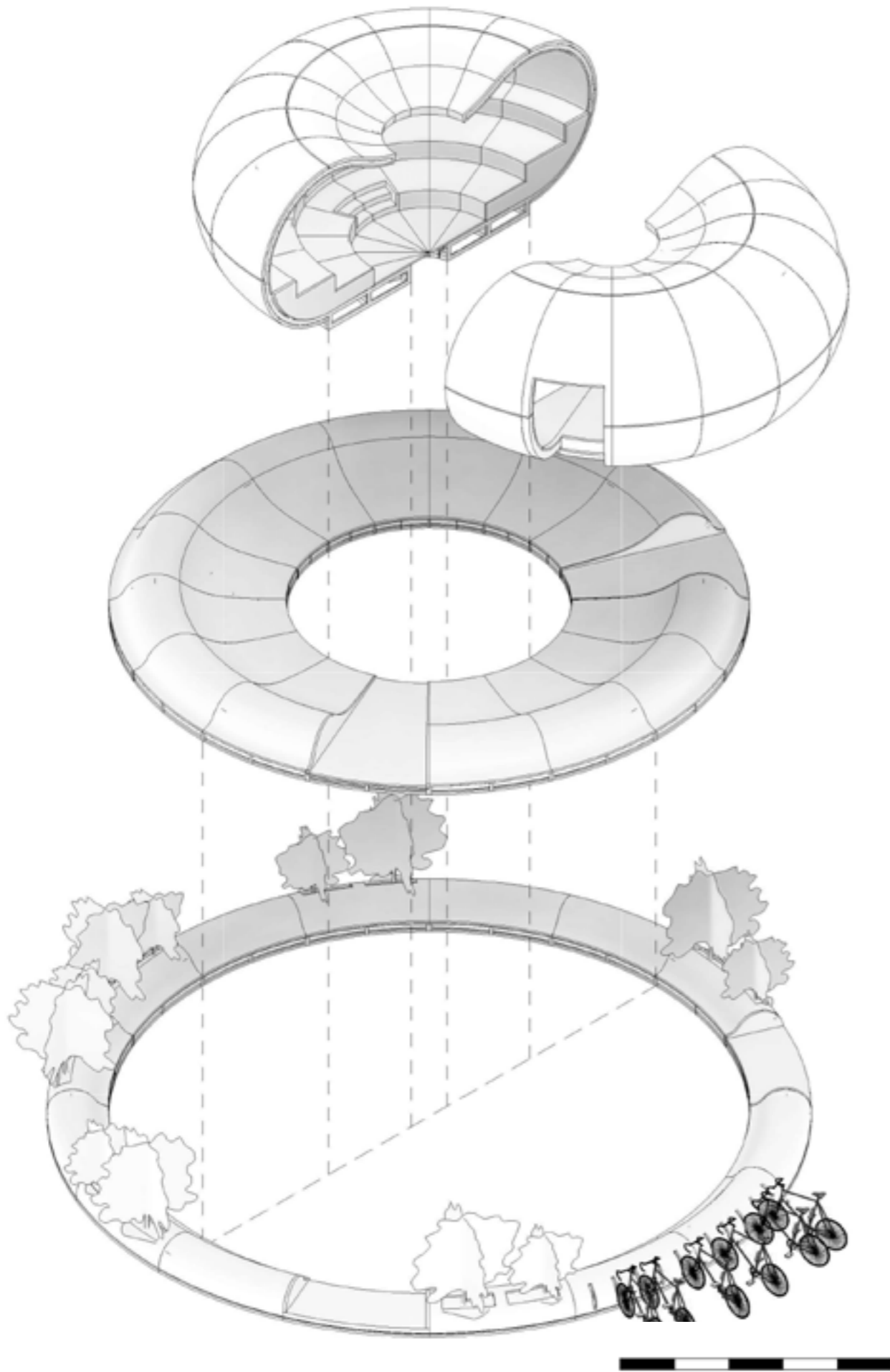
In the case of increased requirements for the indicators of the stability of the structure to temperature extremes and negative manifestations of the environment, the surface of the metal structure is treated with a special protective coating: paint and varnish material, plaster, sheathing with asbestos and gypsum plasterboards.

The purpose of the structure and the expected operating conditions are the determining factors in the choice of material and methods of its manufacture. To ensure special strength and reliability of joints of thin sheets of metal and small parts, spot welding is used.

Carbon or low-alloy steel, cast iron, aluminum, and lightweight alloys are used as raw materials for the manufacture of metal structures. Precision processing of mating products is achieved through the use of the band sawing method. Modern vector positioning technology allows achieving an accuracy of 0.1 mm, eliminating further additional operations.

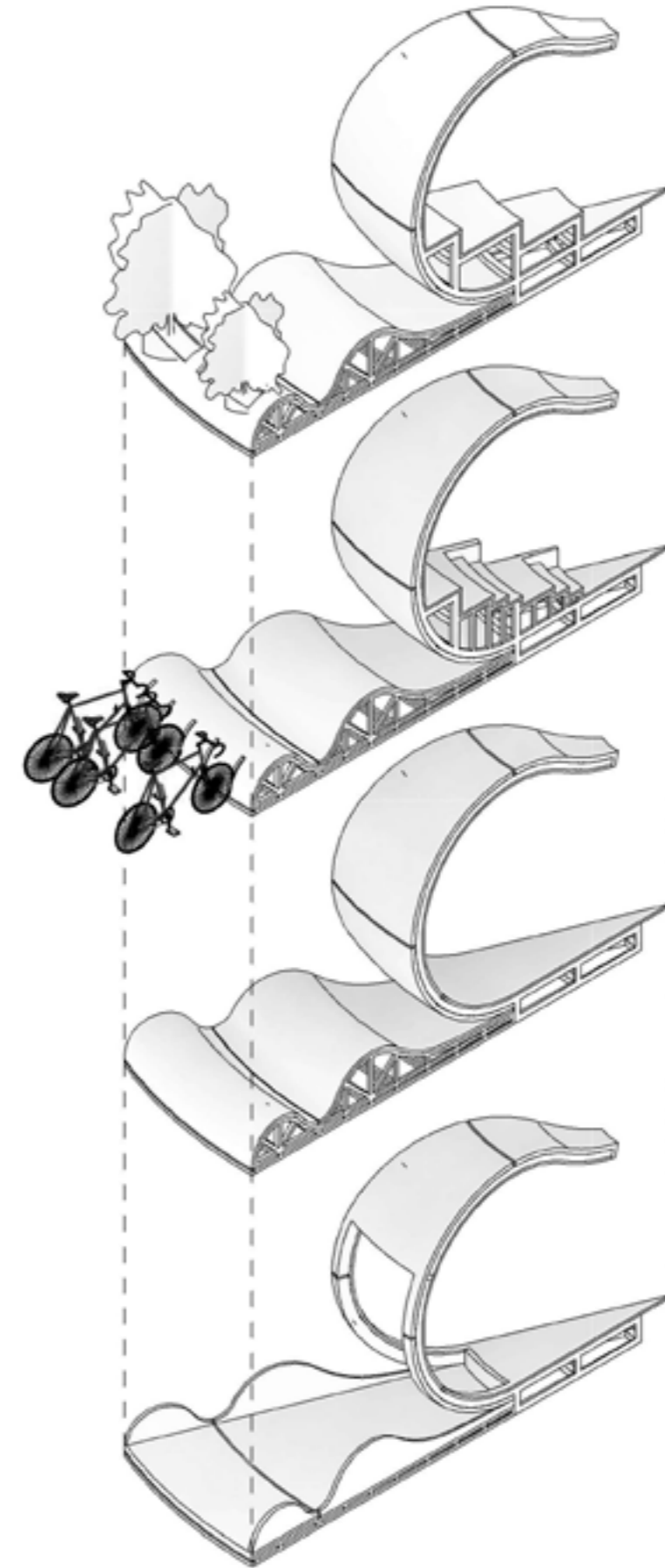
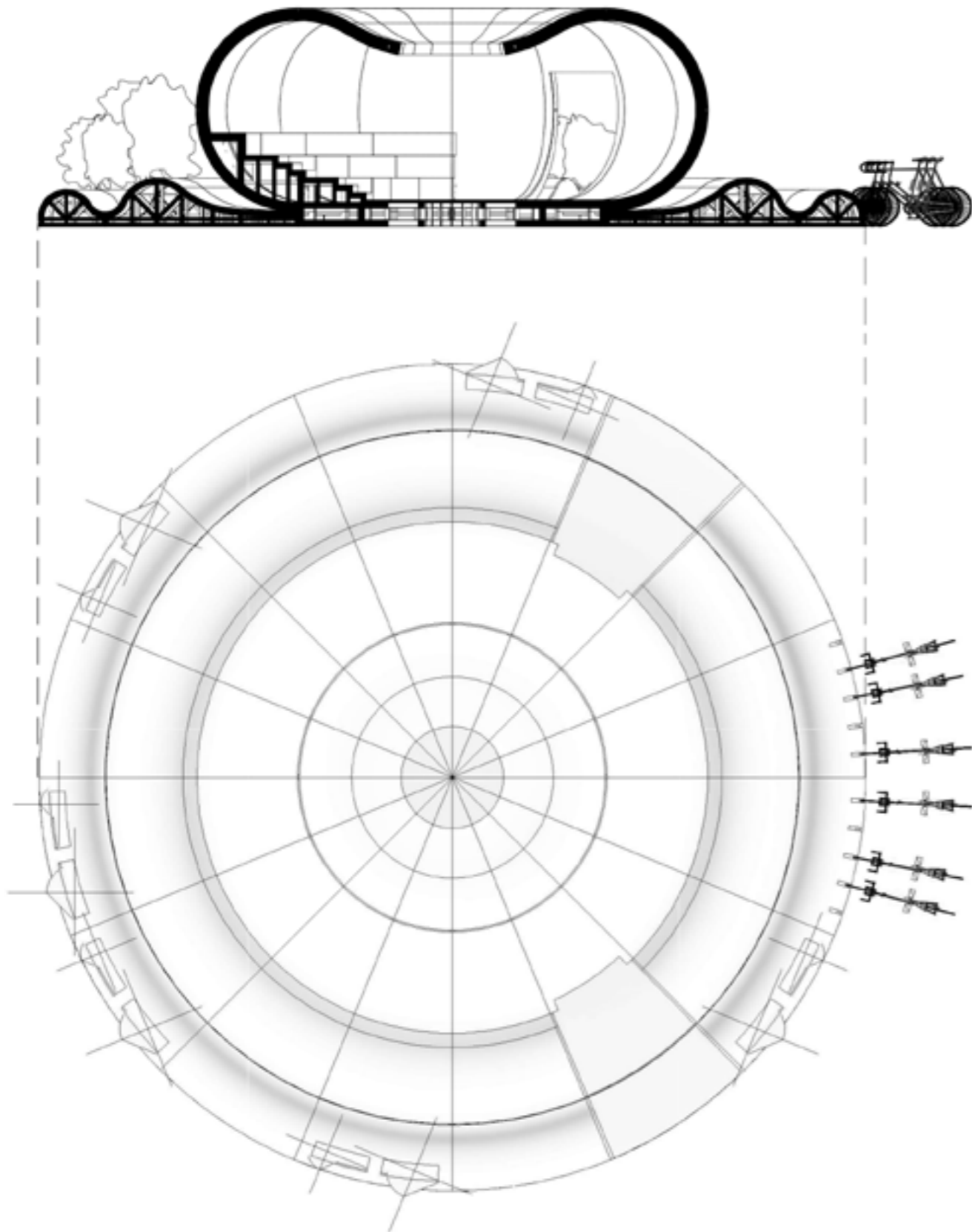


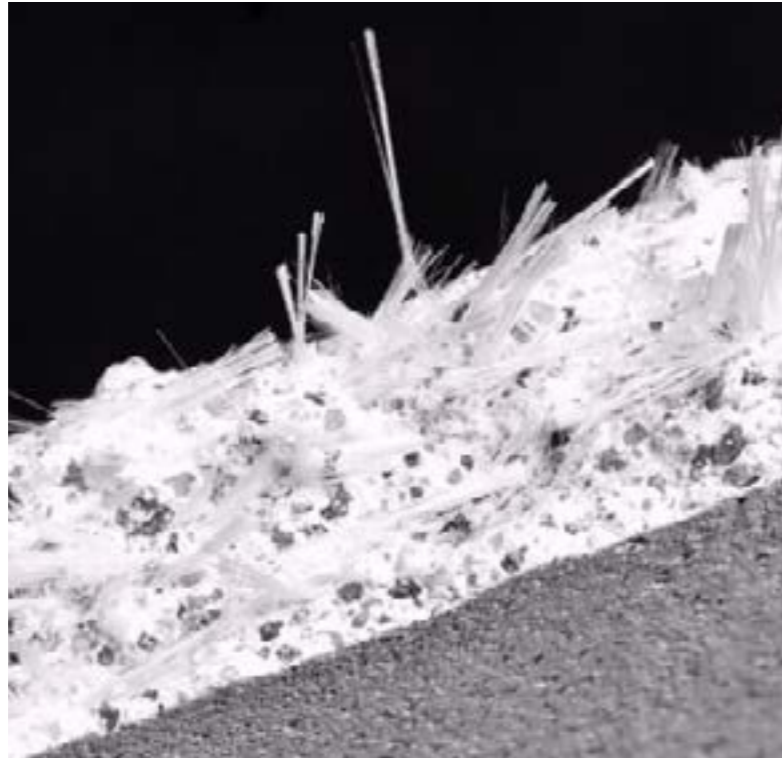




DROP

The structure itself has a peculiar droplet shape that carries waves from the epicenter of the structure. To create an unusual shape of the structure, as mentioned earlier, metal structures are used, which are the main load-bearing element of the entire project. To create the outer panels of the structure, fiber-glass concrete is used, which is pre-fabricated in production, keeping the design shape of the parts. Fiberglass concrete - is a type of fiber-reinforced concrete and is made of fine-grained concrete and fiberglass pieces reinforcing it, evenly distributed over the volume of concrete of the product or its individual parts. The joint work of concrete and fibers is ensured by adhesion on their surface; thus, a huge floor area of concrete and fibers works, forming qualitatively new properties of a new material - glass fiber concrete. Dispersed reinforcement increases not only the strength properties of concrete but, which is especially important, improves the operational characteristics of structures, for example, resistance to dynamic, temperature and humidity influences, wear, etc., which makes it possible to obtain a significant effect in the production and operation of fiber-glass concrete structures. This material has extremely high technological properties when forming products of almost any desired shape, has high flexural strength, high impact strength, elasticity, crack resistance, water resistance, and, if necessary, a decorative surface.





FIBERGLASS CONCRETE



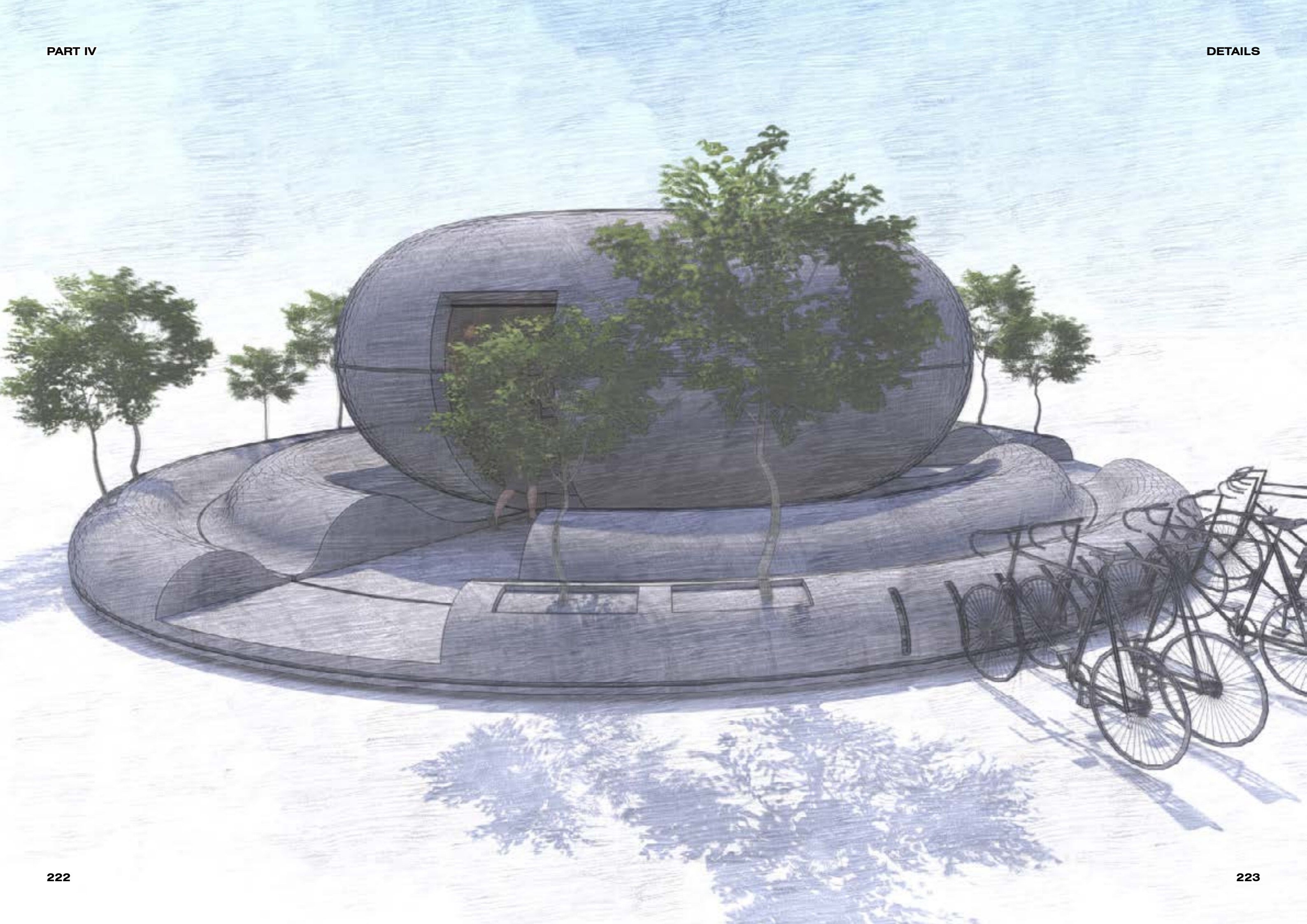
FIBERGLASS CONCRETE

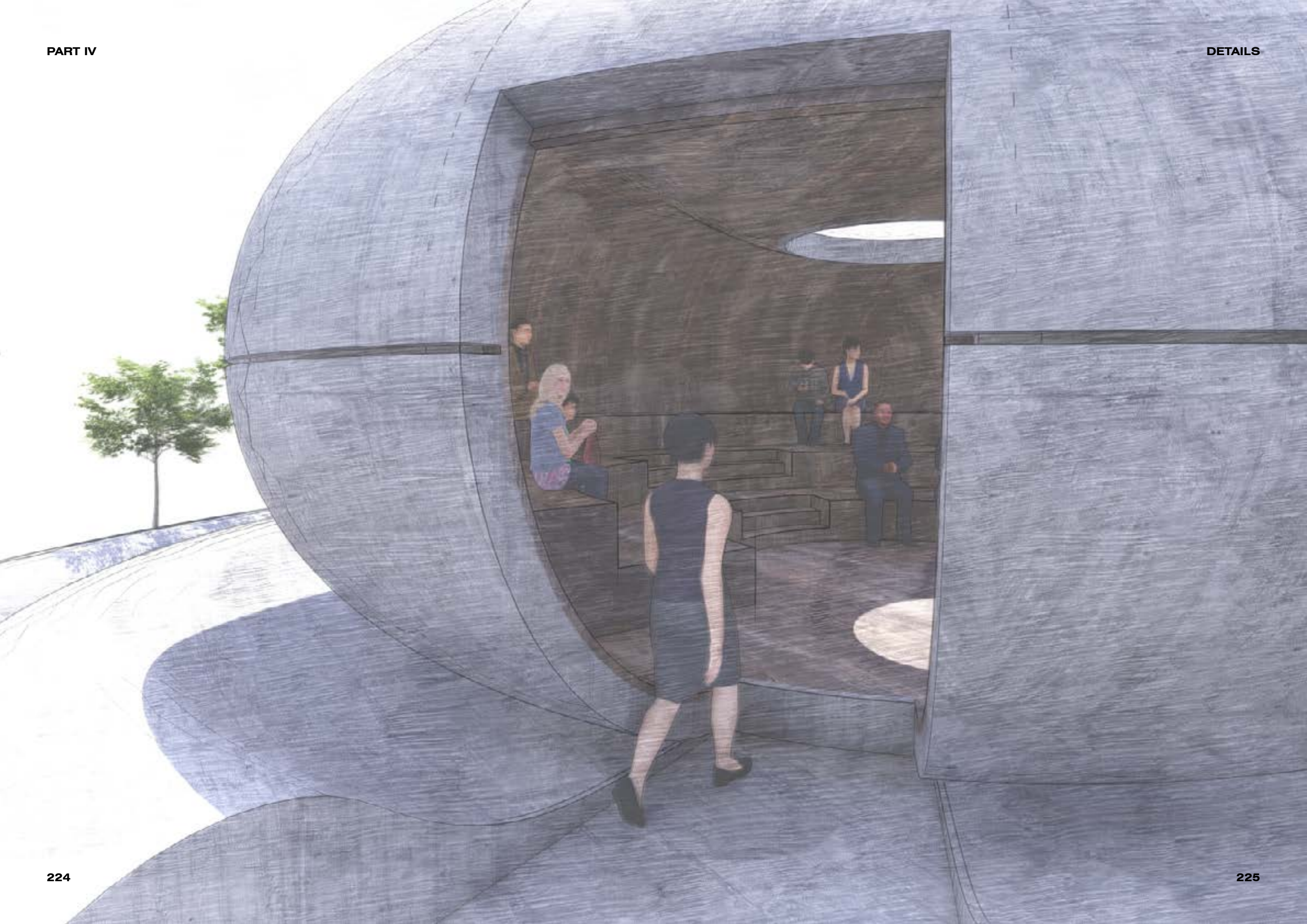
Fiberglass concrete

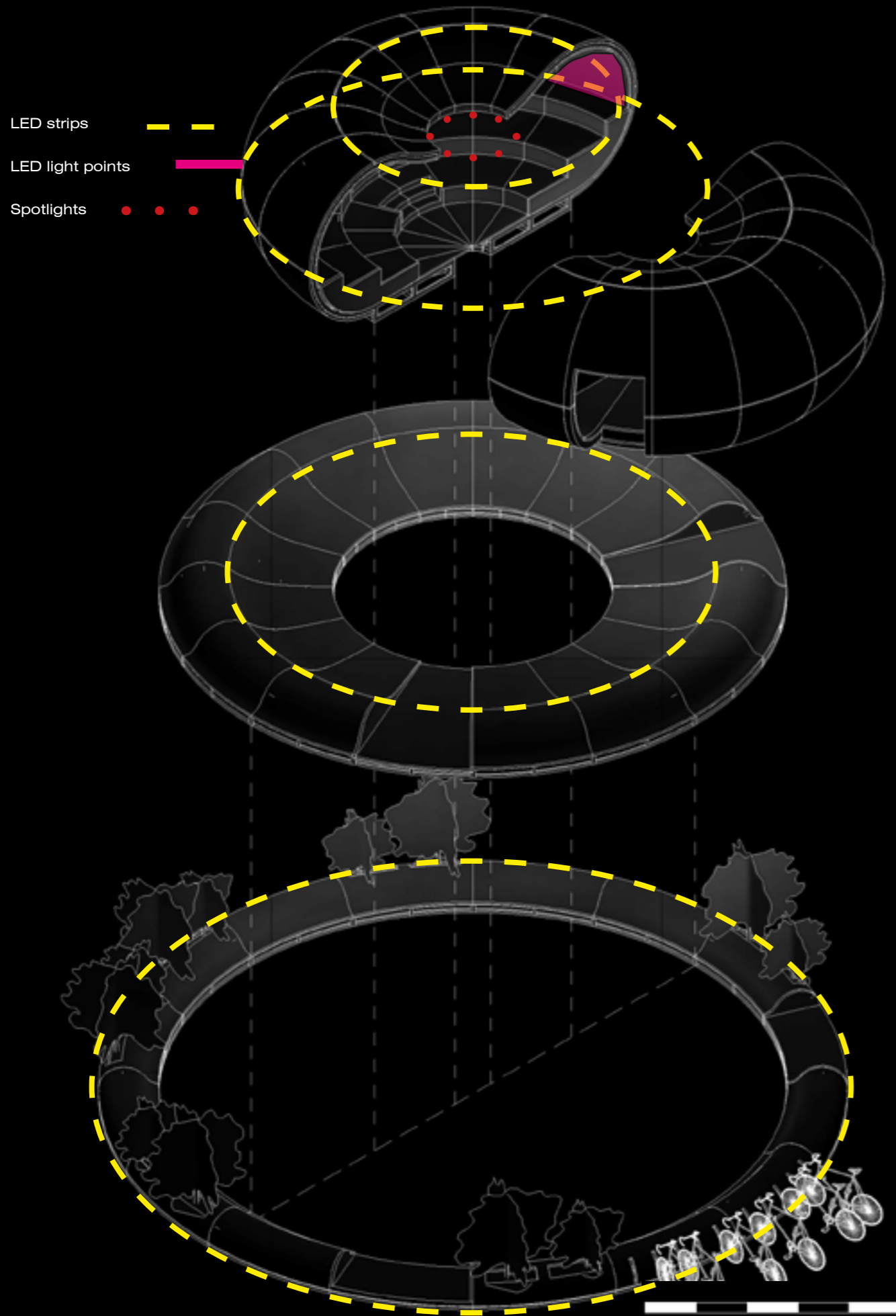
Concrete is the most popular building material. It has many advantages, but there are also disadvantages. Its most important disadvantage is considered to be low tensile strength. You can remove this feature with fiberglass. Its addition to the mortar makes the concrete structure stronger. Glass concrete is easily made by hand, it is lighter and has very high properties.

Advantages of glass concrete:

the versatility of use - blocks, panels, sheets for cladding; lighter, main components: fine-grain cement, sand - equal proportions, fiberglass; high-strength - the material is resistant to stretching, compression, bending, shock resistance indicators are fifteen times higher than that of a standard solution; a variety of additives have a positive effect on the properties of the material. The composition of glass fiber reinforced concrete includes alkali-resistant glass fiber. It is a versatile building material. The production of monolithic blocks and sheet material cannot do without it. The composition may include additives: acrylic polymers, fast-setting cement, dyes. The composition of the material includes fine-grained initial concrete solution (filler sand - no more than 50%), fiberglass. Differs in high strength characteristics in bending, tension, compression, impact. Chemical resistance, frost resistance are also at a high level. Filling the solution with fiberglass is a laborious process that requires even the distribution of the fiber in the solution. Add it to dry mix. The mixture becomes tough, less pliable. Vibration compaction is required in a large layer. The production of sheet material is carried out by spraying.







TYPES OF LIGHT

As you can see from the concept drawing, there are three main types of lighting that will be used in the design. The first is an LED strip that will be used in the exterior to illuminate the entire structure and also used in the interior to illuminate the seating areas and internal staircases. This type of lighting can be used without any additional elements, but also in its design it is possible to use an aluminum profile with a matte profile cover, which can be cut and adjusted to the required dimensions directly during the assembly of the structure on site. An aluminum profile with a matte lid will help the structure to position itself more accurately in the structure, as well as create a diffused light effect. The standard length of the profile is 1000 mm, 1500 mm, and 2000 mm, the size of the profiles affects the cost of the structure, but in no way on its physical qualities. The second type of lighting is diode point lighting points, which does not fundamentally differ from LED strips. In this type of lighting, the same points of light are used with the difference that they are not connected to a common ribbon of light. This type is used mainly in interior design and is atmospheric lighting. The third type of light is extremely atmospheric and brings a small amount of recognition to the design and acts as a light dominant in the environment. This type of lighting is a spotlight that is fixed in the center of the structure around a hole in the ceiling. These floodlights shine into the sky, thereby drawing attention to the public space of these structures.

