

THE TEMPORARY CITIZEN

*and the implications of the next
mode of energy in Vlissingen*

Anouk Klapwijk

The temporary citizen and the implications of the next mode of energy in Vlissingen
Thesis report
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FOREWORD

Urbanism for a moving population

On the 24th of March 2016, the graduation studio 'A City of Comings and Goings - designing for migration and mobility', was introduced to me by a lecture from Prof. Wouter Vanstiphout. He explained his observations of 'generation Bataclan', referring to the number of different nationalities of victims that died in the Bataclan attack in Paris. It served as an example to show today's mobility and migration from all kinds of people across the world. Having experienced the same mobility for myself, I was fascinated by the theme of this studio.

During my study in architecture and urbanism, I have developed an interest for flexible and adaptable solutions that could deal with a constant changing population and functions accordingly. My projects were always focussed on flexibility and being able to adapt. On the other hand, growing up in the city of Rotterdam, the port and its industry have always intrigued me as well. Large scale urban and industrial projects related to this environment, such as Maasvlakte 2, got my interest as well. These stand in sharp contrast with flexibility or adaptability, due to their scale.

This graduation project is a combination of all those fascinations together. Looking at a large scale project, the building of the first large scale offshore wind farm of the Netherlands and the influence this will have on the movement of people and the adjacent city, allows me to combine these interests. At the same time it touches upon two undesirable topics in the Dutch society, offshore wind energy and migrant workers.

The temporary citizen and the implications of the next mode of energy in Vlissingen is a result of my research into this phenomenon and the temporary situation the port and its adjacent city will be in, while constructing this wind farm. With this research, I try to examine a potential synergy between the workers, the city and the energy transition. The result is this book, which forms the conclusion of my graduation project.

I hope you enjoy reading it.

June 2017,
Anouk Klapwijk

INDEX

CONTEXT

22	Introduction
26	Motivation
28	Problem
29	Relevance
30	Challenge
31	Framework
34	Goals of the project

ANALYSIS

48	Building a wind farm
52	Migrant workers
60	Vlissingen
66	Conclusion

PROJECT

- 80** Strategy
- 128** Design
- 182** Legacy
- 193** A common future

APPENDICES

- 196** Conclusion
- 198** Reflection
- 202** The 21st century city
- 210** Workshops on migration
- 216** Literature
- 221** Image credits

CONTEXT

22 Introduction

26 Motivation

28 Problem

29 Relevance

30 Challenge

31 Framework

34 Goals of the project





01: Energy shaping landscapes; energy plant.





02: Energy shaping seascapes; oil platform.





03: Energy shaping infrastrucutre; electricity grid and transformator station.









INTRODUCTION

Energy as spatial designer

Energy needs space. It exploits space as a resource, a site of production, a transportation channel, an environment for consumption and a place for capital accumulation (Ghosn, 2010). The vast network of energy production, consumption and distribution has left its imprint on our urban and rural landscapes around the world. The extraction of non-renewable energy resources, like petroleum and natural gas, have left their marks on the environment in the last century. In 'Global Landscapes of Oil', Carola Hein (2009) describes this impact of energy extraction on the built environment.

Energy shaping landscape

The first influence of energy on the built environment describes Hein as energy shaping landscape. It focuses mainly on the sites of production, such as energy plants and excavation sites. Also transportation channels shaped the maritime environment, with ports as key nodes in the logistical network. Harbours added facilities for storing, refining, and refuelling volumes of oil. Not all of the operations are visible, most are being kept out of sight. But besides these petroleum landscapes, oil also shaped the adjacent harbour cities.

Energy shaping cities

Cities created offices and housing for oil workers and administrators. They created an environment for consumption as well as a place for capital accumulation. New wealth created new infrastructures and capital cities. These urban forms are not always sustainable. We have witnessed how oil extraction processes have set up the initial urban lay out of new towns, but often once resources are exhausted these settlements are abandoned. Influenced by the lifespan of the oil processes, 'oil boomtowns' slowly become 'oil ghosttowns', leaving municipalities with empty oil worker camps and abandoned housing.

Energy shaping migration

Besides shaping the built environment, energy is also shaping migration. Figure 06 on the following pages demonstrates this situation. In the United Arab Emirates, a large amount of the population is not native, due to massive recruitment of foreign labour that occurred in all Gulf States since the beginning of oil exploitation in 1973 (Suter, 2006). In the UAE the foreign population accounted for up to 75 per cent of the total population. Even though the migration system is of temporary character, the cities are influenced by the presence of this labour force.

Entering the cycle of temporary migration through employment in construction, maintenance and jobs in services related to energy, migrants influence the development in their host countries. But despite the significance of this migrant population within urban contexts worldwide, the relationship between migrants and the spaces they create is often overlooked.

From mining black to mining blue

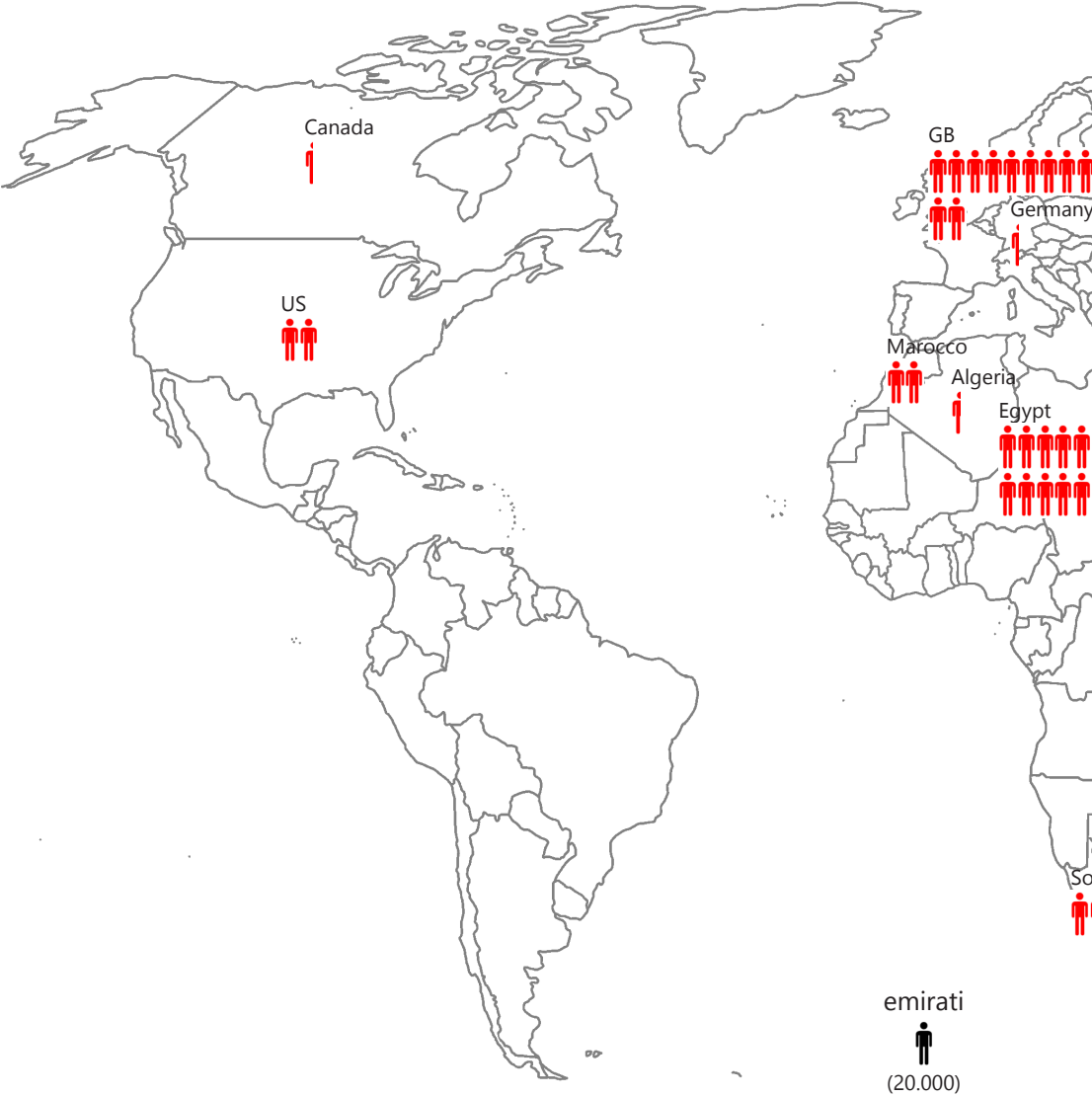
As described, the oil industry has played a transformative role in reshaping landscapes. As many other cities in the UAE and across the globe, Dubai owes her development to the strategic geographic location and the access to oil fields. With climate change and the notion of running out of oil supply, the focus is shifting towards more renewable energy resources. With this energy transition, the geographic locations will change the countries that will lead the way. Wind energy will shift the focus towards Northern Europe (Hau & Von Renouard, 2006). This will result in new emerging employment patterns worldwide.

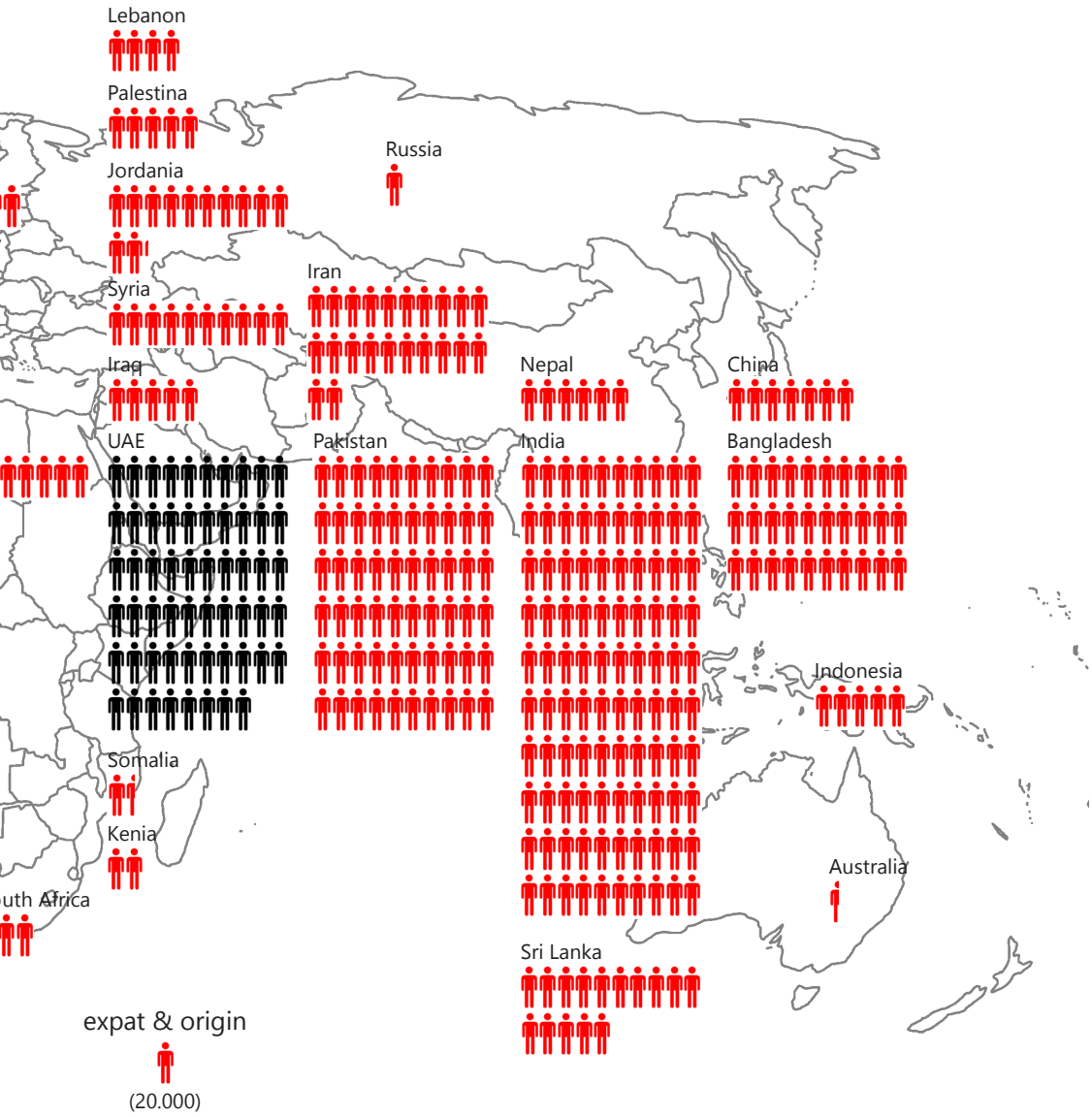
This is where the theme of energy overlaps with the theme of the graduation studio of Design as Politics: 'A City of Comings and Goings - designing for mobility and migration.' Being aware of the influence of work migration on the urban environment by the example of the built environment shaped by energy extraction processes, new questions are posed on how to deal with large temporary populations or citizens. Now that migration is increasing across the globe, this will be an important subject for urban planners in the upcoming years.

An alternative for boom-and bust?

We have witnessed how energy production and consumption processes have set up an urban environment that is not capable of surviving on a longer term. In a time where the emphasis is on more renewable resources and in anticipation of a future beyond oil, we should examine alternatives for cities shaped by energy processes. Instead of destroying the urban environment when the resources are exhausted or instead of keeping the infrastructure out of site, the proximity of energy resources should offer opportunities for cities. But how are we able to deal with the economic lifecycle of energy processes while creating a sustainable and a more just urbanization?

In 2023, 16% of the energy demand of the Netherlands, must be generated in a sustainable way (SER, 2013). Therefore, the Dutch government announced the construction of five new wind farms off the coast of the North Sea, which are amongst the largest in the world. The first of these wind farms, Borssele, will be build 22 kilometers of the coast of Zeeland. This will result in new job opportunities and growth of the port industry in Vlissingen-Oost and its adjacent city Vlissingen in the upcoming years. The challenge and opportunity this temporary citizens can offer will be examined in this report. While the project and the design will focus on a particular site, the city of Vlissingen, the work could offer lessons to the broader context of migration and a temporary population.





06: Energy shaping migration in the United Arab Emirates.

MOTIVATION

Temporary citizens for a permanent legacy

The 21st century will be the so called age of the “global city”, with an increasing mobility of individuals (Herzog, 1997). Globalization has led to this increase in mobility of persons and labour accross borders. It has made migration much easier through improved transport and better communications, such as low-cost airlines and the internet with its social networks. This allows cross-border commuters to sustain a closer and more frequent contact with places and people in different cities and countries (Alsayer, 2015) and will result in new forms of life in the 21st century city.

The graduation studio ‘A City of Comings and Goings’ of Design as Politics taps into this phenomenon. By exploring the theme of migration from an urban design point of view, I can examine influence of this new mobility on the built environment. While the focus around the theme of migration often revolves around illegal immigrants, asylum seekers and refugees, a significant part of the migrant population is overlooked: the legal migrant worker.

Since the sixties, large groups of labour migrants have been present in the Netherlands (Snel, Faber & Engbersen, 2013). Most of these labour migrants settled in the Netherlands permanently. But with the increase of flexible work programs, there is a growing number of so called “shuttle migrants”, that commute on a temporary basis between countries.

These temporary citizens remain hidden and unseen most of the time. Temporary living arrangements are located in non-urban areas and the urgency in which a lot of temporary accommodations are realised, lead to far from optimal and desirable housing conditions (Snel, Faber & Engbersen, 2013). So what is the kind of infrastructure that is necessary for the building of these urban communities?

The question the graduation studio ‘A City of Comings and Goings’ poses is: How can we design buildings, cities and landscapes that make the best of our restless lives, that profit from the constant exchange of people? On the one hand I am interested in the urban logistics necessary for temporary citizens, but as the other half of the question describes: how can we also profit from this constant exchange of people?

The ‘boom - and bust oil towns’, described in the previous chapter, illustrate my motivation. Once resources are exhausted, those villages are left for abandonment or leave existing municipalities with empty parts of the town. The industry creates a city by growing there, and destroying it by leaving. I see my role as an urban designer to explore the alternatives for a municipality to deal with a temporary population, that offers benefits for the future as well.

In a publication of 'Shrinking Cities' by Philipp Oswalt (2006), published in conjunction with the exhibition 'Shrinking Cities - Interventions', a political deficit of architecture is described by architect Rem Koolhaas.

"We have broken the connection with politics and have not been able to find a different domain of legitimacy apart from good and intelligent architecture. But what would be tremendously important. Architecture is only legitimate when it formulates a utopia. Since 1945, however, this idea of a social task has continually declined. The loss was compensated by a lot of attractive new inventions by architects. Only in the past ten years, however, as the number of projects for the public domain has increasingly diminished, and we architects find ourselves serving private interest, has it become very clear that the decline of our theoretical content is also a decline of architectural content."

More concretely, most of the projects are based on growth-oriented models for action that do not function if this is not the case. This is also the case with a temporary population, that only stays for a short term. I quoted Koolhaas because he describes my other motivation for this project; the idea of the social task has declined. Therefore, I joined the studio of 'Design as Politics' as well as the choice for a project that tries to benefit all.

Another motivation is that I believe that new urban plans need to re-enforce or re-empower the local. Most of the different forces that shape the city and its landscape are outside the level on which urban planning and local action take place. But this does not mean we can not think about how to set these different forces to our hand. The task of the urban designer is to think of the city as a whole, that takes into account larger temporal horizons depending on these other forces.

Therefore, this project tries to find a sustainable solution for the long term, instead of temporary relief or a quick fix. I have an interest in not only providing a solution to resolve the practical problem of temporary accommodation, but also improving living conditions of the migrant worker at the same time. The graduation project focuses on the social, institutional and physical infrastructure needed to facilitate the coexistence of diverse populations with diverse needs, while at the same time opportunistically taking advantage of corporate needs to channel investments where the city needs them.

Now that the massive investment for the offshore wind farm Borssele is made, it is a strategic moment for the city of Vlissingen to rethink their opportunities the coming of these temporary citizens can provide in upgrading their urban infrastructure and create better living conditions for the city in the long term.

PROBLEM

Energy as spatial designer in Vlissingen

Vlissingen, a city in the province of Zeeland, is depending on its rich maritime history and the harbour in the inner city. However, industrialization caused the harbour to leave the inner city in 1964 and moving to Vlissingen-Oost. The movement of the port negatively effected the city of Vlissingen, in particular the terrain of the Schelde werf, leaving an empty site next to the city center and a maritime city in decay (Druenen, 2015).

With the energy transition and the construction of the first large scale wind farm in the Netherlands, Borssele, the port of Vlissingen-Oost will receive a lot of new activity in the upcoming years. But as described in the introduction, energy can lead towards different lifestyles and tensions between local context and global powers.

Industrialization has not only led to the movement of the port, but also has led to an increase in mobility of persons and labour accross borders. Work migration is a known phenomenon in port areas, but the changing scale of the wind industry and the mobility of persons nowadays will strenghten this process.

As a municipality, Vlissingen is unaware of this upcoming migration of temporary workers to the city and its port. The shrinking city could actually use the temporary citizens very well to bring life and work back into the city. If the city does not explore the potentials or identifies the stakeholders involved, it will plan only for quick fix and temporary solutions that will not benefit the city in the long term or the permanent residents.

The construction of the wind farm leaves an opportunity to transform the city of Vlissingen and improve the life of both the temporary as well as the permanent citizen. Therefore, a strategy to opportunistically take advantage of the comings and goings of the wind industry is required. This will accellarate change while offering new activities and open possibilities for future developments. Focussing on the potentials these temporary citizens can bring, their social condition can be addressed as well.

I believe that the city should have a vision that incorporates the comings and goings of workers in the port. The question that should be asked by the municipality is: **"How can these comings and goings being seen differently and as an opportunity to benefit the city?"**

RELEVANCE

Comings with the emphasis on goings

Academic relevance

Most of new design projects are based on a growth-oriented model or with a clear design goal. But little is known about non-growth or how to design when growth is not the end situation. With a rise in mobility and migration across the globe, temporary citizens become a larger part of a city population. I see my role as urban designer to advise municipalities about different possibilities how to deal with this.

It will become more important for urban designers to take into account that these population movements can change the methods and approach for future design. Urban designers should learn from the temporary population to develop new planning and design approaches that explicitly anticipate on the increasing migration and mobility in cities. New essential tools for urban planners to address the design of the city are necessary.

Within the complexity of the city, this is not an easy task. The division between the municipality and other stakeholders is often made and municipalities are unaware of the opportunities other stakeholders have to offer. By setting up guidelines and structuring the process around temporary changes, municipalities and developers together can create more long term solutions.

Social relevance

The project is relevant for the society in a few ways. At first, it addresses the issue of shrinking cities. The Province of Zeeland is already coping with shrinkage, with the city of Vlissingen as no exception. Since the harbour has left the inner city, a large brownfield has an negative effect on the liveability of the city and their maritime identity.

Secondly, the project challenges two undesirable topics in the Dutch society; the energy transition and the migrant worker. With the Energy Agreement, the energy transition and the construction of large wind farms will continue quickly in multiple locations. Not everyone is happy with this, the general public still opposes against wind farms especially on land. Studying this subject in Zeeland could offer opportunities for the other locations as well, in informing residents about these projects.

Regarding the migrant workers, they have a negative image due to negative publicity around accommodations and nuisance. A positive message could change this image. Throughout the report, I will refer to this temporary population using two terms; migrant workers and temporary citizens. On the one hand, migrant workers is the correct term due to their main reason of coming to the Netherlands, which is work. But at the same time, the municipality should see them as temporary citizens and inhabitants of Vlissingen, offering an opportunity for the urban environment.

CHALLENGE

Resilience for the long term

The challenge for the graduation project is to **catalyze long term improvements** for the **local and permanent citizens**, while at the same time **improving the conditions of and servicing the global and temporary citizens**. On the other hand **informing the general public about the energy transition** and celebrating the first large scale off shore wind farm in the Netherlands is the second challenge.

To tackle these challenges, the comings and goings of the migrant workers have to be integrated in the project. Most projects usually have a **growth-oriented model** as a base for action, but this case, also **the decline** and the goings of the temporary population needs to be taken in consideration. The challenge is to take into account **larger temporal horizons**, based on the economic cycles of the port.

The spatial and financial conditions of the city of Vlissingen make this task difficult. Small interventions in a large system need to re-enforce or re-connects the cities underlying system. Only then, the structure of the city can be transformed and a **long term legacy** for the city can be protected. **Small operations need to impose constraints on the future.**

FRAMEWORK

Hybrid synergies?

Questions

In order to meet the challenge to take advantage of the migrant workers coming for the Borssele wind farm project and utilize this comings and goings opportunistically to create a long term legacy for the municipality of Vlissingen, the project needs to analyse three topics first in order to establish a design brief: the wind farm Borssele, the migrant worker and the city of Vlissingen. By answering the question **“What are opportunities and constraints for the project by looking at the historical and current context of wind energy, migrant workers and Vlissingen?”**, an outline for the design project and a design brief is defined. A vision in order to tackle the challenge is made.

But the location is no tabula rasa and has site specific characteristics. To understand the context for the design, the question **“What is the relation between the city and the port and what are the underlying systems that re-enforce this connection?”** is asked. By mapping the structure of the area, two places of interest are defined in the system. These are the specific project locations for the design assignment.

Both locations are large areas that can not be transformed as a whole. For the design of these two areas, the theory of patchwork urbanism by Brent Ryan is adopted. In order to construct a design that is sustainable over time and leaves a legacy for the permanent citizens, the question **“What are the guidelines of patchwork urbanism in order to designate areas for punctual interventions?”** is asked. By implementing the theory of patchwork urbanism, five locations for design projects are designated and designed.

Each design consists of five phases in order to deal with the constraints posed by the construction cycle of the wind farm. The last question **“What could be the legacy of the project in future visions for Vlissingen?”** illustrates three different scenarios to show the possible legacy of the project after these five phases.

Report structure

The report consists of three chapters: Analysis, Project and Appendices. The first research question is answered in Analysis, describing a context of the three main topics. In the following chapter, Project, the other research questions are upon elaborated in three paragraphs: strategy, design and legacy. In the final chapter, Appendices, there will be reflected upon the graduation project and background material will be provided. In figure 07 on the next page, this framework is illustrated.

Each chapter of the report starts with a visual essay to illustrate the project and highlight the context. It will create a feeling for the topics discussed.

STUDIO TOPIC

Design as Politics - 'A City of Comings and Goings' -
designing for migration and mobility
Location: Vlissingen, the Netherlands

CHALLENGE

Making the global factors of energy and migration comprehensible and visible,
while using this as a catalyst to local urban change for the longer term.

ANALYSIS

Borssele wind farm
literature
reference projects
newspapers
building process

Migrant workers
literature
interviews
reports
books
company town

Vlissingen
maps
historical photos
books
site visit

Outcome: constraints and opportunities regarding time horizon, scale, functions,
location, legacy, user groups and distance between port and city.

PROJECT

Strategy
Local to global, global to local

Design
Patchwork urbanism
Five phases
Design principles

Outcome: design on four locations within the urban area (Scheldeterrain) and one
location within the industrial port area (Kaloot).

Legacy: 3 scenario's

Decline
The city's reservoir

Stable
The city's green lung

Growth
The city's
neighbourhood

CONCLUSION

GOALS OF THE PROJECT

Three gaps

The aim of this graduation project is to explore a potential synergy between the comings and goings of the migrant workers and the energy transition, to benefit the city of Vlissingen. The design is an attempt to make the global factors of energy and migrant workers comprehensible and visible, while using this as a catalyst to local urban change. The comings and goings of a new population is seen as window of opportunity for transformation of the Scheldeterrain and the port area and the development of new activities. With this aim, the project will address three 'gaps' in the Dutch society:

The social gap

The social gap refers to the distance between the temporary and the permanent citizen. The temporary citizen, the migrant worker, is often excluded from urban areas and city centers. They remain unseen for the permanent citizen, causing them to oppose to every development plan regarding temporary accommodations.

The political gap

The graduation project touches upon two controversial challenges in the Dutch society. The political gap refers to the gap between the energy transition and the migrant worker with the local community. By making both topics visible to the permanent inhabitants of Vlissingen and making a future vision how to use this to their advantage, more support could be created.

The spatial gap

Since the industry left the old harbour of Vlissingen, the city is left with a brownfield industrial area. At the same time, the activities happening in the port of Vlissingen-Oost are not visible anymore for the inhabitants. New activities on the old harbour terrain and the use of heritage need to strengthen the maritime identity of Vlissingen, while inserting a piece of urban in the industrial area of the port will reconnect Vlissingen with Vlissingen-Oost again.

These gaps lead to goals for each topic addressed in this project. Figure 08 on the next page summarizes these goals.



ENERGY TRANSITION

- create awareness for the project of Borssele and renewable energy resources
- making the activity of Borssele visible



MIGRANT WORKER

- improve the living conditions
- improve the location of accommodation



VLISSINGEN

- offer new activities for permanent inhabitants
- strengthen maritime identity
- offer access to the Scheldeterrain and the port

08: Figure with goals of the project

ANALYSIS

48 Building a wind farm

52 Migrant workers

60 Vlissingen

66 Conclusion





09: The first manufacturing plant of its kind for Siemens next generation blade technology (IntegralBlade®) designed for Siemens SWT-6.0-154 6 megawatt (MW) wind turbine.





10: A Haliade generator at GE's factory in St. Nazaire, France.





11: Vattenfall Starts Developing 1.8GW Norfolk Vanguard.





12: Man working on a wind turbine at Horns Rev Wind Farm, Denmark.





13: Work on a wind farm, built by Deepwater Wind and located three miles off the coast of Block Island, Rhode Island, United States.

BUILDING A WIND FARM

Changing the scale

Energy transition

Instead of 'mining black gold', as described in the introduction paragraph, we are moving towards 'mining blue gold' as part of the energy transition. Wind energy will offer large opportunities in order to decrease greenhouse gas emissions, especially in Northern Europe, in the upcoming years. As a result, employment in the energy sector is shifting from fossil fuel to renewable energy and energy saving.

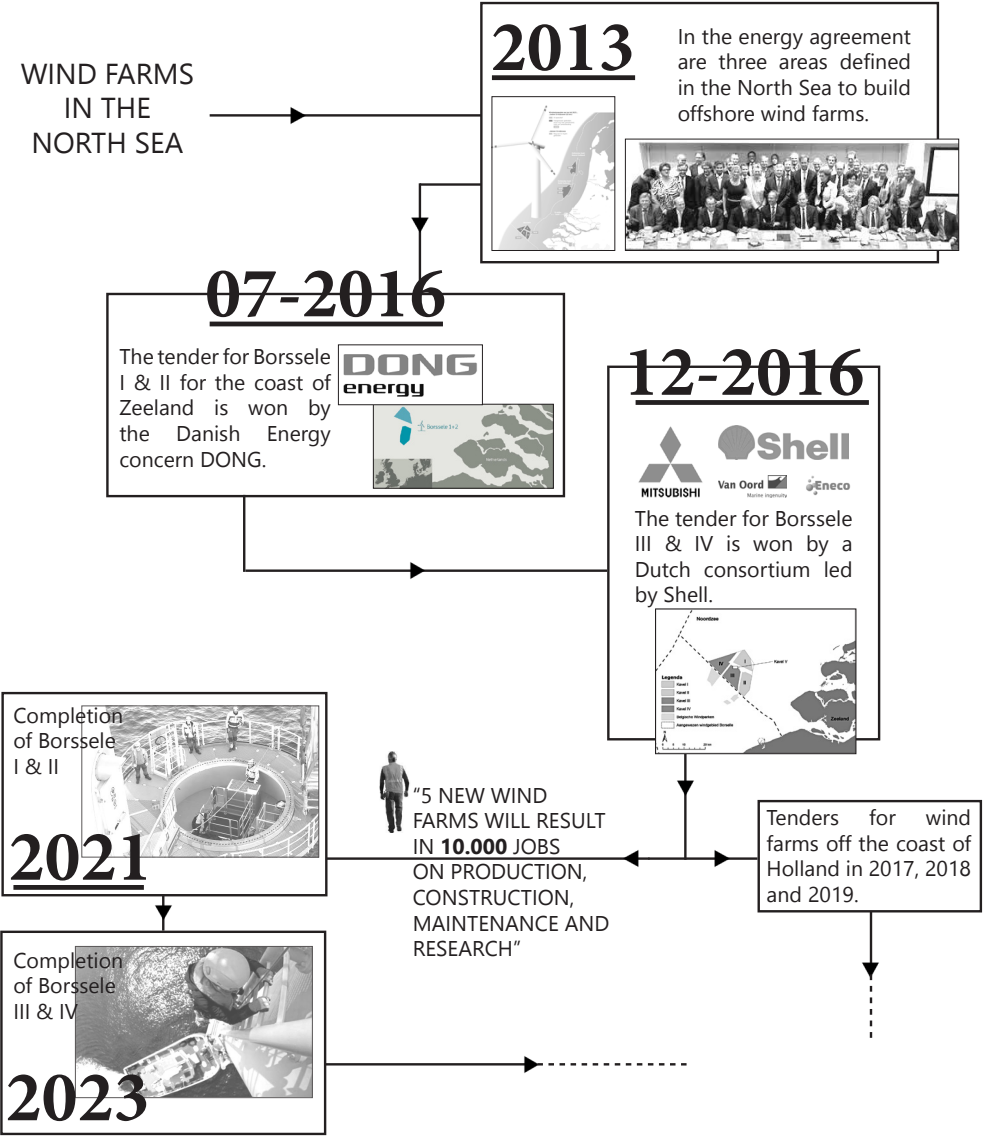
For the Netherlands, the energy transition started with the signage of an Energy Agreement with parties involved in the energy market by the Dutch Government (SER, 2013). As part of this agreement, it is outlined how offshore wind energy will be increased from 1000 MW to 4500 MW in 2023. The investments this requires will cause an increase in the number of wind energy-related jobs.

Borssele

In figure 14 a timeline is presented how this Energy Agreement led to the construction of wind farm Borssele of the coast of Zeeland. Port companies in Vlissingen-Oost will receive a lot of orders for the construction of these wind farms. But according to the director of Humares, a company that provides technical and maritime personnel, the offshore sector in Vlissingen-Oost has a shortage of staff. The labor market in Zeeland can not keep up with the growth of the sector and foreign workers are necessary (PZC, 2014). Willem Weggeman, director of Homeflex, a company providing temporary accommodations for migrant workers, emphasized this same condition in an interview.

An example at Heerema, a company in the port that builds bases for offshore platforms, illustrates the presence already of foreign workers. Welders and fitters working behind the fence are coming from Poland, Lithuania, Romania, Spain and Portugal. Other workers that build scaffolding are mainly from Turkey. During a fieldtrip, shuttle buses were recognizable on the parking lot, transporting the workers from home to work.

In the map illustrated in figure 15 on the next page, the change of scale of the offshore wind farm industry is recognizable. Planned wind farms are more than 10 times the size of the existing. They will involve a lot more work than previous farms in the Netherlands. Since Borssele is the first one going to be build, it will serve as a test case and as an example for all other wind farms to follow.



14: Timeline of the process of the offshore wind farm Borssele.



15: Map of existing and planned offshore wind farms in the Netherlands.

Reference project Alpha Ventus

To learn about the construction proces of a wind farm, the reference project of the wind farm Alpha Ventus in Germany is studied. Alpha Ventus is located 45 kilometres north of the island of Borkum and exists of 12 rotors in the North Sea. This wind farm is studied, due to the extensive information on this project.

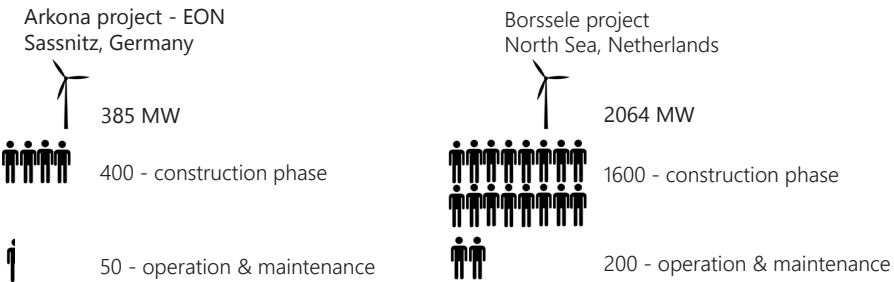
The building of an offshore wind farm starts on land. The individual components of the wind turbines are manufactured and preassembled as much as possible. This will happen for Borssele not only in the Netherlands, but throughtout Europe. Transport of the assembled parts will happen mostly over land, but a few parts such as the foundations are too large to be transported over land and will be taken by ship towards their destination (iserundschmidt GmbH, 2010).

On the open sea, the various components come together in order to assemble the wind turbines. After the foundations are anchored to the seabed, the tower segments, nacelles and rotors are shipped to the construction site. In the last stage, the tower segments and rotors are installed and connected to the cabling within the farm.

Summarized, the construction of a wind farm could be devided in five phases.
phase 1: preparation of the project off site
phase 2: preparation of the project on site
phase 3: installation of the foundations, laying of the electrical cable and construction of the transformator station
phase 4: preparation of the wind turbines and blades
phase 5: installation of the turbines and blades on location
According to these phases, we can conclude different amount of workers will be present in Vlissingen and the surrounding area, depending on the work happening on or off site.

Borssele workers

Where Alpha Ventus is situated 45 kilometers of the coast, Borssele will be 22 kilometers off the coast of Zeeland and 40 kilometers from the port of Vlissingen-Oost. This will mean that there will be no offshore accommodation for workers, but they will be accommodated in the adjacent area. To get an idea of the amount of workers for the project, an estimation is made based on project Arkona in Sassnitz, Germany. This is illustrated in figure 16 below.



16: Amount of workers involved in construction of offshore wind farms.

MIGRANT WORKERS

The life of the worker

Migrant workers in the Netherlands

The Netherlands have always been a destination for (labour)migrants, which has shaped to a large extent the development of the country. Already in 1500, the Jews from Spain and Portugal, from which they were expelled, came to the Netherlands. Later on, labour from other parts of the Netherlands and Scandinavia, Germany, Belgium and France, made the growth of the Dutch cities and the industry possible (SER, 2014).

In the 20th century, the Netherlands saw large migration streams: refugees from Belgium and later asylum seekers from many conflict areas in both Europe and Africa; immigration from the former colonies like Indonesia and Suriname and labor migration from Italy, Spain and Portugal and later from Morocco and Turkey, followed by family migration from these countries. But the 21st century so far shows a different kind of migration to the Netherlands: temporary labour migration.

Since the enlargement of the European Union in 2004 and 2007, migration within Europe has been different. Fueled by large wage differentials, an increasing number of temporary workers from new member states were attracted. Open European borders stimulate migrating between countries and also often their return. These temporary migrants are not registered and therefore hard to count. Although the numbers are unclear, figures show that the numbers keep rising.

European integration has eliminated many of the obstacles that were previously defined by national borders. According to Corpeleijn (2006) there were 72.000 temporary migrants in 2004. But in 2007, an estimated 100.000 work permits were issued to eastern Europeans. In 2011, the Central Bureau for Statistics (2011) presented a number of 200.000 mid- and east Europeans in the Netherlands as worker or inhabitant. This figure however shows a limited number. Self-employed migrant workers, illegal workers and migrants from south European countries are still missing in this number.

In general, it is assumed that there are around 300.000 migrants working in the Netherlands. Most of them come from eastern European countries such as Poland, Bulgaria, Romania but also southern European countries such as Spain and Portugal. Around 60% of the migrant population is male and most of them are aged between 30-40.

From origin, most of the workers are active in the agricultural sector, in which language and other skills are less important. Other labour sectors with a lot of migrant workers are logistics and industrial services. In the industry, more and more practitioners are deployed such as welders, millers and operators (Verlegh, 2012).

The company town

In order to see today's housing solutions and environments for migrant workers in perspective, the model of the company town as seen in urban history, is studied. The main reason for the creation of a company town by employers was the same as we can recognize now with labour migration; the need of a large work force. Although with improved transportation the need for a company town largely disappeared, communities and facilities built for especially migrant workers, are still active today. Therefore, a brief history of company towns and a comparison with today's facilities, is made.

The main reason for the set up of early company towns was mainly practical: to bring a work force close to work. Work locations were often situated in remote places and setting up a town meant to have workers nearby (Gregotti, 1997). The company town is described as "a community inhabited by the employees of a company or group of companies which also owns a substantial part of the real estate and houses."

Besides the main reason, the town's founders did not forget that they were entrepreneurs. Along with the more forward-thinking industrialists, Milton S. Hershey believed that workers who were treated fairly and who lived in a comfortable pleasant environment would be better workers which would result in a higher efficiency and productivity. Therefore the company towns provided besides housing other programs, such as churches, parks, recreational facilities, community centers, schools, shops and sport facilities.

Together with the aim of improving the workers' housing conditions, the additional programs also led to another economic interest advantageous to their firms - advantages derived from a stronger attachment to the company. Most of the industrial villages were built in the country to keep workers away from subversive or revolutionary ideas and there was a strict control over the environment. Also the family of the worker was managed. The dimensions of the houses were calculated taking the needs of an average family into consideration. A certain hierarchy in housing typology differed, according to the workers' position within the company.

Although company towns are often criticized for their visions of social control, they provide comprehensive visions of urbanism. The design of company towns allowed urban design professionals to implement larger visions and test new forms of urban organisation.

Today's company towns

Today, towns may no longer be created by the singular vision of one entrepreneur or owned and controlled by one company, but there can be contemporary equivalents found. An example of this equivalent is the single industry town, like a corporate campus such as Silicon Valley. Here are Facebook, Google and Microsoft based. Although corporate campuses do not typically provide housing, extensive workplace amenities like gourmet food, nap rooms, a bike shop and burger shack are provided (Beanland, 2015).

In the Netherlands we can find smaller communities and facilities built for workers. Two new examples can be found in Welberg and Zeewolde, called Stella Maris and de Bosruiter. These complexes, designed for migrant worker groups in the Netherlands, are the thoughtfully-planned communities. Given the lack of other solutions for temporary housing for migrant worker, they are not developed by one business owner, like a company town, but by the employment agency Goodmorning and real estate company Epe Group. Besides a place to sleep, these accommodations also provide recreational areas, restaurants, bars, services, a minimarket, sports facilities and even bikes or cars.

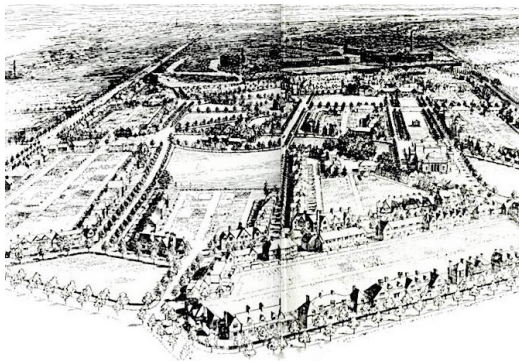
Complexes like Stella Maris in Welberg and de Bosruiter in Zeewolde, host different activities and amenities inside the building or on the surrounding terrain. The idea is that there is no interaction with the adjacent city and its inhabitants, they are kept away from the local population. In this way, the idea of control is the same as for the 19th century company town.

In figure 17 the program and functions of the historical company town of Port Sunlight and the facilities nowadays of Stella Maris and De Bosruiter are illustrated. The functions differ due to the different lifestyle of the worker back then and now, but the idea stays the same. Free time is controlled by the employer in the short stay facilities and employment agencies offer both the employer and the employee a total package that is primarily focused on labour efficiency. In practice, the life of the migrant worker is very much determined.

Although efforts have been made in order to provide adequate housing for migrant workers, like Stella Maris and de Bosruiter, problems still remain. As a target group, migrant workers are unknown and disliked. Housing providers and employment agencies have difficulty in getting these large accommodation facilities approved. Local inhabitants oppose because of the large scale of a complex and the large number of migrant workers in comparison with the local population. In addition, a yield of three to nine percent is not interesting for other investors (Lupi and Visser, 2015). And when migrant workers leave, those facilities are very vulnerable for vacancy.

Homeflex

With the amount of vacant buildings in the Netherlands, it is logical to look at the existing housing stock for accommodation for migrant workers besides new facilities. While large scale complexes are disapproved, Homeflex is using existing housing as accommodation. The company hires more than 400 single-family homes and apartments directly to large employers or employment agencies. They provide accommodation for around 1600 workers per year, in the regions of Amsterdam, Rotterdam, The Hague and Zeeland. Arranging housing in the existing stock is preferable for migrant workers and employers. The migrant worker has more privacy, where as the employee is very flexible in termination.



PORT SUNLIGHT WIRRAL, UK - 1914

- 3500 beds
- 800 apartments
- art gallery
- hospital
- school
- concert hall
- swimming pool
- church
- parks
- garden
- public house



STELLA MARIS WELBERG, NL - 2016



- 400 beds
- 2 / 1 apartment
- 4 / 1 apartment
- 6 / 1 apartment
- 24/7 reception
- technical service
- wifi
- parking
- lockers
- table football
- pooltable
- table tennis
- fitness room
- wellness room
- bar
- restaurant
- terrace
- fishpond




DE BOSRUITER ZEEWOLDE, NL - 2016

- 600 beds
- 120 apartments
- 3 / 1 apartment
- reception
- cleaning service
- technical service
- minimarket
- laundromat
- horeca
- sportfacilities
- cars
- buses
- bikes
- courses / training

17: Comparison between functions of an historical company town and migrant facilities nowadays.

 33.000
City of Vlissingen
 1 km



Homeflex (NL), 2016
 6



 Stella Maris (NL), 2016
 400



 De Bosruiter (NL), 2016
 600

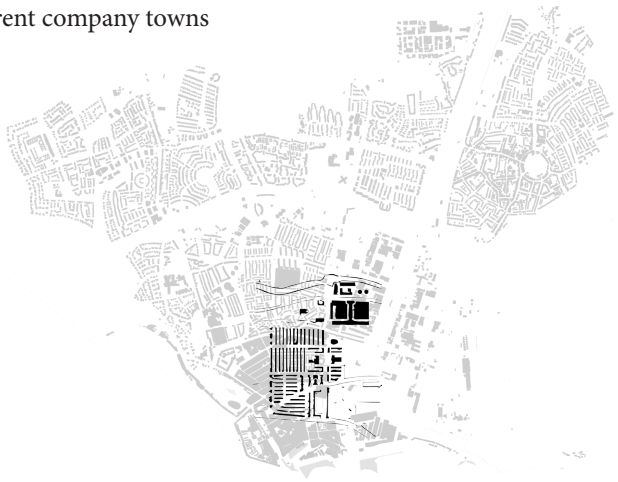


18: Comparison in size of different company towns on the map of Vlissingen.



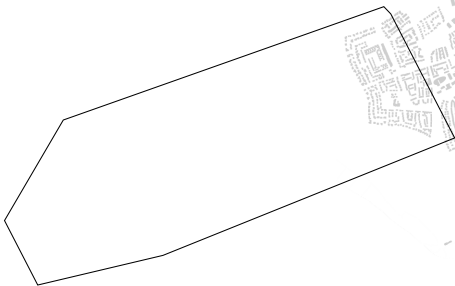
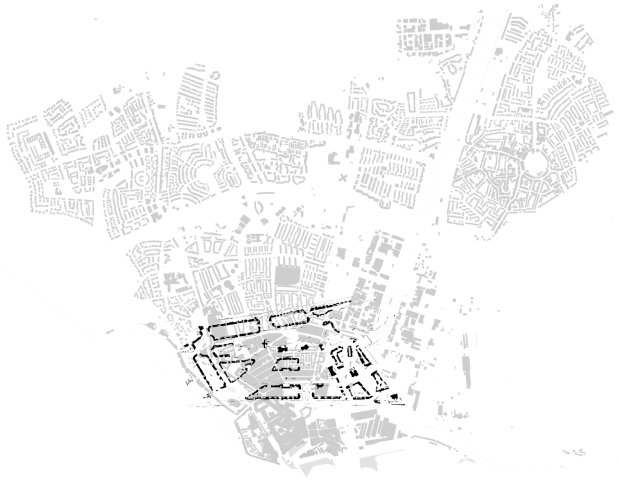
Saltaire (UK), 1853

3000



Port Sunlight (UK), 1914

3500



Barwa al Bahara, (QA), 2018

50.000



Legacy of the company town

If we compare the scale and the functions of the historical company towns, we can conclude that most functions that were offered are existent in the city nowadays. Being more mobile and not placed in a rural environment, the workers could use the facilities the city has to offer. Also the scale in which previous company towns were established, won't fit in the current environment of the Netherlands.

However, at the moment temporary accommodations such as Stella Maris are excluded from city life (figure 19). Despite their significance, more often than not migrant workers are kept separated from the local population: they remain hidden and unseen. Housed outside the city in labour facilities and by the very nature of their lifestyle, migrant workers often feel isolated and disconnected (figure 20).

The possible legacy of the company town is within the infrastructure and the location. The infrastructure of historical company towns offers still ways to use the space and serve as a place for recreation. Besides the company towns are often criticized for their visions of social control, the ideology of providing a clean and well designed living area for their workers can be taken as an example. The thought that well-rested workers who are happy in the place they live are working well, could still be applied (figure 21).

Although these migrant workers are used to being away from home, local connection remains important for matters such as place and identity. An increasing lack of identity leads to an uprooted existence (Schuilenburg 2011). Temporary accommodation should not only offer a place to sleep near work, but places to live, and live to the fullest, not just places to work while only dreaming of life. Improving the location and living environment of the migrant worker could be a first step in offering this.

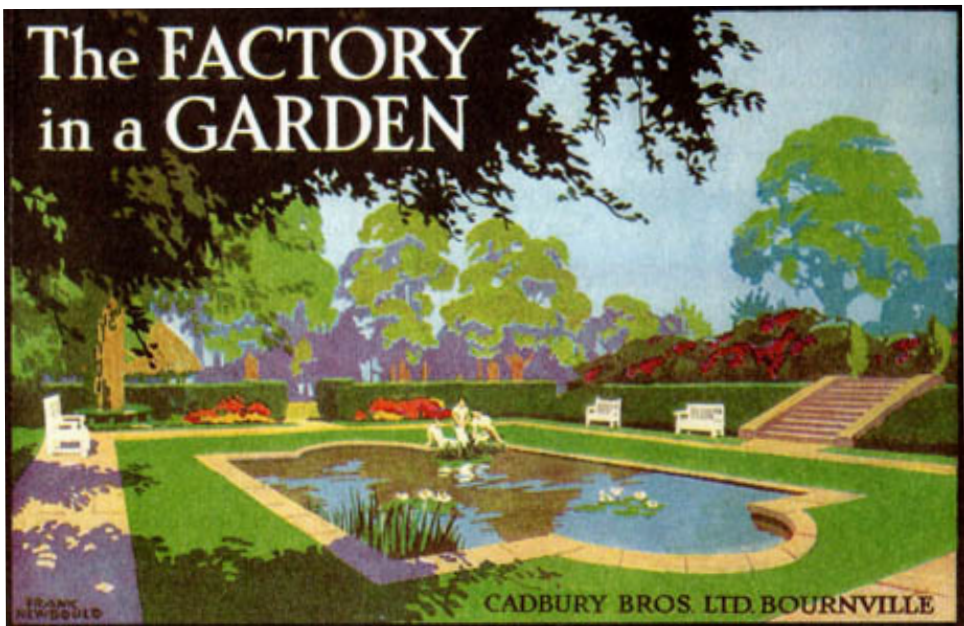


19: Location of Stella Maris relative to the location of the city center of Welberg.



"Stella Maris is a reflection of contemporary Dutch society, in which these migrant workers play no part. After all the guest workers are necessary, but not necessarily welcome."

20: Image and quote from the book of Geisje van der Linden on Stella Maris.



21: Postcard from Bournville, a company town in the United Kingdom.

A maritime city in decay

Demographic context

Vlissingen is a city in the Dutch province of Zeeland, located on the north side of the mouth of the Westerschelde on Walcheren. The city of Vlissingen has around 33.000 inhabitants. Although Vlissingen is, together with Middelburg, the most important city in the province of Zeeland, it is expected that the population will decline in the coming years. The death surplus is the main reason for this, in combination with the departure of young people. The decline is slowed down by an influx of migrants from abroad.

For the city of Vlissingen, the population will decline with 2000 inhabitants until 2020, but also the age structure of the inhabitants will change in the coming years. The number of persons in the age group 60 years and older will increase significantly, while the group of inhabitants between 15-59 year will decrease. This means that the potential labour force will decrease significantly in the upcoming years (Lupi and Visser, 2014).

Vlissingen has from history a high number of migrants. 1 out of 7 inhabitants comes from a migration background. Also in the future, most of the immigrants will choose Middelburg, Vlissingen or Terneuzen as location to settle (Lupi and Visser, 2014). Although the influence of migrants on the total number of inhabitants in Vlissingen will be none because the positive foreign migration is negated by the negative domestic migration, they do influence the potential labour force.

History

In a book by Peter Druenen (2015) the history of Vlissingen as a city is described on the base of three city types. Vlissingen originated as a fishing village, which grew to the center of fishing in the area around the Schelde. In the second half of the sixteenth century, fisherman and their families disappeared in order to accommodate Flemish and Dutch immigrants. Those immigrants engaged in hijacking, piracy, smuggling and slave trade. In this time, Vlissingen was a hijackers city.

At the beginning of the eighteenth century, these industries disappeared as well and Vlissingen was flooded multiple times. The city had to be rebuild and got a naval yard within its city boundaries. This marked the beginning of Vlissingen as a labor city. The naval yard was the main pillar of the economy in Vlissingen. Until the port moved out of the city, due to industrialization.

Vlissingen-Oost

Vlissingen-Oost is the port and industrial area that has been realized east of the old city and harbour of Vlissingen. Together with the port of Terneuzen, Vlissingen-Oost is part of Zeeland Seaports. Vlissingen-Oost is third port of the Netherlands and is extremely important for the economic activity of both the city of Vlissingen and the region of Zeeland.

The development of Vlissingen-Oost started in 1955, when shipyard De Schelde searched for possibilities to build a repair dock with access to deep water. The current harbour in the city of Vlissingen with limited access through the locks, could no longer keep up with the growth of the global shipping industry. Together with further existing plans for reclamation of the South-Sloe, a port and industrial area were build on this location. In 1964, the new port was opened.

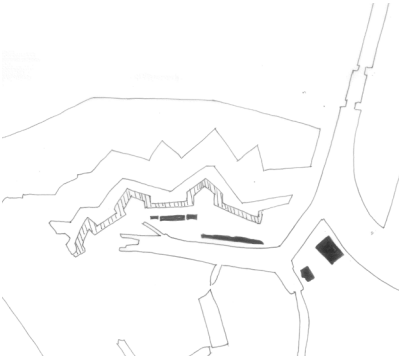
In 1930, the former mayor wanted to enhance the city's economy with three pillars: tourism, port and industry. Although the port and the industry left to grow outside of the city, these three pillars are still representative for Vlissingen. Today, the old harbour presents recreation and tourism, there is education for maritime studies and the port hosts a fair share of workers. The current population groups and further development of Vlissingen in relation to the port are described on the next pages.

Brownfield in the city

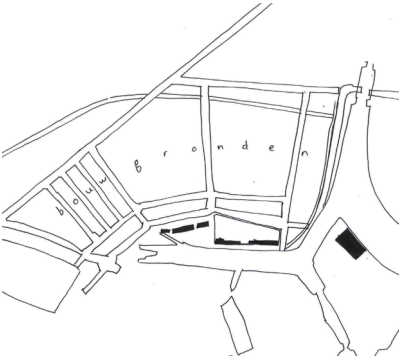
With the movement of the port, a brownfield is left in the city of Vlissingen. Inner-city brownfields have a tense relationship with the city. This is well described by Jurgen Hasse in *Brownfields - characteristics and atmosphere* (Baum & Christiaanse, 2012). The chaos of the brownfield mocks the superficially aestheticized city, whose appearance suggests eternal prosperity. Decay and ordered systems that are falling apart connect with each other to create an image of failure.

Since 2016, the status of Article-12 is granted to Vlissingen. This status is granted by the central government of the Netherlands, to municipalities that are so deeply in debt they can not solve it themselves. Vlissingen is one of the five municipalities in the Netherlands, who has such a status.

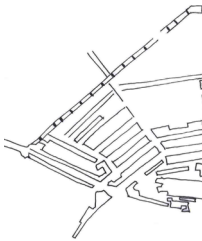
The article-12 status and the empty brownfield shows the situation the municipality is in. Vlissingen does not have much funds to maintain the quality of the municipality and cuts have to be made in the municipal budget. The 230 million euro's debt is, among other things, the result of the purchase of a new urban regeneration project: het Scheldekwartier. It was purchased from shipbuilder Damen, in order to sell the land to landlords for housing, but nobody showed any interest for it.



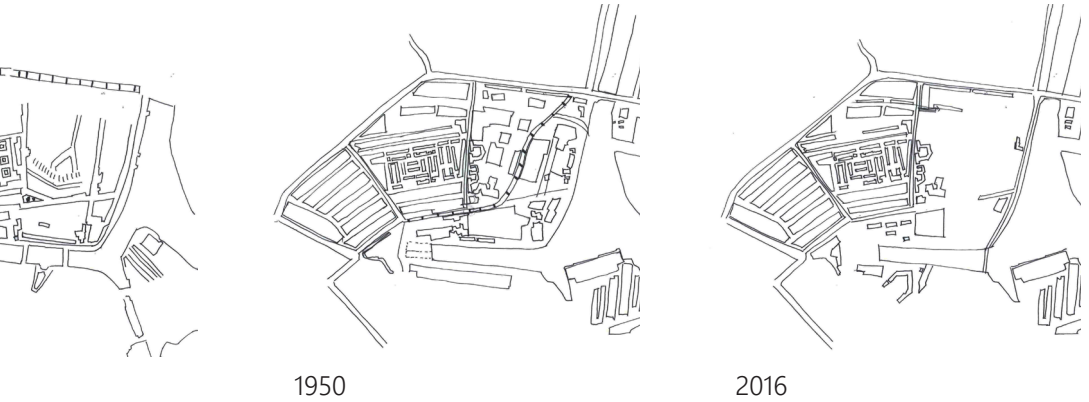
1877



1886



1910



22: Historical development of the Scheldeterrain. The area shows the movement of the port to Vlissingen-Oost after 1950, leaving an empty terrain.

Marines

The province of Zeeland works together with Ministry of Defence, the municipality of Vlissingen and the waterboard Scheldestromen on the realization of new maritime barracks located in the Buitenhaven of Vlissingen. The new barracks will offer space for 1800 marines and 200 employees and staff (Provincie Zeeland, 2015). The construction is expected to start in 2018. Prior to the construction of the barracks, the infrastructure will be adjusted and connections built for utility. In 2020, the first marines will inhabit the barracks, that will be fully completed around the second half of 2021.

Students

The HZ University of Applied Sciences, located in the old harbour of Vlissingen, provides education for 4800 students. The HZ offers education in several disciplines and is divided in nine tracks. The main three tracks focus on maritime disciplines: delta technology, marine logistics & maintenance, and coastal business & tourism. The other four tracks are about economics & management, education, technology & innovation and healthcare.

Tourists

The location of Vlissingen at sea in the Province of Zeeland attracts tourism during the summer months. This is for Zeeland and Vlissingen of great economic value. The industry is important for employment, cultural activities, retail and hospitality in the city. In order to maintain Vlissingen as a tourist destination, the municipality offers different plans (Bos and Meerburg, 2010) regarding accommodation, entertainment, culture and history, water recreation, events, beaches and nature.



2nd Home owners

Second home ownership is a growth market in Vlissingen. The municipality wants to facilitate this trend of part-time living by liberalizing the policy around second home ownership and investigates the possibility of using parts of the existing housing stock for the development of second homes. The maritime environment and water recreation within the city of Vlissingen is a good quality for a second home (Egmond, 2009).

Elderly

Due to double ageing, meaning more people will live longer, the number of elderly will increase in Vlissingen. This leads to an increasing demand for comfort and convenience, where housing is accompanied by care and services. The demand for care will increase in the coming years.

International workers

The international operating companies in Vlissingen-Oost hire increasingly temporary labour workers from East European and Asian countries. They live temporary in Vlissingen and there is a need for safe and healthy accommodation.

23: Image summarizing the ambition of Vlissingen as an attractive maritime city for all user groups.



CONCLUSION

In this chapter three topics were described and discussed in order to examine constraints and opportunities for the design brief and proposal. The question posed: **“What are opportunities and constraints for the project by looking at the historical and current context of wind energy, migrant workers and Vlissingen?”** is answered by notes on seven topics:

Time horizon

The project needs to take the building process of a wind farm and the time horizon into account. Therefore, it is divided in five different phases over a construction period of seven years. Each phase will have a different amount of workers living in the area.

Scale

As illustrated in the comparison between different company towns, the scale and urbanity, caused by the amount of workers related to the Borssele project, is a different scale than the historical company towns. A big urban project would be not necessary or viable in this case. The design proposal should lean more towards smaller urban gestures, but still needs to meet the challenge of leaving a legacy behind.

Functions

Comparing the functions of the company towns, these are usually within the area of the company town and therefore not accessible for other user groups. Making these functions not only accessible for the migrant worker only, will create more support amongst the permanent inhabitants. On the other hand, most functions necessary already exist in the city itself.

Location

Looking at the current conditions of the migrant workers, they are often located outside of a city center and on the edge of an urban area. Therefore, their options to spend their free time is limited and they feel often socially excluded. Due to their limited mobility, it is important to accommodate the workers in a location within the urban area of the city.

Legacy

Looking at what is left of the historical company towns, this is mainly public space and infrastructure. These are the components that can leave a legacy for future development on the location.

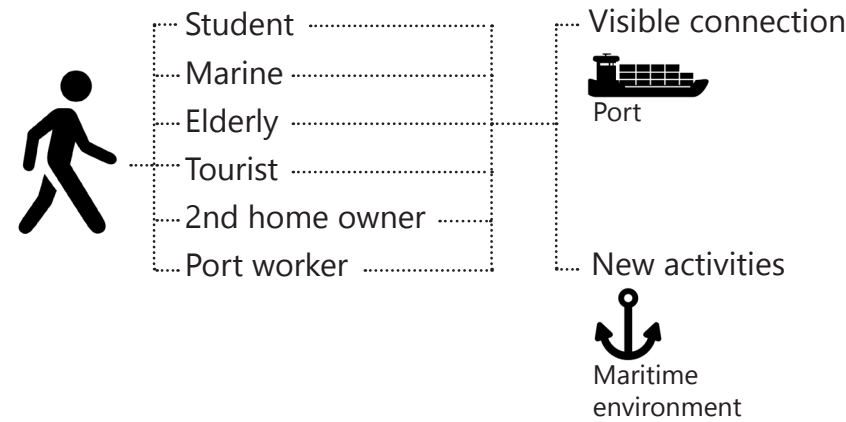
User groups

Vlissingen has different population groups, short term and long term. All those population groups have a different lifestyle and require different urban logistics, that should be addressed in the project.

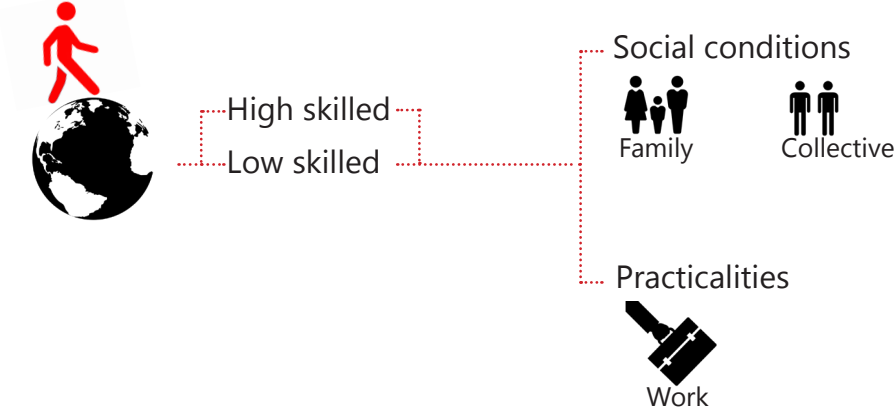
Distance between port & city

The port is the historic open urban center of transnational relations, but post industrial conditions have detached the port from civil life. With industrialization, the port activity of Vlissingen moved outside of the urban center to the present location 5 kilometers away to Vlissingen-Oost. This left a brownfield location on the site of the old port and disconnected the inhabitants with their maritime industry. Therefore, the municipality needs to create new activities to link with the industry again and offer spaces to accommodate this.

LOCAL CITIZEN



GLOBAL CITIZEN



24: a summary of requirements and demands for the project.

PROJECT

80 Strategy

128 Design

182 Legacy

193 A common future





25: 'Polish park', built by employment agency Level One, under construction. A total of 148 houses for migrant workers will be constructed in Swifterband. The project will provide accommodation for temporary workers in the area.





26: Interior of migrant workers housing units in Tienray, the Netherlands. Provided by employment agency Sun Power.





27: Housing for migrant workers in Zeewolde, the Netherlands. Zeewolde has the highest percentage of Polish people from municipalities in the Netherlands, more than 4% of the inhabitants have a Polish background.





28: Courtyard of migrant workers housing units in Tienray, the Netherlands. Provided by employment agency Sun Power.





29: Temporary accommodation for seasonal workers at campsite Hauwert in Medemblik, the Netherlands.

Bringing local to global and global to local

In the previous chapter, constraints and opportunities for the project were discussed. Concerning the program for the local citizen, the project should offer new activities related to the maritime identity of the city and strengthen the relation with its port Vlissingen-Oost. For the global citizen, the social inclusion and contact with their family is important, as well as practicalities related to their work location.

In order to accomplish this, a strategy is necessary across all urban scales. Places are not restricted locally, but influenced by global powers. In "urbanMachine: Subjects that Urbanists Should Study" by Jeff Kon-Chung Ho, this tension between the local and the global is described (Neuhaus, 2011).

"There are two types of changes:

1. Global forces: trends and changes initiated by technical improvement and thought movements as they holistically change the relationship between cities and social structure.
2. Local forces: initiated by the local communities needs and changes in life patterns or family structures.

How could a person be in a less defining space or how to redefine the function, purpose or target users of spaces and buildings, becomes a major question. Urbanists must be able to narrate and construct a habitat or living style and design opportunities for people from an urban design point of view, drawing in the mentioned changing environment."

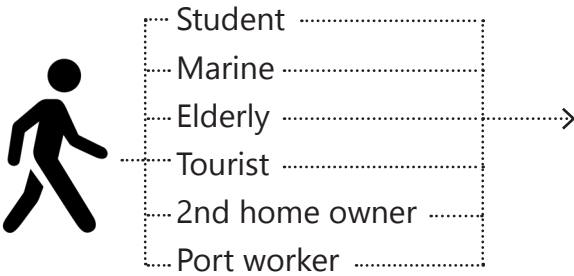
Local/Global

In Vlissingen, the port offered space where local and global forces came together with the global exchange of goods and people. The quay functioned as the intermediary between these international and local scales (Meyer, 1999). But with the movement of the industry to a place outside these urban conditions, Vlissingen-Oost, this intermediary space disappeared. Post-industrial conditions have detached the port from civil life, making it an exclusive work enclave.

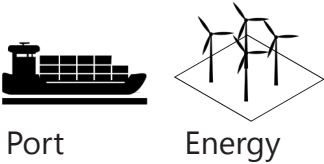
Therefore, the first part of the strategy is to connect the local citizen again with the global forces; the port and the energy industry. Both, Vlissingen-Oost and the wind farm Borssele, are invisible due to their location. By introducing a new public program into the port and inserting public life into the port, the port will function as an extension of the city (figure 30 & 31).

On the other hand, the life of the global citizen is organized by the employment agencies as much as possible. Due to the location of their accommodations, they are usually detached from urban life. Although they do not want to settle permanently in the Netherlands, they spend a period of their lives here. Therefore the second part of the strategy is to bring the workers back into the city, offering them city life (figure 30 & 31).

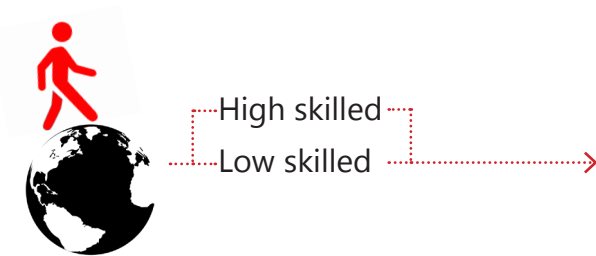
LOCAL CITIZEN



GLOBAL POWERS



GLOBAL CITIZEN



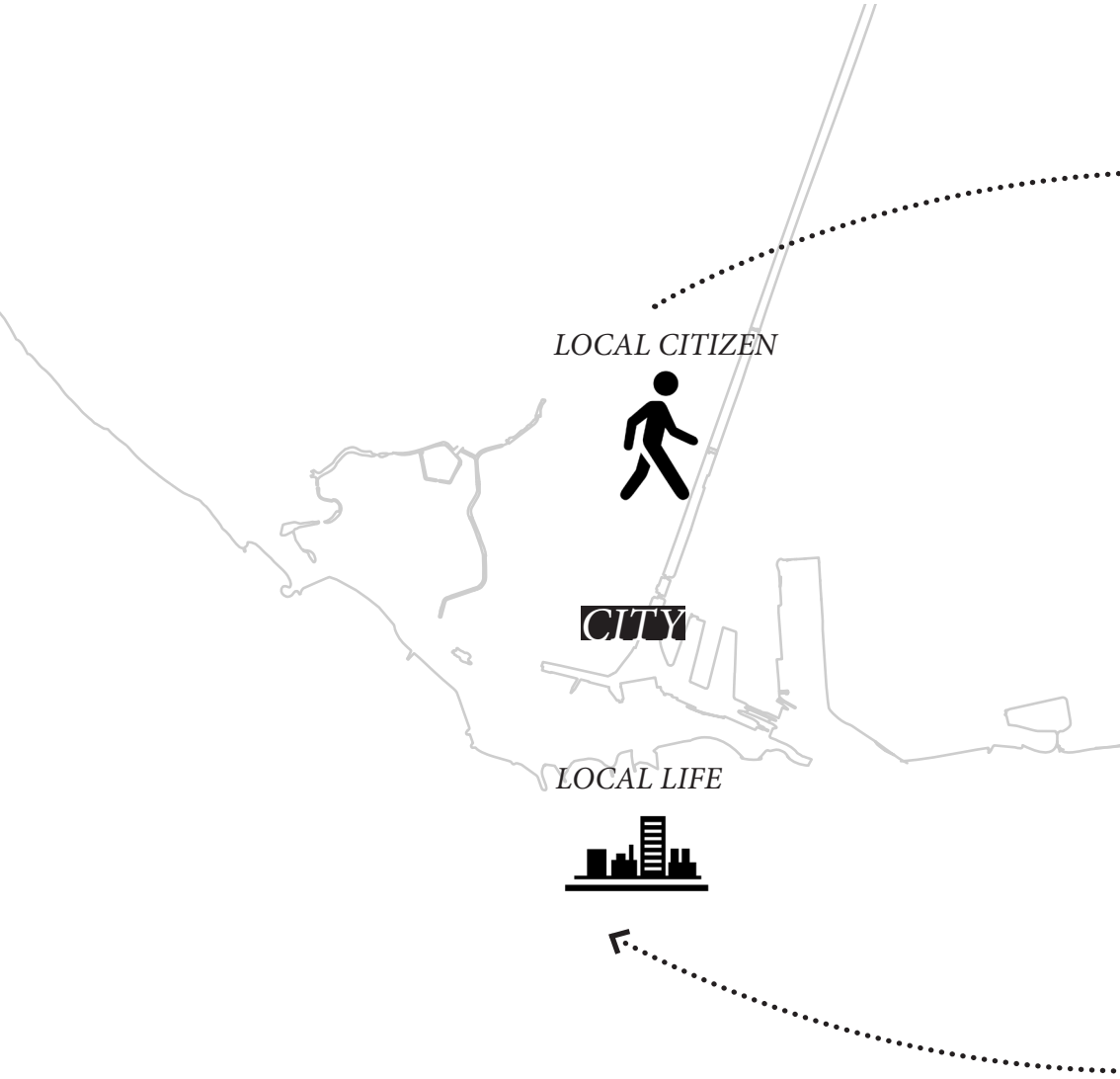
LOCAL LIFE



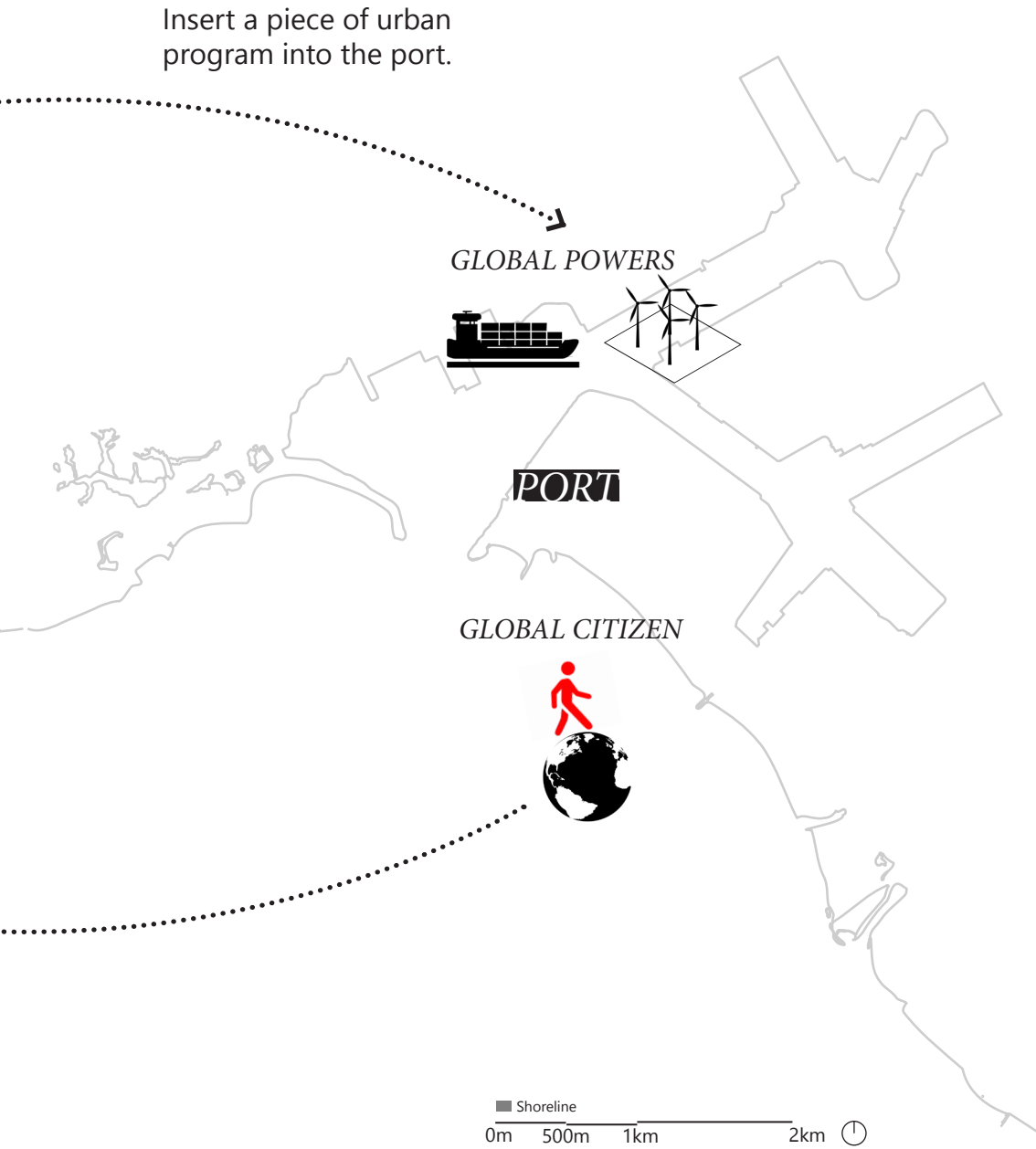
30: The strategy of bringing local to global and global to local

Now that the strategy is clear, the area is no tabula rasa and has site specific characteristics. To understand the context for the design, the question **“What is the relation between the city and the port and what are the underlying systems that re-enforce this connection?”** is asked.

By mapping the existing structures within the area, two places of interest are defined in the system between city and port. A further analysis of these areas leads to specific locations for the design assignment. The following pages will give an overview of this analysis in several maps.



Insert the global migrant
workers into the city.



31: Image of the strategy projected on the map of Vlissingen.

Distance

The old harbour (<1964) in the inner city of Vlissingen and the port of Vlissingen-Oost (>1964) are 5 kilometres away from each other.

< 1964



> 1964



0m 500m 1km 2km



Shoreline

Both ports are connected by the shoreline. The shoreline along the Westerschelde is interrupted at two points. While the old city port offers entrance via a lock, Vlissingen-Oost offers direct access to the Westerschelde and the North Sea. This makes it a favourable location for industrial functions.





Shoreline

0m

500m

1km

2km



Beaches

Along the shoreline multiple beaches can be found. These are all accessible to the public. The beach close to the city center is connected with the program of the boulevard of Vlissingen. This makes it an interesting beach for tourists. The second beach, Ritthem, is connected with the nature reservoir of Ritthem. The last beach, the Kaloot, offers no other program, but is the only public recreation space in the industrial area.





Beach line

Beaches

Boulevard

Natural park

0m 500m 1km 2km



Greenstructure

This map shows the locations of green space in the area. The green space consists of parcs and sports fields together with a dike landscape along the coast.





■ ■ Greenstructure

▲ Dike structure

〰 Dunes

🌳 Parks

🏃 Sportfields

0m 500m 1km

2km



System connection

The greenstructure connects the beaches to each other and offers space around the city center. For the industrial area, a program is missing at the beach next to the port.





- Beach line
- Beaches
- Boulevard
- Natural park
- Greenstructure
- Dike structure
- Dunes
- Parks
- Sportfields

0m 500m 1km 2km



Two locations

After the analysis of the underlying system between the city of Vlissingen and the port of Vlissingen-Oost, two locations are identified. Within the urban area of Vlissingen this is the Scheldeterrain. Within the industrial area of Vlissingen-Oost, the Kaloot is designated as crucial area. The structure of these areas are further analyzed.



Scheldeterrain



Kaloot



0m

500m

1km

2km



Patchwork urbanism

In the previous paragraph the underlying systems between port and city were analyzed. As a conclusion, two locations in the urban area and the industrial port area, the Scheldeterrain and the Kaloot, are designated as design locations. These locations are both large sites and as concluded in the chapter Analysis, a large scale project does not fit. Therefore, the theory of patchwork urbanism is adopted in order to divide the areas. The question **“What are the guidelines of patchwork urbanism in order to designate locations for punctual interventions?”** is therefore asked.

The theory of patchwork urbanism comes forward out of a necessity for cities dealing with a shrinking population. Because of the fluctuating amount of workers in the design according to the phases of construction of the wind farm of Borssele, this theory can be very helpfull to make sure a certain legacy is left when the population declines again. In ‘Design after decline - how America rebuilds shrinking cities’, Brent Ryan (2012) tries to give some guidance how to cope with shrinkage. In the last chapter of his book Ryan describes a set of design and planning principles. By taking into account these principles, the project can anticipate on the comings and goings of the migrant workers in Vlissingen. The principles and their influence on the design will be explained in this chapter.

Palliative planning

The first principle Ryan describes is palliative planning. With palliative planning he illustrates that shrinkage can not be stopped citywide. This means efforts should be focussed on certain points in the city or neighbourhoods in order to retain their residents. With the knowledge obtained with the analysis, points need to be designated to contrate the efforts. Objects such as heritage buildings, or the places of contamination on site, can help in making these choices.

Interventionist policy

The second measure Ryan addresses is what he describes as an interventionist policy. This means each project should be scaled and designed to make an impact. All of the locations have to become attractive in their own right. For the project, this means that each location needs to offer a program for both the temporary and the permanent citizen. By offering public functions on each location, these places will become all attractive. They also need to have their own identity related to the location and site characteristics.

Connection

In the end, patchwork urbanism sees the future city as patchwork of settled, (partly) empty and reconstructed areas. Because a large project is not the scale that fits with the program, the developments should be strategically placed within in a larger area (figure 32). Only by choosing these specific points, a legacy will remain for the city to build upon. On the next pages, these measures are applied on the design locations in order to define specific points for intervention.



32: patchwork urbanism by Brent Ryan

Scheldeterrain - heritage

On the Scheldeterrain several heritage buildings can be found. These are all buildings from the Schelde company and used to offer space for different activities of the Schelde shipyard. These buildings are important to preserve for the local identity.





Scheldeterrain - Damen Shipyards

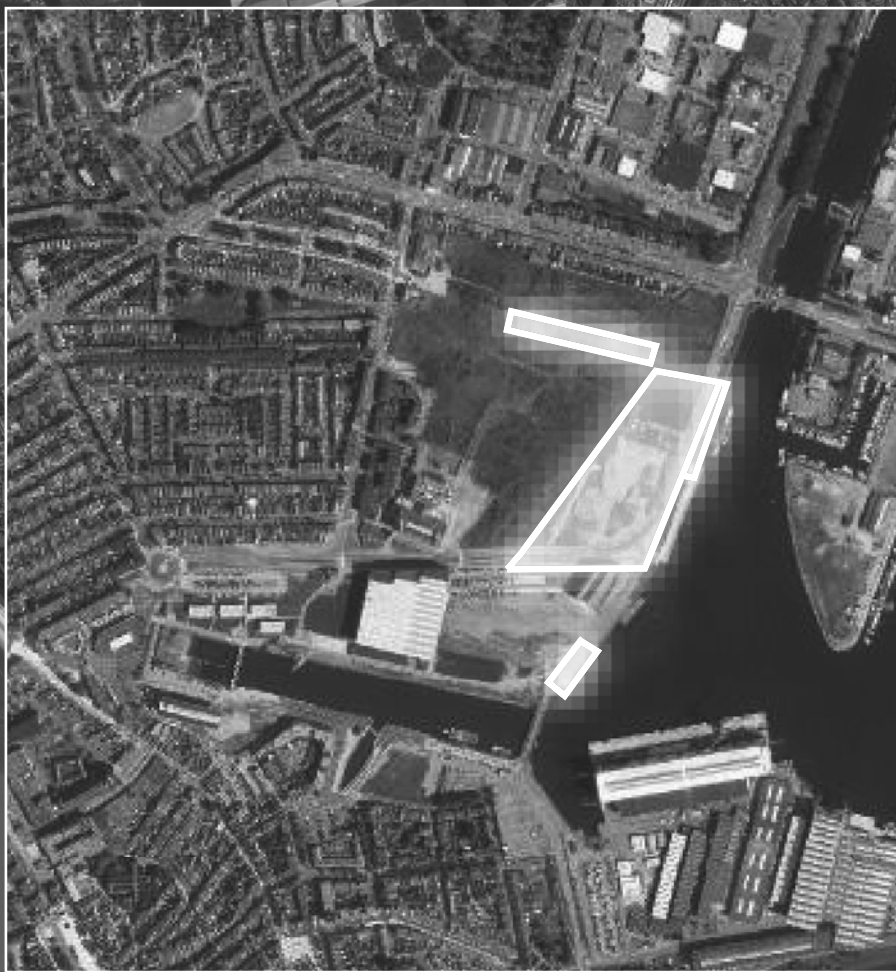
Damen Shipyards is the last still active company on the Scheldeterrain. It is important that Damen Shipyards remains visible for the public and offers an opportunity for activities.





Scheldeterrain - contaminated soil

Due to the occupation of the Scheldeterrain by a shipyard, the terrain is contaminated by industrial activities. This soil is not suitable for building and needs to be remediated first.





Scheldeterrain - singel

The singel is an important structural element of the city of Vlissingen and the connector of different green structures in the area. The singel ends at the moment at the edge of the Scheldeterrain.





Scheldeterrain - waterfront

The inactive waterfront offers an opportunity to connect the area again in the larger scale with the dike landscape and offer recreational activities.







Kaloot - program

The nuclear plant of Borssele is situated behind the dike of the beach of the Kaloot. The site forms the boundary of the industrial landscape of the port. Next to the nuclear plant, a transformer station is situated.





Kaloot - Protected dune area

The Kaloot has a protected dune area, it is the only area in South Beveland where spontaneous dune formation is still taking place. Plans were developed for the construction of a container terminal, which would make this area disappear.





Kaloot - cable trajectory Borssele

The cable trajectory that transfers the energy from the wind farm of Borssele to the electricity grid of the Netherlands comes ashore on this location. A submarine cable will transfer the electricity to a transformation station, which will transport it to the electricity grid.



Opportunities

In order to answer the question "What is the relation between the city and the port and what are the underlying systems that re-enforce this connection?" different maps have been constructed. Making an overlay of all these factors, offers a good view of the elements that need to be taken into account in the project.





Buildings
Heritage
Building program

Natural assets
Green structure
Beaches
Waterfront

Soil conditions
Contamination
Cable trajectory Borssele

Patchwork urbanism - five locations

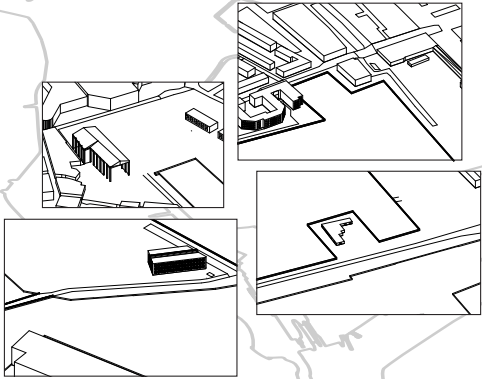
With the structural elements between the city and the port defined, five locations are designated that could enforce the connection between the city and port. Each location has its own characteristics, but will enforce the city system on a larger scale as well.

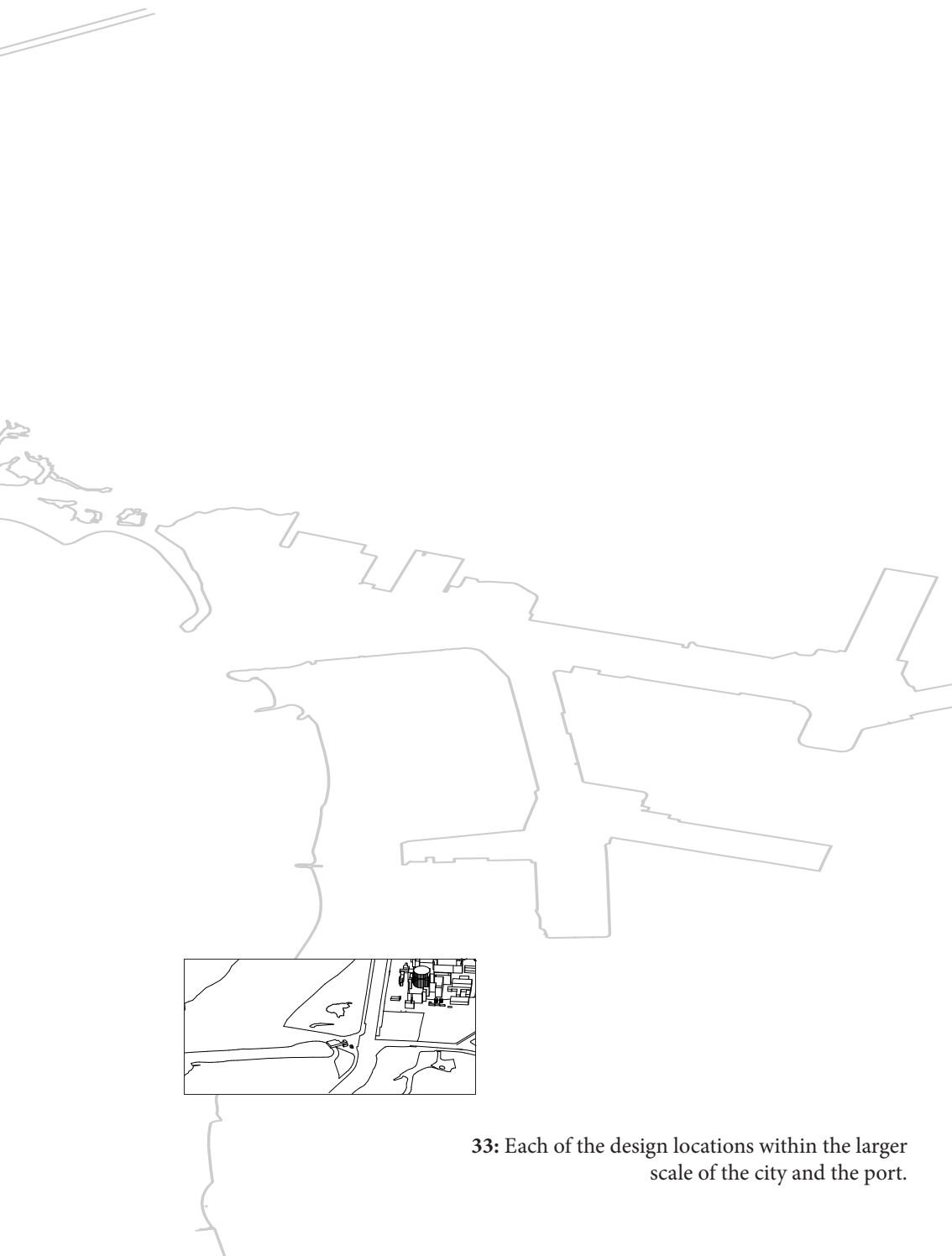




0m 500m 1km 2km

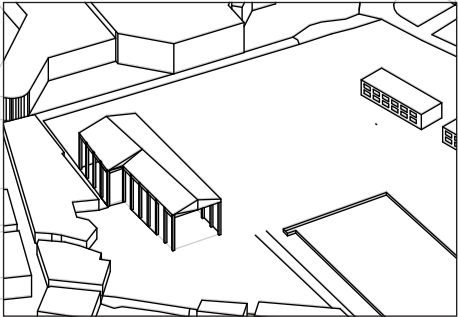




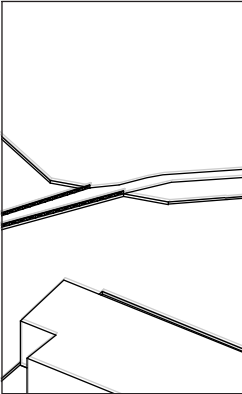


33: Each of the design locations within the larger scale of the city and the port.

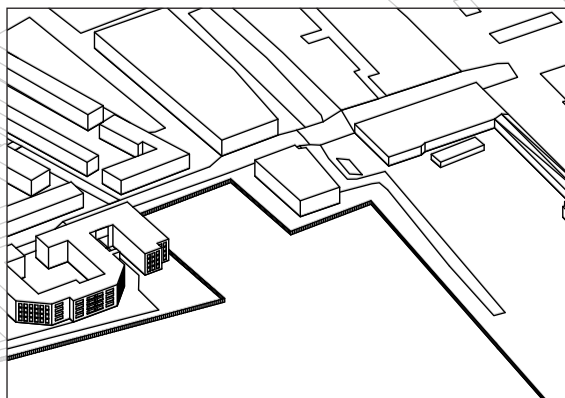
Heritage
Connection with downtown
No contamination



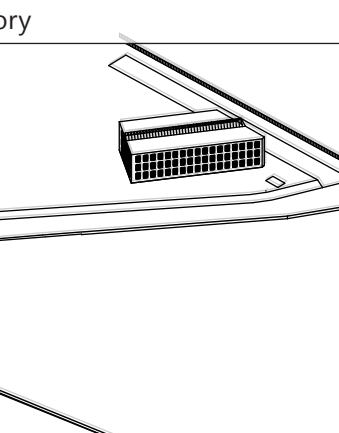
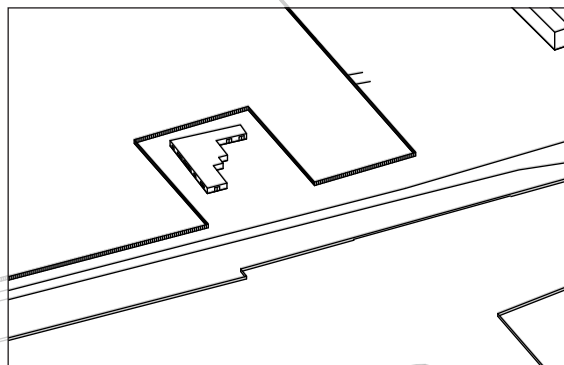
Contaminated soil
Connection with the
waterfronts
Damen Shipyards
Heritage Timberfactory



Heritage
Connection with the singel
No contamination



Connection with the singel
Connection with the waterfronts
Contaminated soil

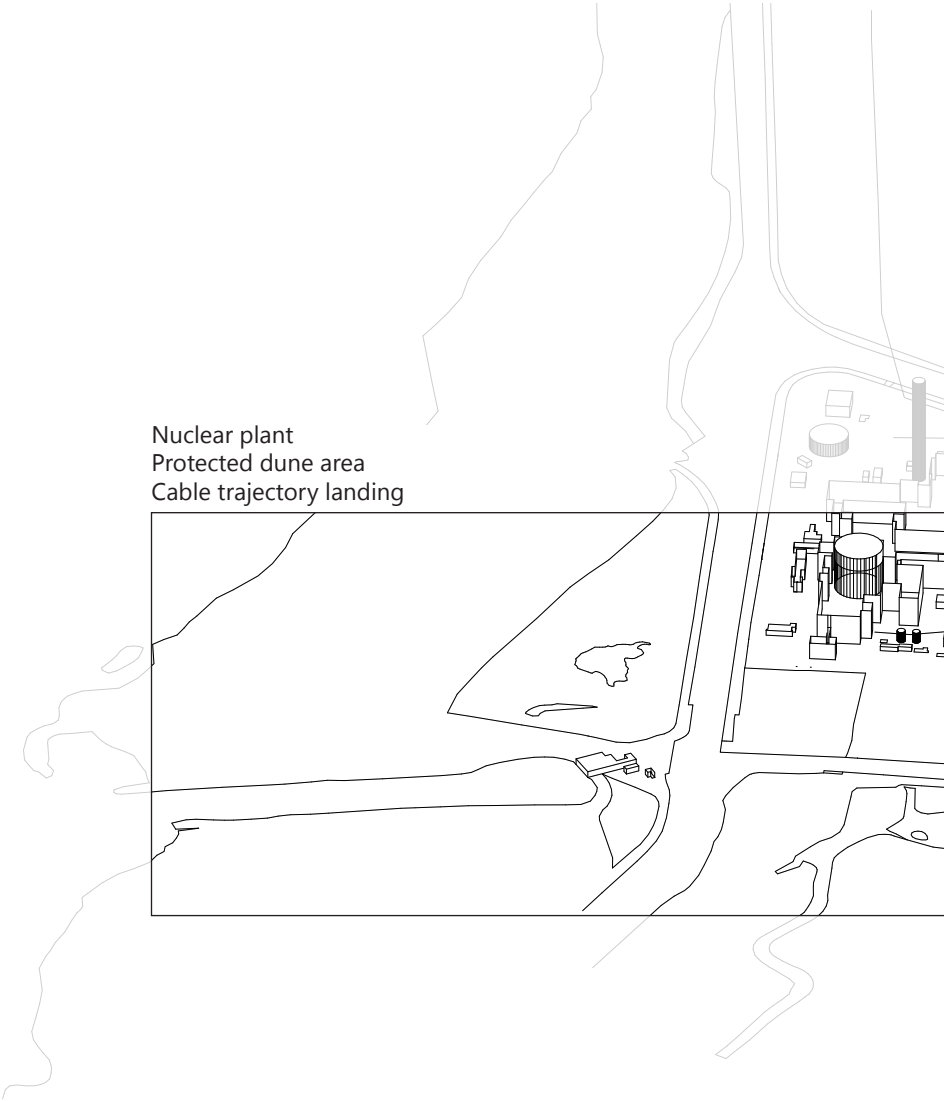


34: Scheldeterrain within the urban area with four locations, based on their structural elements.

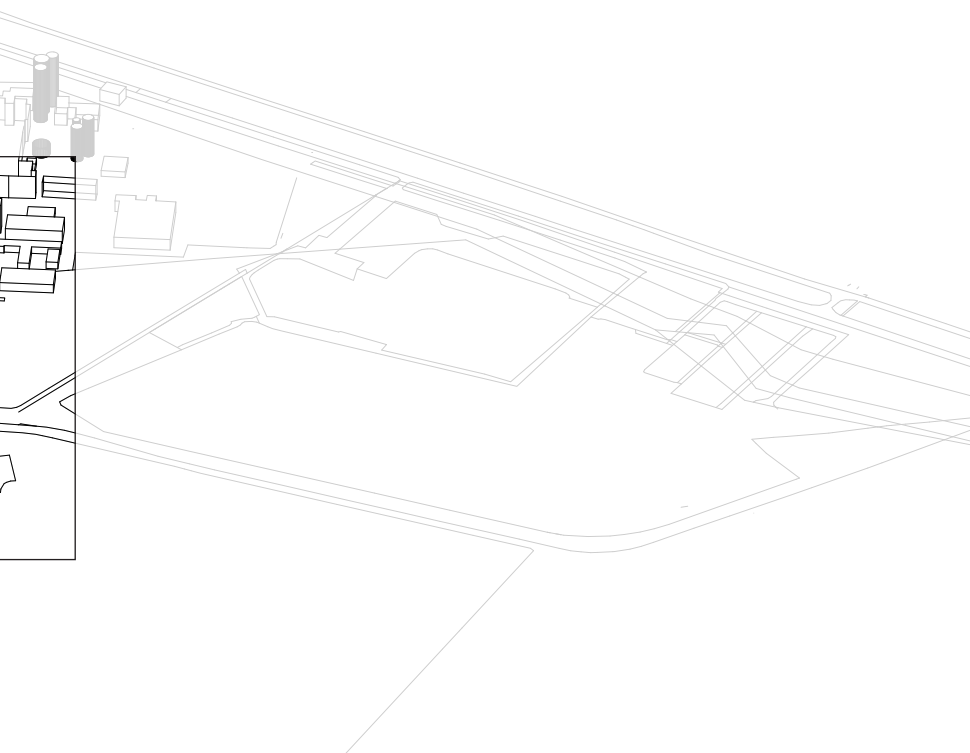




35: Aerial view of the design location within the urban area; the Scheldeterrain.



Nuclear plant
Protected dune area
Cable trajectory landing



36: Kaloot within the industrial port area, one location based on its structural elements.



37: Aerial view of the design location within the industrial port area; the Kaloot.



For the local and the global citizen

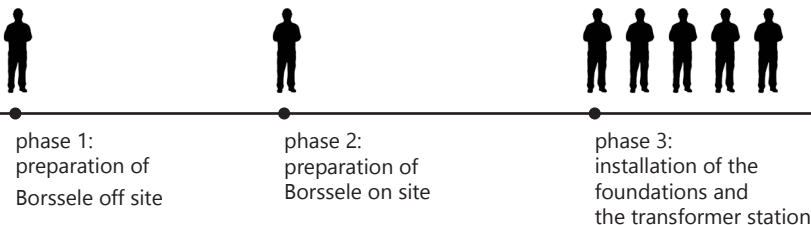
Program and phasing

The second measure of Ryan described in the previous paragraph is interventionist policy, which means each of the locations have to become attractive in their own right and each location needs to offer a program for both the temporary and the permanent citizen (figure 39 & 40). This part of the report will elaborate further on the design for the five defined locations.

As explained in the paragraph about building a wind farm in the chapter Analysis, five phases within the construction of the wind farm are distinguished. The amount of workers present in Vlissingen will differ due according to these phases, since work will happen on and off site. The preparation of Borssele in the first two phases, the manufacturing of the components, will mainly take place outside of Vlissingen and the Netherlands. Therefore, not many workers will be present and housing will take place in vacant accommodations throughout the city. During phase 3 and 5, the phases in which the assembly and installation of the different elements will take place on site, most of the workers will be present on site and temporary accommodation is necessary. A timeline of this comings and goings of workers is illustrated in figure 38.

Design steps

Each project will be designed based on the presence of the temporary citizens. According to their amount, the design for each location is developed in five steps. In the first phase, not many workers are around yet. Therefore the first step is to make the location accessible and recognizable for the permanent citizen. It involves creating a path and adding street laterns to the site. In the second phase, public functions are introduced. These functions will serve the permanent citizens, but also offer space for functions related to the coming of migrant workers. In the third phase, when most workers will arrive on site, the accommodation for them is build. The following phase, the fourth phase, will show a decline in the amount of workers on site. Each of the projects will have time to add other functions, change a function or host other activities. In the last phase, a significant amount of workers will arrive again and more accommodation can be added and the design for each project will extend.



Design principles

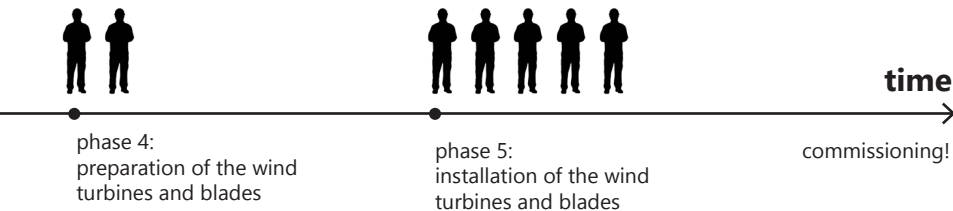
To ensure that each of the designs offers not only space to the temporary citizens, the design needs to be connected to the system and the urban fabric of the city. Therefore, two important design principles are made. Through constructing infrastructure before the migrant workers functions arrive, the permanent inhabitant can already use the terrain for a better city connection. The second principle, activating the waterfront, strenghtens the local identity. In each design location the global citizen ‘blends’ with the local citizen in one space. Interaction between the citizen and the migrant worker is facilitated by public space and public functions on the ground floor, while accommodation is on top of this public program. The public space offers locations to linger and meet eachother. Besides physical social interaction, visual interaction is stimulated by the use of balconies and different height levels (figure 41).

Design elements

The design elements used in the designs provide continuity and connect the projects together. Main elements for the infrastructure, landscaping and lightning are chosen. For the infrastructure, two type of tiles are chosen. One is a large industrial tile, that refers to the history of the Scheldeterrain. This tile is suitable for paving large areas and paths. The second type of tile is a wooden one. This will be used for smaller paths and the connections with the waterfront.

For the landscaping, a specific type of tree is chosen. The tree is the poplar tree (populus) and is chosen because of its remediation potentials. Phytoremediation technology uses plants to remove the contamination from the soil. It is a durable, inexpensive and attractive alternative to the conventional soil cleaning, that usually requires expensive and environmentally harmful techniques such as the transportation of contaminated soil over long distances to the landfill and the use of contaminated soil under roads and in building projects. On the Scheldeterrain, a highly contaminated post-industrial port area, the potential of phytoremediation could be used well.

For lightning an addition to traditional street lightning is made. Incorporating a vertical axis wind turbine on each latern, powers lightning by the kinetic energy from the natural winds, as well as the wind generated by people passing by. Besides reducing energy consumption, it makes the general public aware of the process of Borssele nearby and the energy transition towards renewable resources.



38: Diagram of phases with the amount of workers.

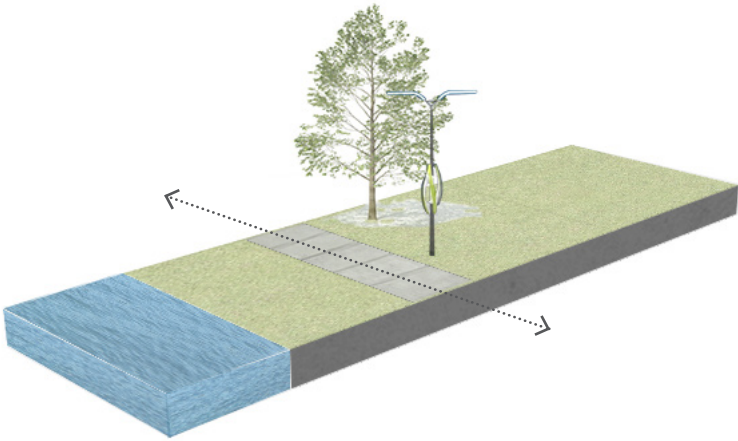
Design program



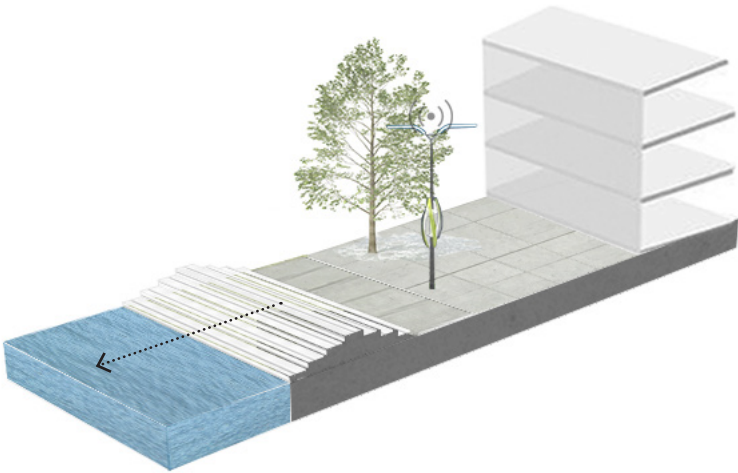
39: Diagram of the program within the urban area.



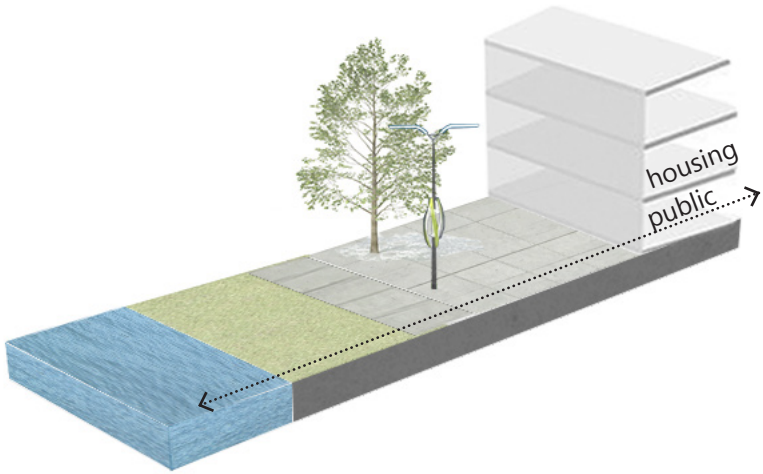
Design principles



Connection
Make the site accessible and develop a route.

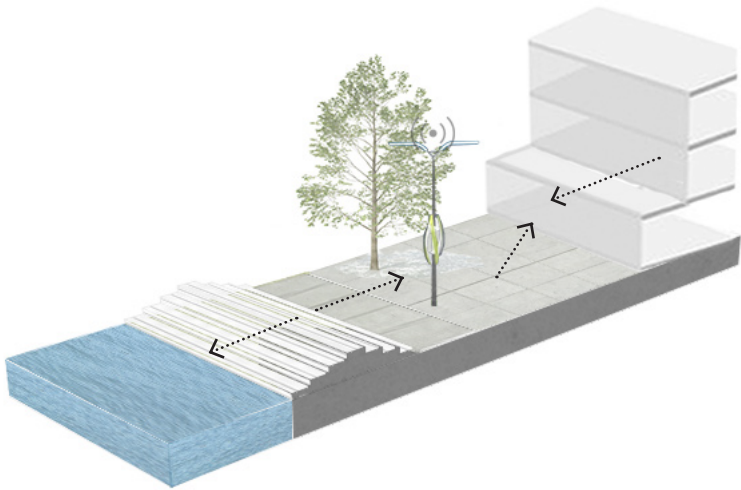


Waterfront
Re-establish a connection with the water and provide places to meet and sit.



Public functions

Add public functions to the site, extending from the waterfront towards the building. Housing is added on top of the public functions.



Visual interaction

Making use of different levels to stimulate visual interaction.

Design locations

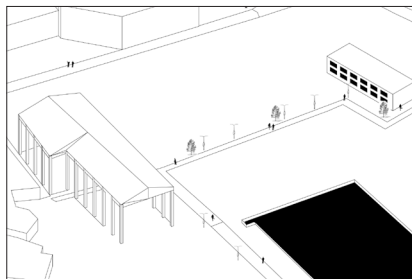
Celebration Dock

The celebration dock is located on the east side of the Scheldeterrain, the location near the city center. It used to be the place where new build ships were launched and celebrated, after they finished the building process. Besides this historical meaning, the building of the Plaatwerkerij is still intact on the edge of the site. The site is currently in use by one user group, the students of Vlissingen, housed in containers on the edge of the location. The Plaatwerkerij will be transformed later on into a healthcare and living facility for elderly by plans of the municipality.

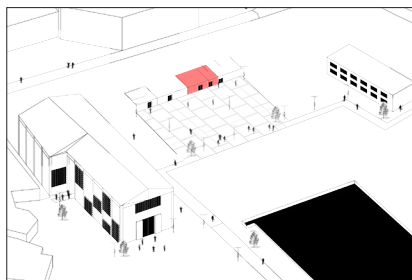
For the design of this site, the aspect of celebration and the combination of the different user groups is the most important. Because there is no contamination of the soil, accommodation for migrant workers is possible. A path will strengthen the connection to the city center, while the accommodation for the migrants will function as an edge and background for the public space of the square and will allow them to live with a waterfront view.

phase 1:

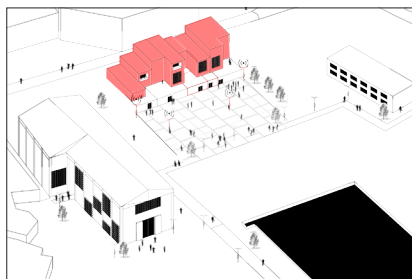
A path is made with trees and lightning.

**phase 2:**

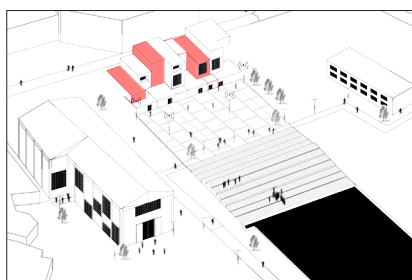
The *Plaatwerkerij* is transformed into a facility for elderly. New public functions and a square will serve as an extension of this programme, with an addition of a post office and international bank for migrant workers.

**phase 3:**

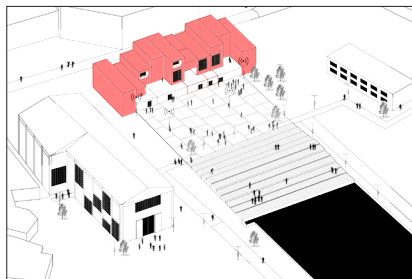
Housing for the migrant workers is added to the location. Wifi is added to the street lightning to make sure the migrant workers can stay connected to their families.

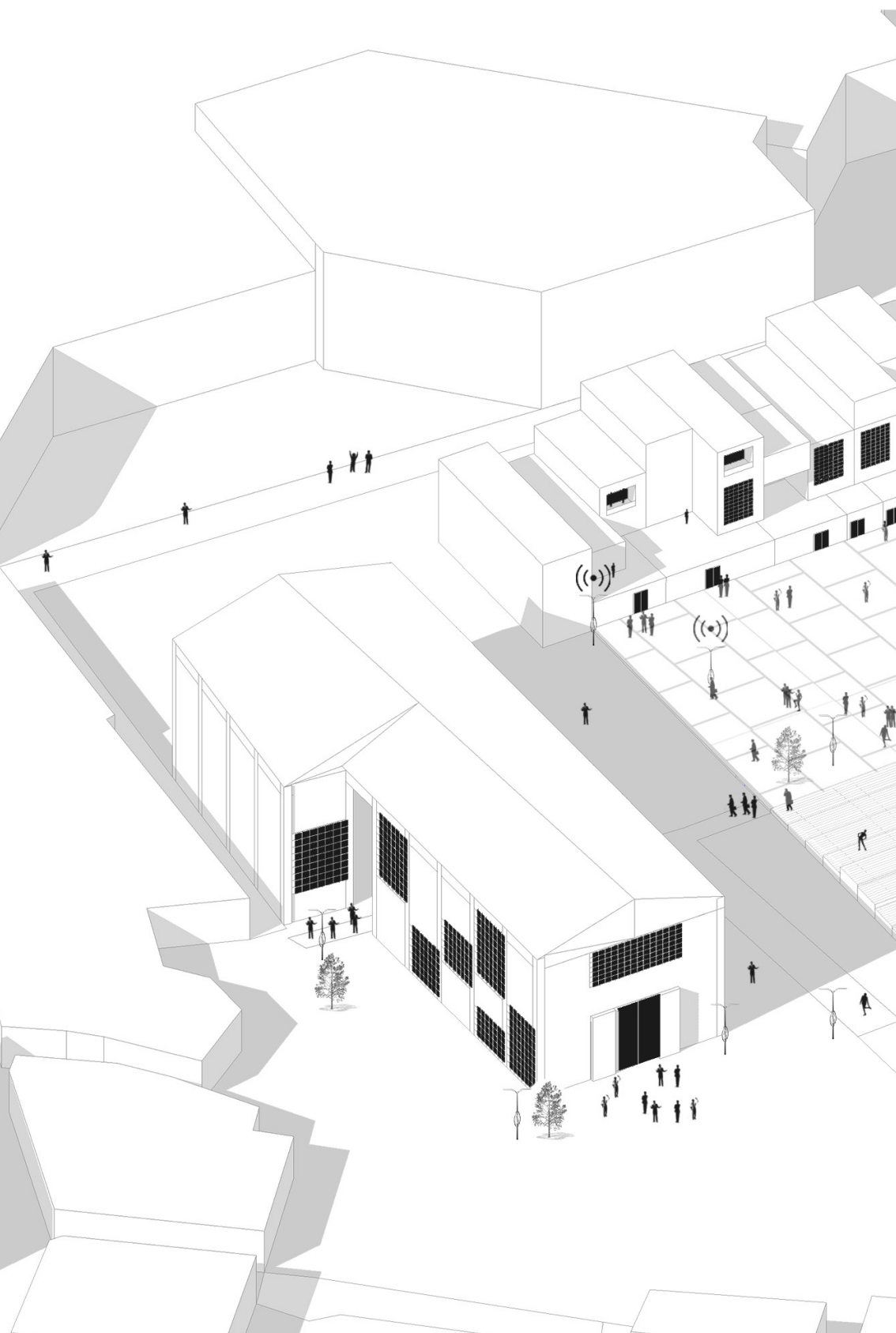
**phase 4:**

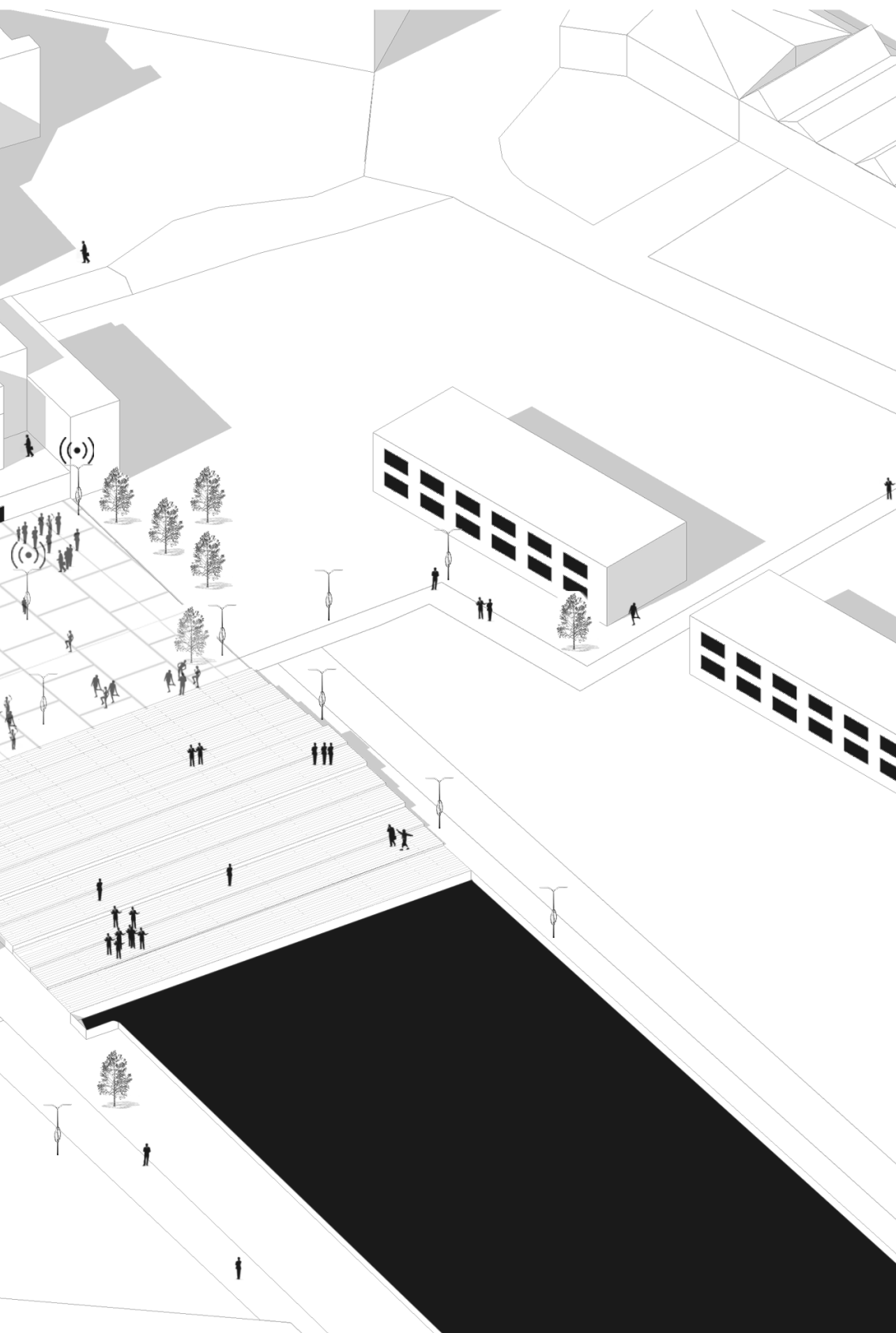
The decrease in the amount of workers on site opens up space for rent and stairs to connect the site to the waterfront will be added. These public stairs will offer space for celebratory events.

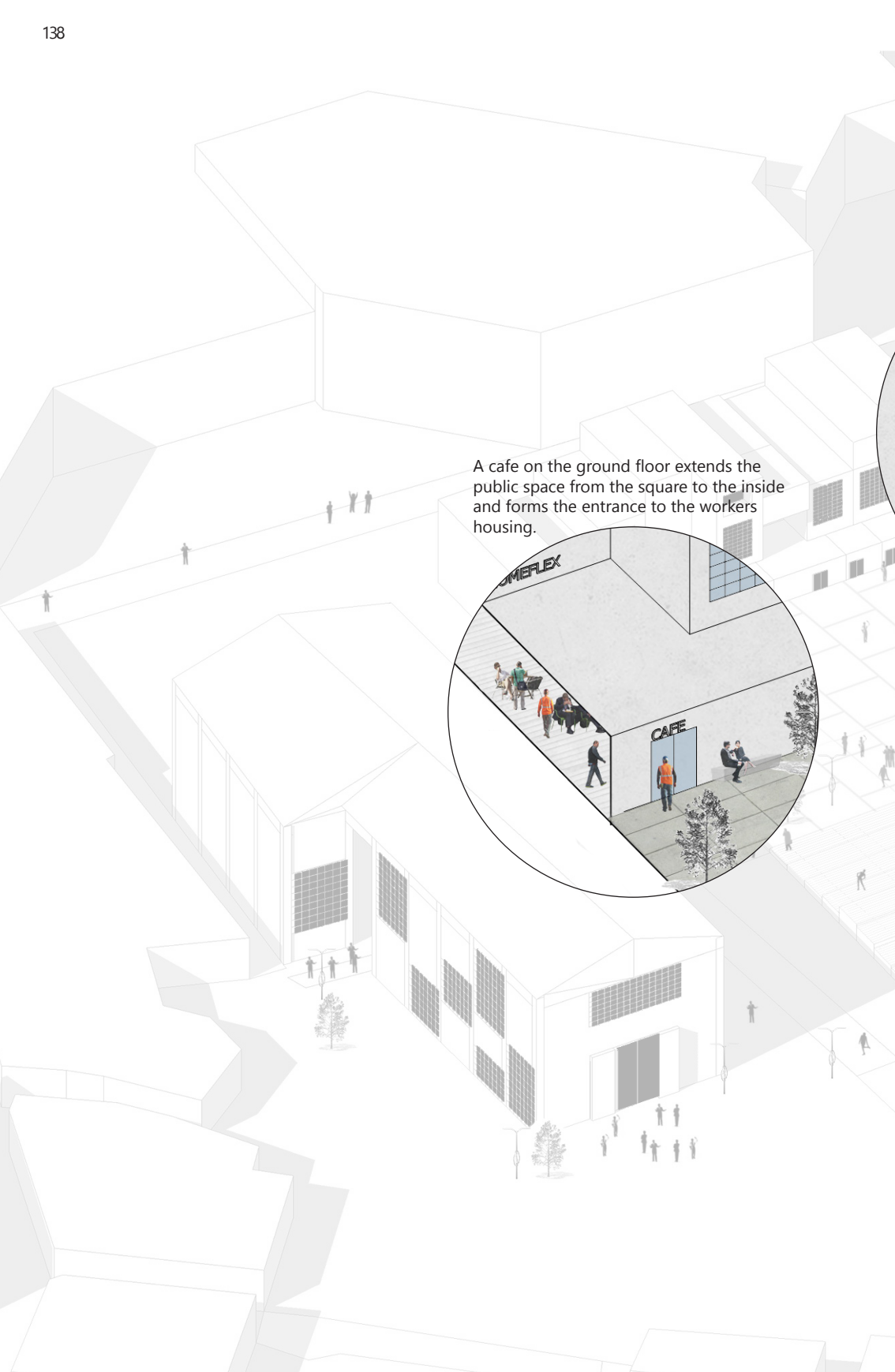
**phase 5:**

More housing is added to the location to accommodate new workers. Permanent and temporary residents will mix in the public space at the waterfront.



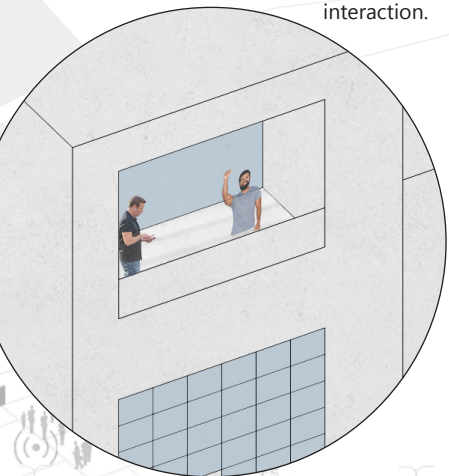






A cafe on the ground floor extends the public space from the square to the inside and forms the entrance to the workers housing.

A balcony offers a view on the waterfront and creates opportunity for visual interaction.



Stairs provide a meeting place along the waterfront while a path connects to the surrounding urban area.







43: Activating the waterfront by creating a public meeting space for all citizens.

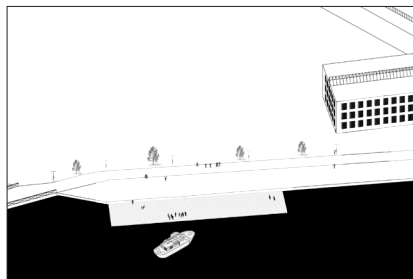
Waterfront

The location of the waterfront is characterized by the heritage of the building of the old timberfactory. Also the last part of industry in the old harbour of Vlissingen is located in the opposite of the location, Damen Shipyards. This offers an opportunity to activate the waterfront and form a connection between the seafront and the waterfront of the canal into the land.

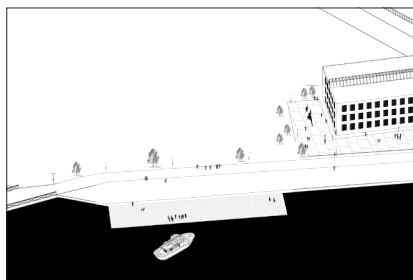
By transferring the jetty for the already existing watertaxi to the location, a start is made to activate the waterfront. For the workers, the site will offer a way to commute to the port of Vlissingen-Oost by boat. The timberfactory is suitable to host an exhibition about the wind farm and offer office space for employment agencies in the energy industry. The visibility on Damen shipyards remains and will be strengthened by the design.

phase 1:

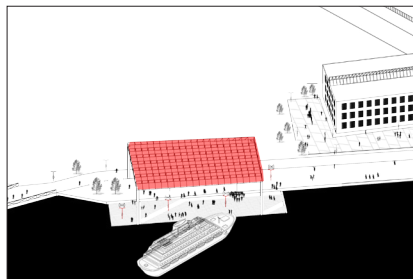
A path is made with trees and lightning along the waterfront. The quay of the already existing watertaxi is moved towards the site.

**phase 2:**

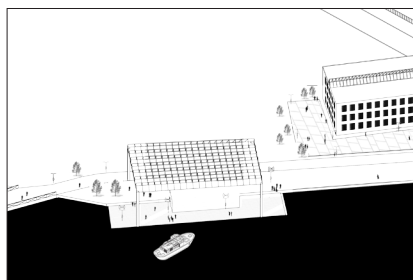
The timberfactory opens up to the public with an exhibition about the project of Borssele. Also employment agencies can rent space in the timberfactory.

**phase 3:**

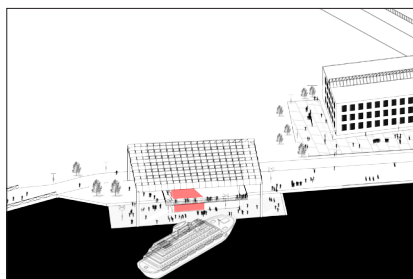
A ferry terminal for the migrant workers is placed at the existing location for the watertaxi. The migrant workers will commute from here towards the port of Vlissingen-Oost. Wifi is added to the street lanterns.

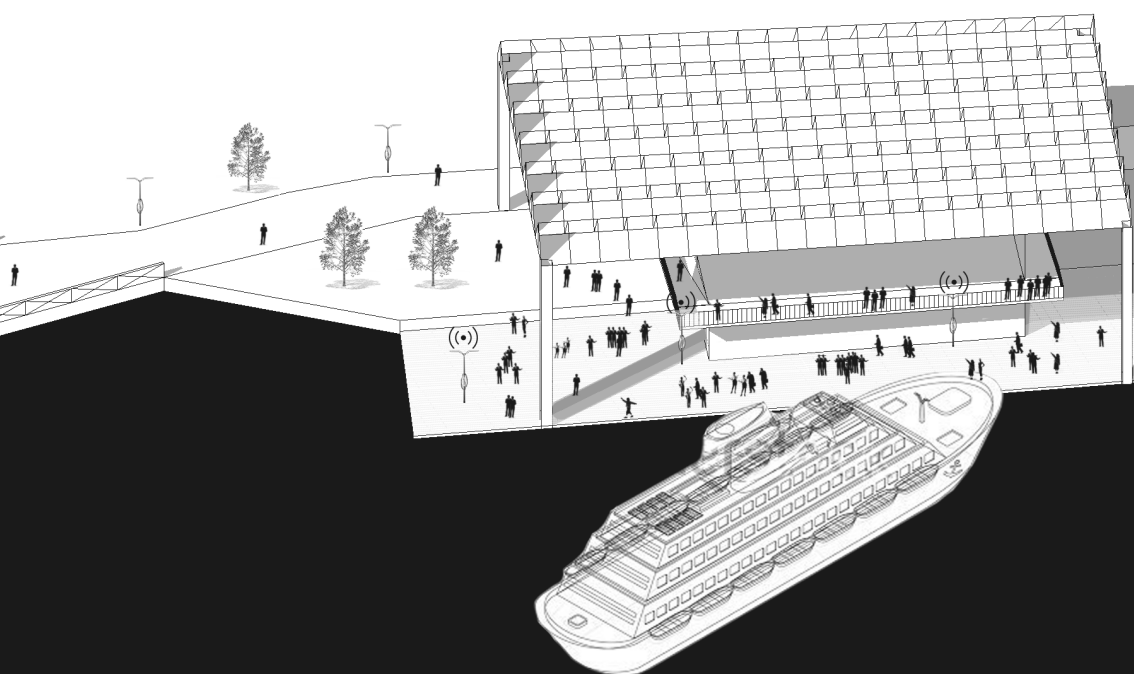
**phase 4:**

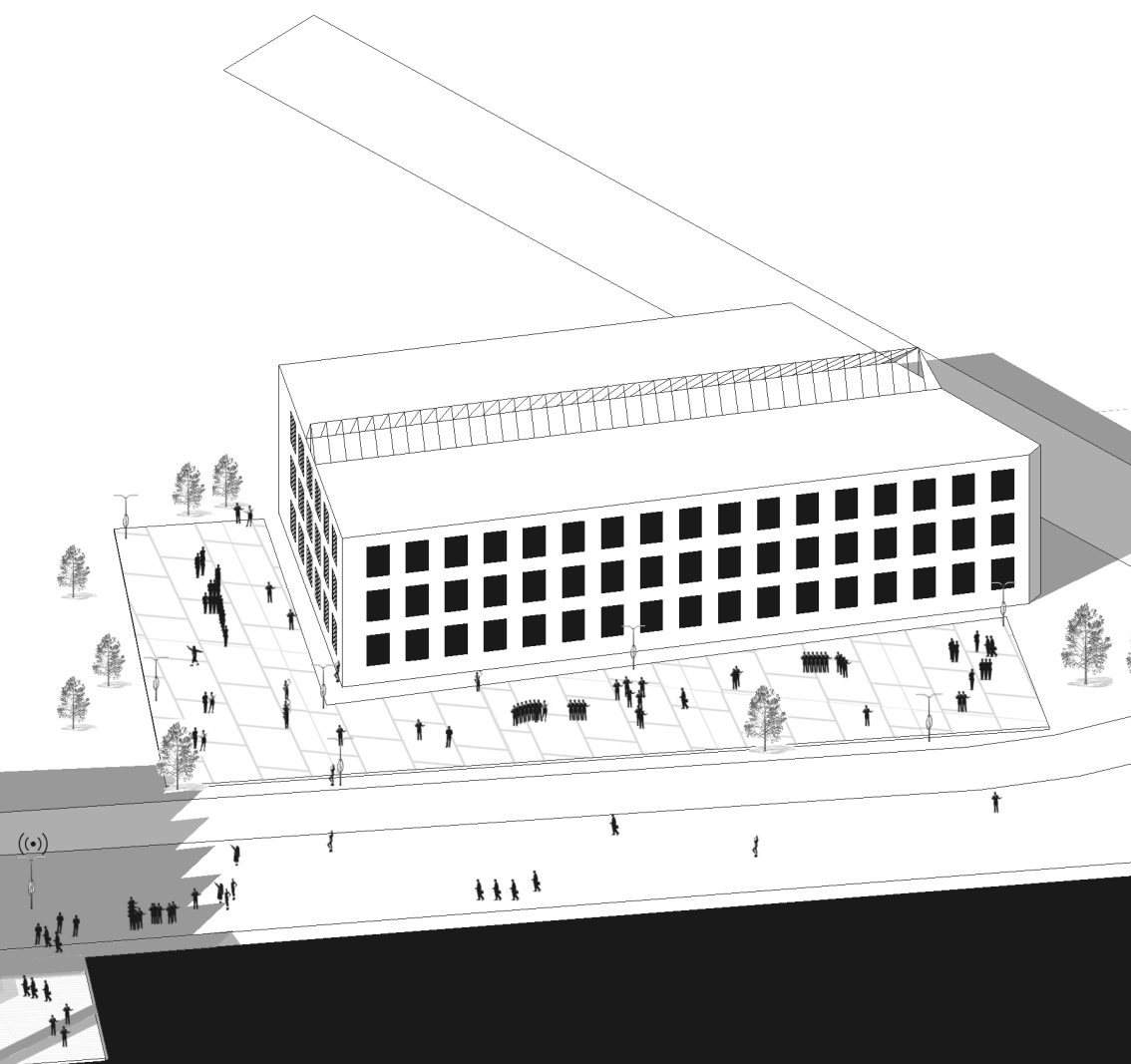
The decrease in the amount of workers opens up space for other activities at the ferry terminal. Excursions to the companies in Vlissingen-Oost will be organised from here.

**phase 5:**

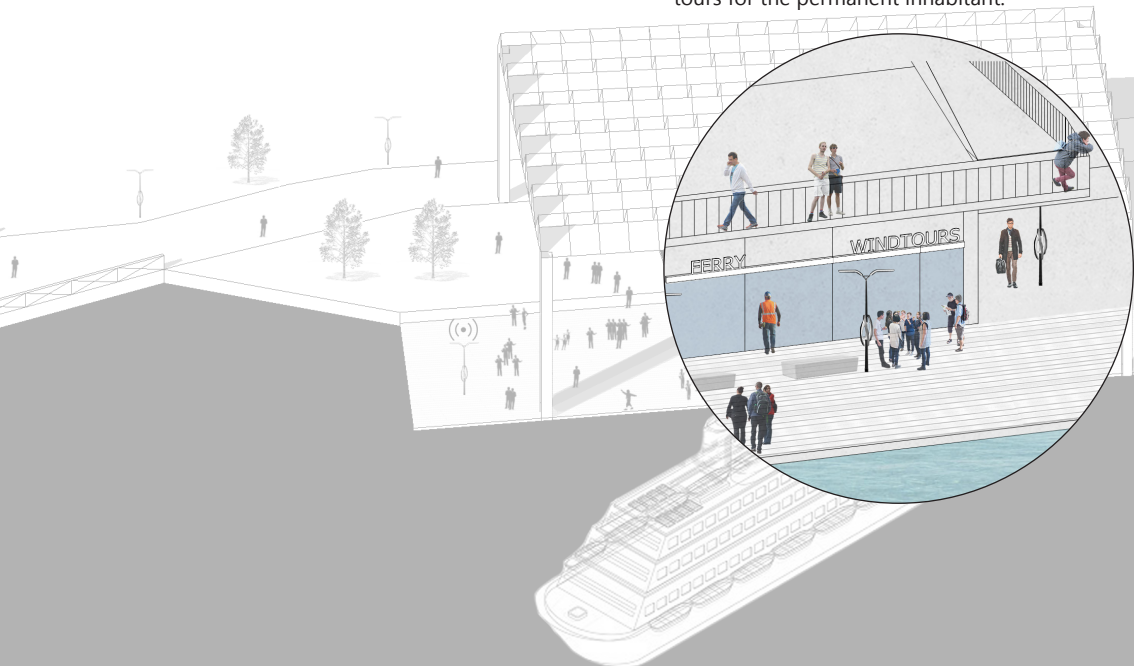
More workers will return and commute to the port and Borssele for the installation of the turbines. Facilities, such as lockers, will be added to the terminal. Streams of general public and commuters are organised on different levels.

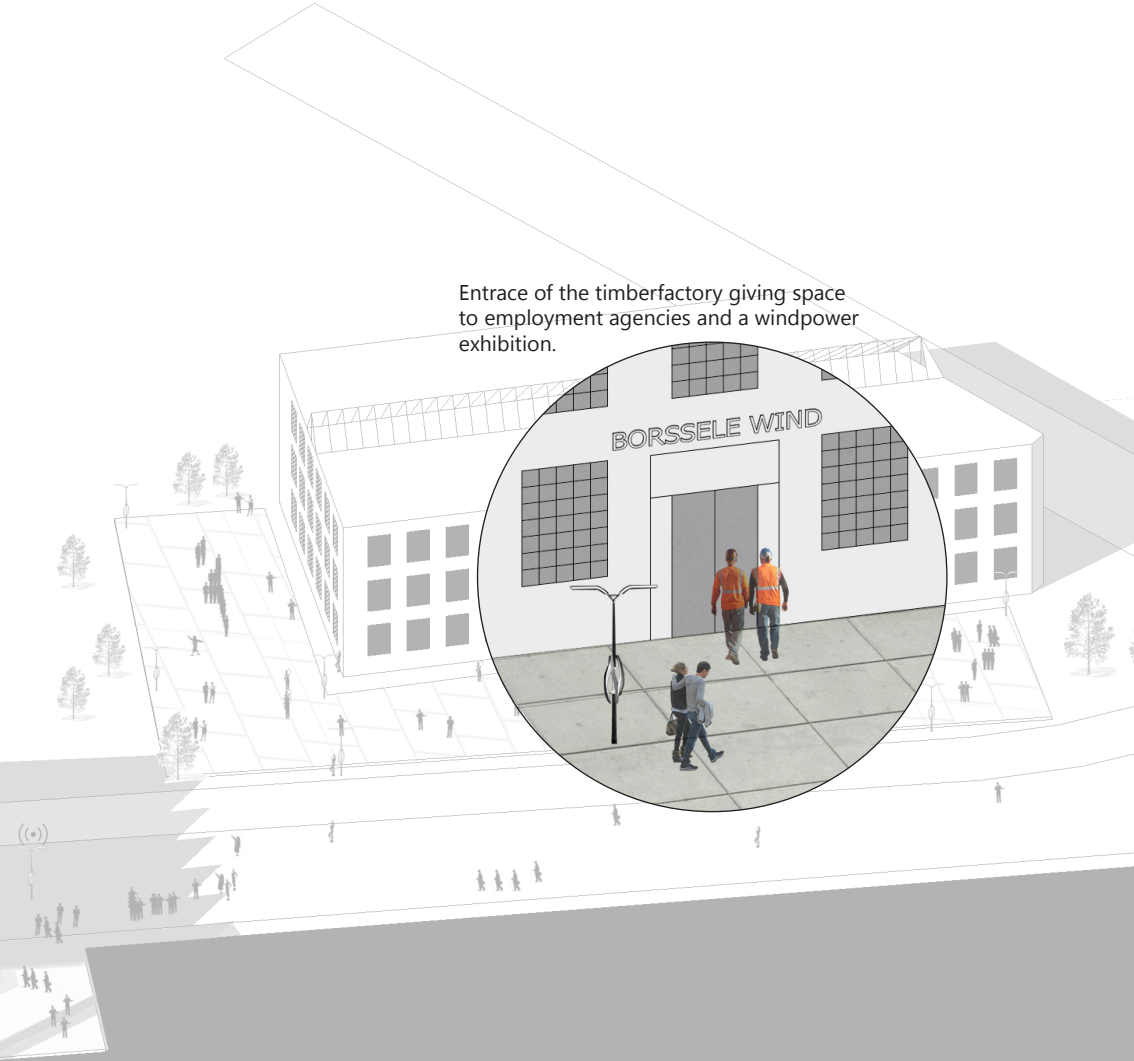






The ferry terminal; commuting to the port for the temporary citizens, offering wind tours for the permanent inhabitant.





Entrance of the timberfactory giving space to employment agencies and a windpower exhibition.





45: From empty and inaccessible heritage to the use of the Timberfactory as space for a wind exhibition and office for employment agencies in the industry.

Workers area

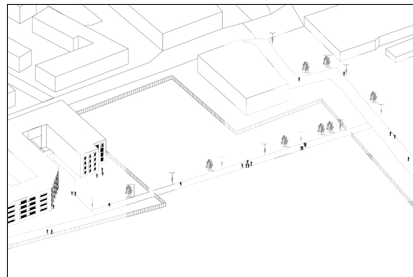
This area of the Scheldeterrain is adjacent to an housing area, build by the Schelde company for their workers. A fence is currently restricting access to the site. With no contamination of the soil, the site is suitable for building most of the accommodation for the temporary citizens.

The design of the site will allow the temporary citizens to live close to the city center, while having a view on the Scheldeterrain and living close to a park. By making the facilities for the migrants public, such as the sports facility and a cafe, the local inhabitants are not excluded.

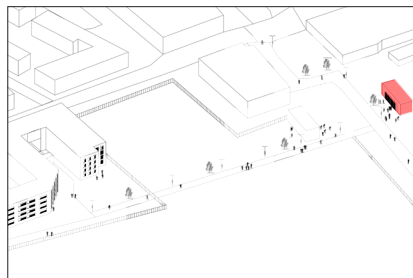
The fence around the location can grow along with the accommodation, meaning that the site is accessible or non-accessible according to the housing that is occupied. The design also allows the street pattern to grow into the site and follow the pattern of the adjacent neighbourhood.

phase 1:

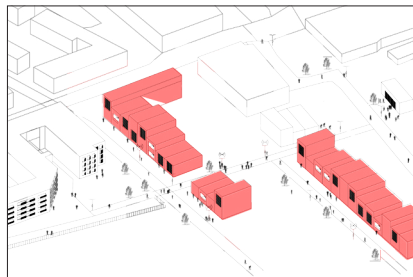
A path is made with trees and lightning to define the site and open up the fence.

**phase 2:**

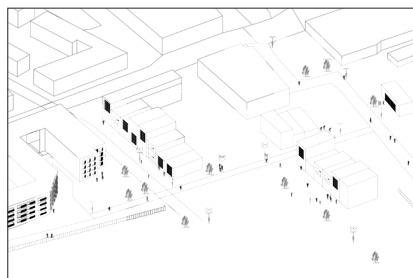
A sports facility and cafe are added to the location.

**phase 3:**

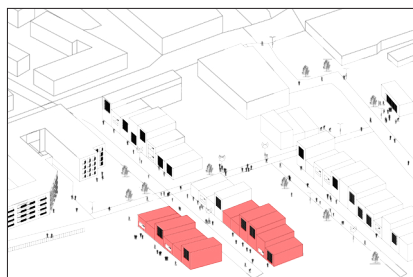
Housing for the workers is build, following the street pattern of the adjacent neighbourhood. The fence is broken down further around the accommodation.

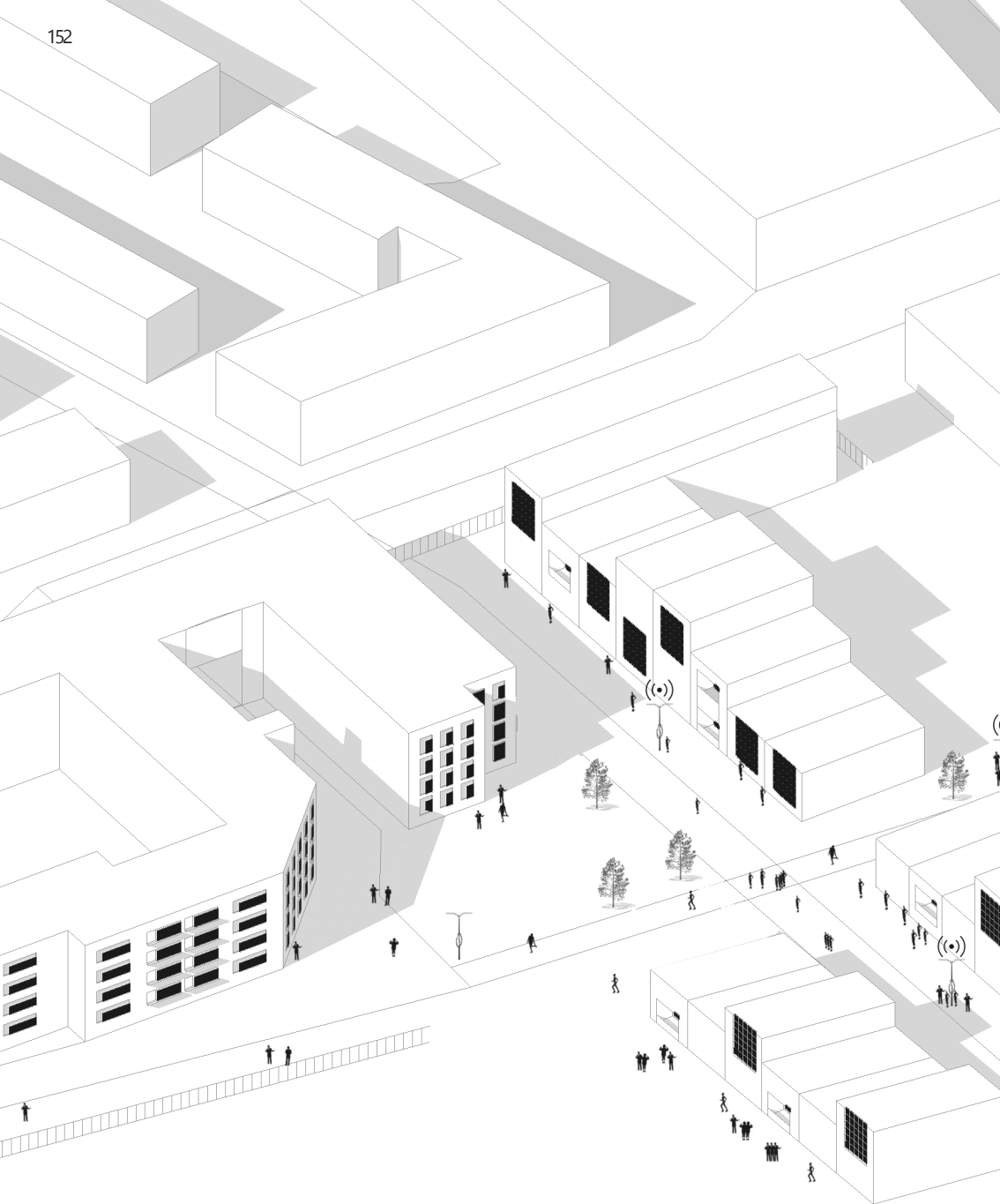
**phase 4:**

The decrease in the amount of workers shows a decline in temporary accommodation. The fence and the accommodation is adjusted accordingly.

**phase 5:**

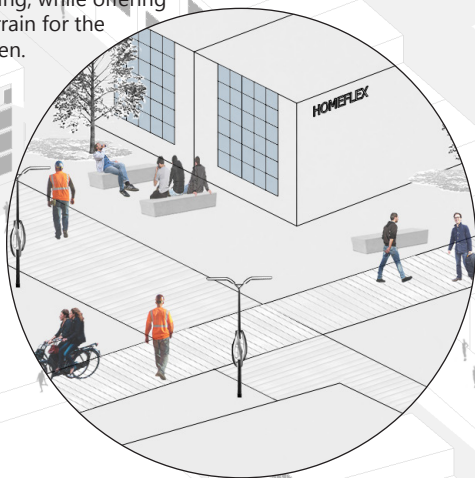
More workers will return and new accommodation is added and grows further into the site. The fence will open up again.







Area for workers housing, while offering access through the terrain for the inhabitants of Vlissingen.









47: From an empty field to a new location for providing accommodation for the temporary citizens.

Central park

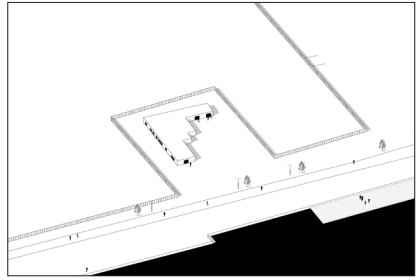
The location of the central park on the Scheldeterrain has the largest part of contaminated soil and is not suitable for building. The site is non accessible and closed off by a fence for the inhabitants of Vlissingen at the moment.

The soil will be cleaned in stages by the poplar trees through phytoremediation technology. Based on the contamination, the fence is opened up in stages, allowing access to more and more space of the park for the public.

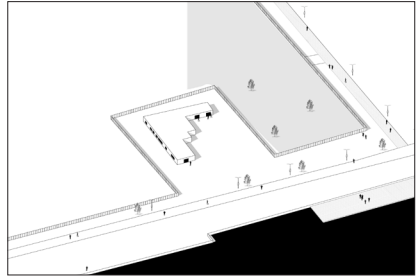
The path and the waterfront of the park will reconnect the site to the larger framework of green- and waterfront space in the area. This will form the basis for the further development of a green lung for the city. It will also provide an attractive outdoor space for the temporary citizen that is accommodated nearby and the permanent citizens of Vlissingen, while the soil is being cleaned for further development.

phase 1:

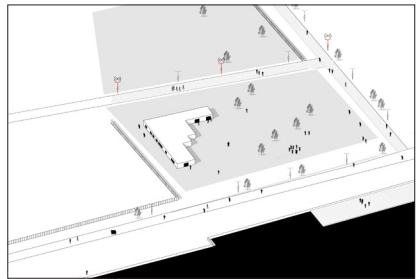
A path is made with trees and lightning along the waterfront. The waterfront is emphasized by a quay.

**phase 2:**

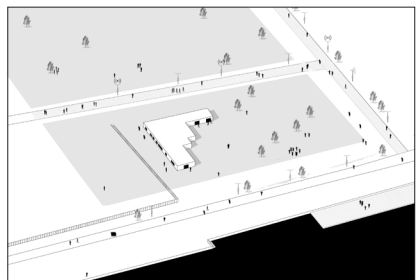
Planting the area starts behind the fence. A path is made to reconnect the site location to the singel of Vlissingen and the workers area.

**phase 3:**

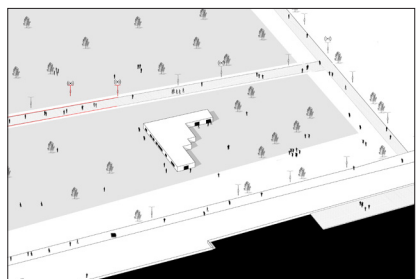
The fence opens up and a path is made through the park. Planting goes forward in the adjacent area. Wifi is added to the lighting within the park.

**phase 4:**

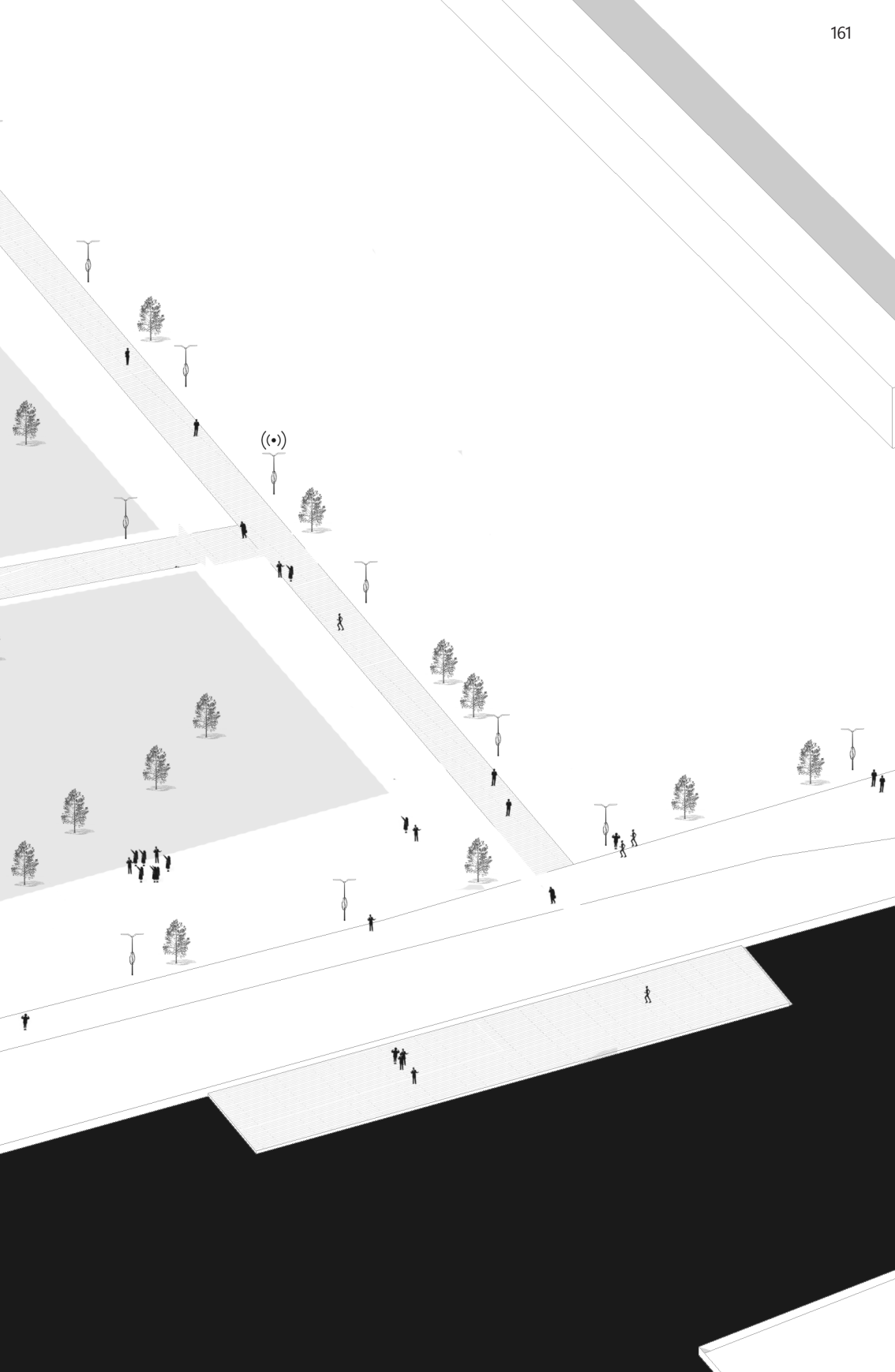
More areas are planted and the path extends along. The park is used by the temporary and the permanent inhabitant.

**phase 5:**

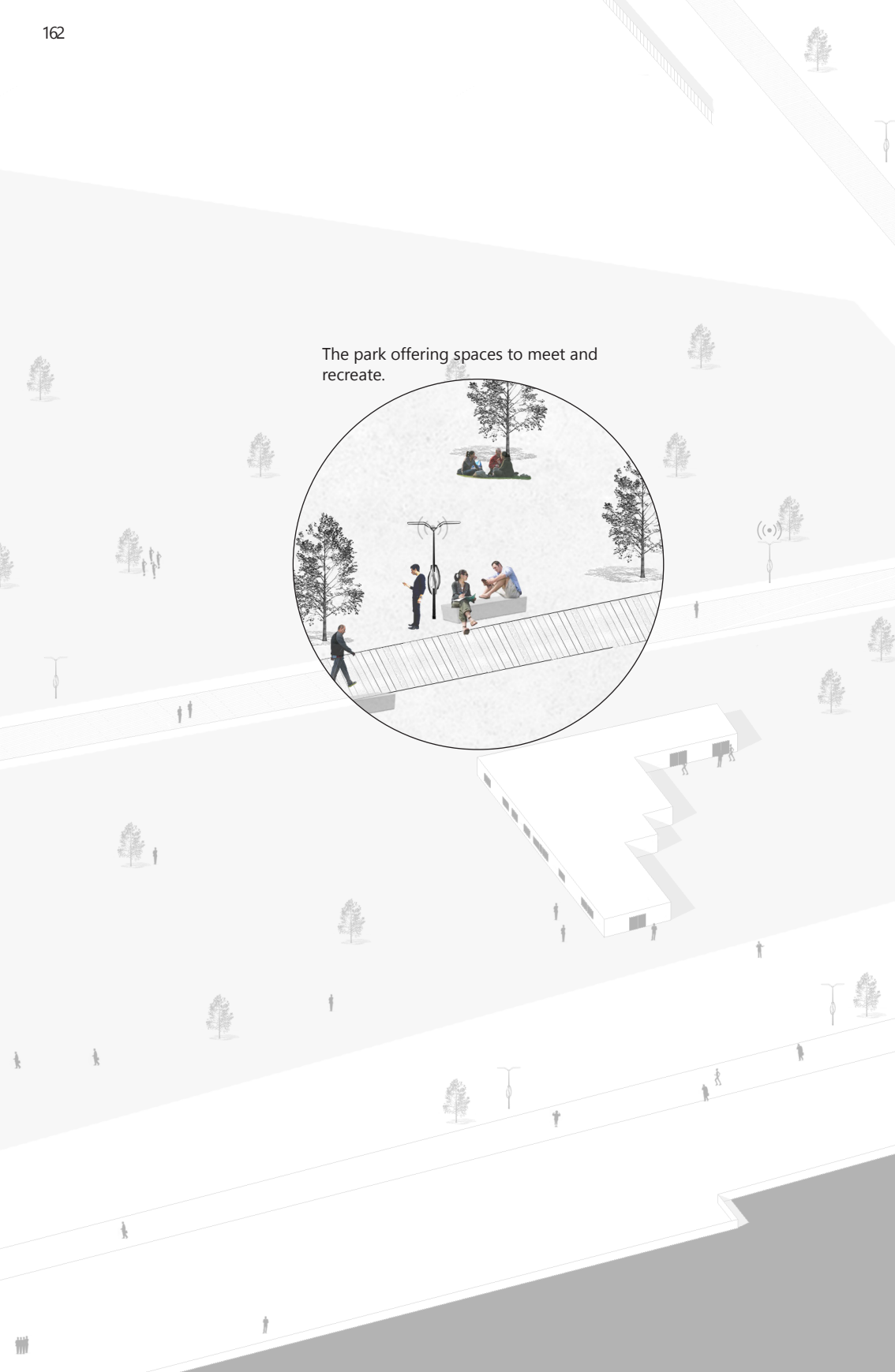
The park extends towards the ferry terminal and along the waterfront. The fence has been broken down.

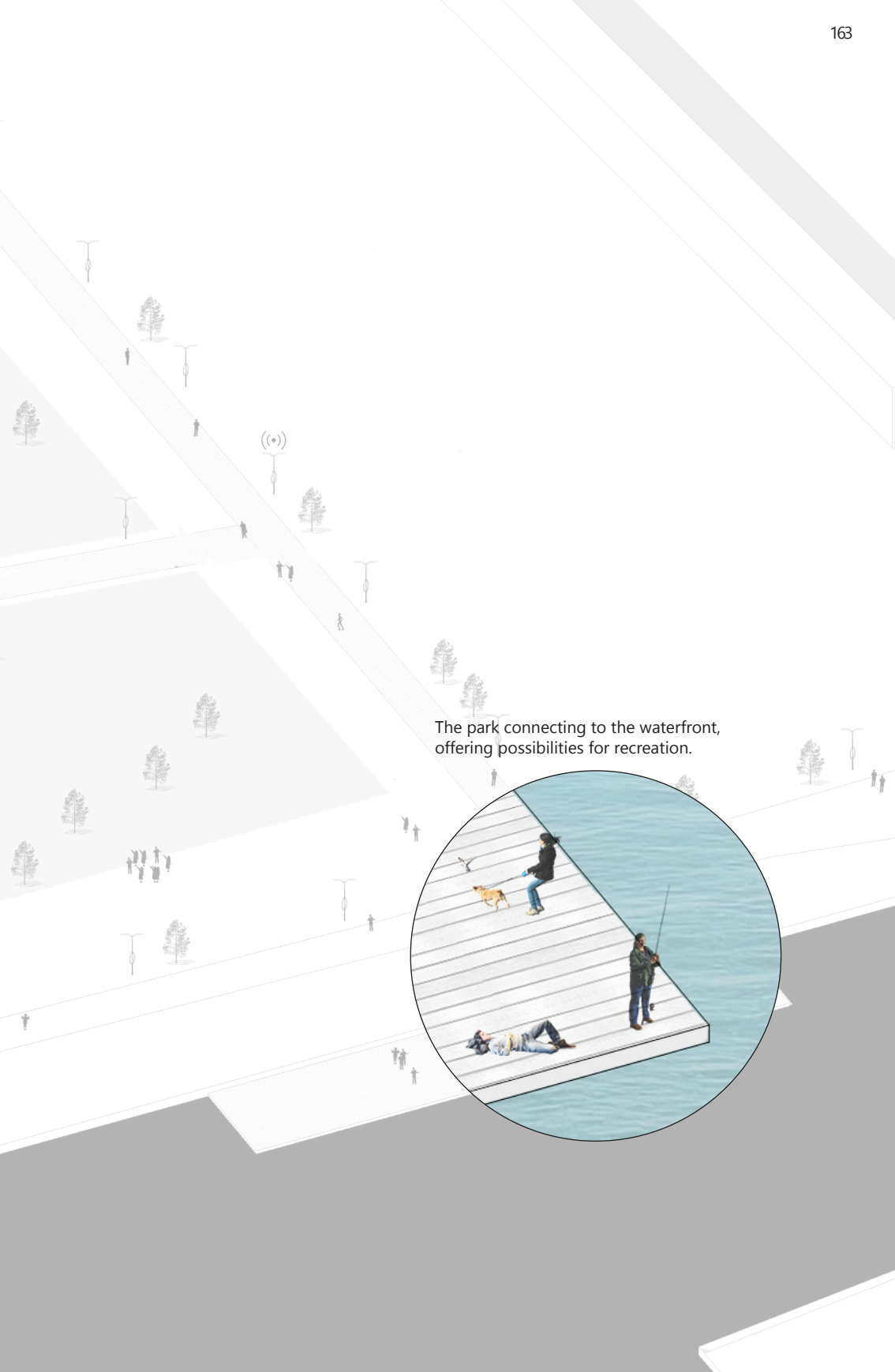






The park offering spaces to meet and
recreate.





The park connecting to the waterfront, offering possibilities for recreation.





49: From an unused terrain to offering a new connection for the citizens of Vlissingen to the waterfront.

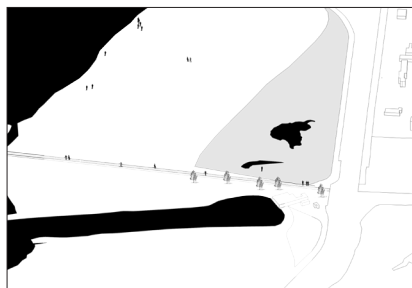
Transformator station

The last location is situated outside of the city center and within the industrial area of the port of Vlissingen-Oost on the beach of the Kaloot. Here is the landing point of the cable route that connects the wind farm at sea with the electricity grid on land. The cable will link the site of extraction, the North Sea, with the site of consumption, Vlissingen. This infrastructure can serve as a metaphor to relate to the systems that provide us with energy.

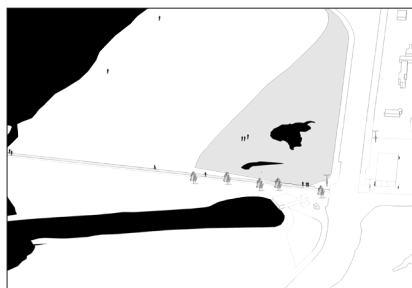
Utilitarian functions are mostly hidden, but they have a broader possibility as a place of imagination and a vivid display of our resources. At the same time, infrastructure such as a cable trajectory, can protect the land and nature above it. Transforming the basic facility of the cable trajectory and the transformator station into an attractive public space, makes this area an urban piece in the work landscape. At the same time, the infrastructure will protect further development of the protected dune area of the Kaloot and offers a place where citizens can experience both nature and industry.

phase 1:

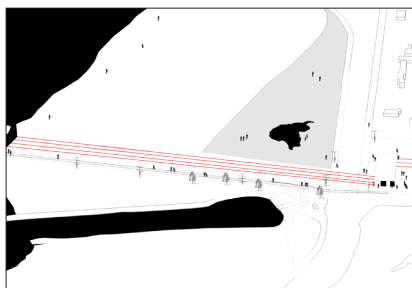
The existing path is highlighted by trees.

**phase 2:**

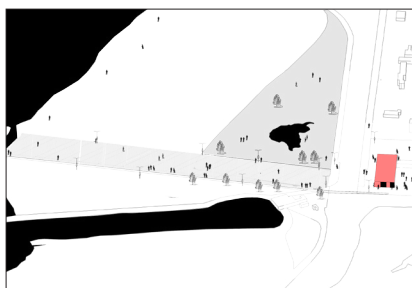
Preparations for the transformation station are made on site. Lightning is added to the location.

**phase 3:**

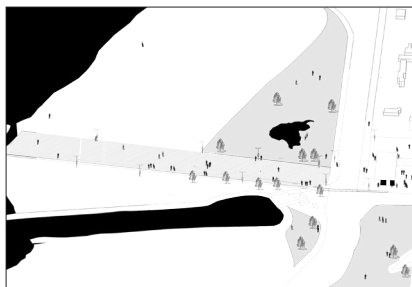
The cable trajectory is made adjacent to the existing path and through the protected area.

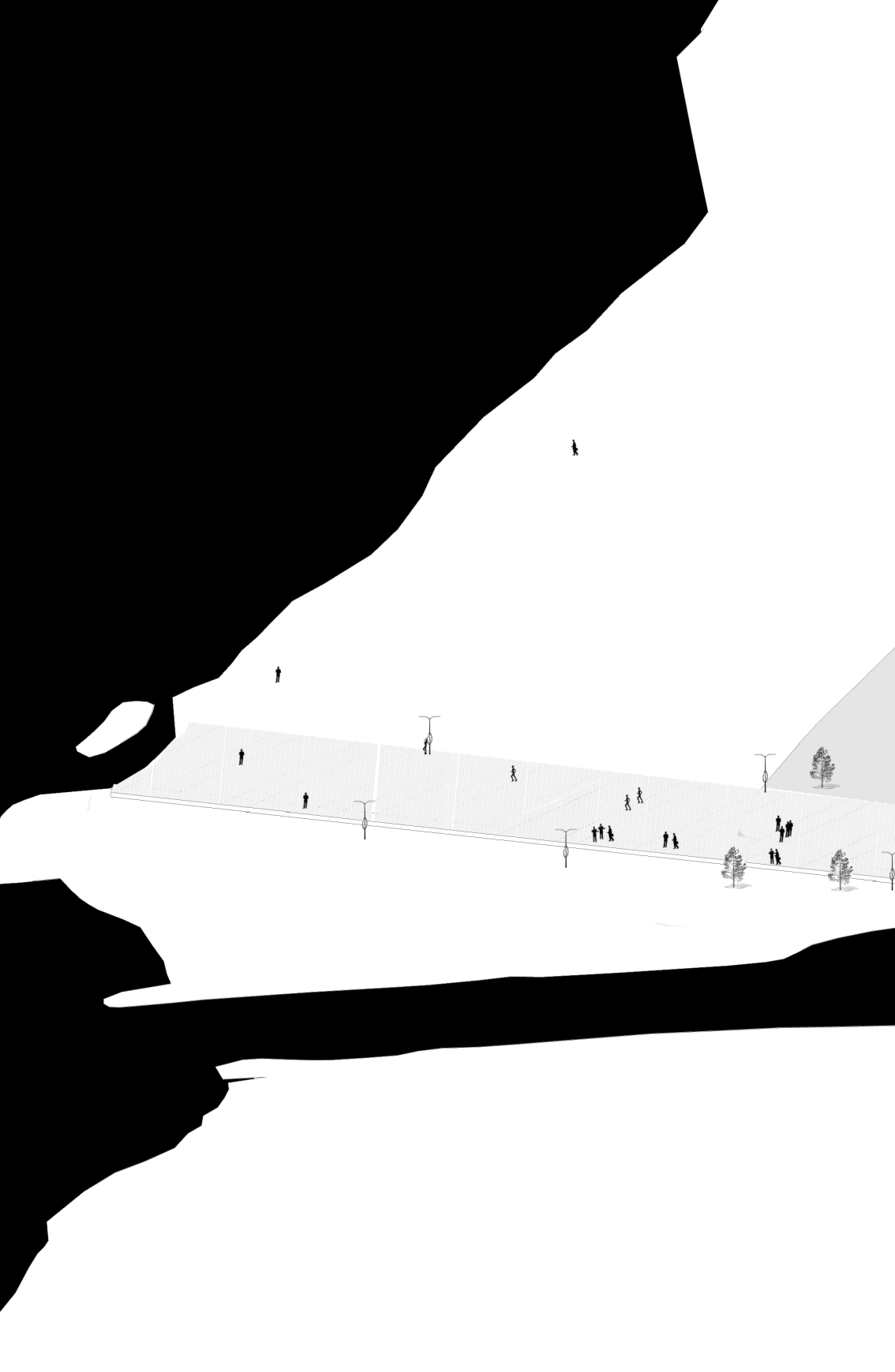
**phase 4:**

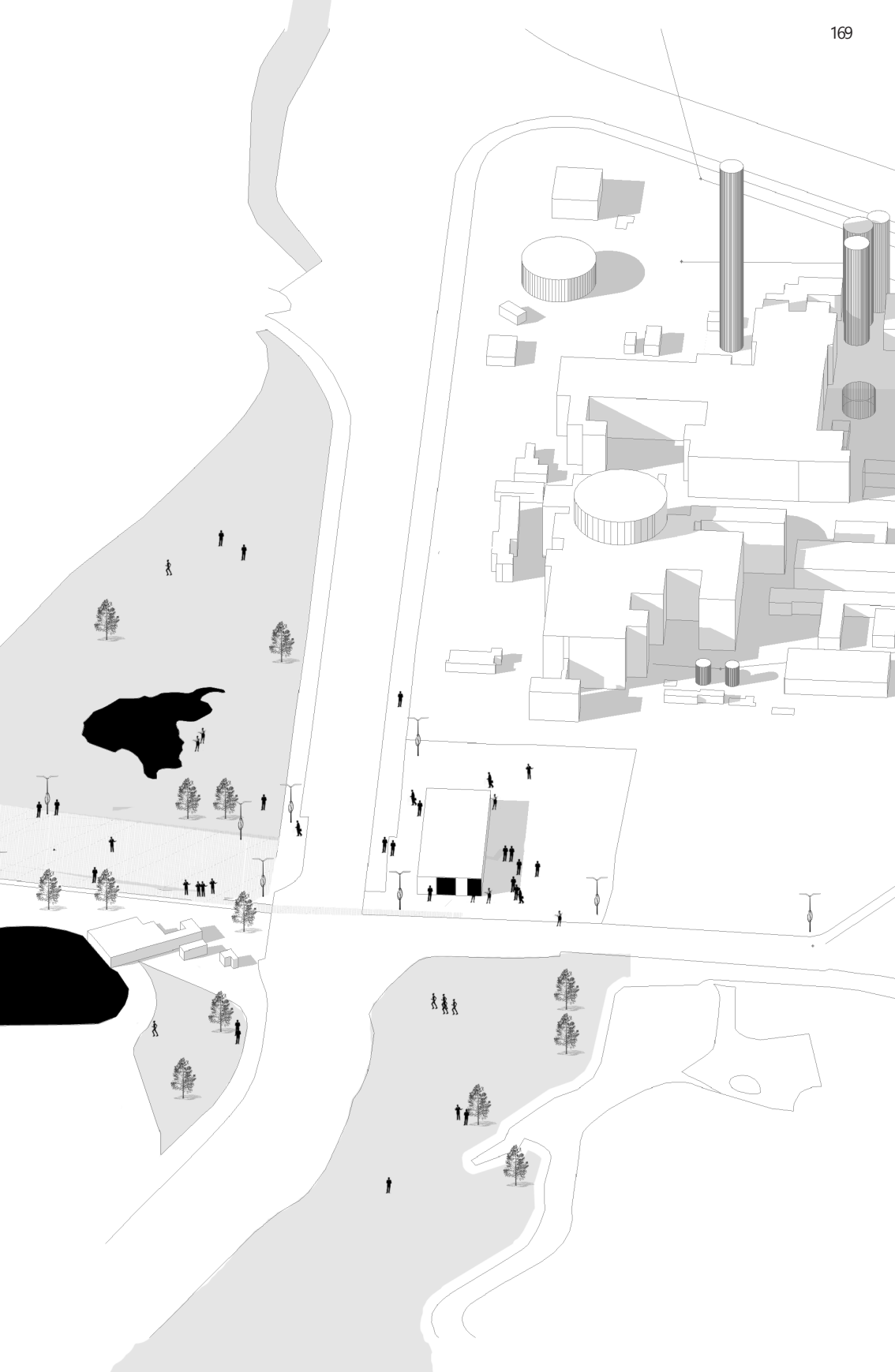
The transformer station adds public functions and a classroom for briefings for the workers. A path is laid on top of the cable trajectory.

**phase 5:**

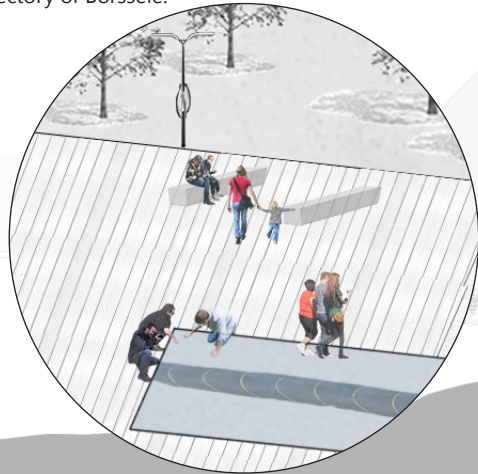
The natural area can be restored and extended around the transformer station.



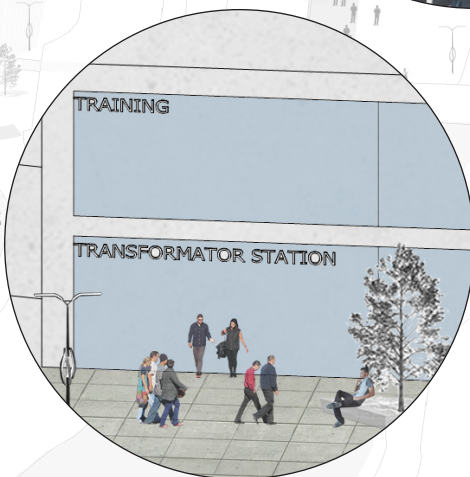




The path connects the transformer station to the water on top of the cable trajectory of Borssele.



Space for training the workers on top of the public function of the transformator station.

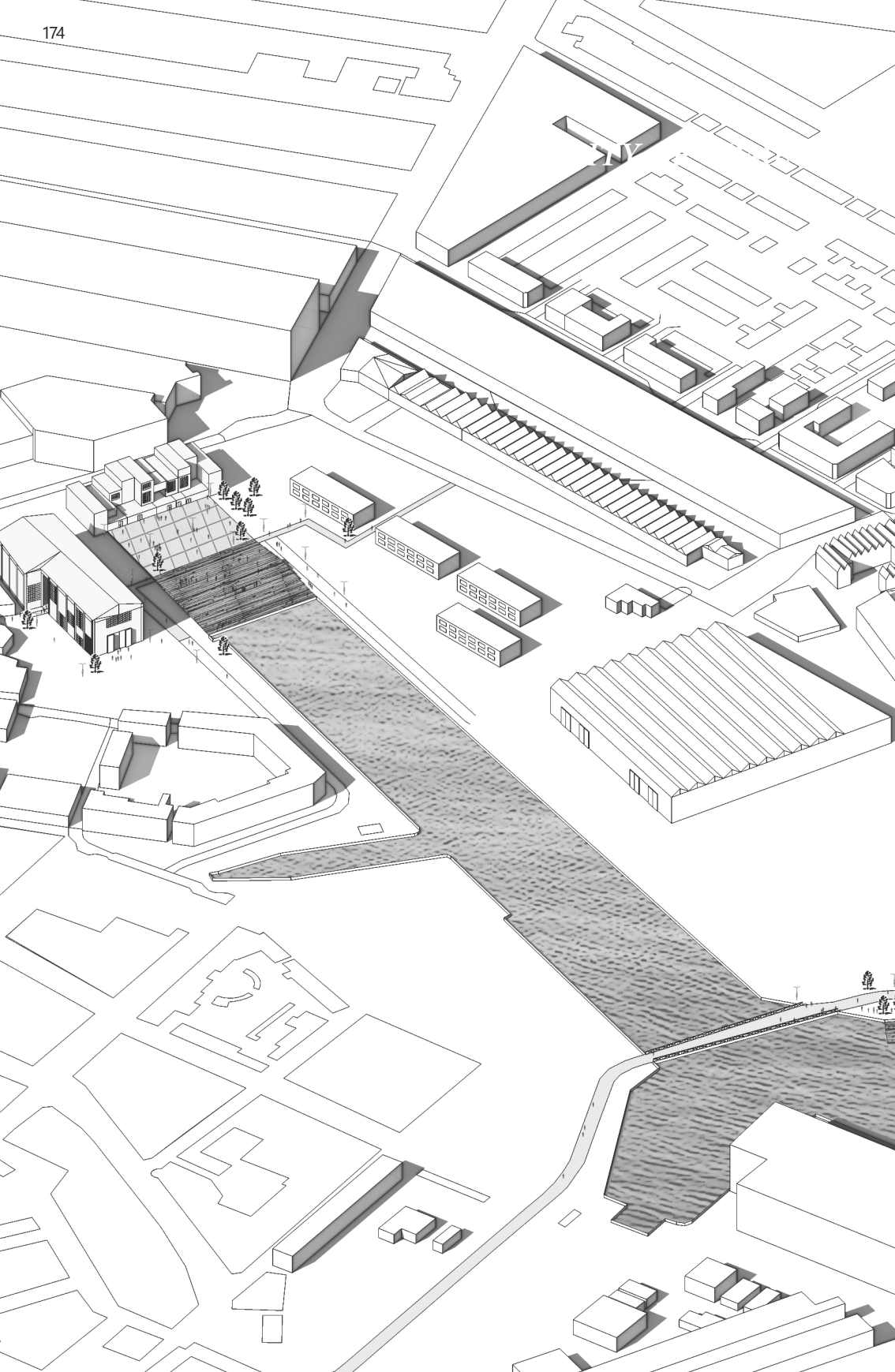


Entrance of the transformator station and training center.

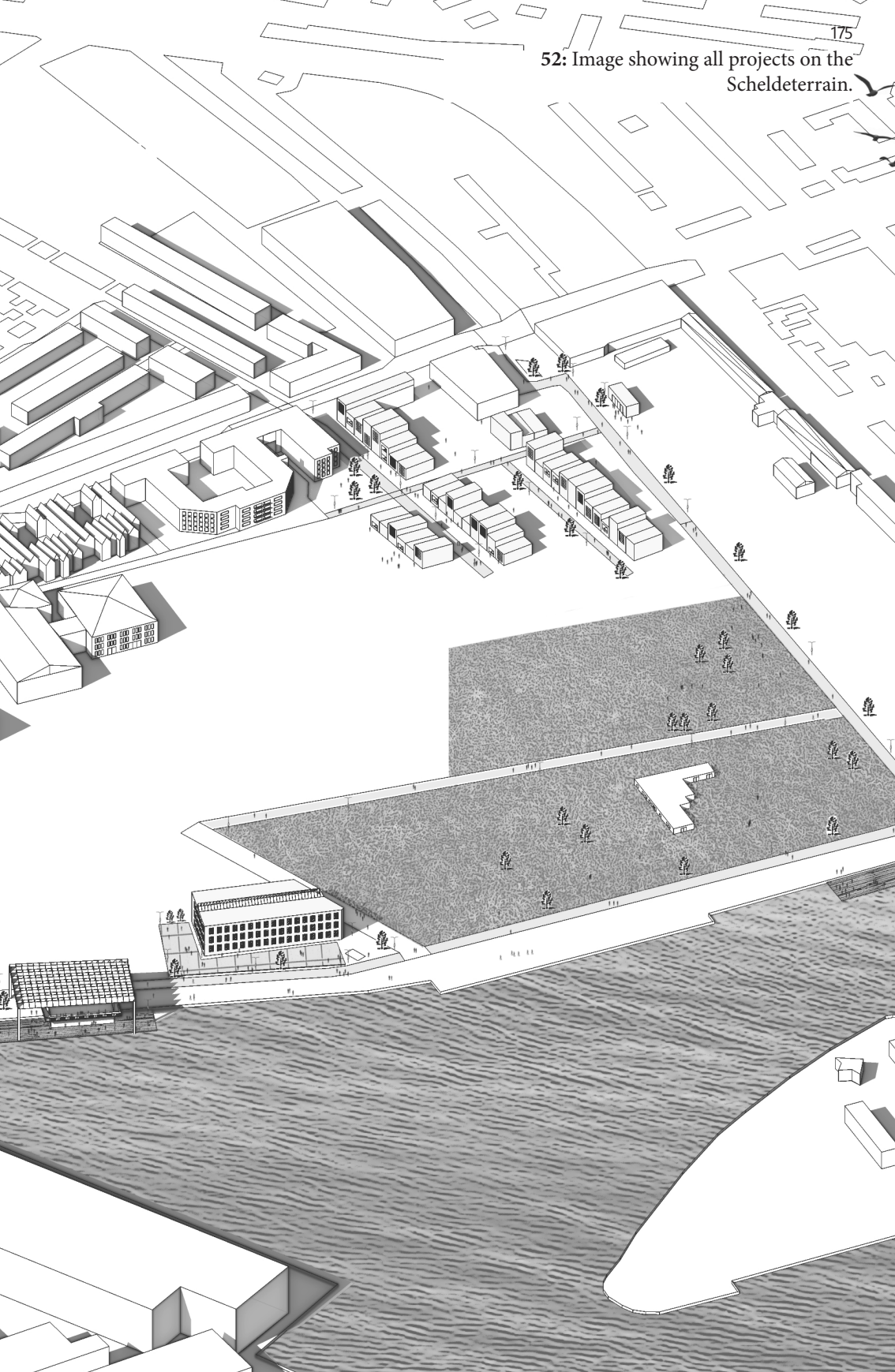




51: The threatened, due to expansion of the port, dune area protected by the electricity cable from Borssele providing a public space within the port.



52: Image showing all projects on the Scheldeterrain.

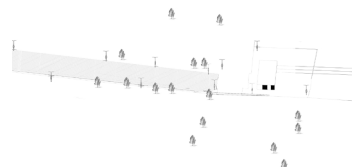
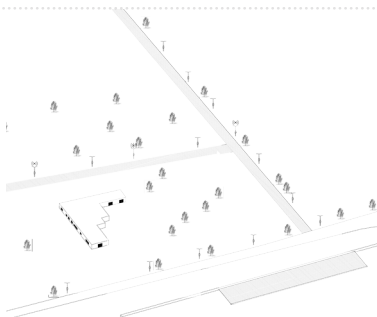
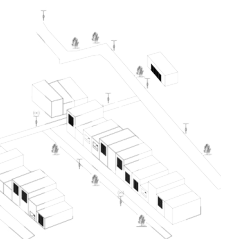
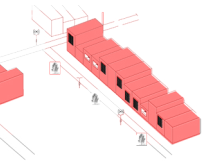
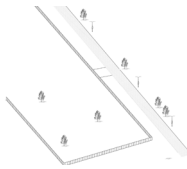
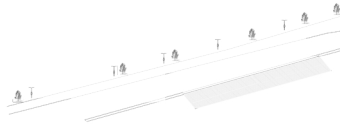


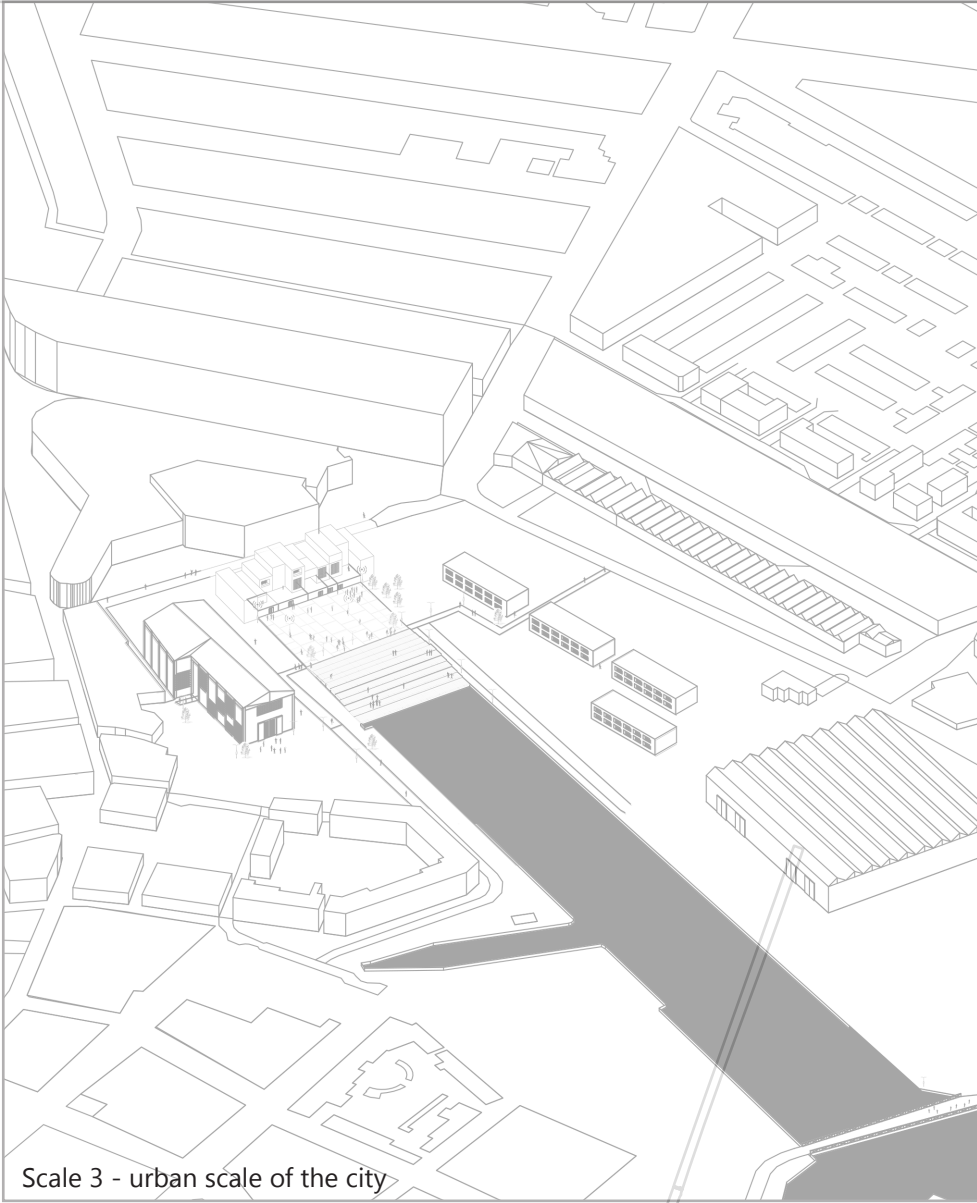
	Celebration dock	Waterfront	Wo
Phase 1			
Phase 2			
Phase 3			
Phase 4			
Phase 5			

Workers area

Central park

Transformer station

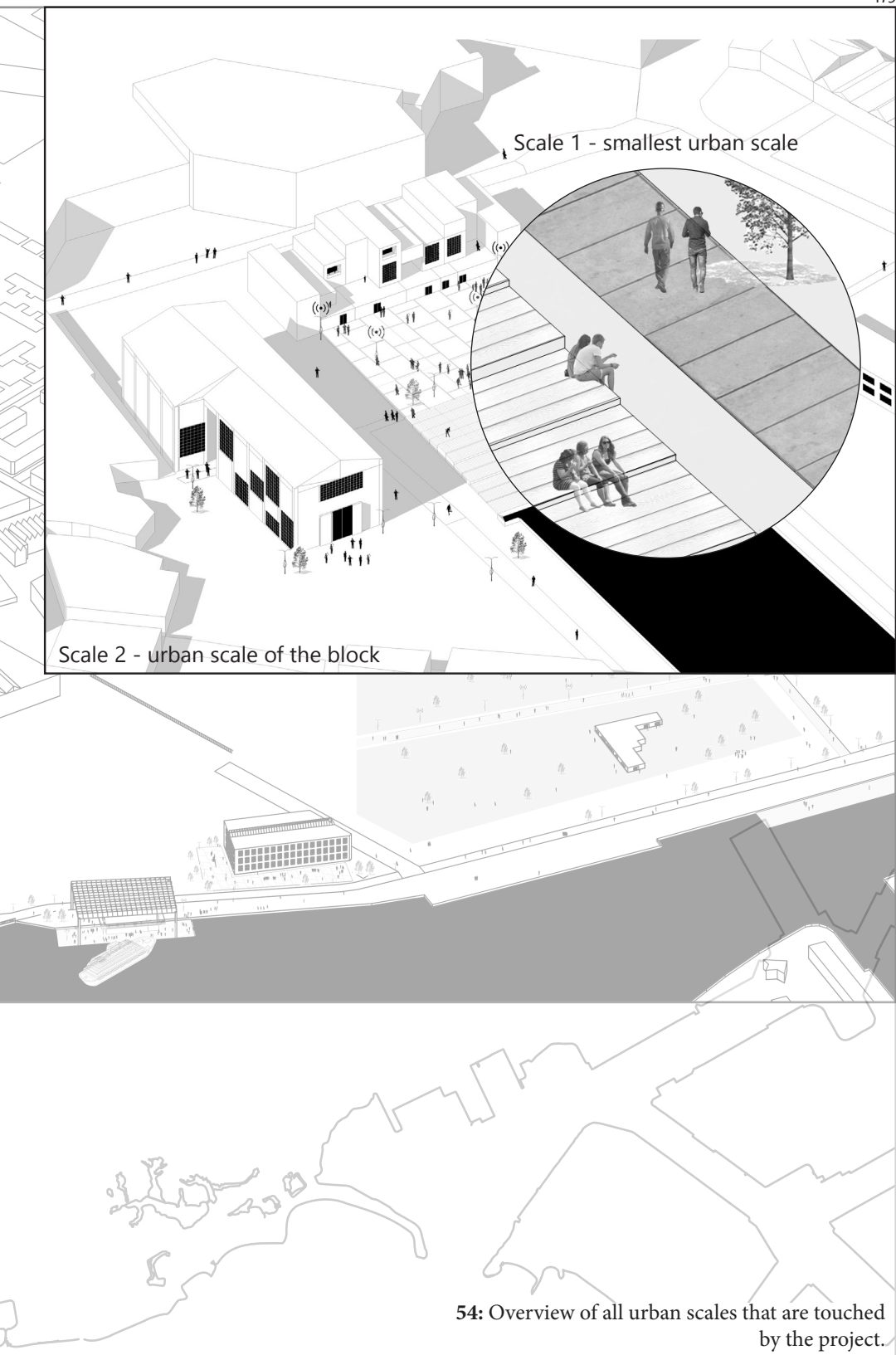


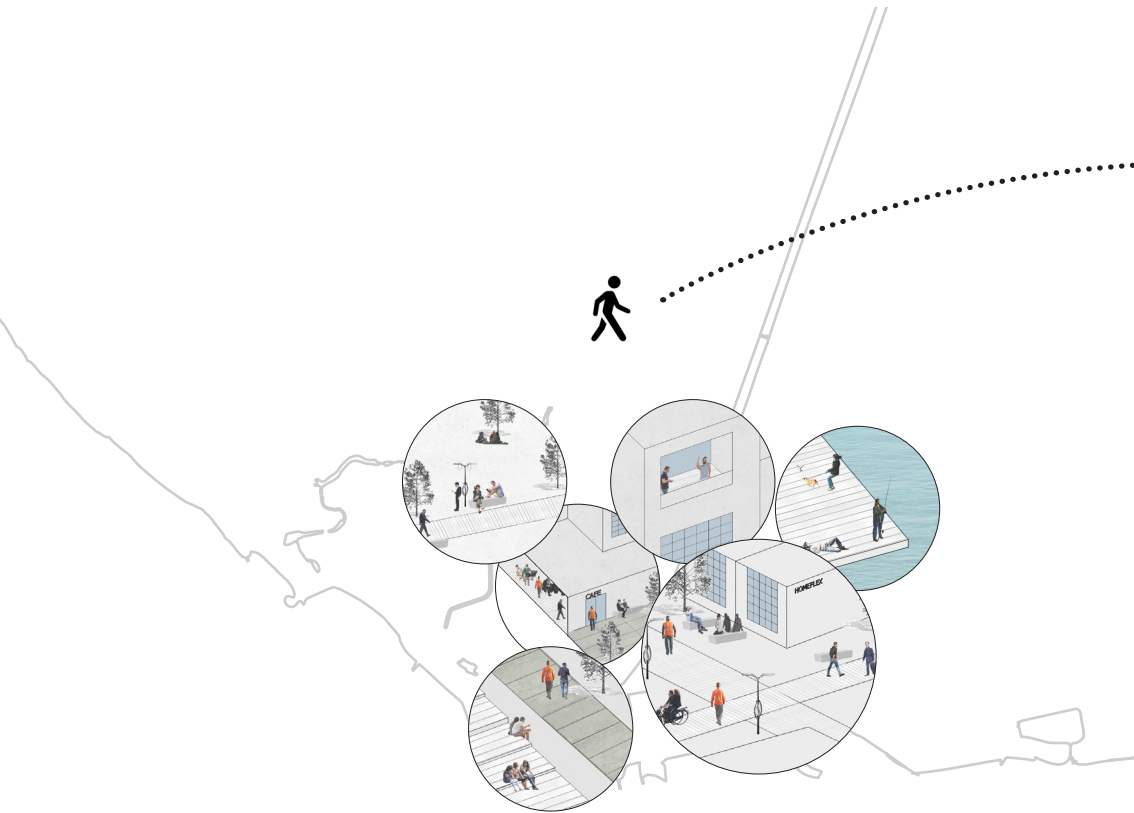


Scale 3 - urban scale of the city



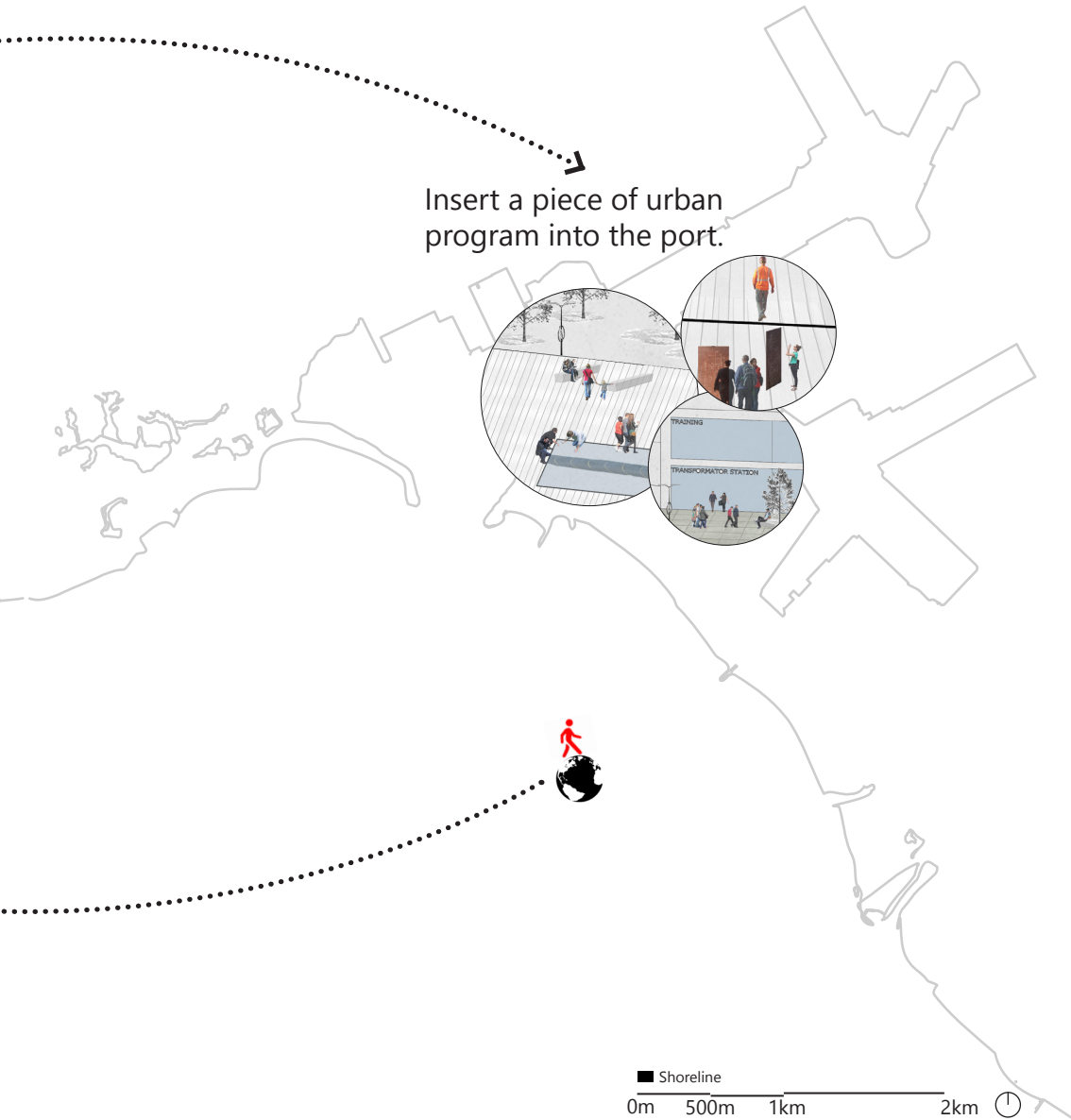
Scale 4 - urban scale of the region





Insert the global migrant workers into the city.





55: Diagram reflection on the initial strategy to the design, projected on the map of Vlissingen.

Exploring scenario's

The question of the viability of the design for the future arises. The most important challenge identified for the project is to catalyze long term improvements for the local and permanent citizens, with the interentions made in the previous paragraphy. The question **“What could be the legacy of the project in future visions for Vlissingen?”** will be therefore tested through different scenario's in this chapter.

We have seen the idea of flexibility and adaptability applied to many buildings, but since this project being an urban design project, the focus is on transferring this idea from the individual building to the city as a whole: how can the area acquire stability and preserve a legacy, while at the same time remaining open to different usages, new models of living and to the future? Besides asking what added value does it create within the city of Vlissingen for the longer term, the transformation of industrial production sites into living urban components is a global phenomenon that is seen in many countries (Baum & Christiaanse, 2012). The design can provide valuable information that can be used not only for transforming similar sites, but also provide important lessons for other restructuring processes in the city, for example monofunctional areas.

To describe and test the legacy of the project, three scenario's are chosen. The growth of the city is in each scenario very much dependent on the growth of the port industry of Vlissingen-Oost. The following scenario's are made:

1. A declining Vlissingen
2. A stable Vlissingen
3. A growing Vlissingen

An overview of the scenario's is given in figure 56.

A declining Vlissingen

The scenario of a declining Vlissingen assumes that after the construction of the wind farm, the port of Vlissingen-Oost won't receive any large orders after the construction of the wind farm. Their business will slowly be taken over by the larger ports of Antwerp and Rotterdam. The decline in population in Vlissingen will continue as indexed by the province (RIVM, 2013) and the temporary citizens of the construction of the wind farm will leave after construction.

For the design, this means the temporary accommodation won't be inhabited again and even destroyed. The public functions will still remain, as well as the watertaxi as a service from the inner city to the station. The Scheldeterrain will remain largely empty, waiting to be developed. The fence will return and close off the site again partially, but instead of a void in the city, the edges will still function to connect different elements within the structure of the city. The infrastructure, paths and lightning will remain and continue to keep the edges of the large terrain usable. The locations of the design are chosen to ensure this, while on the inner side of the fence the trees keep cleaning the soil of the brownfield (figure 57).

A stable Vlissingen

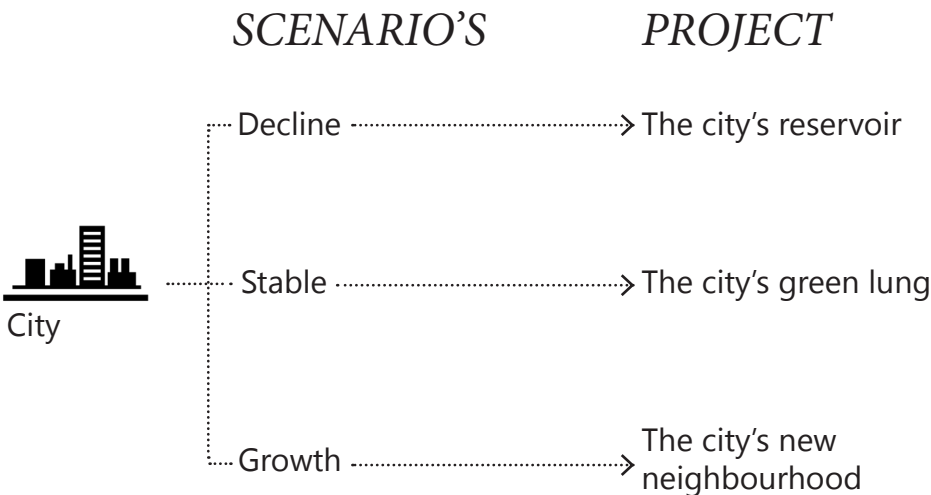
The scenario of a stable Vlissingen assumes that some of the workers for the construction of the wind farm will stay. They find jobs for dismantling oil platforms in the North Sea or within the health industry in Vlissingen. The original accommodation for the temporary citizens will still be inhabited by them. On the other hand, the population in Vlissingen stays stable and will see an increase in single-households, that find a place in the temporary accommodation.

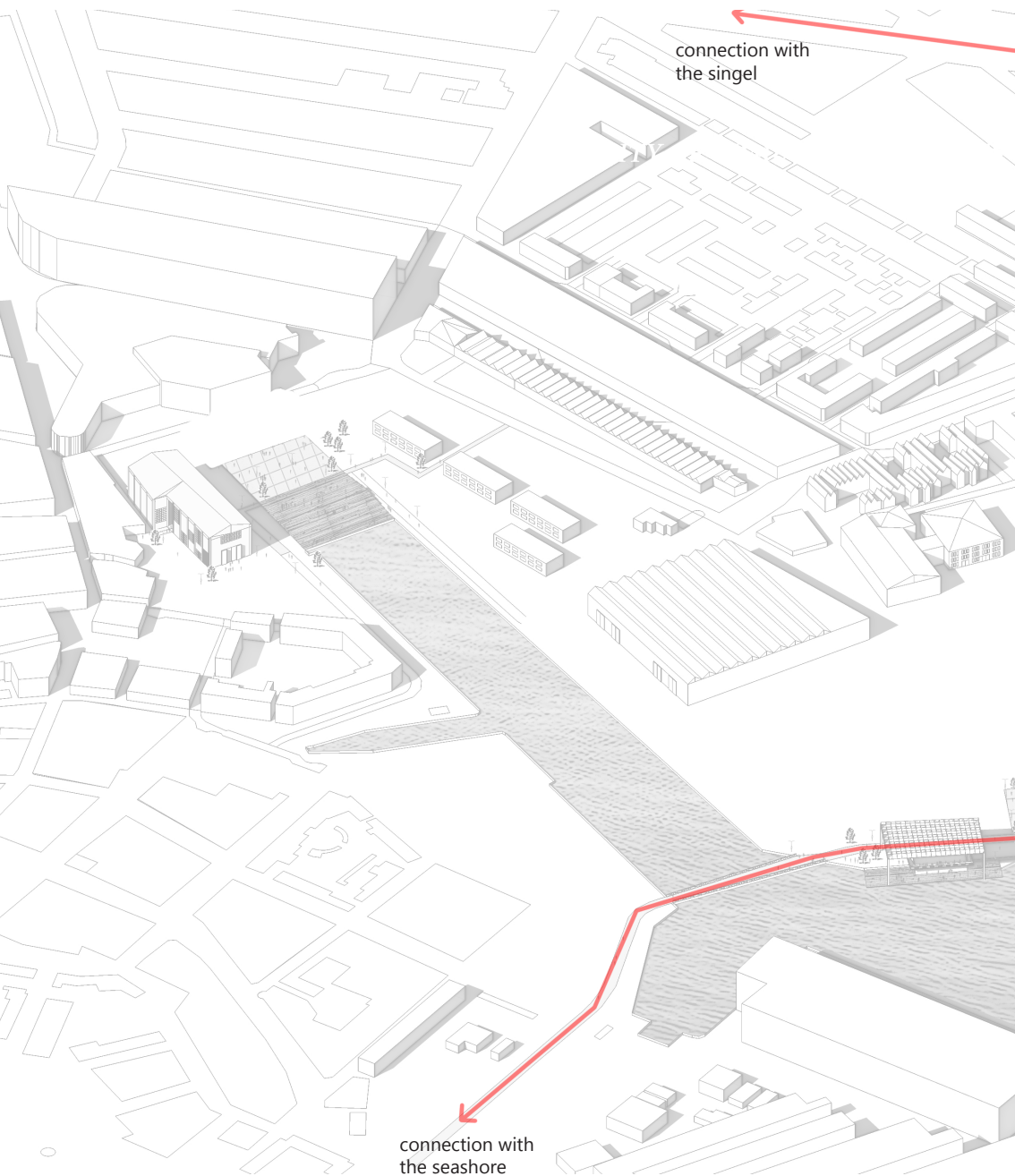
For the design of the Scheldeterrain, not much will change. The project will stay intact. The functions for the workers will have a reason to stay, as well as transformator station at the Kaloot will remain to attract tourists and workers of the port for training and education on renewable resources (figure 58).

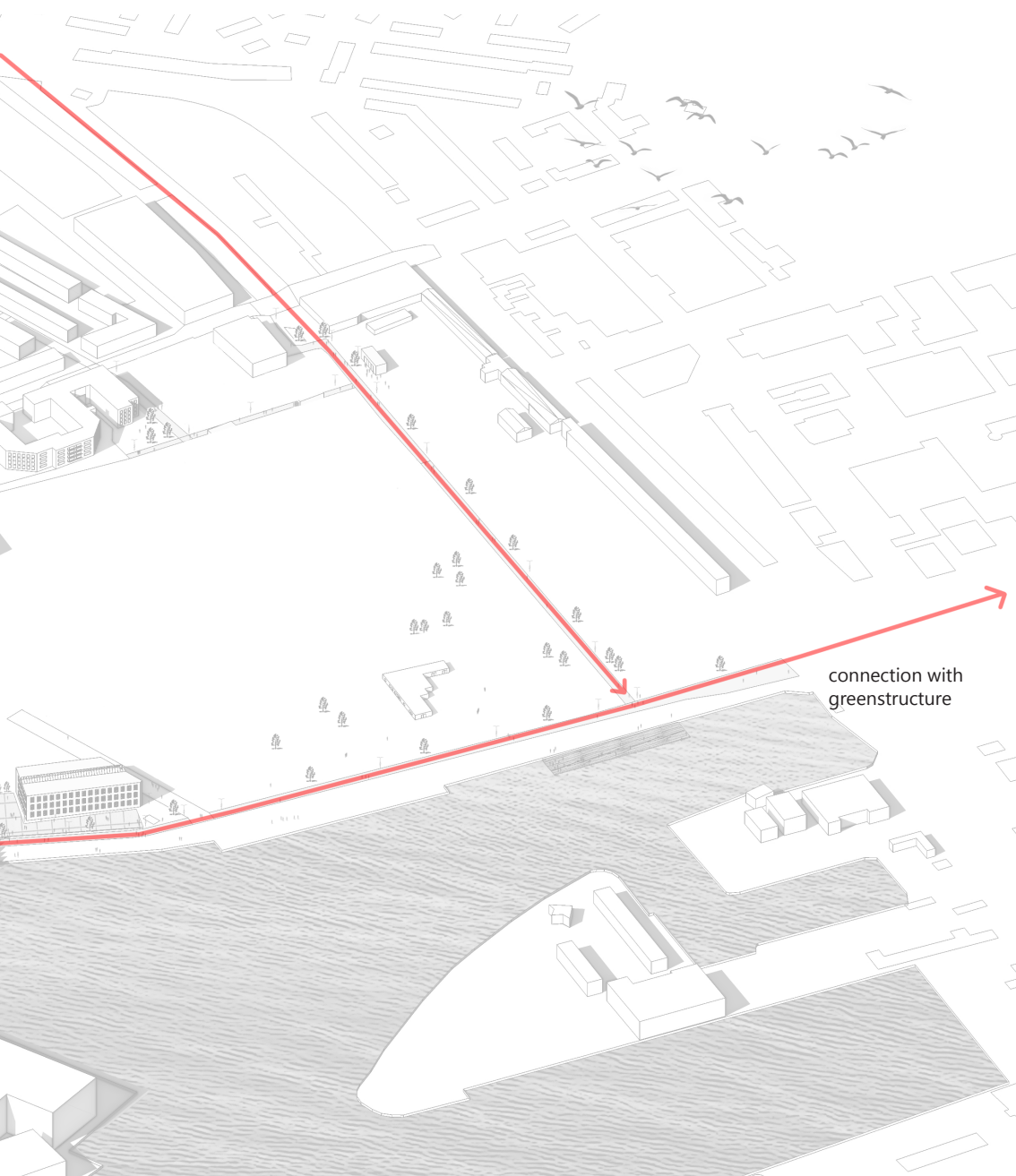
A growing Vlissingen

The scenario of a growing Vlissingen assumes that the port industry of Vlissingen-Oost will continue. Their expertise in building a wind farm will attract more business and will grow into a center of expertise for operation and maintenance and later on dismantling of wind farms.

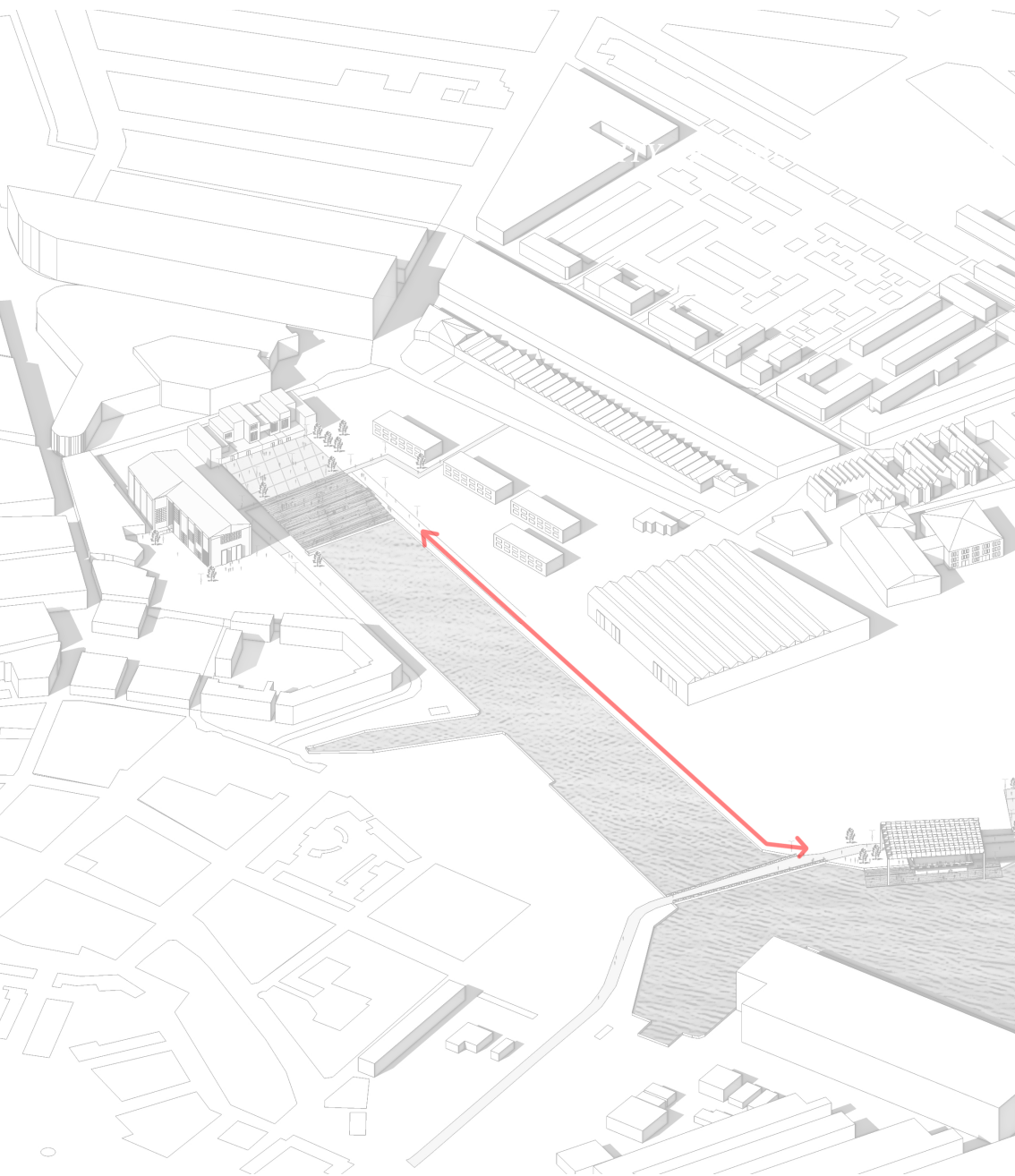
A large part of the site is now cleaned and suitable for building. For the design of the Scheldeterrain this will attract developers and more housing will occur on the terrain. But the developers will be restricted by the already existing infrastructure and build further upon this. This way, important city connections will remain (figure 59) and the site will stay accessible for all citizens. The transformator station will expand and be developed further, but the natural area is protected by the infrastructure of the pipeline.

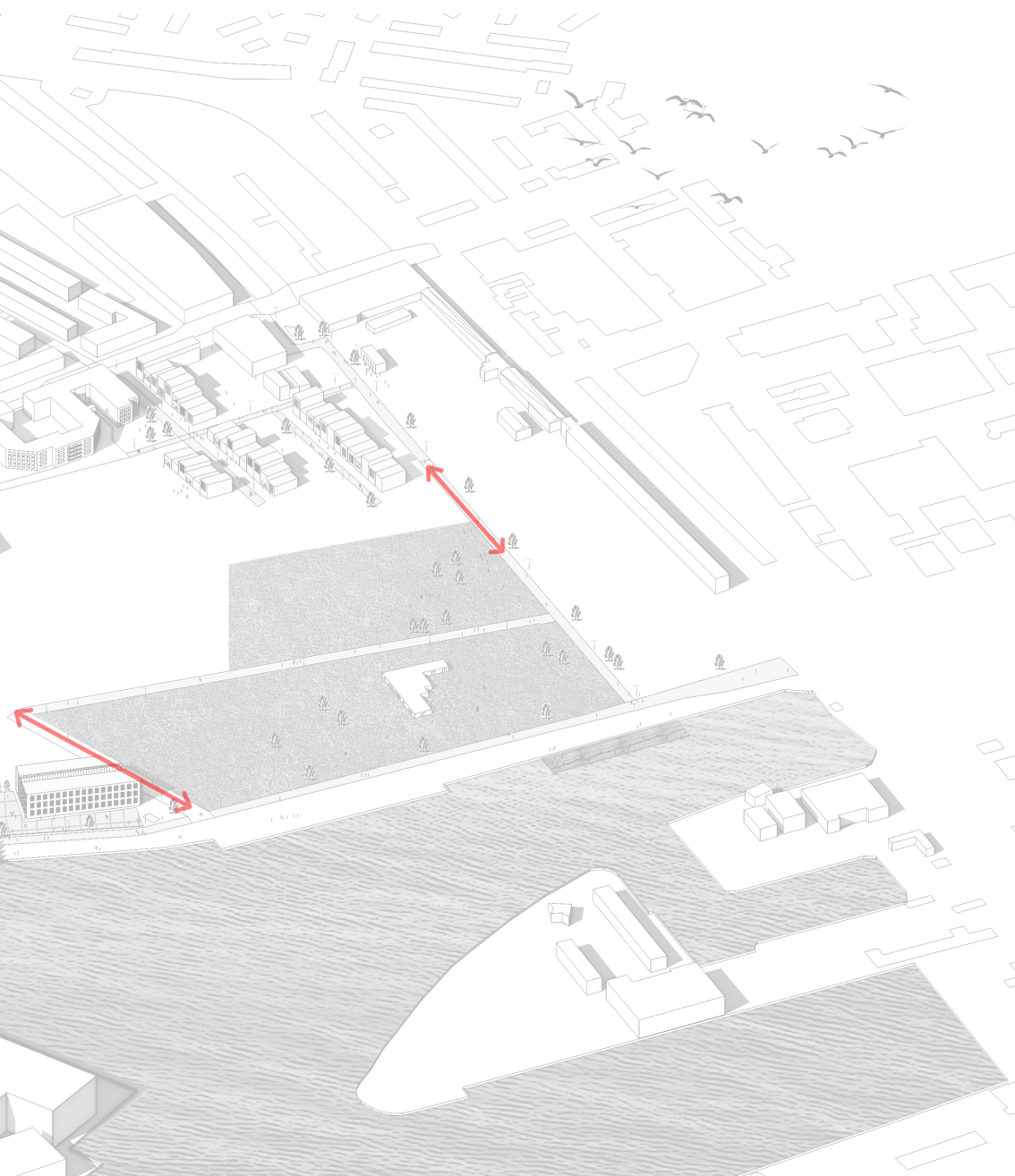




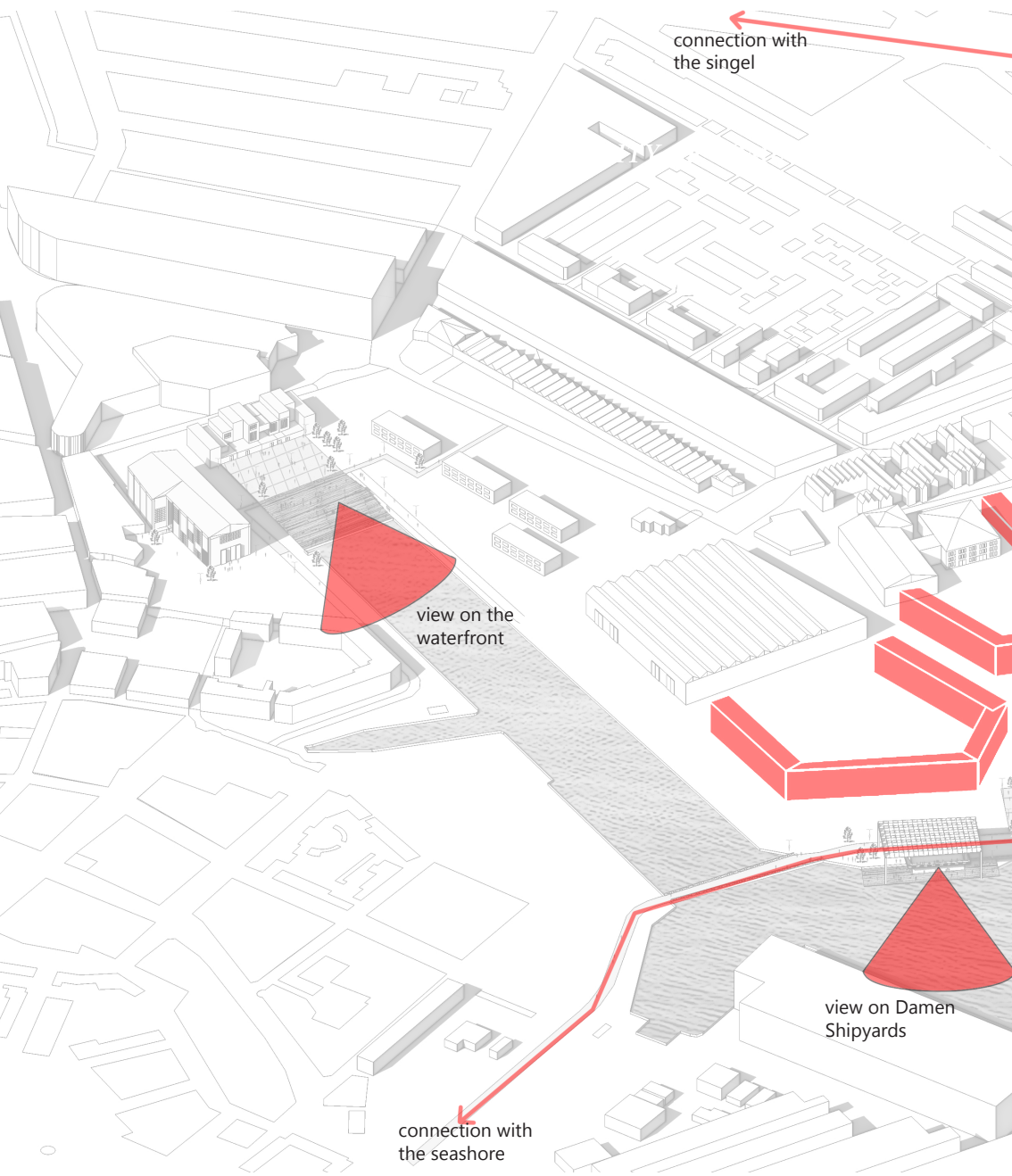


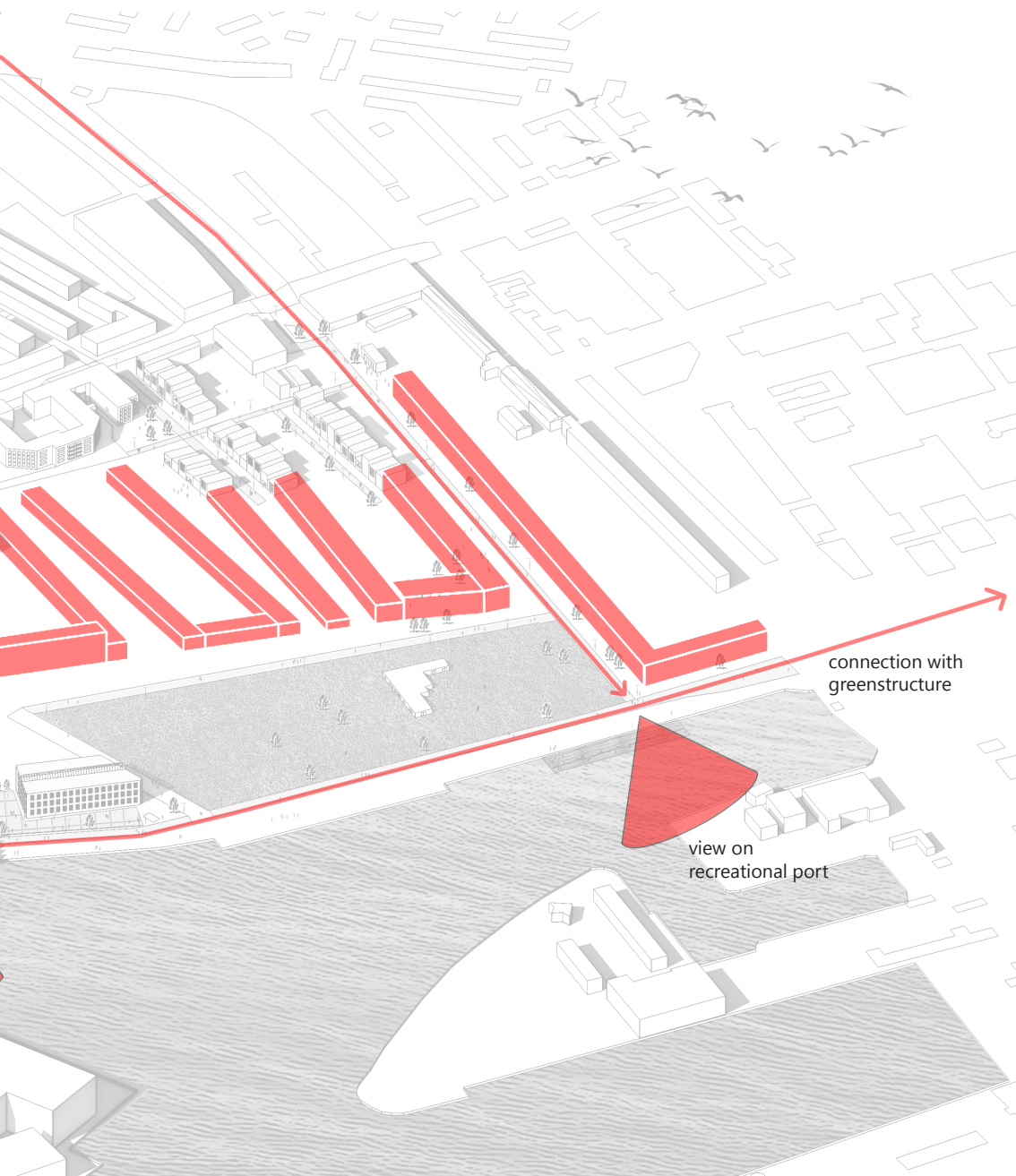
57: The Scheldeterrain according to scenario 1. The edges of the site remain active and still connect city structures. The terrain will serve as a reservoir for the city, while the soil is being cleaned.



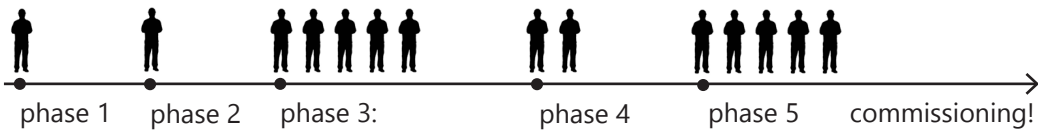


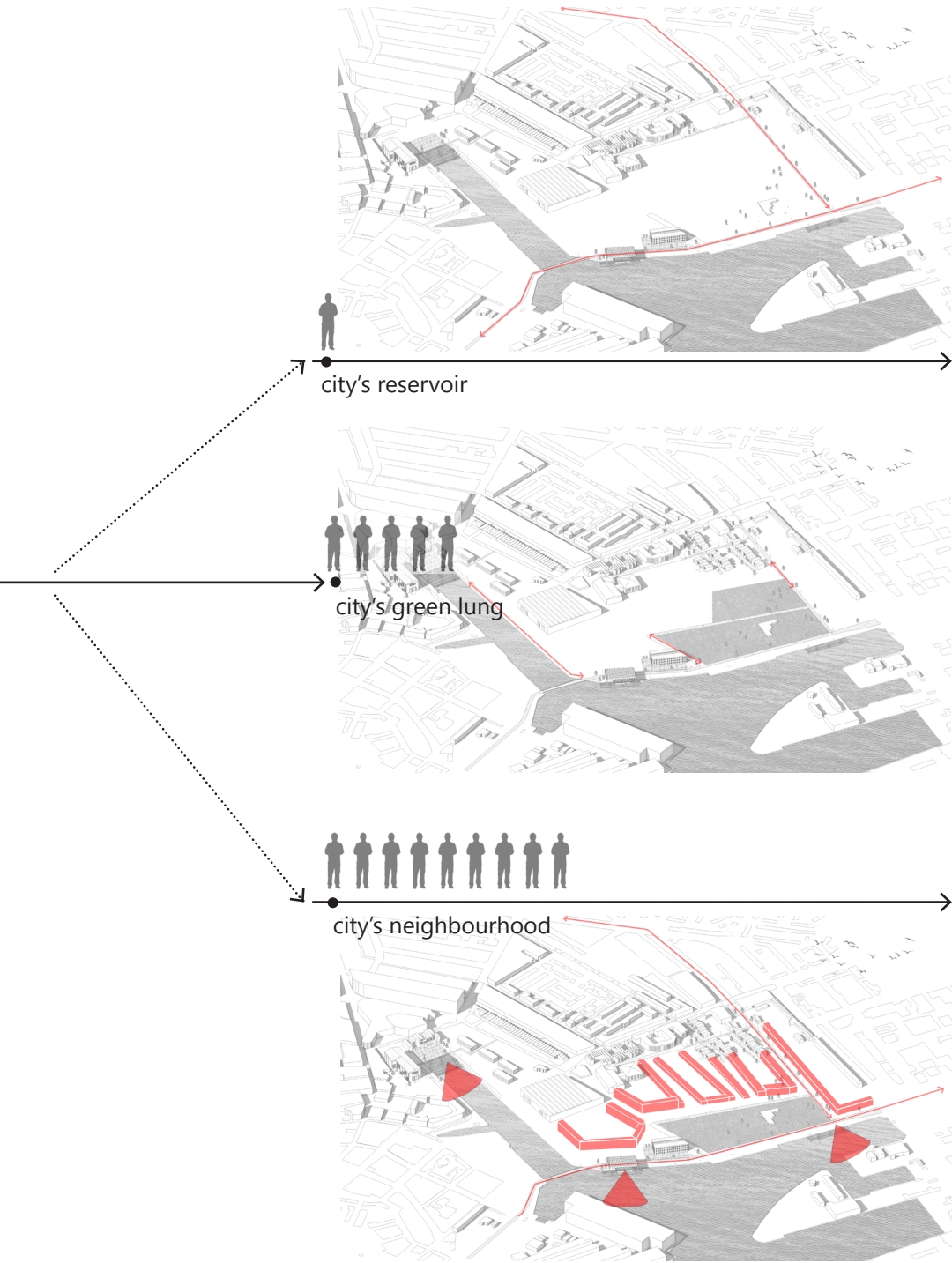
58: The Scheldeterrain according to scenario 2. The project stays the same, other occupants will take their place. The projects have a chance to grow further towards each other.





59: The Scheldeterrain according to scenario 3. New developers will develop the terrain, but within the constraints set by the project earlier. Views and infrastructure will be protected when transforming the area into a new neighbourhood.





60: Summary of all scenario's after the construction of Borssele.

A COMMON FUTURE

for Vlissingen

With the new scale of operating and constructing large offshore wind farms, Vlissingen and Vlissingen-Oost are facing a transition. A part of this transition will include an increase of work migration and temporary citizens within the area for the next five years. This report is a research into this phenomenon of comings and goings.

The design is an attempt to make the global factors of energy and migrant workers comprehensible and visible, while using this as a catalyst to local urban change. This report illustrated the idea that services for the temporary needs of migrant workers can be combined with long term improvements for the local population. The temporary citizens are seen as a window of opportunity for the transformation of the urban area, as well the industrial port area.

As final product of the project, a two-sided document in the format of a folded city map, combining research and design proposal, shows a common new future for Vlissingen. It imagines a potential migrant worker or tourist arriving in Vlissingen, learning about Vlissingen and the Borssele wind farm, and using the facilities the city and the port have to offer. On the other hand, it informs the permanent resident about the new adaptations made in their urban fabric and invites them to participate in and celebrate the Borssele wind project as an upgrade to their environment. The folded city map of Vlissingen can be found in the back of this book.

APPENDICES

- 196** Conclusion
- 198** Reflection
- 202** The 21st century city
- 210** Workshops on migration
- 216** Literature
- 221** Image credits

CONCLUSION

Rethinking the life cycle of an urban project

Challenge and goals

In chapter one, the challenge for the graduation project was described as to catalyzing long term improvements for the local and permanent citizens, while at the same time improving the conditions of and servicing the global and temporary citizens. On the other hand informing the general public about the energy transition and celebrating the first large scale off shore wind farm in the Netherlands was the second challenge. In order to meet the challenge, the design was made according decisions that followed out of four questions.

The first question "What are opportunities and constraints for the project by looking at the historical and current context of wind energy, migrant workers and Vlissingen?", analyzing the context, posed opportunities and constraints regarding seven topics: the time horizon, scale, functions, location, legacy, user groups and the distance between port and city. Based on these opportunities and constraints, a program was made for the demands of the temporary and the permanent citizen of Vlissingen.

By asking the question "What is the relation between the city and the port and what are the underlying systems that re-enforce this connection?" two areas were marked to intervene. The strategy to insert the local into the global and the global in the local, was born. Comparing the program and the scale of both locations, the conclusion was drawn that a project could not cover the whole area. Therefore, the next question was asked.

"What are the guidelines of patchwork urbanism in order to designate areas for punctual interventions?" helped to define five project locations within the two designated areas. Design guidelines and elements filled in these areas according to five phases that illustrate the comings and goings of workers during the construction of the wind farm of Borssele.

In the challenge is described that all projects should trigger a long term improvement for the city of Vlissingen. The question "What could be the legacy of the project in future visions for Vlissingen?" was answered by the illustration of three different scenario's.

I believe the scenario's show that in each scenario the formal, spatial and aesthetic connections are improved and can create an increased sense of place for the permanent citizens, even when the temporary facilities are broken down or inhabited in a different way or by a different function. I hope that this shows a different view on how comings and goings of a temporary population can be seen as more than a practical solution. By setting up guidelines as a municipality for other stakeholders to use, what is left could be beneficial for the municipality. Hopefully this project shows a different view and change the perspective against migrant workers and developers involved in temporary accommodation.

Limits and constraints

The spatial and financial conditions of the city of Vlissingen make the projects harder to realise. A detailed stakeholder analysis and an analysis of their interests would be required. This allows also for the program to be more elaborated and detailed. An stakeholder analysis could also help to elaborate on the governance of the project within the difference phases.

The project also speaks about bridging the gap between local and global powers. Design could not only bridge this gap by making global processes visible, but also by involving and empowering residents in the design process. In this project, the local inhabitants were not involved in the design process. This should be a central concern in realising the project.

Further considerations have to be brought up by the port industry. In the second chapter, the changing scale of the offshore wind farms constructed nowadays was illustrated by a map showing the new planned wind farms in comparison with the already existing wind farms. Borssele is the first one of five large scale wind farms to develop in the future. The design could have elaborated more on the potential of different functions to be able to move to another site or make a comparison with the ports and adjacent cities that will be next. A future study could leave possibilities in terms of movable architecture, taking the design a step further and creating a legacy not only for Vlissingen, but also for other ports and cities involved in the construction of wind farms.

Further research

The graduation project does not present a finished blue print plan or planning principle. It only gives an idea of what a new industry could offer as opportunities and program for the city. It shows a planning method that is aware of its legacy and shows scenario's how this could develop in the future. I believe this planning method shows a different attitude towards the life cycle of projects that could be applied in other urban design projects as well.

In my reflection, I will reflect further upon the question that a city of comings and goings is a different city. During my research, I found out that the temporary population of migrant workers do not differ that much from the permanent citizen such as you and I. The difference in the program necessary does not differ much from the current offer in the city and quick fix solutions for accommodation will be always at hand, but by identifying an upcoming comings and goings of a population in an early stage, I think we could strengthen the city by designating areas that would benefit the most from their functions.

REFLECTION

A City between the Local and the Global

The graduation studio 'A City of Comings and Goings' investigates the ever increasing mobility of individuals and the migration patterns this results in. By exploring the theme of migration from an urban designers point of view, I examine in this graduation project the possible influence this could have on the built environment. The project focuses on work migration in particular, with the case study of the wind farm Borssele.

With a new scale of operating and constructing large offshore wind farms, harbours and adjacent cities are facing a transition. This transition will include an increase of work migration and temporary citizens within the area. The construction of the wind farm will result in a comings and goings of all kind of high- and low-skilled migrant workers and expats. This raises questions about the role of the city, the buffer landscape in between and the port. The city of Vlissingen and the port of Vlissingen-Oost that will be involved as construction base for this wind farm, is unaware of the effects and opportunities of this transition.

The graduation project touches upon two controversial challenges in the Dutch society, offshore wind energy and migrant workers. Therefore, the approach to connect the local and global is chosen to welcome, integrate and celebrate both the migrant workers as the wind energy into the society. The project will not only address the spatial requirements or housing for this comings and goings, but also the social and political position of the migrants.

Research and design

Starting the graduation studio with an idea out of only one observation, the first stage of the research was focussed on providing a context. Interviews, reports and news articles gave me the right information to form a context, but finding real data and numbers about the necessary infrastructure and the workers was difficult. As an urban designer, I try to combine multiple goals and stakeholders into this project. Therefore, obtaining knowledge about each specific topic is impossible. The excursion to Berlin showed me how to deal with this situation and look for inspiration, not necessarily the exact truth. It is more important to get a grip on the topic and being able to draw quick conclusions based on the information you have. Not drawing this conclusions in an early stage made it difficult for me to define goals for the design. Looking at historical predecessors in urban planning, in my case the company town, helped me to limit the scope of the project.

The second research stage addressed the local conditions. In order to realize the potentials for the project, it is necessary to understand the current city. Research into the specific conditions of the area, and a fieldtrip was executed in order to understand the local particularities and lead to locations to intervene. After the two research stages, it was important to write a design brief for myself. I asked myself the question what can we do about this? The retake of P2

showed me I had difficulty with drawing conclusions for the design and writing a design brief. Documenting my work and writing a quick reflection on it, would have helped me to draw clear conclusions earlier. I would do that differently in the future.

The design is an attempt to make the global factors of energy and migrant workers comprehensible and visible, while using this as a catalyst to local urban change. The comings and goings of a new population is seen as window of opportunity for transformation of the Scheldeterrain and the port area and the development of new activities. Research on flexible planning strategies and research into the site helped to set a vision for future development of the area. However, a more specific look into transformation of old industrial sites or cities would have helped to proceed with the design easier.

'A City of Comings and Goings'

The graduation project contributes to the topic of Design as Politics studio 'A city of Comings and Goings - designing for migration and mobility'. The project explores a specific type of comings and goings of the energy industry by addressing the first large scale wind farm that will be built in the Netherlands. Although the Netherlands is familiar with migrant workers, due to the time span of the construction of a wind farm, it makes an interesting case study to look at.

The question posed by the studio, how can we design a landscape that make the best of our restless lives and profit from the constant exchange of people, can be interpreted as addressing a global trend (the restless lives) and a local condition (how to profit from the constant exchange). In the design brief of the graduation project, this tension between the local and global is addressed in each site and program. This results not only in a project about housing, but also about the social living conditions and integration with the local. It explores not necessarily a definite solution, but rather shows a new perspective on the opportunities temporary citizens could offer.

Methods

By questioning the social, political and spatial implications of the next mode of energy, and how design practice can partake in shaping a more just urbanization, the graduation project fits with the method of Design as Politics. By not only addressing a practical solution for the workers of the wind farm but also a more symbolic one, the project tries to explore another role of the designer to make processes visible and comprehensible. This reflects upon the resistance of the public against renewable energy. The task of urban designer is to also give people an insight into these planning processes by making it visible and even 'celebrate' this in public space.

Design as Politics discusses the role of design in policy- or decision making and politics as an integral part of design. In line with this approach, the graduation project tries to address the tension between the national decision making process of a wind farm and the local implications for the city. By visualizing a common future and showing the opportunities, the project tries to close a gap between politics and society.

The organised workshops, lectures and excursions by the Chair of Design as Politics helps to step outside your own topic for a day and get familiar with the Chair's approach. The workshop in Feijenoord showed me a new outcome that could derive from design practice, while the OMA / AMO lecture learned me how to visualize and make global systems like energy visible and comprehensible.

Social context

By addressing two topics, wind energy and migrant workers, that both have a sensitive political position within the Dutch society, the graduation project fits within the framework of Design as Politics. The societal challenges in the project are related to the acceptance of large scale off shore wind energy and the integration of migrant workers into the society. Offering new activities for as well temporary and permanent citizens, the project tries to close the gap between the local and the global.

The graduation project fits also into the social context around the energy transition. Controversial opinions about wind energy influenced by visual pollution and lack of decisions on political level keep the development of offshore wind parks as an open question. Borssele, as first large scale wind park in the North Sea makes an interesting test case, that could be of value for other future locations. Visions showed in the project are relevant to other upcoming sites in the Netherlands, but also Northern Europe.

Is it a different city?

The City of Comings and Goings differs not so much in program as cities nowadays. In the end, I came to the conclusion that the temporary citizen or migrant does not differ so much from the necessities of the permanent inhabitant. Research into the company town made me realise a large scale new neighbourhood would not fit the scale nowadays and small changes could already improve the life of the migrant worker.

But a city of comings and goings does differ in the flexibility of the program and the governance or stakeholders involved. By making a project interesting for as much stakeholders as possible, there is room for investment instead of falling back into 'quick temporary' solutions. Also the municipality should be more aware of this, in order to benefit from temporary citizens. Offering temporary solutions, but making it accessible for the permanent inhabitants as well, will create more support and interaction. I see it as my task as an urban designer, to identify and invite all those involved to serve multiple purposes with one project. Only then sustainable and long lasting solution, can be found.

THE 21ST CENTURY CITY

An exploration of approaches on temporality in urban planning in order to develop new guidelines for adaptable and flexible cities.

Introduction

Globalization impacts urban dynamics. However, globalization is also related to the diversification of migration patterns worldwide (Martiniello, 2012). The UNCTAD's Global Migration Group (UNCTAD, 2010) states that migration has become an integral part of globalization processes associated with increasing integration of national economies, internationalization of production and ownership in goods and services, demographic changes and emerging employment patterns. The increasing globalization keeps us constantly on the move. Never before was the mobility of individuals higher than it is today. This migration and mobility define how we use our cities and landscapes in the future (Provoost & Vanstiphout, 2015).

Besides the known types of migrants that have been there throughout history, such as the political refugee or the labour migrants, a new type of migrant has been added by architecture critic Michael Kimmelman at the conference of reSITE: a conference in Prague in June 2016 with the theme of cities in migration (Barry, 2015): the "middle class and educated mobile migrant". But despite this new significance of migrant population within urban contexts worldwide, the relationship between migrants and the spaces they create is often overlooked in the discourse on migration, globalization and urbanization. Migrants will change the way our cities are inhabited and require a much more flexible approach for the built environment of the city.

In this essay I will address the impact of this migration and mobility on urban planning. This impact is summarized perfectly by urbanists Vera and Mehrotra (2015). Urban settlements globally face increasing flows of human movement and economic crises that modify streams of capital and their allocation to physical components of the city. This means that flows of people are increasing tremendously. As a consequence, urban settings are required to be more flexible in order to better organize and resist outside and inside pressures.

But how do urban planners prepare the built environment of the city for a constant change of population? What do we need in order to plan the 21st century city that facilitates these active fluxes in motion? There is an urge to develop new planning and design approaches that specifically deal with uncertainties in population. In order to answer these questions, new knowledge needs to be gained about adaptable and flexible mechanisms in the city.

In reaction to these conditions, there is an emerging argument about the notion of the ephemeral and temporality in the larger discussion on our cities. It is in this context, that this paper explores literature on temporal urbanism,

in order to gain knowledge that could be applied in the development of new approaches in urban planning that challenge the built environment of our cities as being permanent and in-flexible. To contribute to this body of knowledge, this paper will explore theories on temporary urbanism and what designers could learn from this in order to develop new planning and design approaches for a flexible city.

Firstly, this paper will describe the course of literature within the field of urbanism about temporality, the current situation and emergence for further research into this topic. Secondly, the paper will describe two theories related to temporality in urban planning, where its common ground will be discussed. In addition to these common grounds, the paper will suggest cycle studies within the field of urbanism. Finally, the paper will conclude with a new agenda for the course of future development and research towards a new planning and design approach for the 21st century city.

From small scale to big scale

In attempts of addressing issues of temporality and flexibility in urban planning, literature in the field of urbanism focuses mostly on temporary use of vacant lots, due to the condition of rough economic times that left cities and towns across the world with underused land. Lehtovuori and Ruoppila (2012) therefore describe temporary urbanism as the temporary use of vacant structures or underused land that has no eminent development plans.

These temporary urban practices bring dynamism and mobility to the static social and built fabric of cities (Ferreri, 2015), something that fits with the idea of the 21st century city mentioned in the introduction of this paper, that facilitates active fluxes in motion. But rather than offering solutions to spatial scarcity, it does not address the longer-term relations with the city on a larger scale and the profession of urban planning.

The question is how these experiences and ideas from the current literature can be transferred from an individual building or vacant lot, to the city as a whole. How can a city or district acquire stability while at the same time remaining open to different usages, new models of living and to the future? (Baum & Christiaanse, 2012). It is necessary to take the context of the current literature broader, so that it can inform our current debates on how we think of the city in a larger context.

Beirão and Duarte (2005) amplify this line of thinking and look at urban planning in a broader context and on a bigger scale. According to their analysis, traditional urban plans still have definitive design systems. These systems are without the flexibility that is required to deal with the constant change and fluxes that characterize the current urban environment.

These definitive design systems are also something sociologist Richard Sennett (2006) describes as a closed system. According to Sennett, we currently make cities into closed systems. The proliferation of zoning regulations in the 20th century is a perfect example to understand the cause of these closed systems.

It illustrates the over-determination of both the city's visual forms and its social functions, that make, according to Sennett, the city into a closed system. The result is that the recent structure of cities decay a lot quicker than the urban fabric that is inherited from the past.

Theories for a flexible city

In order to provide our urban plans with an increased flexibility that is required to better organize and resist outside and inside pressures from people flows, the definitive and closed city characteristics previously described, are a starting point. This paragraph describes two theories that imagine the urban environment as the opposite of definitive and closed systems; non permanent and flexible. The two different theories will be described and discussed in coherence and applicability.

The open city

The counter part of Richard Sennett's closed city, is the open city. The sociologist describes the open city through a scientist's point of view in order to understand its idea: chance events, mutating forms and elements which cannot be homogenized or are interchangeable - phenomena of the natural world -, can still form a pattern. The theory of the open city consist of three recommendations on how a more open city can be designed: creating ambiguous edges between parts of the city, contriving incomplete forms in buildings, and planning for unresolved narratives of development.

The first remark of the open city, creating ambiguous edges has to do with closed and open built form. Our current cities are cut up into segregated parts, either by functional isolation between zones or by streams of traffic. This results in a decrease of exchange between ethnic or class communities of different neighbourhoods. In urban design, we tend to look for strategic centres in order to strengthen community life, which means that the edge of neighbourhoods are neglected in development. Therefore it is important to create porous borders, where different groups can interact.

Incomplete forms of buildings refers to an antidote to the over-determined city, that was described in the previous section of this paper. This principle challenges the design ideal of a physical object as fit for purpose, in order to become more evolving and flexible structures. Sennett (2006) also refers to the term "light" architecture mentioned by Peter Eisenman, as an architecture that is planned so that it can be added to, or revised internally as the needs of habitation change over time. This remark is also addressed by landscape urbanist Waldheim (2010), who describes that incompleteness and spatial-temporal openness is central to addressing urban questions for the 21st century cities. In contrast with landscape practices, the focus in urbanism lies on the achievement of a closed solution, rather than generating open systems.

The last remark of Sennett's open city is unresolved narratives, that results from the incomplete forms of buildings. Planning law demands urban designers to always specify certain things, which results in the closed city where all the results are already envisioned in the beginning. But thinking otherwise usually

drives urban authorities up the wall. Therefore, it is critical for urban designers to not focus on the stages in which a particular project unfolds, but evaluate and explore its lifespan by asking what-if questions.

The reversible city

The theory of the reversible city discusses two points of view for a more adaptable and flexible city, derived from studying the temporary city of Kumbh Mela, India. The city Kumbh Mela is constructed as well as broken down in several weeks, for the celebration of a Hindu religious festival. It offers some ideas on how "reversibility" could be better integrated in our future cities. On one hand, Mehrotra and Vera (2015) describe the material aspects concerning reversibility, on the other hand, it highlights the immaterial side of the city, that consists of an institutional framework that supports Kumbh Mela. These aspects will be described further in this paragraph.

Kumbh Mela shows us that reversibility lies in much more simple low-tech tactics. Added to this, the generic condition of basic elements offer infinite possibilities of recombination (Mehrotra & Vera, 2015). Building techniques are based on the repetition and recombination of basic modules. This facilitates the quick assembly, reconfiguration and disassembly of the city, but also simplifies the logistics. It also results in the fact that materials can be reincorporated into regional economies and local industries again, by simple transport and distribution, in a rapid and efficient manner. It offers urban designers a critical way of thinking about the afterlife of the things we build.

In the context of more permanent settlements than the city of Kumbh Mela, institutions associated with urban processes in the city, take time to form and are often not created as malleable and flexible structures (Mehrotra & Vera, 2015). However, in the temporary city of Kumbh Mela, a flexible governance system is created by several temporary governmental agencies, where the nature of governance is dependent on the stage in which they operate. This system allows transversal links of communication between hierarchies of different administrations. Within this system, the governance also addresses the deconstruction in the fourth stage, which illustrates the vision on the afterlife of buildings again, as described in the last paragraph.

Common grounds

Looking at the two theories of the open and the reversible city and thinking about how urban practice can learn from these theories in order to plan a more flexible and adaptable city prepared for migration, one can start by defining their common grounds. Both theories show not only recommendations about the construction of the built environment, but also how inefficient we are in dealing with the reconfigurations of the space that is already built. This paragraph will line up the recommendations taken from the two theories.

Governance

The first recommendation both theories unveil, is related to the governance of our cities. The institutional framework is discussed in the theory of the open city, where it addresses the problem of planning authorities and zoning laws,

as well as in the reversible city that speaks about a flexible governance system based on the different stages. While the open city predominantly discusses the rules the administrative organizations impose on urban designers and project developers and the reversible city addresses more the structure of administrative organizations of planning processes itself, both initiate a change in the governance of cities.

Stages

Both theories also address the necessity for an attitude shift in thinking of stages within our built environment. The open theory shows this shift by explaining the practice of incomplete form and unresolved narratives, where urban designers should not focus on a determined end result of an urban project. The reversible city describes not so much the focus on the end result as a problem, but regards thinking about the afterlife of the things we build as a critical component.

In current practice, the afterlife of buildings or the ease they can be demolished with or distribute its components again, is not taken into account enough in urban design. Changing this in the governance structure by creating responsibility could help this process, but also requires a shift in thinking from designers. This means not only thinking about temporary use of vacant lots, that is suggested in the pop-up literature discussed in paragraph two, but also the logistics and the origin of the material from which it is made.

With a change in government structure that is derived from thinking about the lifecycle of constructions, the urban planner gains more freedom in order to design more flexible and adaptable cities. This requires new thinking in terms of material used for city structures in order to reassemble, demolish or distribute again, but also the immaterial side requires rethinking. Imagining beyond the current life cycle of the built environment, is a task for the new urban designer.

In addition

In thinking about these two theories and what they offer us for urban design, one could argue that one thing is neglected in thinking about the future of our flexible cities: what do we actually know? Focusing the debate on uncertainty of population, ever changing conditions and flows of human movement does not mean that we have no clue about our society or that there is nothing we can plan for. Within the capacity to anticipate forthcoming events by modeling natural and artificial processes or implementing mapping techniques, new possibilities emerge that offer the opportunity for restructuring design and planning processes. In this paragraph, I will argue that in contribution to the previous guidelines from the two discussed theories, cycle studies are essential for the development of urban practice.

Cycles in cities

Urban planner and designer Jeff Kon-Chung Ho explains in *Studies in Temporal Urbanism* (Neuhaus, 2011) his vision on the cycle study as the base of adaptive urbanism. Adaptive urbanism is described here as a study to investigate the underlying principles of long lasting successful cities over changes and apply

them into our future planning. While the previous discussed theories all address adaptability of cities in the ability to accept changes, cycle studies investigate the repeating parts of our cities.

According to Kon-Chung Ho, the master plan should focus more on organization, production and technique as potential generators of form, instead of functions or users, something that is discussed in the reversible city theory as well by using basic elements. But in order to do this efficiently, the study on cycles can provide urbanists with an understanding on how the internal and external logistics flows change in terms of direction and volume. Without an understanding of these cycles and their impact on our daily life patterns, urbanists can hardly formulate the criteria for an urban plan.

Limitations

This paper started by pointing out that urban settlements face increasing flows of human movement and economic crises that modify streams of capital and their allocation to physical components of the city. This immediately shows the critical limitations of cycle studies: that our society is evolving at a faster rate than is foreseeable. Although one could argue that lifespan of buildings becomes so short while we need long-lasting plans for our cities, it is important that urban designers understand preferences for life patterns and their cycles, in order to create a coherence between designs and creating opportunities to adapt to changes initialized by the living patterns.

Future agenda

To conclude, this paper aimed to answer the question what designers can learn from a critical assessment of theories related to temporary urbanism in order to develop new planning and design approaches that explicitly anticipate on the increasing migration and mobility in cities. In order to answer these questions, two theories have been described and compared with each other in order to find their common ground that could be translated into new guidelines for urban design. This resulted in new guidelines on governance, as well as a shift in attitude towards stages and life cycles of our built environment in the city.

Studies on life patterns and cycles of the inhabitants of the city, form a great contribution to these guidelines. Together, these are essential tools for urban planners to address the design of the city. The outcome suggests a promising agenda for further research on new approaches to urban planning, in order for urbanists to make a real attempt to plan for uncertainties in population and create adaptable and flexible mechanisms for the 21st century city.

From theory to design

The theory paper gives answers on how to design in a changing environment. The question that is addressed in the paper is what designers could learn from a critical assessment of theories related to temporary urbanism, in order to develop new planning and design approaches that explicitly anticipate on the increasing migration and mobility in cities. In order to answer these questions, two theories have been described and compared with each other in order to find their common ground that could be translated into new guidelines for urban design. This resulted in new guidelines on governance, as well as a shift in attitude towards stages and life cycles of our built environment in the city. These guidelines had an influence on the design of the strategy for the graduation project.

Governance

Instead of one governance party responsible for the whole project, the governance is depending on the stage of the project in for example the temporary city of Kumbh Mela, described in the paper. Some sort of governance structure could offer possibilities for this project. By making different parties responsible for parts of the project depending on the stage or time, it will fit within the 10 years time horizon of the project and all stakeholders coming from the different population groups, can work together.

For example international companies can be responsible in the first stage, where as employment agencies are responsible for the second phase and the municipality for final stage of the project and the so called 'afterlife'. This part of the theory paper can offer guidelines for the implementation of the plan and in order to answer questions on who is doing what. Also for the transferable strategy, governance should be taken into account and compared in different situations.

Stages

Both theories pay attention to the stages of the project, that for example influence the governance of the project. But they also mention the afterlife of the things we build as important part. This is essential for the design of the graduation project, due to the fact the design is based on a temporary group. When this temporary population either shrinks or disappears, the design still needs to fit within the area.

The theory paper offers examples on how to incorporate the 'afterlife' into design. Examples are in terms of material used for city structures in order to reassemble, demolish or distribute again, but also imagining beyond the current life cycle of the built environment. These options need to be further investigated and could offer ideas for the urban design plan of the project.

Life cycles

In the theory paper, cycle studies are also mentioned. Studies on cycles can provide urbanists with an understanding on how the internal and external logistics flows change in terms of direction and volume. Without an understanding of these cycles and their impact on our daily life patterns, urbanists can hardly formulate the criteria for an urban plan.

By research into the transnational lifestyle and daily life patterns of port workers, cycle studies are taken into account in this research project. Also the flow of people during the ten years of construction of the wind farm is studied. Further literature can be studied on how this can be applied into the design.

Open city

As discussed in the paper, Richard Sennett describes in the open city the attention for the different stages of a project. The urban plan for the graduation project has to do the same. Creating ambiguous edges, incomplete building forms and unresolved narratives are design principles discussed to accomplish a more adaptable design. These options will be studied further and give input for the design.

WORKSHOPS ON MIGRATION

Vote for Space - application

Abstract

The following text is the outcome of a workshop held in Feijenoord, a neighborhood in the South of Rotterdam. The aim of this workshop was to explore the potential of the interstice between urban design and technological applications. The proposal was conceived as a democratic device with spatial implications that allows people to directly choose and intervene on their own environment. The concept consists of an app that allows people to choose physical spaces for potential urban developments. Moreover, it also allows to choose the function that the space would have through a collective decision. The management work would be ultimately translated into a physical intervention based in a collaboration scheme. The app is developed for the neighbourhood of Feijenoord in Rotterdam, but leaves open possibilities for further development in the rest of the city, the country and even the whole world.

Introduction

The workshop has been organized by the chair of Design as Politics at TU Delft as a further research aside the graduation studio "A City of Comings and Goings" 2016/2017. The day was led by Nurul Azlan and Els Leclercq and held in the community center of the neighbourhood Feijenoord in Rotterdam.

The neighbourhood of Feijenoord is strongly related to the topic of migration. Born as a residential neighbourhood, it faced a high influence of foreigners during the 70s. The geographical position of the site in the city of Rotterdam favored segregation phenomena. Placed on the southern bank of the Maas River, the neighbourhood has poor connections to the Northern part of the city and the city center. The geographical and social characteristics have affected the life of the neighbourhood in terms of social interactions and political engagement within the city. The consequences are visible not only from the social perspective, but also in the poor design development of the public space in Feijenoord, creating a big contrast with the rest of the city.

The aim of this proposal is to overcome the situation by giving the inhabitants means to be part of the political life of the city and to be engaged in the transformation of the space. The outcome of the workshop has been the conceptual design of a framework for a device application that has social, political and urban design outcomes.

"Vote for Space!" Application

The app is based on four steps of participation by the user .

1: The first step is about marking empty spaces. Users take a picture of an empty public accessible space that they feel is suited for development. This space then gets marked on the map.

2: The second step is called brainstorming. Users can brainstorm about the activity they want to take place in that particular space. Three categories are provided to keep it simple and clear: #nature, #culture and #sports. In order to inspire the user, for each category an example can be found.

3: Step three in the process is vote! Users can vote on their preference for the development of a particular empty space. The app also allows the user to see the statistics for this space, in order to encourage discussions and campaigns for the development of one space.

4: After the voting process, a decision can be made about the favourable category in which the development for this particular empty space should take place. For the creation and construction of the new space, a responsible inhabitant needs to be assigned within the neighbourhood.

The difference between a survey and a more participatory application like Vote for Space, is that the inhabitants are not only answering the "question", but also choosing which spaces are at "question".

Considerations

The limits and shortcomings of the Vote for Space - application can be mostly found in the last step of the process, which is the creation and construction of the public space. In order to be able to actually realize the project which is voted for, a responsible inhabitant needs to take on the execution of the project. In Feijenoord, the well visited and widely used community center of the neighborhood, is the best place to coordinate this task from.

The concept of the app also leaves possibilities for further development features. The app could facilitate crowdfunding or other financial support for example. The community center would play a leading role in managing and coordinating these projects from the economic side up to their physical realization. Further considerations have to be brought up regarding the people who don't have access to the application. This possible negative aspect could be, instead, turned into a potential if we consider the possibility of the app to create a political/social discussion about the topic raised in the physical world. During the voting phase, the community center could have the opportunity to organize meetings and discussions among the inhabitants of the neighbourhood. People who do not have direct access to the app, could still be encouraged and inspired by other people they meet on the street. This will also encourage the social integration among the inhabitants at Feijenoord.

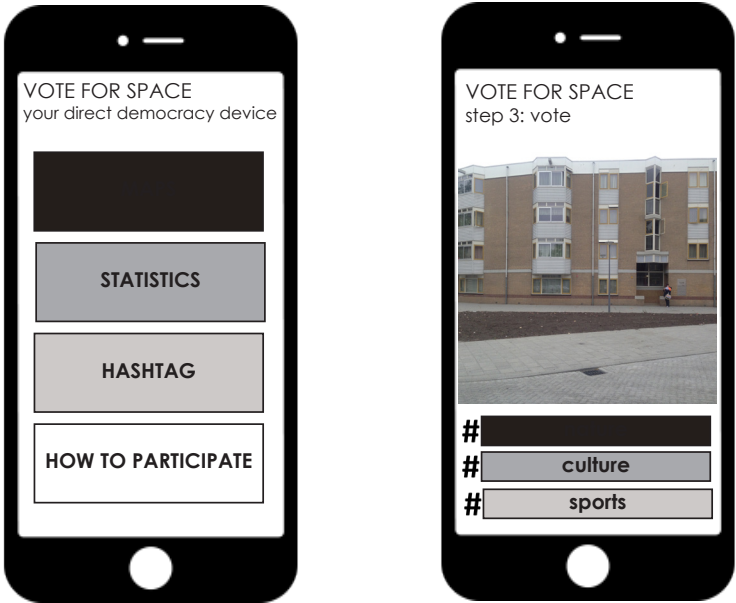
Taking the App a step further we can imagine that its concept would change fundamental ideas about design itself. The relationship among committant – architect – users would radically change in a more participatory/democratic way. The app, in fact, would allow the users to become active part in the very first steps of the design process. The users would work as committants actively influencing the decision making process and possibly also be engaged to the economical aspects. If we imagine the App becoming a city scale, a national scale or a worldwide scale phenomenon, it is possible to imagine that neighbourhoods, cities, landscapes would be directly modelled by popular demand through the imagination and the will of their own users.

Conclusions

The workshop has been a platform to look at different ways to approach participative design and the project of the city. It is clear that, even today, the traditional way to do and understand politics fail to provide equal circumstances for the people, and this is not only because there is an inefficient legal framework, or a poor design planning, but also cultural, social and particular components that affect the specific situations. In that sense, it is our task to review and rethink the political strategies making use of the new opportunities contained in different fields, such as technology, aiming to incorporate them into the design strategy, always focusing it towards the people.

Vote for Space Application is just a first rough idea of what actually could be a new way to approach participative design, allowing people to conceive the public space from its embryonic phase in a truly democratic process that has a twofold aim: on the one hand the improvement and maintenance of the urban public spaces of the city while, on the other, it triggers a new social cohesion that is only the start for a more fair and equal condition amongst the people.

Produced by: Ramon Cordova
 Anouk Klapwijk
 Giulia Spagnolo
 29/09/2016 - Feijenoord Rotterdam



61: Vote for Space application menu's

Delta 3000

Project description

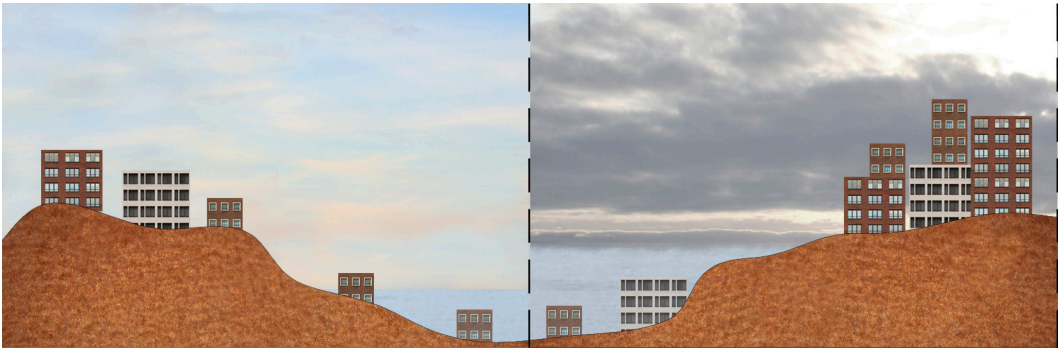
The idea of the Delta 3000 project is to focus on two main effects due to new climate conditions in the Netherlands: a rising sea level and a population growth of 10 million people. Climate change in the Netherlands will result in dealing with more severe droughts, wet periods, a higher temperature and a sea level rise. While these conditions will cause a more Mediterranean climate in the North of Europe that we have to adapt to, the South of Europe and Africa will face severe droughts. These droughts will cause scarcity of food and water, causing a massive migration towards the Northern countries, including the Netherlands.

Delta 3000 proposes to heighten all the land in the Netherlands that is now below sea level with sand, creating a new dune landscape that can enhance further growth of the population and is able to provide fresh water. But instead of just protecting the Netherlands against a rising sea level, the dune landscape also offers possibilities to create a pleasant living environment and think about the way living should be in this landscape. During the workshop, we created a vision and a strategy on how these dunes could be incorporated in the landscape and create a new way of life.

The location we are working on is in the province of Zeeland. This province is a symbol of living with water in the Netherlands and could be the first location and pilot project of the dune landscape, since is not densely built and offers a lot of space for the dune landscape. We think it is important to take into account the main activity within the province, tourism, as well as enhancing the province as a place of lower density and retreat from the Dutch metropolis.

summer 2071

summer 2080



Tidal living

The design strategy is based on living with different water tides, due to the increase of severe droughts in summer (+30%) as well as floods and wet periods in winter (+24%). The main idea of the project is that the space the water leaves for you, decides your lifestyle. In this dune landscape, the population can live in harmony with the water. Instead of adjusting the water to our lifestyle, our lifestyle changes during the seasons. In this way, we can live in a high density when necessary, enjoy the dune landscape and a lower density when possible and meet the demand for fresh water as well.

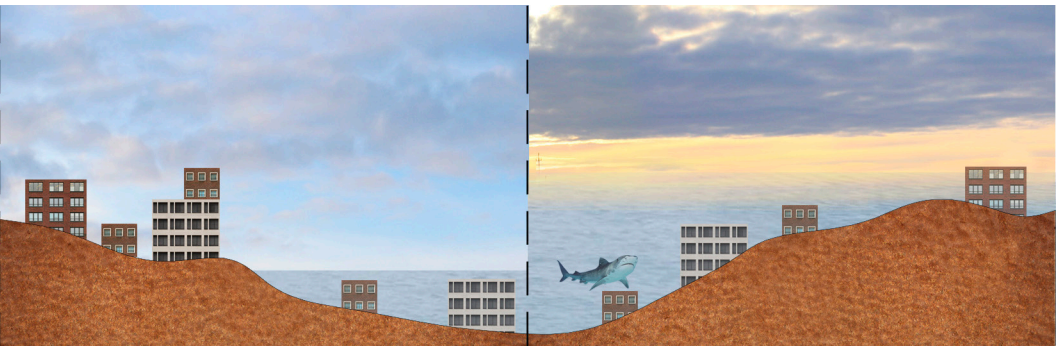
In summer, during the dry period, a lot of land is available and you can live in a low density area. Given the fact future citizens don't have a lot of possessions, they can move to a house in the low lying areas. In this way, summer offers a lot of space during the time you want to use the space the most. This also opens up space to house tourists and tourist activities.

In winter, during the wet periods, the water reclaims parts of the land again. This means that the population will retreat to the higher areas, into the dunes. During winter, the population will live in a high density area, that fits with the colder temperatures and less use of the outside space. Also space provided for tourists in summer, will disappear and hide the vacant hotels and campsites.

Produced by: Ramon Cordova
Anouk Klapwijk
01/03/2017 - ZUS Rotterdam

summer 2091

winter 3001



62: Tidal living conditions in a section.

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Interviews

Willem Weggeman Commercial manager Homeflex, 26-10-2016
Martijn Doens Manager AB Werkt, 30-11-2016

Inspirations

Antonia Weiss | <http://www.antonaweiss.com>
ARCH+ | <http://www.archplus.net>
Baltimore Associates | <http://www.baltimore.com>
Cedric price
Citylab | <http://www.citylab.com>
Harvard Design Magazine
Monu Magazine
OMA Zeekracht | <http://www.oma.eu>
Open act | <http://www.openact.eu>
POSAD | <http://posad.nl>
reSITE Conference | <http://resite.cz>
Stoss | <http://www.stoss.net>
Studio Prototype | <http://www.studioprototype.nl>
Urban catalyst | <http://www.urbancatalyst-studio.de>
ZUS Zones Urbaines Sensibles | <http://www.zus.cc>

IMAGE CREDITS

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006 pag. 24-25	Short Stay City Publication, ZUS

Research

009 pag. 36-37	Siemens
010 pag. 38-39	GE Renewable Energy
011 pag. 40-41	Vattenfall
012 pag. 42-43	Vattenfall
013 pag. 44-45	GE Renewable Energy
017 pag. 55	The Victorian Web, Iersel BV, Ons Zeewolde
019 pag. 58	Google Maps
020 pag. 59	The Eriskay Connection
021 pag. 59	Letchworth
023 pag. 64-65	Municipality of Vlissingen

Design

025 pag. 68-69	Broadcast Flevoland
026 pag. 70-71	Broadcast Reindonk
027 pag. 72-73	Broadcast Flevoland
028 pag. 74-75	Broadcast Reindonk
029 pag. 76-77	Municipality of Medemblik
032 pag. 119	UrbanNext

