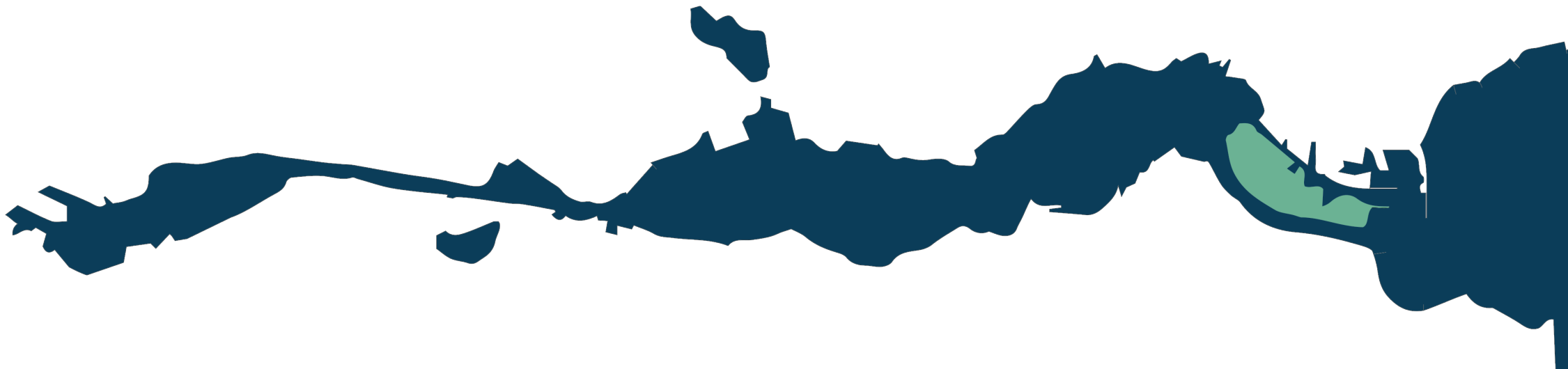


REDISCOVER THE GREEN PEARL OF THE BLACK SEA

TRANSFORMATION OF AN INDUSTRIAL ISLAND IN VARNA





Kalina Stoyanova, BSc

**Rediscover the green pearl of the Black Sea.
Transformation of an industrial island in Varna**

MASTER'S THESIS

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Arch. Univ.-Prof. Aglaée Degros

Institute of Urbanism

Graz, Mai 2020

AFFIDAVIT

I declare that I have authored this thesis independently, that I have not used other than the declared sources/resources, and that I have explicitly indicated all material which has been quoted either literally or by content from the sources used. The text document uploaded to TUGRAZonline is identical to the present master's thesis dissertation.

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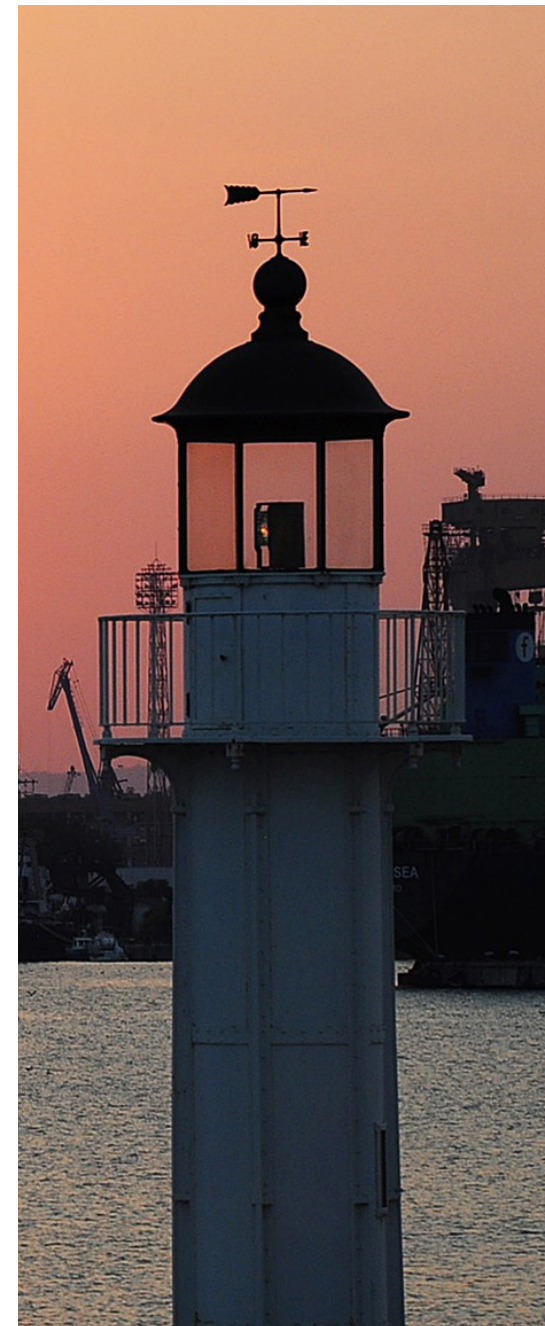


Fig. 1

INTRODUCTION

As sea waves come and go on the shore, so are intelligent minds coming in the Sea Capital of Bulgaria and soon drifting away. With its five universities, Varna attracts young people. However, after graduation, the creative brains leave the city in search of better opportunities either in other EU countries or in the capital. The transition from communism to capitalism had a massive impact on the economic situation. Bulgaria is suffering from emigration and aging. The found solution was a combination of education, business, and science. The so-called high-technology park can bring new investments, attract educated young people to remain working in Varna, additional job opportunities, and improvement in the field of green energy, technology, science, and education. With the successful development of the project in the capital, the municipality of Varna decided to create a similar high-technology park.

The chosen location for the future park is an industrial island south of the Varna port. The island is still functioning despite its current lousy condition. Nevertheless, its primary central loca-

tion and the future relocation of the industrial function has raised questions about the future state of the area. The concept of moving towards new technologies will bring a positive impact on the future development of the city.

However, the implementation of future changes raises some concerns. Very often, in the strive for fast results, essential aspects of design solution can be missed, which will later have an impact on the effectiveness of the project. It is most probably possible for the industrial functions to be not only relocated but also most of the current structures to be erased. The island was always connected with the industry and bound to the heritage of the city. Even though it looks like an unattractive place, it has developed its character as an approved economic source throughout the years.

Therefore it is essential to acknowledge the space and give it a sense of identity that is now invisible but was always part of the urban fabric. For this reason, the main question emerges:

How to transform the island, so the combination of its industrial character and the future high-technology park intertwine together and serve as catalysts for economic growth, attract the young generation and contribute to the overall urban activation of the city.

Rather than starting anew, the redevelopment has to shift into the direction of landscape reusing and contemporary activation. Those actions will minimize the development costs and maximize the potential profits and increasing the return of the investment.

Two important points for the transformation are the infrastructural and ecological conditions of the island. The present working atmosphere on the island has inappropriate working conditions. The development of the infrastructure on the island will be of interest to the investors. It will bring more quality working environment, which will bring more productivity in the business. At the same time, the street network has an essential place in the industrial background and needs to be highlighted. The second point is the ecological con-

ditions. The pollution of Varna Bay by the industrial production of the island is an issue today. With the future deindustrialization and the relocation of the port, the problem will decrease. Nevertheless, the current green infrastructure is valuable in a dense city like Varna because of its protection abilities against possible flooding and the cold winter winds. Also, that will provide favorable healthy conditions over the overall wellbeing of the citizens.

The thesis aims to create a framework for activating the place and prepare it for its future use. The overall vision of the island will be established through guidelines that will support its future development, attract people and investors in this area. Two main questions support the criteria: How to interpret the urban surroundings on the island, so it presents the existent industrial sense and invites social interaction. The second question is how to re-purpose the area for efficient working qualities and give a basic overview of the project framework to the investors.





Fig. 2



Fig. 3

ABOUT VARNA

LOCATION

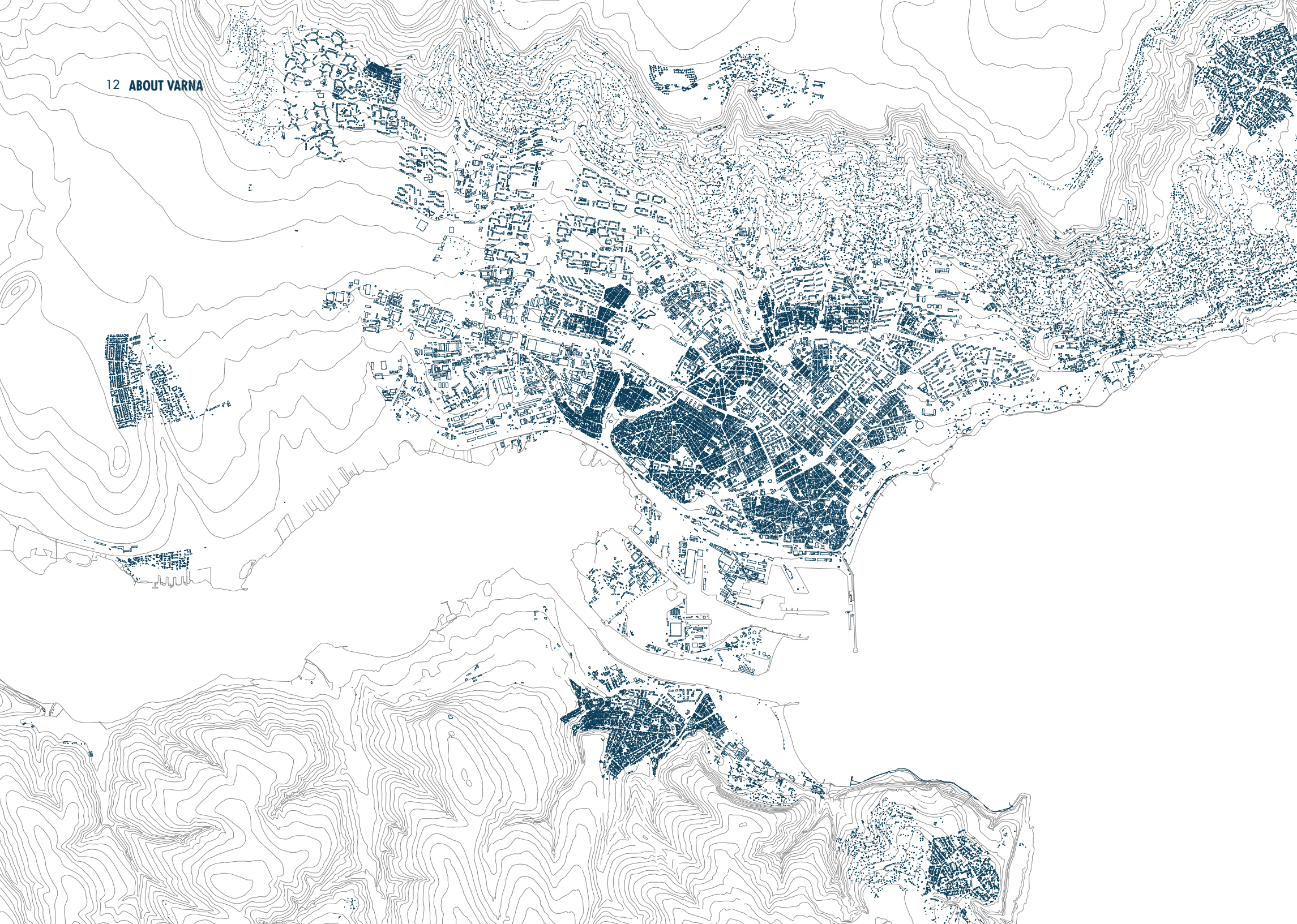
DEMOGRAPHICAL STRUCTURE

ECONOMIC DEVELOPMENT

ENVIRONMENTAL SITUATION

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LOCATION

Varna is a city in northeastern Bulgaria, located on the shores of the Black Sea and Varna Lake. It is the third-largest city, occupying an area of 238 km². The town is situated amphitheatrically, following the curve of the Varna Bay, and around it. There are numerous gardens, vineyards, and woodland. The beach is 17 km long and covers an area of 651 thousand m².

The location of the city along the northern coast of the Black Sea, as well as the abundant natural resources, make it one of the most famous resort center and the largest in the Black Sea region. Varna is the intersection of the road between the Middle East and Western Europe.¹



Fig. 4

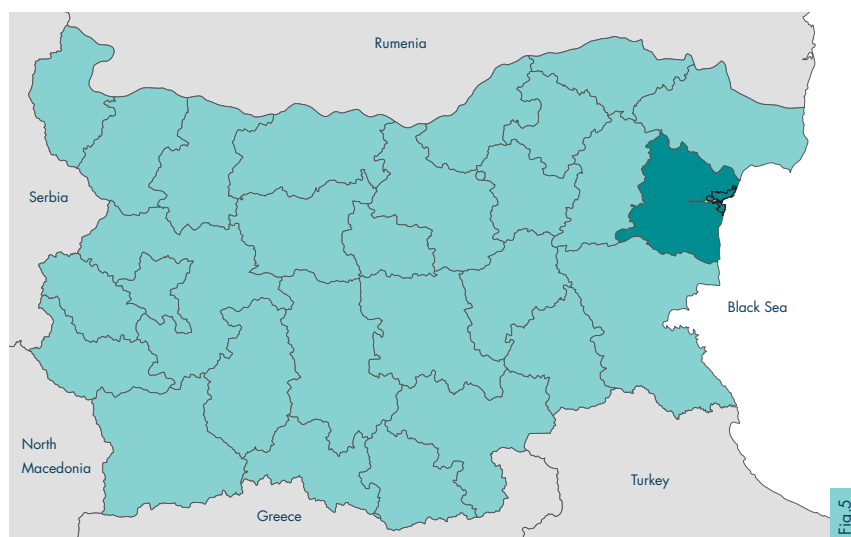


Fig. 5

¹ Vgl. Characteristics, <https://www.varna.bg/bg/810>, 25.10.2019

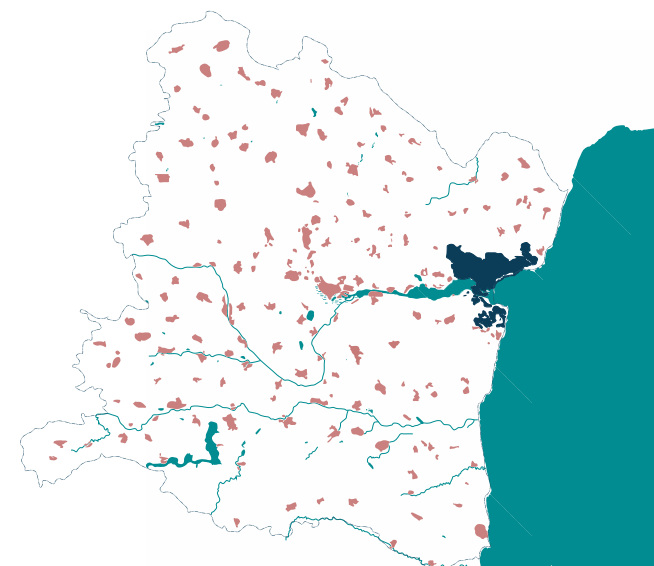


Fig. 6

DEMOGRAPHICAL STRUCTURE

Despite the aging of the countries population, the demographic maps in Varna District remain positive.¹

According to the National statistical institute, by the end of 2018, the population in the Varna region reached 471 252 people, which is 6.7% from the people in Bulgaria and sets Varna in third place after Sofia, Plovdiv and before Bourgas. Compared to 2017, the district's population decreased by 868 people in 2018 or 0.2%. The demographic situation in Varna District in 2018 is characterized by a continued decrease and aging of the population, declining birth rate and high rate of overall mortality.²

In 2018 the population of Varna District decreased by 1,926 people.³

The daily changing technologies and communication tools, access to education and information, and unlimited travel opportunities dramatically are changing the demographic and human reproductive models.

One of the most critical factor for demographic change is that women today receive equal access to education, realization, and participation in the socio-economic life of developed societies. Moreover, the development of medicine, education, and technology changes the standard of living, and increased the average life expectancy, especially in Europe.

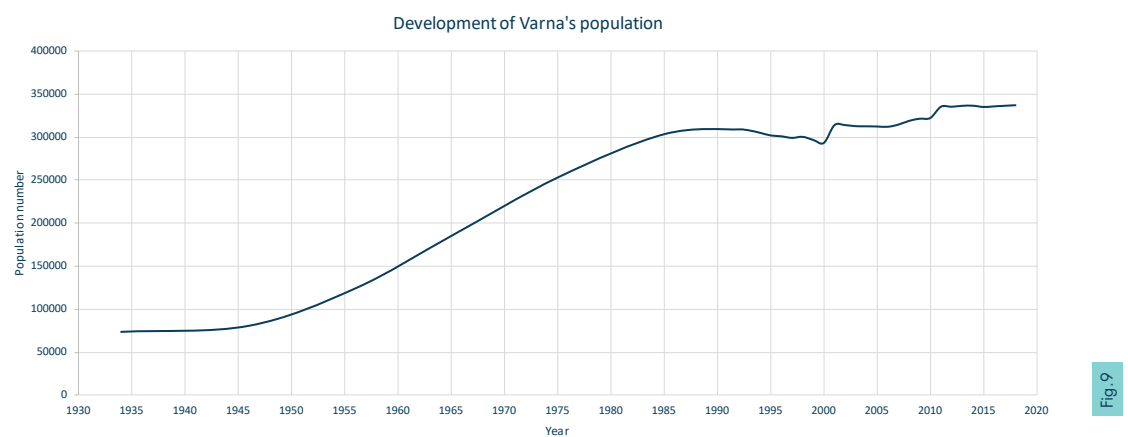
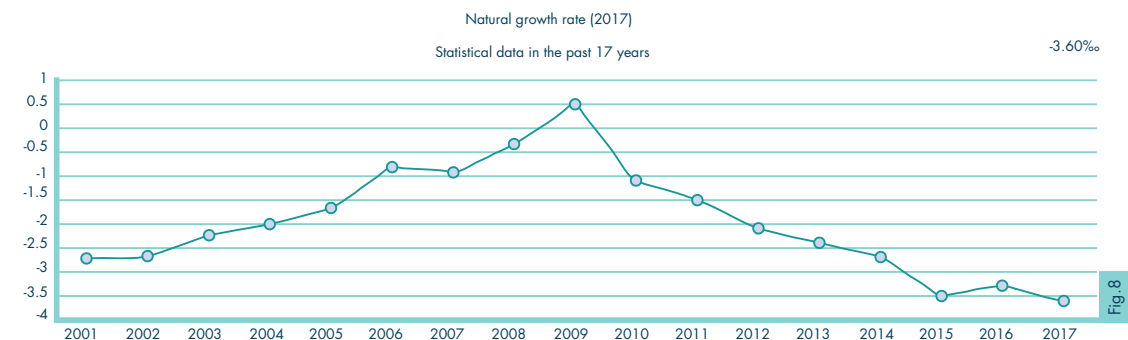
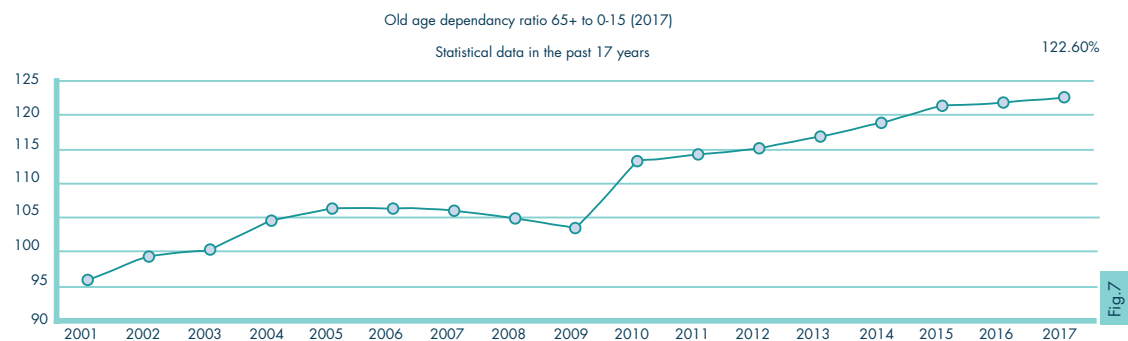
The only difference between Bulgaria's situation and the European countries is the emigration. Other European countries barely have any emigration and, instead, face the challenge of immigration. Meanwhile, Bulgaria continues to be a country, from which a significant percentage of valuable, educated people leave every year. The question is how to retain and attract the citizens to stay in the country. Preventing the spill out of intelligent people will reduce the negative demographic trends and slow down the most severe threats from the demographic crisis in the country – the deficiency of working labor, the problems in the functioning of social systems, ethnic change in the population and depopulation of vast areas of the territory.⁴

1 Vgl. Institute for Market Economics, https://www.regionalprofiles.bg/var/docs/2018P/3_Varna.pdf, 01.11.2019

2 Vgl. Varna population in 2018, https://www.nsi.bg/tsb/wp-content/uploads/2019/04/Press-release_19_Population2018.pdf, 01.11.2019

3 Vgl. Varna. Demographics, https://www.regionalprofiles.bg/var/docs/2018P/3_Varna.pdf, 01.11.2019

4 Vgl. Bardanov/Ilieva, 2018, 2-3.

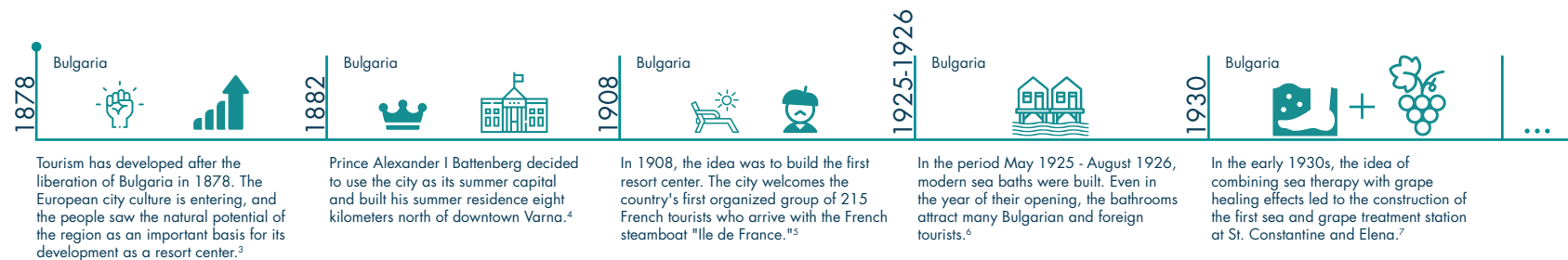
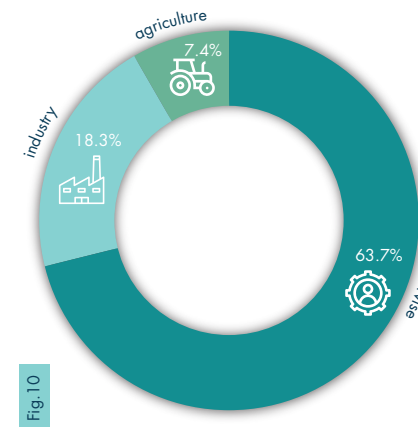


ECONOMIC DEVELOPMENT

Three main sections contribute 10.6% to the national gross domestic product (GDP): services sector (63.7%), industry (18.3%), and agriculture (7.4%). The location of the city on the Black Sea coast focuses the main investments in the touristic and logistic sector.¹

TOURISM

Tourism as a vital economic sector was established much later in the history of the city. Today Varna, combining its rich historical past with its modern achievements, is establishing and developing itself as a major tourist center of Bulgaria and one of the most famous tourist destinations in Europe.²



1 Municipal Development Plan of Municipality of Varna for the period 2014-2020, Varna 2013, 43.

2 Vgl. Tourism Development Program in Varna Municipality 2014 - 2020, <https://varna.obshtini.bg/p.php?i=3433816>, 26.01.2020

3 Vgl. Municipality of Varna, Tourism Development Program in Varna Municipality 2014 - 2020, <https://varna.obshtini.bg/doc/3433816>, 01.05.2020

4 Ebda.

5 Ebda.

6 Ebda.

7 Ebda.

SEA INDUSTRY

With its geographical location, Varna has a historical role in the economic and social development of the region and the Balkans. The Port of Varna played an essential role in the economic situation and was and will continue to be of national and international importance. Today the port is changing again so it can meet the market requirements and the global trends for the development of connections between different modes of transportation as well as improving trade and transport efficiency.⁸

THE FUTURE SECTOR: IT TECHNOLOGIES

High-tech innovative industries. This sector is in excellent cooperation with the development of the tourism sector, the sea industry, and also environmental protection and ecology. The necessary prerequisites and conditions for the development of this priority are available, namely the availability of highly qualified trained staff potential from 6 universities, three colleges and four scientific institutes in the city.⁹

8 Vgl. Varna Port history, <http://port-varna.bg/bg/About-us/History>, 26.01.2020

9 Vgl. Municipality of Varna: Regional economy and sustainable development, 11.2017, <http://research.ue-varna.bg/admin/kcfinder/upload/files/P.Peichev.pdf>, 01.05.2020

10 Vgl. Port Varna, <http://port-varna.bg/bg/About-us/History>, 05.01.2020

11 Ebda.

12 Ebda.

13 Ebda.

14 Ebda.

15 Ebda.

16 Ebda.

17 Ebda.

18 Ebda.

19 Ebda.

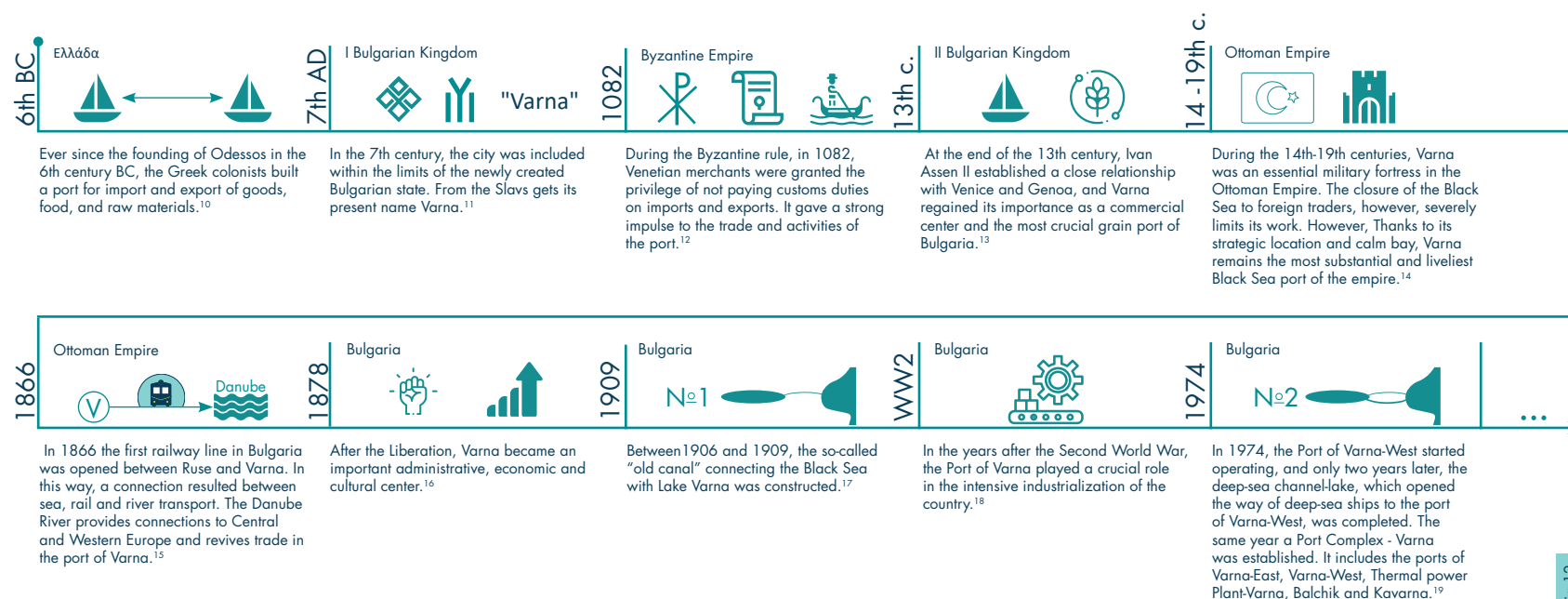


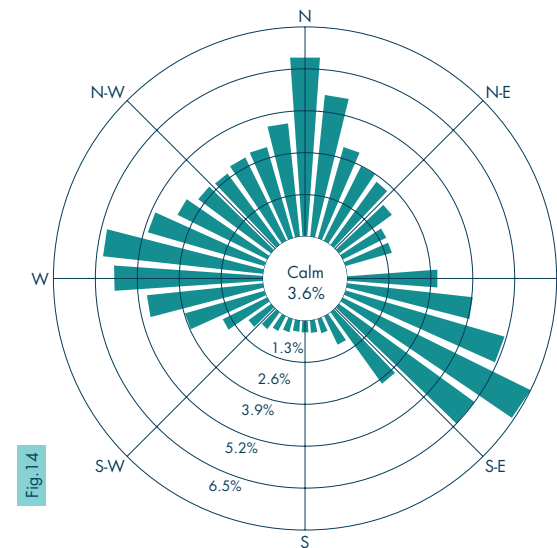
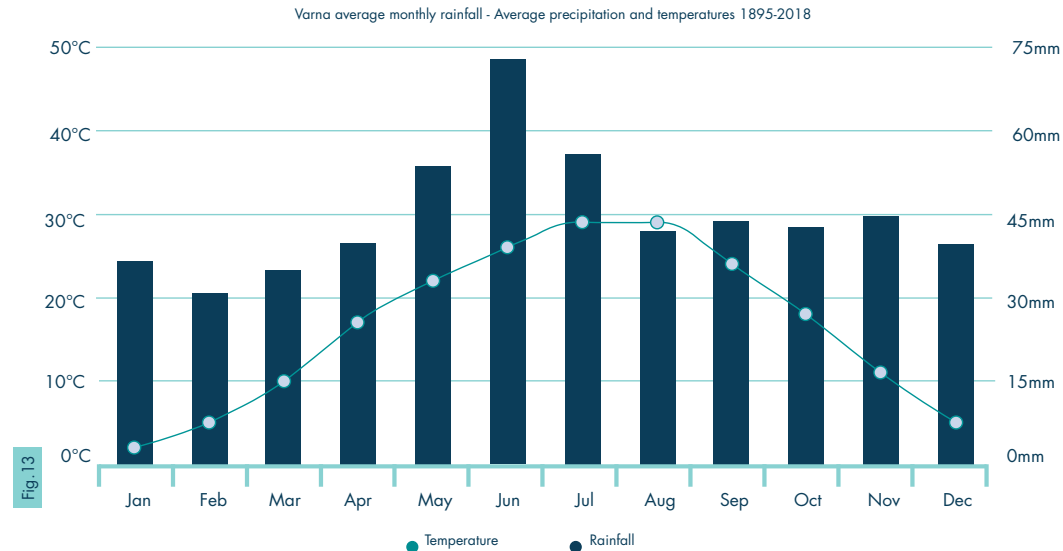
Fig.12

ENVIRONMENTAL SITUATION

CLIMATE

Varna has a humid continental climate with the Mediterranean climate in the summer season. The average annual temperature is 12 degrees. The highest absolute temperatures recorded so far were +41.4 degrees in the summer of 1909, and during the winter of 1929 Varna reached -24.3 degrees. The summer is pleasantly warm, but sometimes the heat is exhausting. The winter season is frigid. February, not January, is the coldest month.¹ The most prolonged sunlight in Varna is observed in July and August 4400-4500 hours per year.² The end of the winter and the spring have the most temperature oscillations. Autumn is warm, soft, and long. The average yearly rainfall distribution is 540.3mm. The average snowfall per year is 22 days, with an average of 16 days with snow cover reaching a maximum thickness of 55 cm. The first snowfall is in mid-December. The cloudiest season is from September to March, and the season with minimum cloudiness is August. In the winter, predominate northwest, north and west winds, and less northeast winds. In the spring, the frequency and strength of winds decrease. Usually, from April, the wind from east

increases, and in the summer, the wind comes mainly from the east and southeast direction. Varna has almost the highest humidity levels of the whole country. Under these climatic conditions, the city's landscaping had to develop from its beginning to the present day. Throughout the ages, the social development of the city changed the temperature and the variety of trees.³



- 1 Vgl. Todorov 1976, 9.
 2 Vgl. Petrova 2012, 14.
 3 Vgl. Todorov 1976, 10.



WATER RECOURSES

The Varna-Devnya agglomeration formed 1965-1975 played an essential part in the spatial development of Varna from the coast to the inland. Through Varna Lake, a natural connection between the two cities was established.⁴ Varna lake is the largest water basin in the Varna region. Before the excavation of a sea canal in 1909, the lake was close leman with a short small outlet leading to Varna bay, where the level of the lake was 1.3m above the sea level. The lake water was freshwater. In 1907-1909, the first canal, 5m deep, was dug, and the lake level dropped and almost equaled the sea level. Saltwater entered the lake, and in a short time, it became a mesohaline pool. Water

salinity reached 11-15‰. In 1921-1923 the second canal was dug between the Varna lake and the Beloslav lake, which was 2.2m higher than Varna Lake. The canals were built for the port facilities and to make navigation between the east port and the west port possible.⁵ The canals are significant for the economy of the city. The lake waters supply the settlements in the region. They also provide water for the agriculture and the marine industry enterprises in Varna-Beloslav-Devnya agglomeration.⁶

FLORA AND FAUNA

The second-largest European migration route of waterfowl, raptors, and songbirds passes through the region. The wetland of Varna Lake has international conservation status. The protected zones have the potential to develop ecotourism and other forms of alternative tourism.⁷

4 Vgl. Crystal Gaines: Sustainable development of Varna Lake region, <https://slideplayer.com/slide/13590390/>, 26.01.2020

5 Vgl. Bozilova/ Beug 1994, 143.

6 Vgl. Crystal Gaines: Sustainable development of Varna Lake region, <https://slideplayer.com/slide/13590390/>, 26.01.2020

7 Ebda.



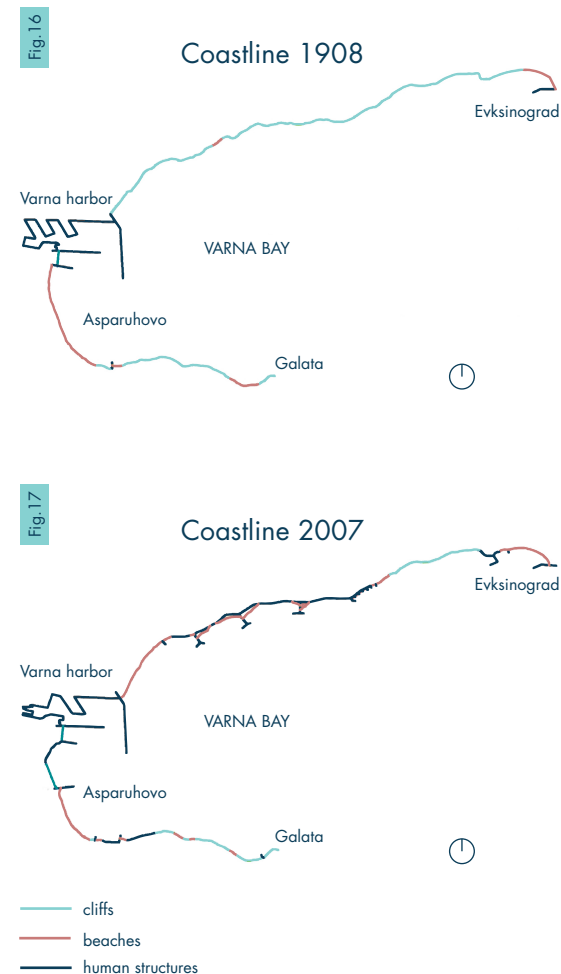
Fig. 15

THE COASTLINE

The beaches around the coastline are beneficial for the economy of the city and the health of the citizens. The sandy beaches were formed not so long ago due to human influence on the coast. Today there are few sandy beaches in the Bay of Varna, formed in the early 20th century: Evksinograd beach; artificial Varna beach, formed between solid groins; central Varna beach, created after the construction of the port mole; and the natural Asparuhovo beach, which is part of a former sandy spit.⁸ The building of a port mole in 1906 brought sand on to the cliffy coastline. A new beach developed called Varna-central, but at the same time, the natural sand in Asparuhovo bay gradually increased. After the creation of the two canals, the sand flow to the Asparuhovo bay was disconnected. As a result, the length of the beach is reduced almost twice (from 1800m to 1035m) in contrary to its width.⁹ In 1976 a second navigational canal was dug to serve as a connection to the port in Varna Lake. In 1980 was build a hard coastal structure – “3km coastal dikes and solid T-shaped groins and spurs.”¹⁰

In the past 100 years, the coastal line of Varna undergone various changes due to human activities. It brought economic impact to the city but affected the natural surroundings. Natural and anthropogenic factors caused a slowly increased sea-level.

“The natural factors contributing to sea-level rise include changing river discharge into the Black Sea, rainfall-evaporation balance, water exchange through the straights linking the Black Sea to the Mediterranean (Dachev, 2000) and subsidence of the land. Anthropogenic factors affecting sea-level changes are urbanization, dam and reservoir buildings, groundwater mining and deforestation. Although such rates are not dramatic for the Bulgarian coast, there would be a case of sudden sea-level rise under extreme storm conditions.”¹¹ According to the analysis of the Institute of Oceanology - Bulgarian Academy of Sciences, the low-lying areas around the Varna bay could be potentially flooded.



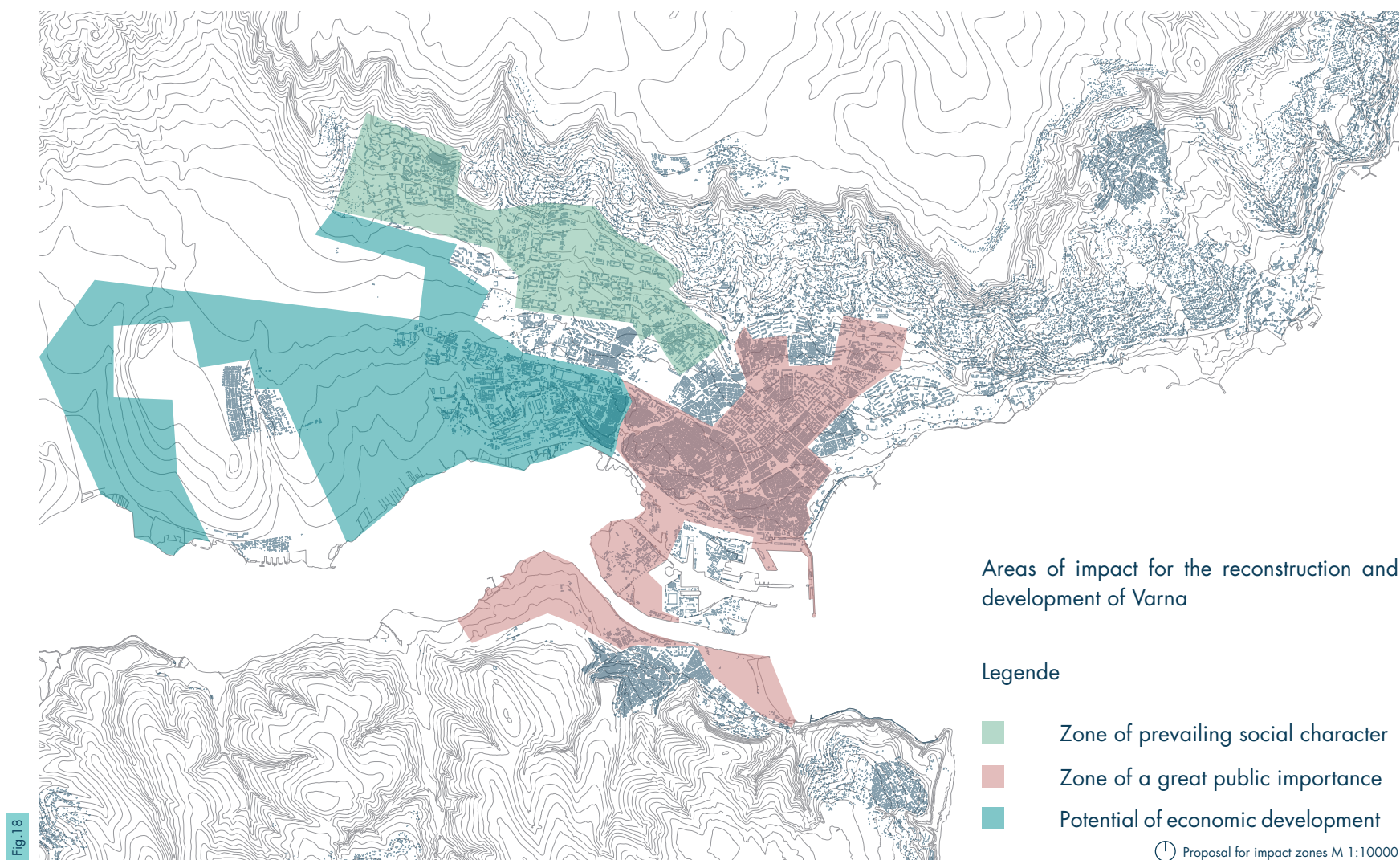
8 Vgl. Assoc. Prof. Dr. Eng. Atanas Palazov: Long-term Coastline Evolution under Anthropogenic Impacts in the Bay of Varna (Bulgarian Black Sea Coast), <https://serc.carleton.edu/31890>, 24.11.2019

9 Vgl. Peichev / Peev 2010, 43.

10 Assoc. Prof. Dr. Eng. Atanas Palazov: Long-term Coastline Evolution under Anthropogenic Impacts in the Bay of Varna (Bulgarian Black Sea Coast), <https://serc.carleton.edu/31890>, 24.11.2019

11 Ebda.

AREAS OF FUTURE IMPORTANCE



HIGH-TECH PARK SOLUTION

The municipality decided to create a high-technology park that has a favorable impact on the economic development and competitiveness, and in particular on the development of high-tech products and services. The high-tech park in Varna will create conditions for attracting investments from large international companies, as well as for starting and developing innovative local companies.

Primary of priority:

- Protection of the coastal zone
- Environmental protection and climate change
- Improvement of renewable energy sources and energy efficiency
- Improving the quality of life through the development of health and safety
- Information and communication technologies are the leading components in the implementation of each of the priority areas.

The implementation of the project will have a positive effect on the traditionally well-developed maritime industry in Varna. The development of technologies for the absorption of resources of the Black Sea and the coastal zone will require specialized equipment and measuring equip-

ment, which in turn opens new opportunities for the development of the Mechanical Engineering and Information Technology sectors.

The construction of the Black Sea High-tech Park - Varna will reduce the human impact on the environment by introducing and stimulating new ecological production; conditions for 'clean energy' will be produced from renewable energy sources and thus reducing carbon emissions. The conservation of biodiversity in the Black Sea through specific solutions such as the construction of artificial coastal reefs will also have a positive impact.

The newly created Black Sea High-tech Park Varna will create conditions for young and talented people to stay working and creating in Varna.¹

In Bulgaria, there is already a functional High technology Park in Sofia whose primary focus is information and communication technologies, life sciences, green energies, education, entrepreneurship, innovation and support for the start-up business.²

Sofia tech park is located in the southeastern end of a crossroads of essential boulevards, one leading directly to the city center, and one is part of the E80 road. The site of the former barracks (4 km) was completed in 2015 with high-tech laboratories for biotechnology, cybersecurity, cloud computing, prototyping, bio-informatics, as well as new, modern buildings for Incubator start-ups, Experimentarium and Visitor Center and Innovation Forum. The park area is preserved, and sports facilities exist. The Ministry of Economy took over the 270-hectare property. Before starting the project and clearing the terrain, Sofia Tech Park commissioned a production company to document the history of the terrain (the former barracks at 4 km). In 2013 the "remains of the history and beauty of the sanctuary" were preserved and sealed.³

¹ Vgl. High-technology park, <https://www.rapiv.org/bg/info/visokatehnologichen-park/>, 14.04.2020.

² Vgl. Information, <https://sofiattech.bg/stp/information/>, 14.04.2020.

³ Vgl. This film tells the story of a former military barracks 4km away, 07.10.2013, <http://citybuild.bg/news/razkazva-istoriata-bivshite/24062>, 30.04.2020

International experts from the European Commission's Directorate-General Joint Research Centre made a report to validate the effectiveness of the high technology park in Sofia.⁴



Fig.19

military barracks lot 2003



Fig.20

military barracks lot 2019

Some of them are mentioned below:

Strengths

- The location is appropriately choose
- Proper developed infrastructure
- Good environment for start-up companies created which encourages the youth commuting
- rent is lower than the market rate

Weaknesses

- weak link between the city
- the area is not open for citizens in general
- lack of urban activities
- laboratories are partially equipped
- miscommunication between the ministries, the universities, and the private sector
- lack of networking between the components
- implementing of a business model- focus on selling
- negative publicity

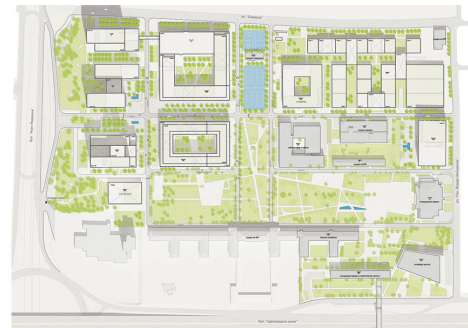


Fig.21

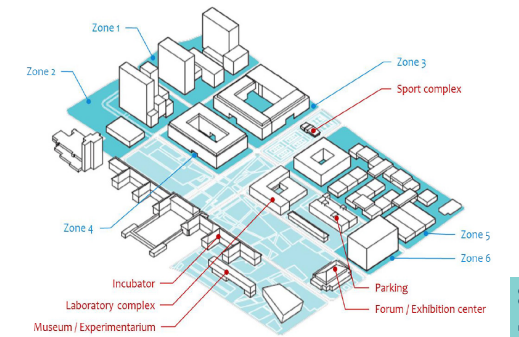


Fig.22

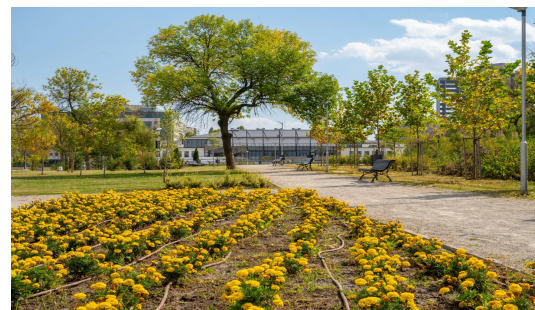


Fig.23



Fig.24

⁴ Vgl. Kokorotsikos/Lund/Peretti/Taylor, 2018, 15-17.

Opportunities

- international attention
- availability of 4 plots of land for future development
- metro connection of the park- better reachability

Treats

- lack of funds to operate the labs leads to obsolescence of the equipment
- the continued focus on selling instead of renting gives a high income for a short time, but renting could give more income in the long term.
- having owners instead of tenants leads to complications in the future development and infrastructure processes because the owners will have more rights, and this could be an issue for future decision making.⁵

The report was mainly focused on the sustainable management of the high-technology park and made recommendations for optimal performance. The main problem is the lack of communication between research, industry, and government.

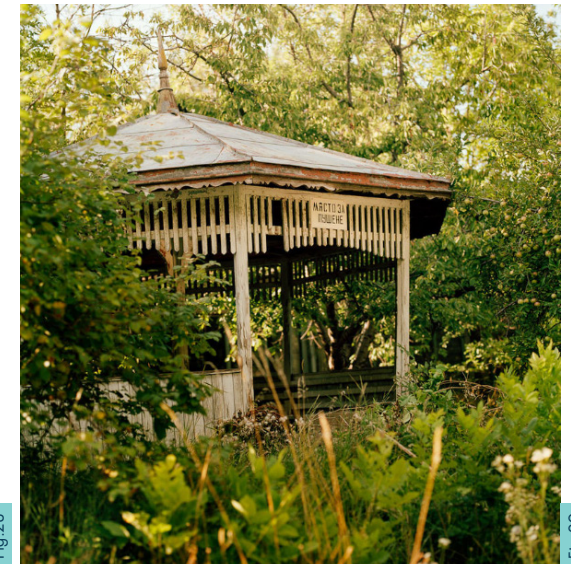
What I see as a problematic feature is a missing link with the surroundings and history of the place. The former military barracks were part of the memory of the city. Some of the buildings were reconstructed and renewed; the space between the buildings lacks connection with the structures. The focal point and the importance shifted towards the buildings and their dominant space. The urban space is on a second level. The urban leisure activities and other facilities related to everyday life are missing, and the public space looks empty. The citizens feel unfamiliar with the new

space, and it is mostly unoccupied. The block structure gives clarity and, at the same time, a formality to the urban space. Few people use the available free zone and I conclude that it is not as enjoyable as it should be.



Fig. 25

Documentation and photos made by the producing company show missing links between the past and the future of the space. The little details bring the atmosphere and make the unfamiliar familiar. The landscape is also a part of the surrounding, and the new project is neglecting it. Instead of trying to work around the vegetation, the area was "cleaned," and now it looks empty and open, and it does not look inviting. In this particular example, sustainability and environment that are keywords for the high technology park are not only high technology innovative solutions that correspond with the conditions, but also observing the environment and giving it a new meaning. The link between the old and the new is of value and can activate the space. The park was finished in a short time, but the lack of consideration concerning the urban space will be a problem in the long term that could affect the future renting possibilities.



CONCLUSION

Varna has established itself as a leading city in Bulgaria and characterizes population growth to the other cities. However, emigration remains a problematic factor for economic growth. Other cities and countries provide opportunities for the young generation, which are not present in Varna. The spill out of graduated people restricts the demographic and economic increase. The economy is based on tourism, logistics, and the sea industry—those three sectors affected throughout the years the topography, water basins, and the vegetation around the city. The digging of artificial canals to combine the lake with the sea lead to some environmental changes. Those modifications led to forming beaches around the coastline but also changing flora and fauna of the lake. However, the city is expanding, and the zones around the canals have public attention and can be a potential wheel for financial development. Building a high technology park is a modern solution for the economic and demographic problems. It combines technology, business, and education that can offer new jobs and more opportunities for young people and motivate them to stay and work in Varna.

With the high technology park, Varna wants to concentrate on improving its relationship with the sea. The city took an example from the capital Sofia where 2015 such park opened doors. For its effective functioning, experts validated the park and gave recommendations for better management. A focus was mainly on fast construction and opening. It was built on a former military barracks area that was part of the history of Sofia and Bulgaria overall. This place is still part of the people's memory. This memory was only captured with a photo before most of it was leveled. This "tabula rasa" planing led to a space that has problems integrating into the urban fabric. The space between the buildings is open yet uninviting; it stands alone with no connection to its surrounding.

Some of the buildings have been renovated; however, consideration regarding the existing landscape is missing. It could lead to one of the reasons why there are public criticism and the difficulties of finding investors. People do not feel a relation. Urban and landscape planning is intimately linked with the surroundings, which in this case, is needed. Those mistakes need to be avoided for the future high technology park in Varna. The area chosen for the park is an industrial island south of the city port. This island has a significant connection with the surroundings and the city. Although an unpopular space because of its industrial characteristics and condition, it is still active and functioning. The next chapter will explore the current conditions of the island.

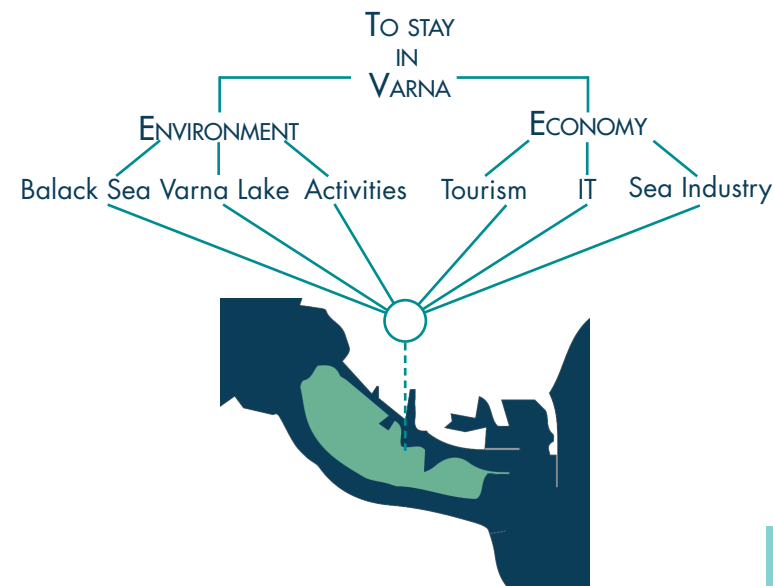


Fig.30





Fig.31

THE "FORGOTTEN" ISLAND

LOCATION

FORMATION

ACCESSIBILITY AND MOBILITY INFRASTRUCTURE

GREEN SPACE AND WATER

URBAN STRUCTURE AND FACILITIES

S.W.O.T. ANALYSIS

PHOTO DOCUMENTATION

CONCLUSION

LOCATION

The island is located between the Black Sea and the Varna Lake. It is the largest lake island- 3000 m x 890 m. The two canals are linked between the Varna port and the Varna West Port, which is located further west on the Beloslav Lake shore. The Asparuhovo bridge provides linkage to the north and the south part of the mainland. The bridge is the only connection between Varna and the south neighborhood and also the other cities further south. Ferry boat passing every 10 minutes is connecting the city of Beloslav with the opposite land. Along the Lakes, several zones are related to the marine trade. Around the lakes, there are also nature preservation wildlife parks and some museums. Unfortunately, these places are unpopular compared to the attractions on the northeast side. With its vital position, the island plays a fundamental role in the city's connection system.

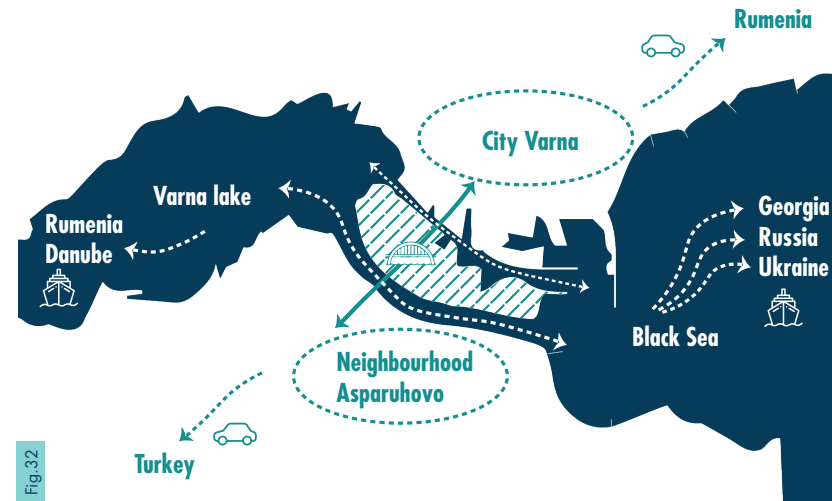


Fig.32

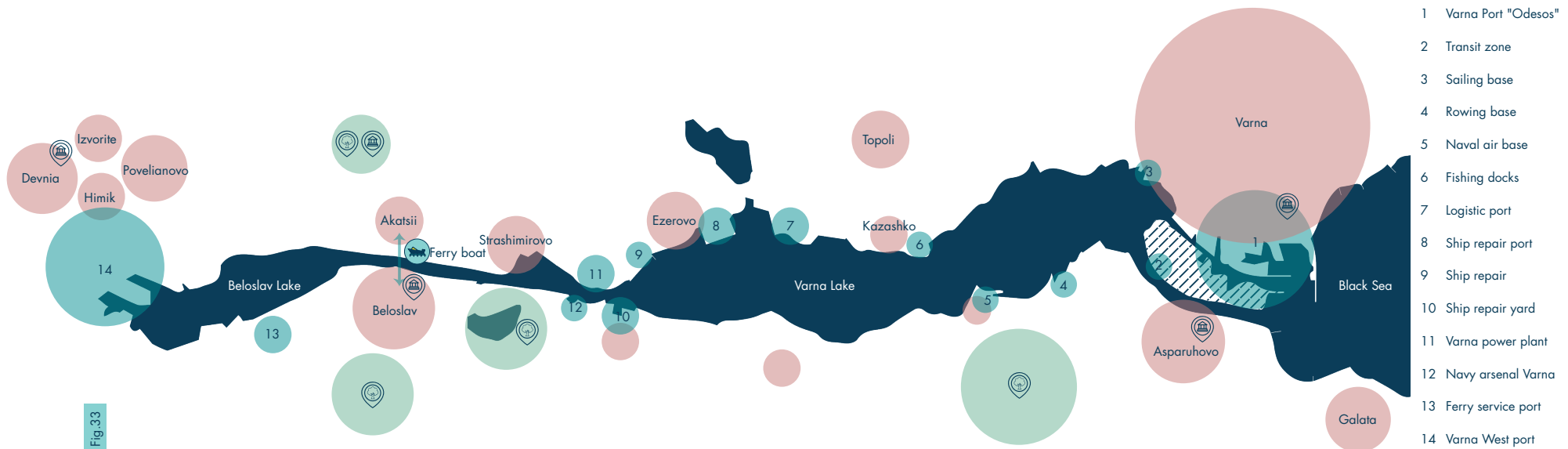


Fig.33

FORMATION

The island was not always a piece of land surrounded by water. It used to be a wetland with marshes. The main factors that influenced the shoreline were natural (passive and active) and anthropogenic. Human impact, especially in the Varna Bay area, is reflected in changes in the dynamics of the coastal zone in the construction of port and coastal fortification facilities, roads, sewerage networks. Natural factors influenced not only the surroundings but also the way of living of the humans in the past.¹

1828



Fragment of a map of Varna Bay from a Dutch sea officer Tetbu de Marini. This plan shows the sandpit that separates the lake from the sea, its depths, and sand deposition. On the north side of the coastline is the city with its walls, and the long line which goes further south is an antique wall from the time of the first ruler of Bulgaria- Asparuh. According to a city's engineer, the wall was an old aqueduct, which was used as a defense wall.²

Fig 34

¹ Vgl. Pletnirov/Pelev 2015, 21.

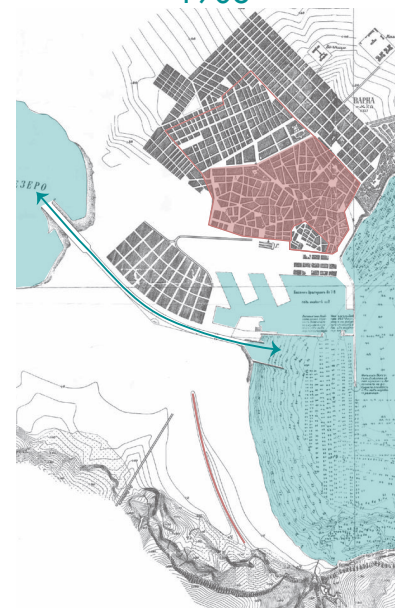
² Vgl. Pletnirov/Pelev 2015, 22.

³ Vgl. Pelev, 2008, 254.

Legende:

- old city and the city's walls
- main/first outlet
- historic defence earth wall
- remains of historic defence earth wall

1908



Hydrographic map by the Bulgarian lieutenant Nedev of the Bay of Varna at the beginning of the construction of the breakwater and the first water canal. Until the beginning of the XX century, the only beach in the bay was the sand spit separating the lake from the sea.³

Fig 35

1944



Fig. 36

The picture was taken from a German airplane. The expansion of the Varna port is seen clearly, and the future formation of the island can be traced. Some remains from the Asparuh defense wall are still visible.

1976

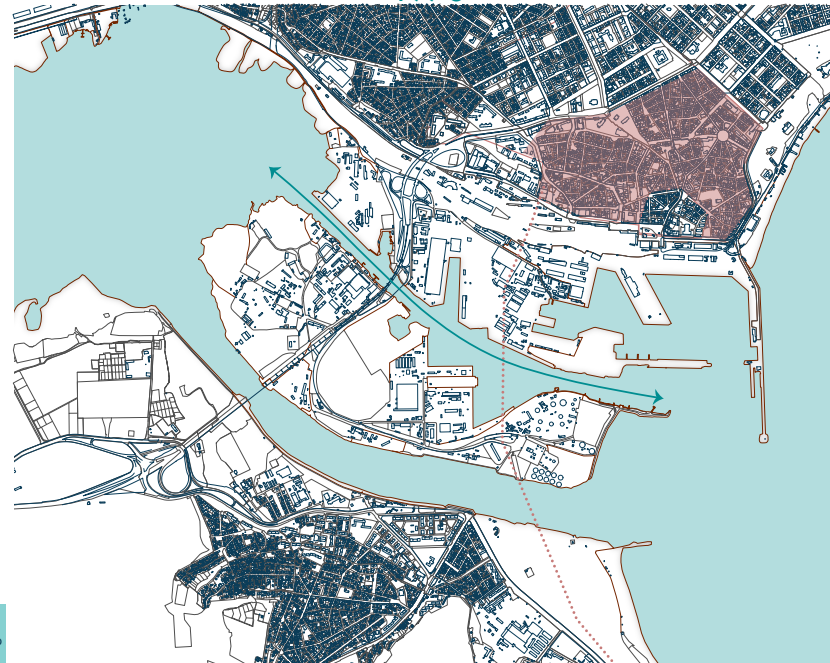


Fig. 37

The second navigable canal links the Black Sea and Varna Lake. The dotted line shows the location of the defense earth wall. During the construction of the canals, the wall was destroyed. Only in the park of Asparuhovo can be seen remainings of the earth wall.

BRIDGE CONNECTIONS

1894



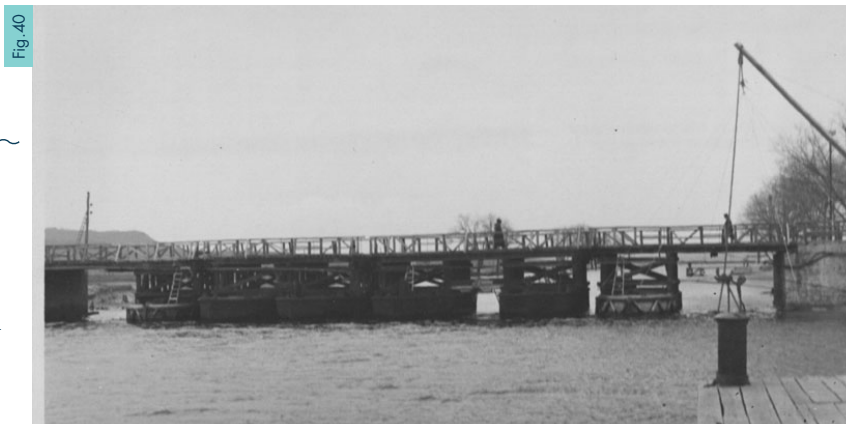
During the Ottoman rule, the bridge was an important connection between Constantinopol and Wallachia.¹

1907



The construction of the canal started, the river drained, and the bridge demolished.²

1908



After the canal between the sea and Varna Lake was completed a pontoon bridge was built.³

1939



A modern movable iron bridge was constructed. With the help of powerful electric motors, it opened in just two and a half minutes, with an opening width of up to 30 m.⁴

1 Vgl. Pletnirov/Peev 2015, 30.
 2 Ebd.
 3 Vgl. Pletnirov/Peev 2015, 32.
 4 Ralitsa Petkova: How a ship demolished the Asparuhov Bridge in 1975, 2019, <https://novavarna.net/2019/01/28/%D0%BA%D0%B0%D0%BA-%D0%BA%D0%BE%D1%80%D0%B0%D0%B1-%D1%81%D1%8A%D0%B1%D0%BE%D1%80%D0%B8-%D0%B0%D1%81%D0%BF%D0%B0%D1%80%D1%83%D1%85%D0%BE%D0%B2%D0%B8%D1%8F-%D0%BC%D0%BE%D1%81%D1%82-%D0%BF%D1%80%D0%B5/,net/2019/01/28/%D0%BA%D0%B0%D0%BA-4>, 30.04.2020

28.01.1975

Fig.42



A Soviet ship crashed directly into the bridge, and the collapsed facility cut off all communications between the two shores. It stops shipping, railway and road transport, and people's travel. Nearly a quarter of Asparuhovo and Galata remain entirely detached from Varna.⁵

1973-1976

Fig.43



The today's Asparuhovo Bridge. It is still known as the longest in the country and is still one of the largest in the Balkans. It connects the Asparuhovo and Galata neighborhoods to the central part of the city and is part of the Black Sea Highway and the E87 European Road. The length is 2050m, height-50m, the number of posts 38 pairs.⁶










⁵ Ebda.

⁶ Vgl. Dobromir Radushec: The Asparuhov Bridge turned 43 years old, 08.09.2019, <https://www.monitor.bg/bg/a/view/asparuhovijat-most-slana-na-43-godini-174835>, 30.04.2020



ACCESSIBILITY AND MOBILITY INFRASTRUCTURE

A significant street that passes through the city center leads to the Asparuhovo bridge. Asparuhovo bridge crosses the island and connects the city with the Asparuhovo district. As an only connection point, the bridge has heavy traffic every day. Ships are passing daily along the island shore through the second canal that links the open sea with the lake and the industrial zone. The only road that leads to the island is the old bridge on the north side. On the island, the roads lead to private properties, thereby limited access to the coast. Railway tracks pass through the old bridge and lead to the most eastern part of the island. Two new proposed bridges will go over the island in the future urban development plan of Varna to ease the traffic on today's bridge and connect significant boulevards in the city with the highway. A new bridge will be built to get additional access to the island.

- | | |
|--|--|
|  Major Roads |  Bus |
|  Minor Roads |  Pedestrians only |
|  Minor Roads2 |  Center |
|  New bridges |  Entrance |
|  New main roads | |



Infrastructure M 1:10000

GREEN SPACE AND WATER

Despite the industrial character of the island, it has abundant vegetation. The unpopulated and abandoned areas have been reclaimed by a plentiful of greenery. On the north prevails the vegetation with a swamp character, mainly marsh that continues the green belt of the Varna lake partially. The central part is with high vegetation. A green line is established around the main road on the island. Throughout the years, a lot of tall, fast-growing species of vegetation like black poplar (*Populus nigra*) and willows (*Salix*) with high water consumption were planted. The east part is open to the sea and has a dune character. Around the island on the west part of the mainland, there is a national reserve park, and on the east-south site is the public park of the Asparuhovo district. On the north, the beach and the public Sea Garden are the primary landscape. The area is a sandy spit with low elevation, but because it is the most inland part of Varna bay, it is protected from coastal hazards.



- Park
- Green
- Nature reserve
- Beach
- Water

Existing green area M 1:10000

URBAN STRUCTURES AND FACILITIES

The island is about 173 km² big. The main character of the area is industrial, and the most frequent users are workers and fishermen. It is visible on the plan that the building structures are scattered around the island, but the available access is restricted. The maritime sector is leading in the area. The location of the most shipbuilding industrial entities are near the port of Varna. An oil company takes the east side, and the central part belongs to the Shiprepair yard of Varna. The west part of the island is less developed, and it has buildings with more diverse functions.- from furniture warehouses to sailing clubs and a restaurant on the west-south side. There are around 14 companies in the maritime business, six firms in the automobile sector, seven firms for buildings and road construction, three furniture companies, two lots for waste and scrap, and a couple of firms in the chemical industry.

Most of the structures are in poor condition and abandoned. Some areas are polluted with waste and rubbish. The west part looks like a construction site, the center is green and with no access, and the east side has almost no structures. Almost all of the buildings are low rise except some old abandoned structures like the former slaughterhouse and the former power station.

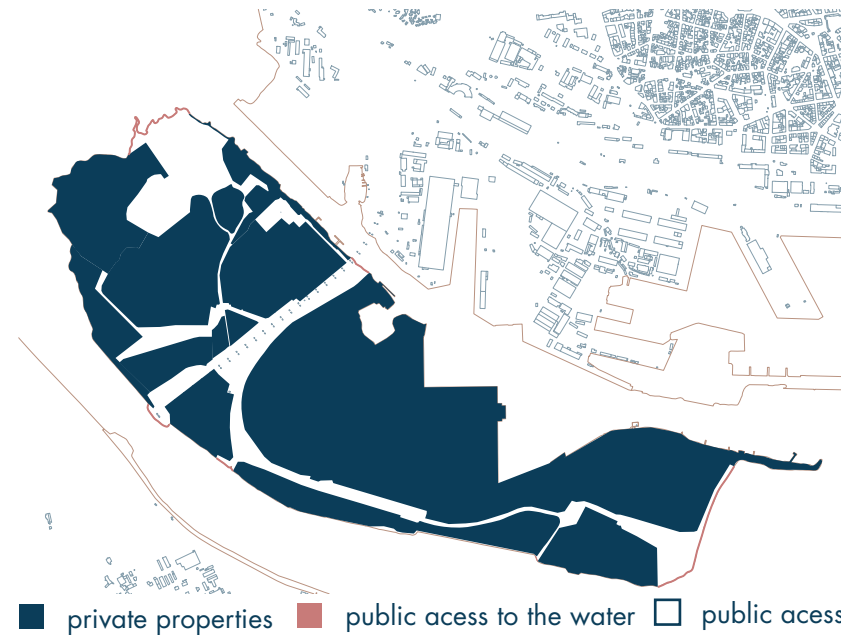


Fig.49

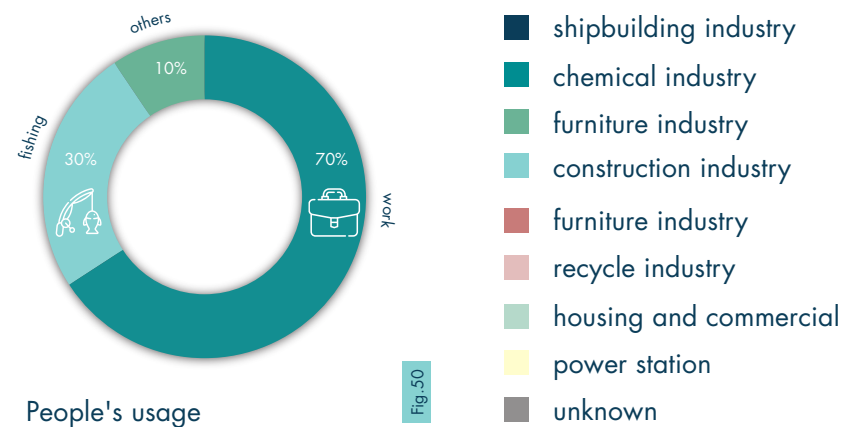


Fig.50

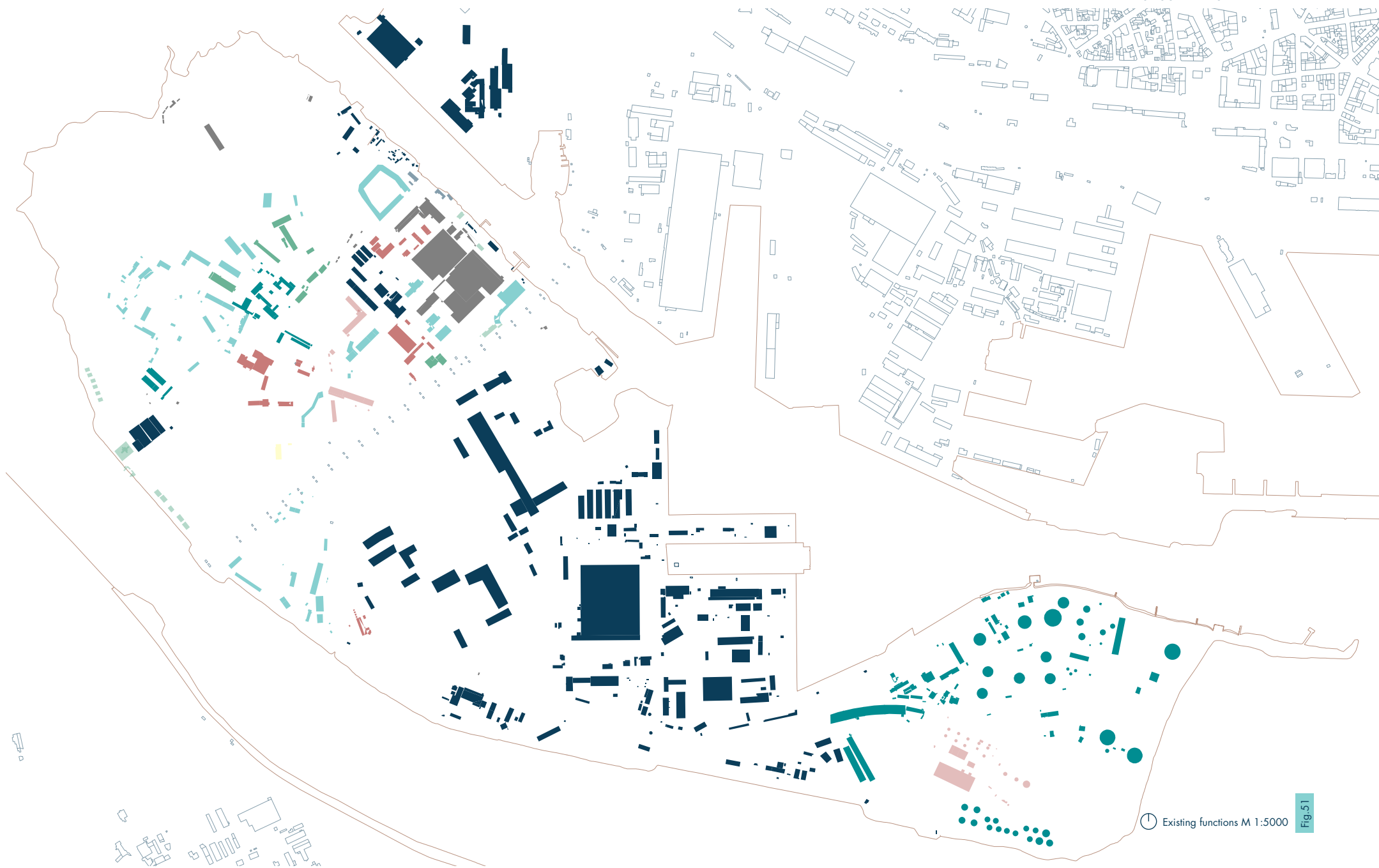


Fig.51

WEAKNESSES

TRANSPORT

Cars are the dominant type of transport in the city- 92%. In a study 71% of the vehicles are used for daily trips, and only 26% of the people use the bus as transport. The average number of passengers on buses per day is 624- quite a low number in comparison with other cities.¹ A survey made by the Municipality of Varna asked 5724 passengers in buses to state their purpose of the trip. The majority said that they use the bus to go to work and to school. On the question, can people make this trip with a personal car, 74% said that they do not own a car, 13% said that they have a car, but the fuel cost is for them too high, 9% try to avoid the traffic, and 4% said that the parking is the reason for not using their private cars. The people stated that the buses also have irregular frequency and often full.

Most cars are used only to travel to work and back home. The rest of the day, those vehicles are parked and not used and only take space. Most parking spaces are on the street, which provokes traffic congestions, sometimes difficult for the buses to maneuver.

The transport with non-motorized vehicles like cycling is below 1%. The cycling infrastructure is reduced and, in many places, absent. The opportunities to travel by bicycle are limited.²

In another survey, the people were asked about the walking infrastructure to try to promote more walking in everyday life of the citizens. Four main problems were found. The most common was insecurity and safety. The lousy quality of the pedestrian paths on the streets brings insecurity in the people and fear of the vehicles. They are scared of the homeless dogs, unlit spaces. Another criteria is the pedestrian comfort. Often the width of the sidewalk is not enough or it is absent. Often the pedestrian routes are blocked and fewer people want to walk. The last aspect is attractiveness. People wish to experience their surroundings while walking, enjoy beautiful views and spaces.³

Fig. 52

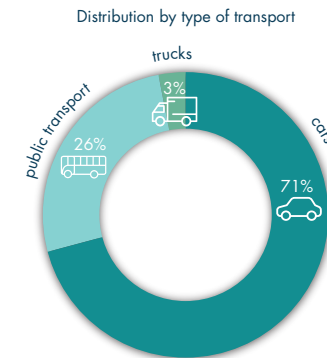


Fig. 53

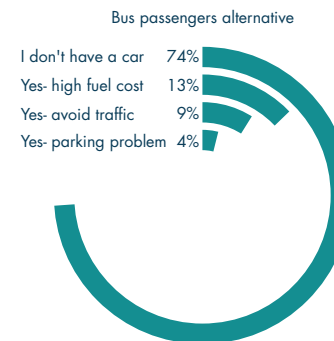


Fig. 54



1 Vgl. Mobility Management Plan for the Municipality of Varna, <https://www.keep.eu/project/575/south-east-european-mobility-management-scheme>, 02.02.2020 2 Ebda.

3 Vgl. Daniela Stoinova: We walk when it is safe, comfortable and interesting, 15.01.2019, <https://www.bnr.bg/varna/post/101068778/hodim-pesha-kogato-e-bezopasno-udobno-i-interesno>, 02.02.2020

⌚ Current motor vehicles, railed vehicles, watercraft routes

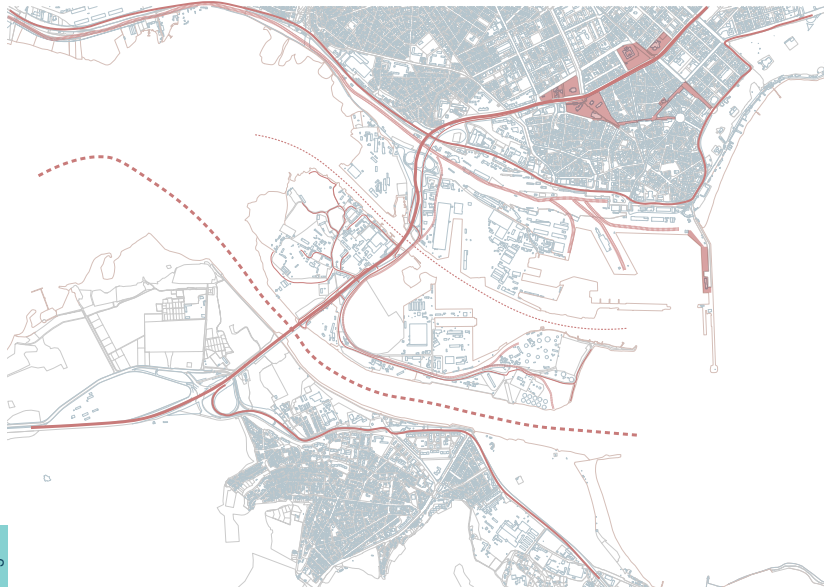


Fig.55

⌚ Future motor vehicles, railed vehicles, watercraft routes



Fig.56

⌚ Bus stops and routes

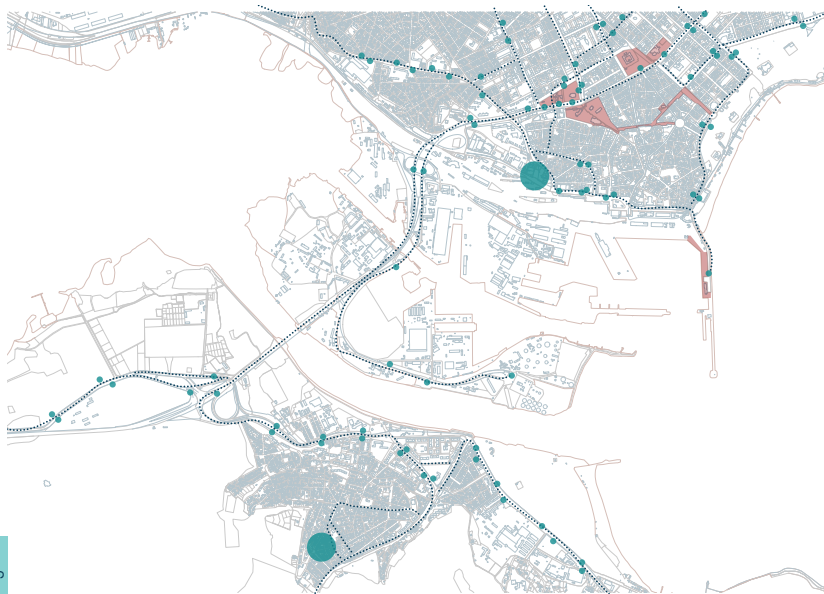


Fig.57

Legende

- Vehicles Roads
- NewVehicles Roads
- - - Watercraft Routes
- - - Bus routes
- Bus stops
- Pedestrians only



Today



Tomorrow

The island has a lot of abandoned old and unused cars, and the main transport is by car. Dirty streets, the non-existing pedestrian paths, no enough lightning, all these conditions force the people to use motorized vehicles. For the future high technology park, the alternative way of transport like walking and cycling needs to be encouraged. Also, more bus lines need to reach the island so the people don't need to use their cars. The alternative transport has to stay as a priority, above the vehicles.

THE BARRIER

After the digging of the two artificial canals, a division was created. The canals are the link for the industrial zones- the West and the East Ports, but they broke the connection between the city and its neighborhood. Today the residential areas are divided by a big industrial area. Moreover, the only connection is one bridge that mainly services the vehicles. To go from the neighborhood to the center on foot is not possible. A person may walk on the busy street, but it is risky because many of the streets do not have a pedestrian road. It seems that the water and the island play the role of a barrier, and it needs to be skipped and just jumped over. The island does not have to be seen as a barrier or as an intruder in the city fabric. On the contrary, it can play the role of a battery, and the seawater is the conductor, and those two together will "lighten up" the two parts of the city.

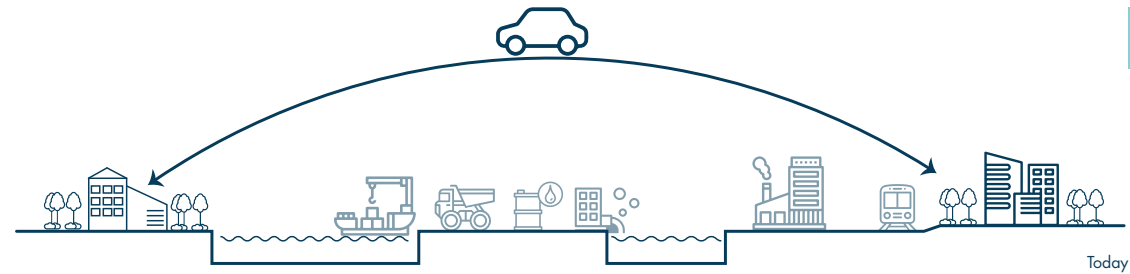


Fig. 58

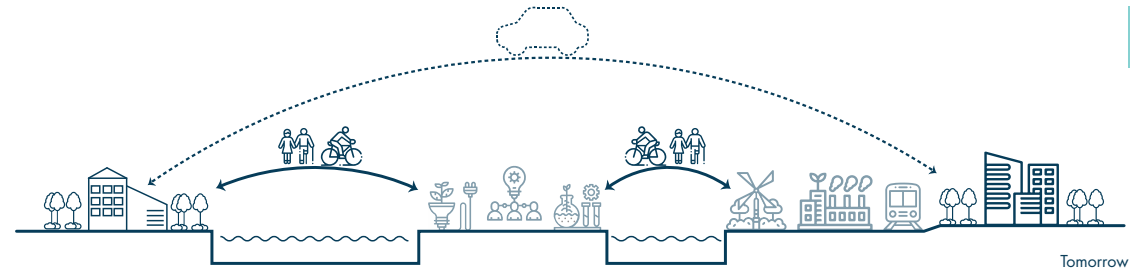


Fig. 59

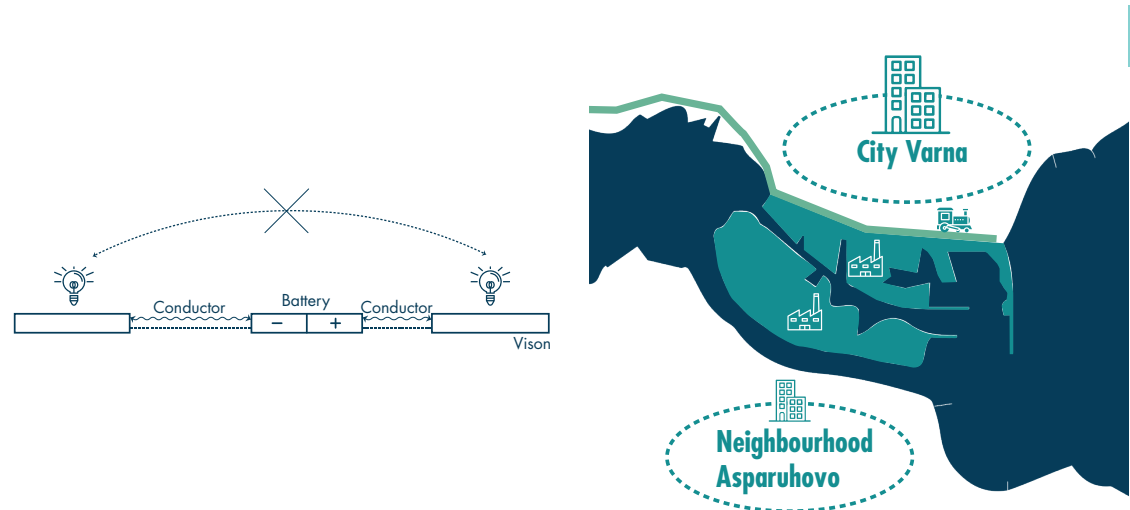


Fig. 60



Fig 61

POLLUTION

Air pollution

The industrial island influences the state of the air. The north and west north winds carry the emissions from the industry to the residential areas of the Asparihovo. Seaside towns are more ventilated, but they have the problem that the breeze carries salty droplets around which attracts the dust particles like a magnet and increases their concentration.¹

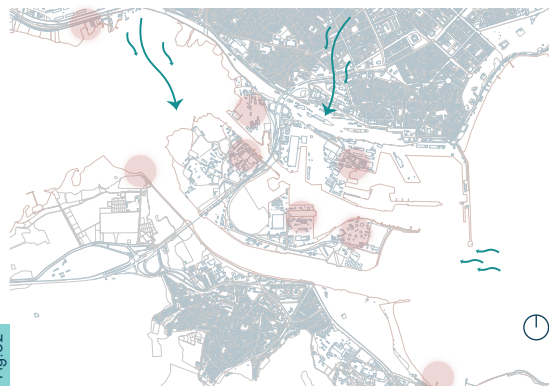


Fig. 62

Land pollution

On the island, there is a high amount of industrial waste. According to the Engineering-geological zoning of Varna municipality, the island has a shallow soil which means that the waste chemicals are absorbed into the soil and going directly into the groundwater.³

Water pollution

The marine industrial buildings often release wastewater in the canal. The water might be clean and purified, but sometimes it is warmer than the water basin temperature, and this leads to disbalance in the ecosystem by killing microorganisms or resulting algae bloom. The water currents also transfer chemicals directly to the local beach and the Asparuhovo coastline.

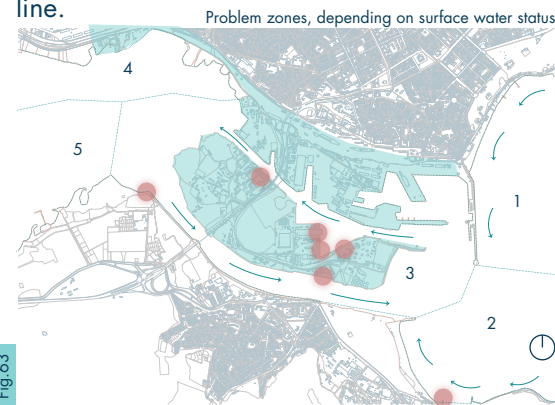


Fig. 63

- 1 Canal pumping station
- 2 The lake current mixes with the seawater, and high concentrations of biogenic, organic substances are unsanitary and not hygienic.
- 3 Most affected by the polluted water masses coming from the lake into the sea through the two channels. In the water enters heavy metals, petroleum products, nitrogen and phosphorus compounds, insufficiently purified domestic fecal water, polluted rainwater.
- 4 Concentrations of ammonium and nitrate nitrogen, petroleum products, heavy metal ions have been observed here. TPP Varna discharges its cooling waters in this zone, which is why there is a partial zone of thermal impact.
- 5 The water quality is slightly better than in zone 4, mainly due to the flow from Beloslav Lake to Varna Bay. In the lake waters, high content of nutrients and petroleum products is registered in the area under consideration.²

Noise pollution

Transport noise is particularly predominant in Varna, where several national and international transit corridors and routes intersect. Of the four significant sources of noise - road, rail, air, and water, only road traffic has a real adverse effect on the population. 52% of the residents of Varna during the day and 44% at night are exposed to excessive levels of car noise.⁴

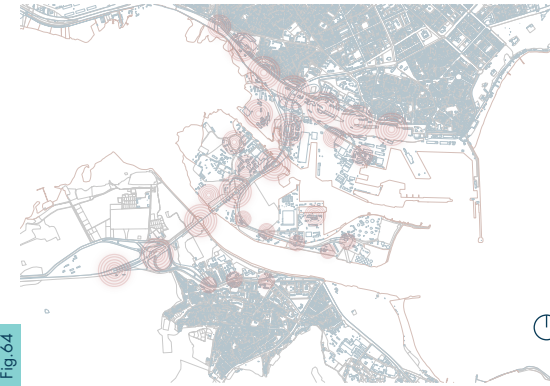


Fig. 64

Relocating the functions, applying new methods for reducing the pollution and using vegetation as a measure for reducing pollution will help improve biodiversity, air quality, and water filtration.

Legende

- Air pollution sources
- Water pollution sources
- Noise pollution sources
- Noise pollution sources
- Water problem zones
- Wind direction
- Water current direction

1 Vgl. Varna already meets the European air quality requirements, 16.04.2019, <http://www.moreto.net/novini.php?n=395347>, 04.02.2020

2 Vgl. Municipality of Varna: Varna Municipal plan for the period 2014-2020, Varna September 2013, <http://www.strategy.bg/StrategicDocuments/View.aspx?lang=bg-BG&Id=124>, 01.05.2020, 182.

3 Vgl. The environmental protection program municipality of Varna (updates) 2019-2023, 03.2019, <https://www.varna.bg/bg/343/>, 04.02.2020

4 The updated noise map of Varna was approved, 13.12.2017, <https://varnacouncil.bg/odobriha-aktualiziranata-shumova-karta-na-varna/>, 06.02.2020

STRENGTHS

The connection to the water

The historical formation shows a clear linkage between the water and the urban core. This feature is today also present, so the future use is also determined by its ability to connect to the water source.

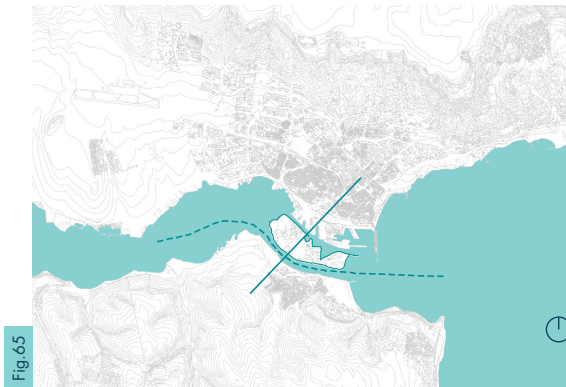


Fig. 65

The post-industrial charm

The romantic charm of the industrial buildings, cranes, hangars, and warehouses, which are partially ruined and the wild nature around the structures which is absorbing the human-made facilities, gives to the island distinct features. The green spaces have high ecological value because no one goes there.



Fig. 66

The Gate

The island is the first thing that is visible when entering the city. It plays the role of a gate for the ships that are coming from the Black Sea; it is the entrance to the city from the south through the Asparuhovo bridge and is even visible from the train before reaching the city train station.

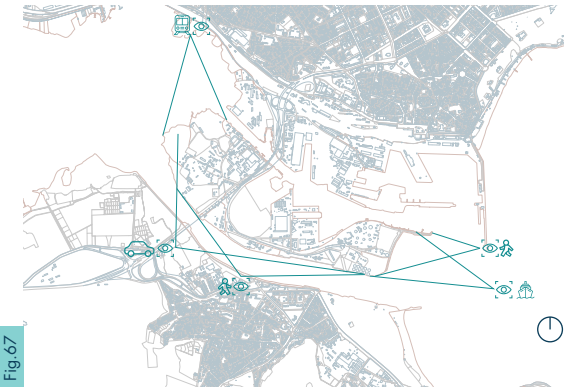


Fig. 67

OPPORTUNITIES

Fishing

Fishing is a popular activity in Varna. There is a non-profit organization that promotes amateur fishing and supports education, public awareness, and conservation of the species. They want to give an example of conscious fishing in compliance with regulations. The Municipality even supports this activity by organizing a tournament every year.¹ On the island and around the island, fishers can be found.



Varna Channel Cup regatta

Varna Channel Cup regatta takes place every year, and it is slowly becoming a traditional international race in the canal the Sea-Varna lake. Around the island, there are sailing and rowing clubs, and their activities can be strengthened in the future.²



Value in the worthless

The ruined and unaesthetic industrial structures which are seen as unworthy for the future can be returned to the positively charged circulation by reusing materials and urban recycling.



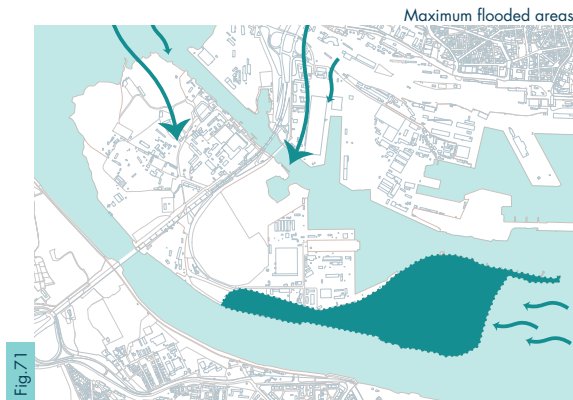
1 Vgl. Yuli Atev: Let's protect the coast and the sea clean!, 07.09.2019, <https://www.localguidesconnect.com/t5/General-Discussion/Let-s-protect-the-coast-and-the-sea-clean/tid-p/1878060>, 02.07.2020

2 Vgl. D.Dicheva: Notice of Race 2020, 26.11.2019, <https://varnachannelcup.com/en/blog/notice-of-race-2020/>, 01.05.2020

THREATS

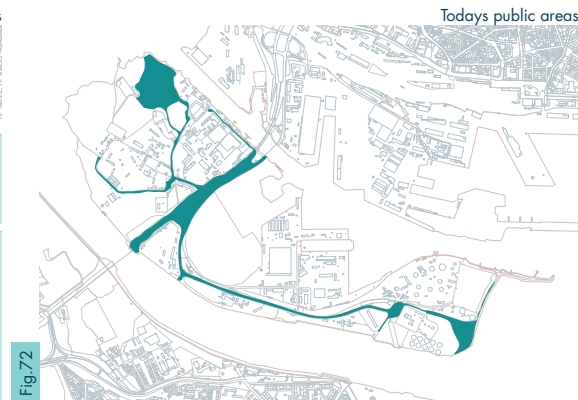
Climate

The island is on the lowest point of the valley, thus exposing it to the elements. The wind and the water are playing an important role, and if they are not taken to account, the development of the island could not fulfill its purpose correctly. Today the island is protected partially from the port structures on the east, but for the possible future high tides, there are no measures taken.³



Private instead of public

One of the reasons the high technology park to be built is to attract investors. The problem that can occur is the privatization of the whole island and not leaving a space for public purposes.



Monopolization

In the case of a single company owning or controlling the majority of the island's property and workers, the firm could become politically dominant and to demand monopoly. As the interests of the city and the company mostly differ, the city must not lose control over the island.



³ Vgl. Efimova/ Valchev/ Andreeva/ Prodanov, 2018, 222.

PHOTO DOCUMENTATION



Fig. 74



Fig. 75



Fig. 76



Fig. 77



Fig. 78



Fig.79



Fig.80



Fig.81



Fig.82



Fig.83



Fig.84



Fig. 85



Fig. 86



Fig. 87



Fig. 88



Fig. 89



Fig. 90



Fig.91



Fig.92



Fig.93



Fig.94



Fig.95



Fig.96



Fig.97



Fig.98



Fig.99



Fig.100



Fig.101



Fig.102



Fig.103



Fig.104



Fig.105



Fig.106

CONCLUSION

The location of the island plays a massive role in the city's connection system. It is in the middle of a naval and a vehicle route. Once this piece of land was part of the mainland. It was a sandpit that separated the sea from the lake. Human activities influenced precious wetlands and changed its topographical structure. With the expansion of industrialization, artificial canals were excavated to open and ease the transport of goods. They changed the vegetation and water qualities of the lake. The newly created island turned to a waypoint in the sea and land network. Throughout the years, there has been only one bridge connection, and today the Asparuhovo bridge combines the two mainlands and is a vital vehicle route.

One bridge is also available for traveling to the island. The infrastructure on the island is in poor condition, and in some places is not complete. Pedestrian roads are missing, and people walk on the street, which makes it unsafe. Railway tracks, which were once part of the main transport of goods, are now not in use. The municipality has decided to build two more bridges above the canals and one more connecting the city with the island.



Fig. 107



Fig. 108

In contrast to the port complex on the north, the island has abundant greenery. In the center, high vegetation with the ability to absorb water was planted. Around the water shore, low vegetation from the former wetland like marsh still grows. The wild mixture of wood and wetland differs from the parks which are around the coastline of the city. Another contrasting effect has the relation of the private properties to the spaces open to the public. The buildings may look scattered around the island, but the actual property areas are dense, and fences and walls restrict the accessibility. Most of the lots have functions connected to shipbuilding, followed by the construction and chemical industry. There are only two places to eat.

Another weak point is the transport. The dominant type of transport is the car. People who cannot afford a vehicle or want to save money on fuel, use public transport (bus and trolleybus). The massive car traffic provokes congestion, slows down buses and makes them an unpopular transport option. Most of the time, the cars stay parked and block the pedestrian routes. The walkways are often missing and unsafe, because of restrictions on them and missing lightning. Their condition

forces the people to walk on the street or use a motorized vehicle. The island acts as a barrier. It is a big void between the city and the Asparuhovo district.

Moreover, the only bridge goes above the island and serves the vehicles. The island stays as an intruder between the city's parts. On the contrary, it can play the role of a battery, and the seawater is the conductor, and those together "lighten up" the two parts of the city.

The pollution is another main factor. Industrial and logistics influence air and noise quality. The waste produced by the industry affects the soil of the land. The shipbuilding companies release wastewater into the canal. Even purified, the temperature difference can lead to an imbalanced ecosystem.

Nevertheless, as an artificially created island, it received a valuable linkage with water, and visibility from land and sea gives a big plus. The industrial character, combined with the abundant vegetation, gives the island a distinct feature. That is why today, the island is a favorite fishing spot. Sailing and rowing clubs have their base around and on the site.

Each year a regatta is taking place, and the route is going around the island coast.

The structures on the island look poor and unkempt, but they are a valuable resource for recycling. If the current privatization on the island continues this will lead to limited or no public space.

Another danger is the rising of the sea level that can affect the buildings around the coast.

The analysis mentioned above gives a basic overview of the site's situation.

The next chapter examines a reference project that has similar characteristics to the island of Varna.



Fig. 109

L'ÎLE DE NANTES

REFERENCE PROJECT

Ile de Nantes is an island located in the course of the Loire enclosed by two arms of the river. It has a length of 1 km. In the past, the island was set of an archipelago of sandy islands divided by small river arms. The little inlets were eventually filled to ease the traffic on and to the island. With the creation of the new port in the 19th century closer to the sea, the activities on the island gradually stopped, and it lost its prosper. The land started to decay and to turn into a wasteland. The city council started a project for the restoration of the industrial buildings respecting the memory of the workers. In 1999 Alexandre Chemetoff Jean-Louis Berthomieu won the competition for the new urban proposal. Instead of a classical masterplan, they proposed a "plan-guide" that serves as a perspective map, regularly updated by the

"The 'bigger picture' of the Ile de Nantes, as synthesized from maps and literature, reveals the site's past, present, and future: from meandering river to estuary metropolis (a-b), from natural to industrial harbour (c-d), from industrial to urban island (e-f).¹



Fig. 110

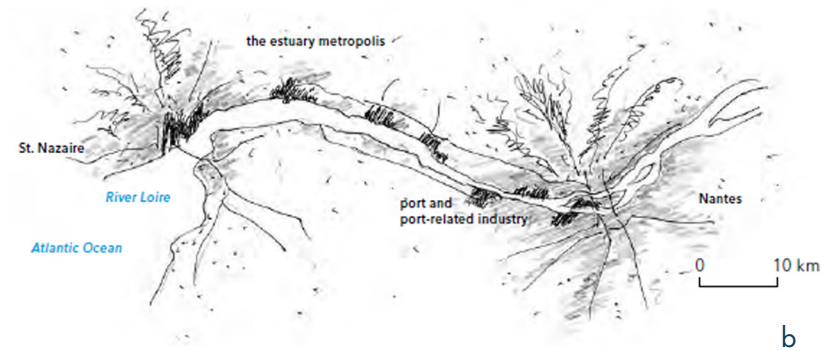


Fig. 111

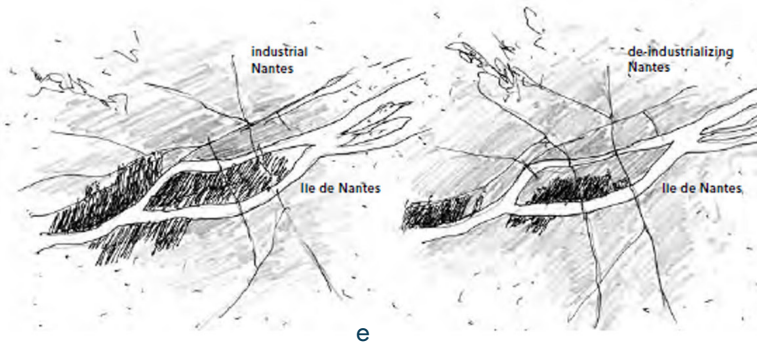
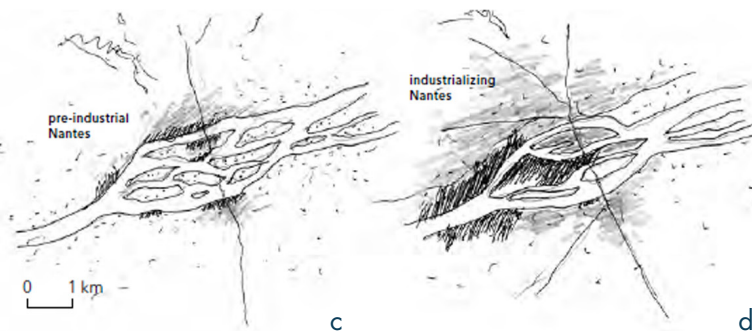


Fig. 112

¹ Diedrich/Dahl, 2016, 80.

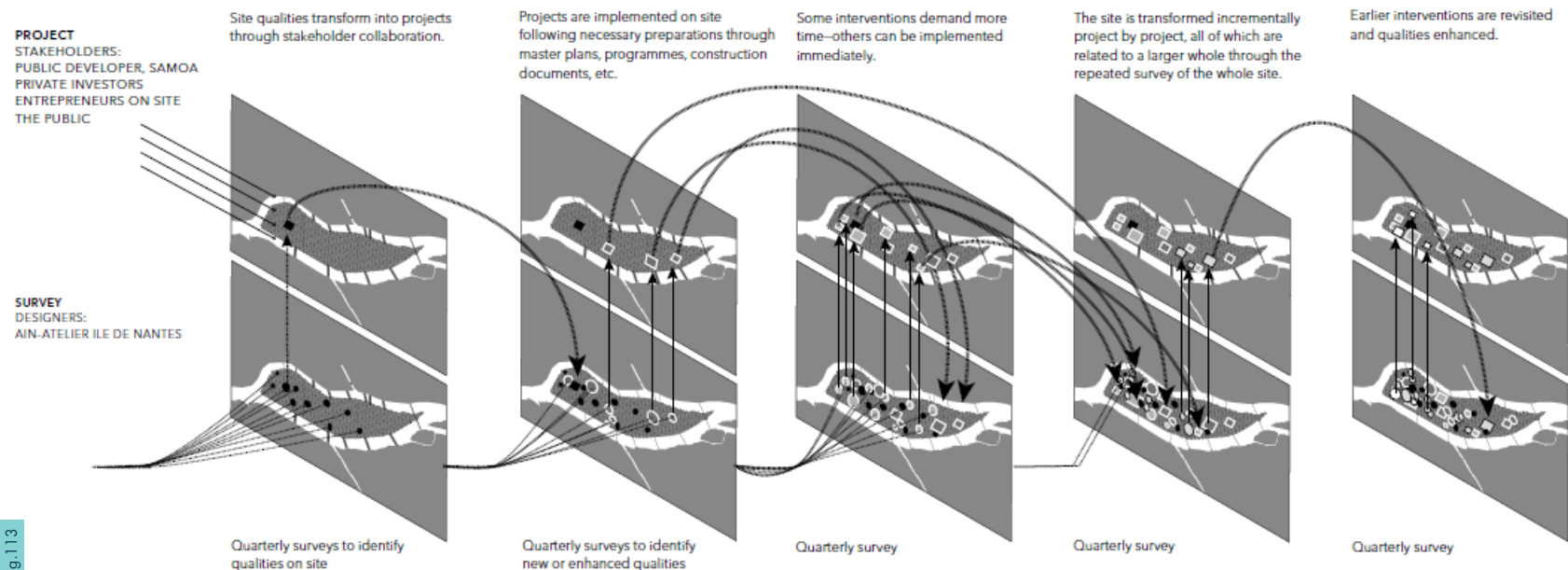
actual state of the project. The main goal was to transform the island by uplifting and retaining the site's main structure as a post-industrial island and respecting the island's heritage and landscape. Public space is concrete for urban transformation. The main goal is to contribute to the economic growth of the city and to relink it with the urban fabric. It does not matter how it will look in the future but rather how space is changing through the years, the close observation and monitoring is the main scope

of the work.²

"The whole set of transformative action forms continuous 'stitching together.' The designers call them a 'plan guide.' It consists of a sequence of drawings: first, a meticulous site survey, mapping the existent, then a proposal on where to intervene. With this sequential, reflexive and relational method the designers can address the site as a continuously transforming environment, conceived by many more actors than the designers themselves, its stages

of change regularly monitored in order to define the next set of acupuncture interventions based on the results of the previous ones."³

"Chemetoff's plan-guide entices an evolutionary process: quarterly surveys identify qualities on site, which are continuously developed into projects."⁴



2 Vgl. Histoire de l'île de Nantes : d'hier à aujourd'hui, <https://www.iledenantes.com/le-projet-de-ile/une-histoire>, 30.04.2020
3 Dietrich/Braae, 2012, 30.
4 Diedrich/Dahl, 2016, 78.

Fig. 113

Few principles established the planing guide, which serves as a framework for planing on the island:

- **Site as a resource:** make use of what exists without denying the traces of history that have shaped the territory. Emphasize the old buildings, not destroying them. Think of the island as a material resource.
- **The new waterfront:** Appreciate the connection with the water and enhance the river and the environment (natural elements and maritime structures)
- **Welcome diversity:** Eventually, the island should include all kinds of activities and infrastructure, from housing to business and retail, social and cultural. Density is cherished to avoid urban sprawl.
- **Start with public space:** Beginning with planing the public space, so the space to be more attractive for future buildings.⁵

Alexandre Chemetoff guided the first ten years of the project and contributed to the recognizing of the territory. It was a plan with an open ending.



Fig.114

The plan and guide map, site survey, January 2007



Fig.115

The plan and guide map, october 2008

⁵ Vgl. Aucame, Île de Nantes : fabriquer la ville autrement, 11.2014, https://www.aucame.fr/images/catalogue/pdf/QSN066_IleNantes.pdf, 02.05.2020

Today the local public company Samoa is the urban and economic developer of the island. Not only local authorities and designers are involved in the project but also citizens who live the territory daily.⁶ The new management company designed an extension of the proposal of the Chemetoff, but this time with a deadline by 2030.⁷

A more conventional way was used: the island was divided by seven new urban districts that have his character and form and are with a close relation and reflect the mainland surrounding.⁸ Connecting the districts with a landscape infrastructure grid.⁹

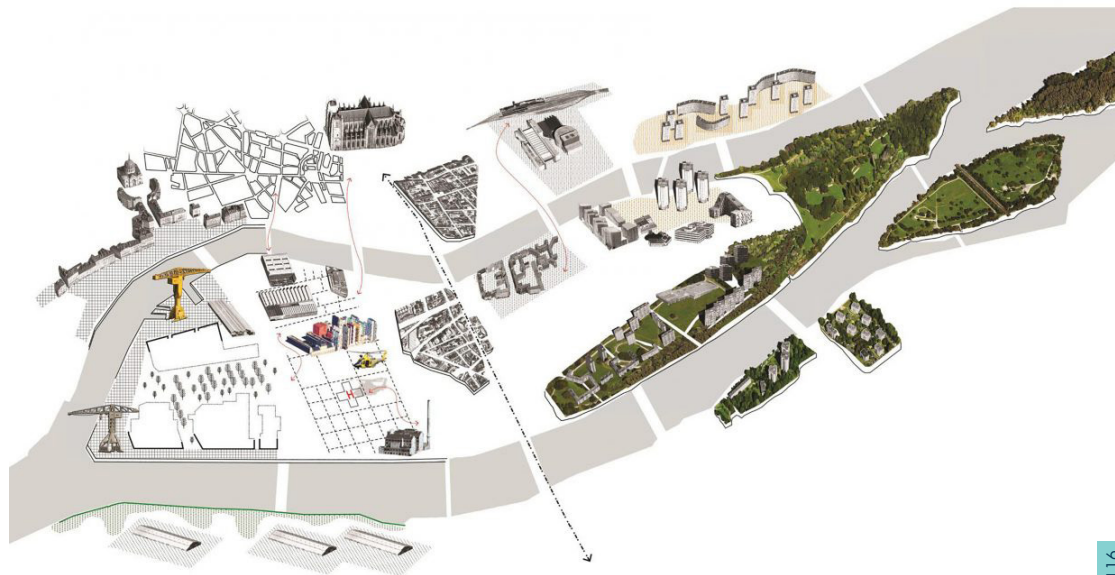


Fig. 116

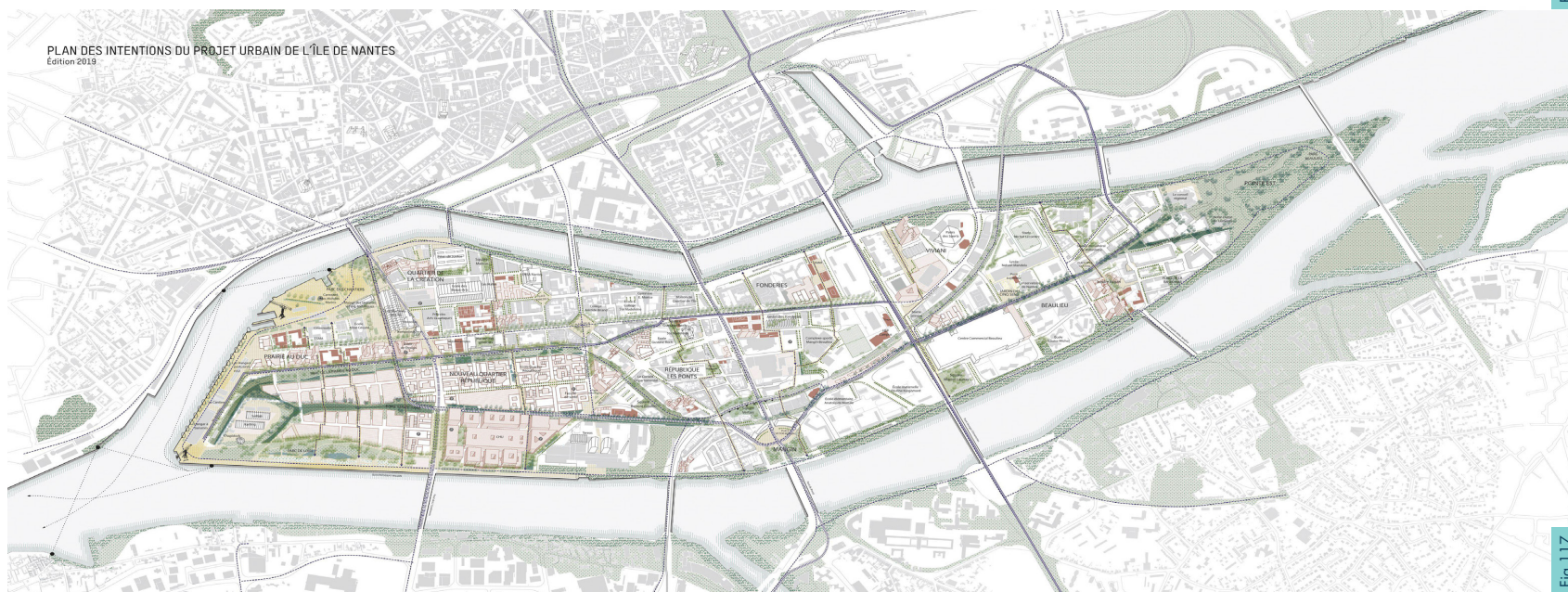


Fig. 117

6 Vgl. Un projet collectif piloté par la Samoa, <https://www.iledenantes.com/le-projet-de-ile/les-acteurs-du-projet-urbain/>, 30.04.2020

7 Vgl. Dietrich/ Dahl, 2016, 77.

8 Vgl. Project island transformation, Île de Nantes, <http://urbanism.orgpermod.com/projects/ile-de-nantes-transformation-plan/>, 30.04.2020

9 Ebda.

The new ideas for the island aim to correspond with the future population increase and the mixture of services that are currently missing. The project concentrated on knowledge economy-health sectors, cultural and creative industries, training, traditional services, social and solidarity economy, crafts and shops and so provide new jobs.⁹

The project of the island of Nantes manages to establish an urban continuum between the urban fabric and the post-industrial island, which was one unpleasant and unfamiliar place. It is accepted as a part of the city even though very little from its former structural elements were changed or erased. Finding the value of a site by observing close each element in order to transform a not to design something new. Transformation is not static but rather fluent processes. "Landscape architects have a long tradition of interpreting the landscape. However, the industrially influenced and constructed sites and their call for design as intervention challenge the conceptual framework of both landscape and urbanism (Braae 2012). While the traditional design act is associated with originality in terms of 'the new,'



Fig. 118



Fig. 119



Fig. 120



Fig. 121

novelty in transformation is rather associated with the ability to create a dialogue with the existent, depending on site-related knowledge: developing 'new views' on uses, aesthetics, etc., ideally focused on enhancing relations between the nostalgic/place-bound and the un-nostalgic/nomadic, between the material and the immaterial, and between the present (including the past) and the future."¹⁰

The island of Nantes is an excellent example of how transformation is taking place and constantly changing and shaping together with the city itself, shifting from a neglected to an essential and valuable area thanks to the involvement of urban and landscape architects and the inhabitants.

⁹ Vgl. Evelyne Jousset: Ile de Nantes phase 2: the district continues its transformation, 11.03.2015, <https://france3-regions.francetvinfo.fr/pays-de-la-loire/loire-atlantique/nantes/ile-nantes-phase-2-quartier-poursuit-sa-transformation-91827.html>, 30.04.2020.
¹⁰ Dietrich/Braae, 2012, 24.

CONCLUSION

The island of Nantes has some similarities with the island of Varna, and they also differ from each other. The table on the right shows a comparison between the two islands.

The project for the Island of Nantes managed to relink a post-industrial island to the urban fabric of the city. Respecting the surrounding and welcoming urban activities, the island turned from a wasteland into a desirable destination. Space was activated with the help of consistent observing and analyzing and minimal involvement of new structures. The site is the resource. They were not destroying the buildings but rather magnifying their presence. A new waterfront highlights the connection with water. The future idea is to invite more diverse activities, and functions and the first step is to start with the public space. The results of the measures taken for the island of Nantes led to an active urban area, which is missing on Varna island. That is why that strategy will be a base for the transformation of the island of Varna. The approach from the Island of Nantes will be implemented on the examined site, and the positive features from the island of Varna will be intensified to ensure active development.

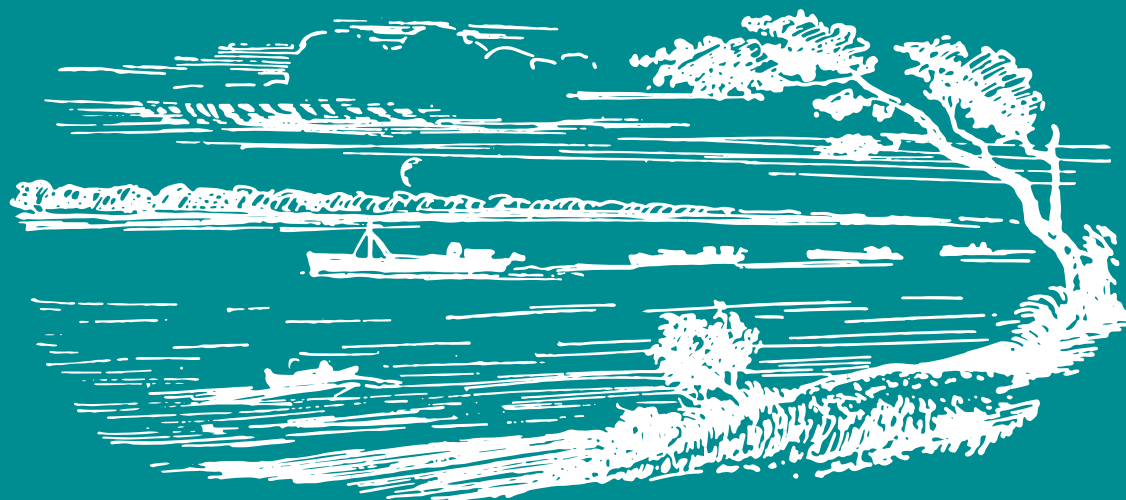
● positive feature

DIFFERENCES

Island of Nantes	Island of Varna
Between two river arms	Between a lake and a sea ●
Set of small islands artificially combined	One piece of wetland divided by artificial canals
After the relocation of the port, it turned to a wasteland	After the creation of a new port deeper into the land, it became a reference point on the navigational map and remained an industrial zone ●
Not functioning industry	Still functioning industry ●
● Masterplan for restoration	Possible Masterplan for demolition
● Respect the buildings	Possible intension for destruction of the buildings
● Invites social activities	Repels social activities in todays situation
● Multiple bridge connection	One bridge connection
● Reachable by foot	Not reachable by foot
Less dense greenery (only on the west and around the shoreline)	Abundant, dense greenery (along the coastline and the center) ●
High-density development	Low-density development ●
● Quality infrastructure	Lack of quality infrastructure

SIMILARITIES:

- Enclosed by water canals
- Central location
- Island with industrial function
- Between two districts
- Masterplan for the accommodation of new jobs and new services



THE NEW VISION

PRINCIPLES

STRATEGY

SEGMENT 1 - THE NEURON

SEGMENT 2 - THE BLUE LINE

SEGMENT 3 - THE MARKET HUB

CONCLUSION

PRINCIPLES FOR THE ISLAND IN VARNA

Several planning principles are developed that will serve as a framework for the future transformation of the island:

1. Working with the existing:

- protecting the industrial memory by revaluing the existing as much as possible
- preserve as much as possible of what is found on the site regardless of the functions
- re-use abandoned buildings and materials

2. Reclaim the blue-green infrastructure

- highlight the existing green areas and the waterfront
- revalue the maritime-marine environment (natural areas, banks, quays)
- redefine water activities and create public spaces around the green areas
- maintain and enhance the habitat

3. Mix functions:

- invite diverse functions on the island
- create quarters that are concerning their surroundings

4. Start with shaping public life

- implementing small interventions for a more pleasant working environment
- increasing the effectiveness of the new constructions through developing the public space

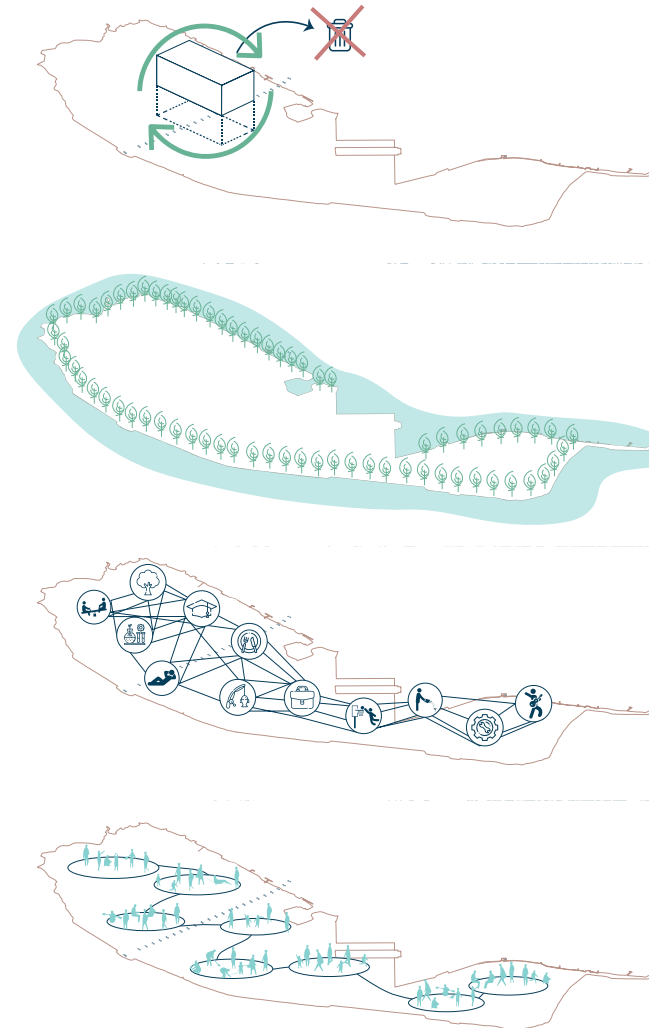
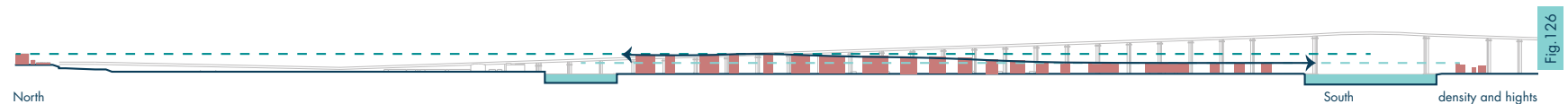
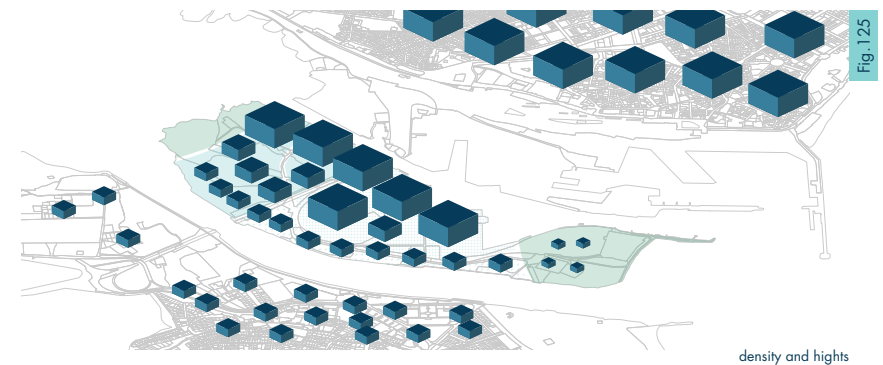
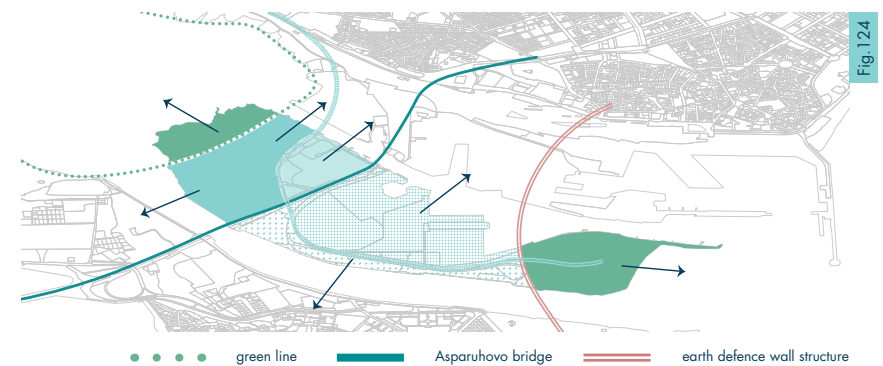


Fig. 123

STRATEGY

Q² QUALITY QUARTERS

- lines linked with the history, present, future, and landscape define quarters on the island
- three central axis that communicates with the surrounding are taken into account for the creation of different zones
- the axes are intersected with the new railway line and new inlets are being established
- the area on the west part continues the green lakeshore line and corresponds with the vegetation and the lake.
- line of the historic earth wall which is passing through is considered axis for creation of zone on the east relating to the sea
- the zones in the center merge with the surrounding too - the area south from the railroad has to have similar urban functions and characters as on the opposite side(Asparuhovo district); the north part unifies with the port of Varna
- future development changes on the primary land side will lead to changes on the island
- the heights of the buildings also are correlated with the heights and the density of the surrounding mainland - on the north higher structures, and high density are acceptable and on the south lower density and lower building height



NET-CONNECT

- The newly established streets and bridges from the Municipality of Varna are taken to an account.
- Limiting the vehicle access on the island.
- Using the existing train tracks for the transport of passengers on the island.
- Establishing more bus stops on the newly created roads.
- Increasing the pedestrian opportunities and limiting the car rounds.
- Creating a densified cycling network.
- Adding more bus lines and inviting railway transport to give enough possibilities to minimize the use of car as an everyday transport

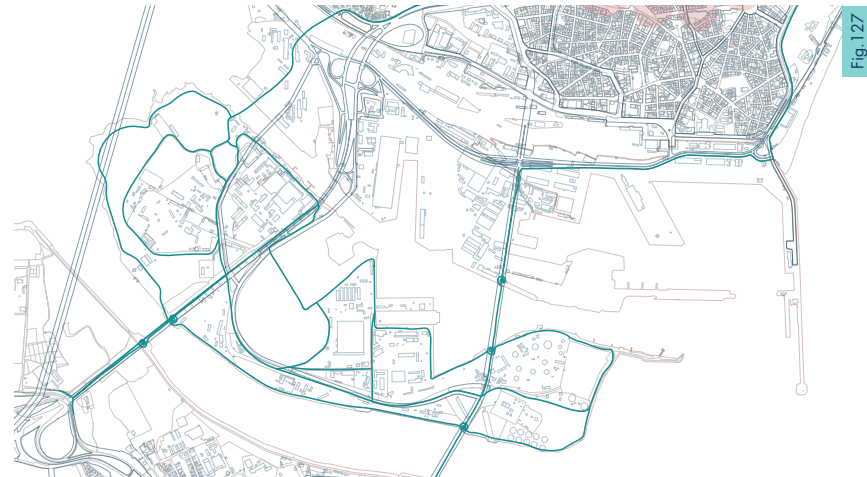


Fig. 127

Bicycle roads



Fig. 128

Old vehicle roads

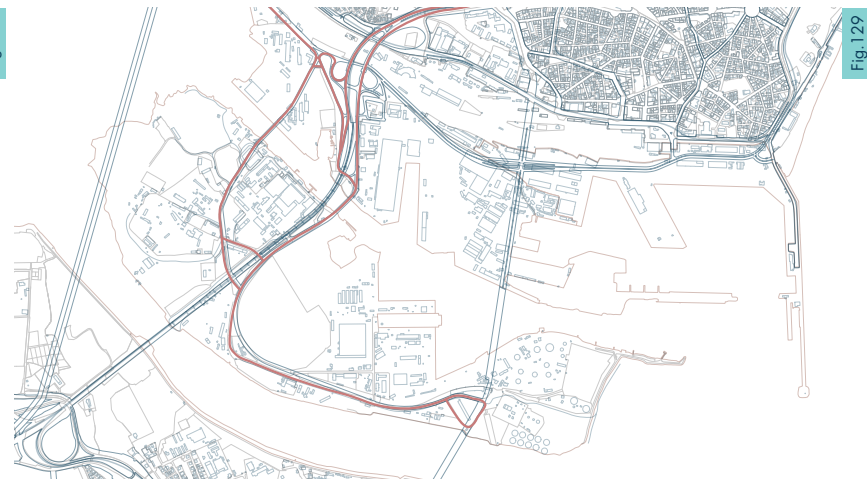
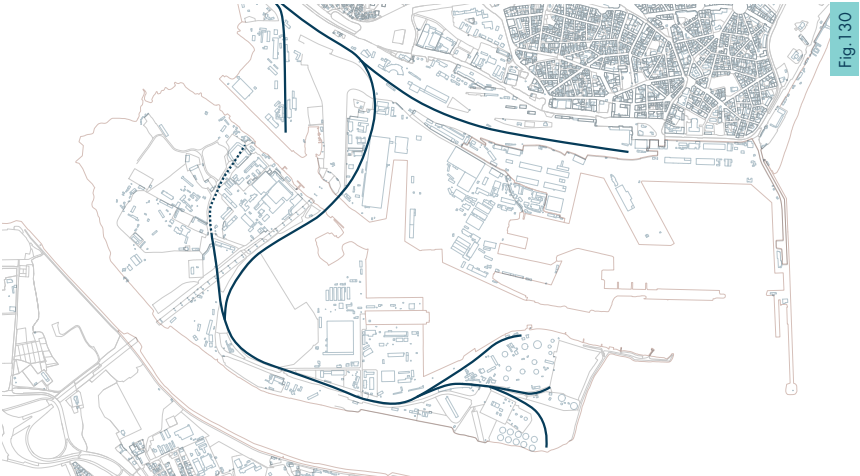


Fig. 129

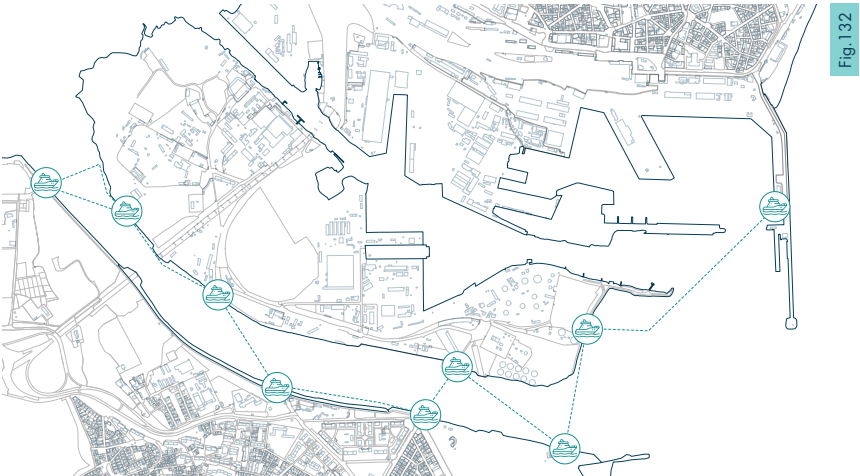
New vehicle roads



Old train tracks



New train tracks



Boat connections

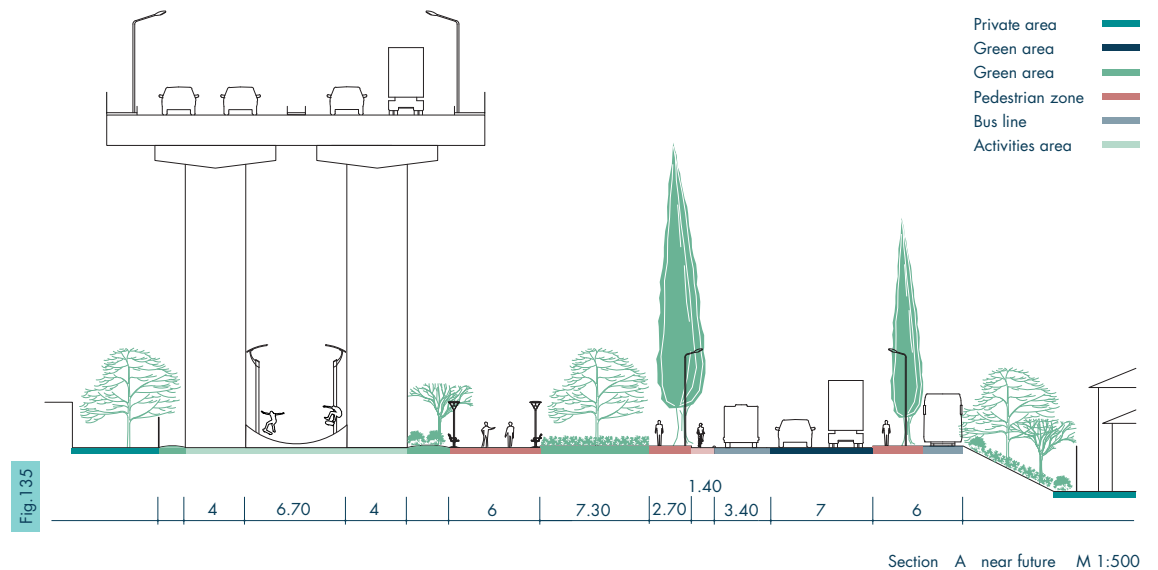
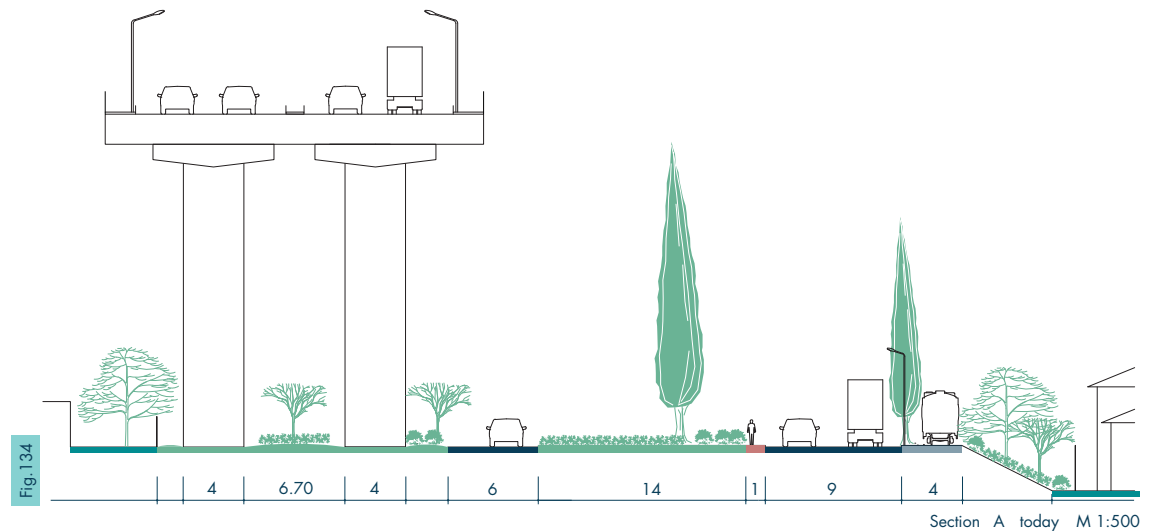


The sections are showing an example of possible changes in the infrastructure in the future. The proposals concentrate on the safety and walkability of the users.

The vehicle traffic is high during workdays, and there are partially pedestrian paths, and in some places, they are missing, so the street is used as a walking path too.

Section A is the area near the bridge where the space under the bridge is a second road. The space under the bridge has the potential to invite different public activities and become a pedestrian boulevard that leads the north and the south shoreline of the island.

Section B is the second road that flows into the first one. The infrastructure on the west part is in worst condition than on the east side. There is no walkway, so a person needs to walk on the street. The street lighting is also missing, which makes walking even more dangerous. The proposal suggests widening the street and implementing the old train tracks in the infrastructure.



Section C is a continuation of the main street that starts from the Asparuhovo bridge and continues until the east side of the island. The street runs along the coastline, which area is private property. The street has a chance here to open to the sea and by applying floating structures to activate the water's edge.

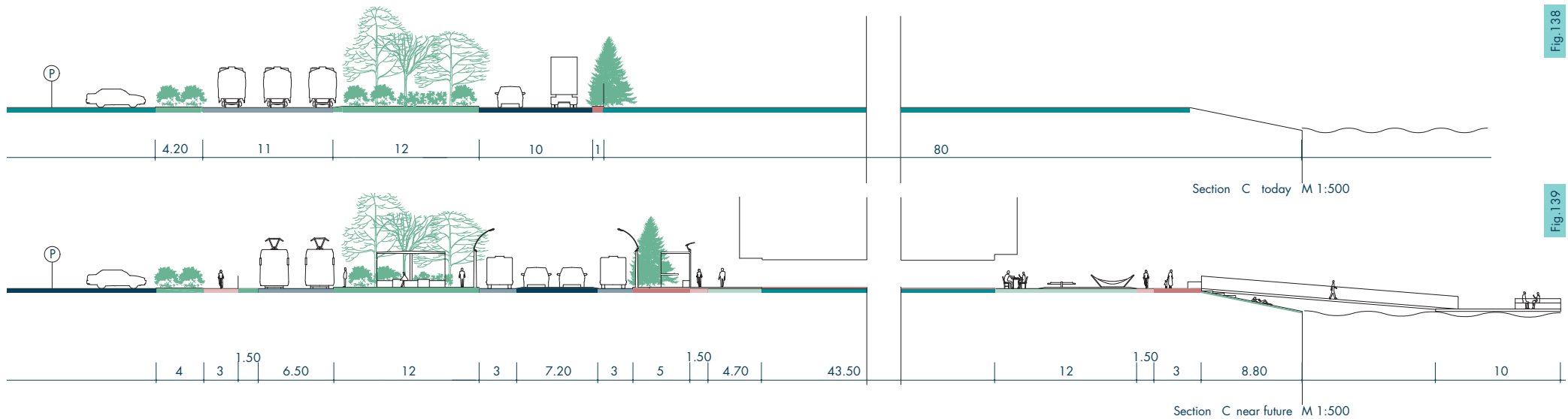
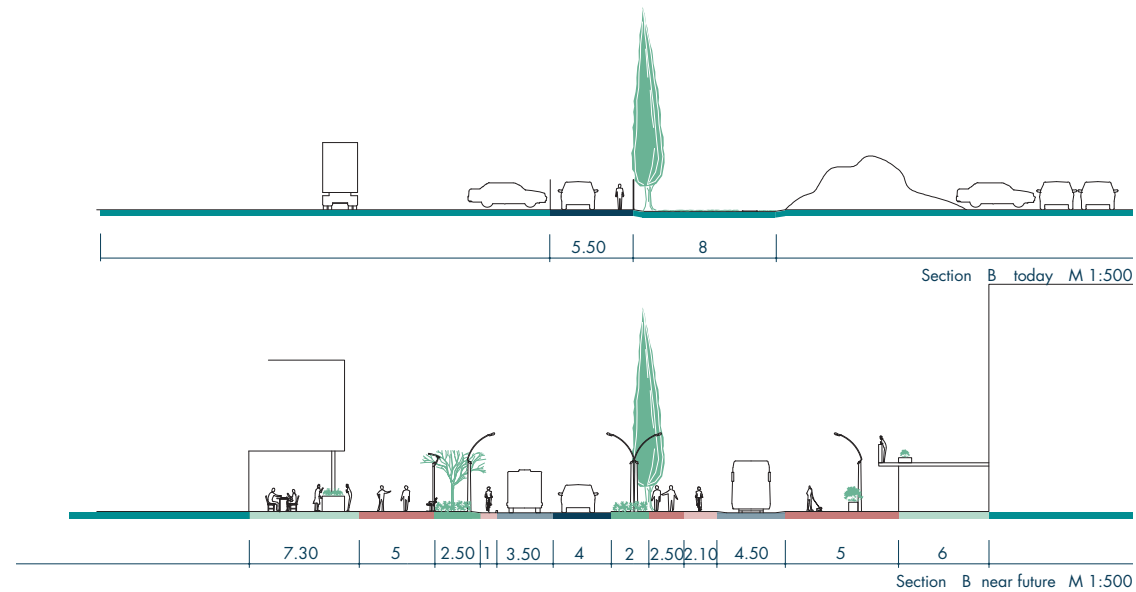


Fig. 136

Fig. 137

Fig. 138

Fig. 139

RECONNECT

- Green buffer zone for protection against the wind and high water.
- Wild protected areas
- Continuation of the protected area
- swamp area on the north lake shore side
- forest area on the east side
- Blue-green promenade that corresponds with the opposite water shore.
- Implementation of floating structures for reconnection with the water element
- Revitalize existing green spaces
- Larger recreation area
- Using the natural space as a climatic drainage
- Pedestrian green boulevard under the bridge
- Recreational purposes
- public space vary from "urban green" in the center to "natural green" on the sides

The area around section A is according to the urban master plan of the city, a protected green zone. Some temporary low high structures that belong to fishers, but they are private property, and as such, a fence is restricting the access to the water. Waste materials and old cars are part of the green scenery. As a protected area, it has an ecological value. Nature needs to be conserved and nourished, and by opening it to the public to create ecological awareness. Clearing the structures and minimizing the human footprint, the area can again recover and promote biodiversity. Section B and C are showing the situation in the most eastern part of the island. Concrete breakwater protection made out of massive tetrapods and triangle-based-Piramide structures is placed in front of a concrete seawall. Those measurements are fast to build, but, in the long term, are more harmful than helpful. Those kinds of hard techniques of coastal structures decrease the fisheries habitat and biodiversity, prevent the natural marsh migration, and can create erosion. With the implementation of softer techniques like the so-called "living shorelines," the coast will restore its ecosystem

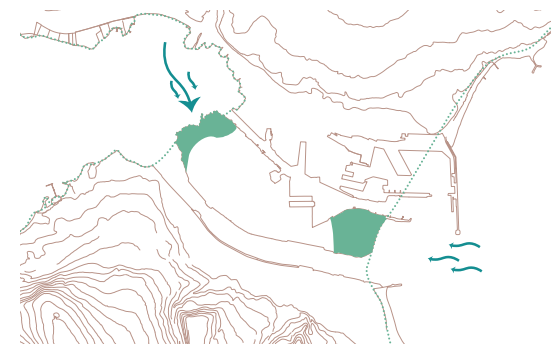


Fig. 140



Fig. 141

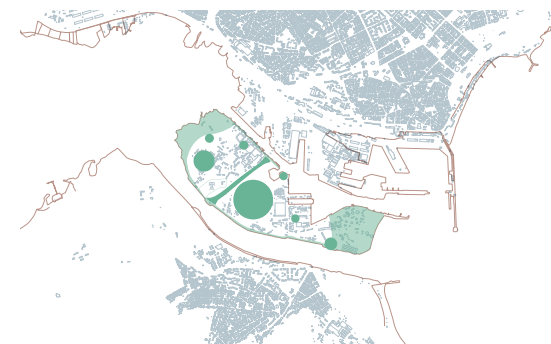


Fig. 142

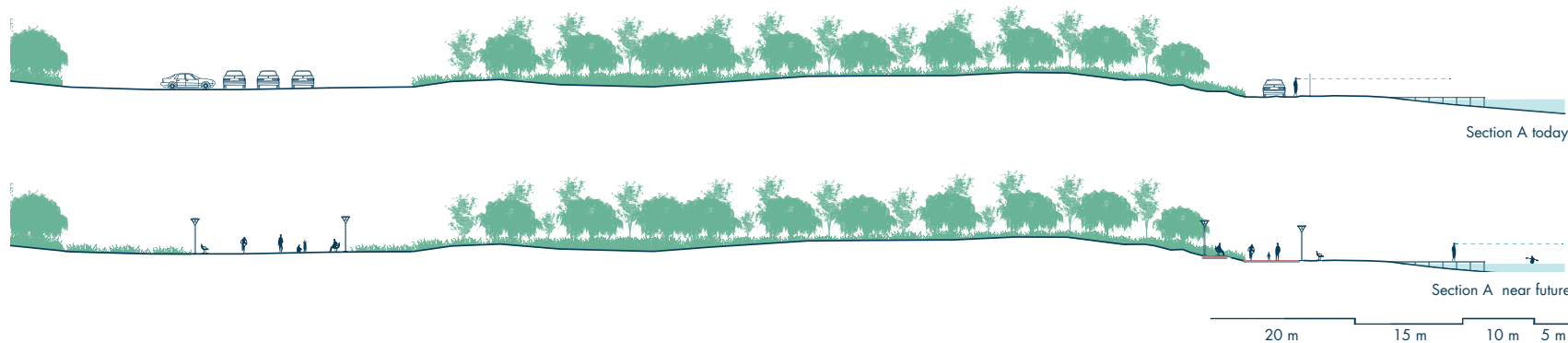
and expand the quality of the shoreline. Natural habitats like marshes and sandbars can trap sediments from the tidal waters and grow in high together with the seawater level. They can absorb the energy from storms, and they are cost-efficient than the hard structures. The new natural proposal seeks to promote ecological diversity and water recreational opportunities.

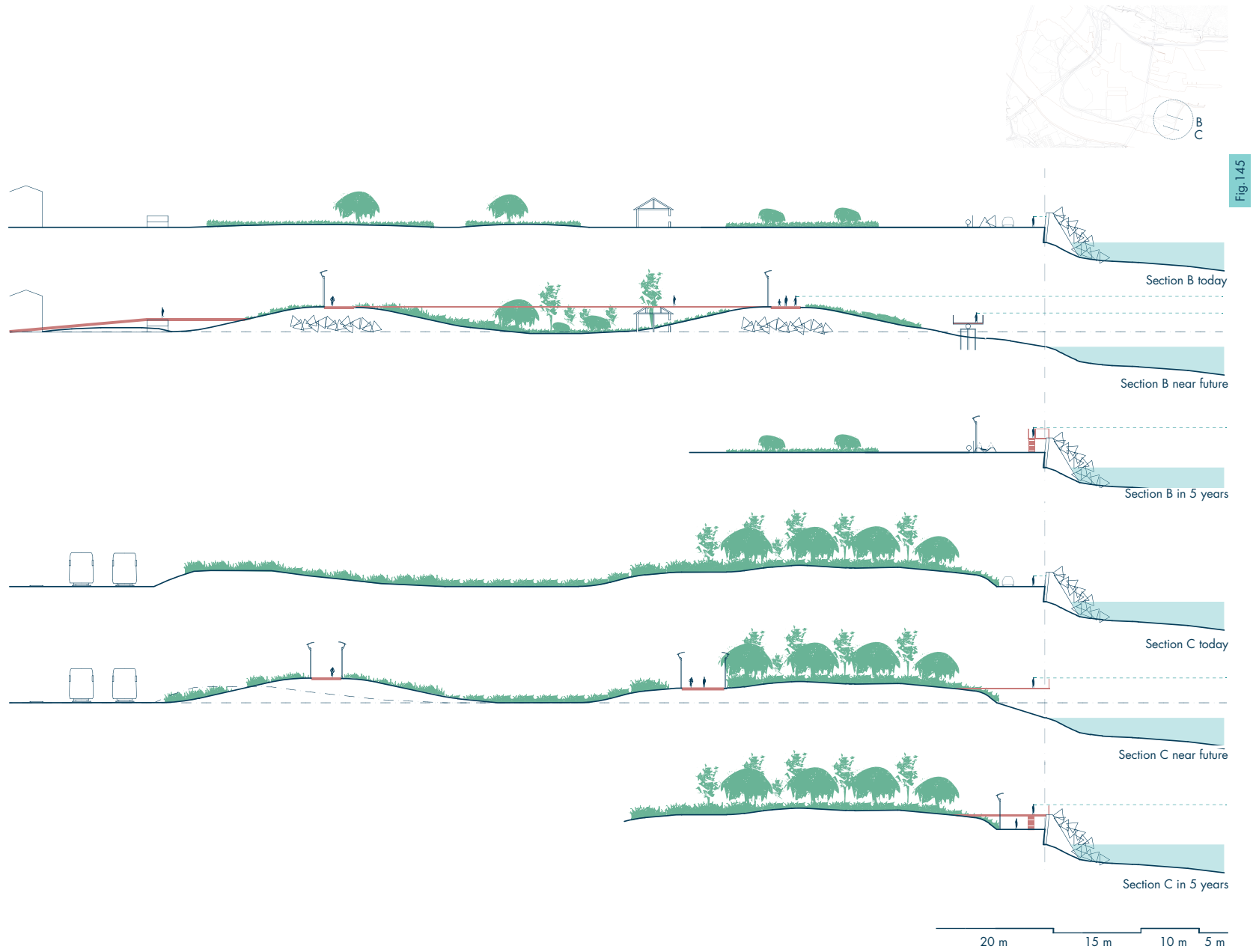


Fig.143



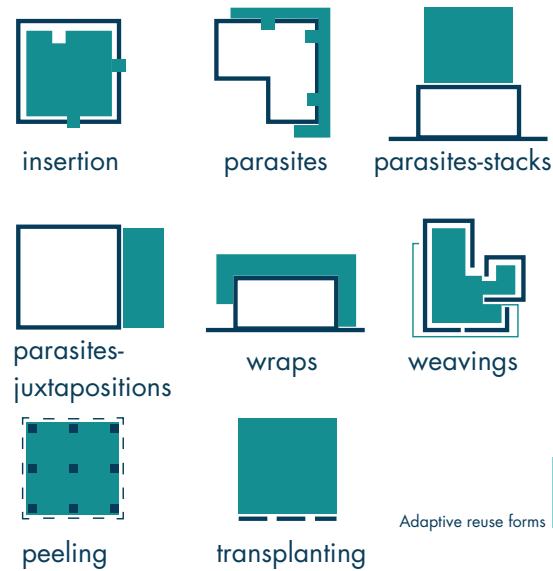
Fig.144



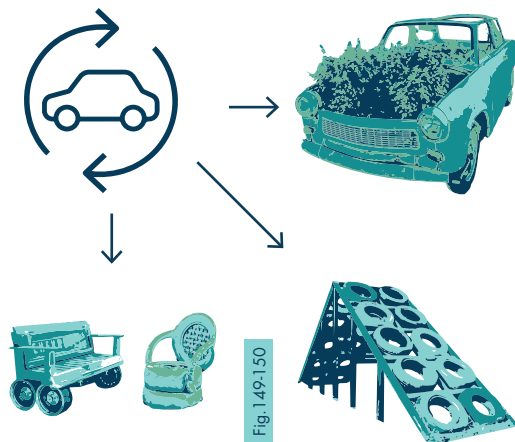


ADAPTIVE RE-USE

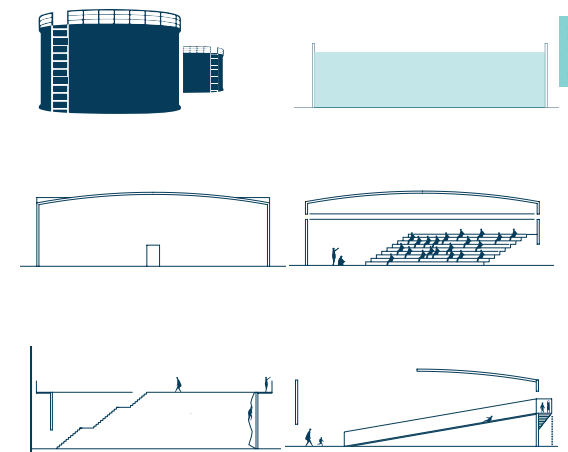
A lot of abandoned buildings, structures in poor condition, and waste materials can be found on the site. Those elements are not as a waste but as a valuable material that can be re-used. With the so-called "adaptive re-use," the abandoned places can be enhanced and made more vibrant for the community. Urban re-using is not only sustainable but also cost-efficient. The first resource on the island is the buildings. Some of the materials can be re-used for other structures, or some historic abandoned industrial buildings like the iconic power plant and the slaughterhouse can be readapted for other purposes. New functions can take place in the old buildings; for example, the maritime naval university can find a bigger home for its



The other most seen objects on the site are vehicles. Recycling of cars is not a new method. However, there are also numerous creative designs and techniques for re-using an old vehicle, for example, extension as a piece of furniture, or plant pot, even children's' playground. "Learning to love today's world is to adopt other people's bad taste as a way of making happiness available to everyone. Urban planning and architecture serve the purpose of revisiting the past years' production—not to bring it in line with contemporary taste, but to find a place for each thing in today's city(Chemetoff 2009:14)"²



training center. There different types of forms for transportation of buildings(Fig.146).¹ Some of the oil storage tanks on the east side are not used, and they can be the perfect stage for starting implementing new public activities on the site. The tanks are also suitable for water storage. Eventually, with the relocation of the oil company, the other storage tanks can turn into an urban feature.



¹ Vgl. Bollack, zit.n. Dongwhan Kim, Fall 2017, <https://www.dongwhan-kim.com/changingfacade>, 30.04.2020

² Chemetoff, zit.n. Braae, 2014, 79.

The creation of quality quarters and the reconnection with the water shore could be developed slowly throughout the years. In the reference project of the island of Nantes Chemetoff tried to "find a place for each thing in today's city (Chemetoff 2009: 14)"³ and the new approach of the Samoa company is more practical and solution-oriented. Both approaches have the goal of creating a useful and meaningful urban space. By taking the project as a reference and applying the strategies will establish a dialog between past, present, and future.

The bigger scale strategies like the creation of quality quarters and the reconnection with the water shore will take more time to develop because it is not an independent area.

Chemetoff's method of close observation is perfect for those types of mediations. Given the scale and the diversity of challenges, it is not possible to draw a detailed blueprint at this stage.

However, by starting to implement individual interventions that open up to the public, loosen the restrictions and invite activities, the island will receive new impulses which will slowly

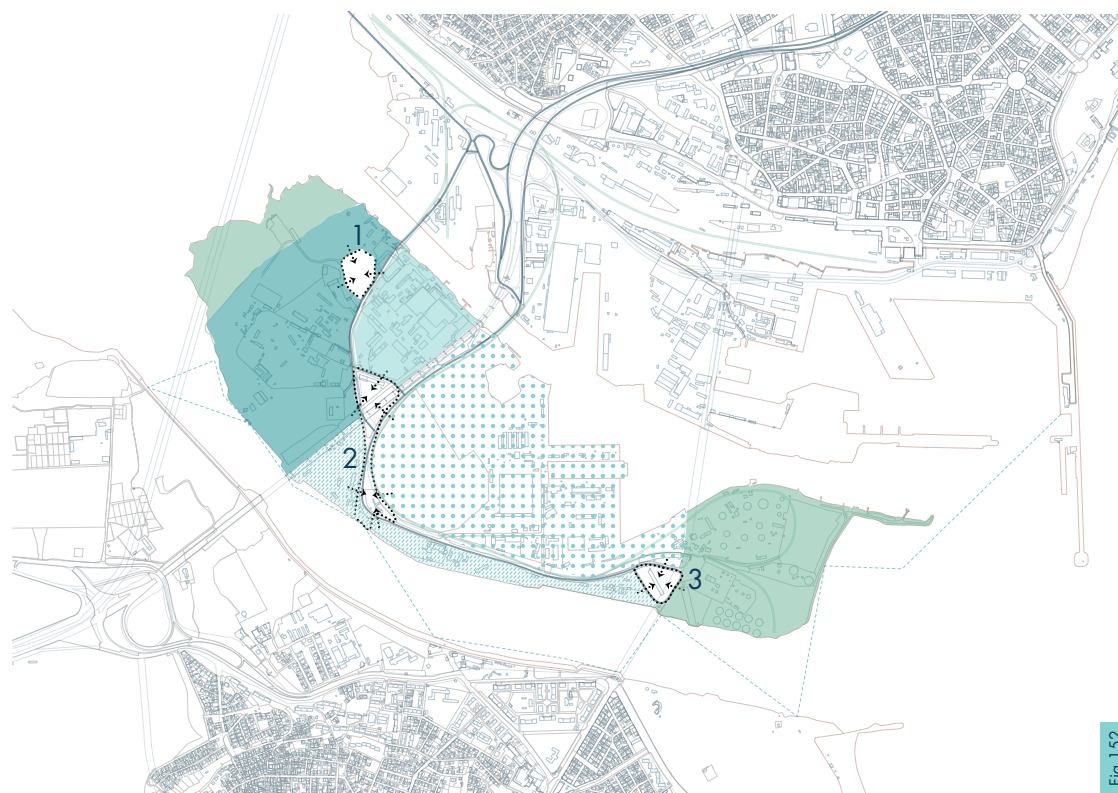


Fig. 152

awake its hearth and welcome liveliness. By putting the three concept criteria, which were chosen as a main framework for the island, three segments were discovered, which have the potential to become the joints of the backbone. Those areas have a significant position

in the network system. As impulses, they can increase the diversity of the space with different functions and urban qualities and, at the same time, bring awareness of the surrounding.

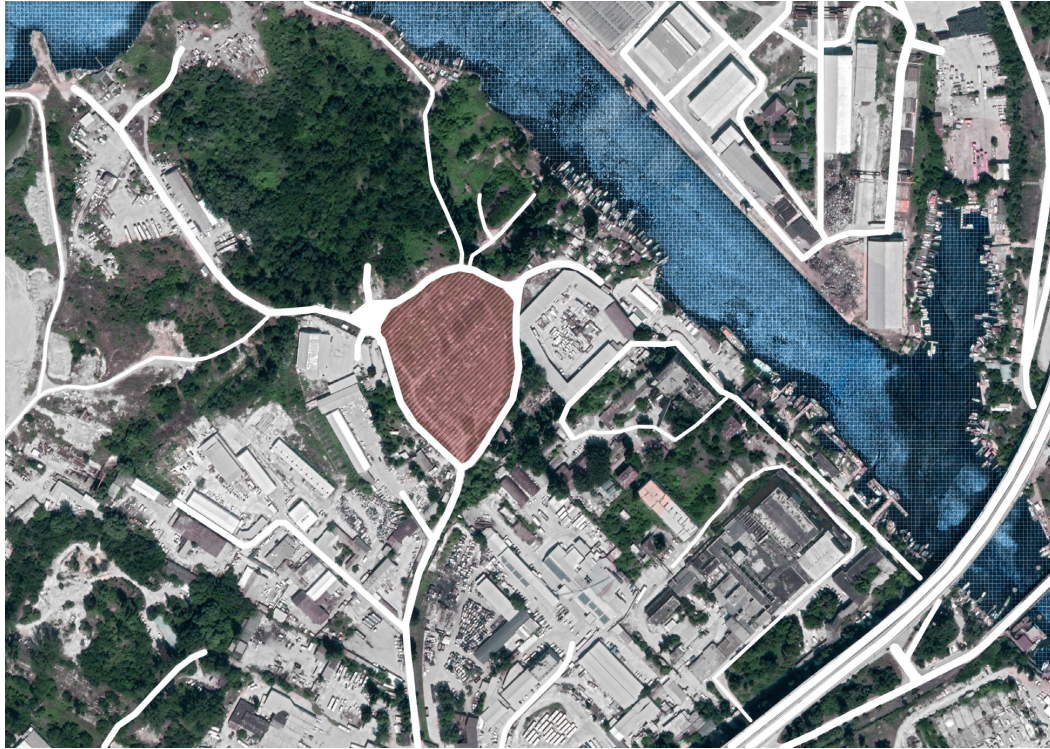
³ Chemetoff, zit.n. Braae, 2014, 80.

The next pages will concentrate in detail on the three segments. The three areas are spread around the island but are connected with the current infrastructure, which will evolve in the future. They also will be an intersection between the districts. As such, those areas need to stay public premises regardless of the surrounding spaces. The first segment is a current impoundment lot. The proposal focuses on how space can be transformed by reusing the findings on the lot. The second segment is a combination of three properties- a waste recycling area, a motor repair shop, and space next to the water shore. A connection between all these areas and the surrounding water and green resources will be created. The last segment is a lot with an abandoned building that was recently bought by a fertilization company. A suggestion will be made for the reuse of the structure on the lot. These three criteria will be taken into account: working with the pre-existing resources (trees and roads on the lot), the recycling of existing materials, and the vitalization of the space with functions.



Fig. 153

SEGMENT 1 - THE NEURON



SEGMENT 1



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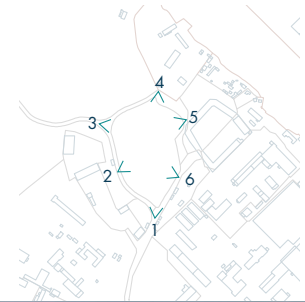
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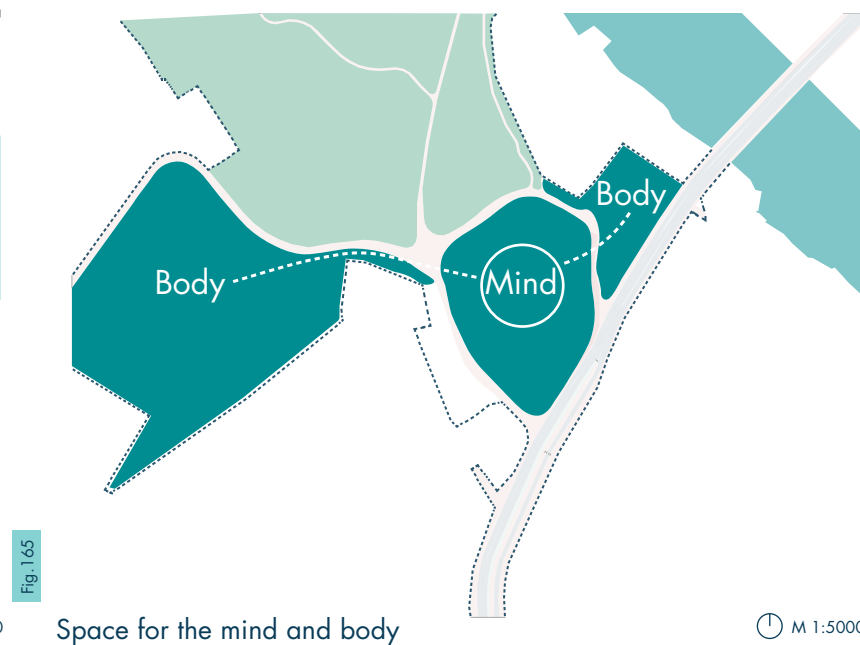
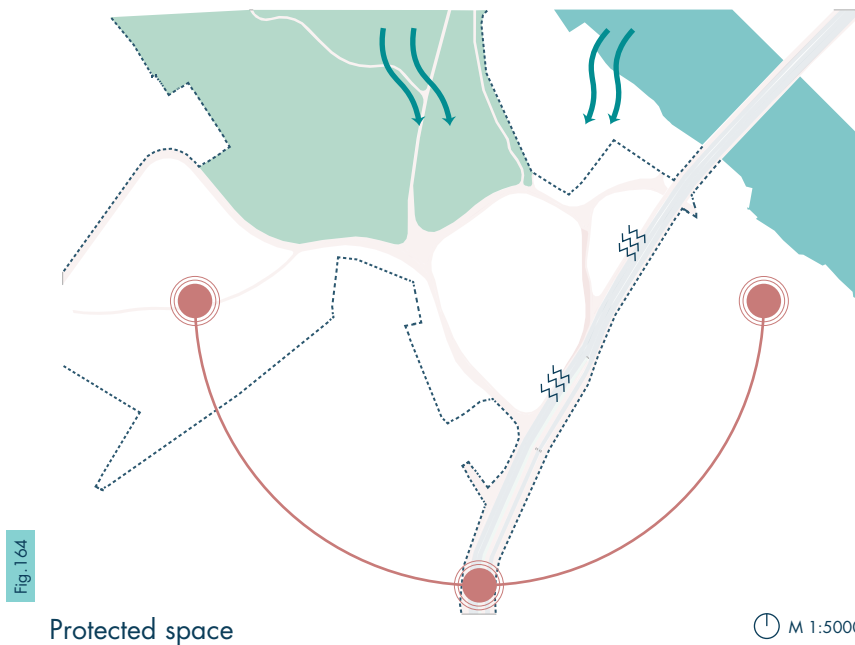
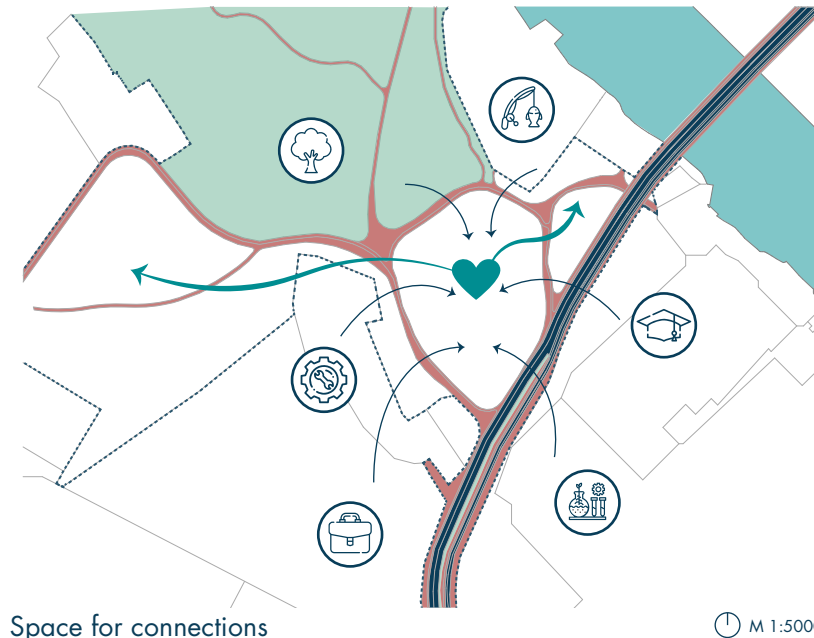
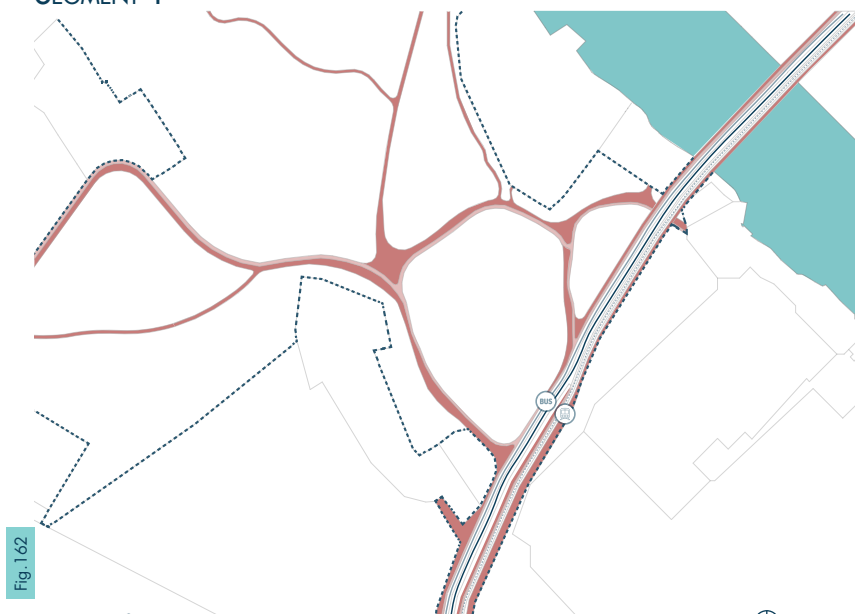
The current plot is around 14 673m².

Dusty roads surround the plot. It is now an impoundment lot with mainly old and unused cars. The north side is protected from the wind by the present vegetation and it is near the canal.

The first point of the concept idea is to make the streets free from cars and to be only accessible by pedestrians. The future main road that will pass along the square will have an effect on the noise pollution only on the south side, where a bus station will stand. Protecting the north part with a windshield and, at the same time, inviting the sun on the south and southwest to give maximum comfort to the square.

With the thought of the surrounding, the area's main feature will be the link between spaces. Secondary spaces will correspond with the main space. The lot will represent the mind that moves the parts of the body.

SEGMENT 1



The plan shows the current vegetation on the plot and the created paths by the cars on the parking lot. Clear zoning indicates the soil difference. Some of those zones are full of plants, some with cars, and others are empty.



The opening up of the square to all directions invites permeability, and the zoning shows clarity. Due to the excessive amount of cars, the recycling of them is essential for the proposal. The tires from the cars are used as protection from the north wind and for establishing some semi-private areas. On the west side, the vegetation is enhanced through a landscape elevation, which also provides semi-private space. The relation with the street on the south provides possibilities for more active use like areas for eating and outdoor studying and meeting spots.

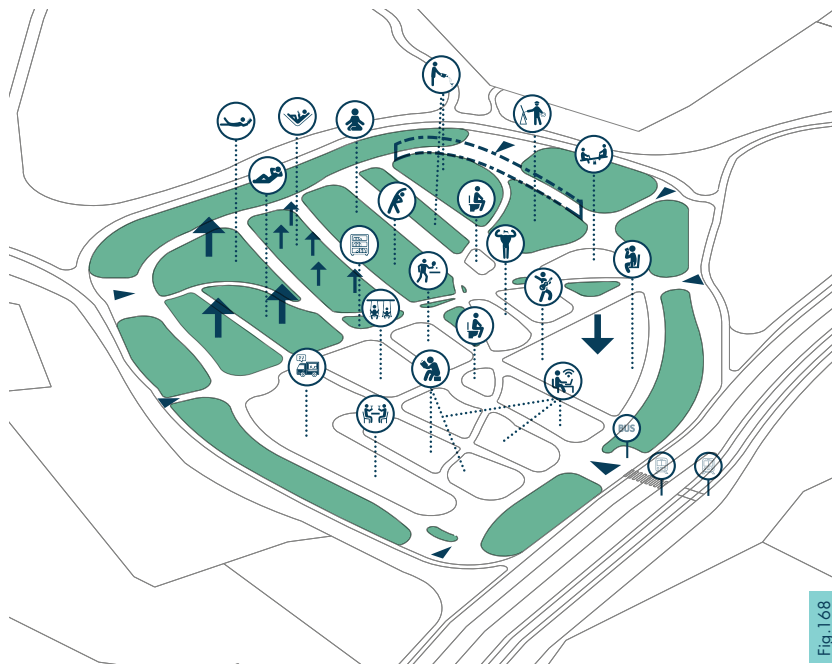


Fig. 168

Another element that is currently on the lot is street lighting, which as a feature of the square, will be increased around the paths. The spaces along the path in the middle are perfect for safe playgrounds and active sports areas. On the north, a public urban gardening area and the tire wall are ensuring wind protection. The current vegetation around the square will not be removed because they are also a barrier against the climate elements and give more sense of enclosure.

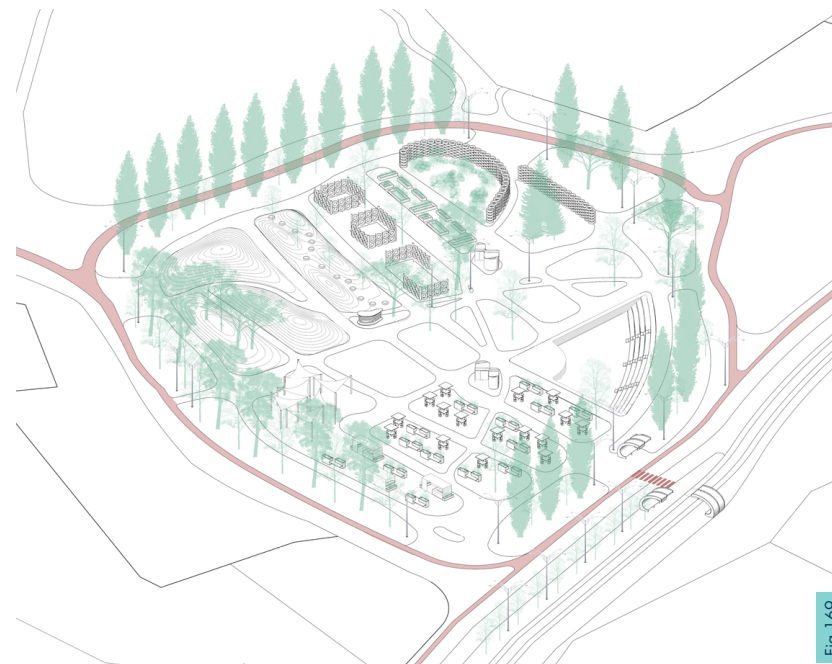
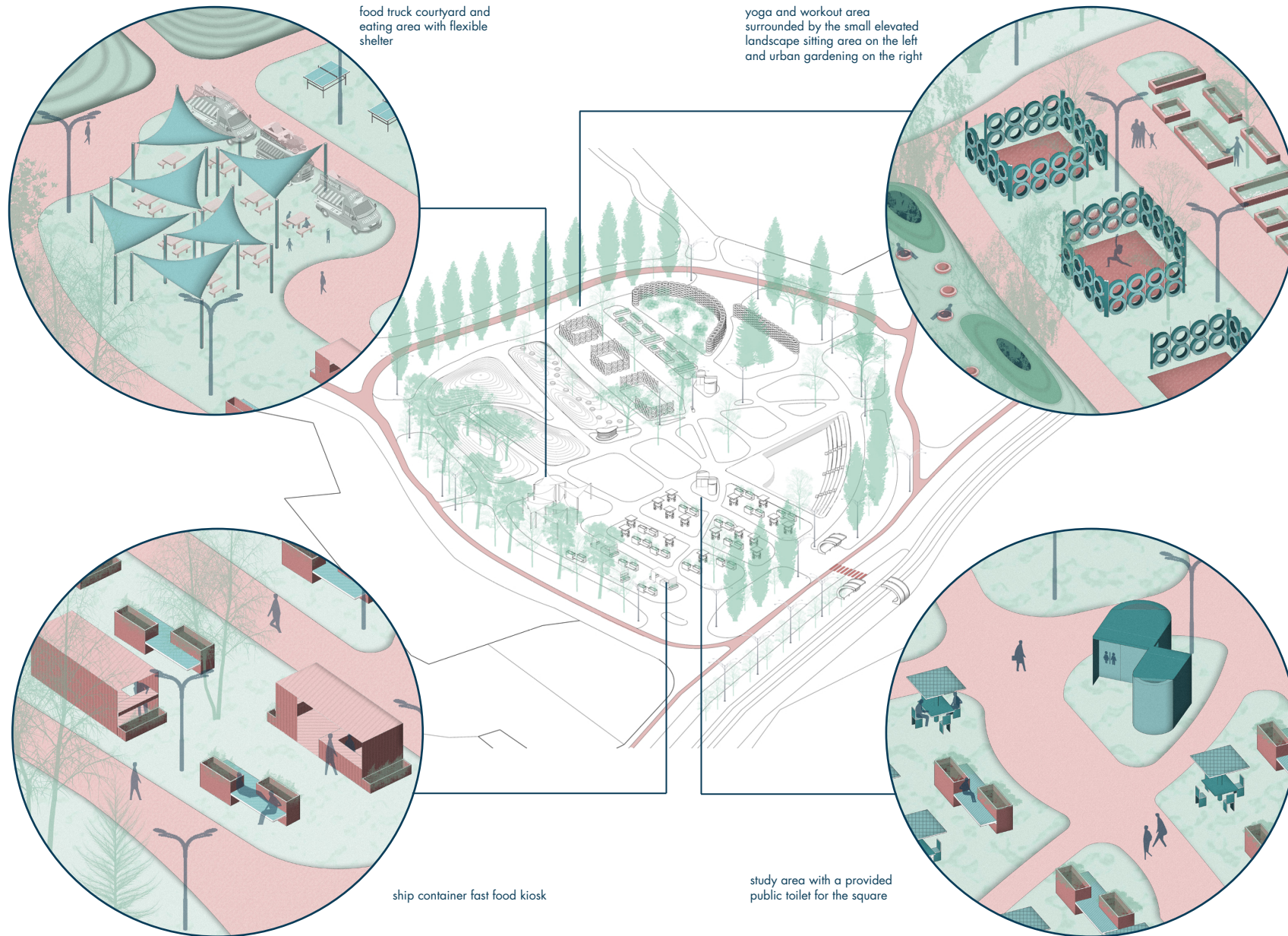


Fig. 169

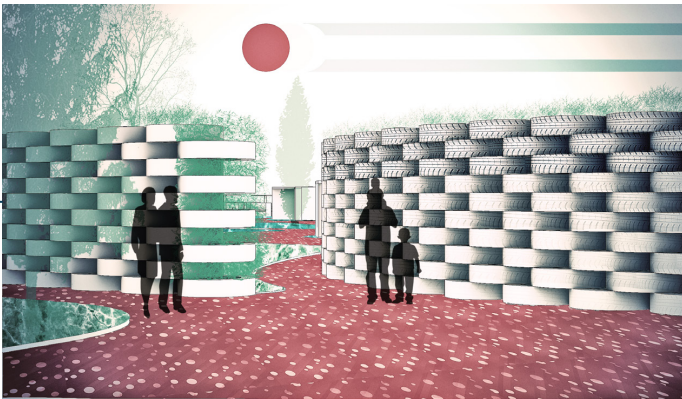


Fig.170

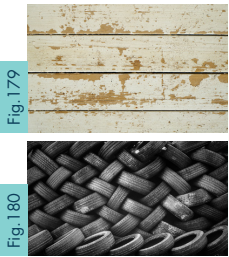




view of the workout area



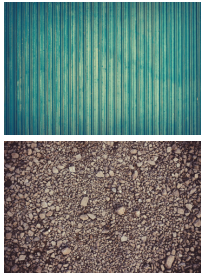
view from the north entrance and the green tire wall



view from the west entrance and the hills landscape feature



view fro the south entrance



SEGMENT 2 - THE BLUE LINE



Fig. 183



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google maps image 2019

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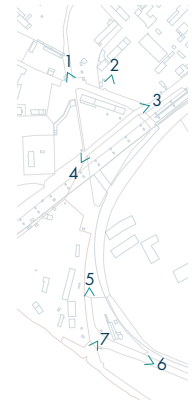
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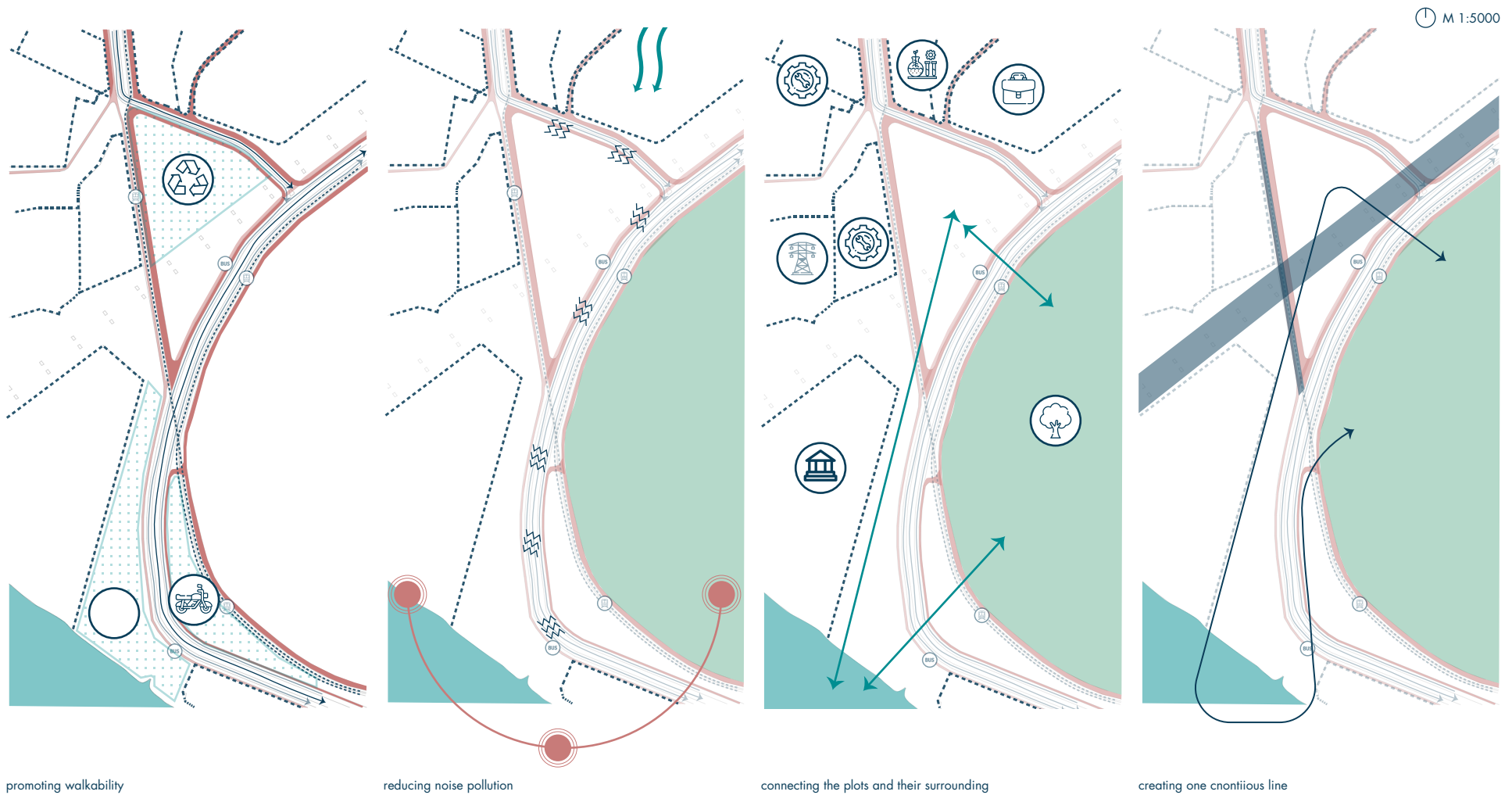


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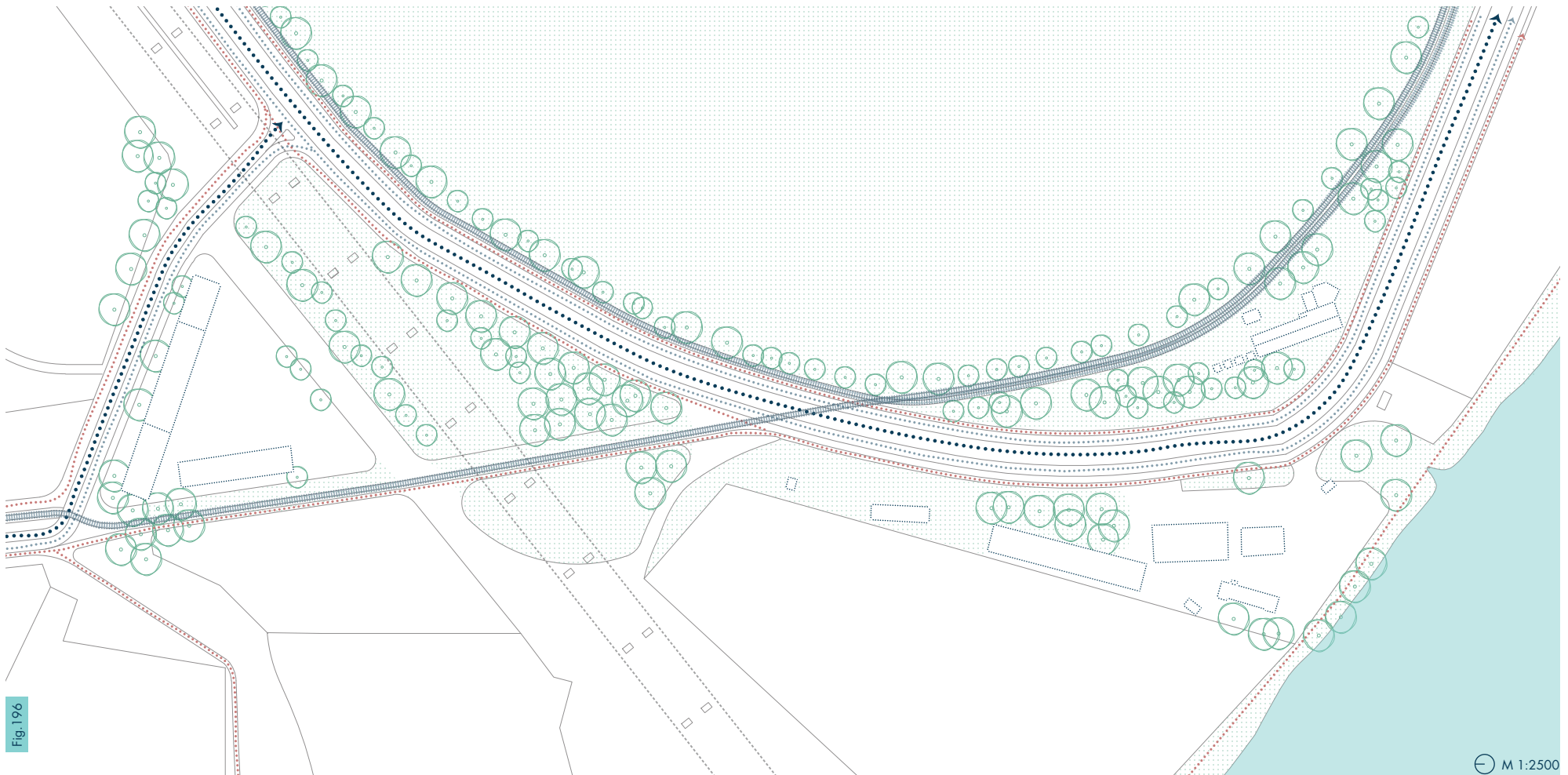
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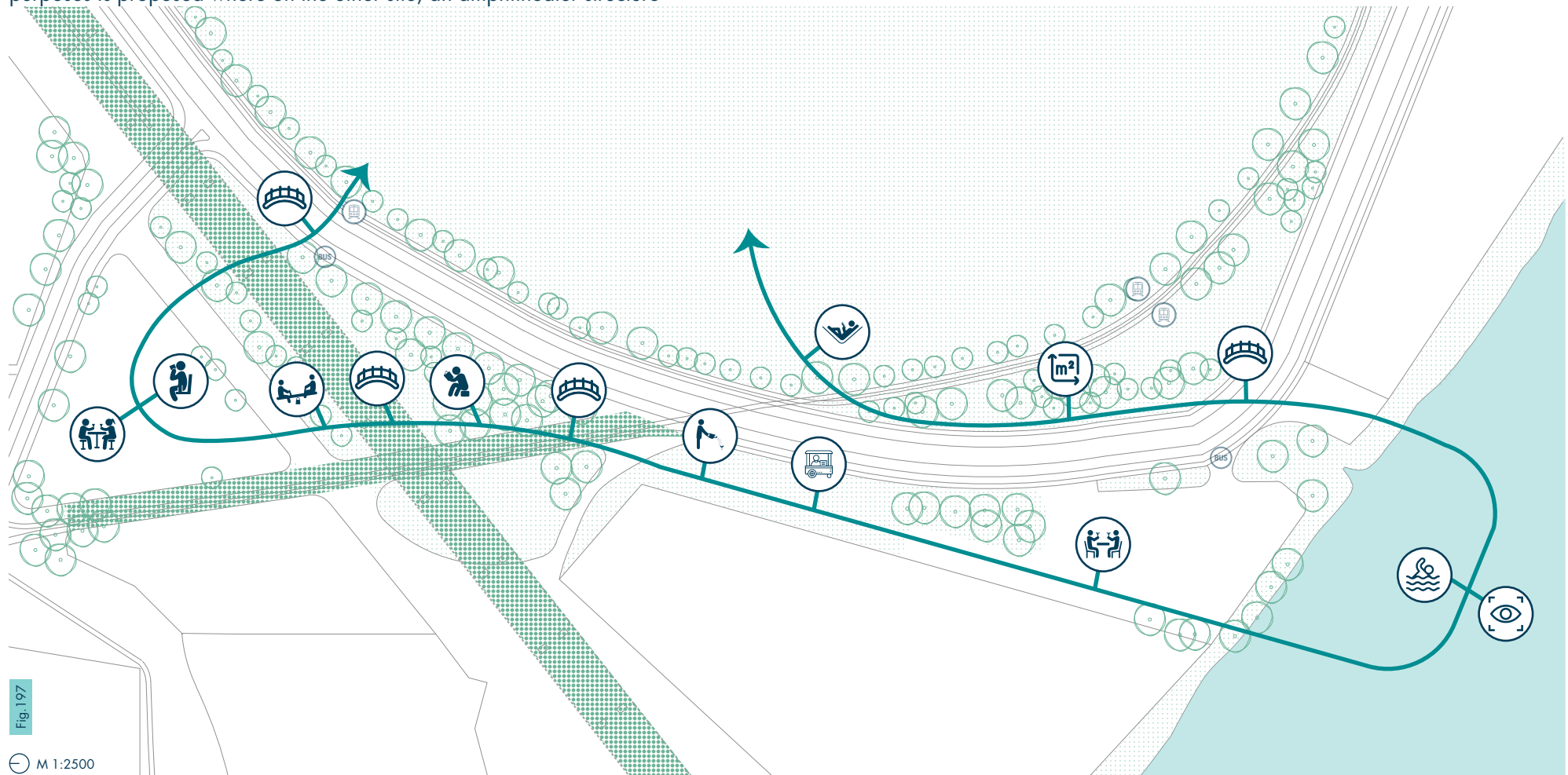
The observation area starts from the recycling lot (8103m²) of the municipality of Varna, where it stretches through the motorcycle repair shop (7094m²) to the open area next to the shoreline on the south (8797m²). The area is separated by the traffic streets and is affected by noise pollution. To link the plots together and to bond it with the water and to the park is the decision. Old train tracks are passing along the west side of the recycling plot and through the street and continue parallel to the street until the most eastern part of the island. With the new infrastructure proposal, those train tracks will be renewed and put to use. Today vegetation around the tracks will stay as a feature element that links the northwest part with the green area to the east-south. Pedestrian green boulevard under the bridge that passes through the observed area acts as a linkage between the north and the south part of the island. The triangle connection will be an elevated pedestrian path structure with different heights that promotes more visibility and safety by crossing the busy street. It extends more in-depth into the water canal, where it will serve as an observation point (watching the yearly regatta) and swimming and sun-bathing area.



The plan shows the current vegetation and the buildings on the lots. The greenery will be preserved, and the materials of the buildings will be reused for the proposal.



opens up to the green boulevard. The space near the water will also stay open to invite excellent visibility to the water and the Asparuhovo district. Next to the park, empty rental spaces will be provided for public activities, for example, workshops, supporting non-profit organizations, co-working, and other community activities.



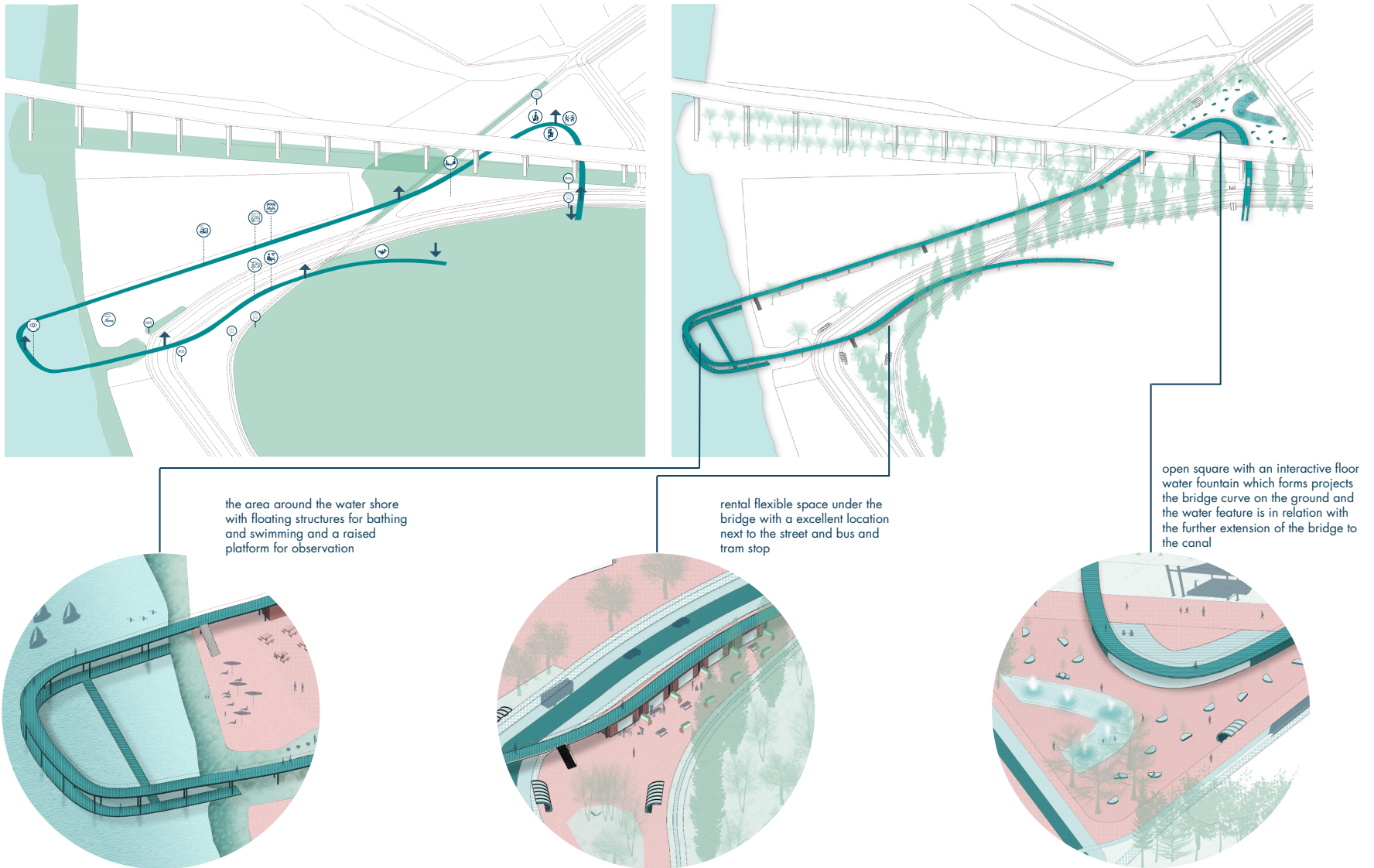


Fig.198-202

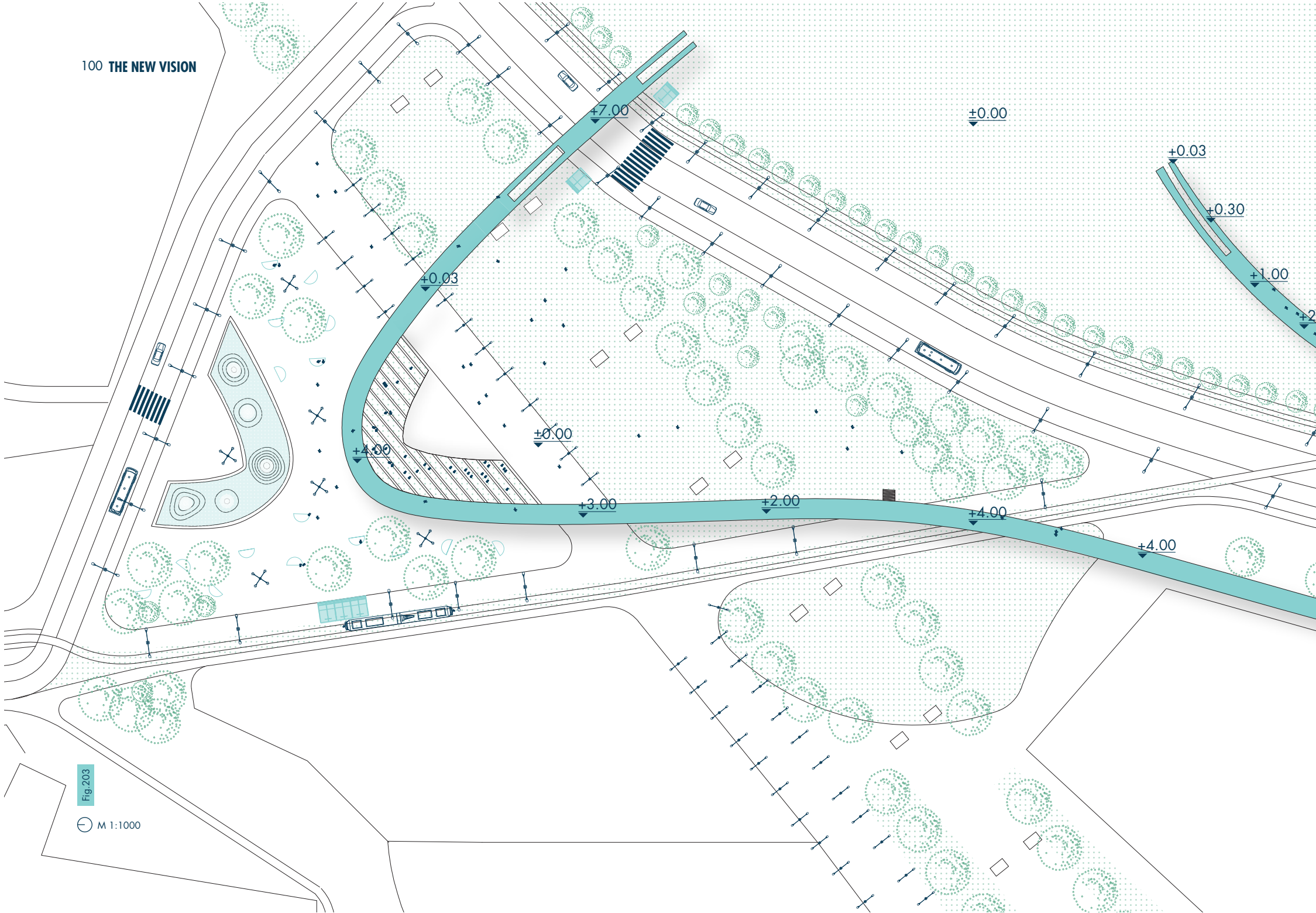
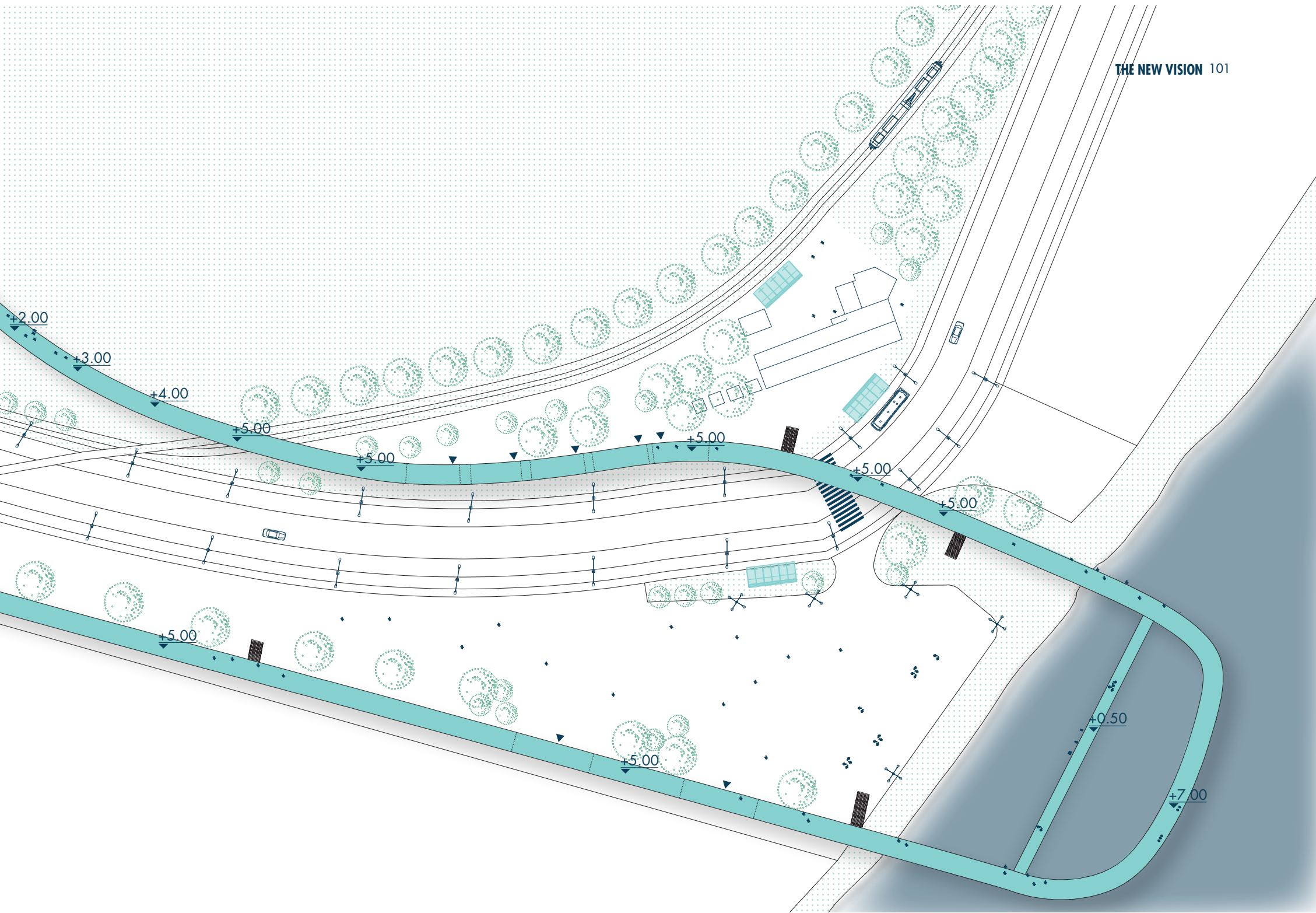
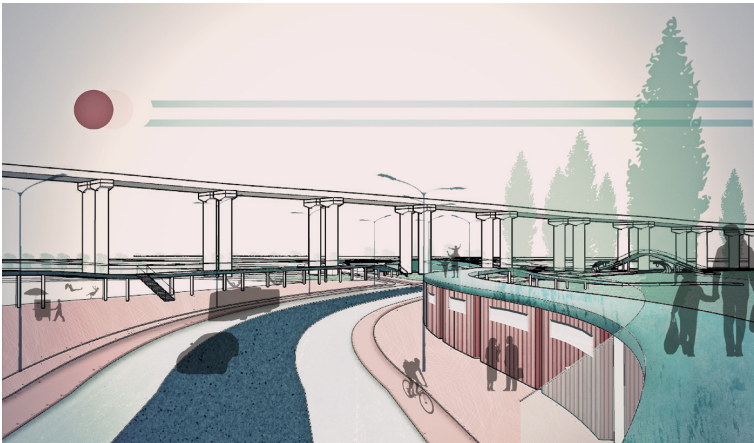


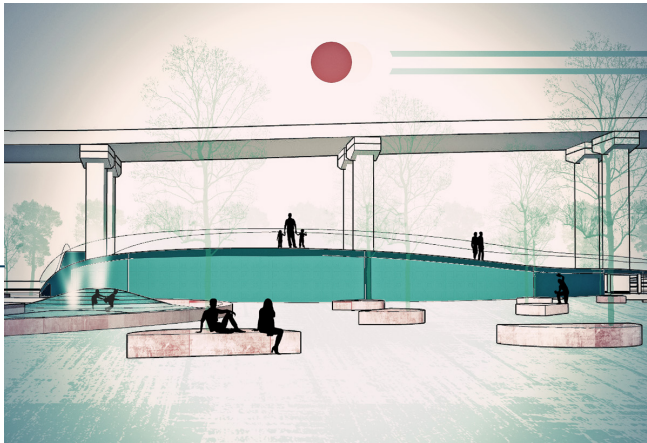
Fig 203

M 1:1000





view of the street and the workshop spaces



view of the square

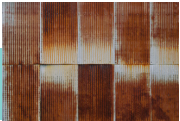


Fig. 207

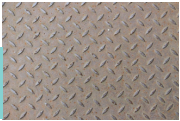


Fig. 208

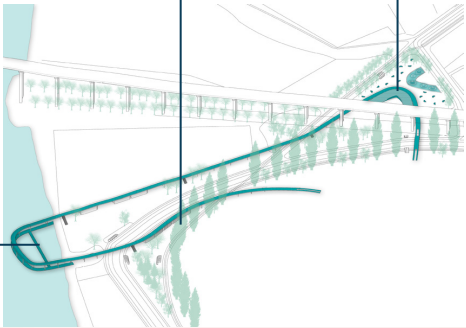
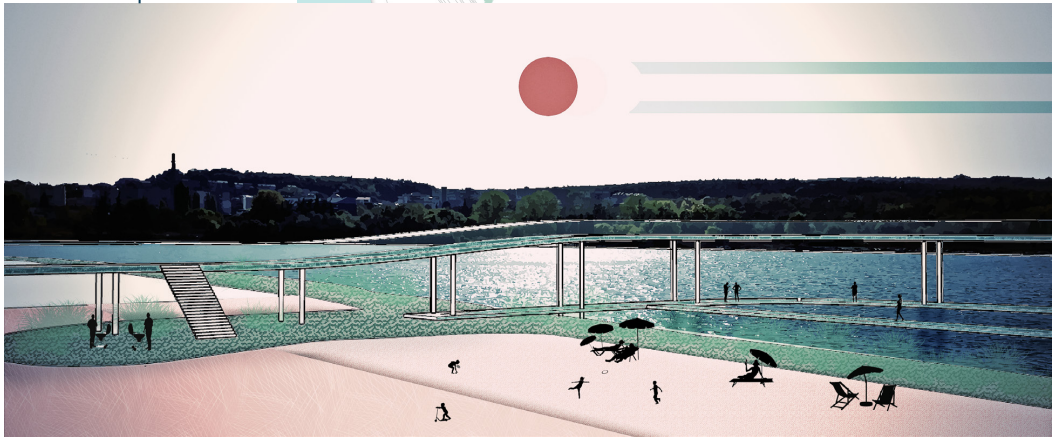


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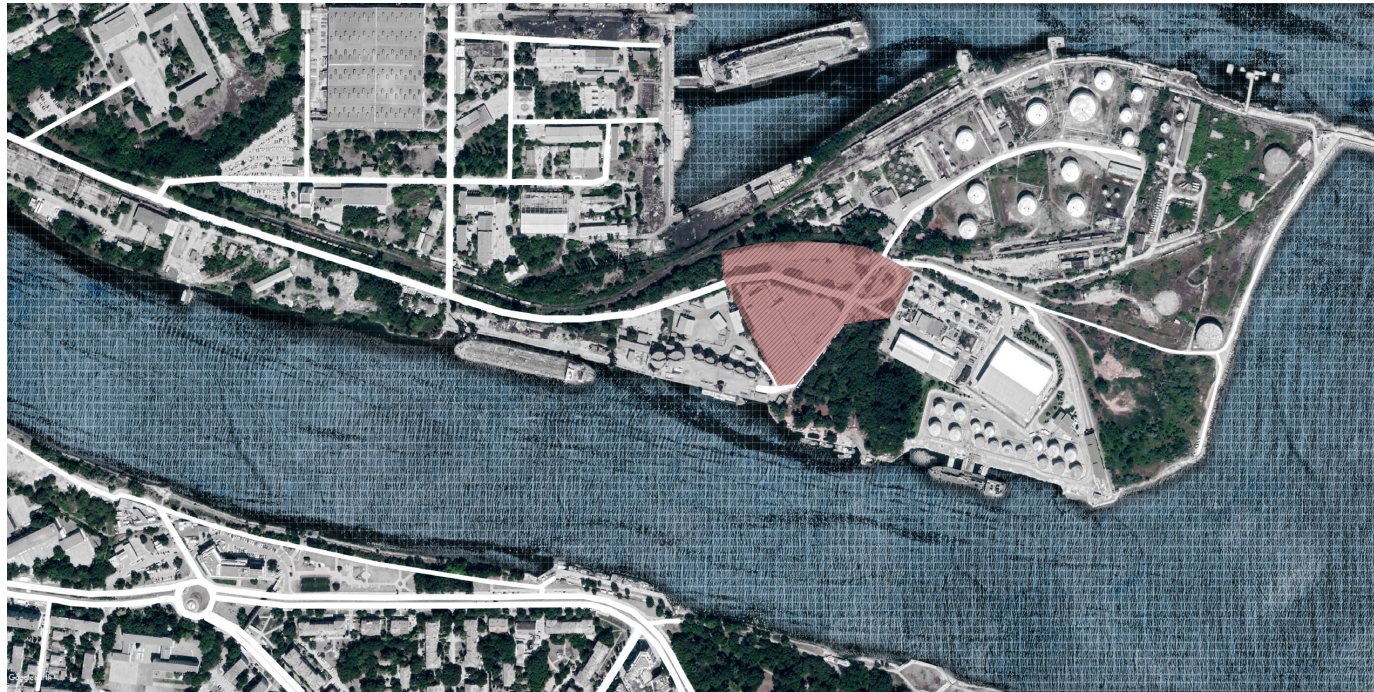
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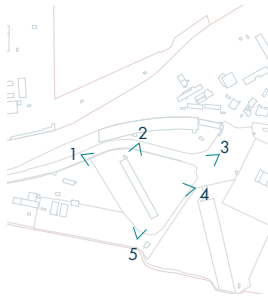


view of the waterfront

Fig. 204-206

SEGMENT 3 - THE MARKET





google maps image 2012



google maps image 2012



google maps image 2012



google maps image 2012



image 2019



google maps image 2012

Fig.212-217

The third segment analyses the area where now the main road ends with a mini-roundabout (13 572m²). Next to the street, there is a lot that is currently a private property of a company for fertilization. The proposed new network system will pass through the plot and so creates a circular square. Pictures from 2012 show the square as an abandoned with an old rusty warehouse. A steel beam structure with a metal roof is bound to the building. Two openings were leading to the warehouse, and also two entrances from the opposite sides of the streets were available. Through a low fence, the warehouse was visible. Today the company changed the lot by building a high fence but keeping the two street entrances. They renovated the building and made an extension, mirroring the old steel structure of the warehouse. The old steel construction is being covered with walls and closed. An exciting feature is the east and west facade with its prominent small glazing. This glazing was partially removed and sealed by a concrete wall. The main focus is the adaptive reusing of the warehouse by combining the previous condition of the building and retaining some of the current changes. The proposed new function is a food market that also supports the fishing,

processing, and seafood wholesale company on the island. The overall space of the building offers much flexibility. The rectangular shape of the warehouse provides a clear central axis from the north and the south side as well as proper natural ventilation. The facades on both sides will be retained and only renovated, and the south wall will receive an opening. Near both entryways, storage and sanitary facilities are located. The walls of the east extension are eliminated to reveal the old steel structure and to open the building into the direction of the square by providing two more entrances. In summer, the food stands can expand to the outside and be sheltered by a glass roof replacing the current steel roof in order to pass sunlight deeper in the warehouse. The west site structure also remains and is replaced by glazing. Another opening for connection is implemented from the west where the future bus stop will be positioned. The fish and meat food stalls are located on the south for proper natural airflow, and in the middle of the warehouse, a small vegetation island with a sitting area is situated.

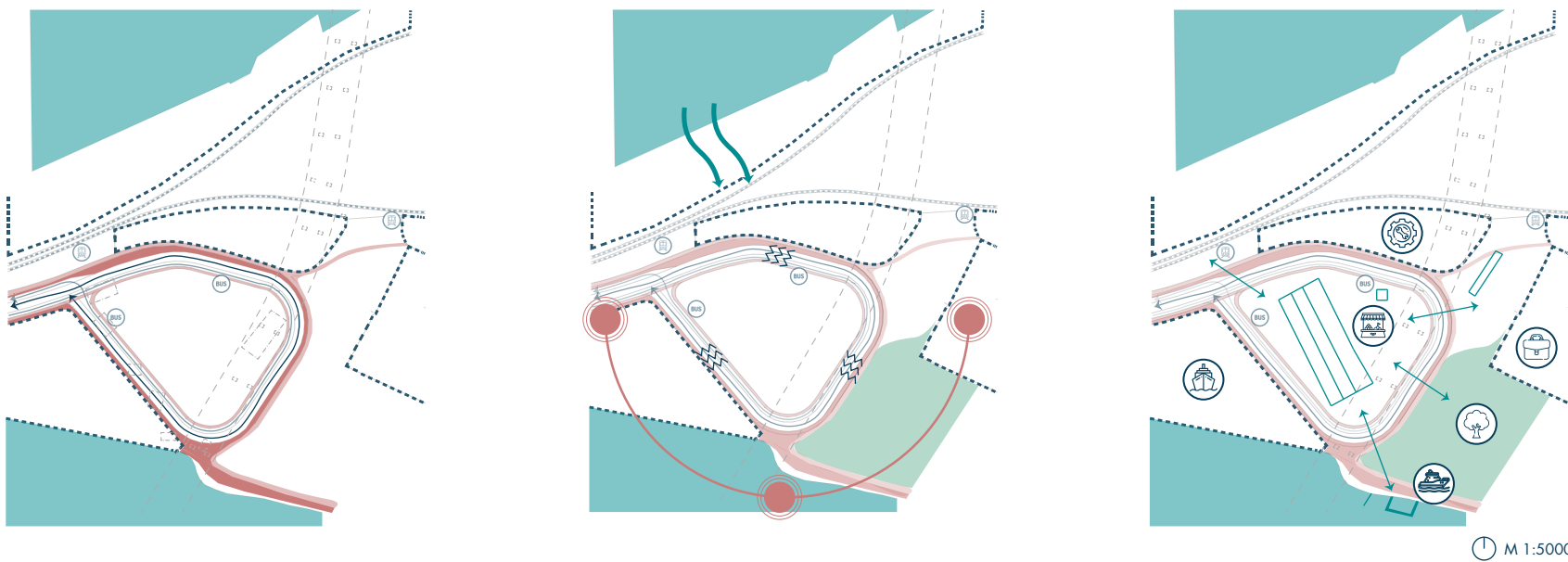


Fig.218-220

5 m 10 m 15 m 20 m



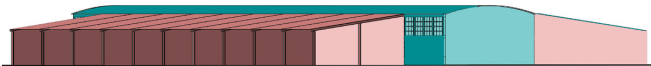
Northeast side year 2012



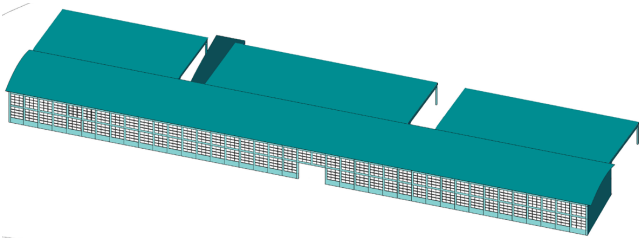
Northeast side today



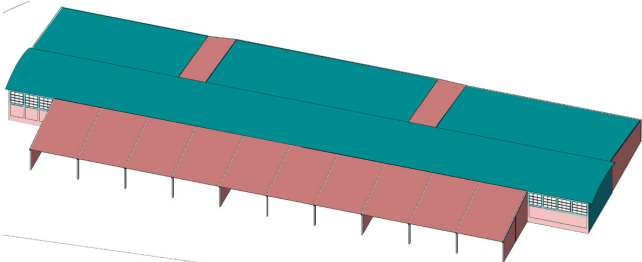
Southwest side year 2012



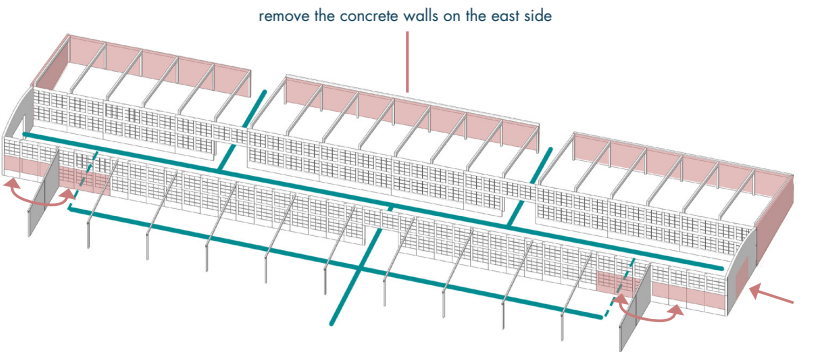
Southwest side today



year 2012

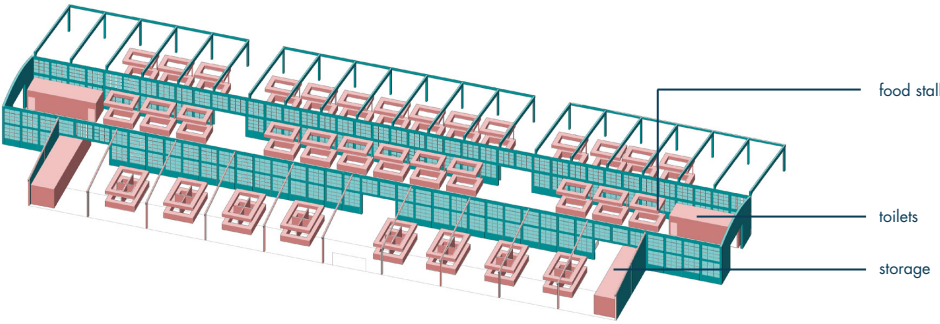


today



remove the glazing and add it to the outside

make an opening



food stall

toilets

storage

elements to be placed

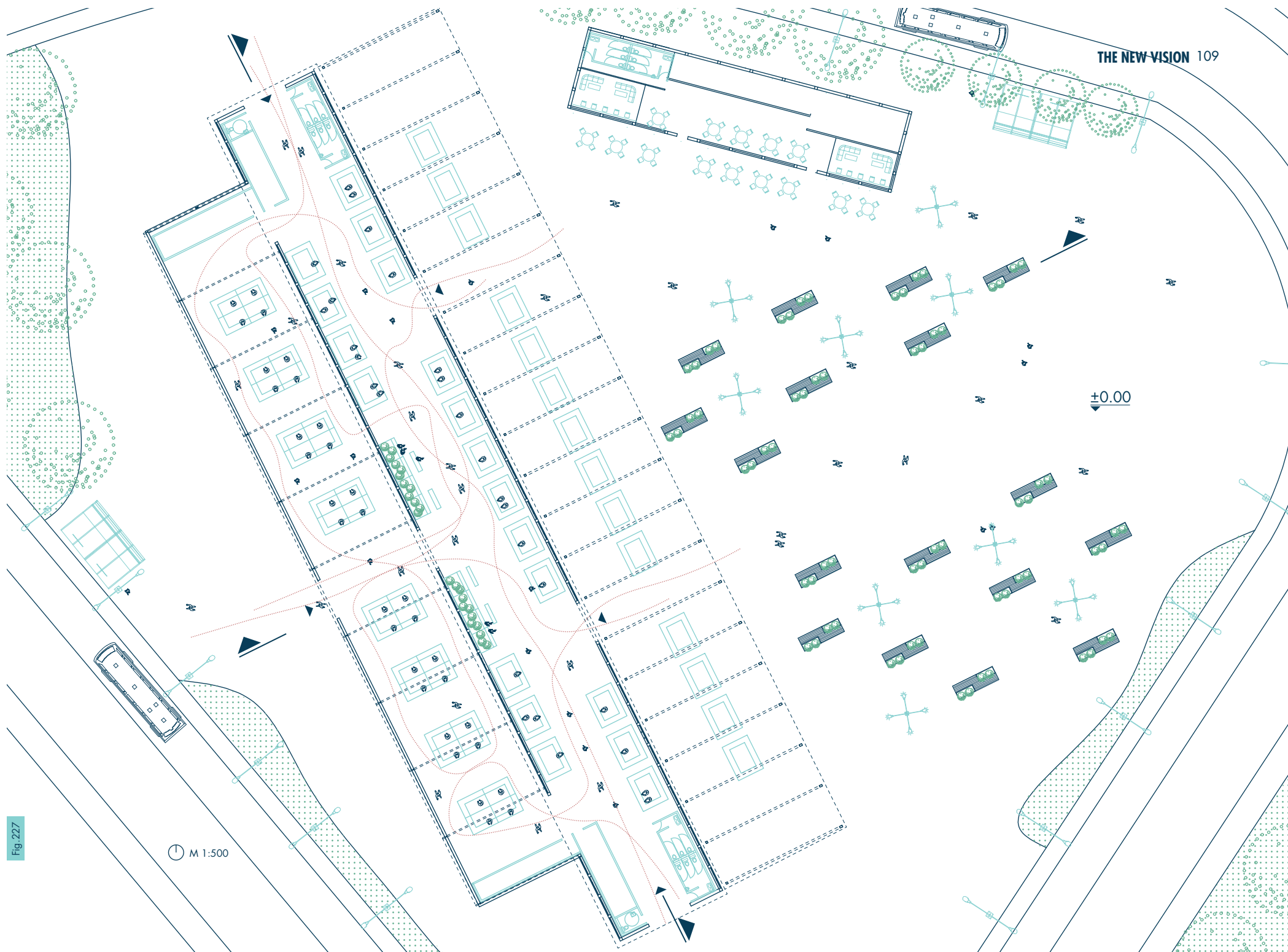


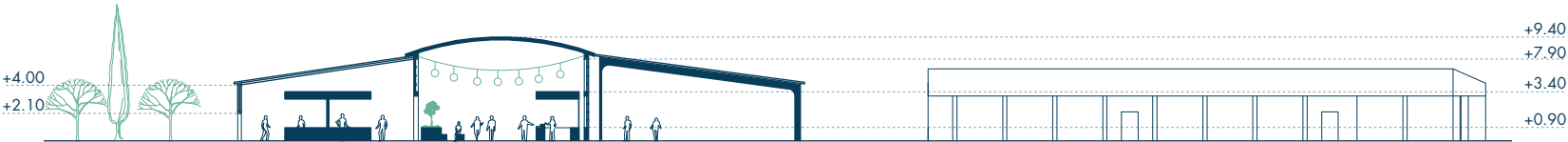
Fig. 227

M 1:500

Fig.228.229



Section east M 1:500



Section north M 1:500

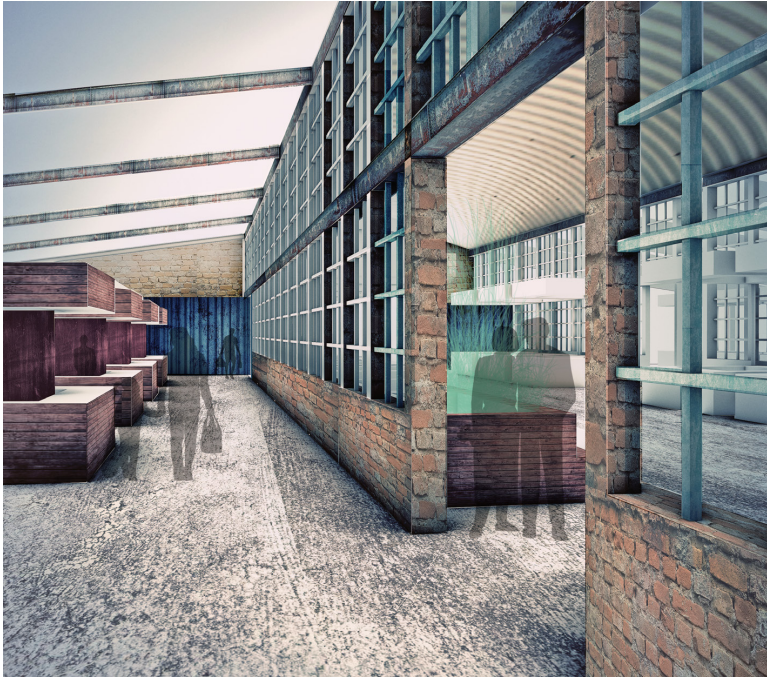


Fig.230.231

The created "pulsating" spaces are variable in functions and aesthetics because of their interaction with their surrounding. However, following a network axis, each space is connected with the others. By interacting with its environment, they can spread with time their public character around the island, activate and invite the people while respecting the surrounding and corresponding with the future circumstances. The idea of activating those spaces will convert them into a reference point that will enrich the island with more pocket open spaces in the future. The slow adaptation of public life through such interventions will establish a meaningful attachment to the landscape and space. It is essential to build a qualitative space before the future development of the buildings can start. The interference with spaces on the island at an early stage will invite more activities that will lead to more closeness with the place and thus promoting more valuable and qualitative surroundings to the future high technology park and other future investments.



⊙ M 1:5000

Fig. 232

EPILOGUE

Because I was born and grew up in Varna, this island has a personal meaning for me. The unattractive appearance of this island does not match the rest of Varna and is wasted potential. These problems are visible to every child. Another major issue in Varna is less easy to spot. The emigration of young and qualified people in which many of my friends and I partook is a social and economic crisis for the region. While I played in the youth with the thought of saving and restoring this island, I used this diploma thesis to work on this idea properly and brought it to paper, trying at the same time to propose a solution to the social problem mentioned. These ideas were not only in my own mind, as is proven by government officials wanting to open a high tech park in Varna. A crucial point in the renaissance of this basically nameless island was the reintegration of it into the rest of the city by opening it up to the public by improving the infrastructure and creating a green oasis that attracts this public. Although this thesis is no blueprint, I hope that someone who is or will actively work on the island's restoration could be inspired by my work.

"TRANSFORMATION IN A DESIGN PERSPECTIVE IS A SITUATION WHERE SOMETHING IS CHANGED FROM ONE STATE TO ANOTHER—RELATING THAT FORMER "SOMETHING" TO THE NEW 'SOMETHING ELSE' WHILE KNOWING THAT NEITHER BEFORE NOR AFTER IS STATIC."¹



Fig. 233



Fig. 234

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MY THANKS AND APPRECIATION

I am deeply grateful for my parents, [Vladimir and Slaweia Stoyanovi](#), who gave me life so I can explore and create in this world. They were supporting me and standing beside me during the whole journey of my education.

My sincere thanks to my supervisor, [Arch. Univ.-Prof. Degros](#) for the dedicated time, helpful support, and valuable discussions.

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Thank you, [Arch. Desislava Hristova](#) for the helpful data for the project.

I want to acknowledge the effort of some of the [citizens of Varna](#), who, through social media, provided me with valuable information about the site. Thank you for sharing your vision.

LEGEND

	park		rental space		empty space		outdoor sport equipment
	fishing		urban furniture		motorcycle shop		workout area
	university campus		food kiosk		recycling		open stage area
	workshop		urban gardening		meditation area		public toilets
	business		sitting area		relaxing area		outdoor library
	science		playground		creative area		wifi learning area
	market		amphitheater		relaxing area		food truck zone
	shipbuilding		eating area		skatepark		swing
	boat taxi		museum		table tennis		table tennis
	observation point		power station		badminton		
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