

Out of (*urban*) order



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Out of *(urban)* order

/ˈaʊt ˈəv ˈər-bən ˈòr-dər/

- 1 : the current state of urban development is broken or malfunctioning.
- 2 : the hierarchical structure or prioritization within urban planning is incorrect or misaligned.

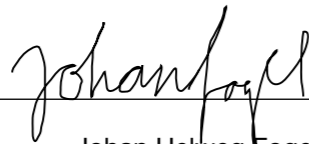
”As architects, we can – and must – be part of the radical change needed, and we must understand the impact of local decisions on the global scale.”

(Pelsmaker et. al, 2022, p. VII)

Abstract



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This thesis explores responsible urban design with a focus on Refshaleøen, an industrial port in Copenhagen. Motivated by curiosity about the societal and environmental impacts that local design choices have on a global scale, it addresses the uncertain future of Refshaleøen.

The study examines the dynamics of urban development, balancing human and non-human agents, including industrial nature, local communities and cultural environment. The project places itself in a rather general discussion of urban development of industrial areas, but aims to answer the overall question through site-specific key findings.

Advocating for a paradigm shift in urban planning, this thesis emphasizes ecological considerations and local community empowerment with a respect for the existing. It discusses how contemporary challenges in urban development can be addressed through physical and organizational strategies. Proposing nature plots, preservation of environments instead of buildings and activating local agents in shaping the city. The thesis aims to set a precedent for future projects by operationalizing strategies into an opening move to exemplify one future.

Central to this thesis is answering what 'responsible' urban planning in the Anthropocene era entails. Hereby highlighting the need for dynamic urban planning, and moving away from rigid, prescriptive planning, it supports adaptive and flexible models.

By flipping the power hierarchy in modern planning, this thesis argues that Refshaleøen can be a flagship of responsible urbanism and standout as an example for other development projects.

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P r e w o r d

This thesis stems from almost five years of learning about Architecture and Urban Design before reaching the final learning curve of a subject that speaks close to our hearts. Within these last 30 ECTS points at Aalborg University learning Urban Design, our shared interest in asking questions and learning by doing led us to a thesis of exploration across disciplines. Ranging from strategic planning to designing in detail, our shared attentiveness to present days trends and challenges finds shape through a public heirloom of Copenhagen, Refshaleøen.

Firstly, we would like to thank our supervisor, Tina Vesterman, for her indispensable knowledge, questions and faith in our project. Her guidance and experience has guided us throughout the entire process, helping us to narrow and scope the project.

Secondly, a big thanks to Mathias Nordby, which knowledge, experience and willingness to help has been a defining factor to kick off this project and searching for the right answers.

Thirdly, we would like to thank our workplaces, Arkitema, Grandville and Werk, for guidance and interest throughout the process of this thesis.

Without their contribution and helping hand, we would not be able to write this thesis. With it, we are to advocate for a paradigm shift within our field of expertise – hoping to inspire planners to let go of the iron grip of power and instead seek guidance from the agents natural to a given site. In doing so, we believe the future looks promising.

M o t i v a t i o n



ill. 1 //Picture from site

*Emma Thompson
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The development of an area isn’t just about buildings; it shapes futures, livelihoods, and ecosystems. When developing something that affects so many, there is an obligation to be aware and careful. This prompts an inquiry into responsible urban design. As the provocative picture indicates, something needs to change. In a more academic sense, the question arises of whether our discussions in urban development are truly comprehensive to address the challenges of our time?

This thesis took its departure within a shared interest in a real-life project facing a bigger urban development. The site should be relevant in the urban scene and align with some of the current challenges and discussions prevalent today. Additionally, there was a desire to select a site with the opportunity of actively participating in dialogue meetings between local users and developer.

This project aims to enter the discourse on responsible urban development by investigating power dynamics and agents involved despite being a new aspect for us. The power hierarchy from different kind of agents is like manoeuvring in a maze, but something we would like to understand more in depth. This exploration delves into a discussion on the balance and the entanglement between human and non-human agents in urban development.

Hereby, this project aims to find a balance between a radical* but to some extend implementable future for Refshaleøen - an experimental approach that diverges from the sociocentric* approach and calls for a paradigm shift.

The title carries two meanings. Firstly, it suggests that the current state of urban development is broken or malfunctioning. Secondly, it implies that the hierarchical structure or prioritization within urban planning is incorrect or misaligned. This dual interpretation captures both the functional and structural issues in contemporary urban development. Something is ‘Out of urban order’.

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Reading guide

an overall introduction

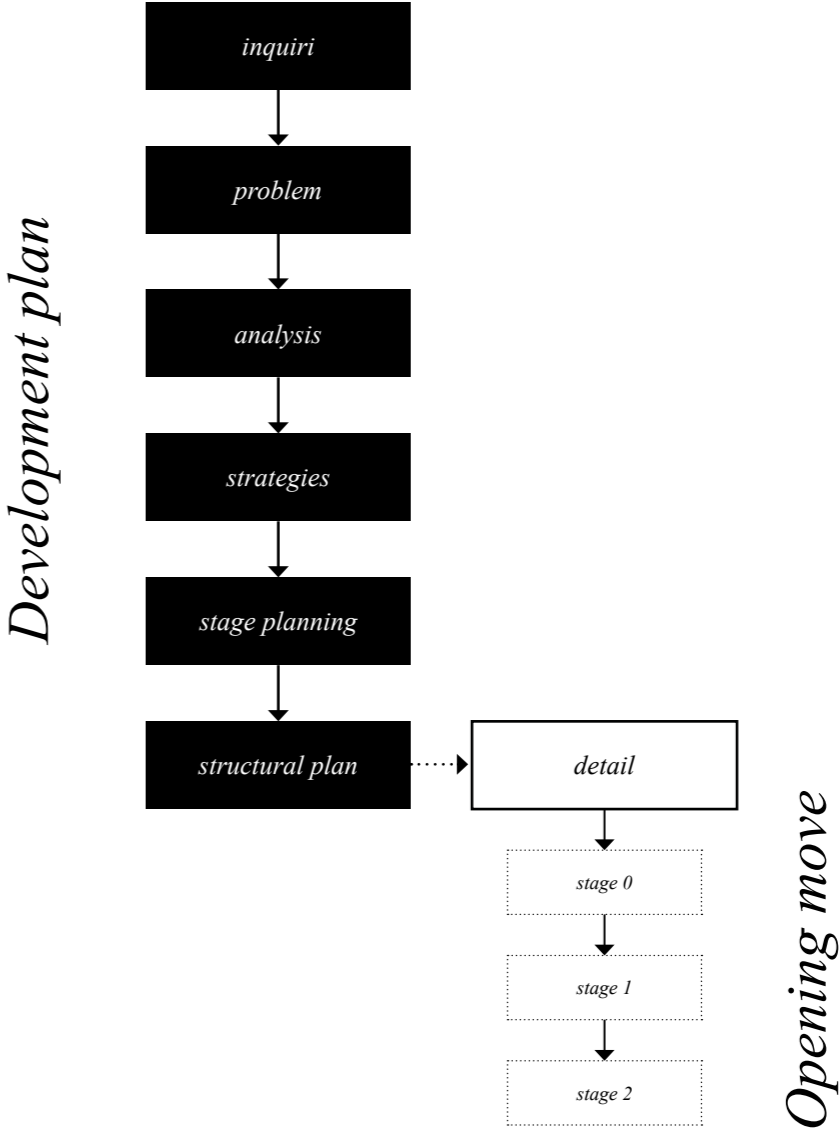
This thesis aims to contribute new perspective on Danish planning and the decision makers hereof. The project proposal is a rethinking for the future approach to urban development, contributing to a discussion on what responsible urban development entails with a specific focus on the three themes; nature, cultural environment and community whilst being aware that there are other conditions.

The output of the project contains two parts - a strategic approach in the form of a development plan* to answer the overall question of this thesis - and an opening move operationalising strategies in a smaller scale to show one scenario for how they can be implemented in a physical design. The different parts of a development plan as seen on ill. 2 will be elaborated throughout the thesis.

At the end of each chapter, sub-conclusions are provided to summarize key findings and insights. These sub-conclusions serve to enhance the reader’s understanding of the main points discussed in each chapter and facilitate the overall comprehension of the thesis.

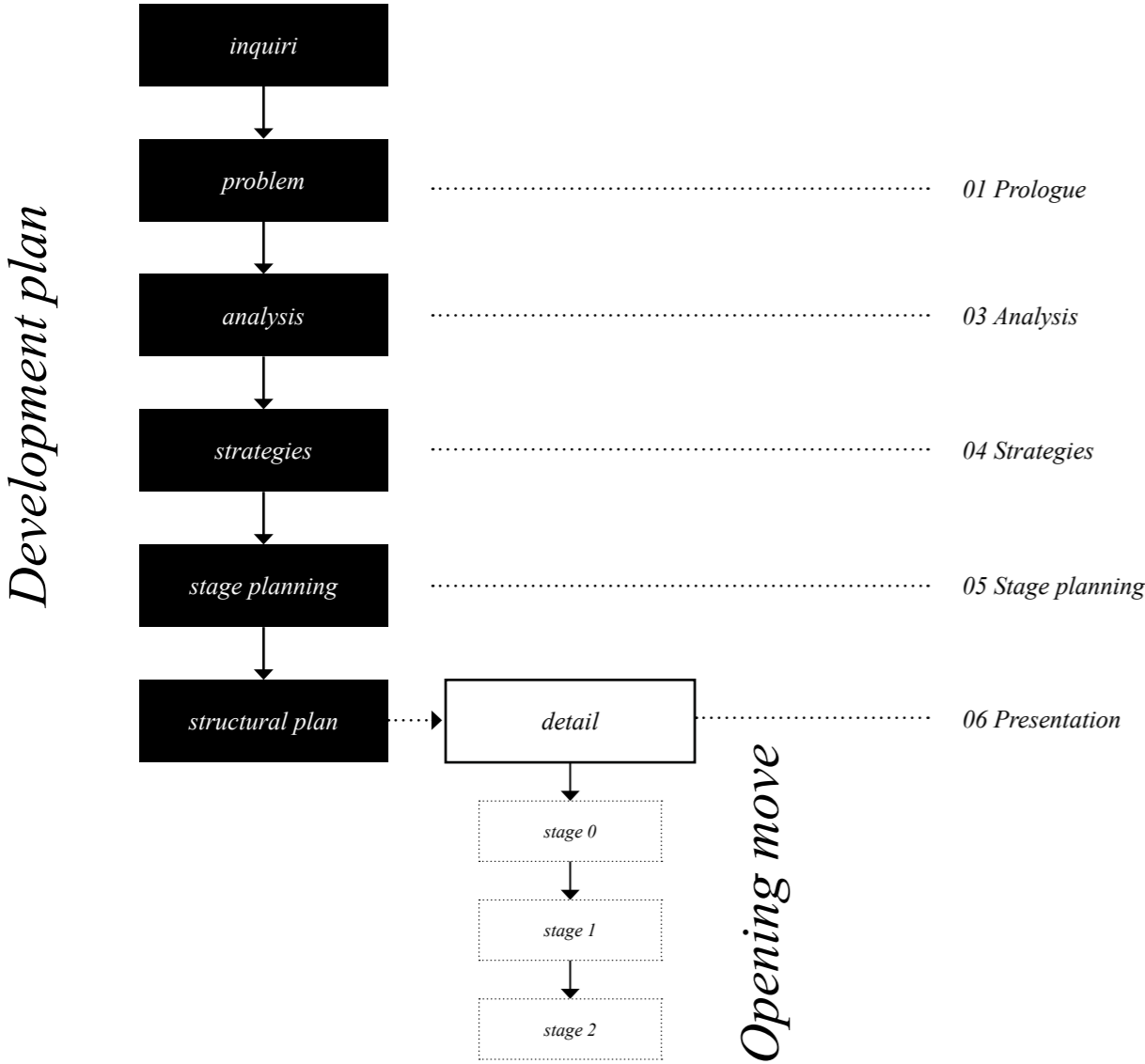
A dictionary containing important words for this thesis is placed at the back where they are elaborated. The first time a word is introduced, it is marked with an *.

Throughout this thesis, the Harvard referencing style is employed for citing sources. Danish quotes included in this thesis are freely translated into English for the convenience of the reader. The translations aim to accurately convey the meaning and essence of the original Danish text. Maps included in this thesis are oriented with north pointing upwards unless otherwise indicated by a north arrow and the scale of each map is clearly provided.



ill. 2 //Overview of output

an overview of chapters



ill. 3 //Overview of chapters related to output

- 01 Prologue**
The first chapter frames the situation by starting in a national scale, gradually zooming in to the local site with facts regarding national challenges such as climate change and mental health. Continuing with an exploration of municipal challenges such as population growth and how to approach urban development of Copenhagen. An argumentation for the site selected is outlined. Summarizing the identified challenges, the central problem statement driving this project is presented followed by the methodology employed to address it.
- 02 Place, Palimpsest and Power**
The second chapter imply theory about place, palimpsest and power. The purpose is to get a more nuanced vocabulary and help understand how to discuss and identify complex challenges. The theoretical section investigates the importance of understanding past and future to work in present as well as how to give power to important agents in a site-specific context.
- 03 The layers of Refshaleøen**
The analytical chapter uses a multiscalar approach to understand important agents in-depth as well as the hierarchy tying them together. This chapter is divided into four parts, starting off with a general structural understandig of the present state of Refshaleøen. It then progresses into analysis divided into the three themes of this project, each presented as 'lessons' to emphasize the active learning process. As we navigate through the site, it informs and educates us along the way.
- 04 Strategies**
This chapter presents the strategies suggested as part of a robust way of planning. The strategies are divided into the three themes of this project; nature, cultural environment and local community. Each theme has an organizational and physical strategy.
- 05 Stage planning**
The fifth chapter contains prerequisites and constraints for the project site inspired by the strategies, followed by a explanation of how these become local conditions.
- 06 Presentation**
In this chapter the design of Refshaleøen is presented in the form of a structure plan* and a opening move detailed in three stages of the developement. This will be supported by sections illustrating different scenarios as they unfold.
- 07 Epilogue**
The final chapter aims to answer the central problem statement presented in chapter 01 additioned by a critical reflection.



This chapter will introduce the national challenges and trends that this project will interfere with, starting off in a national scale and slowly zooming in to the project site and an argumentation for the chosen site. Finally, this chapter will introduce the problem statement, and the methodology used in this project.

Green transition

climate legislations in Denmark

Danish urban development is encountering a paradigmatic transformation. The world is in the midst of an overarching climate crisis that demands action and significant reduction in greenhouse gas emissions – in the short term!

Denmark is a party to The Paris Agreement, which is a legally binding climate agreement resulting from the 2015 Conference of the Parties (COP21) in Paris. The main purpose of the agreement is to reduce the global temperature rise. More specifically to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels” and pursue efforts “to limit the temperature increase to 1.5°C above pre-industrial levels.”

Crossing a temperature increase of 1.5°C poses far more severe impacts such as more frequent and severe droughts, heatwaves and rainfall events.

To achieve the goal of limiting global warming to 1.5°C, greenhouse gas emissions must peak before 2025 at the latest and decline by 43% by 2030. (United Nations Climate Change, 2015)

Additionally, Denmark has implemented a climate law stipulating that greenhouse gas emissions should be reduced by 70% by 2030 compared to 1990 levels. Furthermore, Denmark aims to achieve climate neutrality by 2050. However, the government has proposed advancing this target to 2045 and setting a new goal of achieving a 110% reduction in emissions by 2050. (Klima-, Energi- og Forsyningsministeriet, 2023)

It involves a lot of numbers, which can be difficult to relate to, and the question might arise, how is it going? In 2023, globally, it was the hottest year ever measured, and the global average temperature approached the 1.5°C threshold, one of the goals of the Paris Agreement. Everything indicates that higher temperatures and more extreme weather are something we are moving towards, with heat records broken every year. (Winther-Have, Karlskov, Esbjørn, 2024) The World Overshoot Day in 2024 was on March 16th, and compared to last year, we exceeded the world’s resources 12 days earlier (Miljømærkning Danmark, 2024). On April 6th Vejle Fjord was buried as a markation of deoxygenation of Danish waters. 7.500km2 of Denmark’s coastal waters was in 2023 affected by deoxygenation – an area larger than Zealand (Justesen, 2024). The consequences of climate change are starting to get visible in Denmark. The drastically declining biodiversity can be considered the beginning of a new mass extinction event (Tønder, 2020).



ill. 5 //Death announcement of Vejle fjord. Photo: Jonathan Slyngborg Fjord, &Co. / NoA.

climate challenges in the cities of Denmark

In general cities are a good thing when it comes to sustainability and the possibilities in the climate- and biodiversity crisis. In the cities many live small, dense and tall. Most citizens use public transport, bicycles or simply walk. Further, a strong community arises, when the space is tight. Lastly, when densifying in cities, more land will be offered for forests and green structures to grow and make room for animal and plant species. (Hansen, 2021)

Why is it then necessary to think green solutions in the urban areas? The development of cities is often equal to paved surfaces such as roads and buildings which replaces local nature and ecosystems. The reason for this is that materials as asphalt, concrete, metal and glass are cheap, durable, and fast to build with. The cosequenses of paved surfaces are easy to identify and increase the cities vulnerability to climate changes.

”Research shows that surface temperatures in the world’s cities are rising twice as fast as the global average. ”
(Winther-Have, Karlskov and Esbjørn, 2024)

With the expansion of paved surfaces, the availability of green spaces diminishes, depriving us of natural cooling through shade and evaporation. The urban environment, characterized by paved landscape, limited vegetation, and high human activity, contributes to what is known as the urban heat island effect, where cities experience higher temperatures compared to their surroundings.

Moreover, the structure of cities characterized by paved surfaces, puts them at risk of flooding during rain events, storm surges, and rising groundwater levels. This poses consequences as overloaded sewers where polluted water will run through streets and inundate basements and low areas in general. With nowhere for the water to infiltrate due to the city layout, the risk of flooding becomes exacerbated.

As the statistics on the right shows, although urban areas occupy only 3% of the world’s land area, the concentration of humans combined with the physical structure within the urban areas are contributing to the global CO₂-emissions whilst being especially vulnerable for climate changes, and the urbanisation makes more people affected by the effects. Rising temperatues and the increased risk of flooding pose critical challenges for both human population and ecosystems. The consequences of the structure of urban areas affect all forms of life. The health and resilience of cities and their populations depend on ecosystems and biodiversity as they make the urban areas more resilient to the climate changes. (Winther-Have, Karlskov and Esbjørn, 2024)

68% *of the worlds population will in 2050 live in urban areas.*

75% *of the global CO2 emissions are accounted by urban areas.*

3% *of the world’s land area are made up of urban areas*

ill. 6 //Statistics on urban areas. Statistics: Winther-Have, Karlskov and Esbjørn, 2024, p. 5

Health threat

the mental challenges in the population

Besides the climate crisis, there is also a crisis in the form of mental health, and since the majority of the population lives in cities, it is important to consider this when developing our cities.

World Health Organization (WHO) has declared loneliness a global health threat, and in Denmark, about one in eight people feel lonely. Additionally, one in ten adults often feels alone even though they want company. There is an increase in the amount of people who are stressed, depressed, or anxious. (Sundshedsstyrelsen, 2023)
It is almost irrelevant which parameter you look at within mental health – it is moving in the wrong direction.

All red lights are flashing, and there is a need to prioritize communities and mental well-being when developing our cities, which will host our future homes, workplaces, and framework for everyday life. It is needed to think in more responsible ways and promote health-enhancing parameters in the structure of our cities.

As an example, several countries and cities have introduced the practice of prescribing nature. In Canada and Scotland, doctors can prescribe 'time in nature' to their patients (Nielsen, 2022). In Denmark, the Municipality of Silkeborg has introduced a program for citizens on sick leave and unemployed individuals with stress, anxiety, or depression, called 'Nature on Prescription' (Sundhedshuset Silkeborg, n.d).

The prevalence of adult loneliness increased by each survey year over the entire period (from 13.2% in 2000 to 27.4% in 2021 among men and from 18.8% to 33.7% among women).

(Girault et al., 2023)

WHO declares loneliness a health threat

(World Health Organization, 2023)

”From 2010 to 2021, there has been a total increase of 8.3 percentage points in the proportion of people with a high score on the stress scale, from 20.8% to 29.1%.”

(Sundshedsstyrelsen, 2021, p. 40)

”Depression and anxiety continue to be illnesses with a significant impact on the disease burden, as seen in the reports.”

(Sundshedsstyrelsen, 2023, p. 14)

Densifying Copenhagen

urban development in Copenhagen

Copenhagen is an everchanging metropolis, constantly evolving as development becomes an inevitable result of its popularity. With more and more newcomers, the capital is housing more than 650.000 inhabitants, a number that continues to grow as ill. 8 indicates. In 2022 alone, Copenhagen Municipality grew with 9.200 newcomers. By 2050 it is expected that Copenhagen will grow by an additional 100.000 residents, particularly along waterfront areas and former industrial areas. (Københavns Kommune Økonomiforvaltningen, 2023)

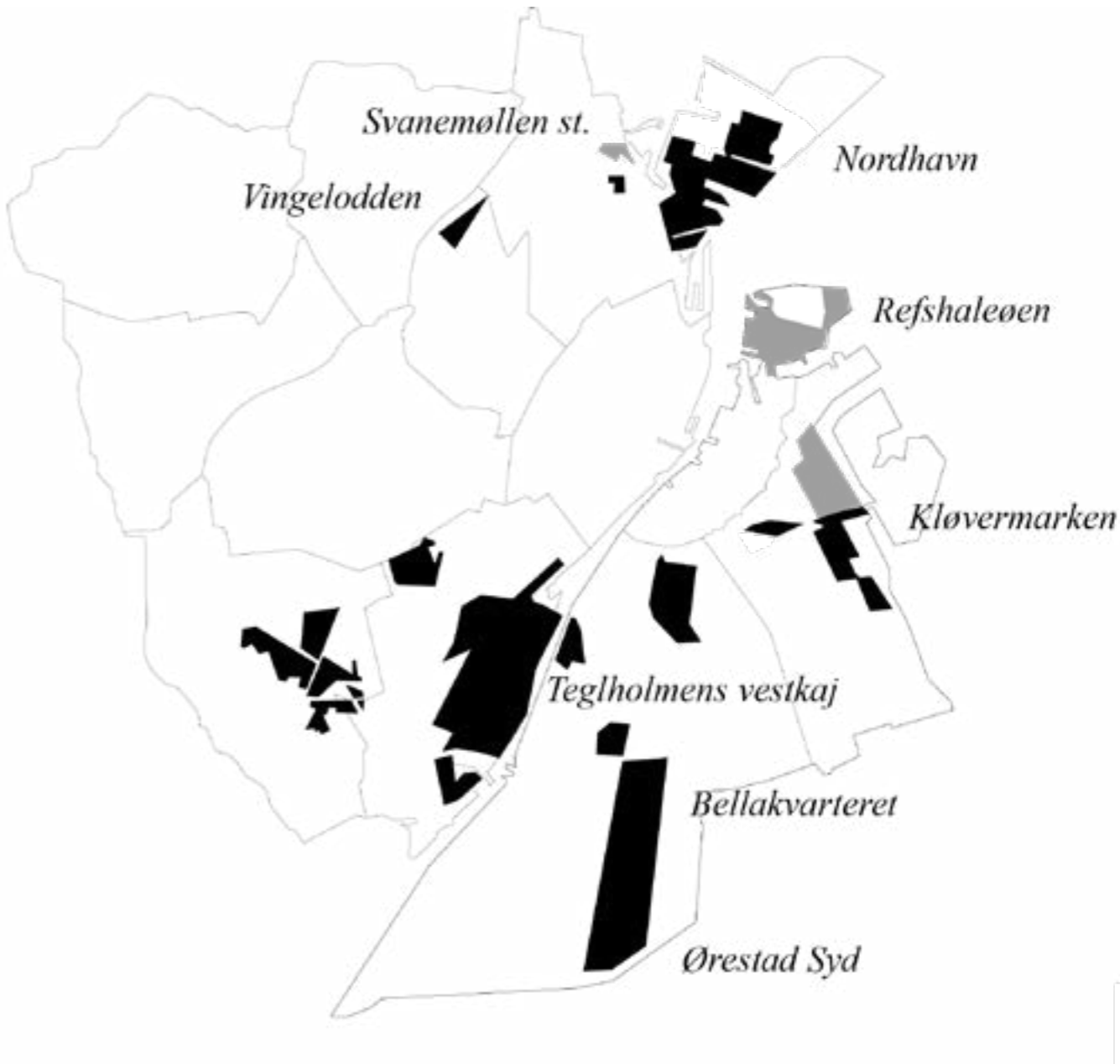
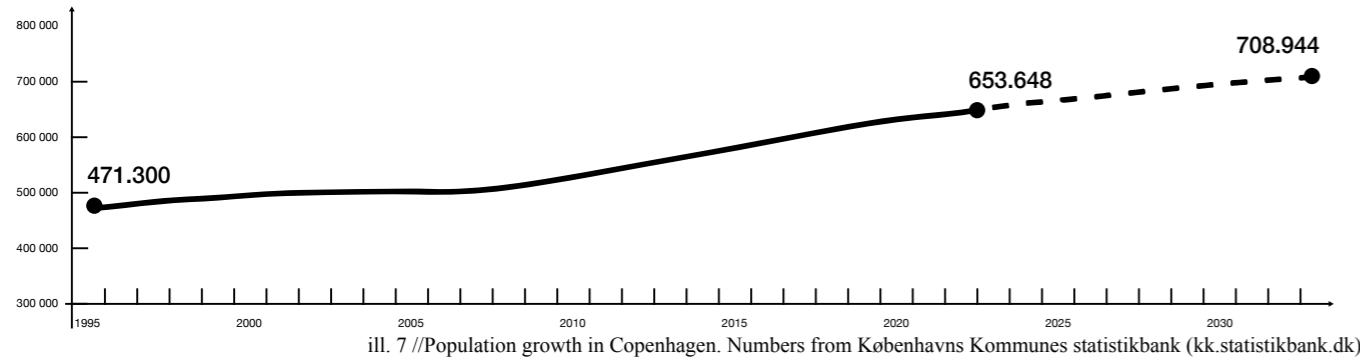
In response to population growth, Copenhagens Municipality typically plans new areas for urban development, expanding the city's footprint. In 2021, this resulted in 6600 new housing projects. The placement of these projects is typically in existing industrial areas earmarked for urban development. To some extend the existing city is also densified. (Københavns Kommune, 2023)

A new municipal plan, which has been sent for internal consultation and is expected to be adopted by the end of 2024, will be the framework for Copenhagen's physical development for the next 12 years. The draft proposal for the municipal plan 2024 is titled 'Fremtidens Klimavenlige Hovedstad' (english: the future climate-friendly capital) and here Refshaleøen is mapped as an area for development. The draft is focusing on five main themes:

- The capital's urban development and mobility
- Housing and connected city
- A city with business and study environment
- A healthy climate city with space for nature, culture and leisure
- Development with respect to the spirit of the city

The trend of living in Copenhagen necessitates the development of adjacent areas, often involving the transformation of industrial zones into urban spaces, such as ports. These areas usually host smaller creative businesses due to low rent, but when the development of an area begins, the rent increases pushing the smaller local businesses out of their facilities. (Valdimarsson, 2023)

Development of former industrial areas must be approached with sensitivity, balancing the needs of existing communities with those of newcomers.



Infrastructure

financing Østlig Ringvej and M5

As previously mentioned, Refshaleøen has been designated as a perspective area for urban development. This designation was part of the Municipal Plan of 2009 and again in 2019 where the timeline was set for 2031, as the urban development of Refshaleøen requires improved infrastructure. (Københavns Kommune, 2019)

However, the political approval to start the construction of Lynetteholm as a soil receiving facility has accelerated these plans. Lynetteholm is an upcoming islet attached to Refshaleøen, and is not part of the Municipal Plan 2024 but should be seen as a long-term contribution to the development of Copenhagen and ultimately be part of the solution for flood protection, soil deposition, and accommodating the city's growth towards 2070. (Københavns Kommune, 2024)

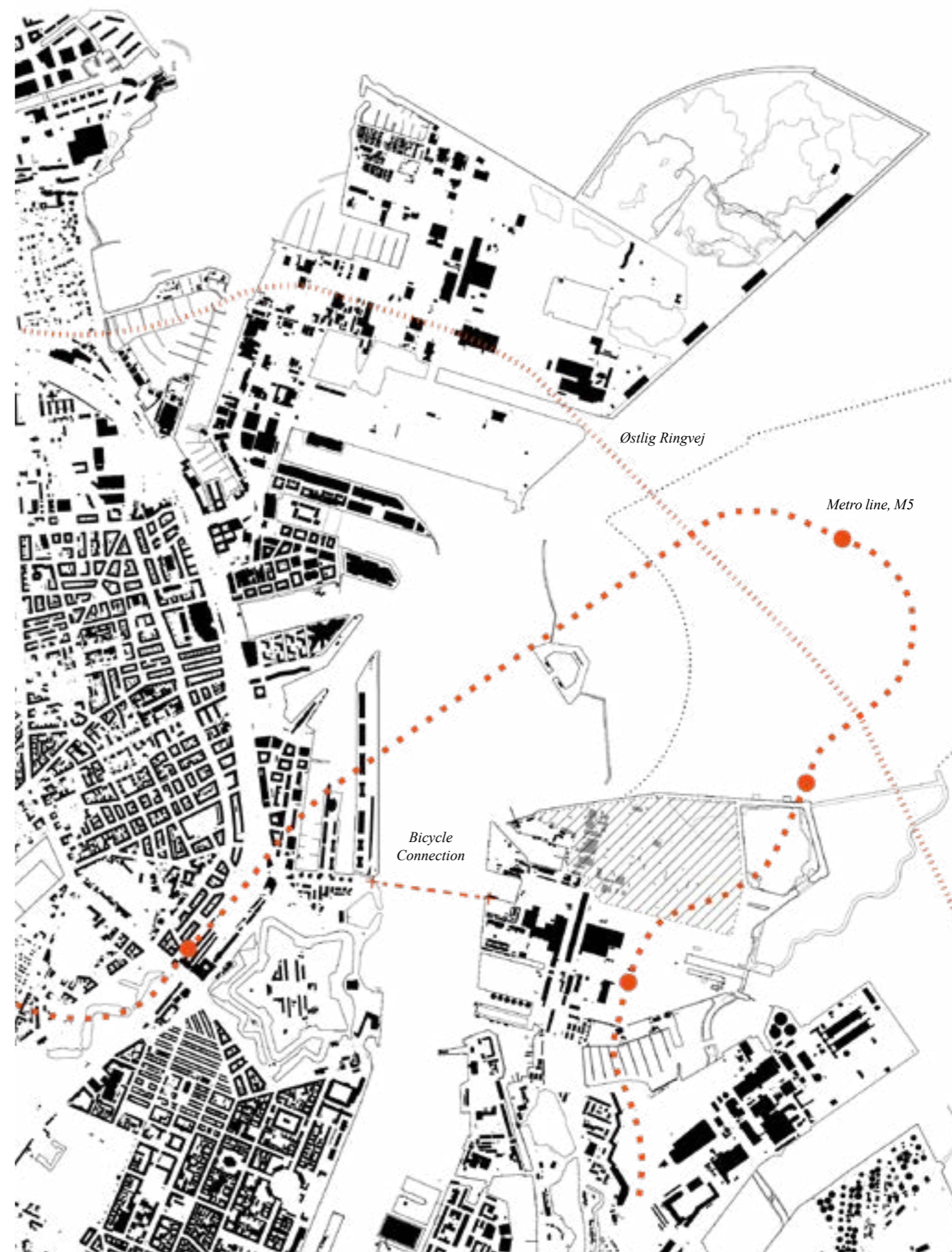
The draft for the Municipal Plan of 2024 identifies Refshaleøen as one of four new urban development areas, but the development of the area is contingent upon the establishment of the associated infrastructure projects to Lynetteholm. This includes the Østlig Ringvej and the new metro connection, M5, the route of which can be seen on the map in ill. 9. (Københavns Kommune, 2024)

This acceleration is partly due to the fact that the urban development of Refshaleøen is intended to help finance the new infrastructure planned to serve Lynetteholm, and thus Refshaleøen as well. (Rasmussen, 2018)

In close connection hereto, a densification of the built environment is needed in order to gain a larger population on the half-island and to finance the new infrastructure. The exact numbers are inconclusive, and the scope of densification is yet to be determined. (Københavns Kommune, 2024)

Further, Copenhagen Municipality is also in the process of exploring the possibilities for a bicycle connection between Østerbro and Refshaleøen. (Københavns Kommune, 2024).

For this project it is relevant as a new metro station and a possible bicycle connection will work as new arrival points in the future, and the fact that Refshaleøen will transform from being an end destination to a connector from the inner city to Lynetteholm.



ill. 9 // Infrastructural plans affecting the development of Refshaleøen

Competition

the future of Refshaleøen

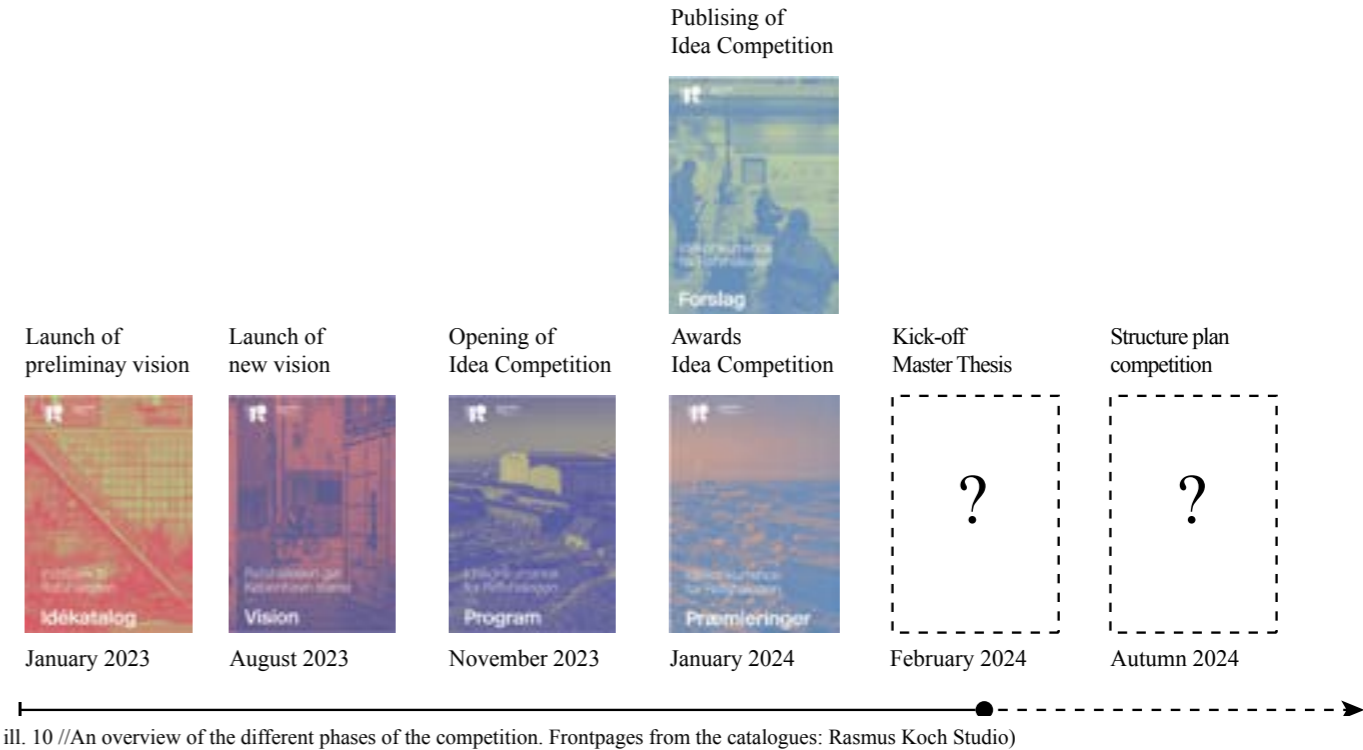
1. We will be able to recognize Refshaleøen in the new neighborhood!
2. We will approach the green transition ambitiously!
3. We will develop with space for urban nature, movement, and strong communities!
4. We will create an archetypal Copenhagen district!

(Refshaleøens Ejendomsselskab A/S and By&Havn, 2023)

With the acceleration of the development of Refshaleøen, the property owners have started a competition. The property owners of the development area on Refshaleøen consist of Refshaleøens Ejendomsselskab A/S and By & Havn I/S. In the winter of 2023 Refshaleøens Ejendomsselskab og By & Havn initiated a 2 yearlong public process divided into three phases to ensure a solid foundation for the further development of Refshaleøen. The three phases consist of

- A vision and idea phase with input from citizens and experts in the spring of 2023
- An open idea competition in the fall of 2023
- A structural plan competition in the fall of 2024

At present, the first two phases have been completed, and the winners of the idea competition have been announced in the five categories based on the four visions and an open category. The next step in the development process is to select five participating teams through an EU tender process, with a deadline of June 17 this year (2024). Based on the idea competition and contributions to Refshaleøen, the property owners are expected to announce a structural plan competition in the fall of 2024 which will serve as a foundation for the work towards a new local plan for Refshaleøen. (Refshaleøens Ejendomsselskab A/S, n.d.)



ill. 10 //An overview of the different phases of the competition. Frontpages from the catalogues: Rasmus Koch Studio)

Why Refshaleøen?

a site introduction

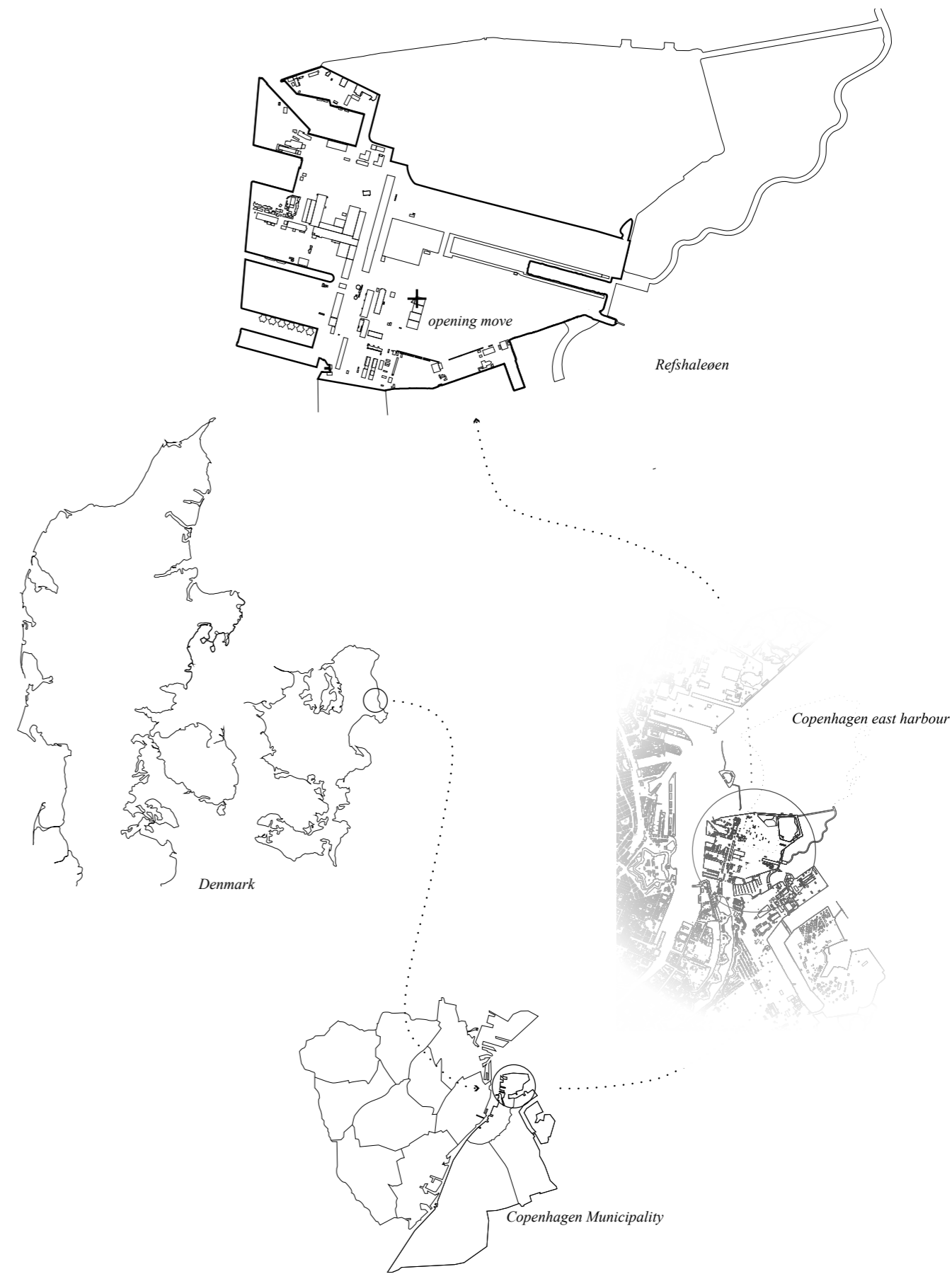
Within the capital, Refshaleøen is placed as part of Copenhagen’s East Harbour. An artificial islet with a unique identity deeply rooted in the built environment and the life in between the buildings. It used to be an industrial port, employing more than 10.000 workers making it a special place for several. Today it holds a more creative identity with a variety of temporary functions. Like many other industrial areas Refshaleøen has its strength in its profound identity and existing qualities.

Refshaleøen has been chosen as site for several reasons, besides being present in the plans of the urban development of Copenhagen. It is an ongoing real-life project where both locals’ concerns and the owners’ interests can be explored, allowing us to actively take part in the process of this project.

Moreover, Refshaleøen presents a complex platform for urban planning, encompassing cultural environment, nature and local community aspects. What sets it apart from other development projects is its availability for exploration and utilization during the waiting position that it naturally is as a perspective area for Copenhagen Municipality. Refshaleøen offers communities and citizens the opportunity to occupy and shape the area before the development, laying the groundwork for further development.

Further, it serves as a promising starting point for addressing national challenges at a local scale. It works as an example for a larger generic discussion setting an example for adjacent projects like Kløverparken, Ydre Nordhavn and potentially Lynetteholm, as they are facing development in the coming years. Refshaleøen is a natural testing ground for innovative solutions and adaptable strategies, with the potential to serve as a pilot project for responsible urban development that prioritizes the well-being of residents and the environment.

Refshaleøen is a valuable asset as an example of a responsible approach towards urban development within Copenhagen’s landscape.



ill. 11 //Location of project site

In - flight

how is power balanced in responsible urban design?

In line with the increasing population growth there has been a focus on transformation of Danish industrial sites. Many of them being old industrial areas or harbour environments. All of them has significant value for what Denmark once was and each of them tells their very own story. These industrial areas have been replaced with new dense urban areas. The pressure from the population growth seems to often squeeze out the traces of heritage. But it is not only the heritage that has an important role for these areas. Many of them have been inhabited by small creative communities, in the hunt for lower rent, making these places even more unique. Furthermore, we face a climate crisis with increasing temperatures, declining biodiversity and dying seabeds right at our own front door. Therefore, we question the balance structure in modern Danish planning and call for a paradigm shift.

To answer the curiosity, "*How is power balanced in responsible urban design?*", we need to dive into Refshaleøen. It takes a deep understanding of the specific site in order to fight these national and global challenges. The project has divided the main question into three site specific lessons:

Lesson 01: The industrial nature of Refshaleøen:

How can the selfgrown industrial nature on Refshaleøen be an agent in the future development?

Lesson 02: The cultural environment of Refshaleøen:

How do we understand the industrial environments of Refshaleøen and transfer it into new urban contexts?

Lesson 03: The local community of Refshaleøen:

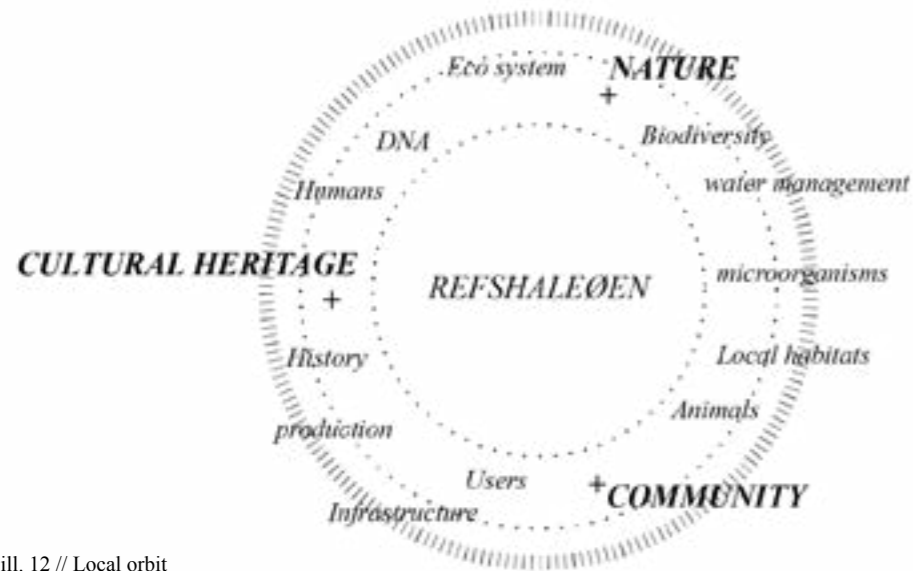
How do we ensure the creative community is not out-phased, while making space for new social constructions?

Each lesson will bring us closer to discuss the main question with new perspective on urban planning.

*How is
power
balanced in
responsible
urban
design?*

Methodology

a two-folded approach

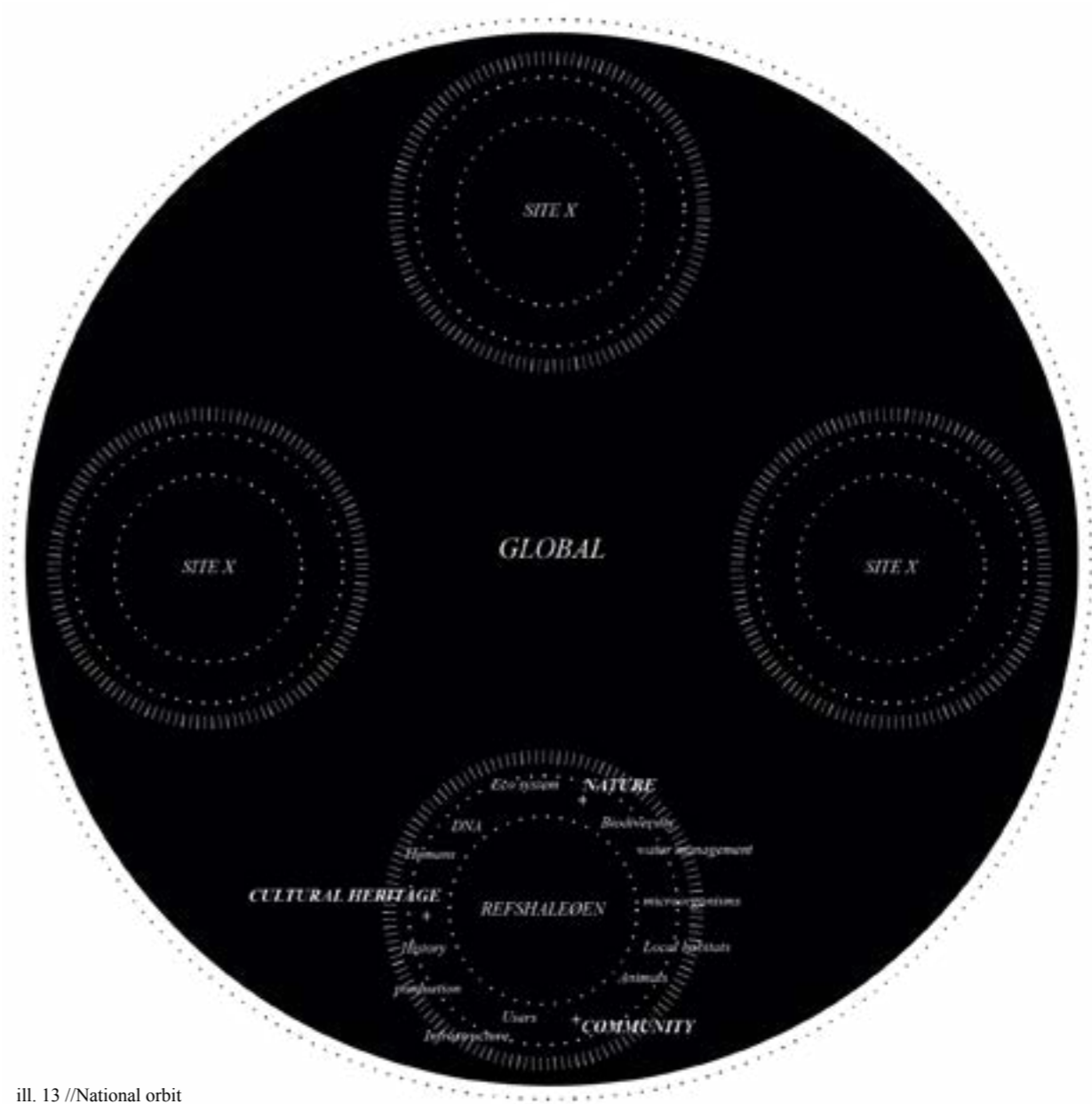


ill. 12 // Local orbit

This thesis aims to enter a discussion about responsible urban planning and therefore seeking new perspectives towards modern planning. The project places itself in a rather general discussion of urban development of industrial areas, but aims to answer the overall question and debate through being very site-specific - making the methodological approach two-folded.

Understanding Danish development models and national trends has been important in order to be informed of the general challenges in our field. However, to find solutions to answer the broader picture it has been necessary to work in-depth with Refshaleøen. Trying to operationalize chosen theory to the site and using the site as a complex platform to discuss the more general concerns of responsible urban planning. The themes this project will be working and learning from, all resolve around general challenges, but fitted and answered through the site.

The choice of why this has been the primary method is because we believe that if a green and responsible transition of existing city areas is to be successful, it will take a deep understanding of the very specific urban typologies, their unique qualities, challenges and potentials. Understanding and fighting global challenges must be done through the very specific site itself.



ill. 13 //National orbit

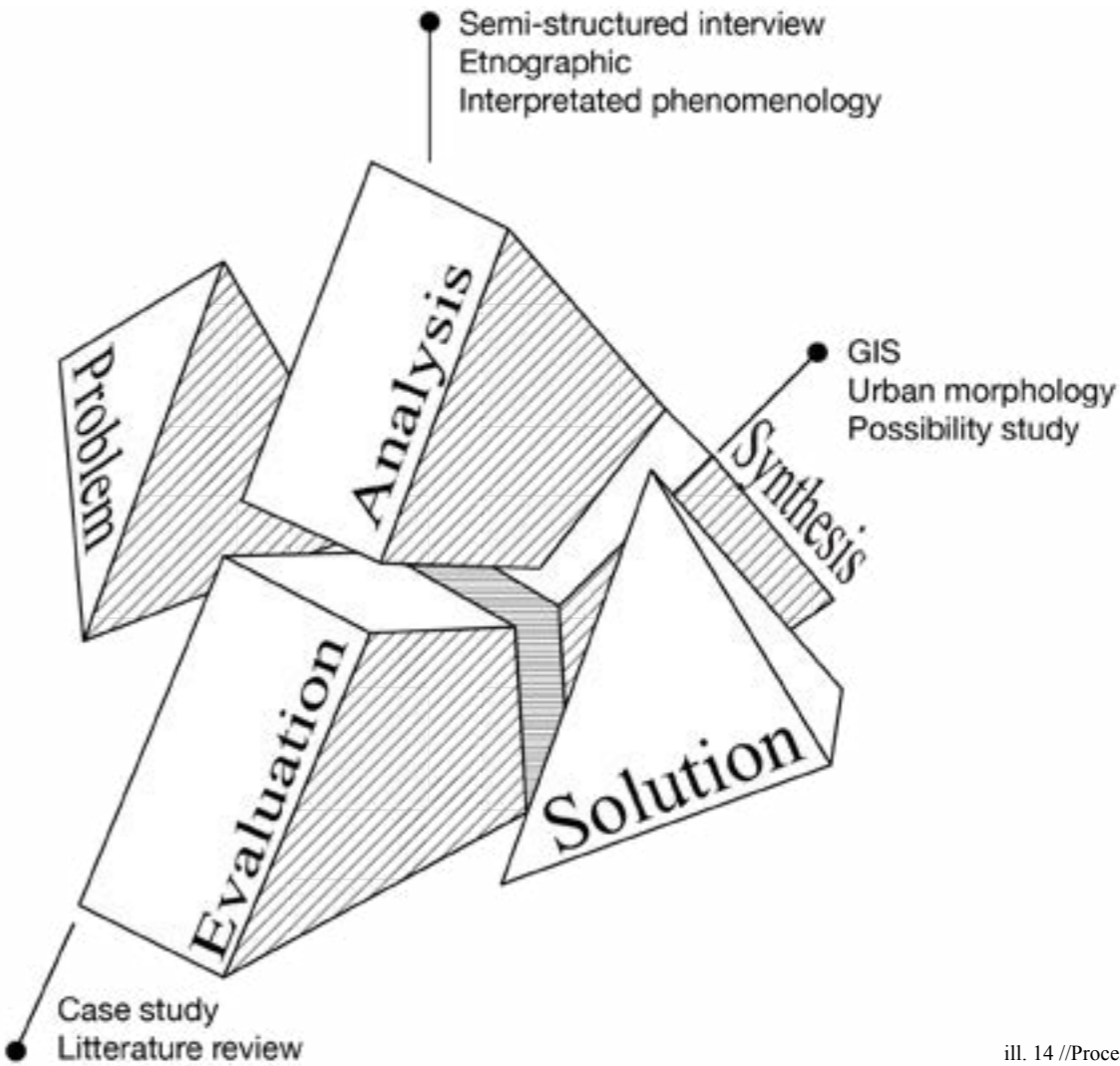
the iterative process

To approach this thesis is to balance a complex task involving multiple agents juggling simultaneously. By working with a holistic ideology of treating a phenomenon in relation to its entirety instead of as individual pieces, we secure a process of working towards a wider and deeper understanding of the matter at hand. To grasp a holistic approach is to acknowledge what we don't know.

“Put a group of architects, urban designers and planners in a sight- seeing bus and their actions will define the limits of their concerns. The architects will take photographs of buildings, or highways or bridges. The urban designers will wait for that moment when all three are juxtaposed. The planners will be too busy talking to look out of the window.”
(Brown, 2009, p. 77)

Whilst this thesis is created and thought through by three soon-to-be urban designers, the lack of nuances in profession is compensated for by listening to the agents of Refshaleøen. Because the change in domain, experiences and backgrounds all contribute to a more encapsulating outcome. Without connecting fields of expertise, the ties between will never fully be understood and therefore not produce an optimal design solution. This leads to the approach within this thesis of problem and solution informing each other. Providing an answer often fosters new enquiries and sketches of solutions provided without entirely knowing why it is a good idea, participate in the discussion of what is the right choice. Through analyses, synthesis and evaluation, the exploratory process of getting to know the project imbursed into a thesis both wanting to become radical and possible, subjective and objective, new and traditional, global and local. And with that level of ambition, experts need to be involved.

In ‘How designers think’ by Bryan Lawson (2005) a point he continues to revisit is the argument that a method for designing is somewhat impossible to reduce into some simple steps towards the right solution. First off, because a ‘right’ solution will never exist. Secondly, a thousand solutions could perform just as well as the chosen. And therefore, the design process will be able to continue on for eternity – iteration after iteration. What can contribute to the process and push a design thinking towards a solution for enquiry, is by being aware of contemporary phase and what it contains. By understanding how we think when we are thinking, phases of designing help control a complex matter on hand and to navigate in the messy process of potentials and challenges. Because to know what you do not know is to be aware of what tools one needs in order for the knowledge to be gained.



ill. 14 //Process

A n a l y t i c a l t o o l s

Semi-structured interviews

To learn from the best is a valuable tool in trying to understand and expand one's knowledge field. When conducting interviews, the quality of learning and understanding unfolds a palette of opinions, experiences and approaches to a shared topic. By conducting interviews through a semi-structured sense, the participant helps shape a dialogue within their field of expertise expanding our knowledge of influential factors behind physical planning and public knowledge.

Case studies

Being prompted by case studies is to learn from experience. Case studies provide answers to complex matters of interests through unravelling the relations between a phenomenon, context and social structures. By looking into two past development plans of large urban transformation projects in Denmark, strengths and weaknesses contribute to this thesis' aim of providing a realistic output.

Field research

A valuable field research method is site visits. To explore first-hand can be overwhelming. Impressions forms at first glance and often overwhelm. To structure site visits is to acknowledge that not everything can be mapped in one visit and more profitable when having objectives related to the research goal. The following methods have provided with valuable insights of Refshaleøen's layers.

Interpretated phenomenology

To experience the site first-hand is to provide an in-depth understanding of the phenomenon on-hand at Refshaleøen. Sensing and feeling on own body are to connect personal experience with a global phenomenon to tap into the spirit of a place. Through interpreting of gathered observations, a hermeneutic processing provides the data needed to converse findings with participants, data and theory leading to identified themes and multiscale analyses. By acknowledging the subjectiveness of participants, observations foster findings instead of a predetermined enquiry. (Smith, 2009)

Urban morphology

Through field research and processing of, a deconstruction of structural forms provides an understanding of the assemblage present and the relations that connects. Just as disassembling of a LEGO set, separating the pieces informs of its complexity and the layers present. The information of physical and social structures intertwined maps the urban fabric and informs direction when unfolding Refshaleøen as a palimpsest.

Ethnographic

An ethnographic approach helps informs the social and cultural layers by observing, interacting and participating in activities related to site. Especially through participant observations, an insight of different communities' opinion, experiences and ambitions for Refshaleøen provides a holistic approach to transforming which includes identifying potentials and challenges worth processing. By participating in public meetings, interacting with locals and attending events on-site, a thorough investigation provides insights beyond corporeal matter.

Remote sensing

In addition to field research, desktop research provides the remote sensing of a site. This approach provides overview and synergy between what is observed and what it means as well as enabling complex matter to be mapped and analysed. Strong key points are fostered by quantitative and qualitative answers coexisting and informing each other. The result is lessons unfolded through topics of different characteristics.

GIS

Geographical Information System, in short; GIS is a tool to work, present and understand in three dimensions across topics through remote sensing. By identifying and treating relations within structural, demographic and geographic powers as well as combining it with gathered field research, it is possible to map patterns within the urban fabric on a multiscalar level. This synergy is the foundation of both presented strategies of this project, but also used for presentation material. 3D modelling through digital tools enables quick and detailed responses to enquiries.

Possibility studies

Through analogue tools, the experimentation and sketching towards solutions have happened efficiently whilst providing easy navigation between scales. By drawing, building and presenting within informed scopes, potentials and challenges became apparent and workable. The synthesis emerged through layers of possibilities stacked.

Literature Review

As a tool to broaden and scope this thesis, literature review of theoretical ideologies has provided valuable viewpoints discussing the future of urban planning as well as elaborated the term of agents within urban planning. When using literature as a way to scope this thesis, the theoretical framework has contributed to identifying and clarifying research question gaps enabling exploratory study.



To understand the complexity of Refshaleøen, theories on place, palimpsest, and power will be integrated and provide a comprehensive framework. This framework offers a nuanced vocabulary that helps identify and discuss contemporary challenges. These theories are carefully selected to address the challenges of this thesis and allows for a responsible approach to the upcoming urban development of Refshaleøen.

02

POWER IN URBAN DESIGN

Place

Making sense of place

How are we to understand a place in order to be in a better position to manage and creatively transform them? Urban development in Copenhagen has, as in many other cities, concentrated around old industrial and harbour areas. Probably, from the assumption that these areas to some extent are functionless, or these leftover functions have been able to be moved to other places (Nordby, 2024).

With the prospect of developing one of Copenhagen’s last industrial and harbour area, there will be focus on how Refshaleøen will contribute with important functions to the city’s industrial structure and diversity – and how the old industrial buildings are an important part of our common heritage. But this assumption of functionless and meaningless industrial areas is wrong, when looking into Refshaleøen. It has developed into a unique creative space and is home to different kind of local creative, cultural and craftsmanship businesses.

In that sense the understanding of place becomes crucial in order to further develop upon an already strong identity, history and community. So, returning to the question of how are we to understand a place? In the book ‘Becoming Places’ by Kim Dovey, the urban planner tries to discuss that question through different ways of thinking and understanding a place – about places in the state of becoming. Being in the state of becoming doesn’t say much, because in reality all places are in the state of continuous change, but by thinking about ‘place’ treats it as a somewhat static concept. Identifying a place with what does not change; ‘their sense of place’, ‘identity’ or ‘character’ is seen as stable (Dovey, 2009).

The concept of place

The concept of ‘place’ is a highly contested term and bear a multiplicity of meanings and connotations. In everyday life most know what place means, even though it is experienced differently. In the field of architecture and urban planning it plays a significant role, but the definition and understanding of the term shows little consistency across the academic discourse (Dovey, 2009). How we theoretically understand the sense of place is an entirely different matter. The complexity lies within the interpretation of the term. Dovey discusses the significant problem in interpreting ‘place’ based in an ontological ground:

“This is the view that is generally accused of essentialism – to see the sense of place as deeply rooted in stabilized modes of dwelling (homeland and history) that cannot be changed.”
(Dovey, 2009, p. 4)

This thinking can be referred to as the ‘spirit’ of a place and related to a Heideggerian view of place (Norberg-Schulz, 1979). This stabilized view conflates the sense and place into one, a reduction to essence that in a way ignores the possibility of social constructions of place identity. A more progressive thinking could be found in the field of geography, where Doreen Massey rejects the notion of static, unchanging space. She describes a place as having specificity derived from its accumulated history and thereby being a product of layer upon layer of different linkage (Massey, 1994). Emphasizing the dynamic nature and social significance of place infused with complex power dynamics.

”[...] it is absolutely not a seamless, coherent identity, a single sense of place which everyone shares... If it is now recognized that people have multiple identities, then the same point can be made in relation to places”
(Massey, 1994, p. 65)

Massey’s sense of place is open and hybrid, defined by multiple identities and histories. The character comes from interactions and relations rather than original sources (Dovey, 2009).

Place as assemblage*

Building upon the idea of ‘place’ being constructed by its connections and interactions the term assemblage* comes into play. The general sense of assemblage is ‘whose properties emerge from the interaction between parts’ (De Landa, 2005). Like a machine the parts of an assemblage can be taken out and used in other assemblages. The ‘assemblage theory’ is to avoid reductionism. Like Massey wants to avoid reduction to essence. Dovey gives an example of how to understand assemblage:

“For instance, a street is not a thing nor is it just a collection of discrete things. The buildings, trees, cars, sidewalks, goods, people, signs etc. All come together to become the street, but it is the connections between them that makes it an assemblage or a place.”
(Dovey, 2009, p. 16)

It is important to note that assemblage is also dynamic in the sense that trees and people grow, and buildings are constructed and demolished. So, in order to truly understand a place, there is a need of deconstructing such assemblage or place in order to see the different parts singularly and then put them back together to understand their interactions and connections. Therefore, place cannot be reduced to fixed boundaries, but must be seen with a more outwards view. The concept of place-as-assemblage enables us to encounter and understand the sense of place as an everyday experience rather than an essentialized ‘spirit’ of a place or a myth fixed on one identity.

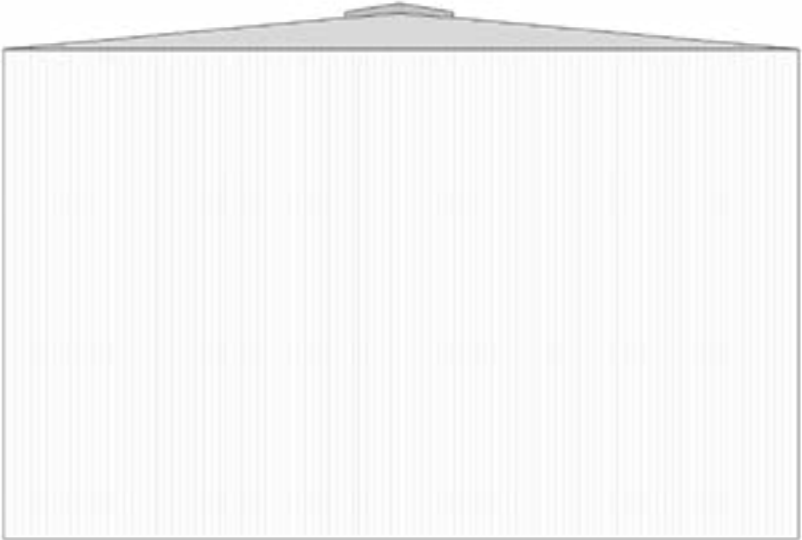
Sign



Port



Building



Trees



Windows



Road

Sidewalk



Humans



Cars

Palimpsest

Present Pasts: Urban Palimpsest and the Politics of Memory

How do we learn to notice change? And how does one read a palimpsest? By examining the paper of Andreas Huyssen and discussing the relation between past and present within urban landscapes, our goal is to explore the concept of urban palimpsest* and its implications for contemporariness and the spirit of a place along with how we bridge the theory to practice. We want to draw upon the notion that

“Ghosts of the past and the spirit of future glory struggled on the same terrain without prospects for reconciliation.”
(Huyssen, 2003, p. 77)

We want to examine and understand how memories of the past, corporeal matters like local communities, and the spirit of a place shape present realities and influence future trajectories. By using a multidisciplinary approach, looking into the relevant layers of Refshaleøen and its social structure, cultural geography, and heritage preservation, we investigate the politics of memory embedded in this case to suggests strategies for respecting cultural heritage when planning for the future. By operationalizing this theoretical framework, we will be able to navigate the complexities of urban transformation while honoring invisible layers present within the built environment and understanding the essence of local communities.

Introduction

The city is not merely a physical entity but a complex assemblage of relations, corporeal matters, and the spirit of place, all interwoven into a collective fabric. Within the tapestry, the past merges with the present, leaving indelible marks that shape the lived experiences of contemporary urban spaces. As societies experience the complexities of rapid urbanization and relentless development, the preservation of cultural heritage emerges as a pressing concern, not just in terms of physical structures but also the essence of communities and the spirit of place. Huyssen stresses the importance of acknowledging and working with invisible layers in urban planning. The consequence of forgetting is to break ties with the individuals and ultimately remove the memories connected to a site. When we try to narrate histoy, we also narrate the individuals resulting in exclusion for some individuals and minimize the ties present to a place that gives it it's spirit.



ill. 17 // Old buildings reinvents and graffiti tells the story

This section seeks to unravel the complexities inherent in the notion of urban palimpsest and to understand the importance of memory and history

“[...] helps us not to forget that [memory is what makes our life] and, perhaps, to look with fresh eyes at the way we ourselves negotiate space and memory in our own everyday lives.”
(Huyssen, 2003, p. 121)

As a way to converge with the exigencies of the present, while also emphasizing the importance of corporeal matters and the spirit of a place in shaping urban identities and experiences.

The Concept of Urban Palimpsest

The term "palimpsest" originates from the Greek word meaning "scraped again," referring to a manuscript page that has been reused, with traces of previous writing still discernible beneath the surface. In the context of urban studies, the concept of urban palimpsest denotes the layering of historical, cultural, and social strata within the built environment. Each iteration of urban development leaves its imprint upon the landscape, yet remnants of past incarnations persist, bearing witness to the passage of time and the evolution of human endeavors. Urban palimpsests encompass not only tangible artifacts such as architectural structures and archaeological remains but also intangible elements such as oral histories, traditions, and rituals that imbue spaces with meaning and significance.

The Politics of Memory and Corporeal Matters Memory is inherently political, serving as a battleground for competing narratives and divergent interpretations of the past. Within urban contexts, the politics of memory manifest in struggles over heritage preservation, commemoration, and representation.

Corporeal matters, such as communities, play a pivotal role in shaping the urban landscape, as they are not passive recipients of development but active agents who negotiate their place within the city. The spirit of a place, encompassing its cultural, social, and environmental dimensions, further enriches the urban experience, imbuing spaces with a sense of identity and belonging that transcends mere physicality.

Respect the layers

Huyssen uses the artist Doris Salcedo and her work which he calls 'Memory Sculpture' when explaining how to respect and comprehend the past. Similar to his example, a zoom-in on the large industrial Section Hall of Refshaleøen speaks of same volume. He explains in order to understand and experience the corporeal matter,

“[...] it depends on duration, on sustained contemplation, on visual, linguistic, and political associations woven together into a dense texture of understanding.”
(Huyssen, 2003, p.113)



ill. 18 // The many layers of history shines through when approached

His approach to the mentioned piece of art can be applied to our chosen example. With starting by observing the overall form, and from there on going into detail with how and why, the sculpture chronically unfolds. The same way happens with our choice of example. From a distance, the building's size – and therefore form - is hard to overlook, but also hard to comprehend. The facade is monotone expect for a pair of eyes overlooking your every move. Only by moving closer, the building start to tell us a story of how it portrays itself and what it have been. The scale of the entrances in the facade tells stories of managing large objects. In relation to its surroundings, the objects are most likely water related. The closed doors, holes in the walls and graffiti covering, speaks of being out of function for a long time. In the detail, rust and old mechanical solutions speaks of political contemporariness and the lack of technology. This awareness of reading into detail enables personal reflection and, in doing so, creates a deeper bond to the story and feelings behind. It is unlikely that people will ready into it the same way.

By using this example, we join the enquiry of how to treat traces of the past and how to evoke and strengthen corporeal matter when navigating the tensions between preservation and progress.

A holistic approach acknowledges the interconnectedness of physical, social, and cultural dimensions of urban life and makes it possible for the individual to contemplate and experience with fresh eyes. Rather than viewing heritage conservation as a hindrance or forcing the traces to become static whilst surroundings is treated as an urban tabula rasa*, the value of knowing the integral components secures a responsible urban planning that prioritizes the preservation of corporeal matters and the spirit of place alongside physical structures by understanding in depth the fabric woven into a site. This calls for a shift in power to prioritize and shape the future towards a built environment that fosters communities and functions on a long-term scale rather than as a temporary condition that shifts, thereby fostering a sense of ownership and stewardship towards shared heritage.

Conclusion

In conclusion, the notion of urban palimpsest serves as a metaphor for the layered complexities of urban life, wherein past and present converge in a dynamic interplay of memory, corporeal matters, and the spirit of place. Also called social memory*. By recognizing the politics of memory inherent within urban spaces and operationalizing strategies for respecting cultural heritage and the essence of communities in future development endeavours, we can cultivate cities that are not only sustainable but also inclusive, equitable, and reflective of the diverse tapestry of human experience. In doing so, we honour the past as a source of inspiration, nurture the present with empathy and foresight, and cultivate the spirit of place that sustains urban communities for generations to come.

To operationalize this knowledge as to what we need to bring into our design, by identifying, analysing and unravelling the history and its traces on Refshaleøen, we will be able to weave the past into the future of development whilst preserving in a respectful way, creating a patchwork of past, present and future potentials that strengthens the urban fabric into a sheet of welcoming. By acknowledging and understanding the tied social memory and what different communities understand through to the phenomenon, relations form.



ill. 19 // The built-up of memories

P o w e r

about power in the anthropocene age

How are we to understand power dynamics in order to be in a better position to manage and creatively adress contemporary challenges? Urban development in Copenhagen has, as in many other cities, concentrated around water management and green transition, yet it seems like the climate crisis keeps getting worse. In light of scientists' concerns regarding domino effects* on Earth's ecosystems that will accelerate man-made climate changes, it is crucial to introduce the term 'Anthropocene era'. The term describes a geological era and refers to the Ancient Greek word for human (anthrópos). The reason for this is, that humans have become a 'geological force' affecting the conditions of nature. Said in another way – human activities have begun to leave such a large footprint that humans have become a crucial factor in the many ecosystems of the Earth. (Tønder, 2020)

The concept of power

The concept of power has been exclusively oriented towards the social sciences and has been redefined over decades, especially after the Second World War. Characteristic of all approaches is a sociocentric bias, as they all have a sociocentric starting point and thus, do not engage with the non-human world – thereby understanding that human-power is larger than non-human power. An understanding like this will lead to a reductionist power analysis.

“...it is based on unrealistic expectations of how a decision is made, ultimately promoting a narcissistic self-delusion where individuals believe they can control societal development independently. As our contemporary climate crisis clearly demonstrates, such a portrayal is not only philosophically-theoretically incorrect; it also has negative political consequences for the ability to act responsibly and with respect for the needs and desires of future generations.”
(Tønder, 2020, p. 89)

Without detracting from the relevance or depth of the traditional power analyses, they do not constitute a real analysis of the social and political challenges moving within society as they do not develop genuine care for the significance of the non-human world for societal development.



ill. 20 // The power dynamic between human and non-human agents at Refshaleøen

When discussing the term 'power', the question of what it means to possess power naturally arises. There exist two different types of power - power over and power to. The traditional understanding of power - power over - describes a dominance relationship where one actor can enforce their will upon another actor, as the first actor holds power over the other actor. This form of power is often associated with hierarchy and authority. The second form of power - power to - is more progressive, where an actor becomes capable of acting. This form of power is more constructive and proactive, oriented towards possibility creation.

“The ‘power to’ plays an important role in the Anthropocene era where it is not always clear who dominates whom, but where the entanglements of the human and the non-human still create an explosive and decisive process of change. As we have already seen, this applies particularly to global climate changes and the associated domino effects.”
(Tønder, 2020, p. 26)

Power is a potentiality – a force or energy – inherent in both the human and the non-human. Hereby, power is to be understood as something enabling.

A rethinking of power

The climate crisis and the Anthropocene era pose new challenges and call for new answers. It is no longer enough to let the concept of power and the associated challenges be solely for the social scientific world. The concept of power also belongs to the natural scientific world and more relevant for this project, urban development. A rethinking for the study of power is needed.

The limitation to one science and the sociocentrism will risk that the analysis will be superficial and unfulfilling, which naturally will lead to unfulfilling answers to the challenges of today’s society. By expanding the power analysis and the understanding of how the world works, a broader and deeper understanding will lead to more qualified answers.

The world and its agents are highly complex and cannot be reduced to a sociocentric analysis that excludes non-human agents. Furthermore, it is important to challenge the hitherto understanding of nature and culture as separate phenomena.

The starting point for new materialism is thus a dissolution of the boundary between nature and culture in favor of one fundamental material substance, which imbues both the human and non-human parts of the world with varying degrees of power - both in terms of power as dominance and power as possibility creation.
(Tønder, 2020, p.79)



ill. 21 //Examples of entanglement between human and non-human

The climate crisis is man-made, but it is not controllable solely through human power. It is no longer possible to map or influence power dynamics without realizing that human acts are contingent on the Earth’s many complex ecosystems. It is time for a rethinking of the tradition, that parts of our politics and society builds on today. The focus changes from being sociocentric to ‘zoecentric’ focusing on life in general. It tries to understand that culture and nature is closely tangled, and that one another is dependent on each other. A rethinking of power also concerns that power is dynamic and not static.

“The new materialist power analysis contributes to fostering greater respect for nature’s own forces, which helps justify an interest in caring for life, including a commitment to sustainable development that does not deplete the Earth’s many ecosystems.”
(Tønder, 2020, p. 108)

Making it tangible

According to Tønder this new or more nuanced understanding of power calls for a new political organization – politics of swarming*. This means that there are multiple centurms of power all depending on the context.

The idea is a radical democratization and to mobilize as many actors as possible, and to do so in as many assemblies as possible, thereby garnering support for structural societal changes. From a new materialist perspective, this means, among other things, that political actors are not only humans, but also include animals, plants, ocean currents, and other forms of non-human life. It also means that political decisions are not only made in one place (the Parliament), but instead start from the bottom up, respecting local conditions and circumstances.”
(Tønder, 2020, p. 128)

Politics of swarming is about an assembly of agents where the decision process is based on the assembly’s knowledge and experience, and the proposed solutions are tested out through experiments. Hereby the civilization is not seen as a supplement to political institutions, but the driver behind.

Power analysis and urban planning

A power analysis is supposed to describe and map the actors in society and thereby aiming to understand the actors being part of the decision-making process behind political agendas. Urban development is a reflection of the political agendas and thereby reflecting the development of society. Only by understanding the power dynamics of today, it is possible to take part in the discussion of new actors that should be taken into consideration in the future.

In order to supress the global challenges, it is crucial to start at a local scale, which this project will do by working with Refshaleøen.

Sub conclusion

integrating place, palimpsest and power in Urban Development

The theories on place, palimpsest and power creates a framework when approaching Refshaleøen trying to understand its complexity. A framework entailing a more nuanced vocabulary and understanding what is at stake. The theories shed light on what is important to pay attention to when identifying qualities, potentials and challenges.

Combining these insights, the development of Refshaleøen must be rooted in a deep understanding of its place characteristics, historical layers, and power dynamics. By viewing Refshaleøen as an assemblage, we can appreciate its dynamic interactions and multifaceted identity. Recognizing its many layers and characteristics allows us to incorporate its rich environment while fostering responsible futures. By rethinking power dynamics on Refshaleøen the development will be more inclusive and responsive to both human and ecological needs. Together, these perspectives provide a robust framework for the responsible and aware urban development of Refshaleøen that respects its past and present while embracing future possibilities.



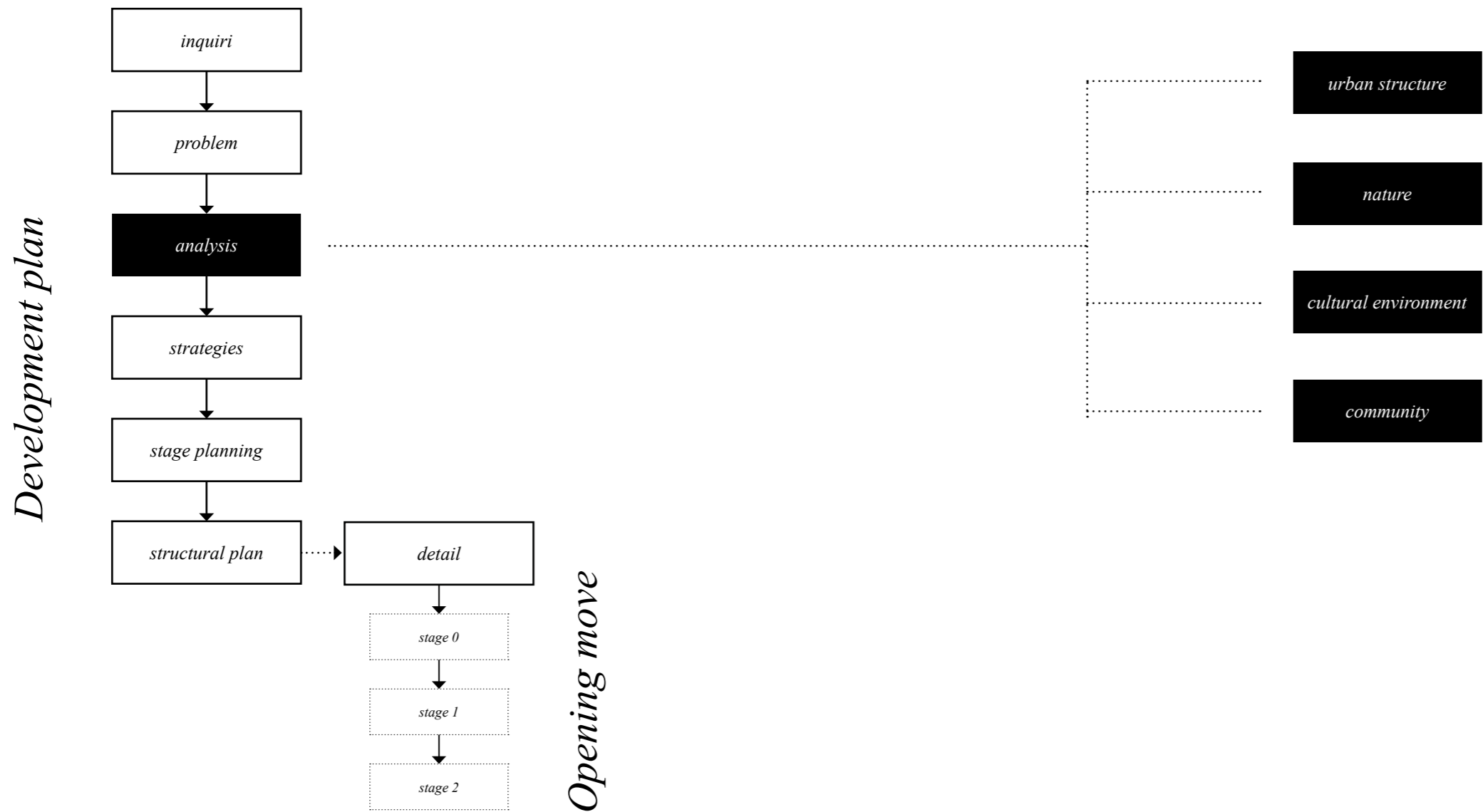
03

ill. 22 //Refshaleøen as a complex platform

THE LAYERS OF REFSHALEØEN

Overview

experiencing Refshaleøen



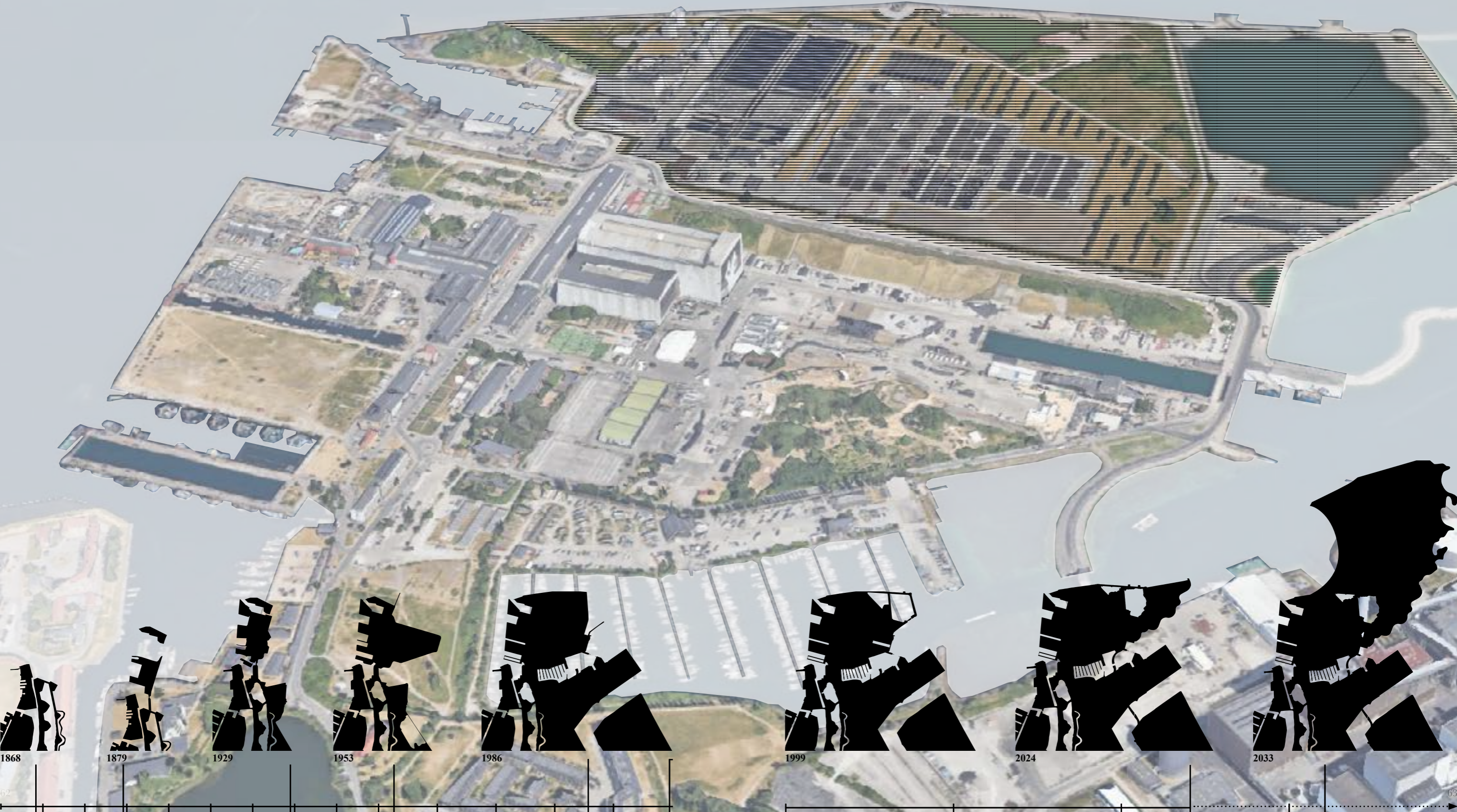
ill. 23 //Overview of analysis

This chapter is an analysis of what Refshaleøen is today, what it has been and what possibilities it holds. As the diagram shows, the analysis is divided into four categories; urban structure, nature, cultural environment and community. Firstly, starting off with a general structural analysis of how Refshaleøen is experienced today, and which attention points there is. Afterwards the three themes of this project; nature, cultural environment and community has a part each to ensure that every perspective will be covered. The three main themes end up in a lesson each, to summarize what we have learned throughout the exploration. Lastly, a subconclusion of the chapter will try to gather the key learnings and gather them into a general understanding of Refshaleøen.

Starting point

the startoff

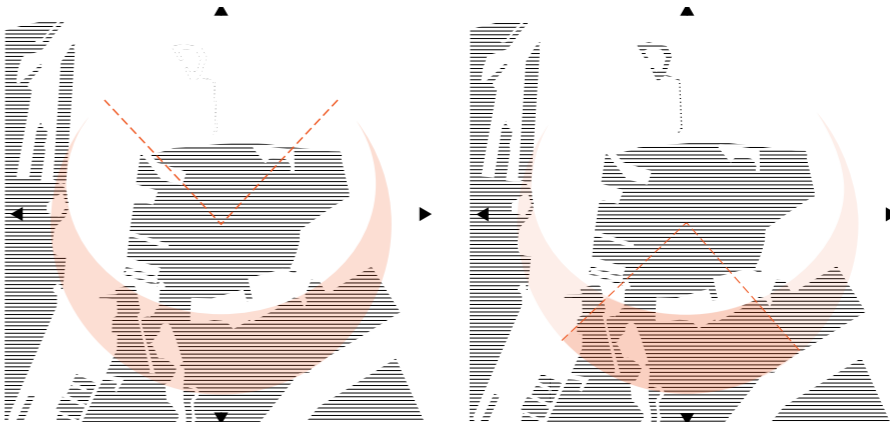
A man-made islet developed and expanded as stepping stone for Burmeister & Wain – commonly known as B&W – to become a global impact on international water travel. After bankruptcy of B&W, the islet is now striving as a pocket of freedom for Copenhagen. Home to creative souls whilst continuing to be a land of inspiration and innovation. Continuing to expand with the plans of Lynnetteholm.



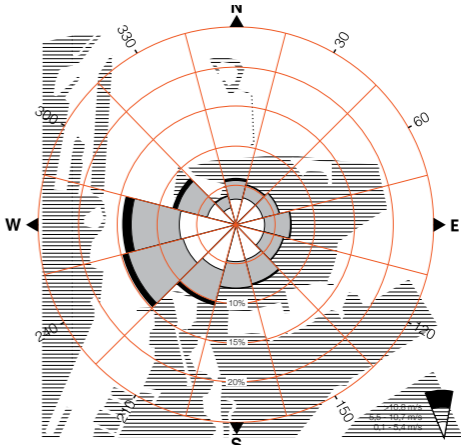
Microclimate

experiencing Refshaleøen

When living in Denmark it is crucial to analyse the microclimate because it allows us to understand how seasonal changes affect local environmental conditions. Each season in Denmark brings variations in temperature, humidity, wind patterns, and sunlight, influencing the microclimate of specific areas. When developing Refshaleøen, it is important to study these microclimatic factors in the specific area, addressing local challenges, and design spaces that are comfortable and functional year-round. For instance, incorporating windbreaks and maximizing sunlight exposure is vital during the cold and windy winter months, while providing shaded areas and cooling solutions is essential for the warmer summer periods. Integrating local microclimate conditions ensures that public spaces accommodate different activities and enhance the overall livability and sustainability of the environments around Refshaleøen.



Sun
During the summer, the site will be sunlit most of the day, rising in east and sets in west. During winter, the sun will shine from south.



Wind
As the windrose shows, wind will primarily come from west. However the build structure can affect the wind direction and acceleration.

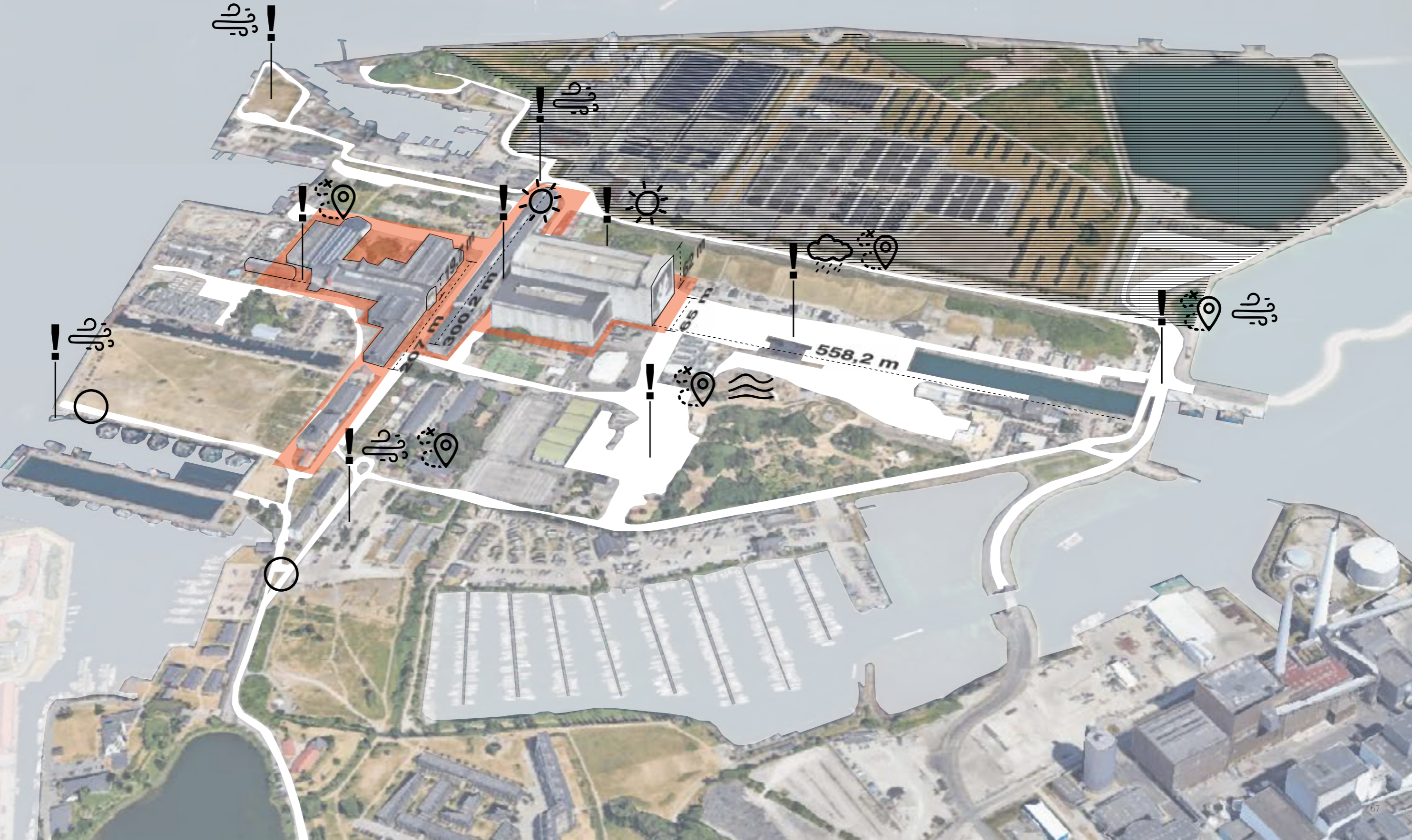


Water
Water can affect the site from above, beside and from beneath. As the diagrams show, it is especially the southeastern part of the site, that is vulnerable.

ill. 25 //Microclimatic conditions on Refshaleøen

Attention points

areas to pay attention to



experiencing Refshaleøen



Shadow

In identified spots surrounded by large-scaled buildings, especially towards east and west, the space between is covered in shadow during most of the year. This prevents long-term stays when the temperature is of lower degrees – contradictory it can provide shade during hot temperatures but is very limited due to Denmark’s climate conditions. Additionally, the lack of sun hinders overall vegetation growth.



Surface water

During heavy-rain events, rainwater gather in low points of the topography on site. If the depression on terrain is of impermeable pavement, large puddles gather due its’ inability to seep into the ground. In relation to how long the event continues, 15 mm rain within a 30-minute window is defined as torrential rain. Because the islet is mainly paved with only few spots of permeable ground, the site is particularly vulnerable.



Sea-level rise

The islet is surrounded by water but will in the future be covered towards north by Lynetteholmen. This land expansion will protect most inner harbour and prevent from surpassing Refshaleøen’s average waterfront height of 2 m at west. Towards east, an absorbing waterfront of stacked boulders softens the impact. Towards 2100, Klimaatlas expects an overall ocean level rise between 30 and 60 cm as well as a growth in wave size during 20-year event storm surges between 144 and 277 cm – to which 20-year events becomes even more common. This means that the ocean and waves can reach a height between 174 m and 2,8 m at which most of the site will be covered. (DMI, 2024)



Wayfinding

Due to size and scale in relation to lack of hierarchy for paved conditions, some areas are left unattended and forgotten due to missing infrastructure. The space becomes 2-dimensional with no connection to human scale. This creates poor legibility on site and lacks elements to navigate with. A poor balance between size and barriers prevents visitors from exploring.



Wind

The dominating wind direction is from west and towards east. With the intuitive understanding of how water flows within a stream in relation to objects, wind is amplified when moving around and/or over large obstacles. This means that large open spaces as well as narrow passages pointing in the wind direction can amplify wind speed. Strong wind can hinder long-term stays if constant.



Arrival point

Refshaleøen only has two arrival points. One from south carrying cars, busses, bicycles and pedestrians. Another from west by bus boat. This is limiting the islet from cars, but also making it feel cut off from the rest of Copenhagen as there is only limited public transport.

*INDUSTRIAL
LANDSCAPE*

*REFSHALE-
ØEN*

The layers of Refshaleøen

*NATURE
LESSON 01*

*How can the selfgrown industrial nature on Refshaleøen be an agent
in the future development?*

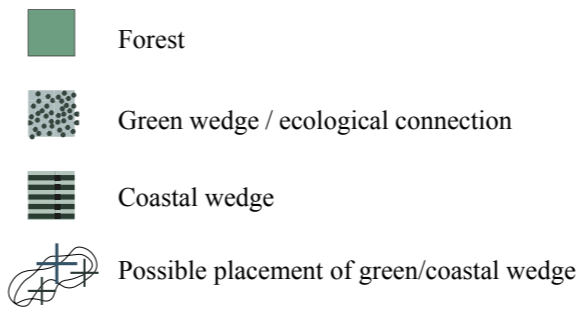
ill. 27 // Nature at Refshaleøen

LESSON 01 - HOW CAN THE SELF-GROWN
INDUSTRIAL NATURE ON REFSHALEØEN BE AN AGENT IN THE FUTURE DEVELOPMENT?



The coastline

Fingerplan 2019 and the vision of Copenhagen



A number of green areas are regulated by the national spatial planning directive (Landsplandirektiv) and national interests. The national spatial planning directive for the Capital Region (Fingerplan 2019) determines green and urban wedges and requires that these are secured in the Municipal planning. The green and urban wedges in Fingerplan 2019 encompass an area of approximately 36.000 hectares, hereof 23.000 hectares of green and coastal wedges, while outer green wedges encompass 13.000 hectares. The wedges contain forests and open landscape areas with valueable and a variety of nature.

The green wedges primarily aim to meet the general need of outdoor recreation and to ensure that residents and visitors of the Capital Region have easy access to recreational areas (Ritzau, 2022).

The mapping on ill. 28 shows the present green and urban wedges of Copenhagen, which clearly shows the vision of a very green coastline. Therefore, the diagram also points out future green wedges that could be an extension to the already appointed areas. A future nature park for Nordhavn is already in the work plus the arrival of Lynetteholm in the foreseeable future. By appointing these areas for green/coastal wedges it builds upon the Fingerplan and the overall vision of a green city and a capital in development.

The green context

the coast scenery of Lynetteholm

- Green wedge / ecological connection
- Coastal wedge
- Potential missing green link
- Forest

Zooming in, the immediate context includes plans for a green coast. The construction of Lynetteholm incorporates several green initiatives. The perimeter of the islet facing Øresund is planned to feature coastal scenery, starting from the northeastern part of Refshaleøen. To the south, Christianshavn Vold and Kløvermarken create a green connection. Refshaleøen is situated between two larger green structures, revealing a potential missing green link.



ill. 29 // The coast scenery of Lynetteholm

History of nature

nature's growth

- Growing
- Removed

ill. 31 //Nature characteristics



Establishing Refshaleøen: Before 1945

Nothing is natural vegetation on Refshaleøen due to the islet being man-made. With the development of Refshaleøen, green appear as spots in the corners of the islet. Especially the fort is of rich green with established pockets at the northern end. Because the fort is developed before Refshaleøen and dense vegetation works as camouflage, the vegetation has served a purpose fostering the impenetrable forest that exist today. The space formed consists of densely shrubs and trees - 'forest'



Traces of industry: Up untill 1999

Refshaleøen is developed and expanded to make space for industry and Lynetten. Whilst transitioning into a much larger island, nature grows underneath. With the expansion of the site, more space for vegetation is also made possible. The rampart, for an example, serves the purpose of protecting from noise and smell from Biofoss. In the meantime, a result of B&W moving out is the leftover waste still present today – shaping much of the landscape into acting as landfill for the islet. Waste such as concrete blocks, large wooden materials, graffiti and old constructions have decayed into a new type of landscape – leftover landscape.



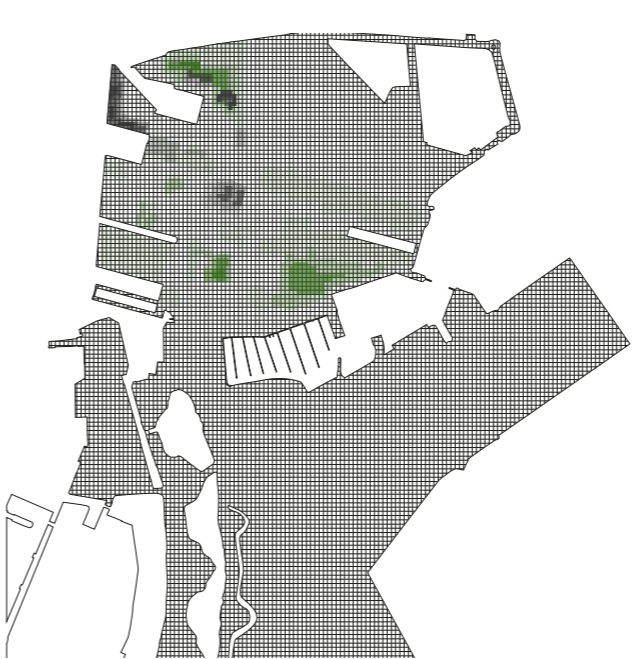
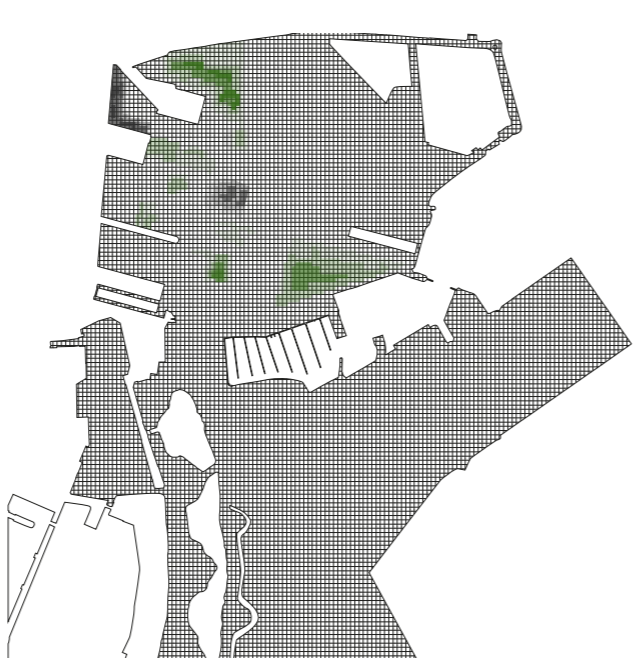
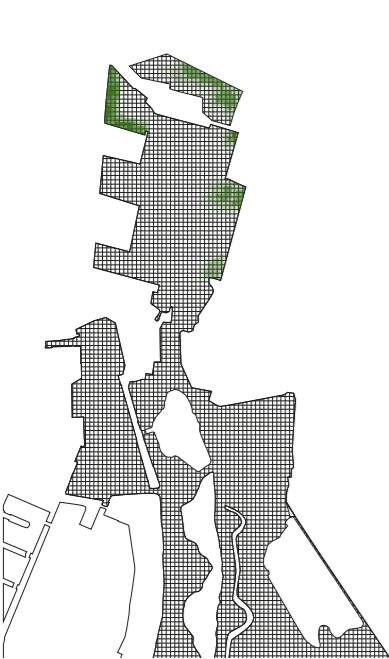
Opens to the public: Up until 2005

After B&W bankruptcy, the islet is left alone to become a perspective area for future development. Whilst new functions move in, occupation of urban spaces transforms areas into a new type of landscape – urban gardening and kept grass. Some nature plots* are adopted and curated into communities liking.



Home to many: Up until 2023

Activity of grassroot ties is concentrated at the southwest resulting in patches of kept nature serving the purpose of human in the form of urban gardening and field for occupation. Absence of planning towards east leaves space for nature to grow. This makes it possible for nature to both increase and appear in new areas. Nature begins to surround the existing industry as well as grow stronger.



ill. 30 //The becoming of nature



ill. 32 //Habitats

1 : 12.000

On Refshaleøen, multiple habitats are identified and divided into different characters. These are ranked between experienced natural appearance compared to appearance of man-made. As seen on the pictures to the right, the balance between human and non-human is suggestively prioritising humans whilst nature is compromised by paved conditions and narrowed down to patches. In general all the different characters of nature, human related or non-human related, are appearing in smaller, separated patterns without any connection to one another.

-  Cut grass
-  Urban garden
-  Shrubland
-  Leftover landscape
-  Forest



ill. 33 //Nature qualities

the morphology of habitats

Nature is not equal to biodiversity as it is dependent on variation in species. Diversity is the presence of multiple species gathered within a ecosystem, but also with the need of variation. To improve biodiversity is to integrate and broaden the existing habitats but also to expand and implement new relevant habitats in comparison to existing. (see appendix 01)

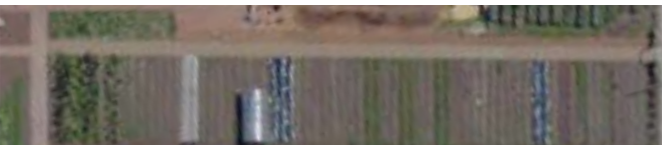
As the map on the prior page shows, Refshaleøen lacks a continuous nature with space for natural processes. To enhance and strengthen the biodiversity and natural processes on Refshaleøen, vegetation should be connected. By identifying the different types of habitats, it is possible to connect within relatable types. The relatable types depend on the presence and absence of human. Whilst connecting wild vegetation contributes to biodiversity and non-humans agents, connecting kept vegetation can contribute to legibility for humans.

Cut grass



Cut grass is defined by maintained grass that regularly is being cut and contained. Though mud, temporary puddles and singular bushes is apparent, the overall characteristic is defined as primarily for human and used by humans. Kept grass contribute to open spaces of easy accessibility and invites to long-term stays. A flat landscape of low vegetation – mainly grass - provides great conditions for water absorption as well as offers significant overview and space for longer stays. On site, many uses these patches for sunbathing, picnic or outdoor games.

Urban gardens



Urban gardens are defined by maintained kept gardens controlled by humans. Some patches of community kept is overgrown with bushes and hedges but located in busy places close to human activity. The value of growing vegetation is higher than cut grass and therefore attracts more insects and wildlife, but due to high activity it is still small in value. Contained to flower beds and regularly maintained, a variety of vegetation species is able to grow and flourish. When contained it enables vegetation foreign in character to grow without becoming invasive to the local ecosystem. Urban gardens have the ability to gather within a community and contribute to self-sufficiency.

Leftover landscape



With the ability to adapt into contemporariness, leftover landscapes inherit rich historical traces whilst enabling continuous transformation and still leave space for vegetation to grow. Within the power of man-made objects, the ability to change function regarding the current needs serves purpose for both human and non-human. Leftover landscape is the combination of broken pavement, gravel and freely growing small vegetation with man-made objects scattered and left. This landscape used to be heavily developed but forgotten and left to nature and often contain barriers due to its' richness of obstacles.

Shrubland



Large open expanse offers natural processes such as grazing, hydrology and expansion of vegetation to flourish. Acting as a buffer zone to connect densely vegetated patches, the shrubland is able to adopt vegetation as needed as well as already occupied by wildflowers and grass. Especially expanses functions as grazing territory for large mammals – an agent in the circular ecosystem. Shrubland is defined by the unkept and freely growing grass and perennials with few smaller free-standing trees. This landscape character offers good conditions for hydrology due to muddy ground and less human activity which makes it possible for species to inhabit the given conditions.

Forest



Most rich on biodiversity is the forest to which vegetation grows freely without interference. Within a forest, many types of home for different species appears. Old, dead and new, fresh growth amplify biodiversity greatly through its rich palette of options and surfaces. When the habitats are strong, the process of implementing and giving home to rare species is likely. Forest is defined by bushes, trees and hedges growing above two meters with little to no human appearance. These areas tend to need more space to grow into habitats for biodiversity. This is partly because forests offer home to larger species due to the intensity of vegetation.

ill. 34 //morphology of nature



ill. 35 //Nature is the only element not obeying the grid

SUBCONCLUSION 01:

NATURE



ill. 36 //Landscape

Refshaleøen is 100% human-made making it an anthropocene islet. The site is going to find itself between two major green structures – Christians Vold and upcoming Lynetteholm. There is potential in connecting the green structures with the surrounding context to create an ecological transport link for both humans and non-humans.

Nature grows sporadically on Refshaleøen as a result of the hierarchical impact of industry. However, the islet contains strong landscape characteristics, each with inherent qualities. Some are selfgrown and industrial in nature, while others are more organized and cultivated by humans. The different characteristics create contrast full meetings of nature, which supports a friction that is the core of the site’s continuous distinctiveness. However, the landscape characters appear separated and are not very well connected on site, but by flipping the perspective on nature and letting it imprint itself into the urban tissue, characters can be connected, creating an entanglement of urban life and nature. Overall, flipping the hierarchy between human and non-human agents, shaping a nature heritage for the future.

CULTURAL ENVIRONMENT

LESSON 02

*How do we understand the industrial environments of Refshaleøen
and transfer it into new urban contexts?*

ill. 37 // Cultural environment at Refshaleøen

LESSON 02 - HOW DO WE UNDERSTAND
THE INDUSTRIAL ENVIRONMENTS OF REFSHALEØEN AND
TRANSFER IT INTO NEW URBAN CONTEXTS?

History of expansion

the becoming of the build environment

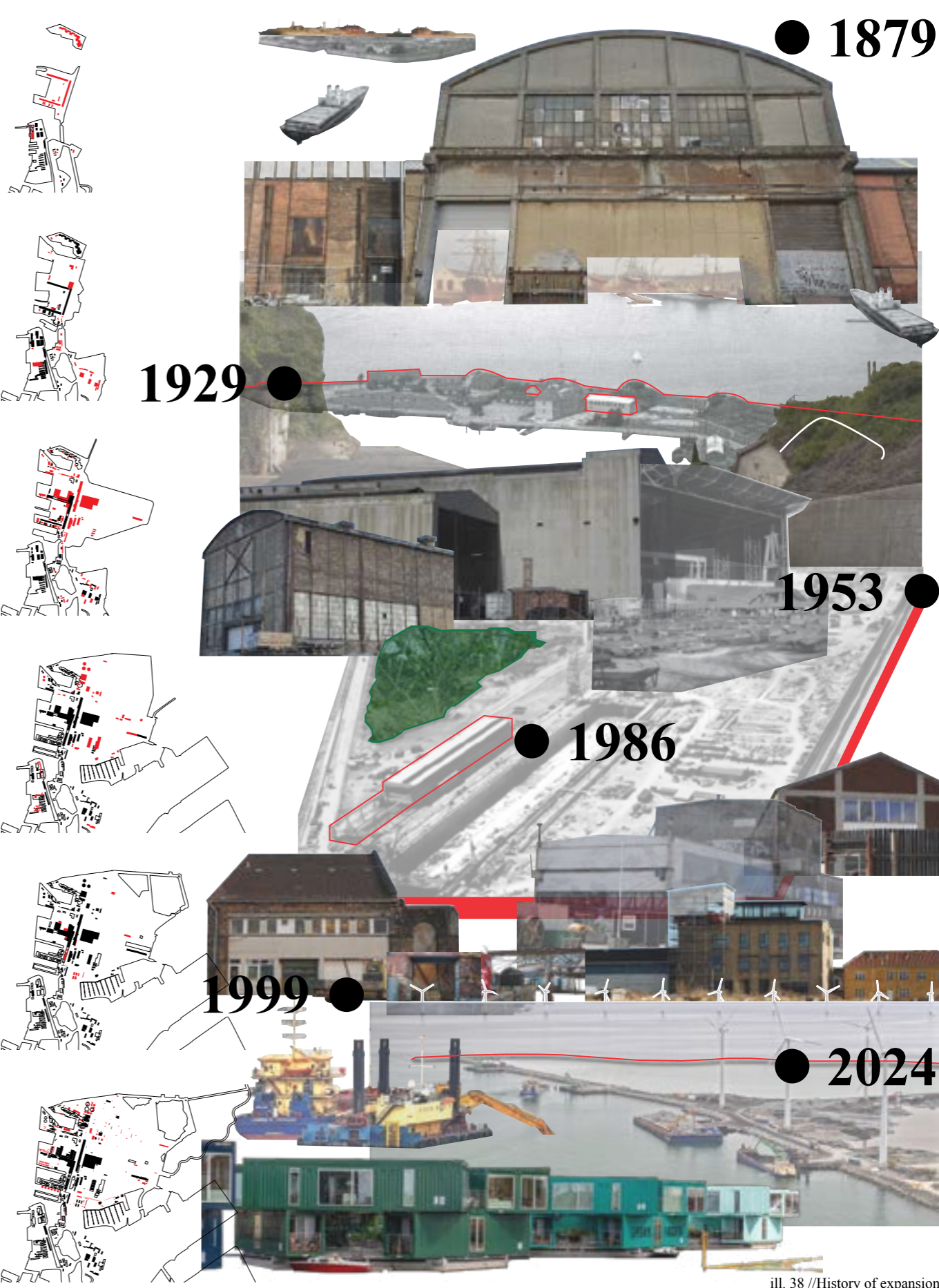
Whilst the land of Refshaleøen have gone through multiple expansions, so have the building density. Through a mapping of land and building plot size from start to present, a deeper understanding of the contemporary building practice showcases the transition from the modern breakthrough and industrialisation to post second world war and up until the global times of right now.

In 1879, Refshaleøen becomes home to Burmeister & Wain. At this time, the fort of 'Lynetten' is already established and have been used in war as canon battery in collaboration with Trekroner fortress.

After the industry grew bigger than available space in Christianshavn, a three-winged structure was developed on the newly formed island of Refshaleøen and became the first ground-breaking initiative. With the invention of new technologies enabling new ideas and larger projects, the purpose quickly outgrew the existing structures resulting in a continuous densification of large permanent structures such as industrial halls, storage and workshops. Wide-open programming of interior and large building plots is needed to store the enlarging ships. The orientation and placement of this structural densification grows into the historical B&W buildings known today.

After the wharf went bankrupt and left behind everything – now owned by Pension fund Refshaleøens Ejendomsselskab A/S - no vision was apparent. Copenhagen's municipality didn't prioritise the future planning until almost 10 years later, leaving the land available for occupation from the bottom. This is significantly visible through the change in building practice. By absence of planning, grassroot initiatives from the bottom grows. Through primarily additive architecture of small temporary solutions, the large building scale is deconstructed, and densification approach changes into subtle interventions of temporary character. Additionally, the densification mainly concentrated west.

To conclude, if the big picture densification is provided, grassroot initiatives shape conditions into a sense of belonging through social memory – meaning reading the context thoroughly and prioritising slow growth with the goal to adapt. By leaning into cultural traces through a collection of structures and absence of planning, human scale densification grows organically at Refshaleøen.



Preservation value

B&W cross

- Low degree of preservation
- Medium degree of preservation
- High degree of preservation
- Industrial heritage
- Old production line
- B&W cross

The mapping shows a big part of the building volumes on site has a degree of preservation. Furthermore, The Danish Heritage Agency (Kulturministeriet) has listed the two Burmeister & Wain halls as one of the 161 regional industrial monuments (Slots- og Kulturstyrelsen, 2019). The reasoning behind the listing is the industrial impact and value it had on the narrative of Copenhagen as an industrial city. Besides the volumes in themselves, the industrial era has imprinted itself into the landscape of Refshaleøen through visible crane traces of the old production line.

These structures make up a systematic grid through the orientation of their axis. The map indicates a cross made up by the preservable structures, this will be referred to as the B&W cross. Today, the activity on Refshaleøen is primarily placed along the B&W cross, which also creates a hierarchy in the flow on the site.

It is important to be critical towards the preservation value. It reduces the preservation to building scale, valuing one singular building, but it is the interplay between multiple buildings and environment that is important. For example, the B&W hall tells a story of the industrial cradle, but it does not tell this story alone. The old production line, in form of the old crane traces running systematically through the site in a big urban space, is equal part of the story. Telling the tale of mega production. It is the entity that creates the heritage.



ill. 39 //History of expansion

Legibility

moving through Refshaleøen

To understand the physical and spatial attributes that inform the structural layout and creates hierarchy of flow on site, a mapping of paved conditions and barriers is done in shape of af nolli. The white indicates where it is possible to move whilst black indicates barriers of sort – whether it is containers, fences or vegetation. The analysis shows the difference between planned flow towards west and lack of designated paths towards east through the use of leftover landscape obstacles. Overall, the use of asphalt as pavement is almost identical across the entire site. When asphalt stops, concrete replaces. This continuous hard surface without elevation in connection to the large-scale buildings and limited details, provides overly dimensioned conditions applying to car traffic. An argument is the presence of car traffic. Toward west the infrastructure reflects a concentration of pedestrians and cyclists. The presence of barriers creates clear pathways with dimensions that limits cars to the periphery of the active zones. Towards east the phenomenon is contradictory. The lack of barriers on the east site and no dimension indicating the hierarchy of paths leaves behind a large asphalt plaza being one shared space for all traffic.

By strengthening the legibility and accessibility of a place through preserving existing structures and additionally plan new barriers to create dimensions that indicate the preferred traffic contribute to the mental map of users. The knowledge of boundaries and where and how they take shape informs how to create coherence and optimize the social connection within visual, spatial-organization and place-making



ill. 40 //Nolli map showing legibility

1 : 12.000

Scale



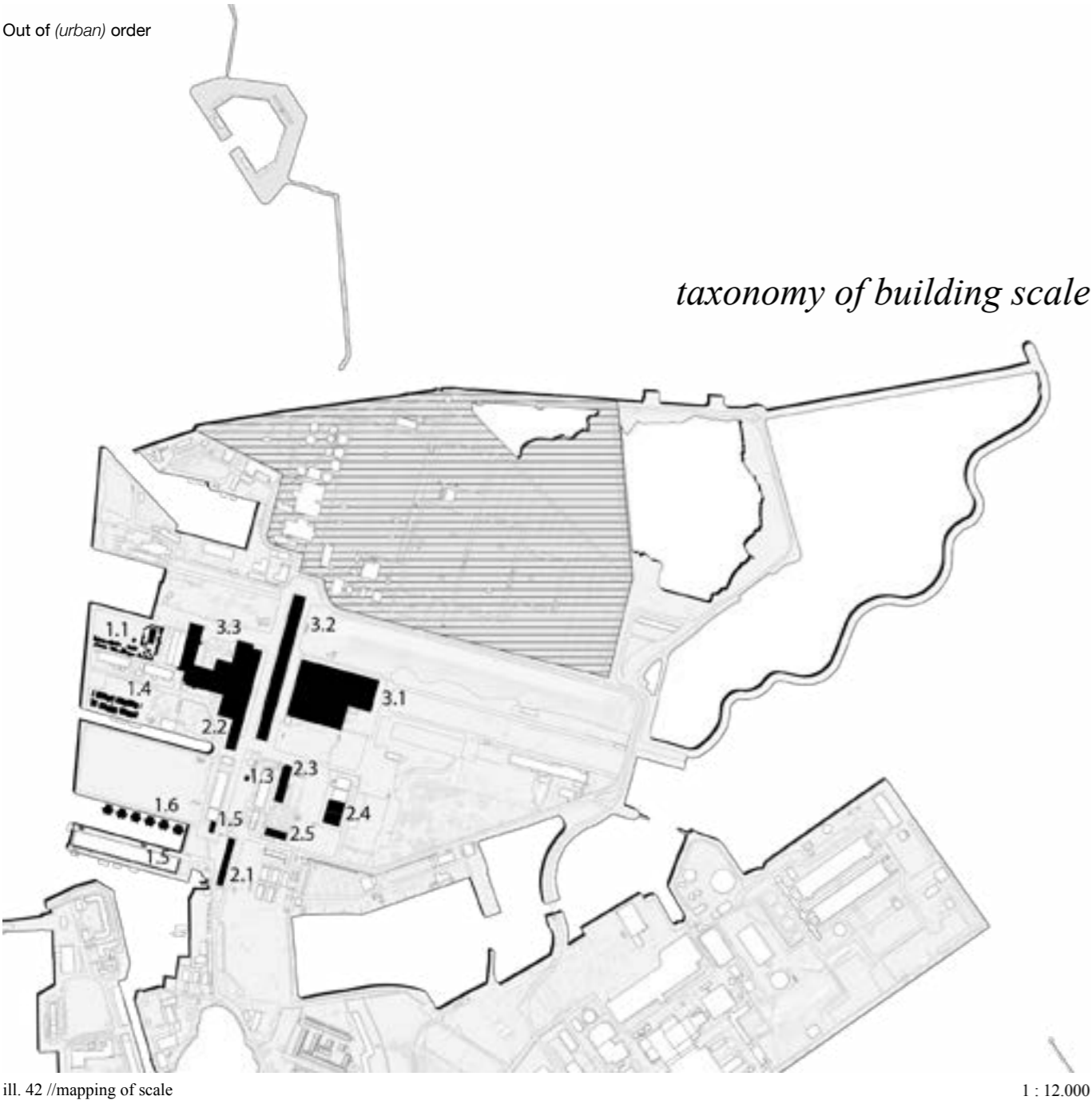
Large
Burmeister & Wain, 2024
Old industrial warehouse



Medium
Copenhagen Yacht Service, 2024
Yacht garage/ boat hotel

Small
Reffen Streetfood, 2024
Local eatery and skatepark

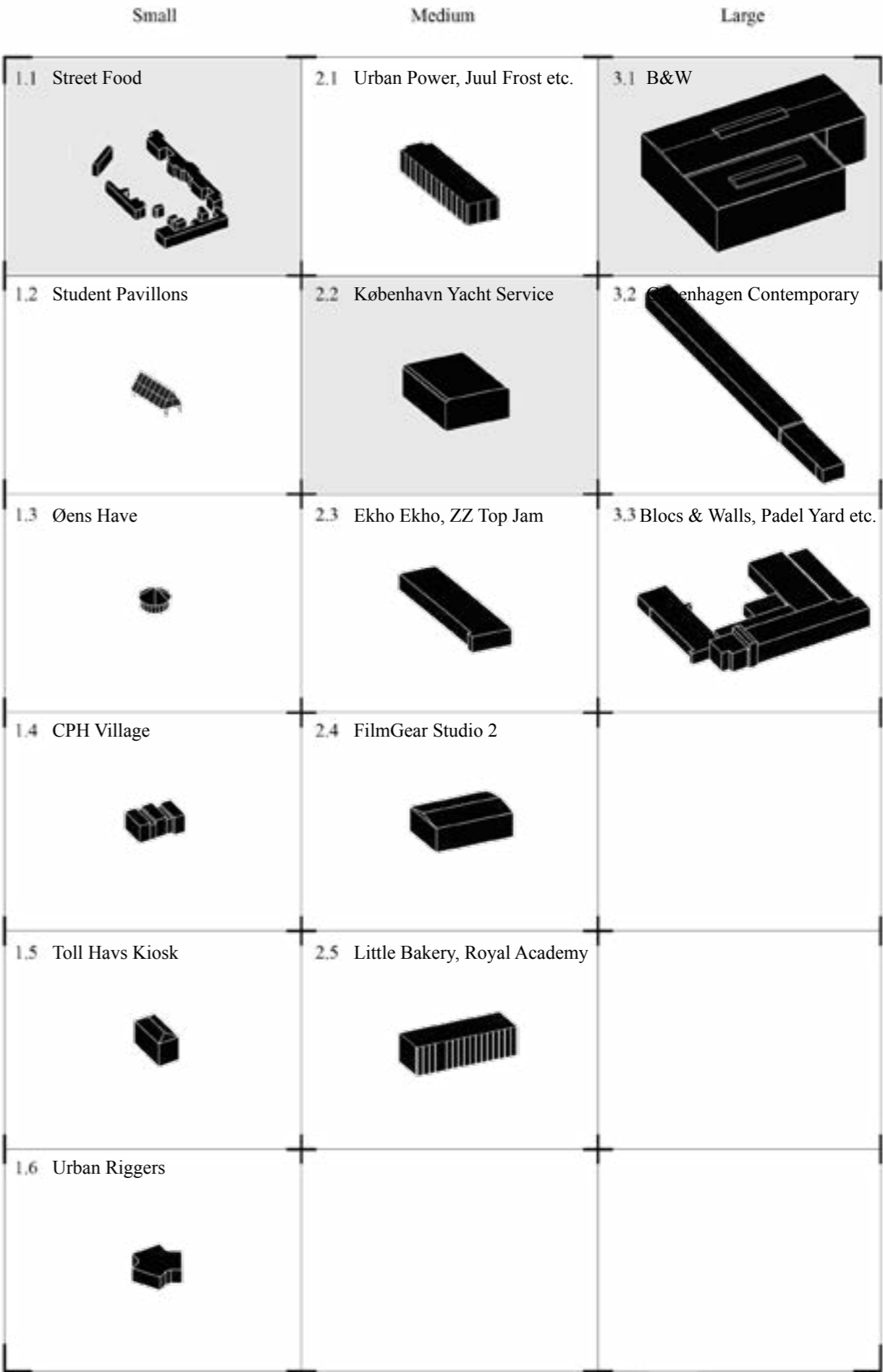




Character was found in the juxtapositions* of buildings of different size, age and style. The adjacencies of factories, local shops, offices and cultural institutions creates a dynamic urban space, and the conception of the mix creates an important variety both in terms of function and aesthetics. The multiple transitions of Refshaleøen have made a platform of many different building scales, creating the necessary space for different functions and thereby the opportunity for different scaled businesses to grow. A critical layer that has made it possible to establish the dynamism of the site. This mix involves an openness to difference in both formal and social terms.

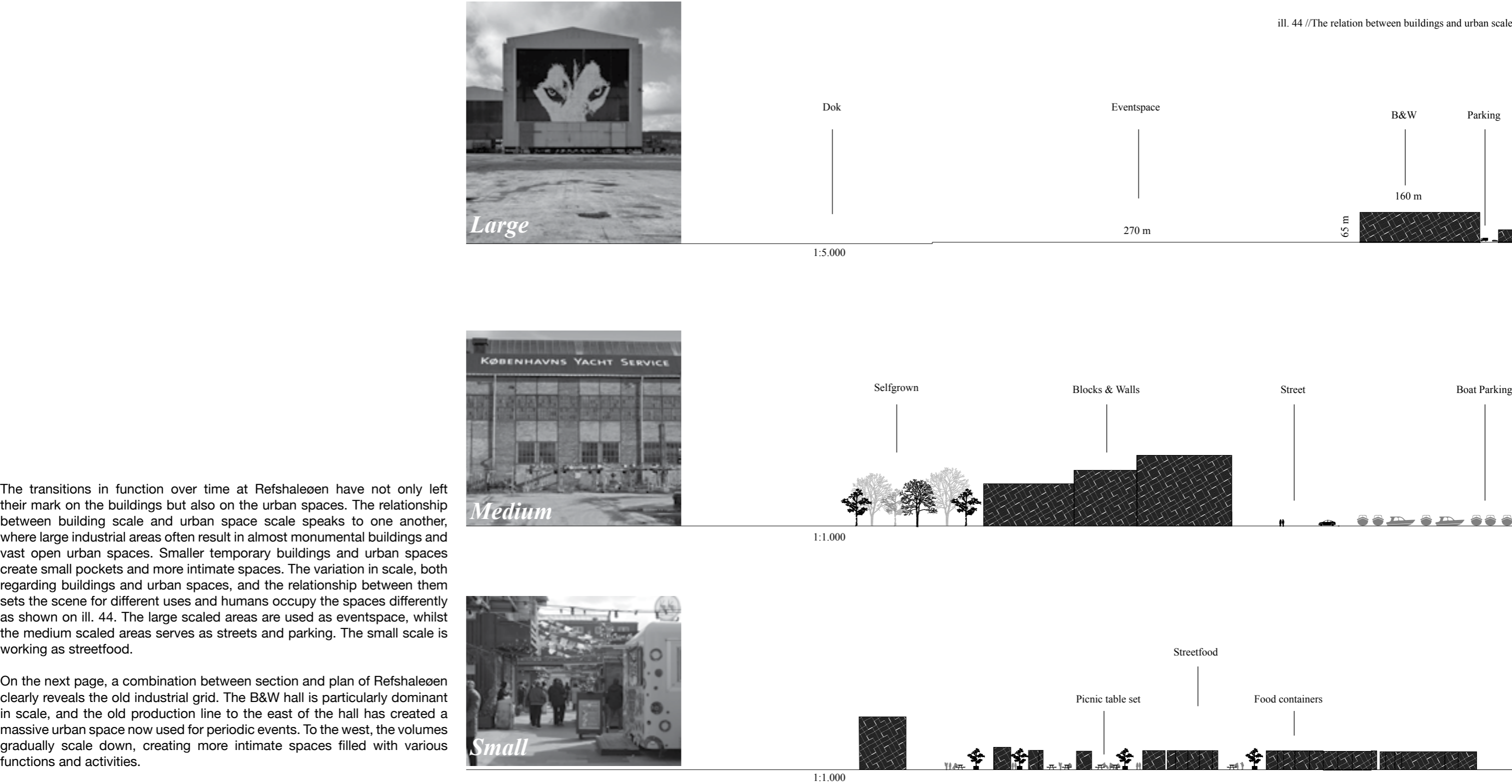
Different kinds of architecture attract different kinds of people. A place where embodied differences become character (Dovey, 2016).

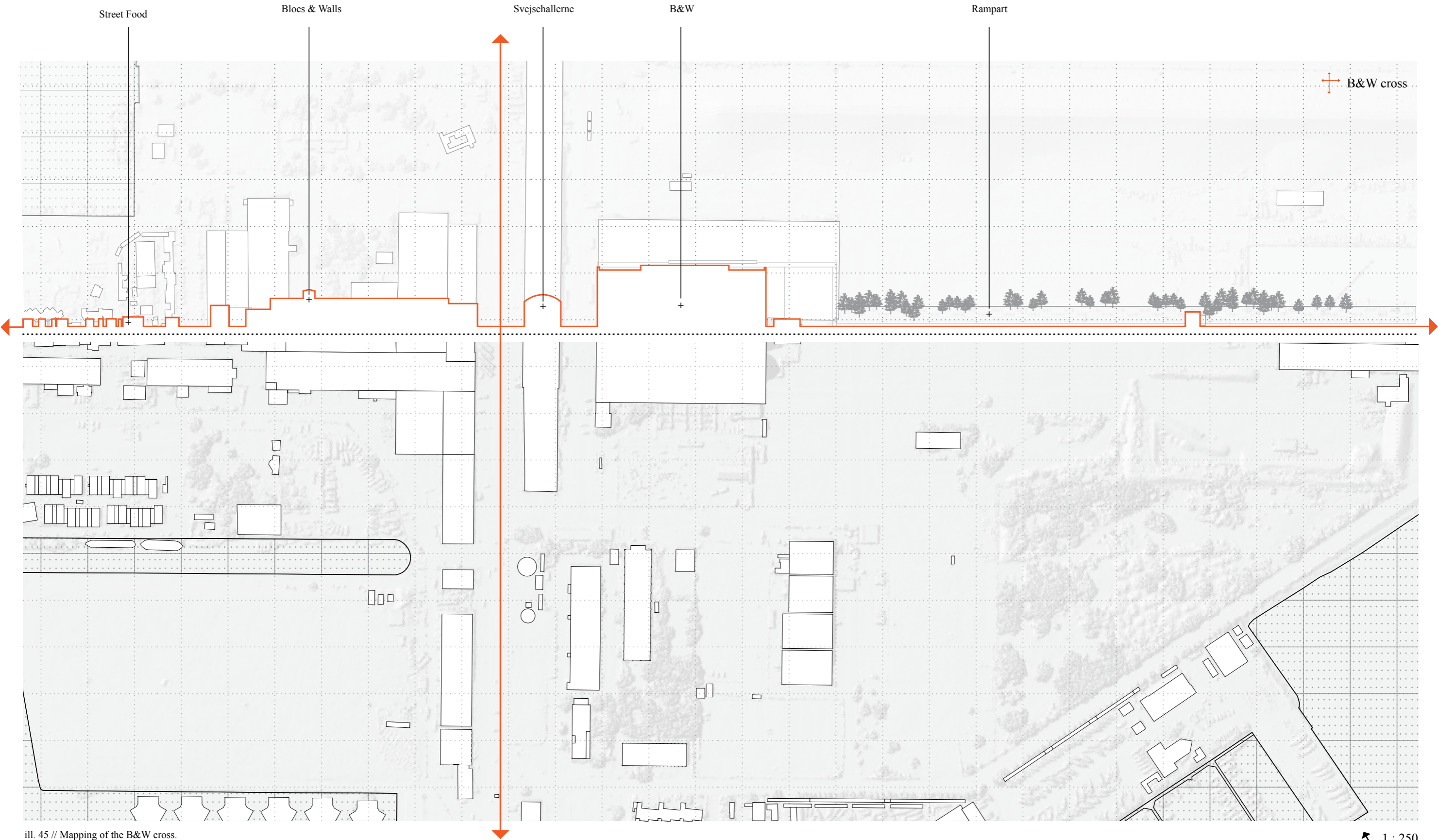
The dilemma is how to protect urban character in a manner that does not kill the very dynamism that produces it in the first place (Dovey, 2016).



ill. 43 //taxonomy of building scale. The grey boxes mark buildings explored.

the experience of relation between building and urban spaces





ill. 45 // Mapping of the B&W cross.

1 : 250



ill. 46 //Subconclusion on cultural environment

SUBCONCLUSION 02:

CULTURAL ENVIRONMENT

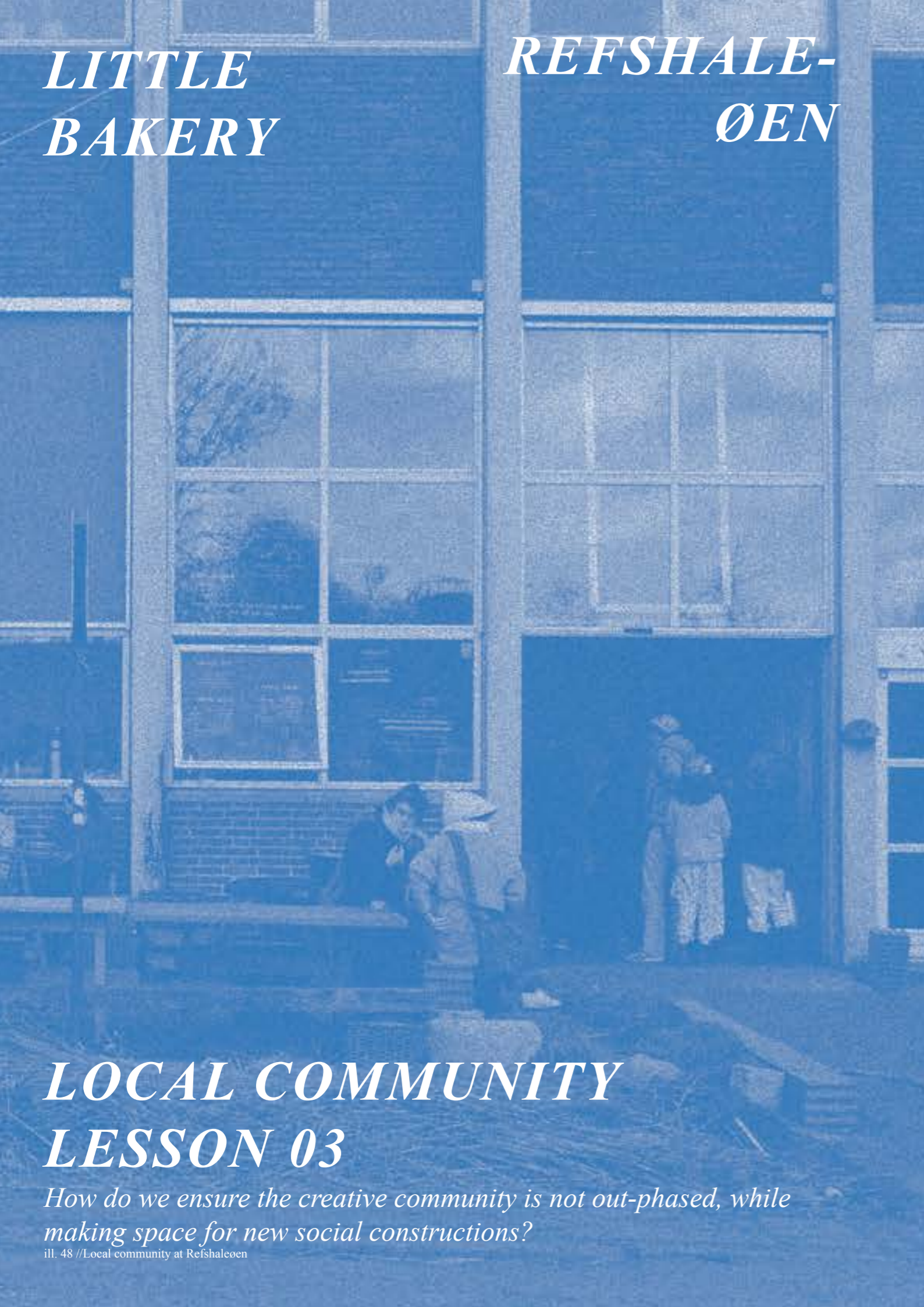
The layers of Refshaleøen



ill. 47 //Industrial trace

Refshaleøen should adopt a pragmatic approach towards transformation. A fear of developing the industrial culture must not immobilize the buildings. They should not remain as empty monumental frames but rather be repurposed with new functions where possible. The old production line has already gone from producing mega ships to mega events. Smaller buildings that cannot accommodate new functions or transformations may be demolished, but their elements can be reused to keep variation in urban space. From now on, it is not cultural heritage but cultural environment. It is the interplay between buildings and urban spaces that creates heritage and an understanding of the site's DNA.

Each period has left its mark on Refshaleøen's fabric, creating contrasts that contribute to a diverse urban environment. New and old building typologies, rooted and temporary structures, and local and global production coexist to form a varied urban space. A pattern that needs to continue. Let past inform present to form future.



*LITTLE
BAKERY*

*REFSHALE-
ØEN*

The layers of Refshaleøen

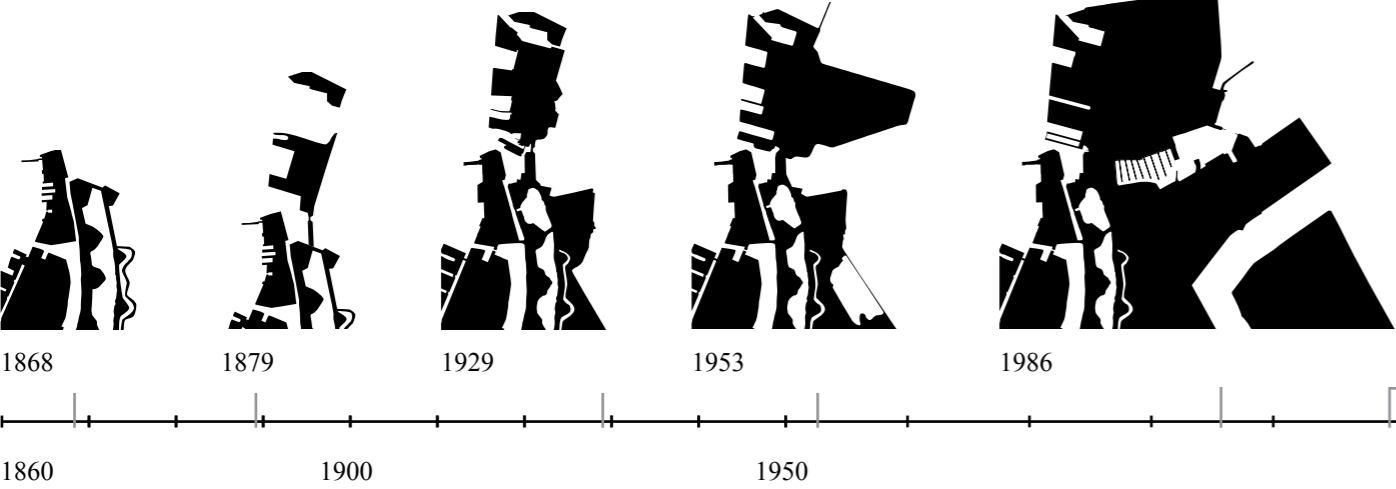
*LOCAL COMMUNITY
LESSON 03*

How do we ensure the creative community is not out-phased, while making space for new social constructions?

ill. 48 // Local community at Refshaleøen

LESSON 03 - HOW DO WE ENSURE THE CREATIVE COMMUNITY IS NOT OUTPHASED, WHILE MAKING SPACE FOR NEW SOCIAL CONSTRUCTIONS?

Historical timeline



1868: Start-up of infill at Refshaleøen

1872: Burmeister & Wain moves in

1950: Svejsehaller are being build

1960: Landfil towards east

1970 - 1985: Economic crisis: Sale of land to real estate company

1980: The wastewater treatment plant 'Lynetten' is inaugurated

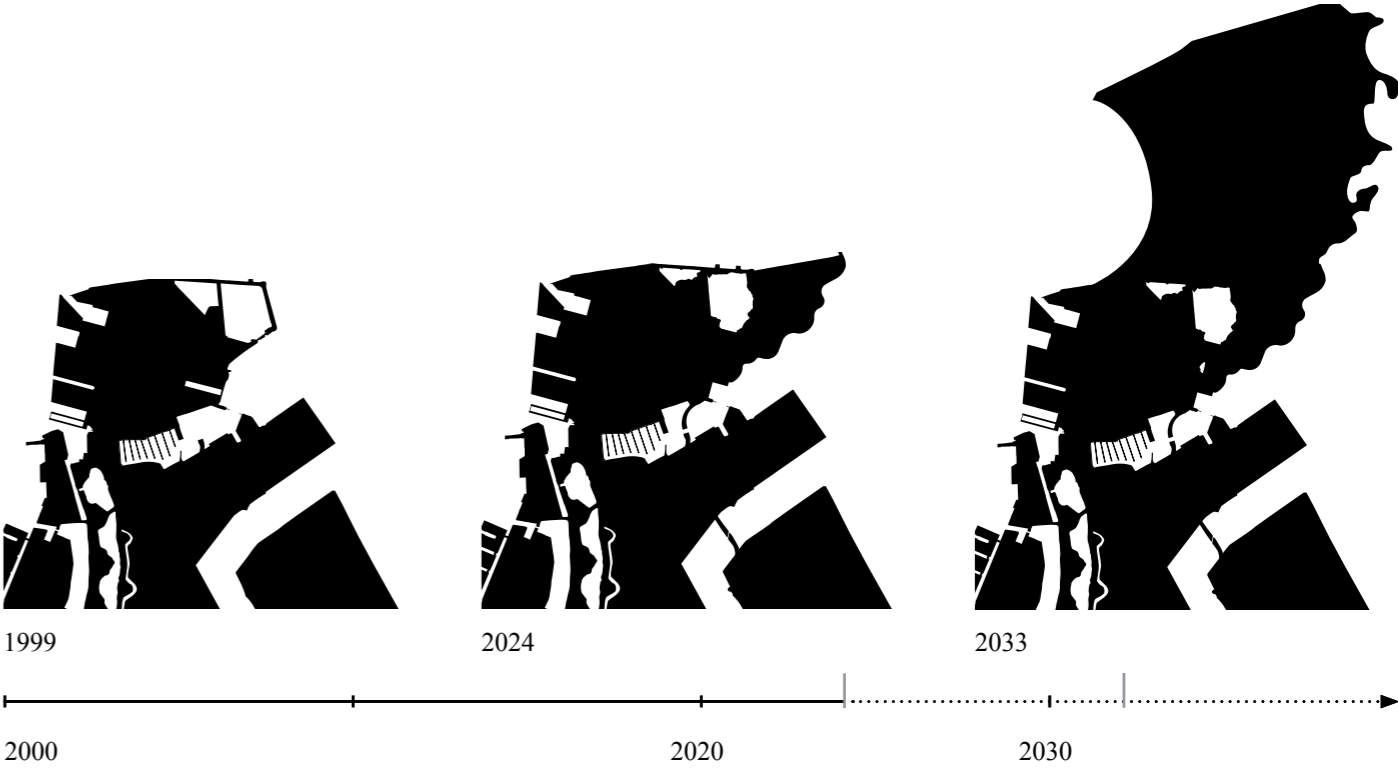
1987: Expanded due to requirements from the Water Environment Plan

1990: Registered as a waste depot due to pollution and urban waste used as fill



1996: B&W goes bankrupt

1997: Modernized and expanded



2009: Refshaleøen designated as perspective area

2014: Eurovision is held and extensive renovations were carried out in preparation

2017: 'Reffen' streetfood moves to Refshalseøen

2018: Copenhagen Contemporary takes over B&W's welding hall

2020: A harbor bus connects Nordhavn and Refshaleøen

2021: Phase 1 of Lynetteholm commences

2024: (Re)Creative and artistic epicenter in Copenhagen



Refshaleøen 2024

365 days of creativeness

Refshaleøen is famously known by its variety of events and continuous changing scenery in regard to seasons. Its ability to change functions regularly have made it into a creative and cultural hub for many visitors. Among rich offers, some of the largest events that draws visitors is exhibitions, festivals and markets along with an inclusive approach to the creative craftsmanship and experimental spaces.

The special thing about Refshaleøen is all the 'junk' lying around, reminiscent of earlier activities. And that's what I love about the place! Without it, Refshaleøen wouldn't be Refshaleøen! Could one imagine the place with precisely defined paths?

(anonymous Facebook user, 2022)

As the quote encapsulates, the landscaping – or lack hereof – plays a significant role in enabling temporary and experimental functions to move in. The large open spaces left behind by B&W for producing ships, offers space and home to many creative activities that calls for bigger space than the city centre can offer. This is especially visible during the warmer months as both outdoor activities on land and water is well-integrated into the urban fabric with close structural Cadeau to the prime of the wharf.

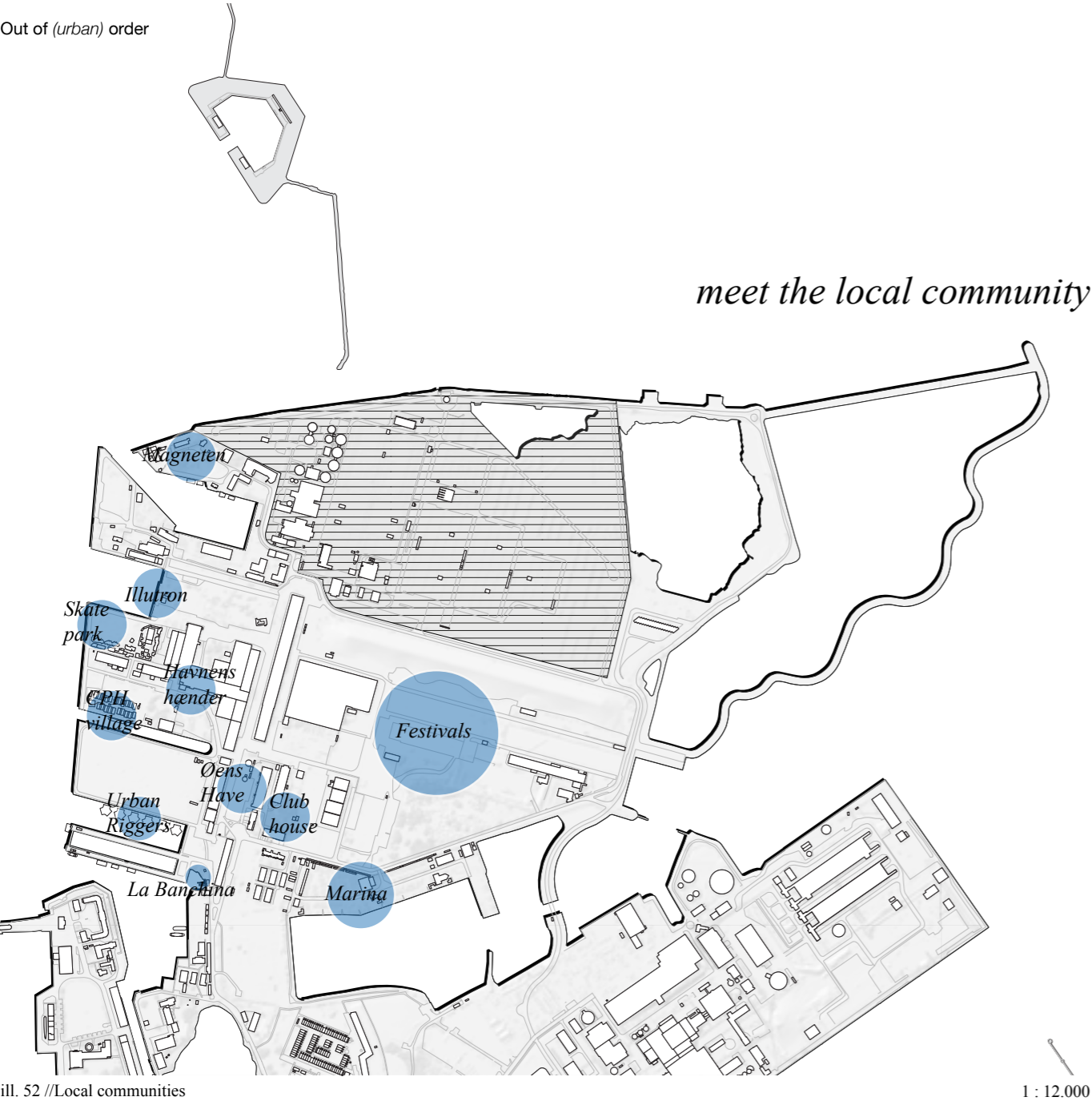
By prioritising flexibility, the spirit of Refshaleøen will continue to support a legacy of freedom to experiment and shape a foundation for creativity and innovation – an asset the public values greatly and the reason many come to visit.



ill. 50 //Refshaløen, 2024



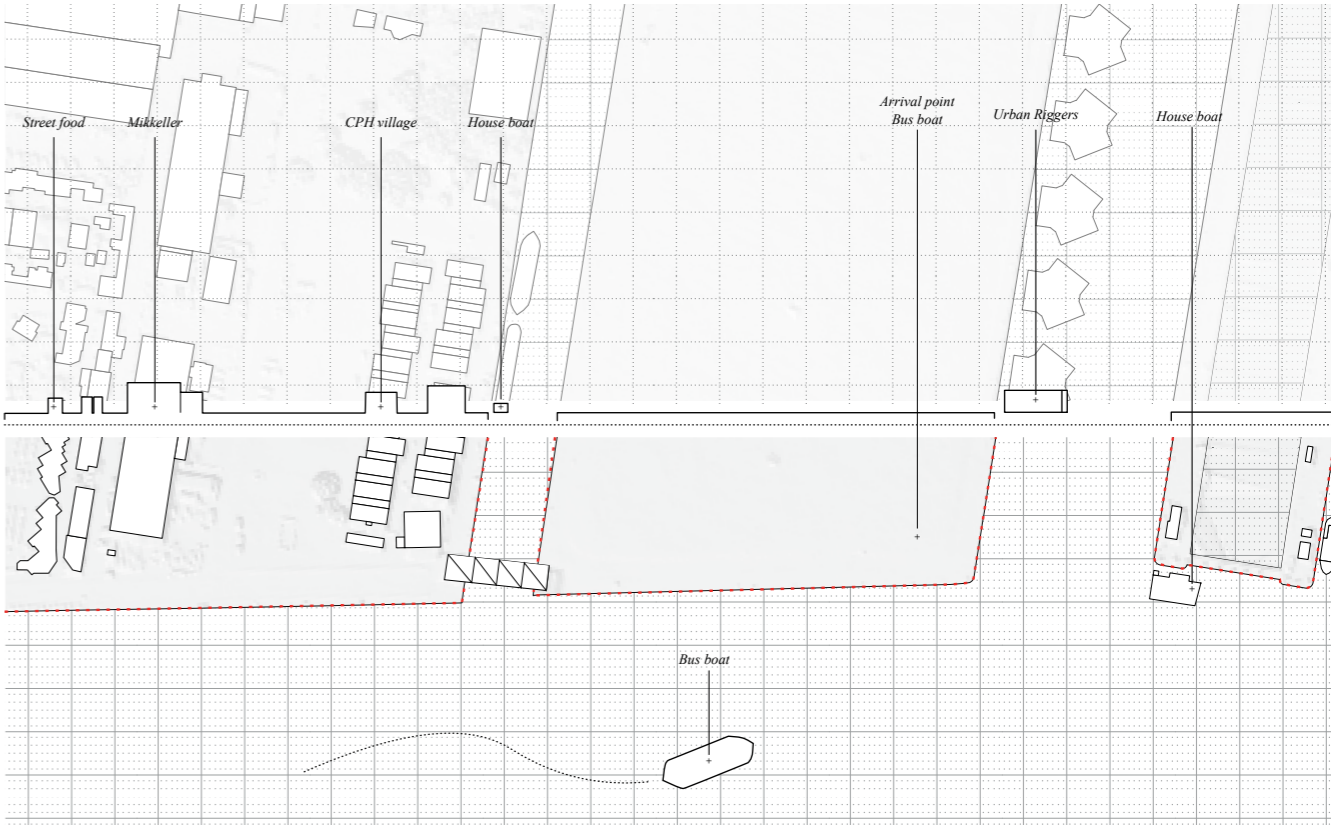
ill. 51 //Diagram of all year-round periodical events



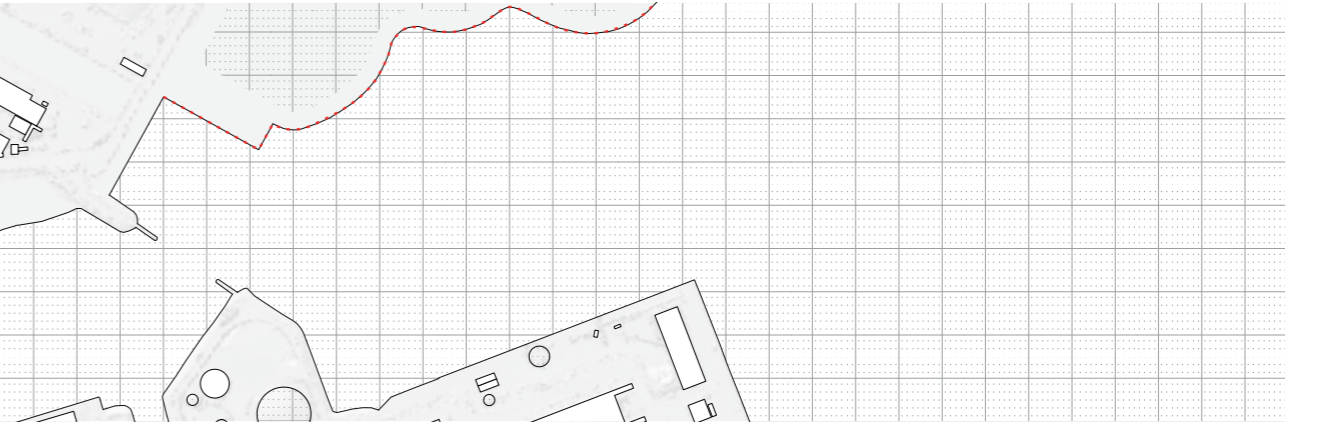
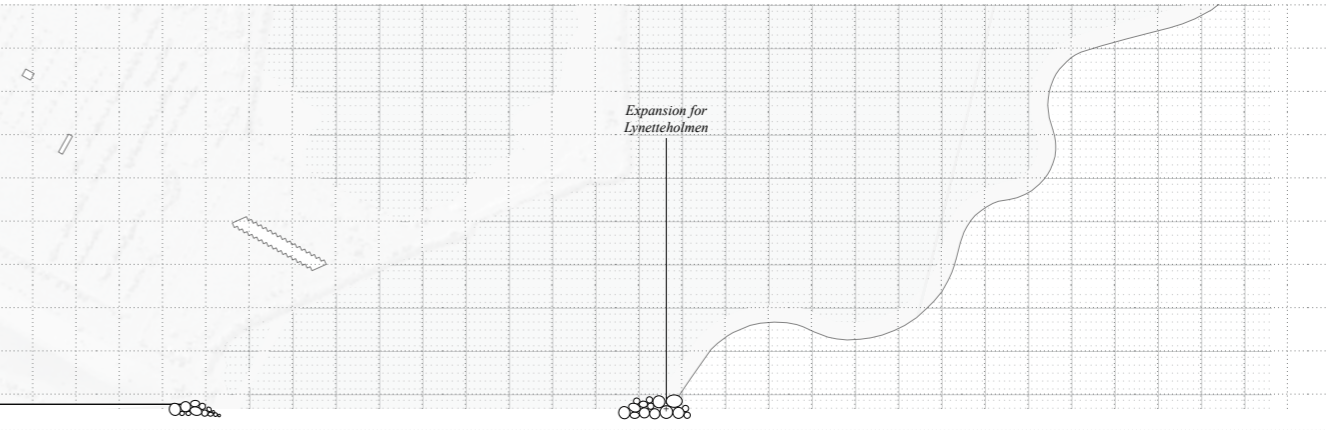
ill. 52 //Local communities

When mapping the different local communities, a pattern emerges. Many of the various communities are situated in the southwest, generating continuous activity and vibrancy. This leads to a lively waterfront with significant engagement, as depicted in ill. 53. The waterfront's edge is reflective and forms a distinct boundary between land and water. In contrast, the eastern area experiences periodic activation, primarily during festivals and other major events, resulting in a more expansive space where non-human agents can emerge. With the plans for Lynetteholm, a perimeter is being established as seen on ill. 54. This creates an absorptive edge that softens the transition between water and land, thereby achieving a more natural appearance.

The relation between land and water can be considered in the future use of the harborfront and the connection to water.



ill. 53 //Active and reflective harbourfront ←



ill. 54 //Absorbing harbourfront ↗

Refshaleøen 2014

space for mega-events



ill. 55 //The old production line



ill. 57 //Eventspace for mega events

One of the qualities of Refshaløen is the ability to host big events. Besides the yearly event of Copenhell and Distortion Ø, Refshaleøen hosted the mega-event of the Eurovision Song Contest in 2014, drawing global attention. Refshaleøen went from industrial stronghold to Eurovision venue. Simply by removing the content of the B&W halls and inserting the new function as a concert arena, Refshaleøen was made ready for the song contest.

The Eurovision Song Contest is not important in itself, but it tells a story of how flexible the area is and why some of these big urban spaces are important for Refshaleøen. It adds to the narrative of a dynamic site, but also how new social constructions can inhabit the islet in a period of time. The traces of the old production line lives on in form of another tale by giving both building and urban area a new function. From producing big ships to producing big events.



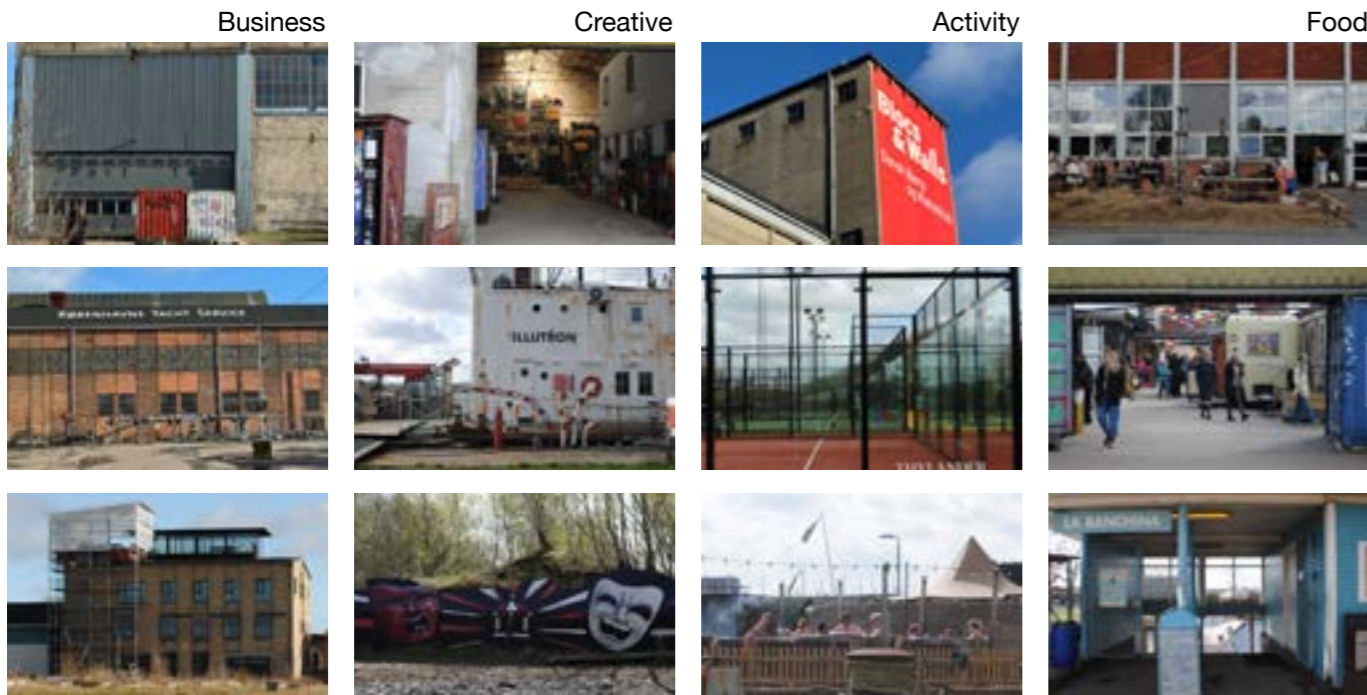
ill. 56 //Refshaløen, 2014



ill. 58 //Copenhell, Refshaleøen

Refshaleøen 2009

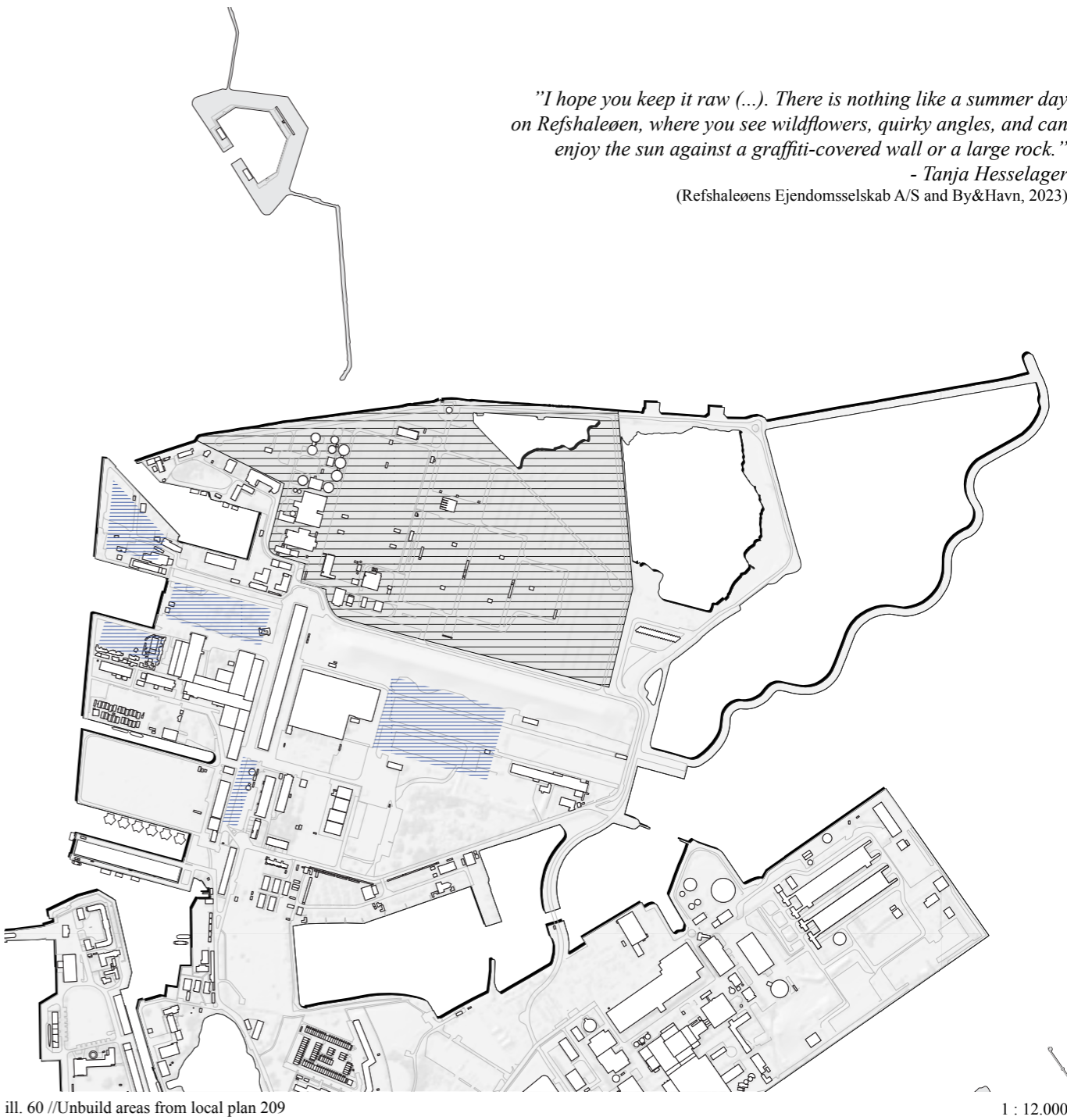
Refshaleøen appointed as perspective area



ill. 59 //The spectrum of functions

A creative and cultural environment started to arise in the absence of the decommissioned shipyard area. From local plan 209, several areas are appointed as unbuild areas as illustrated on ill. 60. Additionally, Copenhagen Municipality appointed Refshaleøen as a perspective area for future development in the 2009 Municipal Plan (Refshaleøen, n.d). Same year Refshaleøen was opened to the public. Already here, the first seeds of Refshaleøen was planted. Refshaleøens Ejendomsselskab was very ambitious in selecting and assembling the many activities that characterizes the islet today - creating an early plan for cultural and social infrastructure for further development.

Refshaleøen is now home for a very broad cultural spectrum, which spans from The Royal Academy and architectural offices to local bakeries and Streetfood. The site has also functioned as a platform for more experimental planning. Firstly, housing Copenhagen Village, which is a student housing project working with a 10-year renting period. Secondly, the floating student housing, Urban Rigger, is an experimental approach towards life on water and as a response to the shortage of affordable housing in our cities. Finally, housing temporary structures like Streetfood adds to the story of Refshaleøens dynamism and experimental approach.



ill. 60 //Unbuild areas from local plan 209

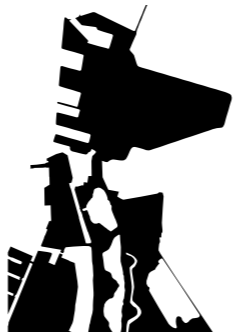
"Preserve the cultural heritage and workers' history (...). Create more space for creative industries - more freedom and dynamism, less regulation."
- Vibe Kjer Nemmin
(Refshaleøens Ejendomsselskab A/S and By&Havn, 2023)

Refshaleøen 1950

the workers of Burmeister & Wain

The legacy of Burmeister & Wain is strongly represented through the workers. As Refshaleøen transitions into present, it is important to remember the social integration of their contribution into today's development. In doing so, the history of B&W's workers continues creating a deeper social dimension. This helps to bridge the identity of old maritime industry with contemporary residents.

The countless hours of working on Refshaleøen sparked traditions, memories and experiences shared among the workers, creating a large and strong community able to withstand the wavy grounds of the firm's history. The power of this community had a great impact on the Danish society with it being one of the largest industries in Denmark in multiple settings from ground-breaking innovations in international water-travel to advocating for social equality within the social layers. The following quote comes from an interview with Ole Eriksen, B&W worker. (MultiHonda2010, 2016)



ill. 61 //Refshaløen, 1950

Interviewer: “All employees have been walking around with a letter of resignation in their pocket for months (...) Are you looking for another job?”

Ole Eriksen: ”No, I am not. I have been here for 21 years. That means, that I am built with B&W wharf. And everything that B&W stands for. Both friendship and good ships.”

(MultiHonda2010, 2016)

Not only was Burmeister & Wain a workplace for many, but it was also a social community of entrepreneur- and craftsmanship prioritising innovation and quality. By drawing upon this notion to more qualitatively understand the atmosphere within the workplace and the community's overall attitude, an embodiment of space of curiosity and creativeness is represented through the workers, which contributes to a unique identity for Refshaleøen and the potential to create social cohesion between past and present by preserving cultural traces and the community's ties within.

ill. 62 // Workers fighting for better labour rights, Allan Mylius Thomsen

2 ører, 10-øren, 36 rør, Abekatten, Aborten, Andenviolinen, Arkitekttander, Arme og Ben, Artisten, Atlanterhavet (undermesterbror til Vesterhavet), Automtbokseren, Ayatollahen. B&W Kai, Babs, Badebolden, Bademesteren, Bageren, Baghjulet, Baluba Frank, Bambi, Bananen, Bankrøveren, Benny Bomstærk, Bent Flæskerøv, Bjergede, Blomsterhandleren, Bløde jord, Blåbærtud, Bordluderen, Bomben, Bonde Hans, Bongo, Borgmesteren, Bornholmeren, Bradepanden, Brilleyten, Brok Kurt, Brumbassen, Bryggerhesten, Brylcreme, Buldetrold, Bænkebideren, Bøjle-Søren, Børge-gennemgang, Calle, Chaplin, Chimpanse, Christian Gasarm, Cocktailpølsen, Cykelstyret, De lange slanger, Den bløde Jord, Den brækkede Arm, Den Døve, Den evige nier, Den Fromme, Den grimme Dame, Den Hvide hval, Den lyserøde Panter, Den røde løber, Den skoldede Hånd, Den skæve kridtstreg, Den skæve Ligvogn, Den Skodeløse, Den Runde, Den Tavse, Det beskidte dusin, Dikke Luis, Dingle Jørgen, Dollargrinet, Druk Ole, Druk Torben, Duen, Dynebetrækket, Døgnbrænderen, Elektrolytten, Elton John, Elvis, Emhætten, Esbjerg, Falkedøje, Far til fire, Fedtøre, Fiskebollen, Flødebollen, Forhjulet, Frankfurteren, Frikadellen (Kotelettens bror), Frynse Carl og hans søn Trevlen, Frøen, Frøsnapperen, Fuglekvidder, Fugleungen, Fynboen, Gasarmen, Geden, Gorillaen, Granitten, Gravballemanden, Gribben, Grisen, Grævlingen, Gråbjørnen, Gråpæren, Guldfugl, Gummibjørnen, Gummibolden, Gummi Carl, Gåselorten, Habitsangeren, Ham der lærte duerne at gå, Hans Majestæt, Harald Pedel, Harmonika Helge, Hattenål, Havnefogeden fra Rostock, Harlev Sygehus, Hesten, Hesteløven, Holeby, Holger Danske, Hoppen og Plagen, Houdini, Hornfisker, Hundelorten, Husmanden, Hvalen, Hæmoriden, Høvepovel, Indianeren, Jan tusind bajer, Jens Mange penge, Jens Knibtang, Jernhovedet, Jernæderen, Jesusbarnet, Jet Jensen, Jo-jo, John Drøngerøv, Jordspekulant, Jungledyr, Jørgen Dingle, Jørgen Skidderbras, Kaj cykelstyr, Kaj fidus (også kaldet Damernes ven), Kalkunen, Kappelænen, Karl Røvreder, Karl Sild, Kartofflen, Kasserollen, Kineseren, King Kong, Kiksprikkeren, Kjeld Hærværk, Klemmelusen, Klør Fem, Knalde Karl, Kniven, Knortekæben, Knortekæppen, Knudepik, Knækpølse, Kobber Ole, Ko-foden, Kolding, Kold Mad, Kommoden, Kommunist Svend, Kompot Ole, Kontravægt, Kopatten, Korporalen, Kors i Røven, Kosterkaffet, Koteletten (Frikadellens bror), Kødje Arne, Kusse Karl, Kravlenissen, Krebinetten, Kronprinsen, Krølle, Krøl Søren, Kulturbøffen, Kuppelfisen, Kylling, Kænguruen, Kødpølsen, Lampepudderen, Lange Ib, Langeland, Lange Luke, Langedalle, Langesvend damerøv, Lang Maren, Lappedykkeren, Lars Post, Laurits Svingben, Leif den Lykkelige, Ligbrænderen, Liget, Lille Arne, Lillebror, Lille Ole, Lille Olsen, Lille Rust, Lille Svend, Lorteleif, Lotte, Luntén (Kineserens søn), Lygtetænderen, Lænkehunden, Makrellen, Manden med leen, Manden og Barnet, Melormen, Meksikaneren, Mester, Mester Helge, Mester Lue, Mesters Dreng, Mikkel Mug, Molotov, Morfar, Mormor, Mosegrisen, Muggi, Mumme, Munchausen, Musen, Mælkebøtten, Nattens Dronning, Nils Bohr, Niels Brændevin, Ni-finger, Nossen, Ole Spand, Oliesheiken, Operasangeren, Op på tå ned på hæl, Osteklokken, Otte hundrede omdrejninger, Papegøjen, Parabolen, Pastoren, Peberfuglen, Perle, Perletand, Pindegnaveren, Pingvinen, Pinocchio, Plattekaj, Plommer, Pomadedrengen, Pommens fritten (søn af Kartofflen), Postmesteren, Poul Dejlighberg, Poul Tusmørke, Proppen, Pytten (søn af Skovsøen), Pølse, Radisen, Rally Per Regnormen, Ridefogeden, Roskilde Willy, Rotten, Rotteslagteren, Rotteungen, Rullebukken, Rullepølsen, Rygsvømmeren, Ryste Osvald, Rødbeden, Røde Arne, Rødvind Per, Røveren, (Syltens makker) Rødkridt, Rødspætt, Røveren, Røver Hans, Sildeøje, Silkeaben, Skeletsmeden, Skelettet, Skifte Kurt, Skive Erik, Skrigeren, Skovsøen, Skuespilleren, Skuffe Erik, Skuffen, Skrigeren, Skvalpesoen, Skygebokseren, Skærvebunken, Skødedrengen, Skøden, Skødekiddet, Slik og Lir, Smeden, Smukke Jensen, Smæklåsen, Smørkagen, Småkagen, Snudebilen, Snøfte, Sorte Mads, Sortfod, Sovsemund, Spadestikket, Sparegrisen, Spidsmusen, Spillemanden, Sprinteren, Spædekælven, Spærreballonen, Standerlampen, Steamer, Stenbideren, Stockholm, Store Erik, Svend guldtand, Stodderkongen, Store Svend, Strygejernet, Sukkerbolien, Sukkerroen, Sulebenet, Suppehønen, Sur-mester, Svend tidligt op, Sylten (Rødbedens makker), Syre Øjvind, Søde Karl, Sølvrvæven, Sødsmælk, Sømanden, Sønderjyden, Søpapegøjen, Søren aldrig beskidt, Søren Bajs, Søster, Søvnig, Tango, Tante Viggo, Tarok, Tin Tin, Tivoli Poul, Tomaten, Tommeltotten, Tolvfingeren, Trevlen, Trykkogeren, Tykke Kaj, Tykmælk, Tyren, Tårnspringeren, Udspringeren, UHA-Hansen, Ulykken, Undermesteren, Vadehavet, Vanddråben, Vandmanden (far til Vanddråben), Vandpytten, Varanen, Varde, Vaskebjørnen, Vaskeskindet, Vesterhavet (undermesterbror til Atlanterhavet), Viggo Hverandendag, Violinen, Violinspilleren, Volvo Verner, Vovhunden, Von Munchausen, Væggelus, Zik Zak, Æblekage, Øl Kurt, Ørkensket, Ålen

Social memory

A strong asset in humans is their ability to identify successful urban spaces subconsciously based on phenomenology. With B&W workers daily life being on Refshaleøen, the essential social points of gathering provides dynamic urban spaces of high social, environmental and historical significance that changes as time passes. An overall impression, provided by the community of B&W, is that informal meetings happened in close relation to the organisational structure of who worked where and on what. Considering the size, it is safe to assume that plenty of small pockets of comradery valuable in the past, left Refshaleøen with the workers, but stories withstand. Louise Hvid, apprentice at B&W, tells:

“Willy, welding in S2, and his mates were named Frontwheel and Rearwheel. I had a lot of fun with them, especially when we celebrated birthdays during the double-shift for the 10th time in a month..”

(Louise Hvid, 2018)

The quote describes a social structure based on self-grown adoptive tendencies scattered across the island and provides sporadic new meetings constantly based on a shared interest in maintaining a strong social bond. This cultural asset is important to the spirit of Refshaleøen for it to continue being a foundation for strong communities. Additionally to sporadic gatherings, physical structures as well as inherited social memory.

Marketenderi

Commonly known as Tutten, acted as an agora to many. This cantina underwent multiple transistions in order to adapt to the growing business of Burmeister & Wain whilst statically maintaining the symbolic value of social interest. What started as being owned by the board of directors providing lousy conditions in order to save money, sparked the establishing of ‘Fællesklubben’, workers’ union believing in a socialistic approach to oversee Tutten instead. With Fællesklubben taking over the cantina, conditions improved resulting in economic gain. (Thomsen, 2021)



Photo: Michael Perlmutter



Photo: Benny Pedersen



Photo: Finn Svensson, Arbejdermuseet



Photo: Dan Aistrup



Photo: Johnny Worning

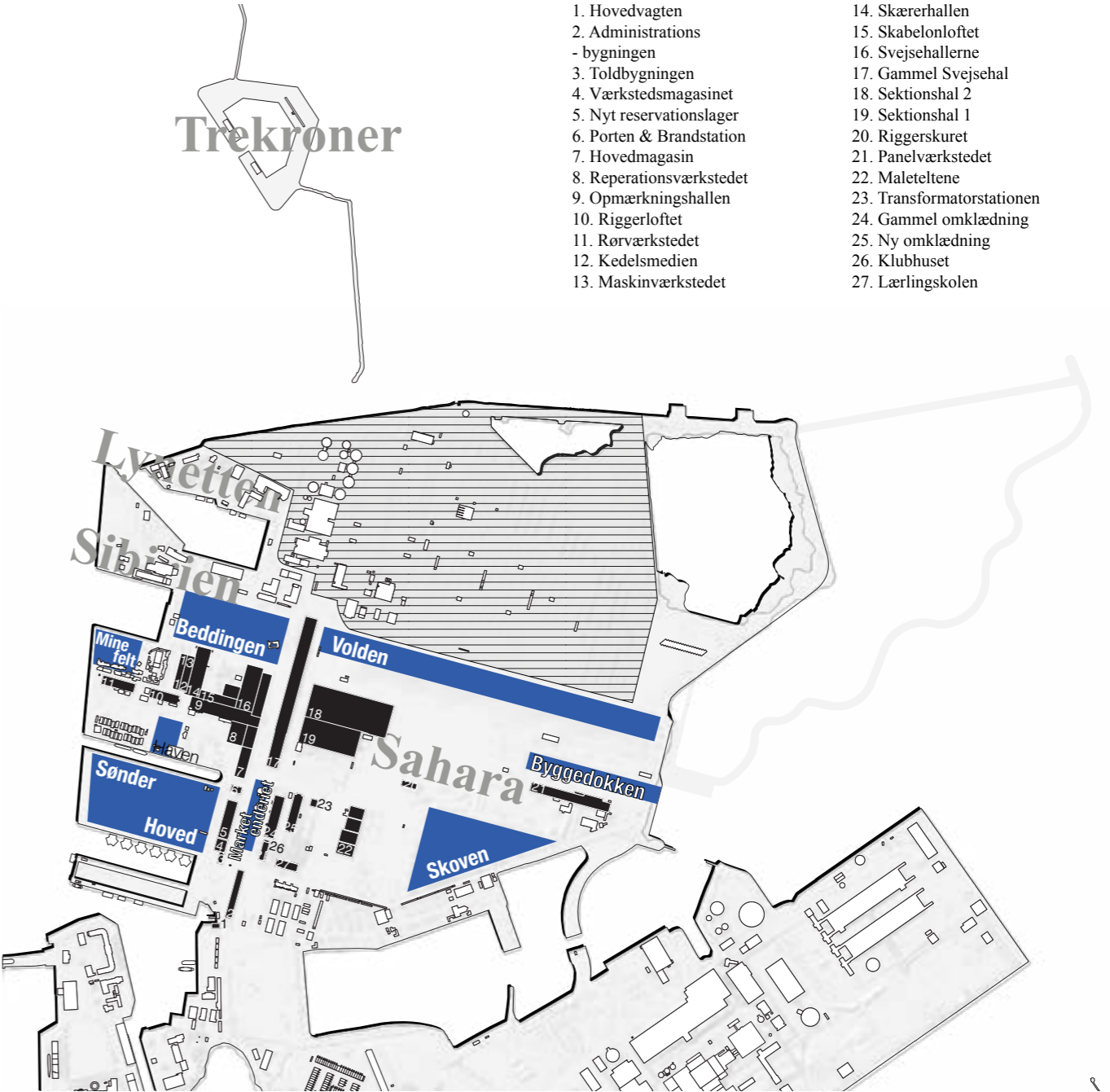


Photo: Tommy Howard



Oil on canvas: P.S. Krøyer, SMK.OPEN

Trekroner



ill. 64 //Social memory of important spaces

1 : 12.000

26. Arbejdernes Klubhus

An example of continuing the social memory of functions, is Arbejdernes Klubhus. In the past, this physically small building facilitated everything from football teams to birthday parties to political debates. In doing so, contributing to valuable cultural exchange and recreational purposes. Today, the leisure lifestyle is continuing to bloom. By hosting social gatherings and events catering to all, the physical structure still radiates as a focal point of community engagement.

The experimenting, self-grown and self-done are what creates a connection between the creative agents on Refshaleøen. Both between present agents but also a connection from past communities to present ones. The engagement from the communities has had an enormous value for the site, which should not go unnoticed. Therefore, it is crucial the present and future communities will be secured in the future plan.

Urban tissue

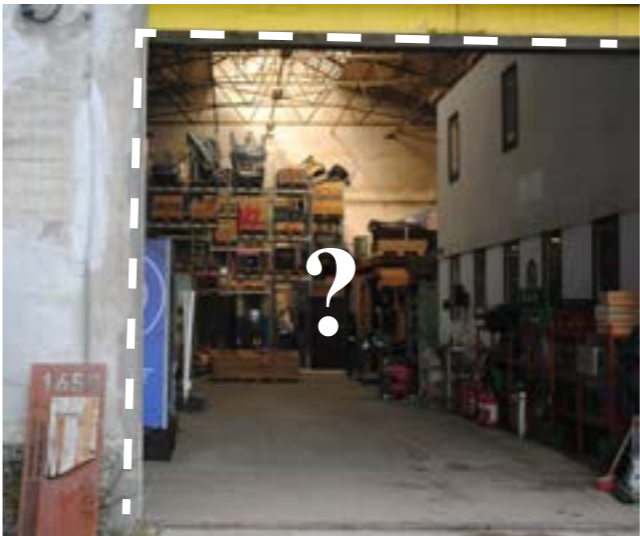
Present facades and groundfloor



ill. 65 //Active groundfloor as part of the urban tissue

One of the qualities of Refshaleøen is the way of binding user-oriented businesses to the urban tissue. Local agents, both small and big, like La Banchina or Streetfood creates social hubs by integrating into the city's fabric. It creates a social infrastructure that supports people and communities by getting together and creating social bonds and sense of belonging (Pelsmaker, 2022).

The possibility of activating facades and groundfloor



ill. 66 //Potential expansion of public space



Refshaleøen has an inherent potential in some of the industrial gates. Many of them are closed off and private in their nature. By opening them up they could be an extension of the public space. Allowing them to integrate with the overall layout of the urban tissue on Refshaleøen. The smaller gates or garages could also function as common facilities and thereby save some squaremeters. The potential in saving squaremeters through sharing facilities like garages, fitness or office canteens is a quality, but could also help with creating a mindset of a common responsibility for common facilities. Creating a strong bond between resident, user and business.



As learned earlier in the lesson of 'Cultural environment', the eastern part of the site is lacking a hierarchy in flow and simply infrastructure in itself. By layering the mapping of landscape characters with present spaces of communities we investigate the connection between them. Many of the landscape characters are placed along or beside the present communities.

"Connection to nature increases citizens' wellbeing, both when people are visually connected and when they have physical access."
(Pelsmakers et al., 2022, p. 139)

As the quote indicates, nature right at our front door can improve the overall wellbeing for humans, including the mental health. Can the relation between the landscape characters and the local communities benefit from each other enhancing a physical and social bond.



ill. 68 // Pictures of abrupt and undefined connections on site



ill. 69 //Subconclusion on local community

SUBCONCLUSION 03:

LOCAL COMMUNITY



ill. 70 //Reffen streetfood

The different transitions the area has undergone has made it a platform for many different communities over the years. The importance of the creative class inhabiting the area in the absence of the old shipyard industry cannot be overstated. It has created a strong bond between the self-grown communities. Furthermore, it shows how the local community has had an active role in shaping Refshaleøen. The local creatives extends the public space and imprints itself into the urban tissue. We need to continue this pattern! Not dictating the character of space but allowing the function to be created in interplay with the dynamism of the city through temporality. Future becomes futures.

There are far too many examples of the creative class being out phased, when commercial urban development hits. The present and future local communities must be secured in the plan.

Urban palimpsest

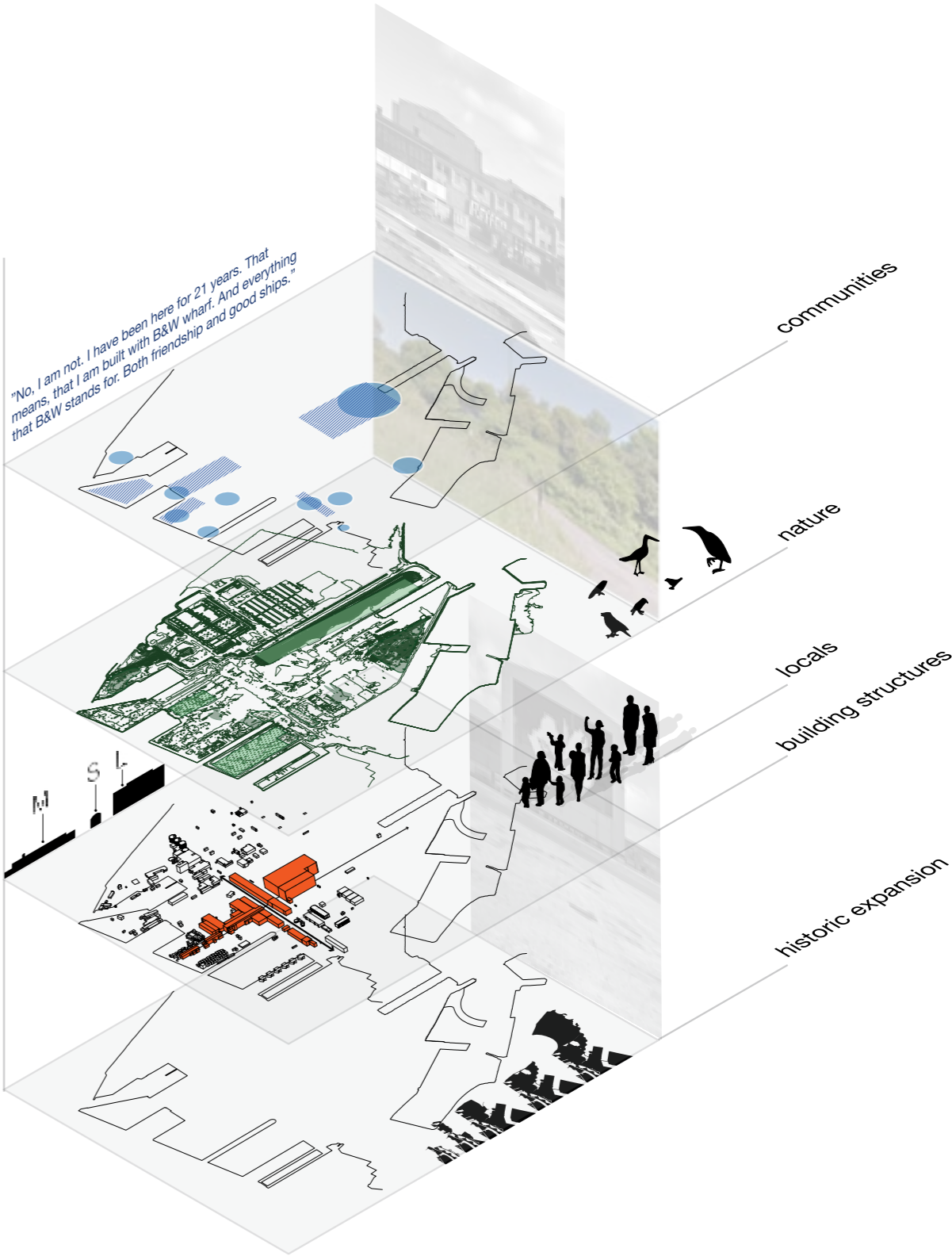
in scale 1:1

Refshaleøen has undergone multiple transition over time, which has left its own traces on the urban tissue, resulting in an urban space rich in diversity regarding typology, landscape, inhabitants and function. This has created a challenging and dynamic platform for urban development. The analyses in each lesson are a reduced layer to simplify the understanding of Refshaleøen. The comprehensive understanding of Refshaleøen lies in combining all the layers and acknowledge that they overlap in a web of intertwining networks made up of different agents. More so, the lessons have showed the unique urban tapestry of new and old, rooted and permanent, local and national. Combining into an urban palimpsest in scale 1:1.

Like many other industrial areas, Refshaleøen has its strengths in its profound identity and existing qualities. Existing structures and patterns that are not to be ignored, but strongly recognized in the upcoming development. A district with such profound layers and inherent qualities deserves more than a tabula rasa treatment*. Instead of starting from scratch, the initiatives should be nurtured and upscaled. Destruction can no longer be a factor equal to urban growth.

The three lessons have informed that Refshaleøen’s foundation already encompasses many of the initiatives we need to consider moving forward. The difficult task of future urban development is to address contemporary challenges while preserving the layers with inherent qualities of the place. To achieve this a rethinking of the hierarchy is needed.

Paradoxically, it seems like the greatest possibility and threat towards the unique site becomes the upcoming development.



ill. 71 //Refshaleøen as an urban palimpsest



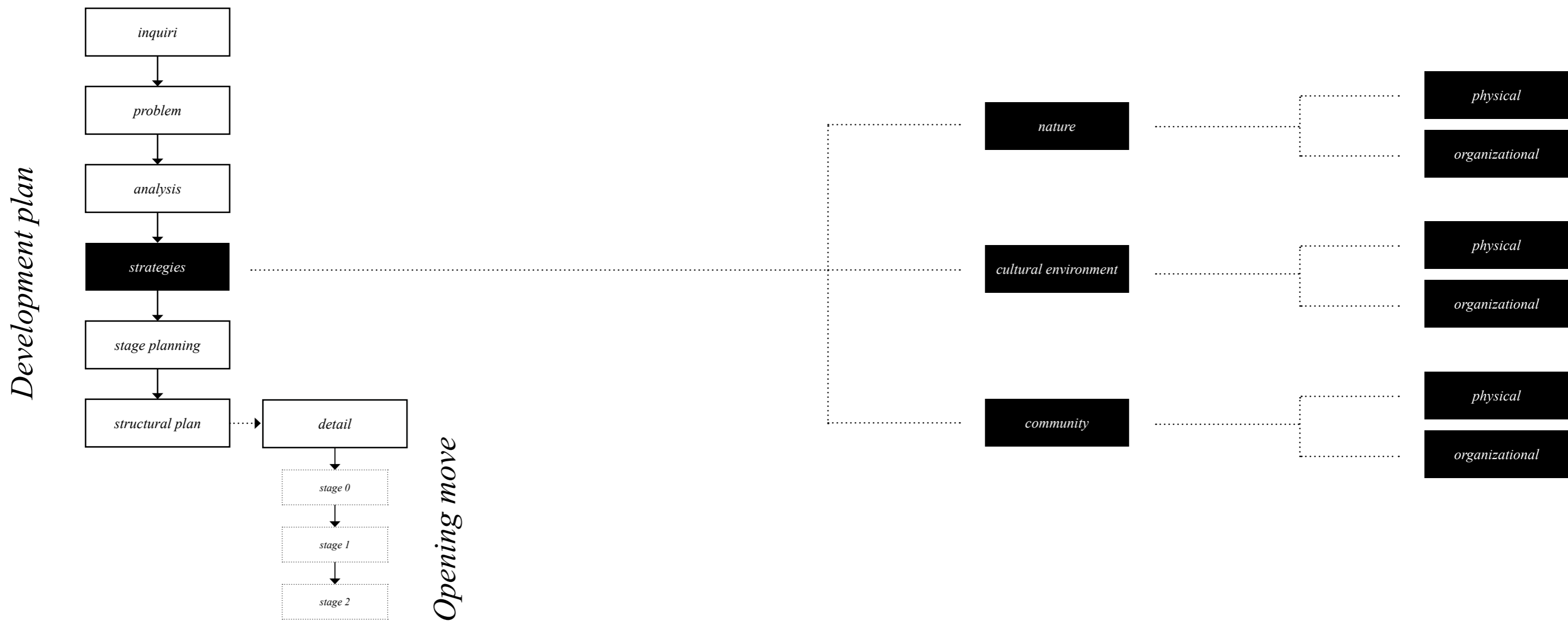
04

ill. 72 //B&W facade

STRATEGIES

Overview

strategies

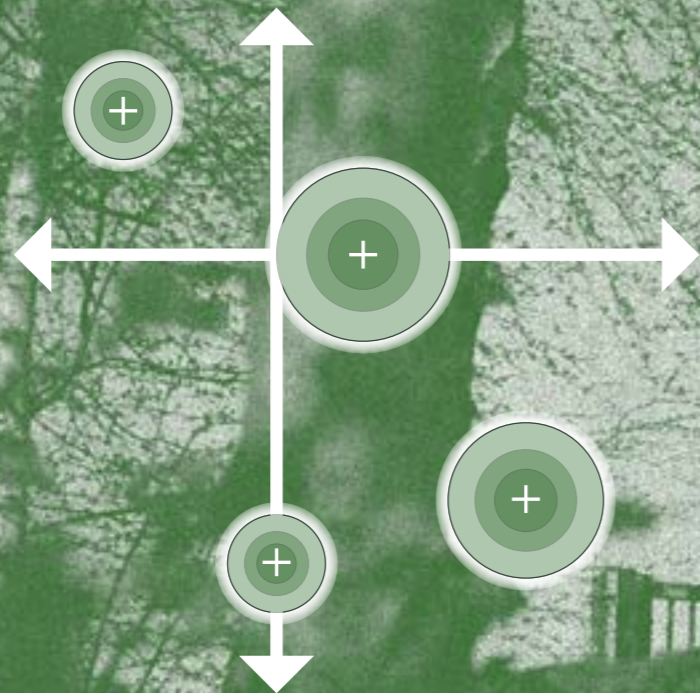


ill. 73 //Overview of strategies

Looking at the development plan in ill. 73, the strategies are based on the key findings from the analysis. In the following chapter, the strategies are divided into the three themes of this project, ensuring that the lessons from the previous chapter are fully covered. Each theme encompasses both an organizational and a physical strategy. We believe a strong and dynamic development plan must address both organizational and physical aspects in order to face the green transition of urban development.

■ □ □ organizational

identify nature plots

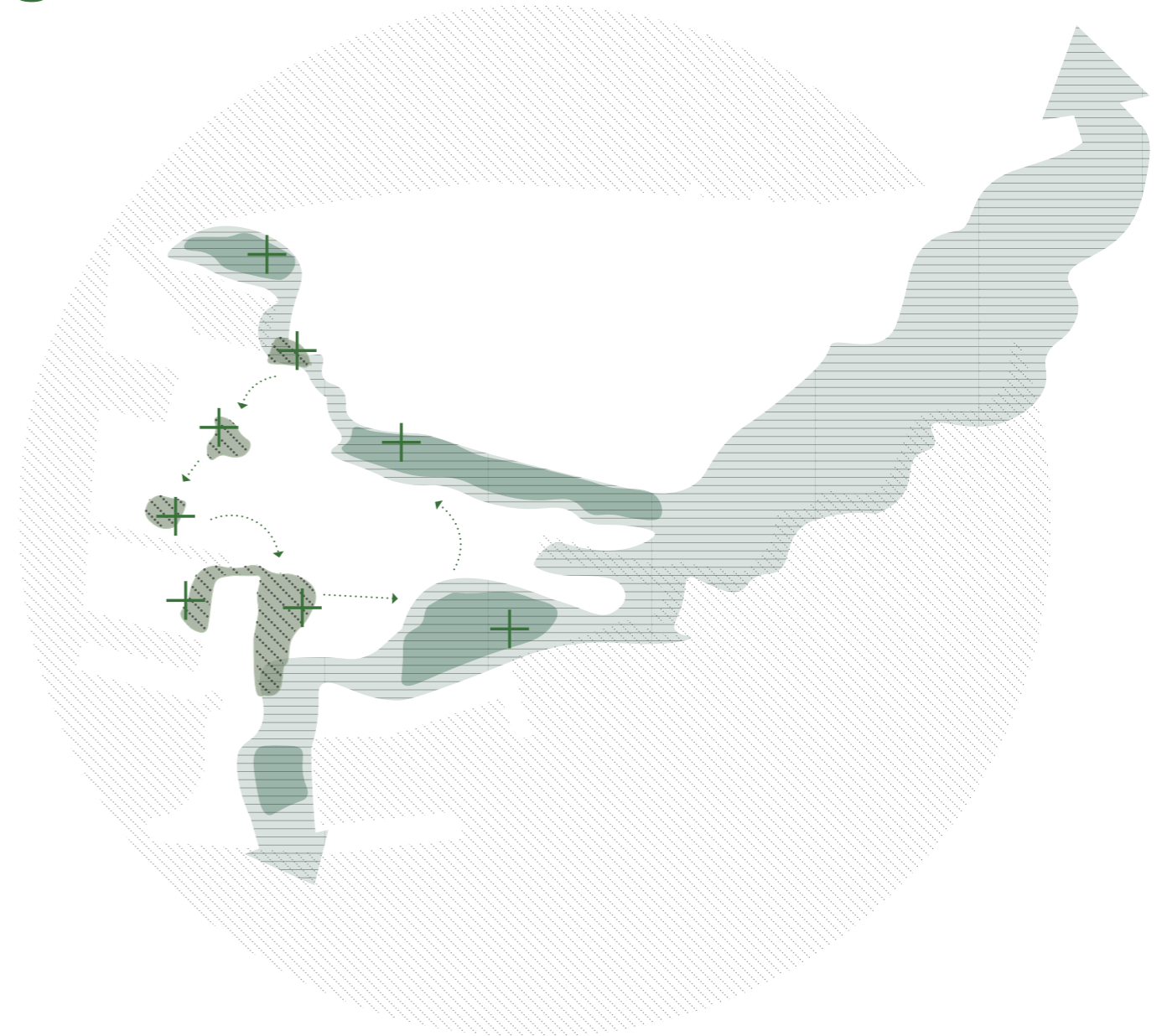


Proposing a new order where nature plots are identified before building plots. Preserve, enhance and expand the natural landscape like the approach towards the built environment. It is about time we let go of our own self-interests and control but instead give back space to some of the more non-human agents. Turning post-industrial landscape into nature heritage.

ill. 74 //Identify nature plots

nature breaks grid

physical ● ○ ○

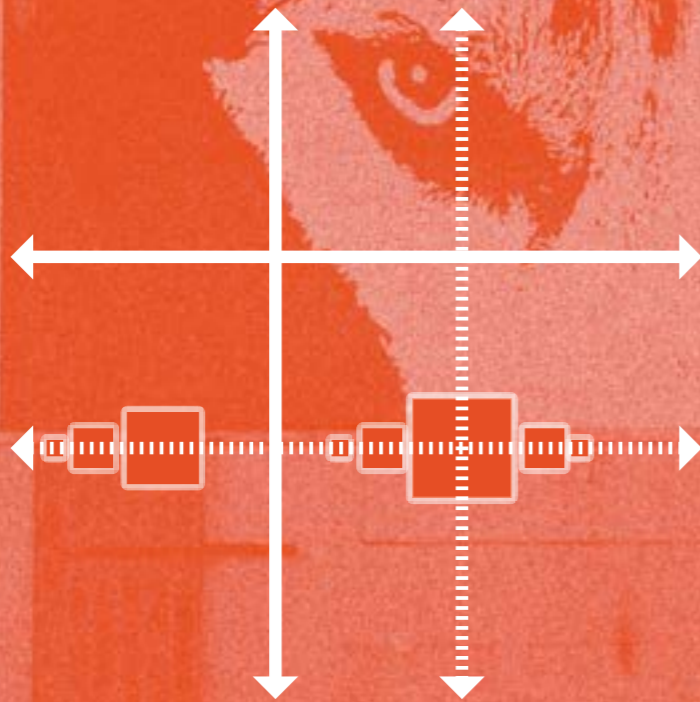


ill. 75 //Nature breaks grid

Let industrial nature and leftover landscape at Refshaleøen grow into bigger green connections. The bigger green connection is to grow into an ecological connection - giving space for non-human species, microorganisms and rich biodiversity. A new order where we try to balance the land between human and non-human actors.

□ ■ □ organizational

*past
forms
future*

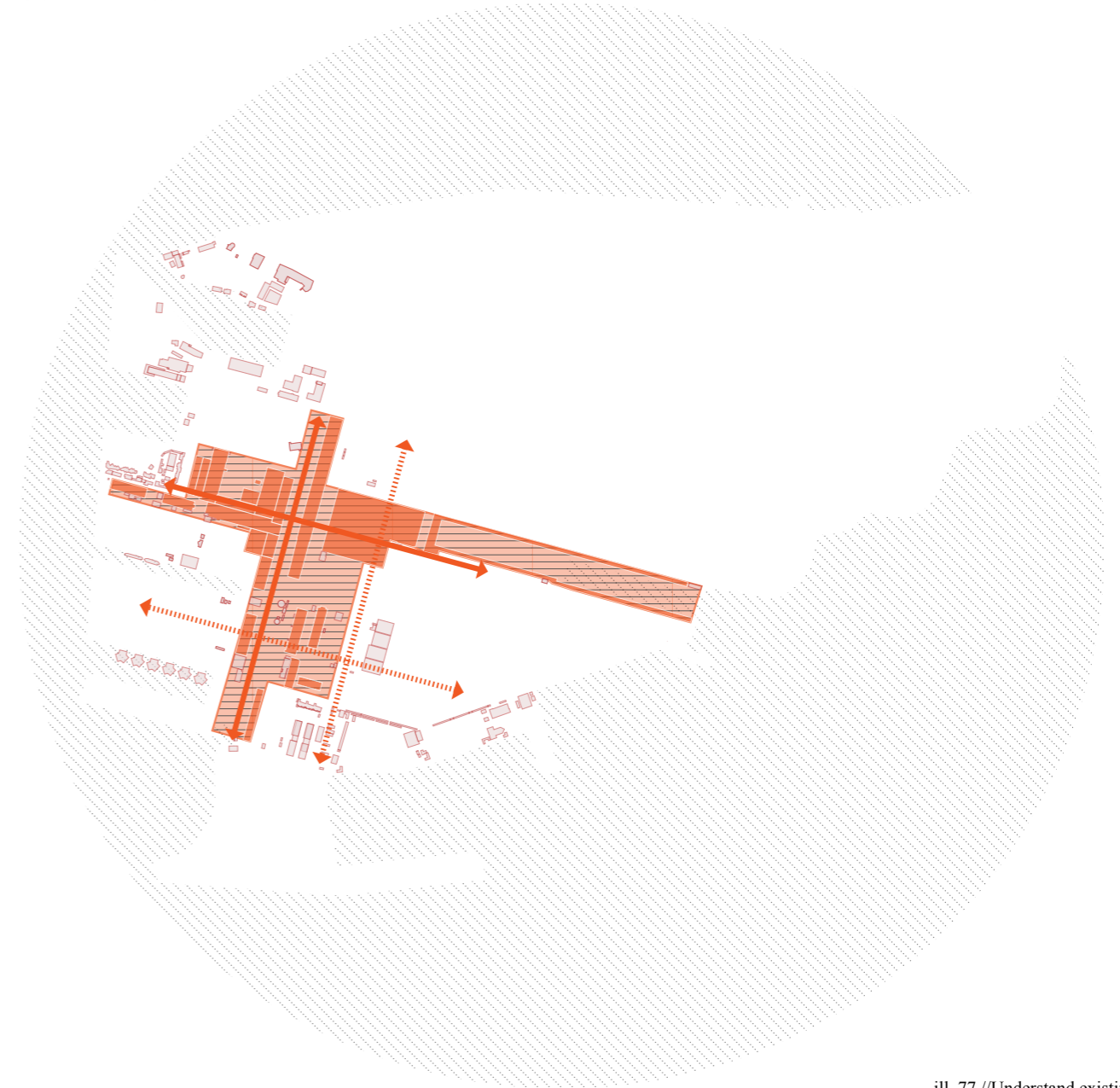


Refshaleøen offers something completely different than the rest of Copenhagen's districts. The many transitions have made its marks in form of different typologies, materials and scale. This pattern of mixed scale allows for different functions and businesses to co-exist side by side. Giving space for both big and small agents. By allowing a pattern of different building plots and building sizes in the future is a way of maintaining the dynamic urban space. Variation must be truly present in order to create a dynamic and diverse urban space. Present in function, building typology and user composition, if one is to feel it is genuine.

ill. 76 //Past forms future

*understand
existing
dna*

physical

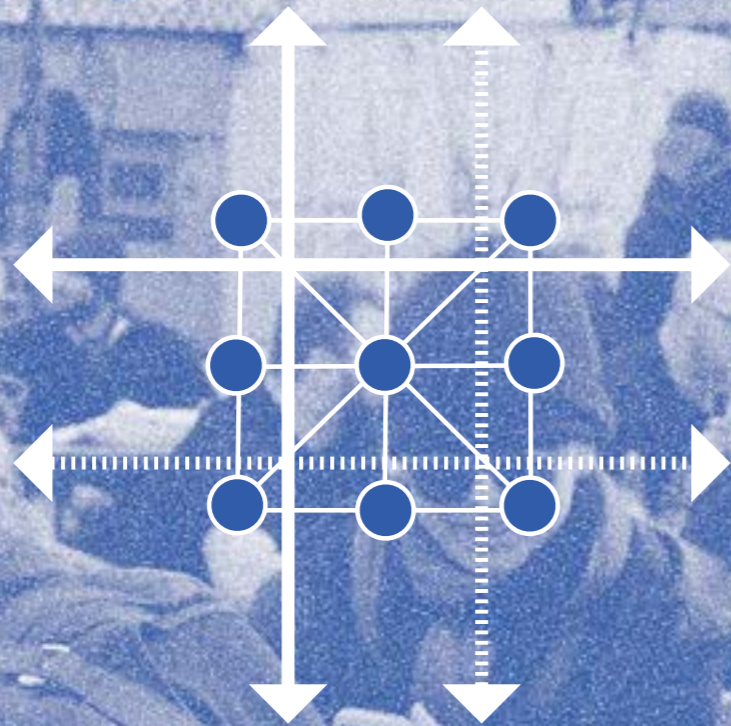


ill. 77 //Understand existing DNA

We need to study and understand the existing structures and build upon that in order to not lose the narrative of how the “industrial cradle” of Refshaleøen gave value to the rest of the city. The preservable volumes can be seen as empty shells and thereby take on new functions and programming in order to live on as something new, but still function as an important anchor point and industrial memory.

□ □ ■ Organizational

introduce shareholder mindset

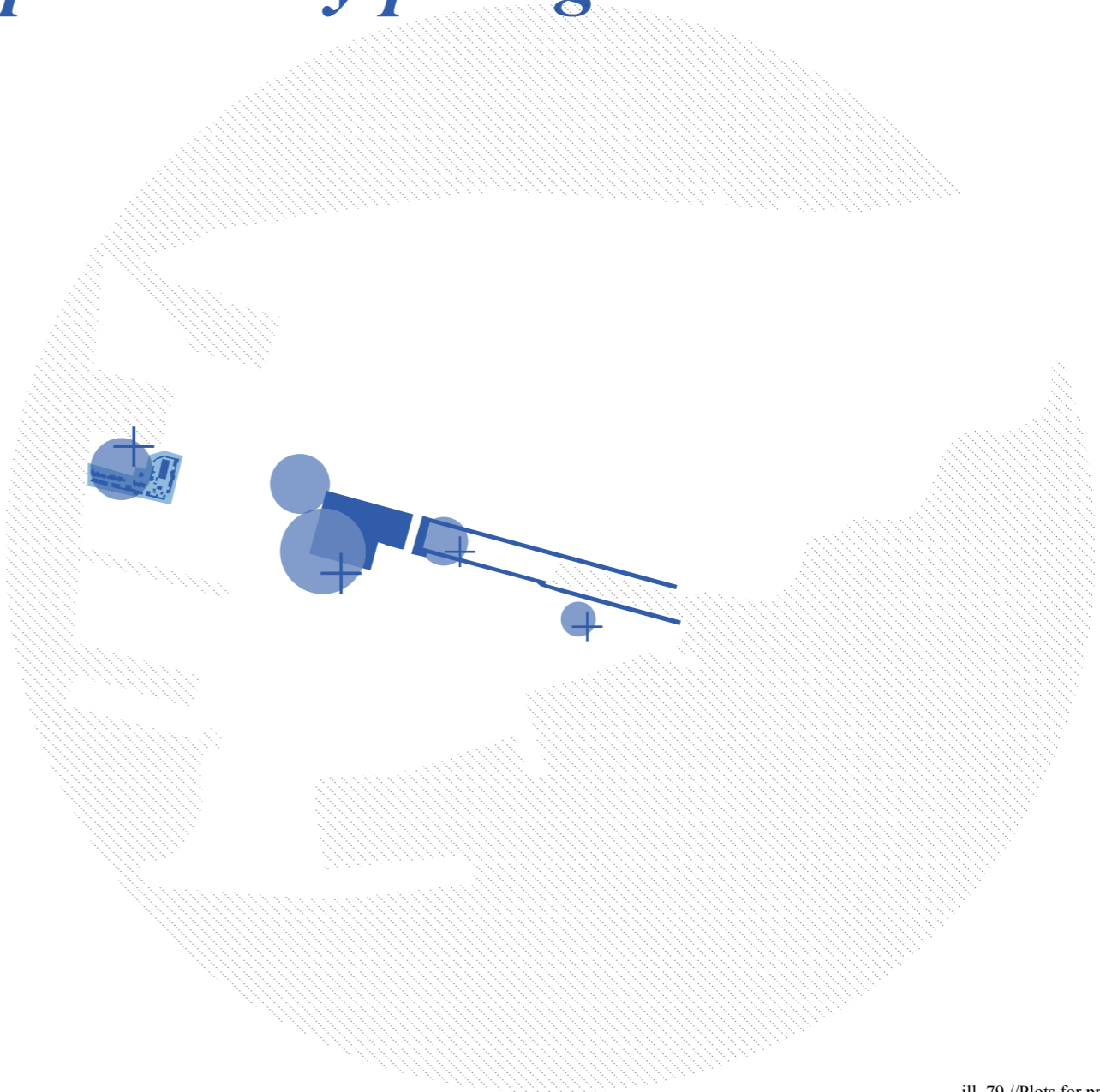


The local community and creative environment on Refshaleøen have emerged over time and plays a huge part in the quality and identity of the site. Many of the local businesses are very small in both size and income. When the urban development of former industrial areas really start rolling, it is often the small-scaled businesses that are out phased or relocated in the city. We want to secure the local community and businesses in the future plan. Introducing an urban tax with a shareholder mindset. The future residents of Refshaleøen will invest in public oriented functions, building a strong urban community.

ill. 78 //Introduce shareholder mindset

plots for prototyping

Physical ○ ○ ●



ill. 79 //Plots for prototyping

Refshaleøen will be densified. Identify spaces in the new dense area, where temporality is a requirement. These plots can be some kind of provisional housing, installations, markets, outdoor areas or events. The idea is that these plots will help the self-grown businesses into more stable in-grown communities. Talking directly into the very core of Refshaleøen as an unique creative and cultural space with eccentric character.

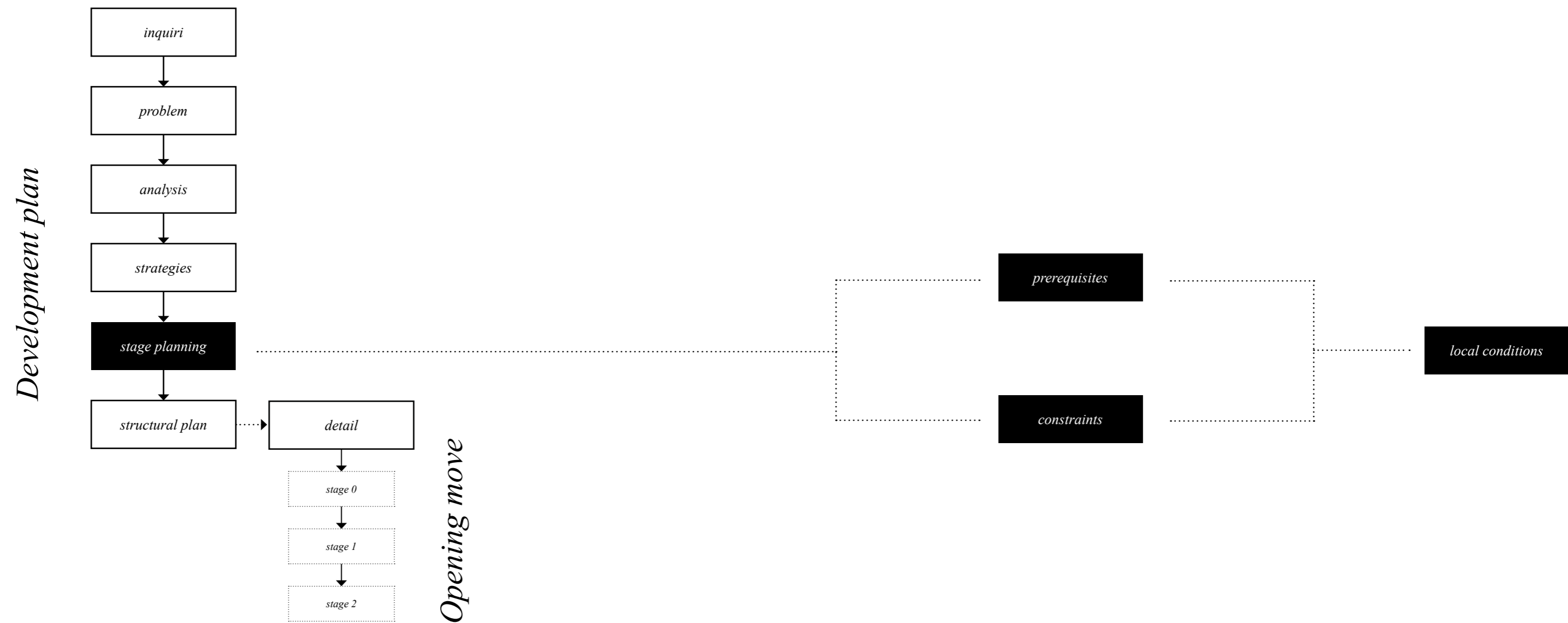


05

STAGE PLANNING

Overview

stage planning



ill. 81 //Overview of stage planning

The chapter about stage planning holds the prerequisites for Refshaleøen, and the constraints for the site based on the strategies. The prerequisites and constraints for the entire site will transfer into local conditions for the different building plots, when the developement starts. Firstly, an understanding of this has been illustrated followed by a case study of how another project has been using stage planning. The second half of the chapter will introduce the suggested opening move for the development, with an elaboration of the local conditions.

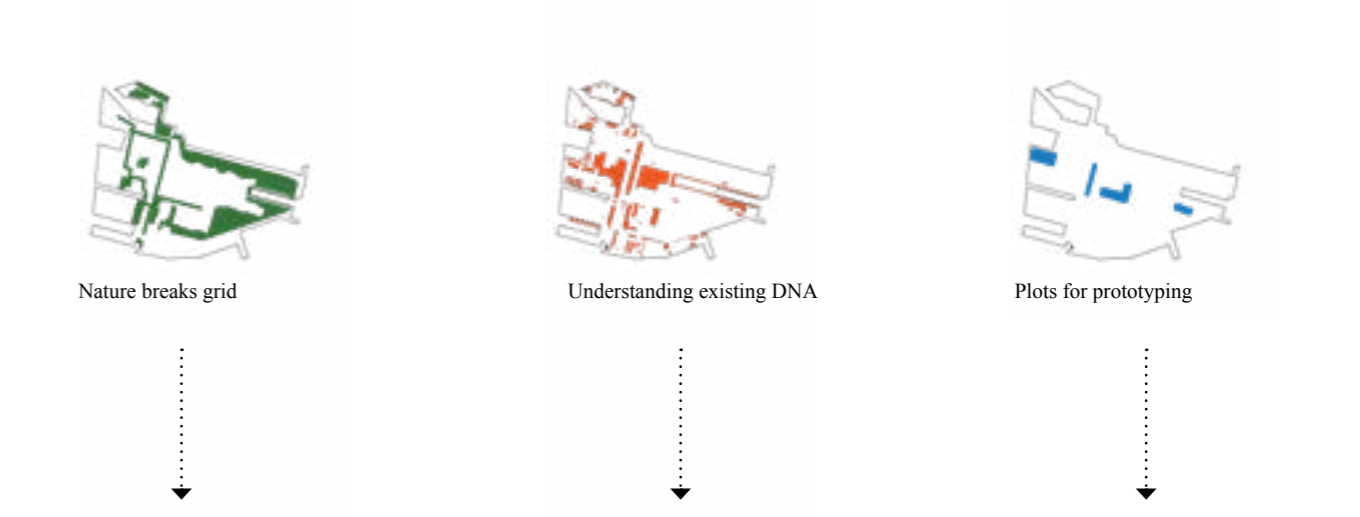
Local conditions

the relation between prerequisites, constraints and local conditions

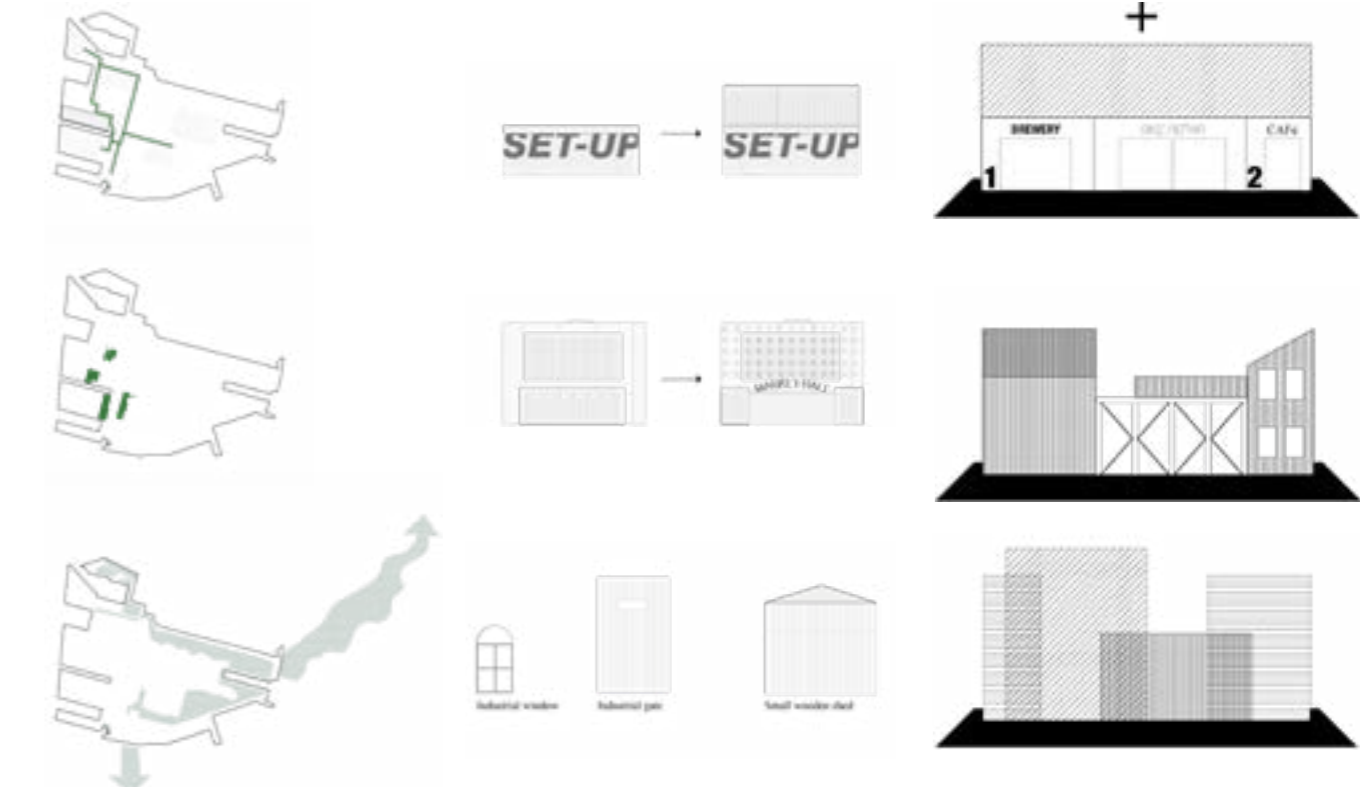
Prerequisites



Constraints



Local conditions



When developing new areas, there are often adjacent projects underway simultaneously. These projects are dependent on each other, and it is necessary to consider their influence on this project from the beginning. This is called prerequisites and for Refshaleøen this means Lynetteholm, M5 and a new bicycle connection.

Furthermore, the strategies in this project have been translated into physical constraints. These are some of the most important elements for the future of Refshaleøen and are intended to ensure greater coherence in the area across future masterplans and construction sites. A development spans many years and to ensure, the greater coherence at Refshaleøen, a structure plan is developed.

When developing the subareas at the site, the constraints will become local conditions, and depending on where development and construction take place, different local conditions will come into play. It is important to consider these and determine some rules they should follow. This means that the local conditions are not applicable to other subareas planned to be developed in the future.

ill. 82 //stage planning explained

Case studies

stage planning in Nordhavn

Introduction

Nordhavn is one of the most ambitious planning projects in Europe starting in 2007 and continues to expand. Looking at a man-made island consisting of 2 km² of landfill, rich industrial historical traces and the Copenhagen coastline being reinvented by further land-expansion, it is safe to assume the project foster opinions. Up until 2009 when the first competition was won by Cobe, SLETH, Polyform and Rambøll to design a structure plan and first masterplan was finalised at Århusgadekvarteret, the site was restricted to construction only. At this given time, around 4000 have already moved into the inner part of Nordhavn and vibrancy is beginning to fill the streets. Next big step is the development of Levantkaj. The vision for future Nordhavn is to develop a sustainable district in Copenhagen. The vision alongside objectives has withstood but been revaluated into 6 themes; CO2 friendly city, 5-minute city, Blue and green city, Dynamic city, Identity and historical traces, Islets and canals. (By&Havn, 2023)

Context

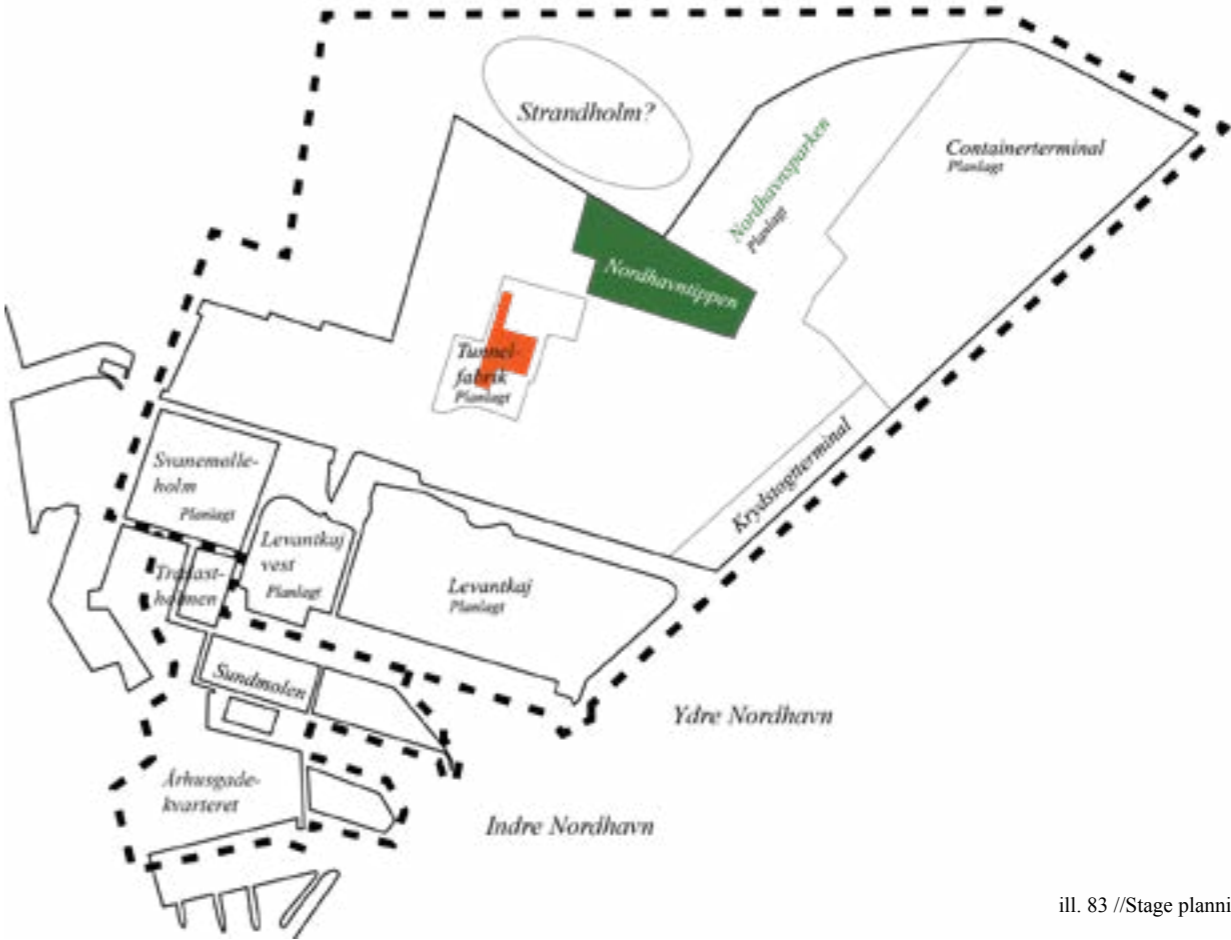
Nordhavn has been slowly expanding since the last part of the 19th century. With soil continuously being added, expanding the islet up until the early 2000s, Nordhavn was an industrial harbour for international shipping. With less need for heavy industry and more need for homes, Copenhagen municipality and By&Havn decided to start selling building plots to finance better infrastructure within the city. (Frederiksen, 2018)

In 2023, the expansion of outer Nordhavn began and the process of developing left a large area of untouched nature. The expansion relates to the development of Levantkajen, which means container- and cruiseship terminal needs to be moved further out. Though being larger, only 28 hectares are scoped as area for future nature park. At the same time as needing to encompass demands for sport facilities, festival space or wild nature and biodiversity. A candidate representing the public ends this article by stating that in order to balance all of these, it should be done based on natures premises. (Petersen, 2021)

Enquiry and answer

The stage planning of Nordhavn is approached by starting with a structure plan and vision. From there on, masterplans have been presented fostering local plan and eventually the realisation of subareas. The intention was to implement a 'Intelligent grid' jumping from islet to islet. Firstly, existing urban spaces and landscapes are prioritised and creates 'free zones'. The infrastructural loop is drawn, ending with a grid applied to the rest of the islet defining building plots. These initiatives are applied to the structure plan and then refined – meaning that when the development starts, the plots can change and expand compromising the preserved if needed.

Developing from closest to city and outwards indicates a gradual opening of Nordhavn but restricted until fully developed. Referring back to 'Present Pasts: The politics of memory', social memory and cultural heritage is valuable agents in regard to preserving relations between the public and transformation projects. When sense of belonging is compromised, an area distances itself from the user. Depending on connectivity for bringing the life outwards and housing to be the main attraction, urban vibrancy becomes gradually more difficult to achieve as the distance to a city centre becomes more apparent. The context of building plots being sold as to finance other



ill. 83 //Stage planning at Nordhavn

projects, Nordhavn becomes somewhat of a bank to draw money from. With this being the main driver for developing, the power is deliberately given to investors – disregarding other agents. An example in context is the limitation of upcoming nature park expecting to host multiple functions for both human and non-human actors. By reducing the footprint of a nature plot, more space for development is possible – and therefore more profitable net gain.

Conclusion

Overall, the Nordhavn planning project offers valuable insights into how to approach large-scale urban development projects through good intentions of emphasizing sustainability, adaptive planning and space for a healthy city. By practices, the intentions are replaced with finance questions of how to make more money by developing square meters. This compromises the other agents involved – creating a gap between vision and reality. The gap appears in the tension between the 'Intelligent grid' approach and the iterative structure plan. Whilst the structure plan draws the overall themes of importance, the realising is heavily dependent on investors which creates friction against other agents.

Opening move

an introduction

The marked area on ill. 84 is selected as the opening move for the development of Refshaleøen. This area is chosen as it is situated adjacent to the three themes of this project.

As earlier appointed, Refshaleøen finds itself between two larger green connections, revealing a missing link, that could potentially evolve into an ecological connection. The selected subarea is adjacent to this missing link, making it a critical component in setting an example of how to develop adjacent to these green spaces.

Moreover, the subarea includes existing structures that must be integrated thoughtfully into the new development. Notably, the large B&W halls located nearby offer significant potential for prototyping. By implementing temporary structures well before the completion of permanent residences, we can cultivate social memory and create dynamic public spaces that evolve with the community.

The southwestern part of the site is already vibrant with activities and communities, and this thesis respects and aims to enhance this thriving area. In contrast, the eastern portion of Refshaleøen is currently more expansive and primarily utilized for large events. This distinction allows for a balanced approach, maintaining the vibrancy of the southwest while introducing new opportunities in the east.

The new M5 metro line, expected to be operational by 2030, will greatly enhance connectivity to the rest of the city, positioning the metro station as a key arrival point. This improved access will make the eastern part of Refshaleøen the first thing to see when arriving.



1 : 5000

ill. 84 //Placement of opening move

Nature breaks grid



ill. 85 //Wild nature at Refshaleøen



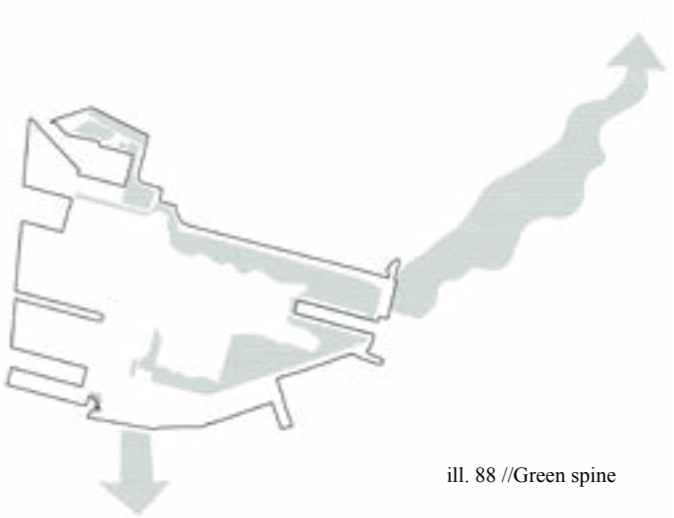
ill. 86 //Urban gardens at Refshaleøen



ill. 87 //Green path at Refshaleøen

Green spine

A green spine secures an interconnected web of life on Refshaleøen - for animals, insects, fauna and humans as well as remedy microclimatic problems. It is a vital corridor for present and future generations of all species. With the help of planning new buffer zones for nature to grow, it enables biodiversity to expand on its own terms.



ill. 88 //Green spine

Urban gardens

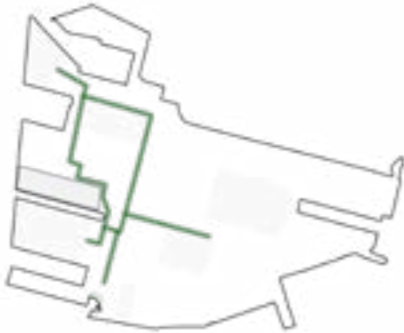
Community gardens facilitate opportunities for growing and getting together. It creates opportunities for social interaction and community building. Participants can share knowledge, skills, and resources, fostering a sense of belonging whilst also producing a good foundation for biodiversity to move forward.



ill. 89 //Urban gardens

Green paths

Green paths provide legibility for soft traffic. As a wayfinding tool, the green paths will connect building plots, community gardens and access to the green spine meaning that wherever you walk, a green connection will lead the way. Additionally, these paths will imitate and change character in relation to its context. In this case, the gravel paths enclosed in trees and shrubs will act as intermediate landing for non-human agents.



ill. 90 //Green paths

Transformation



ill. 91 //La Banchina at Refshaleøen



ill. 92 //Urban Riggers at Refshaleøen



ill. 93 //Little bakery at Refshaleøen

Reuse elements

In order to tap into the industrial aesthetic experienced, the potential of reusing building materials for new development, will continue the legacy and traces of past. Small-scaled products in context can be integrated.



ill. 94 //Reuse elements

Build on top

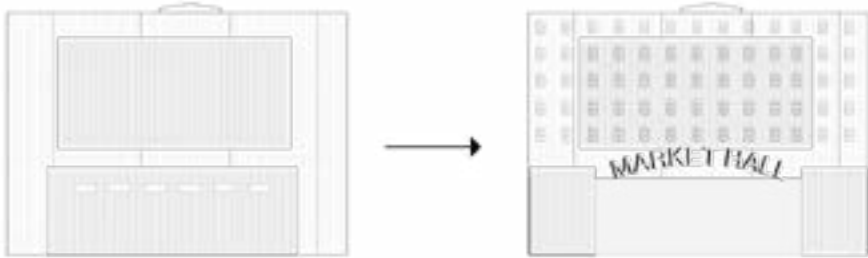
Through an additive approach only, existing buildings is able to maintain their known industrial aesthetic. For structures of medium scale, preserving the entire building whilst only adding on top, creates familiarity whilst being transformed and enables new functionality though being of original shape.



ill. 95 //Build on top

New functions

To preserve the cultural traces on structures identified as large scale, new functions need to respectfully inhabit existing structures whilst still preserving the shell, structural system and symbolic details from original buildings. The B&W buildings have a large open space within, able to transform into apartments whilst still maintaining the scale and facade on the outside and use the existing opening panels for interactive ground floor.



ill. 96 //New functions

Community



ill. 97 //Open workshop at Refshaleøen



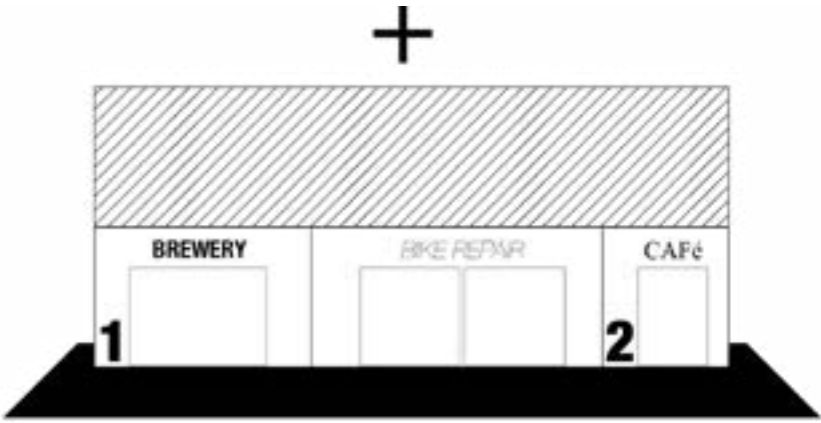
ill. 98 //Streetfood at Refshaleøen



ill. 99 //Wasteland at Refshaleøen

Active groundfloor

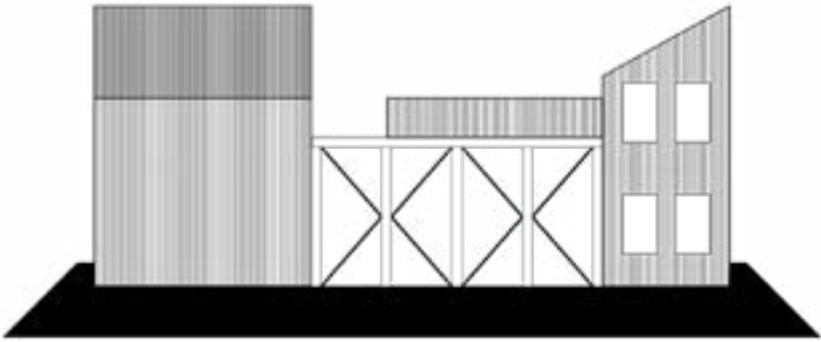
To preserve the sporadic meetings and gatherings able to happen wherever, all shared space is available to Refshaleøens' inhabitants. Ground floors of public buildings is open to small local initiatives both internally and externally.



ill. 100 //Active groundfloor

Assemble & disassemble

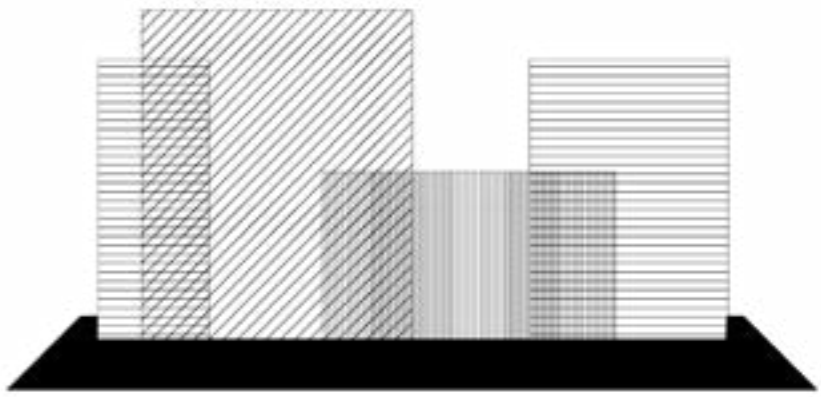
Within prototyping plots, the interventions must be temporary with a vision for experimenting. This means constructions should be based on community fostering physical form opposite to new development's becoming for then to be used. If the grass-root seeds planted grows into successful initiatives, a revaluation of permanency is possible.



ill. 101 //Assemble & disassemble

Preserve the spirit

The narrative of functions should reflect a creative and experimenting setting of craftsmanship and events through small businesses. The main goal is to produce and learn through exploratory participation with the product being secondary.






ill. 102 //Preserve the spirit



The following structure plan, isometrics and sections will showcase the implementation of the strategies from chapter 04 and local constraints from chapter 05 in a detailed opening move. The goal with the presentation of the opening move is to show possible design solutions that works with the challenges of the future development of Refshaleøen.

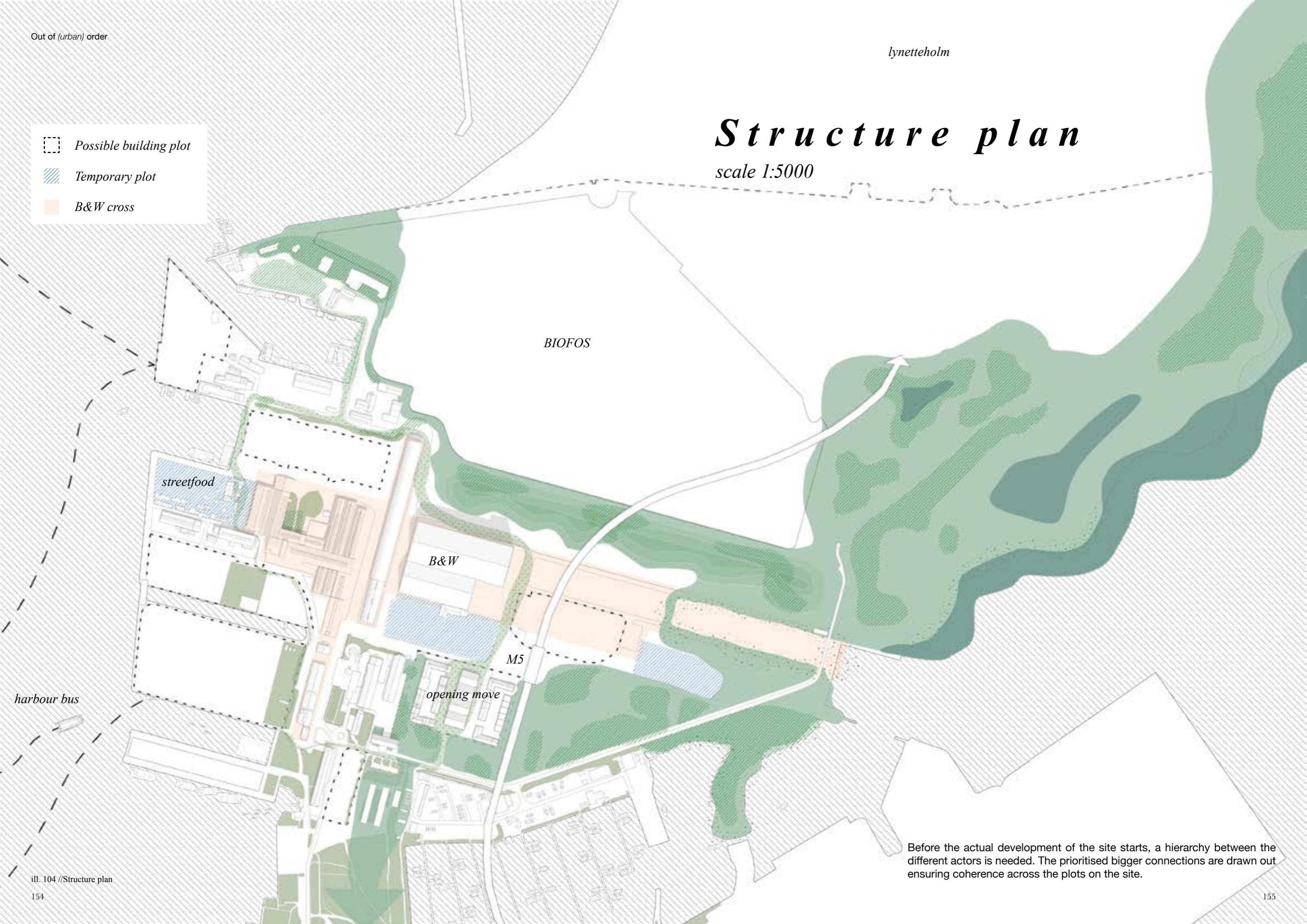
06

PRESENTATION

-  Possible building plot
-  Temporary plot
-  B&W cross

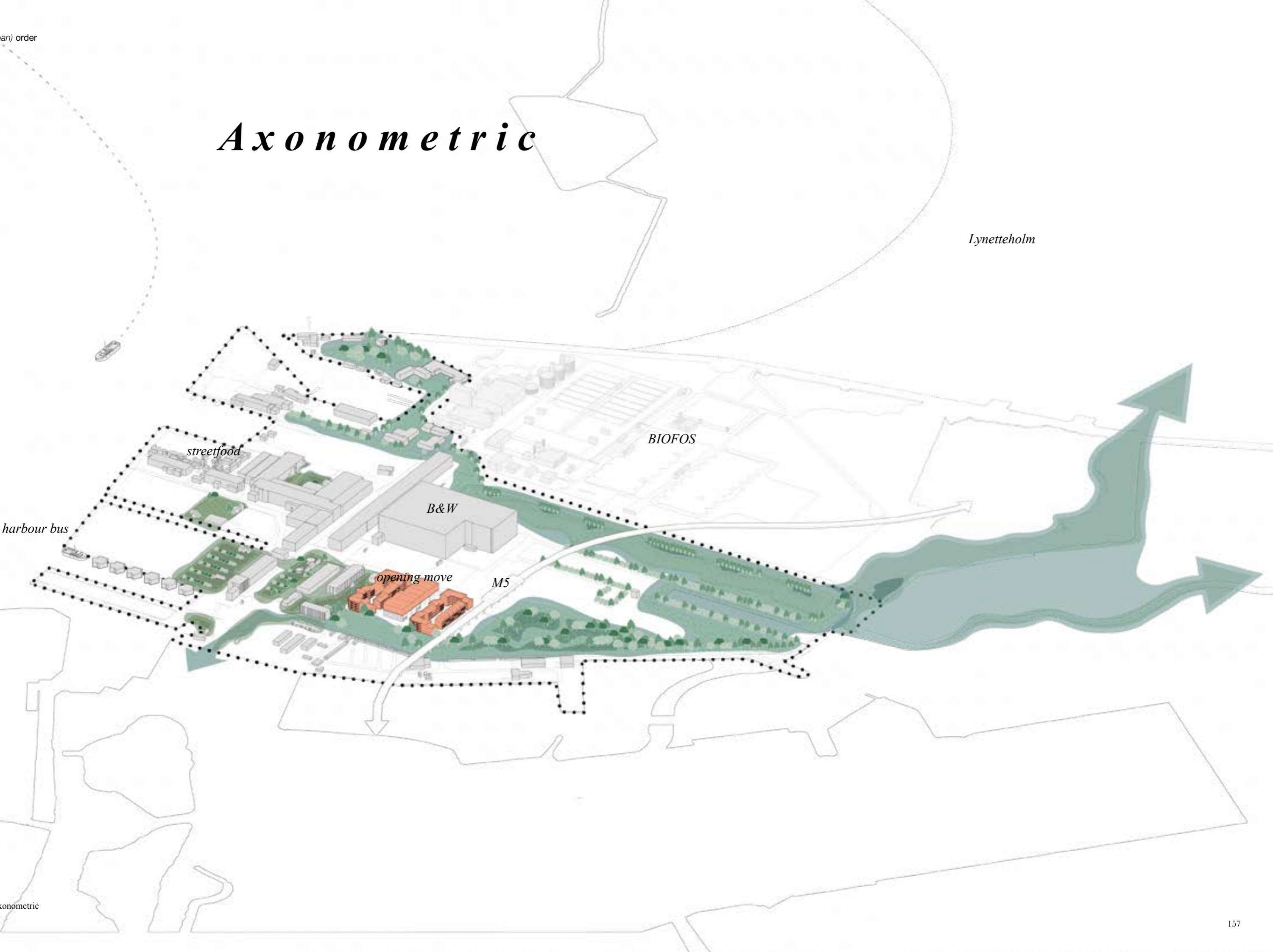
Structure plan

scale 1:5000



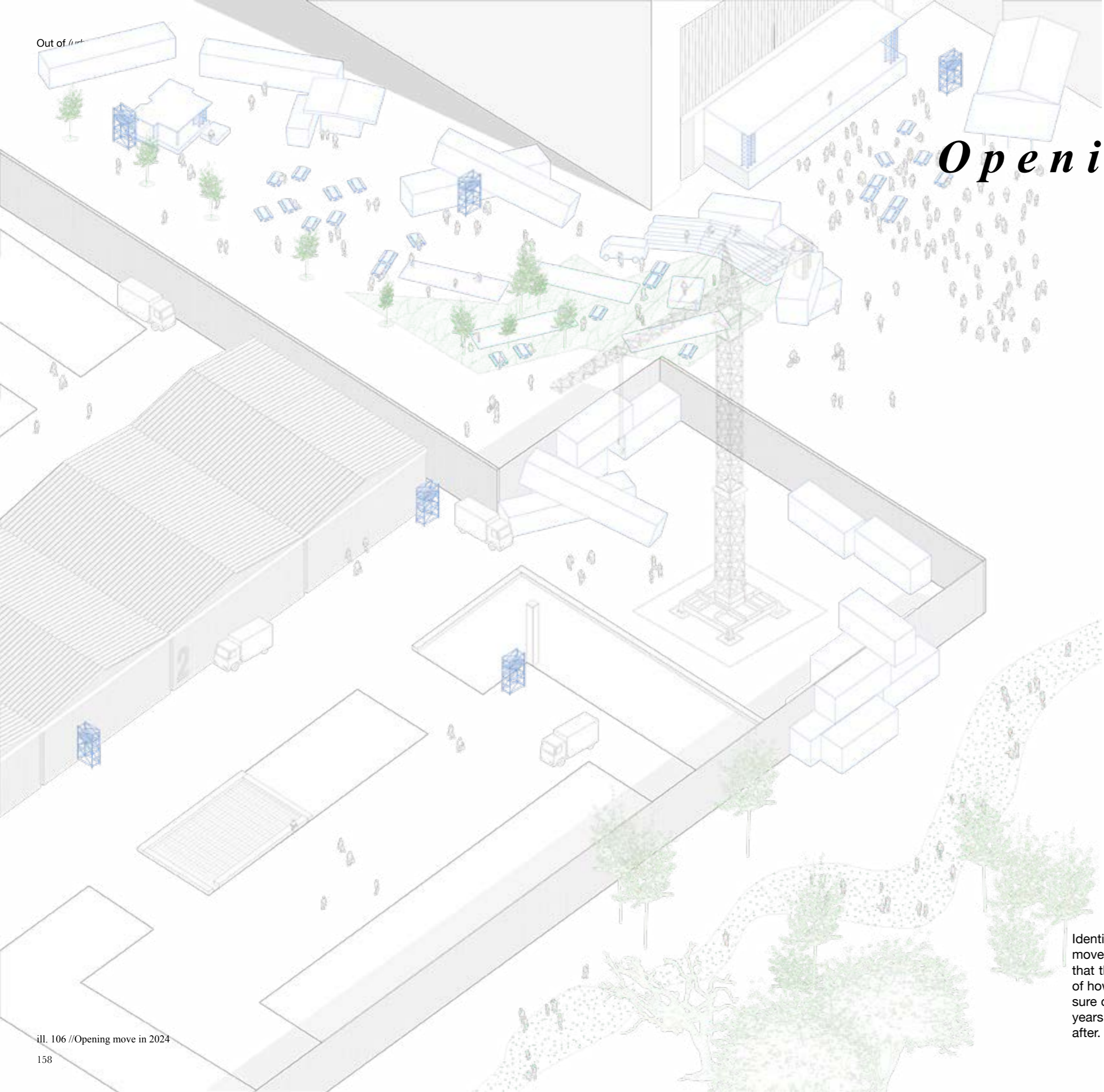
Before the actual development of the site starts, a hierarchy between the different actors is needed. The prioritised bigger connections are drawn out ensuring coherence across the plots on the site.

Axonometric



Opening move 2024

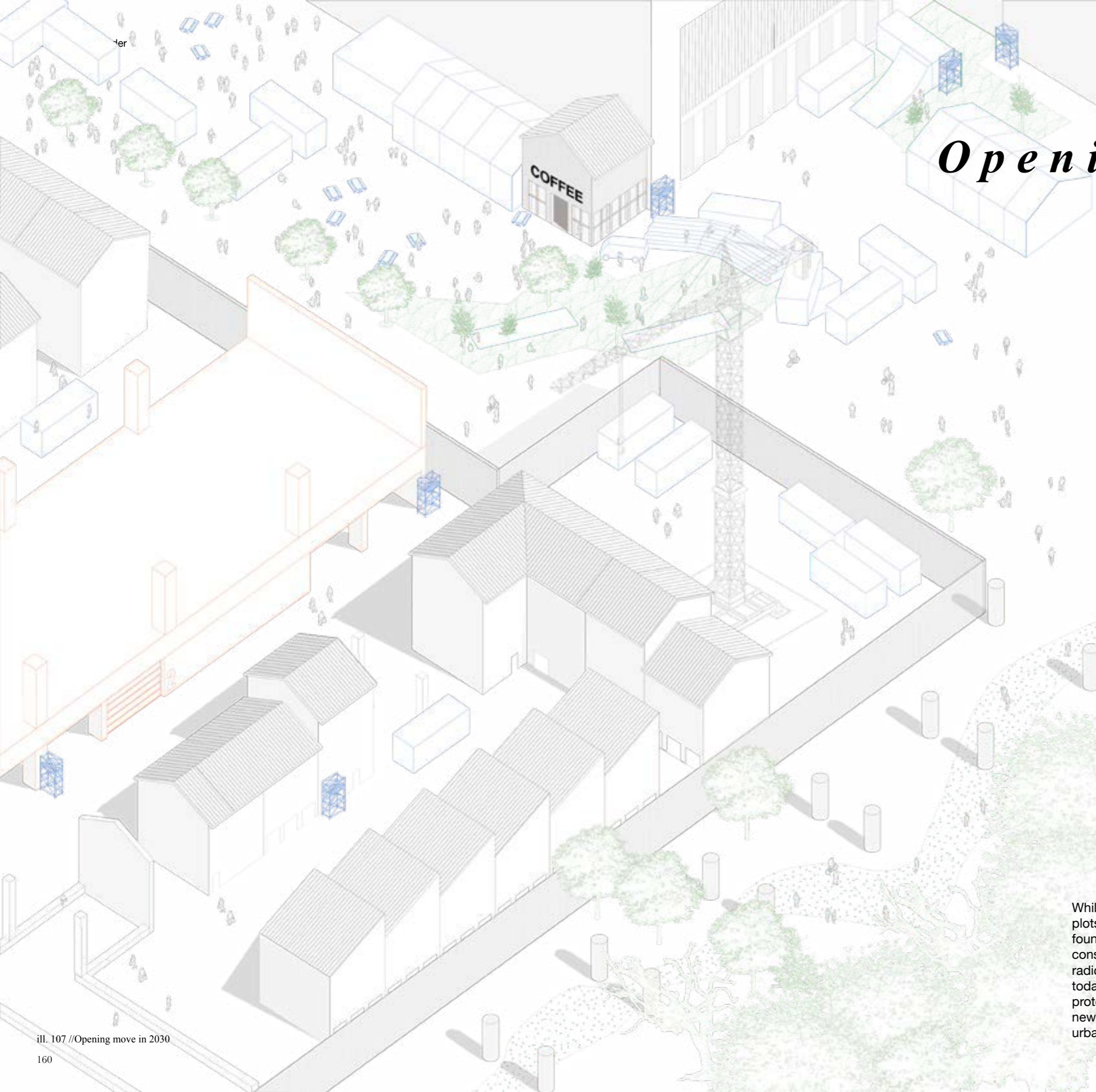
Green spine as supporting strategy



Identifying 'nature plots' serves as a supporting strategy for the opening move of the future development of Refshaleøen. It is crucial for the future plan that these plots are implemented first and thereby flipping the perspective of how to work with nature. Start treating it like building plots in order to be sure of implementation. Buildings is said to withstand for 50 or maybe 100 years, but nature was here before the built environment and will be here after. Changing our mindset towards a more ethical position.

Opening move 2030

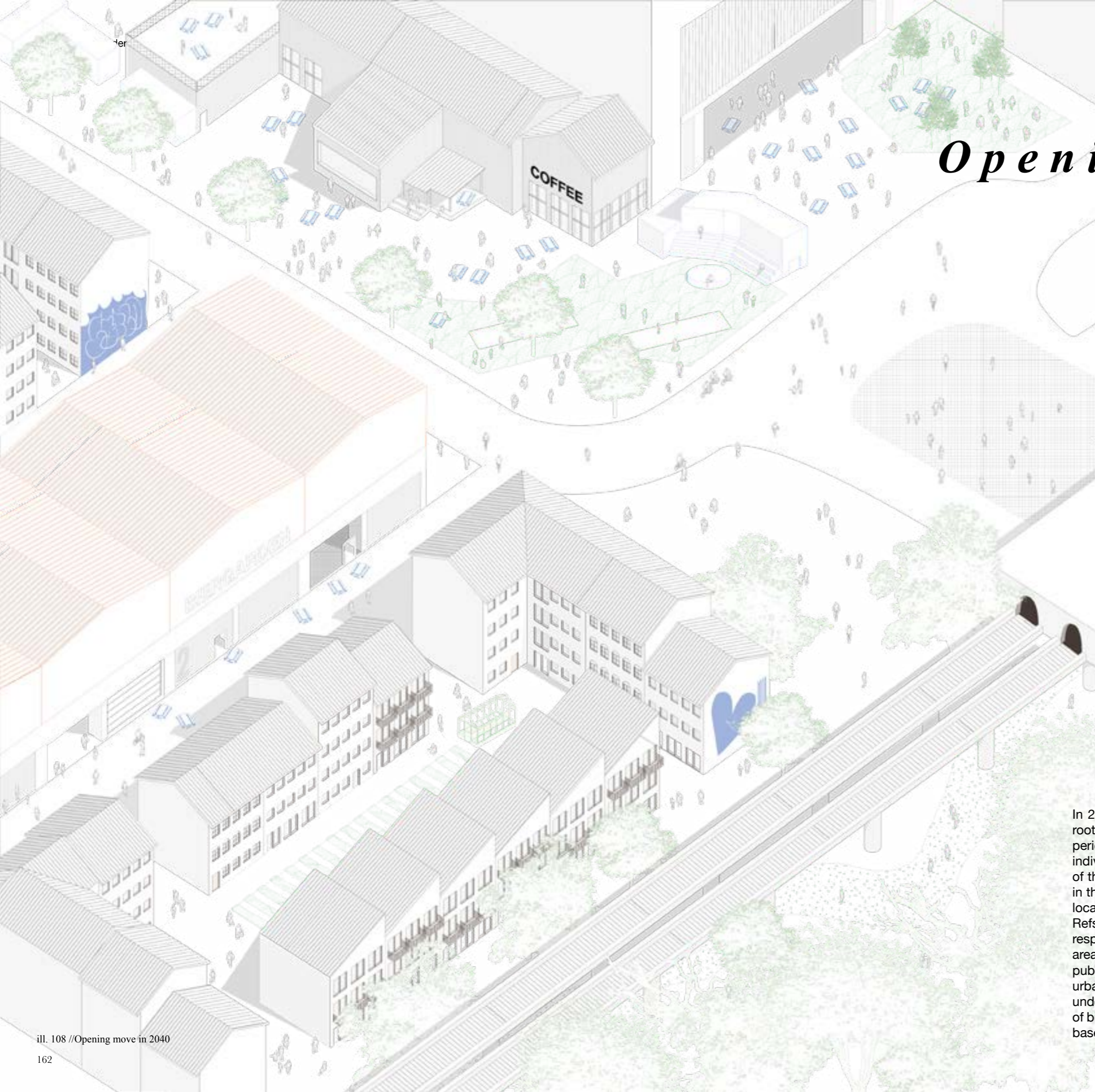
less behaviour-dictating planning



While the frames for more rooted structures are being built, the temporary plots have an important role in keeping the site active. Refshaleøen's foundation already encompasses many of the concepts we need to consider moving forward. We need to create a space for possibilities where radical solutions can be tested, which can enlighten us on how to rethink today's urban planning models. This involves, among other things, plots for prototyping, where local communities reclaim an active role in creating the new district. This approach suggests a shift towards less behaviour-dictating urban development, which we see as a key factor in future planning.

Opening move 2040

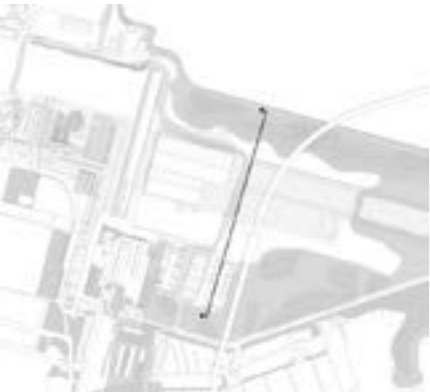
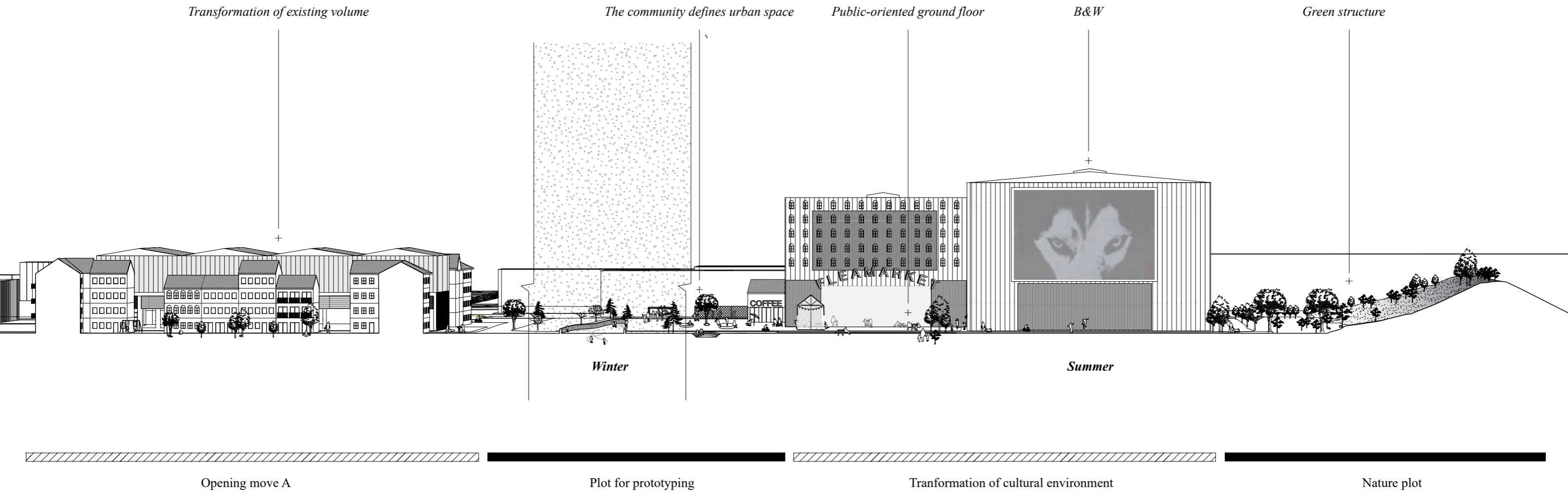
Urban order



In 2040 some of the experiments of prototyping is transformed into more rooted structures. The urban scenery has changed over the three time periods. The architecture and urban space have not been created by a single individual or organisation, instead it has relied on co-creation. The heritage of the old production line will live on by producing locally. Local production in the form of urban gardening, creative communities and most importantly local decision-making. There will be a shareholder mindset towards Refshaleøen. Investing in your community and owning up to a common responsibility for common facilities, local businesses and recreational areas. The ground floor will be public-oriented and thereby expanding the public space. The open and active ground floor will imprint itself into the urban fabric and create new flows on site. The historical buildings will be understood as historical environments as a shift away from the rigid thinking of building plots. Working towards an urban approach that prioritizes nature-based solutions and the common good.

Old and new layers

longitudinal section, scale 1:1000

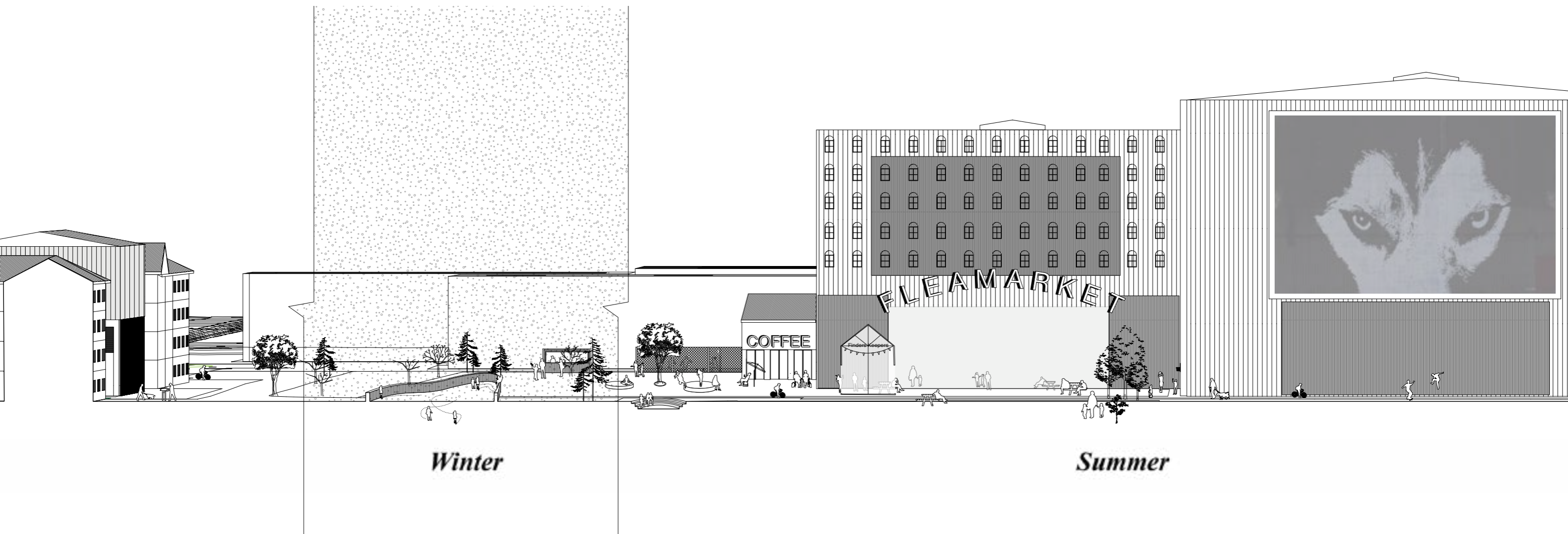


ill. 109 //Section, old and new layers

The section showcases how the urban space varies in scale, typology and function. Creating a diverse district. The new district on Refshaleøen clearly showcases the historical layers in harmony with newly added layers. Refshaleøen exemplifies a new approach to how urban space is conceived in conjunction with the architecture, one that remains true to the site's DNA.

Future is now futures!

longitudinal section, scale 1:500

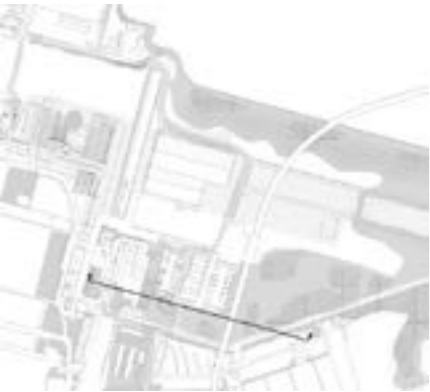
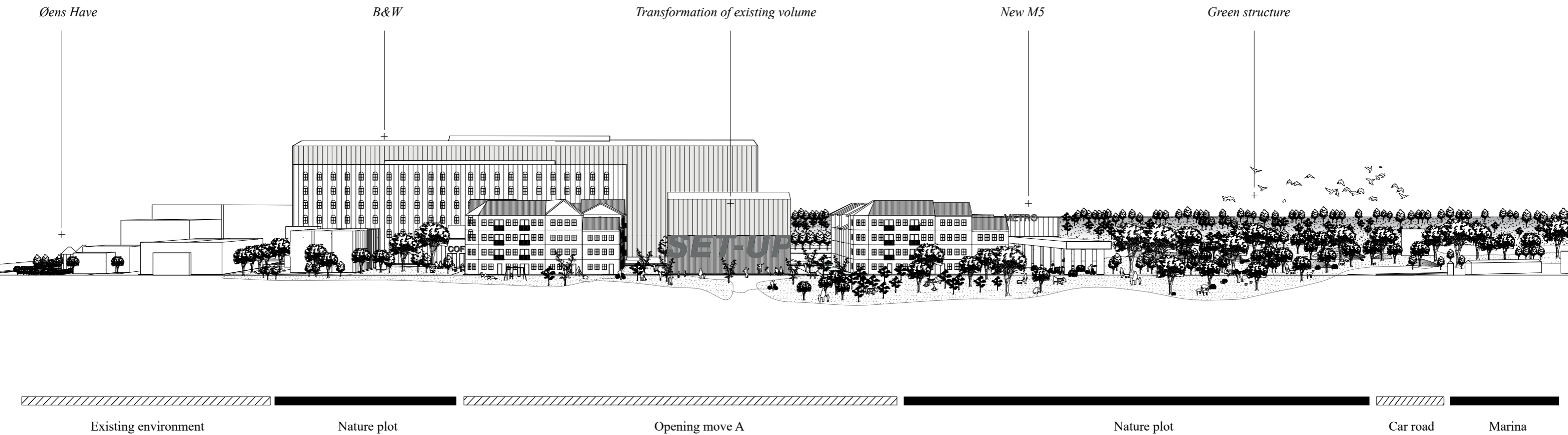


The B&W hall has lost its old function of production. All that is left is the monumental frame of the historical building. Future is now futures! The building and the urban space around can be occupied and imbued with new significance in accordance with the dynamics of development. Thereby letting the community be an active agent in the making of place.

The section also tells a story of how the space can be used all year-round. The temporary spot can simply turn into functions that are seasonal-friendly – like ice skating in wintertime!

A new hierarchy

latitudinal section, scale 1:1.000



ill. 111 //Section, a new hierarchy

The green spine winds through the site breaking the built grid, serving as a supporting structure for the initial phase. A clear hierarchy emerges – 50% nature, 50% built environment. The green spaces are easily accessible to both residents and visitors of all kinds – humans, flora and fauna. Cars are kept to a minimum and will be confined to the periphery of the site.

Nature on prescription

latitudinal section, scale 1:500



By growing into a bigger ecosystem, nature benefits humans socially and mentally by being both physically and visually available. Secondly, it will benefit local water management challenges. Finally, the structure will serve as home for a rich variety of local wildlife and plants.



07

EPILOGUE

Conclusion

The thesis started with an inquiry of the uncertain future of Refshaleøen, which sparked the question of responsible urban development. But what does responsible mean? According to ai ‘responsible’ refers to the ability to recognize the impact of one’s actions on others. In light of the Anthropocene era this definition of responsible underlines the point of this thesis greatly. Humans are responsible for the climate crisis the earth is facing, because we as a specie have become a geological force affecting the conditions of nature (Tønder, 2020). Everywhere around us we are feeling the consequences of habitual thinking that are not capable of accelerating the green transition. Parallel, as the thesis indicated earlier, statistics showcases an increasing number of stress and the feeling of loneliness. We, as in all of us, are falling short on multiple parameters, which brings us back to the definition of ‘responsible’ and ‘the ability to recognize the impact’. The responsible thing would be to recognize the impact humans have had on earth and to recognize, is to change. So, by changing we point towards a more responsible urbanism.

This thesis calls for a paradigm shift. A shift in the hierarchy of agents in urban planning in order to handle challenges faced in the Anthropocene. The thesis argues to identify nature plot before building plot. The proposal of the green structure is working in multiple scales. Firstly, a greater connection to adjacent areas like Christians Vold and the upcoming Lynetteholm. Secondly, a better coherence on site for humans by connecting the nature plots. Lastly, non-human agents will have passage through the main ecological connection and the smaller plots in between. This form of radical thinking is part of a greater connection to form future post-industrial landscapes as nature heritage.

The thesis represents a growing awareness and a new beginning for post-industrial areas. Besides a focus on solving the present biodiversity crisis, it addresses the importance and power of local community. Refshaleøen is a proof of how local community can have an active role in shaping the city.

Buildings and structures from the past must not remain as empty monumental frames that merely remind us of industrial grandeur. Instead, these buildings should continue to evolve through transformation strategies. They can act as binding constraints against often too rapid urban development, thereby helping local communities to cement themselves and transition from self-grown to in-grown.

By flipping the power hierarchy in modern planning, changing the habitual thinking, this thesis argues that Refshaleøen can be a flagship of responsible urbanism and standout as an example for other development projects.



ill. 114 //The wolf as one of the characteristics at Refshaleøen

A critical Reflection

A range of reflections have emerged throughout the process of this thesis, questioning our process, the correct tools of responsible urban planning and the general approach towards developing ‘good’ cities. The said questions will be discussed through this critical reflection of our work.

Jumping scale

This thesis revolves around precautions relevant to a national scale, but problems visible in Denmark, can also apply to the global impact. The ambition of wanting to address and treat global-scale problems is a complex but necessary step into a promising future.

The reason behind this thesis mainly considering national problems is due to the acknowledgment of value in context driven projects as well as the shortfall in comparison to the worlds problem and the specific affect noticeable in Denmark. With the ambition to explore a solution that is graspable and possible to become a flagship for planning means to start in a local scale first. Without acknowledgement from the society in context, reaching for the stars can become rather impossible. This fosters the question of what needs to be considered in regard to bridging national across Scandinavian, European and Western scale into the global. Because what does each scale indicate? And what new agents affect the new scale of planning. The hierarchy of problem-solving colours what themes to prioritise. It is often the political agenda that dictates what to be prioritized, and maybe the order is wrong, as it then becomes what is trending instead of what is most important. This is why this project will need to involve new fields of expertise to understand how to jump scale.

Open vs. dense

Where does the balance lie between the dense city and Refshaleøen’s openness? The project is based on the premise that nature and green structures should occupy 50% of the area, which is a radical proposal as it leaves less space for buildings. Such a proposal may raise more questions than it answers. What does the project sacrifice, and what does it gain in return? The emphasis on space for nature is considered more valuable because it offers the city something deemed more necessary than a high building density. As argued earlier, it is statistically proven that nature is a significant factor in people’s mental well-being. Furthermore, it is a crucial help in water management. Moreover, it is used for increasing the biodiversity and create better conditions for local focal species. This proposal will of course limit the possibilities of the built environment, but it also prompts valuable considerations, reflections, and future discussions in exploring the balance between nature and urban spaces and their interplay. If we are to rethink the hierarchy in urban planning, perhaps we should also discuss the development density for local focal species or square meters per species, as well as for humans? What is the true nature of the dense and diverse city? In modern development project adjectives like diverse and vibrant resolves around humans. But if it is a diverse city we really are seeking, then should it not entail the presence of agents like wildlife, plant life, microorganism?

All though this thesis contributes to the discussion of urban nature and advocates for a new hierarchy to face the challenges in the Anthropocene era, it could have benefited from an in-depth analysis of local focal species and their point of view. Paired with the different landscape characteristics it could have explored more specific local design initiatives.

Balancing regulations and innovation

To address and solve some of today’s greatest challenges, we propose a radical and innovative approach to urban development. This approach may face obstacles along the way, including legal challenges. We live in a highly law-abiding country where everything is measured against strict regulations to ensure proper quality before construction begins. Take fire safety regulations, for example. How many good projects have been reduced due to the extensive space requirements imposed by fire safety standards? These regulations consume green initiatives for everyday-experience and leaves hard surfaces for once-in-a-while-situations. All requirements and legislation come from a good place and are made to enhance quality and ensure well-thought-out projects, but perhaps these requirements are also part of the problem in terms of why we are not progressing – at least not enough.

If a more responsible approach is to happen in real life and actually change something, a rethinking of the legislation in Denmark is needed – or perhaps just the possibility of obtaining exemptions to try, if it is a well-considered project that genuinely attempts to change some of our rigid thought patterns.

When limitations like regulations and legislations is practised, it is to ensure healthy and secure surroundings for the user. This responsibility is important to acknowledge and only right to respect, but the problem lies within the measurements bound to rules. A standard is not always the right solution, because all projects are different and therefore the way of designing a fire escape, the dimensions of a road or layout of a plan can deviate from what the standards are presuming. By applying regulated standards to projects outside of the traditional thinking, the solution is often reduced to a generic way of thinking close to ‘if it works, then why change it’

How to plan the unplanned

To design or not to design must be the Hamlet dilemma of urban planners. A statement we paradoxically consider when asking ourselves whether to intervene and how much? And why we cannot reduce the solution into an answer of the enquiries to this very thesis. Based on the methodological approach set out in the beginning, the problem and solution thought still lingers. To design is to explore – not to find the right solution but to find a solution – to answer one’s enquiries and find a path through questions, problems and possibilities. In comparison to our appointed tools of method, we stand behind with a thought of subjectiveness. Tapping into the revisited argument by Bryan Lawson of a design process for an Urban

Designer is to analyse, synthesise and evaluate every thinkable aspect of a design process with every thinkable background available – in short saying... no matter how hard we try to become objective or presume the existence of one right solution – we are only participating in a never-ending process that will properly fail anyway. And not in a discouraging way, but as a motivation for being open to learning. This is also the reason to why we call our key findings for lessons. By wanting the process to evolve by learning from the site, is to work interdisciplinary across fields-of-expertise, but also to increase the involvement of agents. The intention we stand by but acknowledge the lack of involvement in practice due to limited available sources. For future work, consulting experts within their niche relevant to site, the knowledge acquired could conform alternative solutions.

Leaping into a discussion of working cross-agent, In the book ‘Designing Disorder: Experiments and Disruptions in the City’ by Sennett and Sendra (2020) informs:

“Incomplete forms enable [shift in form as uses and the users change] alteration to occur physically. Massed together in an assemblage, these incomplete forms allow nonlinear development of the cité to occur”
Sennett and Sendra (2020)

This quote considers the importance of involving temporary agents as well. For though not always being visible, the need for respecting all agents – both permanent and temporary – adds yet another dimension for how an urban space is adopted and boosts the possibility for continuing activity. This thought feeds into our own enquiry of how much we are needed. Whilst the quote asks the question of our roles as urban designers contra how much power users have within; our thesis tries to answer it. By acknowledging that too much planning deprives innovation and that we, as urban designers, does not know everything, the art of temporariness creates incomplete forms – and that is only possible by involving them as well. To make space for spontaneity and give back space to the public, we assume that people take to their responsibility and interest to make things grow. This trust is something only time can tell whether proving successful or not – we want to gamble these odds by making space in hope that things will grow. This is also to realise that urban designers cannot control how people act in a space, but only mix the right bedding in the hope that things will blossom. When freedom with support is actively practiced, a dialogue between agent and planner becomes beneficial.

Check! Check! Temporary check!

During our studies, we have extensively worked on creating quality cities and urban spaces. Today, the design process is filled with various criteria and requirements. Throughout this thesis, the group initially identified all building plots to be developed on the site, which we at first deemed necessary. Subsequently, we assigned rules for the development of these plots and sat up an order of implementation (cf. Appendix D). However, this approach was discarded in favour of focusing solely on the opening move, but also an acceptance of avoiding a rigid structure.

This approach perhaps stems from a student mentality, or maybe even an expert mentality, that insists all ends must be resolved and all factors must be known. But is this possible within our field? This mentality certainly leads to a form of reductionism. Urban development and the role of architecture are reduced to a checklist as we overload the design process with innumerable needs, creating a prescriptive character. At what point does the urban planner’s role end? We may have overstepped if we strip away the user’s active role in creating ‘place’. Surely, good planning is not about ensuring that the urban space is used as intended, but rather that it is used as needed.

Perhaps urban development is better served if we do not consciously strive to create a good city. Instead, it might happen organically by attributing local responsibility and listening to the context. A city has never been created by a single individual but rather the result of co-creation among multiple professional disciplines, local communities, and organizations. This type of shared responsibility is the essence of a strong community, and it is the foundation upon which areas like Refshaleøen should be built. Responsible development may be to relinquish some control or giving power to other agents.

D i c t i o n a r y

an urban manifesto

The following list of concepts and technical terms aims to support the reading and understanding of this thesis on responsible urban development. The list is by no means exhaustive but is intended to facilitate a healthy and much-needed discussion on responsible urban development. The selected concepts and technical terms reflect our understanding of them and are a mix of inspiration from professionals and our own expressions. Concepts and technical terms are marked with * in the main text.

Assemblages

A theoretical way of understanding the idea of ‘place’ to avoid reductionism. The understanding of ‘place’ based on interrelations between agents like the example of the street on page 40. It is the connection between all the parts, which constructs place identity (Dovey, 2016). In the context of Refshaleøen the connection between the parts can be understood as something but take the parts out and use it elsewhere it would create another connection and therefore another meaning for the place identity.

Development plan

The development plan serves as a cohesive vision. It should be a dynamic tool that can encompass various professional fields and foster broader conversations across different agents. The development plan allows for thinking beyond specific plots and disciplines, ensuring a holistic approach towards urban development.

Domino effect

The term refers to the latest climate research of how climate changes in one area of the earth’s ecosystems can affect the climate changes in another area. In the end, this creates a self-reinforcing process (Tønder, 2020). In this thesis the term is used to understand the impact of local decisions on national scale. The consequences of design-choices regarding urban development will affect individual, local communities and ecosystems. One non-responsible design-choice is going to affect the whole structure of the urban layout.

Juxtapositions

A placement of one or multiple objects next to each other, often to show contrast (Dovey, 2016). In this context, contrast should be found within building and urban space, in terms of size, age and style. Different kind of architecture attracts different kinds of people – helping to create true composition of variation in function, typology and population.

Nature plot

Designated areas reserved for nature. Normally we speak of building plots, but we want to flip the perspective on conventional patterns of thinking. Perceiving and treating nature equal or above buildings. A pursuit of restoring order in the anthropological era.

Politics of swarming

Politics of swarming entails an assembly of agents that do not adhere to a single hieararchical command structure. Instead, they engage in a gradual yet spontaneous decision-making process, where the assembly makes decisions based on a constant exchange of new knowledge and feedback on the utility of this knowledge. (Tønder, 2020)

Radical

To be radical is to challenge traditional thinking. We cannot treat structures or agents as something fixed and generic. To push the boundaries of responsible, urban development we must take greater risks and avoid the challenges that hinder the green transition. To be radical is not equal with being unrealistic.

Social memory

Social memory refers to the collective ways in which a community remember and interpret past events. It encompasses the processes by which groups or communities understand and preserve memories of their shared past. This concept reflects how historical narratives are constructed and maintained, how community identities are formed, and how meetings can arise based on a phenomenon.

Sociocentric

Also known as human-centric. Sociocentric is a perspective that distinguishes between culture and nature - the human-made and the naturally occurring. It is a reductionist mindset that places humans above all other forms of life and does not acknowledge that human and non-human is closely connected.

Structure plan

A structure plan is a physical framework for an upcoming development. It is the physical part of the development plan. It can be a maze to navigate around the many technical terms in urban planning. Masterplan, structure plan, vision plan, development plan, municipal plan and the list go on. The structure plan is site-specific. It serves as a guideline to ensure the primary physical features and principles for the area without being too rigid, as development will span many years.

Tabula Rasa

An old Latin phrase metaphorically used to describe the concept of a mind not yet affected by experiences, impressions, or preconceived notions – a clean slate ready to be filled. In the context of urban developement ‘tabula rasa’ is used to describe a treatment aimed at starting fresh unburden by past influences.

Urban Palimpsest

Palimpsest originates from what Cicero described the old text documents the Romes used to write on. A document where old text would be covered by new text on top of it. The metaphor is used to describe the layers of Refshaleøen and how it carries traces of earlier impacts - old and new, rooted and temporary and local and global. Acknowledging the multiple layers present and as an entity (Huyssen, 2003).

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Illustration list

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08

APPENDIX

Appendix A

Growing - Reset mindset

Current state
Nature is defined as features, processes and forces that is not created by humans [Cambridge 2024]. It is a term that encompasses habitats based on geology, climate, terrestrial as well as hydrology features and processes. The cooperation and balance between, creates ecosystems and habitats for species to thrive. As a part of interplay between natural features, biodiversity happens. Therefore, to achieve a higher value of biodiversity, both an understanding of the national nature’s characteristics along with an in-depth identification and understanding of occupant habitats on site and shore along with their individual value helps to discover how to enhance and create synergy between human and non-human on Refshaleøen and surrounding coasts.

In present, society as a capitalist, have been prone to over-exploiting nature for resources without given it time to grow naturally. For example, whilst 14,7% of Denmark is covered in woods and forests, only 4,6% is untouched [Naturfonden, 2023] and the rest is curated by humans to source wood, medicine or food. Whilst every waterfront and shoreline on a global scale, only 15% is on nature conditions. What we have forgotten in the process of exploiting, is the benefit of untouched nature is impossible to gain at the same speed as we are able to exploit, leaving behind an imbalance between human and non-human stakeholders resulting in biodiversity becoming less and conditions for species to survive, shrinking. But whilst biodiversity is a part of nature, it is also a strong virtual force for our planet. It has the abilities to affect great scale problems such as the climate crisis, societal health and support habitats for the earth’s species – both human and non-human actors.

Biodiversity
Our goal is to gain an in-depth understanding of biodiversity on Refshaleøen along with its’ current challenges and needs. We use Dansk Naturindikator [DNI] to understand the current state of biodiversity on site along with mapping existing habitats in nature to identify potentials enabling us to enhance and create a foundation for nature to grow. The result being relevant strategies able to be implemented successfully on Refshaleøen and design solutions that becomes an integral part of the future symbiosis between human and non-human actors.

Biodiversity is the collection of insects, animals and plants present in the same area. More biodiversity means greater processes and stronger ecosystems supporting life cycle. Ways to achieve it, is by creating and preserving living spaces dedicated to the organic growth, though some ecosystems is impossible to recreate and therefore should at all times be preserved. A way to map the worth of biodiversity when planning, is by the use of DNI (Dansk Naturindikator) that defines the current state of biodiversity along with marking potentials for enhancing and preserving. The indicator defines the value of biodiversity based on three categories to



Appendix B

inform on how precious an area is to rare wildlife and species. It highlights the value of marked ecosystems are to rare species and how likely the area is to sustain. Since restoration of natural processes in nature is a slow process, the first priority should always be to preserve what we already have and only enhance. [DCE, 2021]

Transforming Refshaleøen
We want to make a habitat enhancement of Reshaleøen based on DNI score to improve the current overall value of Refshaleøen, 5 out of 100 [Naturindikator.dk]. The reason behind the current poor value is due to present untouched nature is limited to few areas because of industrialisation in the past and paved conditions. To enhance and strengthen biodiversity, taking offset in State of nature ‘Tilstand’ values guides planning to start with habitats possible for enhancement and to let it expand by supporting the habitat through protection.

Biodiversity is easily disrupted and brought out of balance. In close connection hereto, Nature-based solutions (NBS) is a great tool for planning sustainable and responsible. Among a large variety of reasons for prioritizing nature, arguments such as climate adaption, habitat creation and societal benefits address the hugely important agenda of landscape into our planning. Not only does nature, forest and landscape in a large-scale narrative contribute to improving the environment, but also complements the individual – human as non-humans – in a societal, economic and health benefit relation. [IUCN, 2021]

Refshaleøen being surrounded by blue structure and with a rich marine life, the intention of being expanded greatly with the becoming of Lynetteholm, implies a becoming and transformation of existing marine life that already is being considered with the planning and development. When designing for blue biodiversity, the imitation of natural conditions has proven the most beneficial. This implies creating variations, recesses, NBS and retention of human conflict.

We want to improve the habitats of Refshaleøen through strategies and NBS. This means to support and strengthen existing whilst implementing new units both on a national scale and in the particular case of Refshaleøen. By prioritising biodiversity in green and blue structures, retracting human interaction and rethinking the practice of wanting to control nature for societal gains, the nature on Refshaleøen will flourish.



ill. 116 //DNI: Tilstand

State of nature: Suggestively 25 +

State of nature is one of the three categories that DNI works with. It tells the bio factor score based on suitability for rare species as well as its’ ability to accumulate as a habitat for long-term sustain.

Along the waterfront of Refshaleøen is the best conditions for species to accumulate due to possible habitats. Due to Refshaleøen being primarily used during summer months, hibernation and occupation is possible during winter months in place that otherwise is used for temporary events.



ill. 117 //DNI:Beskyttelse

Protection: 49 / 100

Protection indicates a professional evaluation of how likely an area is to become compromised. This means threats to biodiversity in its' current state in comparison to who owns the plot containing valuable in dual with legislations to protect.

The dike and waterhole surrounding Lynetten is especially threatened by conversion into alternative purposes such as infrastructure, development or agriculture along with changes in existing hydrolic condtions.



ill. 118 //DNI:Process

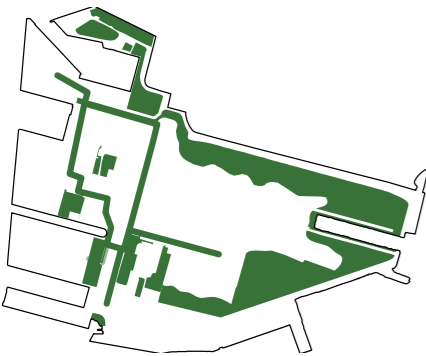
Natural processes: 16 - 50 / 100

Natural processes are divided into three types of processes that is of huge importance to biodiversity – grazing (the appearance of grazing species), hydrology (the collection of precipitation on surface and ability to seepage) and coastal dynamic (flooding and sand drift due to natural coasts)

Along the waterfront towards north the natural processes of grazing and flooding is apparent whilst towards west it is due to optimal hydrologic conditions. The dike that splits Lynetten and the Eventspace in front of Sektionshallerne is low in value but with the possibility to enhance with primarily hydrology as the main natural process.

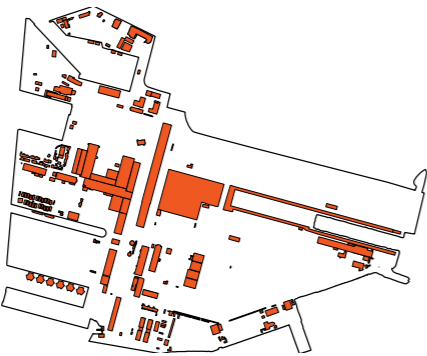
Appendix C

Prerequisites and Constraints



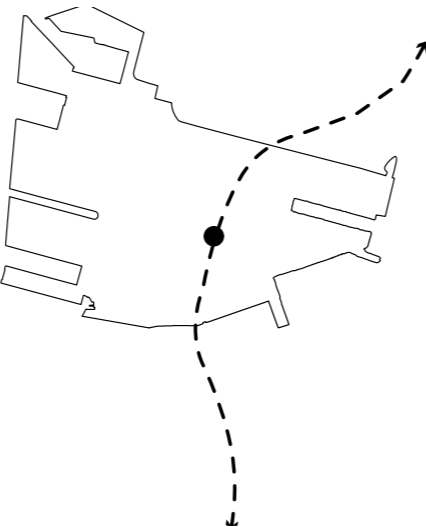
Green structures

Half of Refshaleøen will be designated for green structures. Industrial nature has made its way through the absence of humans, and therefore the green structures has been the first priority in the land use battle.



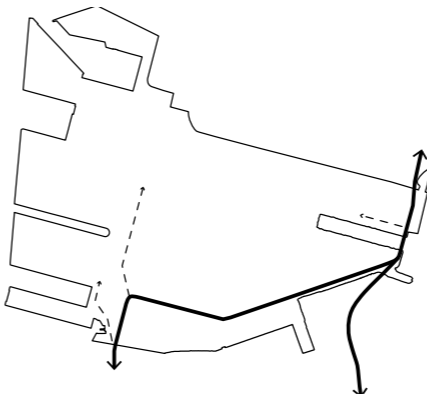
Preservable structures

All existing buildings and traces of cultural heritage will be preserved as a starting point. However, buildings, sheds, and low-quality containers will be removed.



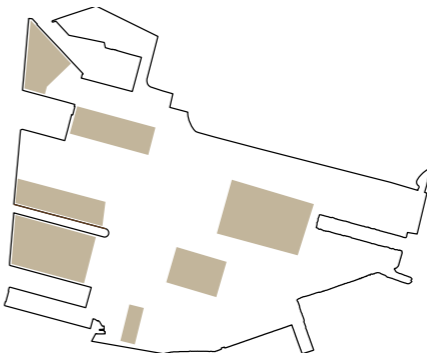
M5

A new metro line is currently in progress, with one of its stations slated for Refshaleøen. It is assumed to be elevated tracks and set to be completed by 2035. The station will serve as an arrival point, and the space beneath the tracks aims to accommodate various activities and temporary uses.



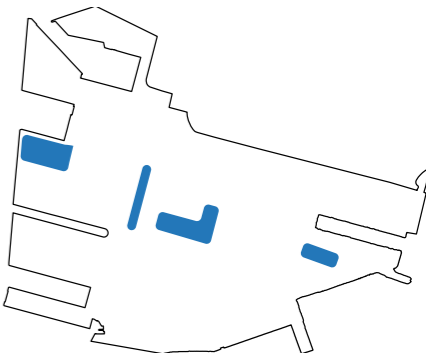
Access roads

In the future, Refshaleøen will be reserved for public transport and soft traffic. Therefore, there will only be one primary road running through the site and continuing to Lynetteholmen. The existing main road leading to Refshaleøen and the current land transport route will be redirected to serve as main roads, guiding heavy traffic away from the center of the island. The dashed lines indicate routes that can be converted to car traffic lanes later on if necessary.



Building plots

Remaining space will be designated for building plots. These areas will be developed periodically over time aiming to accommodate existing functions and communities. Until development these areas will be free for temporary uses.



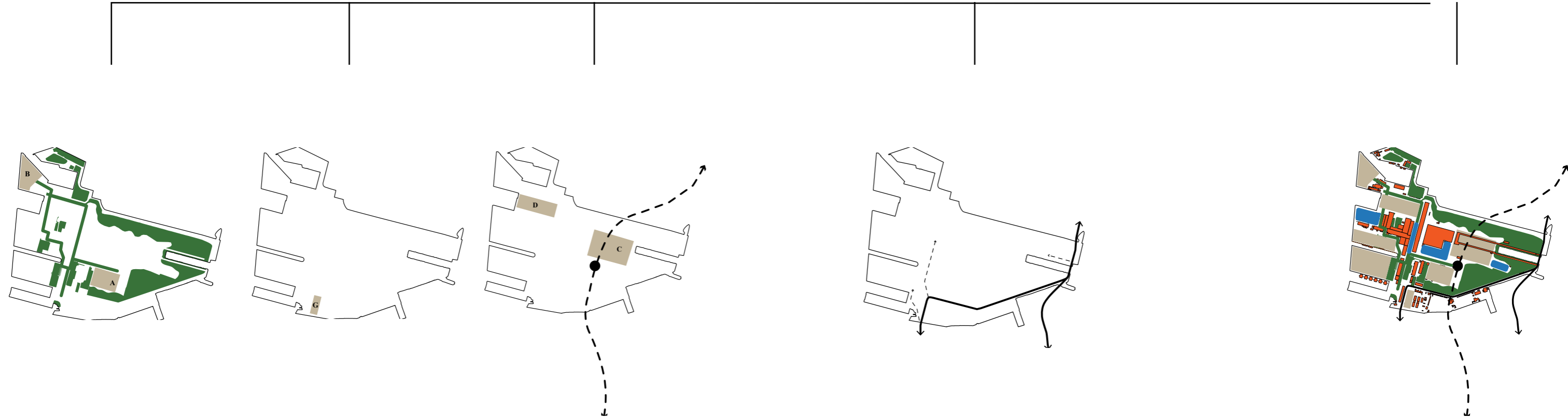
Plots for prototyping

Multiple plots will be kept free for development. These areas will serve as sort of perspective areas and may change function and expression over time. They are carefully selected based on existing environments. In the future, these areas will only be developed in collaboration with the communities that utilize them.

Appendix D

Stage planning

2025 2030 2035 2045 2055



Green structure
Firstly the green structures will be implemented. This will give the trees and bushes time to establish before the new inhabitants will arrive.

Subarea A
The opening move. This area will relate to the landscape, existing structures, a plot for prototyping and the upcoming M5. This makes it a very important area and can set an example for the upcoming development.

Subarea B
This area is withdrawn from the activities there is today. It has the ability to be developed without affecting the existing.

Subarea G
In the future public transport and soft pedestrians will be the primary source of transportation. The ability to park your car and enter the area is an important sign to sent. This building plot is the first thing you meet when arriving Refshaleøen as it is today.

M5
The new metro line is expected to be completed in 2035.

Subarea C
This area will start its development when M5 is implemented as it relates to the new metroline and will be very much dependent on it.

Subarea D
When subarea B is developed, this area will naturally work as the next step. It relates to industrial buildings and the landscape.

Infrastructure
In 2045 most of the building plots are developed, and M5 is expected full functioning. A parking house at the entrance will be finished.

Subarea E
This area will be kept free from development as long as possible to continue working as a green area as it is today.

Subarea F
Today Copenhagen Village is placed here and in order to keep their function and placement as long as possible, this area will start development in the latest stage.

In 2055 everything is expected fully developed and partly matured.

Out of (*urban*) order

/ˈaʊt ˈɒv ˈɜː-bən ˈɔː-dər/

1 : the current state of urban development is broken or malfunctioning.

2 : the hierarchical structure or prioritization within urban planning is incorrect or misaligned.

