A research for
AMS INSTITUTE

DEMYSTIFYING THE INNOVATIVE CHARACTER OF THE MARINETERREIN

A COMMUNICATION INTERFACE TO STRENGTHEN THE RELATIONSHIP BETWEEN INNOVATORS AND CITIZENS

Master thesis
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Strategic Product Design

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Coming together is the beginning. Keeping together is progress. Working together is success.

- Henry Ford

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AMS City Project team

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Supervisory Team
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INCIPIT

By delivering this report, I am concluding an important chapter of my life as an Industrial Design Engineering student at Delft University of Technology. The closure of this chapter actually began in September 2022, when I relocated to Amsterdam to undertake this project at the AMS Institute. While it felt good to be back in my old hometown, I was also taken aback by the noticeable decline in social cohesion at both the neighbourhood and city levels. At times, it seems as though Amsterdam is becoming more of a tourist attraction, rather than a place where people life. There is no longer a place for the diverse mix of subcultures in the city centre. I am proud that this project might have contributed to strengthening social cohesion in the city I love. Without the assistance of the inspiring individuals, this project would not have been realized.

I feel fortunate to do my graduation project at a AMS Institute, a company that fosters a forward-thinking and positive environment and gave me all the freedom to give my own twist to this project. Getting the opportunity work at the office of AMS Institute, allowed me to be physically present daily at the site of my research. This proved to be a unique experience, as I could observe first-hand what was going on at the Marineterrein and quickly identify critical stakeholders. It was special to swiftly earn the complete trust of the AMS Institute and be acknowledged as the “walking encyclopedia” on the Marineterrein development. As a consequence of this trust, doors were opened as I was able to join private meetings and leverage public events to conduct my research, which would have been unattainable otherwise. In particular I want to thank Michel Handgraaf, Juanita Devis, Gian Luca van der Putten (Bureau Marineterrein) and Matthijs ten Berge (AHK), who where real “door-openers” during this project.

In addition, I would like to express my gratitude to the supervisor team from the IDE faculty. Mieke, you have guided me wonderfully through the world of Systemic Design and when I got really stuck with writing my report, you were able to give me direction to continue with my process in a targeted and structured way. Pieter, I appreciate the coaching meetings in which you sometimes acted as a “rubber duck” and by simply listening helped my untangle the fuzziness of my project. But you did more than just listen. Your input was often spot on and pinpointed exactly what needed to be addressed. I have experienced that you both, coming from totally different backgrounds, have a passion for educating. This combination of academic and practical knowledge formed a great coaching duo for me.

I would like to express my gratitude to everyone who participated in the interviews and prototype tests during my project. In particularly the people who took time to collectively brainstorm with me on innovative and inclusive citizen engagement tools for the Marineterrein Area development. Mila, I want to thank you for helping in facilitating this co-creation session and for the valuable extra pair of ears and eyes you provided.

Pino, I want to thank you for explaining the Eskimo technique to me. Without this technique, I would have probably turned into an icicle after day one in the container.

Enjoy reading!
Jaap Tjebbes
24-03-2023

EXECUTIVE SUMMARY

This report presents the design process of My.I.D., a communication interface located at the Marineterrein aimed at enhancing the relationship between citizens and innovators. The ultimate goal of My.I.D. is to preserve the inclusive nature of the Marineterrein and transform it into a hub for open innovation, where everyone can feel empowered to contribute their creative ideas. My.I.D helps AMS Institute to be better equipped to bridge the gap between technological research and societal practice.

For decades, the Marineterrein used to be a military base that was closed off from the rest of the city. Due to budget cuts, the Ministry of Defence decided to gradually leave the Marineterrein in 2011 and return the territory to the city of Amsterdam. The Marineterrein has been undergoing area development since 2013, gradually opening to the public and business activity since 2015. In recent years, an important focus has been on weaving the area into the urban fabric of Amsterdam. The Marineterrein now offers values to many different target groups, as more and more Amsterdam residents are finding their way there for recreation, sport, and business. I believe that the Marineterrein’s values of inclusiveness is the most important values, given that these core values of the city of Amsterdam and have been eroding in recent years.

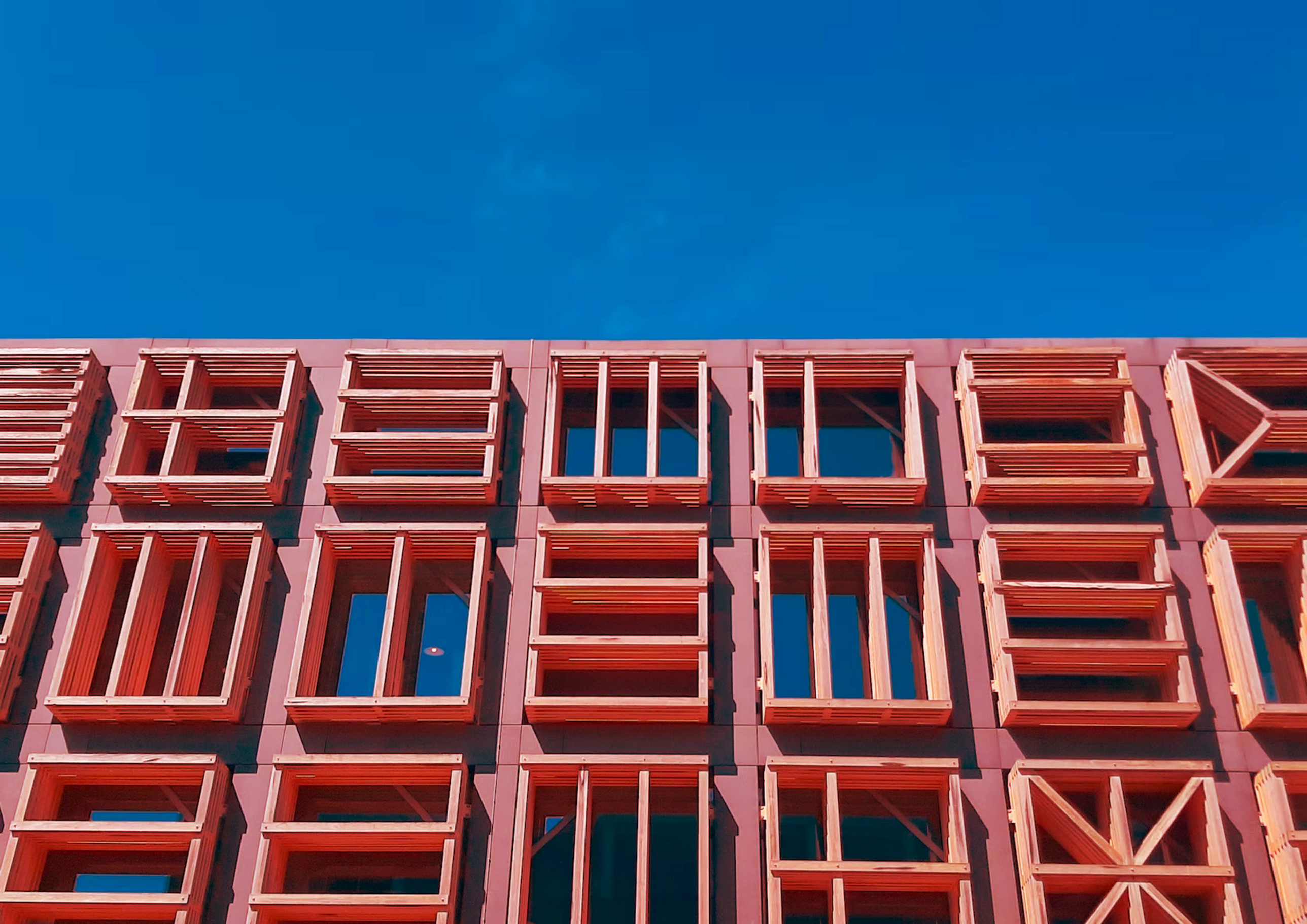
However, exactly this value is under pressure due to the decision to turn the Marineterrein into an innovation district. An innovation district is a city area designed to bring together innovative companies, start ups, and knowledge institutions to stimulate innovation and economic growth. While the decision to convert the Marineterrein into an innovation district is well-founded given its history, research indicates that such districts tend to rapidly gentrify both economically and socio-culturally. The emergence of an incomprehensible monoculture, as innovative companies mainly attract the “knowledge class,” deters many other target groups and results in innovation districts becoming enclaves. Initially, this design project aimed to create a shared future vision for the Marineterrein. Nevertheless, without inclusivity, the implementation of a shared future vision is impossible.

Citizens engagement might be the solution to maintain inclusiveness in the innovation district Marineterrein. By involving citizens a sense of ownership and affection can be stimulated. Collaboration and understanding of diverse perspectives are crucial for mutual tolerance and social cohesion. Within the context of the Marineterrein, a opportunity lays in involving citizens in “open innovation.” Open innovation is a participatory method of innovation. At the Marineterrein, the primary issue for involving citizens in open innovation the lack of effective communication interfaces between citizens and companies. Companies tend to operate behind closed doors, leaving citizens with no space to provide feedback or engage in a dialogue about innovation. The undesirable scenario of the Marineterrein drifting away from the rest of the city seems to become a reality. Therefore, the design goal of this project is to develop an interface that demystifies the innovative character of the district and stimulates citizens to engage in open innovation.

My.I.D. is a design concept that might be a first step to engage citizens in open innovation. Visitors can choose from eleven innovations routes to explore the innovative nature of the Marineterrein. Along the routes, visitors encounter inspiration points that tell stories of innovative projects or experiments that the companies are working. Visitors get the opportunity to not only listen to the story but share their own thoughts, concerns or wishes regarding the innovation. Besides they can listen to the responses of or visitors. The responses are shared with the companies for a better understanding of citizens’ opinions and ideas. This cross-pollination might lead to the emergence of new collaborations or synergies. In that way, My.I.D. aims to improve the mutual understanding and relationship between citizens and innovators.

Using the framework for effective citizen engagement that I have developed myself, I aimed to make My.I.D. successfully enable the design goal of this project. The framework consist of four design functions: invite, inform, incite, and inspire. The design functions were formulated based on observing various citizen engagement events and validated during a transdisciplinary co-creation session. The design functions are ensured through eleven design principles that were integrated into the physical design of My.I.D..

I conducted prototype testing to further validate the design principles of My.I.D.. End-users tested a prototype of the My.I.D. concept in the public space of the Marineterrein. The results of the prototype tests demonstrate that My.I.D. has the potential to effectively showcase the innovative character of the Marineterrein to citizens and involve them more in the ongoing innovation. While, further design research is necessary to further develop My.I.D. and overcome some viability bottlenecks this project might be a crucial first step in ensuring that the Marineterrein remains connected to the rest of the city.



COLOUR ASSISTANCE

SECTIONS
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SECTION INTRODUCTION
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CHAPTER INTRODUCTION
Every section consist of several chapters. This colour indicated the start of a chapter.

CONCLUSIONS
This colour indicates pages that summarize the previous section or chapter. Only larger chapters are summarizes.

DESIGN CONCEPTS
This colour indicates pages that present a design concept. Including written design concepts.

CO-CREATED DESIGN CONCEPTS
This colour indicates pages that present a co-created design concept.

EXPLANATORY NOTE
This colour indicates note explaining a certain jargon or concept.

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SECTION 1. INTRODUCE

In this section, I will introduce my graduation project, which centres around the area development of a unique area of Amsterdam, the Marineterrein. The client for my project is the AMS Institute, which is located on the island and has designated it as a use case for their AMS City Project. In this section I will introduce AMS Institute and the AMS City Project. I will delineate the scope and relevance of both the AMS City Project and my own design project. Furthermore, I will explicitly specify my contribution to the AMS City Project while highlighting the distinctions between my research questions and methodology and those of the AMS City Project. I will elaborate how two domains of design, Value Sensitive Design and Systemic Design play a role in this project, and I will explain my motivations for undertaking this project and the impact that I hope to achieve.

In addition to this introduction, I will explain my approach to this project and the methodology that I have employed as a blueprint for my own design process. By reading this section, you will also gain a better understanding of the structure of this report and where to locate specific information.

1.1 INTRODUCTION TO THE PROJECT

EXPLANATORY NOTE URBAN LIVING LAB APPROACH

The Urban Living Lab approach is a collaborative method that involves end-users, private and public actors, and knowledge institutes in co-creating and testing innovative solutions to address urban challenges. The approach emphasizes real-life testing in living environments, enabling researchers and stakeholders to identify and address context-specific challenges as they arise. Combining this with the focus on interdisciplinary, the approach aims at developing innovation that are responsive to local needs and have a high potential for implementation. (Steen & Van Bueren, 2017)

CLIENT

From time immemorial, cities have always been an attractive place for people to work, meet, learn and have their home. Due to this vibrancy, they are places of constant evolution. One of the main factors leading to urban evolution is technology. Amsterdam Institute for Advanced Metropolitan Solutions (AMS) investigates, designs and experiments how technology can play a role in making our cities more future-proof. They call this 're-inventing cities'. AMS Institute has various Urban Living Labs (refer to explanatory note) around the city of Amsterdam to put their research into practices. Therefore, the mission of AMS Institute reads as:

TO CONNECT SCIENCE WITH SOCIETAL PROBLEMS AND SOLVE THEM COLLABORATIVELY.

The research portfolio of AMS institute revolves around six urban challenges that cover important urban transitions: Smart Urban Mobility, Urban Energy, Climate Resilient Cities, Circularity in Urban Regions, Metropolitan Food Systems, and Responsible Urban Digitization. Research & Valorisation teams are working on the research, design and experimentation projects related to these six different programmes. AMS Institute has also engaged a group of Research Fellows working at the founding partner universities who help to set up and develop the research agenda. The Research Fellows are thus the direct link between academic knowledge and practice (AMS Institute, 2022).

AMS Institute is also an education institute, as it established its own MSc Master's program named MADE in 2017.

SCOPE OF AMS CITY PROJECT

Since April 2022 AMS institute has started a new research project, called AMS City, in which a team of Research Fellows is exploring what it means to combine the different solutions of the AMS Institute's portfolio. Solutions in this portfolio range from autonomous boats, to vertical farms, to retrofitting historical buildings. The AMS City team has the task of analysing where these solutions can reinforce each other or hinder each other. Ultimately, this analysis must lead to a design project, in which a vision is created for an technologically ideal future neighbourhood in Amsterdam. As test-case for this future neighbourhood they pick a place that is highly familiar to them: the Marineterrein.

DEFINITION INNOVATION DISTRICT

"These districts, by our definition, are geographic areas where leading-edge anchor institutions and companies cluster and connect with start ups, business incubators and accelerators. They are also physically compact, transit-accessible, and technically-wired and offer mixed-use housing, office, and retail."
- Brookings Institution (2014)

The Marineterrein is a unique city island in the centre of Amsterdam with a rich history that is currently in a transitional stage. Completely surrounded by water and a 17th century brick walls, it was long known as a "hidden piece of city" with a mysterious character. After ages of serving as a military naval base, in early 2015, the gate opened -literally and figuratively- and the island was given back to the people of Amsterdam. A special opportunity has arisen to set up a centrally located **innovation district** where living, working and learning intertwine. The Marineterrein should become an inspiring place where new innovations are found, developed and tested that might contribute in solving major urban issues. The municipality indicates it wants to develop the area in an adaptive and sustainable way together with residents, visitors, institutions and entrepreneurs.

In the middle of 2018, the AMS Institute made the decision to transition from its previous location in the Tropenmuseum to the Marineterrein (van Zoelen, 2018).The decision to relocate AMS Institute to the Marineterrein was strategic. AMS Institute's capacity and function as a research and education institution, made them a ideal anchor (refer to explanatory note) on the Marineterrein. Furthermore, the experimental and innovative nature of the Marineterrein aligns well with the Urban Living Lab approach of AMS Institute.

RELEVANCE OF AMS CITY PROJECT

The AMS City project has two main goals: organizing the solution portfolio of AMS and inspiring the municipality of Amsterdam. An inventory of the solution portfolio is useful for internal organization and can help with strategic business decisions. Before the start of this project this phase has already been conducted by the team.

The second goal of the AMS City project is to inspire and advise the municipality of Amsterdam. Having an exhaustive overview of the AMS portfolio can help in making an coherent future vision for the Marineterrein. The municipal authorities acknowledge the expertise of the AMS Institute and accord considerable weight to such a future vision.

A desired effect is to demonstrate the relevance of the AMS Institute so that it can remain at the Marineterrein in the future. The current business activities at the Marineterrein have a temporary nature and based on how the phased development will ultimately proceed, it will be determined which companies can remain.

The Marineterrein's location within the urban fabric of Amsterdam

INITIAL PROJECT GOAL

I deem it important to clarify that although I was a member of the AMS City Project team, my conducted graduation project can be seen as an independent research. My research primarily resolved around the second objective of the AMS City project. There was comprehensive knowledge transfer between me and the team aimed at enhancing the outcomes of both projects. However, I pursued a distinct research goal, as explained in the following paragraphs.

For designers, it is customary to take a problem as the starting point of the design process. A product that is not working properly, a process that is not running smoothly or a social problem that is stressing the society, are great sources of inspiration for new products, services or system improvements. In this project, however, the starting point is not a problem, but rather an societal opportunity (Leadbeater & Winhall, 2020). Opening up the Marineterrein to the city of Amsterdam creates a new perspective. On the 14 hectares of centrally located land, surrounded by water and full of historical character, a beautiful new city quarter can emerge. A new pearl of Amsterdam.

In a democratic constitutional state, we deem it essential that public decision-making processes, such as an area development, take into account the needs and interests of all stakeholders involved. Transforming the Marineterrein into a innovation district is therefore a complex and wicked opportunity. Many stakeholders are interdependently involved with varying mental models, interests and aspirations (Buchanan, 1992; Camillus, 2008; van der Bijl-Brouwer & Malcolm, 2020). These diversity of perspectives might cause controversies (Geenen, Ozkaramanli, Matos-Castaño & van der Voort, 2022). There is no single obvious "good" design and the challenge can be approached from different perspectives and different levels, which will all result in different outcomes (Snowden & Boone, 2007). New relationships have to be created and already existing ones will change. A new city district is not created overnight but will be a organic evolution. There is a high probability that unanticipated changes will drastically alter the plans (Pendleton-Jullian & Brown, 2018). The transition of a closed military site into a public innovation district is expected to result in changes in the values that the site offers to various stakeholders (van der Poel, 2018). To prevent conflicts and discontent, it is crucial that all relevant stakeholders engage in an open and inclusive dialogue to identify the collective values they consider important.

Drawing up a shared future vision that balances these values, can be a useful tool of ensuring that despite the different perspectives, there is common ground among the various stakeholders and they can work towards a collective goal. During the implementation of the plans, a shared future vision can provide guidance and be used as a means of control by the various stakeholders (IDE TU Delft, 2021).

Through a orientation session I facilitated (refer to Appendix C), it became apparent that the AMS City team has considerable expertise in technology and has the capability to generate a robust future vision from that perspective. Nonetheless, they have less experience with co-creation or participatory design practices to create a shared future vision that balances the interest and needs of various stakeholders. As a strategic designer, I possess greater expertise in this domain. The AMS City team expresses a desire to critically compare a future vision that reflects the interests of multiple stakeholders with their own predominantly technology-oriented future vision. As a result,

ANCHOR INSTITUTE

Anchor institutions are typically large, established organizations that have a significant presence in innovation districts. Examples of these anchor organizations are universities, research institutes, or hospitals (Koh et al., 2020). The idea is that their presence attracts other companies, entrepreneurs, and talent, creating a network effect that drives innovation. Moreover, anchor companies often collaborate with start ups or spin-offs to co-create new products, services, and business models. This collaboration allows start ups to leverage the resources, expertise, and networks of the anchor companies, and provides the anchor companies with access to new technologies and business models (Katz & Wagner, 2014).

a relevant goal arises for me to investigate the following research question:

HOW CAN WE DESIGN A SHARED FUTURE VISION FOR THE MARINETERREIN THAT BALANCES THE CURRENT AND EMERGING VALUES PRESENT IN THE SYSTEM.

Concrete sub-questions that should be addressed are:
Sub-Research Questions:
What is the background of the Marineterrein area development?
Which stakeholders should be taken into account for creating a shared future vision?
Which values does the Marineterrein offer to these stakeholders?
What further transformation of the Marineterrein can be anticipated and how will this affect the values present in the system?

Design Questions:
How to collectively design a desired future vision for the future Marineterrein?
What interventions can be designed to facilitate the ongoing implementation and iteration of the future vision at the future Marineterrein?

SCOPE OF PROJECT

The social system of this study has strong physical boundaries: the 14 hectares of the Marineterrein. However, as this project is concerned with a area development, I must consider that this project can have impact on a diverse range of stakeholders, including administrative planners & companies. While the Marineterrein currently lacks permanent residents, it serves as a crucial green space for the surrounding neighbourhoods, which I need to include. To define these neighbourhoods, I will utilize the 15-minute city principles as a criterion (Moreno, 2019). During this project, I will only focus on the current stakeholder, as for now, there is too much uncertainty about the future stakeholders making it difficult to approach them and emphasize with them.

During a team orientation session (also refer to Appendix C), it became apparent that the AMS City project has planned its future vision for 2030-2035, together with a strategic roadmap and milestones for achieving this vision (Simonse, Whelton, & Iwanicka, 2017). Therefore, I will adopt the same time scope for my project.

Fortunately, the AMS City project has few financial constraints for the design. As being a future inspiration, the project prioritizes financial feasibility less than other factors.

ROLE OF VALUE SENSITIVE DESIGN IN THIS PROJECT

Values and meaning play a crucial role in design driven innovation, particularly when tackling complex problems (Verganti, 2017; IDE TU Delft, 2021). It is more likely that the shared future vision will be more meaningful, ethical, and long-lasting if they align with the various values of various stakeholders at stake (Bos-de Vos, 2020). This can be a challenging task, as different stakeholders usually have different values and priorities. For example, during an area development, different stakeholders may prioritize values such as sustainability, respect for historical heritage, and financial prosperity to varying degrees. .

The definition of value used in this report
It it important to highlight that throughout different scholars various definitions of values are been used. In general, a distinguishing can be made between two different ideas about values, as described by Bos-de Vos (2020).

Firstly, “Value as guiding principle” refers to the idea that a particular value serves as a guiding force in one’s life. Values serve as the foundation for our moral and ethical frameworks, shaping how we make decisions and interact with others (van der Bijl-Brouwer & Dorst, 2017). Values are often deeply ingrained in our cultural and societal norms, and can be influenced by a variety of factors, including culture, human relationships, and personal experiences (Swartz & Bilsky, 1987). Values as guiding principle is mainly a human centred approach to value and is commonly used in the field of sociology, psychology, anthropology and philosophy.

Secondly, “Value as qualities with worth” refers to the idea that values are qualities or characteristics inherent in objects or spaces that represent a certain amount worth (Bowman & Ambrosini, 2000). This is the type of values that commonly used in economic, business management, and design scholars, when theories about value creation, value capture and value exchange are discussed. This worthiness can both be monetary and non-monetary, so it is also used to describes use value and emotional meaning of objects and spaces, and are perceived differently by each individuals.

Throughout this report I will use the term value to refer to “value as quality of worth”, since I am investigating what the qualities of the Marineterrein are and how these are evaluated by various stakeholders. Values are notated as nouns. Numerous attempts have been made to list and categorize values. For this research, I gratefully used Bos-de Vos’ (2020) framework (refer to Appendix B), which presents a comprehensive list of values.

ROLE OF SYSTEMIC DESIGN IN THIS PROJECT

Taking into consideration the complexity of broad social network involved in the transition of the Marineterrein, the application of systemic design can be relevant. This new field of design, combining systems thinking theory with design practices, has drawn much attention in the last couple of years. Systemic design is increasingly becoming a vital design field focussed on achieving positive societal impact. By looking at the project through a complex systems lens I might be better able to see the wider context in which the area development of the Marineterrein is taking place and manage its complexity. For this project transdisciplinary approach and infrastructuring are interesting principles within the field of systemic design to focus on (Van der Bijl-Brouwer, 2022; Pendleton-Jullian & Brown, 2018).

Transdisciplinary design is a successful method for working on complex societal opportunities (Björgvinsson et al. 2012). By bringing together various academic disciplines and non-academic stakeholders with experiential knowledge this approach recognize and utilize the interdependency that exists within and between the different stakeholder groups. Through actively seeking a diversity of perspectives, these approaches facilitate processes that enable potentially conflicting views to be discussed on more equitable terms. In doing so, they may help to identify interventions that are broadly accepted and can guide the social system towards a desired direction. (van der Bijl-Brouwer, Kligyte, & Key, 2021).

Furthermore, the systems thinking theory emphasizes the significance of continual social learning and interaction among stakeholders. Designing interfaces that facilitate stakeholder interactions and enable their contributions with new ideas is referred to as infrastructuring or Thinging (Björgvinsson et al., 2012). By promoting knowledge exchange, stakeholders are exposed to new ideas and behaviours, ultimately leading to organic self-organisation of systems by which they become more resilient and adaptable to changing environments. This resilience and adaptability is particularly valuable for the Marineterrein, given its transitional phase.

In the end, the infrastructuring principle was found to be the prevailing principle in this project. Eventually I reframed the initial research question and translated it into a design goal to create an interface to enhance self-organized connections within the social network. Transdisciplinary work was also utilized in a co-creation session.

MOTIVATION & RELEVANCE OF PROJECT

I personally consider this project to be significant for two distinct reasons.

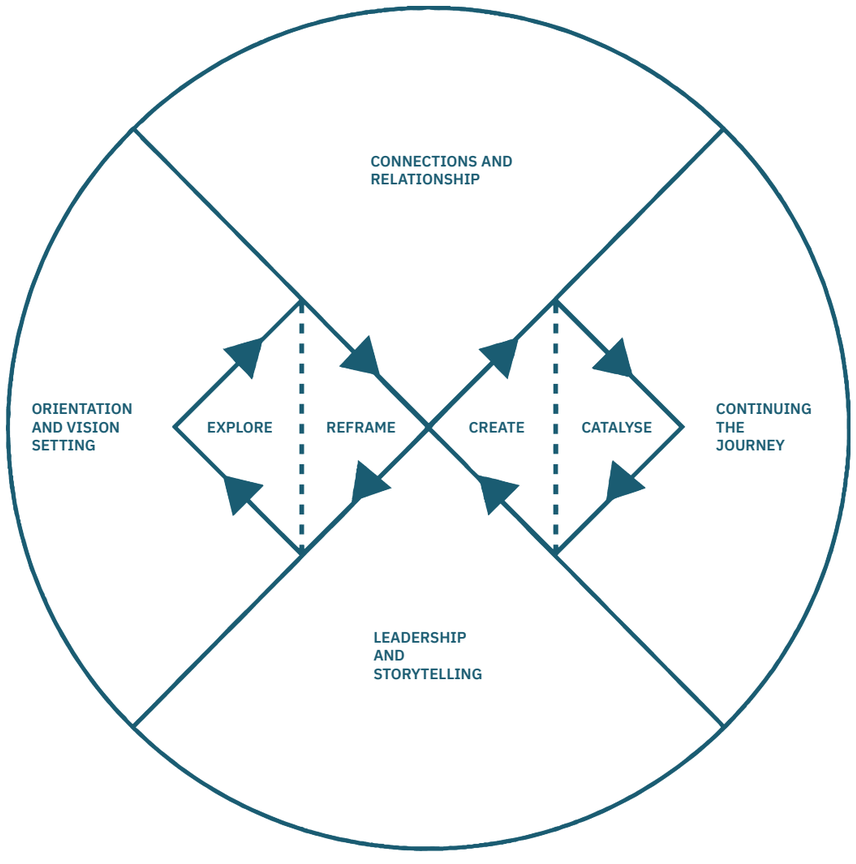
Firstly, the transformation of the Marineterrein is a substantial undertaking that will have a significant societal impact on the city of Amsterdam and its residents. I am keen to employ my design skills in socially-oriented projects such as this, to contribute positively to the city where I have my roots.

Secondly, I have little familiarity with the systemic design principles of transdisciplinary and infrastructuring , and I am seeking to broaden my skill on these topics through this project. While infrastructuring is rooted in participatory design principles, it is a relatively recent practice among designers, necessitating ongoing knowledge generation.

1.2 PROJECT APPROACH

Designing a shared future vision for a future neighbourhood is a project that takes place in the fuzzy front of the design process (Reinertsen, 1999). There is not a real starting point and much is yet unclear. While a design process is never a clear structured linear process, a approach is needed to structure the research, make sense of all information gathered the and translate that into practical design solutions.

The methodology that was used as 'blueprint' for this project is proposed by the Design Council and is called the Systemic Design Approach. The basis for this approach is the widely-applied Double Diamond model, also introduced by the Design Council, which is based on the scientific work on frame innovation and co-evolution by Dorst (2015). The Design Council renewed their traditional Double Diamond framework to make it better applicable for the field of systemic design. The core principle of divergent and convergent thinking within both problem and solution space remains the same but the four design activities are renamed (explore, reframe, create, catalyse) and four additional enabling activities are added: orientation & vision setting, connections & relationship, leadership & storytelling, and lastly continuing the journey The methodology underlines the importance of a non-linear cognitive and working approach and recognizes the importance of the context in which systemic design takes place. (Design Council, 2021).



Systemic Design Approach of the Design Council

Explore
The starting phase, in which digging into of the system and context is the goal. By gathering information through different methods and from different perspectives helps to identify the stakeholders, their assumptions, and their relationships. This phase aims at understanding the context from different perspectives to get a better understanding of root-causes of challenges and identify new opportunity. Translating these opportunities into first prototypes and testing them can further enhance your understanding of the context.

Reframe
Identify specific opportunities or challenges. This might mean refining the brief to focus on one specific area or expanding it to show how everything is connected and impacts multiple groups. By looking through different lenses and converge the explored information, new frames to look at the problem are formulated. This creates a springboard for new design ideas.

Create
The goal is to ideate on a portfolio of interventions that aim to steer the system in the direction that is pictured in the reframing phase. The ideas can be aimed at different layers of the system. Some can be small practical steps and others can be big audacious ideas that might never happen but will help people re-imagine what might be possible.

Catalyse
Design is about making things. Prototyping an idea is an important way to test how it works, explore how it connects with other interventions. Creates the story that others can join in or spark their own ideas, creating a bigger movement for change.

Orientation and Vision Setting
Complex social challenges are dynamic and cannot be simply fixed. Working on them is an ongoing process which might be demotivating. Therefore it is important to begin a systemic design project in a positive way. Spending time with the team and stakeholders to understand their relationship to the challenge, gain their trust, and seek for values that can be useful throughout the process.

Connections and Relationships
By connecting the right actors new network collaborations might emerge which open new solution spaces. Besides it is important to give confidence to other to create and imagine new solutions. The designer can acts as mediator and connector in a way that is perhaps not immediately quantifiable but, undoubtedly vital, and provides value way beyond the project itself.

Leadership and Storytelling
As the road might be bumpy it is important to remain optimistic but also realistic. Designers are striving for a better futures and try to inspire other stakeholders to become part of that mindset, but there needs to practises in place to reflect on your own abilities and the overall goal. Being open and share your knowledge with others is key.

Continuing the journey
As mentioned above, complex challenges are ever evolving and cannot be "fixed". New problems might arise and new opportunities open up. As the work will continue after your project it is important to create and share knowledge for future work. Reflect on your own contribution, share the mistakes that you have made and give directions for new routes.

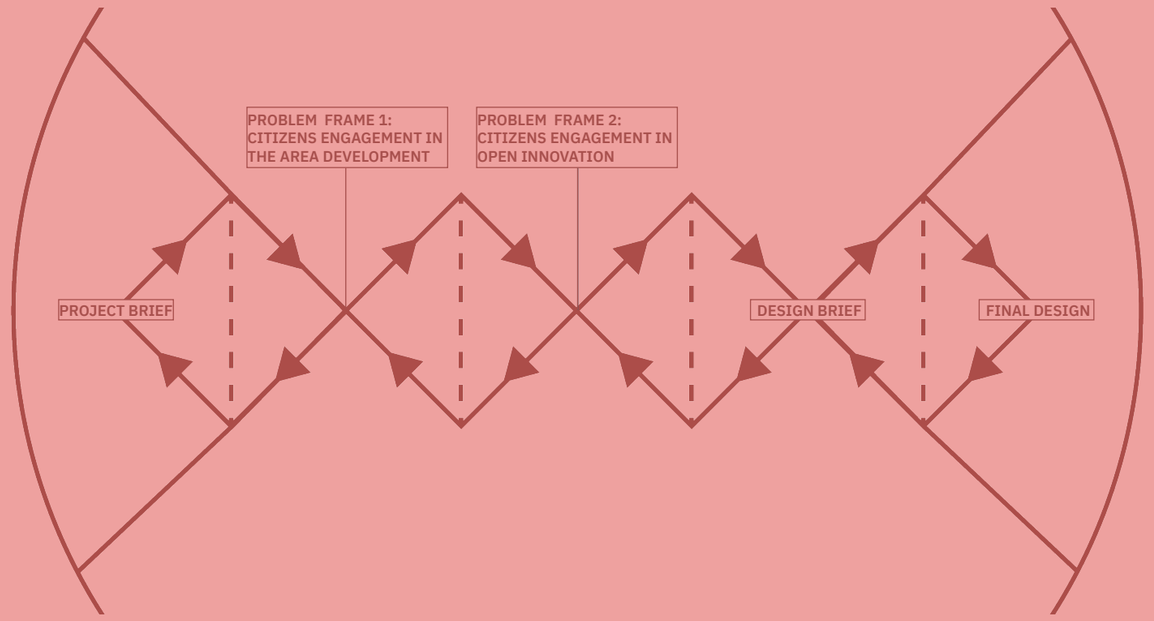
It is crucial to emphasize that the framework only served as a blueprint. Design activities often do not go as planned, and in reality, the phases overlap with each other. Often, I was simultaneously engaged in various exploring, creating, and reframing activities. Overall, it is primarily the broad working principles of divergent and convergent thinking, zooming in and out, reframing problems, testing and iterating, and connecting with existing initiatives of this framework that were consistently applied throughout this project. In chapter 1.3, I will demonstrate how this framework ultimately fits into the design process that I followed during this graduation project.

1.3 READING GUIDE

The Systemic Design Approach served as a guide for me to progress from the project brief to the final design. However, for this design project I needed more than just a double diamonds. During the exploration phases, I acquired new knowledge and discovered new challenges that were more pressing and made the design of a shared future vision for the Marineterrein irrelevant. After reframing cycles new problem frames emerged and additional research was necessary.

In retrospect, I can identify three distinct 'research diamonds' of exploration and reframing before finding the final problem frame to design for. It is important to note that these diamonds did not follow a linear progression. As a result, my ultimate design did not become a shared future vision, but rather a communication interface aimed at improving the connection between innovators and citizens on the Marineterrein. The simplified illustration below depicts how my project process eventually could align with the framework of the systemic design approach. The corresponding chapters, are listed below the illustration.

Readers interested in the background research that led to the emergence of these new problem frames may wish to dive into sections 2, 4, and 6. Alternatively, those who just seek to gain insight into the high-over process that led to the final design may opt to read only sections 3, 5, 7, 8, and 9.



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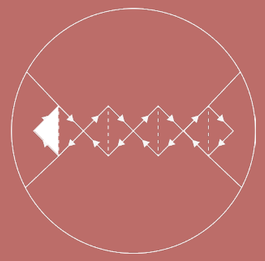
- Conclusion (Ch. 11.1)
- Discussion (Ch. 11.2)

SECTION 2. EXPLORING THE TRANSITION OF THE MARINETERREIN

This section outlines the first design activity, which involves conducting a thorough exploration and research of the context surrounding the area development of the Marineterrein. The goal of this phase is to gain a deeper understanding of the interests, values, and beliefs that shape the social network of the Marineterrein and how these elements play a significant role in the ongoing transition. By investigating the history of the area, analysing network relationships, examining the values that the Marineterrein offers to various stakeholders, and mapping relevant external factors, I was able to better anticipate how the transition will progress. Ultimately, all the knowledge gained during this exploration phase led to the identification of a new problem frame.



2.1 EXPLORE APPROACH

Deriving from my main research question

HOW CAN WE DESIGN A SHARED FUTURE VISION FOR THE MARINETERREIN THAT BALANCES THE CURRENT AND EMERGING VALUES PRESENT IN THE SYSTEM?

I derived the following four sub questions to be researched:

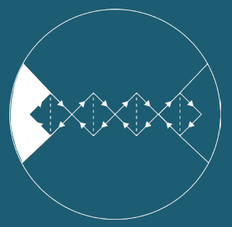
1. What is the background of the Marineterrein area development?
What is the origin of Marineterrein, and how does this history continue to influence the current system? In what ways has this historical background shaped the perspectives of the stakeholders towards the Marineterrein at present? What are the historical occurrences that underlie the rationale behind the transformation of the Marineterrein into an innovation district?

2. Which stakeholders should be taken into account for creating a shared future vision?
Who are the current actors that make up the social system and how are they related? How are the (invisible) power dynamics and relationships between these stakeholders? In what manner do these relationships serve as the propelling factors behind the current transformations, and to what extent will they ascertain the further area development? Are there relationships that could stimulate or might hinder systemic change?

3. Which values does the Marineterrein offer to these stakeholders?
In what way is the Marineterrein utilized by various stakeholders, and why do they use the marineterrein in the way they do. What aspect of the area do they deem important and how does this effect how the different stakeholders perceive and interact with the Marineterrein. How do these values relate to those of other stakeholders and does this affect the relationship/

4. What further transformation of the Marineterrein can be anticipated and how will this affect the values present in the system?
What are plans for the further area development of the Marineterrein and which stakeholder groups are making and influencing these plans. What will determine the feasibility of these plans? What will be the implications of these plans on the utilization of the area by different stakeholder groups? Do these plans cause any challenges or value conflicts?

Taking into consideration the four sub research questions that need to be answered, various research methods where appropriate to use. Retrieving both active and latent knowledge was necessary to get a coherent picture of the Marineterrein and its context. The following four research strategies were applied chronologically to obtain both forms of knowledge.



1. Orientate
According to the Systemic Design Approach it is important to gain a deep understanding and build empathy for your team and the community that is present in the system. The enabling activities Orientation and Vision Setting and Connections and Relationship are advised as a start of the project. Systemic design involves connecting disparate actors across a system, often requiring the mediator role and building trustworthy relationships with the local community. Finding allies within the local community can be critical for the success of such projects. Please refer to Appendix C to find the results of a orientation session I facilitated for the project team. Please refer to Appendix D for the results of the preliminary orientation discussions that I conducted with the local community before initiating this project.

2. Investigate
To answer the first two sub research question, I conducted research both in breadth and depth on the context of the Marineterrein. The aim is to get a deep understanding of the social network and current programming and of the area. It is essential to investigate the past of the Marineterrein, as the well-known adage advocates, ‘knowing the past is necessary to comprehend the present.’. The research methods used to achieve this are exploratory desk research, expert interviews, stakeholder mapping and graffiti walls. In chapter 2.2 and 2.3 the main finding of this research strategy can be found.

3. Empathize
In order to address sub-question three, and comprehend the motivations and decision-making of stakeholders, it is essential to ascertain the values that they deem significant for the Marineterrein. The prioritization of values by different stakeholders has played a significant role in shaping the ongoing transition at the Marineterrein. Since values belong to the latent knowledge of stakeholders, it is necessary to use qualitative research methods. It is might be useful to apply the NADI model (van der Bijl-Brouwer & Dorst, 201) and laddering techniques (Reynolds & Gutman, 1988) to uncover values. The research methods applied for this research strategy are: exploratory desk research and expert interviews. In chapter 2.2 the historical values are presented. In chapter 2.3 the contemporary values are listed.

4. Anticipate
In order to develop a design that is not only feasible but also sustainable in the long term, it is imperative to anticipate future developments. While the future is inherently uncertain and subject to change, a rigorous analysis of the municipality’s plan documents can offer valuable insights into the expected trajectory of the Marineterrein. Moreover, to address the final sub-question, it is essential to acquire a deep understanding of the concept of an innovation district and its potential implications for the Marineterrein. With the Marineterrein undergoing a transformation into an innovation district, there is a likelihood of value tensions arising. These tensions serve as useful input for designing a shared future vision or can form independent problem frames to design for. The methods employed to explore the future include exploratory desk research, creative facilitation, and expert interviews. Chapter 2.4 provides a comprehensive summary of the key findings of this research strategy.

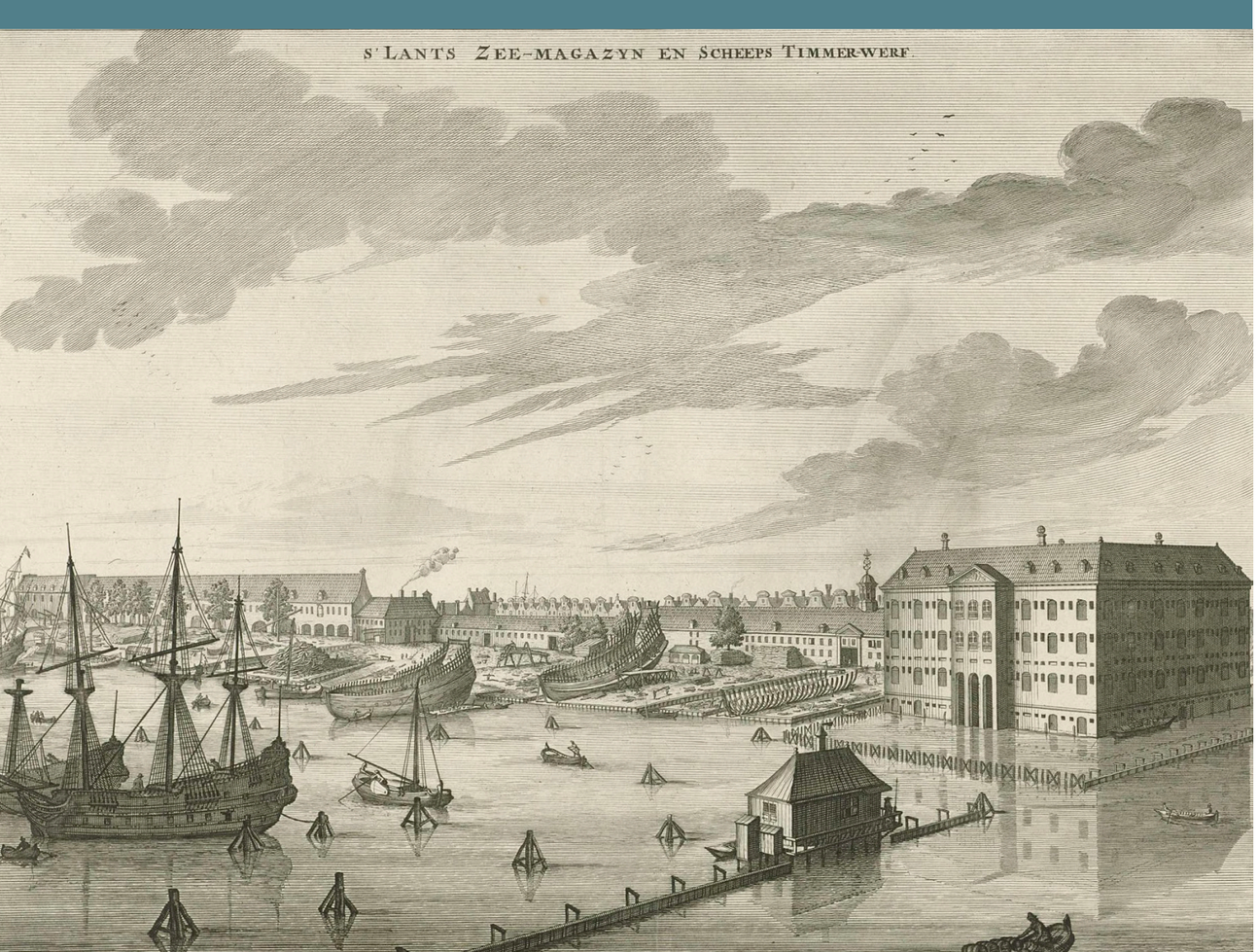
The qualitative design research methods that I used during the explore phase can be powerful tools contextualizing the social system, but it also have some limitations that should be considered.

One limitation of the design research methods is that it can be difficult to generalize findings to other contexts. The design process often involves abductive reasoning. By gathering detailed qualitative data about a particular problem or issue new insights and hypothesis are formulated that could potentially explain the observations (Dorst, 2015). Design research is that sense different from most other scientific research who are either based on deductive or inductive reasoning. Unlike deductive research, design research is not about testing hypothesis. Unlike inductive reasoning, design research does not strive to find the only possible explanation for the observation (Schurz, 2008). Since design researchers are not striving to find a single truth and rely mostly on qualitative research methods, they may bring their own assumptions, perspectives, and interpretations to the research process, which can influence the results. This can make it challenging to ensure the reliability and validity of qualitative research findings.

2.2 A BRIEF HISTORY OF THE MARINETERREIN

In order to accurately understand the decisions that are being made during the current transitional phase of the Marineterrein, it is essential to understand the historical context of the city island. This includes examining the past events and cultural, social, and technological patterns that have helped in the evolution of the current system present at the Marineterrein and the forces that continue to influence it (Snowden & Boone, 2007). Values are often deeply rooted mechanisms that continue to influence the state of the system today (Meadows, 1999). Especially within the field of urban planning, understanding historical context to plan the future it is a widely accepted principle. Relating things back to their historical background can help make better informed design decisions (Marcucci, 2000). Additionally, by studying the outcomes of past events and decisions, I can gain valuable insights into what works and avoid repeating mistakes that have been made in the past.

In general the history of the marineterrein can be roughly defined into three periods. In this chapter, an examination of the three periods is conducted in greater detail through the analysis of literature and podcast series. This examination aims to identify key actors and their relationships that continue to play a role in the current network, as well as to examine the historical values of the area. A more comprehensive analysis of the Marineterrein's history can be found in Appendix E



A NEW PIECE OF LAND 1642 - 1813

The Marineterrein finds its origin in the maritime past of the city of Amsterdam. The city of Amsterdam has always had a strong relationship with water due to its location on the banks of the Amstel river and its access to the North Sea and Zuiderzee (Gemeente Amsterdam, 2021). The maritime industry played a significant role in Amsterdam's history and shaped its culture, economy, and infrastructure. However, water also posed significant risks of flooding and naval attacks (Jalhay, 1988). To mitigate these risks, the citizens of Amsterdam developed a range of infrastructure techniques. These included laying down breakwaters to reclaim land from the swampy area (Gemeente Amsterdam, 2021). Moreover, these new pieces of land were utilized for constructing fortifications to enhance protection (Gawronski, 2021).

One such fortification infrastructure project was the land reclamation of the Island Cattenburgh (nowadays still known as Kattenburg), referring to the "cats," an old Dutch term for defensive fortification. In its first years, the island indeed served as fortification, but it was repurposed for shipbuilding activities after a few years. In 1656, the Admiralty of Amsterdam acquired the island, including its shipyards and renamed it into 'S Lands Werf (Heijdra, 1999). The Admirality of Amsterdam was responsible for the admiralty responsible for the naval defence of the city of Amsterdam and its surrounding region (Sicking, 1998). 's Lands Werf rapidly developed into the most prominent and progressive shipyard for the Admiralty, employing thousands of workers (Bureau Marineterrein Amsterdam, n.d.). A notable example of the importance of 'S Lands Werf was the construction of the 'S Lands Zeemagazijn naval warehouse, designed by the renowned architect Daniel Stalpaert. This imposing structure served as a prominent architectural and cultural icon of Amsterdam's naval power and influence (Bureau Marineterrein Amsterdam, n.d.).

From the ship-ramps of the shipyard, state-of-the-art warships were launched into the water with high production rates. These ships were then utilized for naval battles against neighbouring countries and for escorting the Republic's merchant fleet on voyages to the East, playing a crucial role in the economic growth of the Dutch Republic (Bureau Marineterrein Amsterdam, n.d.; Gawronski, 2021). The densely populated east side of the Kattenburg island housed the workmen and officers employed in 's Lands Werf, and the island was a tightly-knit community with a strong sense of pride and solidarity (Heijdra, 1999).

1642
Creation of Kattenburg

VALUE:
security

1655
Repurposing Kattenburg as shipyards

VALUE:
status

1656
Construction of 'S Lands Zeemagazijn

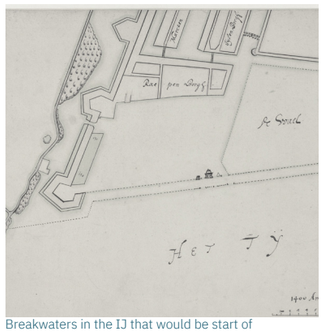
VALUE:
financial prosperity

+/- 1660 - 1750
Expansion of the shipyards

VALUE:
ambition

1787
Bijltjesoproer. First big uprising among many to follow by the residents of Kattenburg

ACTOR:
residents of Kattenburg


Breakwaters in the IJ that would be start of Kattenburg Island


S' Lands Zeemagazijn


Progressive Shipbuilding at s' Lands Werf


Kattenburg Bijltjesoproer of 1787

ACTOR: Royal Netherlands Navy

VALUE: Respect for tradition

1813 Establishment of Royal Netherlands Navy & start of the Rijkswerf

1876 Opening North Sea Canal

1889 Opening Central Station

STEAM AND STEEL 1813 - 1915

The political unrest and French occupation of the Netherland at the end of the 18th century led to stagnation in the shipyards (Bureau Marineterrein Amsterdam, n.d.). However, the restoration of Dutch sovereignty in 1813 marked the beginning of a new era for the shipyards on Kattenburg, which were reoccupied by the newly formed Royal Netherlands Navy and renamed Rijkswerf (Ministerie van Defensie, n.d.; Bureau Monumenten & Archeologie, 2011). The shipyard underwent a modernization process (Gawronski, 2021) The shift from wooden ships to steel-plated steamships marked a significant transformation for the shipyards, resulting in a second wave of prosperity. (Bureau Marineterrein Amsterdam, n.d.). This was further fuelled by the opening of the North Sea Canal in 1876, which enabled larger naval vessels to navigate from Amsterdam to the North Sea (Bureau Marineterrein Amsterdam, n.d.).

However, industrialization also had negative consequences for the Rijkswerf shipyard. The increased use of steam trains for transportation and hauling led to a decrease in demand for shipping. This decline was already evident on the other eastern islands of Wittenburg and Oostenburg, where former V.O.C. shipyards had been replaced by steel halls for railroad and train equipment (Jayasena, 2021). In 1889, the opening of Central Station isolated the Rijkswerf from open water, as the new railroad embankment only had a narrow opening for ships. As a result, the number of ships accessing the Oosterdok decreased (Garwronski, 2021).

Launching of the artillery instruction ship 'Bellona' of the Royal Netherlands Navy at the Rijkswerf.


Railroad embankment North of the Oosterdok, in the back the newly opened Central station

VALUE: Adventure

VALUE: Personal development

VALUE: Mystique

1915 Last ship being manufactured at Rijkswerf, new M.E.A has purpose of naval intelligence and education

1968 start construction of IJ-tunnel

A NEW NAVAL PURPOSE 1915 - 2011

Eventually in 1915, the Royal Netherlands Navy relocated its shipbuilding activities to more easily accessible shipyards in Amsterdam-North and Den Helder (Bureau Marineterrein Amsterdam, n.d.). The Rijkswerf was repurposed into the Marine Etablissement Amsterdam (M.E.A.), which served as a centre for communication and intelligence for the Royal Netherlands Navy (Karremann, 2018).. The Verbindingschool at the M.E.A. served as a training ground for new recruits in signals, Morse code, and radio telegraphy (Bureau Marineterrein Amsterdam, n.d.)..

The current layout of the Marineterrein is owed to the construction of the IJ-tunnel in 1968. The southern part of the Marine Establishment Amsterdam had to be removed to make way for the entrance of this car tunnel (Amsterdam - Verzamelde Historische Filmbeelden, 2014; Bureau Marineterrein Amsterdam, n.d.). The soil excavated during this process was utilized to fill the dock on the north side, which allowed the navy to expand its administrative and training buildings, as well as a sports field, and a large congress centre (Bureau Marineterrein Amsterdam, n.d.).

In recent decades, much of what goes on behind the walls of the Marine Establishment Amsterdam remains a mystery of the regular citizens. It serves as a safe haven for temporarily housing individuals such as key witnesses or threatened politicians. In times of emergency, it serves as a shelter or staging area. However, only those directly involved know exactly what takes place there. The site is sealed off from the city and blurred on satellite photos (Bureau Marineterrein Amsterdam, n.d.).


Telegraphy workspace of royal Netherlands navy


The closed gates of the Marine Etablissement Amsterdam seen from the Kattenburgerstraat

HISTORICAL VALUES

Since the Marineterrein has been utilized by various stakeholders for almost four centuries, it has held significance for people in countless ways. A comprehensive list of values that have played a part is thus unattainable. However, by examining the qualities that the Marineterrein possessed over an extended period and through different types of activities, I have attempted to create a summary of the most prevalent historical values as worthwhile qualities. Below, you can find an outline of the eight primary historical values, along with a brief explanation of how each value was expressed.

VALUE:
SECURITY

ONCE CONSTRUCTED TO STOP FLOODING, THE SITE HAS PLAYED AN CRUCIAL ROLE IN THE FOLLOWING AGES IN THE CONSTRUCTION OF MILITARY SHIPS THAT HAD TO KEEP OUT ENEMIES.

VALUE:
STATUS

LARGE EFFORTS AND INVESTMENTS WHERE MADE TO TURN THE SHIP YARDS INTO A SYMBOL OF MARITIME POWER; THE BEST ARCHITECTS CONSTRUCTED IMPOSING BUILDINGS, GATES AND WALLS.

VALUE:
FINANCIAL PROSPERITY

THE SHIP INDUSTRY PROVIDED SO MUCH EMPLOYMENT THAT AN ENTIRE WORK CLASS NEIGHBOURHOOD HAS EXCAVATED ON THE EASTERN PART OF KATTENBURG.

VALUE:
AMBITION

THE SHIP YARDS HAVE ALWAYS BEEN A PLACE WHERE INNOVATIVE MINDS COULD DISCOVERED, TESTED AND FURTHER IMPROVED CUTTING EDGE TECHNOLOGICAL MARINE SOLUTIONS

VALUE:
RESPECT FOR TRADITION

DESPITE MOMENTS OF POLITICAL INSTABILITY OR THE EMERGENCE OF NEW MEANS OF TRANSPORTATION, THERE WAS CONTINUOUS INSISTENCE THAT THE AREA WOULD HAVE A MARITIME FUNCTION.

VALUE:
COURAGE

MILITARY OWNERSHIP, MEANT THAT VARIOUS SECRET AND EXCITING ACTIVITIES, THAT WERE NOT INTENDED FOR PUBLIC VIEWING, TOOK PLACE AT THE MARINETERREIN.

VALUE:
PERSONAL DEVELOPMENT

BLACKSMITHS, MARINES RECRUITS, WOODWORKERS HAVE ALL RECEIVED THEIR TRAINING OR EDUCATION IN THE YARDS OR EDUCATIONAL BUILDINGS OF THE FORMER MARINETERREIN.

VALUE:
MYSTIQUE

WHAT WAS HAPPENING BEHIND THE WALLS WAS A PUZZLE TO THE AVERAGE AMSTERDAMMER. DESPITE THE MARINETERREIN'S CENTRAL LOCATION, IT EXISTED AS A SELF-CONTAINED WORLD OF ITS OWN.

Historical values of the Marineterrein

CONCLUSION HISTORICAL CONTEXT

Three time periods

'S LANDS WERF
1642-1813

Most important and innovative shipyard for the Admiralty of Amsterdam. Specialized in the construction of wooden military ships, which were used to defend the city and convoy trade ships of the Dutch East India Company (VOC).

RIJKSWERF
1813-1915

Timber shipbuilding is replaced by iron shipbuilding and the shipyards are owned by Royal Netherlands Marine. With the enclosure of the new railroad on the North side, the yards lose their strategic location.

MARINE ETABLISSEMENT AMSTERDAM
1915-2013

The shipbuilding industry in the area comes to an end, leading to the repurposing of the area for administrative and educational purposes. The area not open to the public, and the construction of the IJ-tunnel will significantly alter its shape.

Historical stakeholders

RESIDENTS OF KATTENBURG
since 1660

Since the establishment of the area, there has always been a presence of working-class individuals residing on Kattenburg. A tight-knit community, who make their voices heard when they disagree with plans from higher-ups.

ROYAL NETHERLANDS NAVY
since 1813

For decades the owner and user of the area. The area has therefore gained a significant status for them. Responsible for building most of current buildings & facilities. Has a private character which sometimes leads to conflicts with the general public.

Historical influential factors

MARITIME ACTIVITIES
since 1655

The Marineterrein has always been associated with water. For ages, ships were built there, and when the railway and IJ Tunnel hindered this, the area was used for other maritime functions. To this day, the Royal Netherlands Marine is the owner of the site, all current buildings have had a maritime function at some point and the former ‘s Lands Zeemagazijn is the National Maritime Museum.

CENTRE OF INNOVATION
since 1655

Historically, the area has been a forward-thinking location where there was ample room for experimentation , exploration and education. From new shipbuilding techniques to new radio telegraphy technology, the innovative character of the site has significantly contributed to the economic, cultural and technological development of Amsterdam and the Netherlands as a whole.

MYSTERIOUS CHARACTER
since 1915

Due to the enclosing of the water and industrial and later military activities that took place on the site, the area has always had a closed and mysterious character, despite its central location. The ordinary Amsterdam resident had little reason to go to the site and from an certain moment even kept out by a large wall.

2.3 CURRENT PROGRAMMING, STAKEHOLDERS & VALUES OF THE MARINETERREIN

This chapter builds upon historical knowledge to examine the current context of the Marineterrein. In 2011, a decision was made that set in motion an interesting transition of the area. After a prolonged period serving as a primary location for the deployment and operations of the Royal Netherlands Navy, the military usage and function of the site ultimately will come to a close. This chapter seeks to investigate the underlying causes that led to this transition and the implications of this decision for the current utilization of the Marineterrein. Specifically, this chapter examines how the programming of the Marineterrein has transformed to its present state. Additionally, it provides an overview of how the social network of the Marineterrein has evolved over the past few years, including which new stakeholders emerged, how power dynamics have changed, and which new relationships were established or broken. Combining this knowledge of current stakeholders and the way they use and perceive the quality of the Marineterrein reveals its current values of worth. Besides literature research, direct contact with stakeholders through various qualitative design methods was necessary to reveal this information. The contemporary context focuses on the period from 2011 to the present day (2023)

THE REASONS BEHIND THE MARINETERREIN TRANSITION

Partly due to the financial crisis of 2008, the Ministry of Defence as heavily pressured to make budget cuts, in the early years of the previous decade. The ministry took a critical look at its real estate holdings and decided to concentrate defence units more (Ministerie van Defensie, Rijskvastgoed- en ontwikkelingsbedrijf & gemeente Amsterdam, 2013). The Marine Establishment Amsterdam, with its beautiful location in the capital, was certainly an important eye-catcher for the navy, but from a military strategic perspective, it was not a necessary location. Furthermore, the area had a very high land price. Therefore, in 2011 it was decided that the Royal Netherlands Marine would vacate and sell the property.

A BRIEF OVERVIEW OF THE TRANSITION PHASE THUS FAR 2011-2023

The new availability of the ground of the Marine Etablissement Amsterdam presented a unique opportunity for the city of Amsterdam. A coalition of the Ministry of Defence (the overcharging body above the Royal Netherlands Navy), the National Real Estate Agency (Rijksvastgoedbedrijf) - the government agency responsible for the management of buildings and lands of the government and Defence -, and the municipality of Amsterdam was formed to coalition (Steering Group Marineterrein) to plan the transition (Ministerie van Defensie, Rijskvastgoed- en ontwikkelingsbedrijf & Gemeente Amsterdam, 2013). The illustration presented below serves to depict the respective roles and responsibilities held by each party within the coalition.

Roles and responsibilities of Steering Group Marineterrein

After considering various programming options for the Marineterrein, behind closed doors, the Steering Group decided in 2013 to transform the area into an innovation district that integrates working, living, and learning (Meijer-Skouratovskaja, personal communication, 22 November 2022). In chapter 2.4, a detailed explanation of the concept of innovation district will be provided. From that moment onwards, the area was officially named the Marineterrein (Ministerie van Defensie, Rijskvastgoed- en ontwikkelingsbedrijf & Gemeente Amsterdam, 2013).

The Ministry of Defence announced that it would relinquish control of the area on 1 July 2018, with the municipality of Amsterdam assisting in the area development planning and receiving priority in the right of purchase in return (gemeente Amsterdam, Rijskvastgoed- en ontwikkelingsbedrijf & Bureau Marineterrein Amsterdam, 2017). Temporary functions were assigned to vacant buildings and public spaces until formalized zoning plans and environmental plan were submitted (Ministerie van Defensie, Rijskvastgoed- en ontwikkelingsbedrijf & Gemeente Amsterdam, 2013). (gemeente Amsterdam, 2017). The plan was executed gradually, starting with the Royal Netherlands Navy's

2011
Ministry of Defence decides to sell the ground of the the Marine Etablissement Amsterdam

ACTOR:
Municipality of Amsterdam

ACTOR
National Real Estate agency

ACTOR:
Bureau Marineterrein Amsterdam

2013
Strategy Note is signed

2015
Opening of historical gate

ACTOR:
Surrounding neighbours & public visitors

2017
College of mayor and alderman establish Principles Note

ACTOR:
Marineterrein Community

2018
Ministry of Defence states they want to partly remain at the Marineterrein

2020
New agreement between municipality and Ministry of Defence, feasibility phase can continue

2021
Concept Nota van Uitgangspunten is published.

VALUE: Innovative-ness

VALUE: Connection

VALUE: Focus

2022
Participation period on the concept Nota van Uitgangspunten and creation of Response Note

withdrawal in 2015, followed by the opening up of more land and the establishment of various innovative companies, collectively known as the Marineterrein Community, in the former marine buildings (Bureau Marineterrein Amsterdam, 2016). Each year, more Amsterdam citizens became aware that they also had access to the area, making it a popular destination for diverse groups of people (Bureau Marineterrein Amsterdam, 2016).

The transition proceeded smoothly until June 19th, 2018, when the Ministry of Defence unexpectedly announced their intention to maintain a presence on part of the Marineterrein, just over a week before their planned departure on July 1st (Kruyswijk & Keultjes, 2018). This unexpected development caused significant delays to the project and required the city and government to reconvene and reconsider the feasibility of designating the area as an innovation district (Meijer-Skouratovskaja, personal communication, 22 November, 2022). Eventually, negotiations between the municipality and Ministry of Defence officials resulted in a new agreement regarding the dimensions and location of proposed new barracks. As a result, the municipality continued with urban planning and developed a new planning document known as the Concept Nota van Uitgangspunten (NvU) (gemeente Amsterdam, 2023).

The NvU provides a detailed framework for the spatial and programmatic implementation and set-outs three the core values of the future Marineterrein: innovativeness, connection, and focus. The Marineterrein is envisioned as a space where diverse knowledge fields and perspectives are brought together to actively seek sustainable and creative solutions with a clear purpose. This involves combining knowledge and contacts in a goal-oriented manner, and embedding the area within the social and physical fabric of Amsterdam to facilitate experimentation and discover. As interactions and knowledge exchange drive innovation, new spaces for socializing and networking were planned to be created (Steering Group Marineterrein, 2021).

Ultimately, the NvU forms the core of the Project Note, which the mayor and aldermen and the city council will make a decision on (Gemeente Amsterdam, 2022). If the city council and mayor and aldermen chooses to implement the Project Note, the prospective buyer, regardless of whether it is the municipality or not, must abide by all the provisions outlined in the NvU (Meijer-Skouratovskaja, personal communication, 22 November, 2022). Furthermore if this Project Note is accepted, the feasibility phase of the project will be completed and the development phase will begin. Afterward, the construction of the new Defence barracks can begin. Once the barracks are ready, the rest of the area can gradually develop, likely in 2027 or 2028 (gemeente Amsterdam, 2023).

For an more extensive analysis of the journey that the transition has undergone in recent years and a contemplation of the key political planning documents, please refer to the Appendix E. I also held an interview with the head urban planner of the municipal project team to further deepen my knowledge (refer to Appendix F). A simplified representation of the transition process can be seen in the two images below.

PREVIOUS PROCESS

PROBING PHASE | **EXPLORE PHASE** | **FEASIBILITY PHASE**

2011
Ministry of defence Decided to sell ground of the The Marine Etablissement Amsterdam

2013
National government & Municipality sing the **Strategy Note**:
The are will be transformed into an Innovation District

2015
Gradual opening of Marineterrein starts

2017
City Council agrees with open publication of the **Principles Note** for official participation procedure

2018
Ministry of defence decides to stay, feasibility phase is paused

2020
New agreement between municipality and Ministry of Defence, feasibility phase , that was paused in 2018, can continue

2021
Concept Note of Starting Points is published for 2nd official participation procedure

EXPECTED PROCESS

FEASABILITY PHASE | **DEVELOPMENT PHASE**

NOW
Response Note can be published any moment

Q1 2023
NvU, Response Note and participation plan form collectively the Project Note, which is presented to district committee Centrum for feedback

Q3 2023
Project decision on Project Note by city council & mayor & aldermen

Drafting of zoning plan, environmental plan, and conducting public consultation and input regarding these documents

2025/2026
Project decision on zoning plan and environmental plan

Design & building of new barracks

2027/2028
Inauguration of new barracks, start participation process as described in participation plan

CURRENT USAGE

Due to the various political decisions outlined in the previous paragraph, the character of the Marineterrein has drastically changed. Despite still being privately owned by the National Real Estate Agency, is accessible to the public and provides temporary space for various types of businesses, institutions, and educational organizations. To examine how this transition has affected how the area is used currently, I applied, expert interviews, exploratory desk research and graffiti walls. The method and findings from these three qualitative research methods will be discussed in the following paragraphs.

CURRENT USAGE - URBAN LIVING LAB

When you enter the Marineterrein through the new gate, a warning sing indicating that you enter a “research zone”. Since its opening in 2015, The Marineterrein has been utilized as an Urban Living Lab, (also refer to page 12). AMS Institute, Amsterdam Smart City, NEMO Science Museum, and Bureau Marineterrein Amsterdam collaborate to foster partnerships between businesses, scientists, students, and government agencies, resulting in scalable experiments conducted within the Marineterrein’s urban setting. To gain a deeper understanding of this program, I spoke with Gian Luca van der Putten, the Project Manager Marineterrein Amsterdam Living Lab (MALL), who is responsible for side of Bureau Marineterrein Amsterdam. The interview was conducted using interview guides. This can be found together with a complete overview of the findings of the interview in Appendix G. The following key findings on the MALL were derived.

MONDAY 24 OCTOBER
10:15-11:00

BUREAU MARINETERREIN AMSTERDAM
Marineterrein, building 003C

INTERVIEWEE
Gian Luca van der Putten

Gian Luca van der Putten

MALL is a unique aspect for the city

The presence of the Urban Living Labs at the Marineterrein holds considerable importance, as they offer one of the limited privately governed spaces in Amsterdam that are publicly accessible. Therefore innovation and experimentation can be conducted within a relative safe social context. The Marineterrein’s ambition to become a centre for open innovation and experimentation is significantly bolstered by the Urban Living Lab programming.

The importance of citizen involvement in the success of MALL

Van der Putten stresses the importance of involving citizens in the MALL and the broader transition of the Marineterrein into a innovation district. The Urban Living Lab approach, emphasizing the importance collaboration among a diverse group of stakeholders to address urban challenges. He believes that citizens should play a more significant role. Currently, citizens mainly visit the area to “consume”. The success of new solutions depends on their effectiveness in fulfilling end-users’ needs and desires, thus it is important to involve them in the process. To establish trust towards the citizens, communication about the experimental nature of the area is essential. Van der Putten strongly believes that the Marineterrein should remain an inclusive and approachable space rather than becoming a high-brow recreation spot. In chapter 2.4 I will further dive into the risk of innovation district becoming exclusive enclaves.

“I think that it is important that the Marineterrein is and remain an experimental area, precisely to seek that intermediate space between not total anarchy and not immediately in society, because that also causes risks that you do not want”
van der Putten

“Most people come here to consume, it would be interesting to investigate where these people come from, why they come and what they can bring.”
van der Putten

CURRENT USAGE - BUSINESS ACTIVITIES

Through desk research, I investigated the business activities taking place at the Marineterrein. From 2015 the first companies were located at the marineterrein, and currently a big community has been created. The primary criterion for selection of the companies is being that they possess an innovative character. The industry in which the companies operate was not a significant factor, as long as they were future-focused (Steering Group Marineterrein, 2021). The aim was for these companies to inspire each other and find synergies in creating new innovations. In Appendix H a visualization can be found that maps the diverse range of businesses, organizations and educational institutes. Besides the urban living lab experiments and other outdoor facilities are also mapped.

Business event at the Marineterrein

CURRENT USAGE - PUBLIC ACTIVITIES & APPROPRIATION

In addition to the business and Urban Living Lab use of the public space and buildings of the Marineterrein, the area is also used by a diverse group of visitors for various recreational activities. To investigate how different visitor groups utilize the area, an interview was conducted with Gedi van Schriek, and data was collected through graffiti walls on a public "Green Market".

FRIDAY 5 NOVEMBER
14:30-16:45

VAN SCHRIEK'S HOME
Kattenburg, Amsterdam

INTERVIEWEE
Gedi van Schriek


Gedi van Schriek

Gedi van Schriek is the chairman of the Citizen's Collective "Werkgroep Ontwikkeling Marineterrein" (W.O.M.) which is a group of citizens focused on the development of the Marineterrein. The W.O.M. has representatives from various other citizens' collectives and is closely involved in the consultation process for the development of the Marineterrein area. They represent the opinion of the surrounding neighbourhoods. Because of her role, Van Schriek has a thorough understanding of the importance of the Marineterrein to the neighbouring communities. The interview guide and summary of the interview can be found in Appendix I.

On November 18th, Bureau Marineterrein Amsterdam organized a public "Green Market" at the Voorwerf of the Marineterrein. I used this opportunity to engage with visitors and learn about their activities and desires regarding the area. The graffiti wall technique (Hanington, 2003) was used to collect qualitative data by providing participants with a large-scale map of the Marineterrein and inviting them to identify the places they appropriate, places they do not appropriate, their activities on the Marineterrein, and what they feel is missing using post-its. The use of a large-scale map allowed participants to view and build upon the responses of other visitors, encouraging a collective and dynamic exchange of ideas and insights. This approach was highly effective in gaining visual insights into people's interaction and perceptions of the Marineterrein area. I applied a voluntary participation sampling strategy (Miles, Huberman, & Saldaña, 2013), where participants were self-selected based on their willingness to engage in the research process.

The following two paragraphs will summarize the findings of these research methods.

"As you can see, now that you see the Marineterrein, it's nice that it's open now. For all those years it was actually closed because it was owned by defence. Now that it's open, you can see how much it's being used and how much pleasure people are having. Look, they're even swimming there! And it's always packed on a beautiful day."
van Schriek

""We don't want it to be filled with stones. Especially in the center of Amsterdam, if you look there, if you look at the map of the center of Amsterdam, we don't have any greenery here in the entire center. We only have a small postage stamp-sized Wertheimpark."
van Schriek

"But we still believe that you should keep in mind the historical significance of the Marineterrein, and of course, that is a significant one."
van Schriek

Interview insights: A safe green oasis for a inclusive working-class neighbourhood

The Marineterrein has transformed into an important for the neighbourhood residents, offering several crucial elements that enhance the quality of life on The Eastern Island of Amsterdam. Kattenburg and Wittenburg largely inhabited by working-class families, and has a heterogeneous population. In 2022, 55% of the Kattenburg residents has a migration background (Allecijfers.nl, 2022). However, it is also affected by high levels of criminal activity. This has also become tragically clear when, during a case of mistaken identity, the innocent 17-year-old intern Mohamed Bouchikhi was shot dead in the Wittenburg community centre (Vught & van Dun, 2018). The Marineterrein park and outdoor swimming facility offer a tranquil escape, providing a secure and appealing space for children and teenagers to play, exercise, and participate in recreational activities, away from crime prevalent in their community. The Marineterrein, with its open and inclusive nature, provides an opportunity for individuals from diverse backgrounds to come together and benefit from its community resources, promoting unity and well-being.

The lack of green spaces in the densely populated city centre of Amsterdam has led to great value being placed on the remaining green space on the Marineterrein by the residents of the Eastern Islands. The Marineterrein provides a peaceful escape from the city's busyness and opportunities for relaxation, sport, and play, dog walking, and a connection with nature. Its opening has contributed significantly to the liveability of the surrounding neighbourhoods. The neighbourhoods are concerned that the development of the Marineterrein will result in a loss of this green space.

The cultural heritage of the Marineterrein is significant to the surrounding neighbourhoods, as much of the area's maritime history and cultural heritage has been lost through previous renovations. Preserving the remaining cultural landmarks helps to maintain a connection to the past and preserve the unique cultural identity of the neighbourhoods.

Graffiti Walls insights: A vibrant and social outdoor terrain for Amsterdam residents

The following pages present the input gathered on the graffiti walls. An overview of the activities that visitors undertake at the Marineterrein and the things they are missing is provided. The blue dots signify areas where individuals experience a sense appropriation, while the red dots indicate areas where they feel not welcomed. The concentration of these dots helped to cluster the Marineterrein into smaller areas, and additional conversations were held to understand why visitors had these feelings. Analysing this data an overarching insight emerge: As previously stated by Van Schriek, the Marineterrein has emerged as a prominent public space for numerous inhabitants of Amsterdam. It is widely acknowledged destination for swimming, exercising, and relaxation, and has therefore become a significant communal outdoor location where residents of Amsterdam can socialize with friends, family, and neighbours. Nonetheless, in recent years, this has escalated to an excessive extent during the summer, leading some individuals to avoid the area altogether. Despite the absence of certain amenities, particularly an indoor communal facility to meet others during the colder months of winter, the Marineterrein plays a crucial role in enhancing the quality of life of numerous residents in Amsterdam and serves as a vital social hub.

FRIDAY 18 NOVEMBER
13:00-17:00

VOORWERF
Marineterrein, Amsterdam

PARTICIPANTS
23 local visitors

"I love coming to the park of the Marineterrein with friends during the summer to spend time outdoors and have some food together. Unfortunately, it is not really comfortable to organize a picnic during the winter, so I often end up taking walks on my own or with a colleague during the winter"
Woman, +/- 35 y.o.

"In the winter, we come here quite often to play with the kids in the park. But still I placed my post-it here [the northeast waterfront] , because in the summer there are so many people in the park, mainly students like you, who come and sit in the park that I find it a bit tricky with the girls. Then we prefer to go more near the Scheepskameel."
Man, +/- 40 y.o.

"Have you seen this place in the summer? It's packed with people on the lawns, and you can still enjoy the sun late into the evening. There are many groups having picnics and drinks. Personally, I prefer to sit on the terrace of Homeland because unfortunately people also tend to make a lot of mess"
Woman, +/- 50 y.o.

"This is actually the only place in the neighbourhood to walk the dog. Especially at the helicopter field, you can let them off the leash and there are often other dogs to play with."
Woman, +/- 45 y.o.

"I like playing soccer on the grass field with dad or my friends. There are also many beautiful flowers in the summer."
Girl, +/- 10 y.o.

"I mainly come to the Marineterrein to exercise. I use the outdoor gym regularly and sometimes meet with a friend to jog or swim here."
Man, +/- 50 y.o.


Green Market taking place at Voorwerf of Marineterrein

Conducting the graffiti walls technique with visitors

CURRENT STAKEHOLDERS

The Marineterrein's transition phase has had a profound impact on its social network. Previously, the terrain was exclusively utilized by Royal Netherlands Navy employees. However, in recent years, a much broader group of stakeholders has gained access to the area, resulting in a significant expansion of new actors in the social network. The complex nature of area development necessitates the consultation and involvement of a multitude of parties and experts. . The emergence of these new parties has given rise to novel relationships and coalitions. This transition has also resulted in drastic changes in the relationships between stakeholders, primarily due to the impending change in ownership of the Marineterrein. The resulting "power vacuum" - with the Ministry of Defence officially owning the site but playing a less dominant role in the planning than the municipality - has created a dynamic in which each party seeks to influence and defend their interests. New coalitions are being forged to sway administrative decisions, while citizens are forming collectives to strengthen their voices.

Despite the dynamic nature of the social network in recent years, I endeavoured to create a current stakeholder map through desk research, utilizing resources such as the Bureau Marineterrein Amsterdam's website and municipal planning documents. The stakeholder map was then subjected to expert validation by the project manager of the municipal project team (refer to chapter 4.5). Given the large number of stakeholder parties (n=~100), conducting a sufficient social network analysis (Huhtamäki & Rubens, 2016) is an impossible task. Therefore, in my stakeholder map, I have only clustered the stakeholder groups. I did this based on four criteria: location, sector of activity, same parent organization, and officially agreed coalition. There may be more officially agreed coalitions out there, but I am only aware of the Steering Group Coalition & Knowledge Coalition. The Knowledge Coalition is a official collaboration between the three major educational institutions on the Marineterrein and aims to endorse the relevance of education on the future Marineterrein. To select which surrounding neighbours to include, I have employed the 15-minute-city concept as previously mentioned in the Introduction section (Moreno, 2019).

After analysing the stakeholder map of Marineterrein, several key observations can be made. Firstly, there are more companies operating in the area than initially anticipated. Despite frequent visits to the site during the course of this project, I had not fully realized the extent of the diversity of businesses present. Secondly, the Steering group coalition holds significant sway in decision-making regarding the development of the area. Moreover, a considerable number of municipal employees are involved in this development project, underscoring its complexity. Finally, it is worth noting the significant presence of citizen collectives in the surrounding neighbourhoods. This comes as no surprise given the historical context of Amsterdam's eastern island, which has been marked by tight-knit and politically engaged communities

INPUT GENERATED WITH GRAFFITI WALLS

ACTIVITIES VISITORS DO @ THE MARINETERREIN

Go for a swim (5x)*
Go for a drink / food (5x)
Go for a walk (4x)
Have a Pick-nick (3x)
Outdoor playing (2x)
Do some exercise (2x)
Go to work (2x)
Sauna visit
Looking at plants
Green Market visit
Play football
Join the community meal
Celebrate special occasions
Enjoy open space
Bike around
Look at old buildings
Have business meetings
Relax in the park
Sit on the benches
Walk the dog
Work outdoors
Meet other people

** Number in brackets indicated how often a response was given.*

LEGEND

Place I appropriate

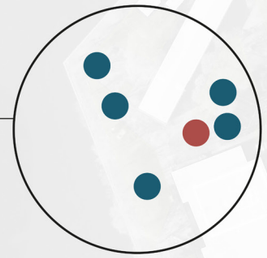
Place I do not appropriate

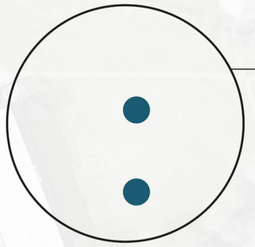
THINGS VISITORS MISS @ THE MARINETERREIN

Vibrancy (3x)
Public toilets (for W.O.M.en) (3x)
Place for meeting others (3x)
Cosiness / "Gezelligheid" (2x)
More park space (2x)
Place for cooperation (2x)
(Sustainably) heated shelter (2x)
Convenient store
More picnic tables
Playground for small kids
Outdoor podium for art performances
Official dog walk area
More hospitality places
More flowers
Thrift shop
Workshop space

ANNOTATED CLUSTERS OF INPUT

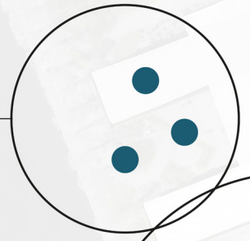
This is considered a more relaxed and empty part of the Marineterrein. It is a good place for a walk along the waterfront and in summer time this is less crowded. The outdoor gym is both a place where people like to come, but the macho culture can also scare people





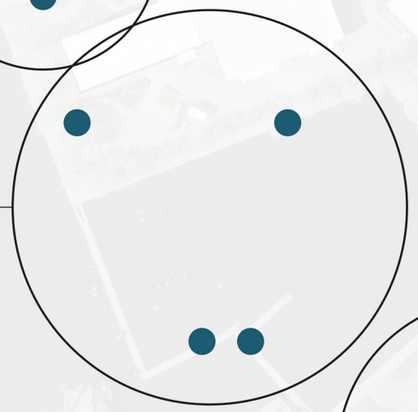
The helicopter landing field is a beloved place for dog walking.

Building 27 has a big working capacity leading to appropriation. Also the architecture of the buidling, the desire paths and experiments attracht people.



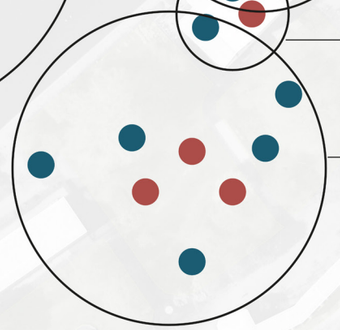
the military area is a private area. As ordinary citizen you are not allowed to enter without an invitation. It is fenced off. Consequently, it is a place that people do not appropriate. People find the big Scheeepsvaarmuseum Depot terrifying, especially from the side of the kattenburgerstraat

The harbour is a place that is appropriated, mainly for it's swimming and sauna capacity



The street in between building 006 & 034 is considered not welcoming and boring. It has a big contrast with the green Voorwerf, is completely tiled, and all of the sudden you see the military fence.

Building 006 is both appropiated and not. The eating facility attracts people, but others find it too crowded and don't like the architecture



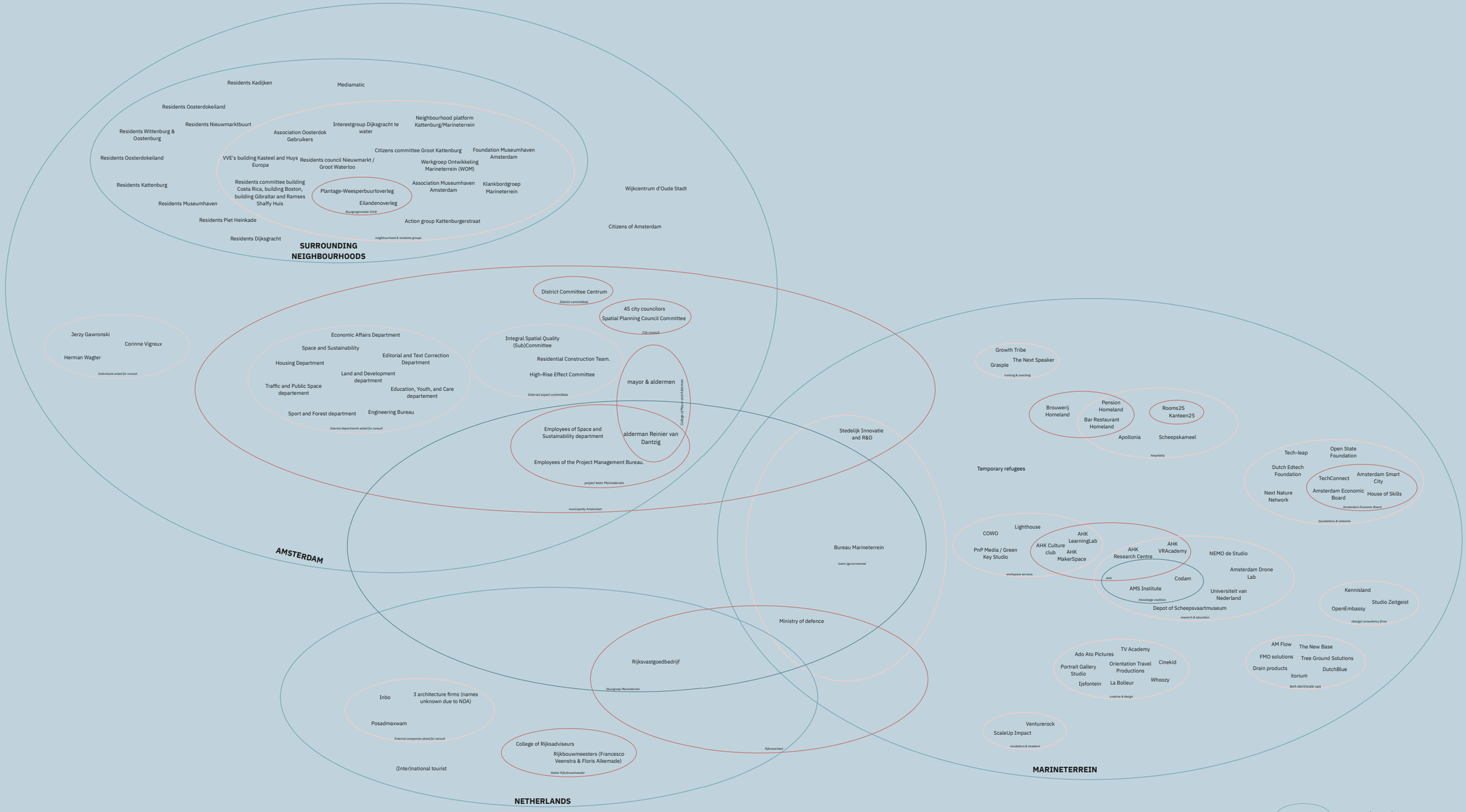
People have a love / hate relationship with the Voorwerf. The green character is pleasant, offers tranquillity and some people really enjoy the vibrancy in summer. However, the summer bustle, especially for the older and younger people, is also a reason why they do not feel at home in this place

the start-ups located in the gatehouse do not have an open character towards the street. People work there, but you never actually see what they are doing.

The rooftop gardens in Kattenburg are not open for the public.

Scheeptsvaarmuseum is a place interesting for people with a sea background

STAKEHOLDER MAP MARINETERREIN DEVELOPMENT 2013-2023



same location

same sector / function

same mother company / department

official arrangement for cooperation

CURRENT VALUES

The opening of the Marineterrein has sparked the emergence of new values and a reordering of the importance of already existing values,. Drawing on the knowledge acquired from the preceding paragraphs on the area's current programming and stakeholders, I have identified 17 values that are pertinent to the Marineterrein. It is important to acknowledge that this selection of values is not exhaustive, owing to the subjective nature of values and the vast array of stakeholders involved in the Marineterrein. Due to the scope of this project, it was not feasible to engage with all stakeholders, and a selection had to be made based on the stakeholders deemed most important.

As such, this overview represents a compilation based on a critical analysis of essential planning documents and conversations I had with a subset of stakeholders. The initial three values, for instance, are directly derived from the values that the municipality has outlined for the Marineterrein in the Nota van Uitgangspunten (NvU). This is followed by a list of values based on the public use of the terrain, which I have gathered from conversations with visitors and interviews with Van Schriek. Furthermore, certain values highlight the business aspects of the Marineterrein, such as those established by the Marineterrein Amsterdam Living Lab and the accommodation of innovative companies from various sectors. Finally, the role of educational institutions is another critical component of the current values of the Marineterrein.

VALUE:
INNOVATIVE-NESS

MOST START UPS, ORGANIZATIONS AND INSTITUTES ARE WORKING ON FINDING GROUND-BREAKING SOLUTIONS FOR SOCIETAL CHALLENGE

VALUE:
CONNECTION

A CENTRAL LOCATION THAT SERVES AS A CONNECTOR BETWEEN THE CENTRAL STATION AREA AND THE EASTERN ISLANDS, AND A BRIDGE BETWEEN MARITIME HISTORY AND A KNOWLEDGE-DRIVEN FUTURE.

VALUE:
FOCUS

CAREFUL CONSIDERATION IS GIVEN TO THE SELECTION OF BUSINESSES THAT ARE PERMITTED TO TEMPORARILY SET UP OPERATIONS. THESE BUSINESSES MUST ALIGN WITH AND SUPPORT THE ESTABLISHED AMBITION.

VALUE:
INCLUSIVE-NESS

PEOPLE FROM ALL WALKS OF LIFE IN AMSTERDAM, RANGING FROM HIGHLY EDUCATED RESEARCHERS TO STREET KIDS FROM KATTENBURG, COME TO THE MARINETERREIN FOR THEIR OWN REASONS.

VALUE:
COMMUNAL HARMONY

MANY AMSTERDAM RESIDENTS, ESPECIALLY ON SUNNY SUMMER DAYS, GATHER IN THE AREA TO SOCIALIZE AND SPEND TIME OUTDOORS WITH FRIENDS, NEIGHBOURS, AND OTHER ACQUAINTANCES.

VALUE:
PHYSICAL SAFETY

THE AREA IS A MUCH SAFER PLACE FOR CHILDREN FROM THE EASTERN ISLANDS THAN THEIR OWN NEIGHBOURHOOD. IT ALSO OFFERS A SOLUTION FOR CHILDREN FROM THE CITY CENTRE WITH ITS GREEN CAR-FREE ENVIRONMENT.

VALUE:
UNITY WITH NATURE

THE PARK LOCATED AT THE VOORWERF AND GREEN WATERFRONT OFFER A DESIRABLE GREEN SPACE WHERE AMSTERDAM RESIDENTS CAN ENJOY A BIT OF URBAN NATURE.

VALUE:
MENTAL WELL-BEING

CALM ENVIRONMENTS AND NATURAL ELEMENTS HAVE BEEN DEMONSTRATED TO PROVIDE A SENSE OF RELAXATION AND LIVEABILITY IN AN URBAN LIVING SETTING.

VALUE:
ECOLOGICAL STEWARDSHIP

GREEN SPACES AND WATER BODIES PLAY A CRITICAL ROLE IN MITIGATING CLIMATE PROBLEMS, BY PROVIDING RELIEF FROM HEAT STRESS, STORING WATER, AND SUPPORTING BIODIVERSITY.

VALUE:
PLEASURE

WHETHER YOU WANT TO SWIM, GO PLAY WITH THE KIDS IN THE PLAYGROUND, OR ENJOY A DRINK ON A SUNNY TERRACE, THE AREA PROVIDES MANY OUTDOOR LEISURE AMENITIES.

VALUE:
PHYSICAL WELL-BEING

AS THE AREA IS NOT BUSY WITH CARS, IT ATTRACTS MANY JOGGERS, AND THE OUTDOOR PUBLIC FITNESS EQUIPMENT IS FREQUENTLY UTILIZED AND WELL-VISITED.

VALUE:
CULTURAL WISDOM

THE NUMEROUS MONUMENTS ARE A DELIGHT FOR INDIVIDUALS WHO ARE FASCINATED BY THE RICH HISTORY OF AMSTERDAM'S ARCHITECTURE.

VALUE:
RESPECT FOR TRADITION

THE HISTORICAL MARITIME TALES ARE FREQUENTLY REVISITED THROUGH TAKING TOURS, STUDYING POSTERS, AND LISTENING TO PODCASTS.

VALUE:
CREATIVITY

THE AREA FEATURES MULTIPLE CREATIVE WORKSHOPS AND COMPANIES, AS WELL AS A SOME PUBLIC ART PROJECTS THAT SHOWCASE THE TALENTS AND SKILLS OF ARTISTS, CRAFTSMEN, AND DESIGNERS.

VALUE:
COURAGE

THE MARINETERREIN URBAN LIVING LAB PROVIDES A UNIQUE AREA FOR CONDUCTING EXPERIMENTS NOT ATTAINABLE ELSEWHERE IN THE CITY.

VALUE:
PERSONAL DEVELOPMENT

EVERY DAY, HUNDREDS OF STUDENTS RECEIVE EDUCATION. MOREOVER, THERE ARE VARIOUS TRAINING INSTITUTES WHERE LIFELONG LEARNING IS PUT INTO PRACTICE.

VALUE:
FINANCIAL PROSPERITY

A SUBSTANTIAL NUMBER OF BUSINESSES HAVE BEEN ESTABLISHED ON THE AREA AND ARE NOW IN FULL OPERATION, PROVIDING EMPLOYMENT AND INCOME TO THEIR WORKERS.

Current values of the Marineterrein

Former minister of housing Stef Blok and former mayor of Amsterdam Eberhard van der Laan opening the second north entrance of the Marineterrein in 2016

CONCLUSION CURRENT PROGRAMMING, STAKEHOLDERS & VALUES OF THE MARINETERREIN

A new function for the Marineterrein

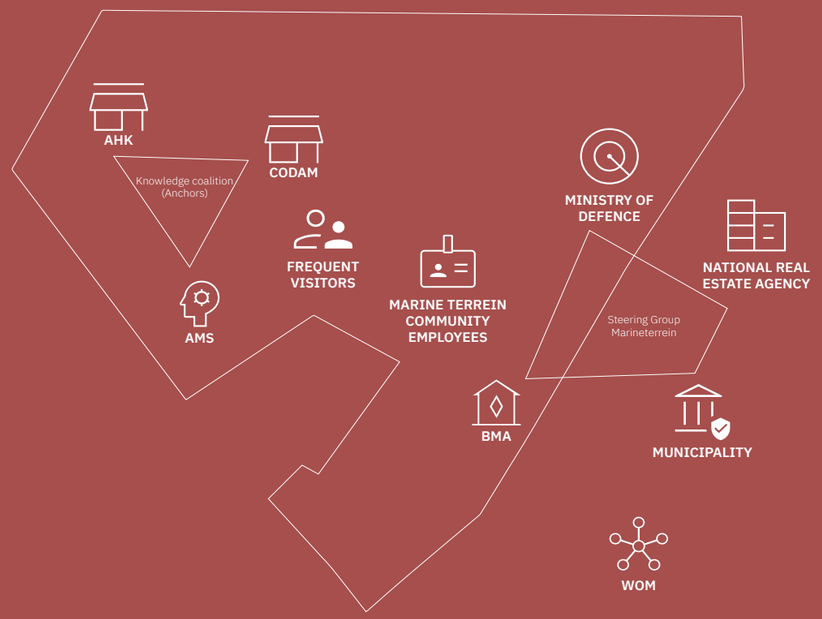
The Marineterrein has undergone a significant transformation in recent years following the decision of the Royal Netherlands Navy to leave the area. To determine the new public usage of the space, a Steering Group comprised of the Municipality of Amsterdam, National Real Estate Agency, Ministry of Defence, and Bureau Marineterrein has been tasked with developing plans. The development of the Marineterrein has officially been divided into three phases; exploration, feasibility and development phase. I argue, nonetheless, that prior to the “exploration phase”, a critical supplementary stage had already taken place, occurring in a confidential manner. At the time of doing this master thesis, the transition between phases 2 and 3 is underway. During the first two phases, three important planning documents were published, which already partially determine the current usage of the area.

A place that has quickly won over hearts

When Marineterrein went open for public in 2015, it was uncertain how the inhabitants of Amsterdam would engage with the facility. The site had been off-limits to them for decades, thereby resulting in a complete disconnection. However, the Amsterdam residents soon discovered that within the bustling city centre of Amsterdam, Marineterrein offered a unique setting with its tranquil and secluded green waterfront and public swimming area. In a short span of time, the area became a much-valued destination for a diverse range of Amsterdam residents, including dog owners, senior citizens seeking a peaceful stroll, students who relaxed with friends until late into the summer nights, and young people from the adjacent Eastern Islands who now had a secure play area.

Complexity of stakeholders.

The current development of the Marineterrein is marked by a high degree of complexity. The context of the Marineterrein development encompasses approximately 100 different types of stakeholders that are interrelated and dynamic (Snowden & Boone, 2007). Nonetheless, these stakeholders vary in terms of their levels of influence and engagement. Based on my desk research and interviews, I have determined that the following stakeholders hold the most importance in the current transitional phase of the Marineterrein:



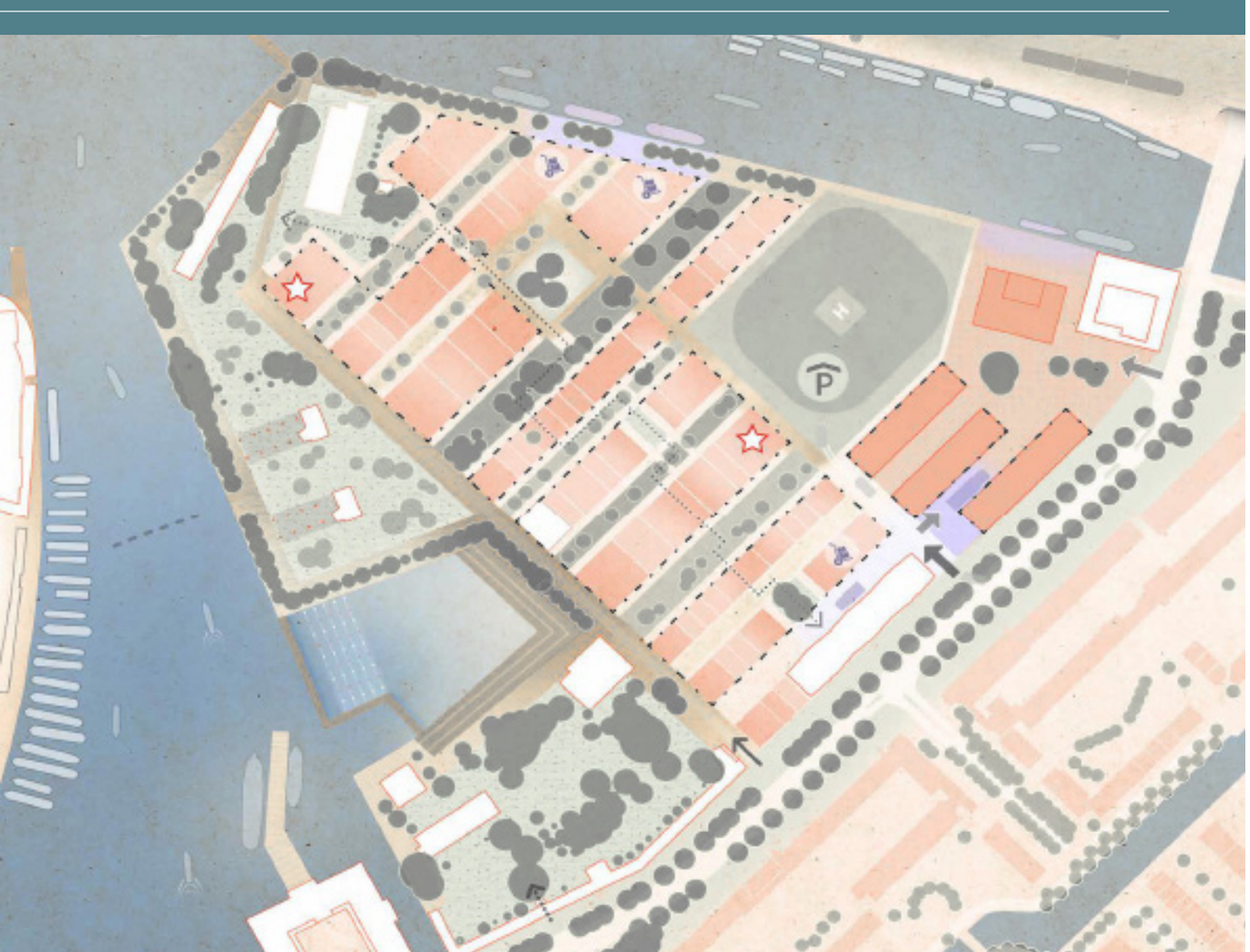
2.4 UNDERSTANDING THE INNOVATION DISTRICT PLANS

Already in 2013 the official decision has been made to transform the Marineterrein into a innovation district. In the previous chapter, I discussed the progress made towards this transition. This chapter delves deeper into what the end-goal of this transformation is and what it means for the Marineterrein to become an innovation district.

This chapter examine the definition of innovation districts, key features of such districts, and the values of these district. By having this benchmark, I was able to assess to what extent the Marineterrein can already be considered an innovation district. Additionally, I zoomed out to attain a more holistic understanding of how the decision to make the Marineterrein an innovation district fits within the larger context of Amsterdam (Ackoff, 2004). Thorough desk research and expert interviews has be employed as the research method in this chapter.

By gaining a better understanding of the innovation district plans, I was better able to anticipate how the transition phase of the Marineterrein will proceed. I must knowledge that systemic changes, such as is happening Marineterrein, are characterized by a high degree of unpredictability, and variability, since they are susceptible to numerous external environmental influences. This adds to the complexity and uncertainty of complex systems, making it challenging for designers to predict the impact of their final design. However, by acknowledging this complexity and having a comprehensive understanding of innovation districts, I am better equipped to make informed design decisions (Snowden & Boone, 2007).

Ultimately, the analysis of innovation districts provided insight into an emerging value tension, which is discussed in the conclusion of this chapter, that led to a reframing of my initial research question.



INNOVATION DISTRICT ANALYSIS

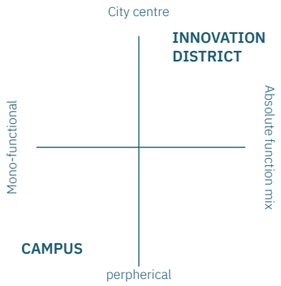
When I started this research, I thought that the term "innovation district" was just a self-invented name that nicely reflected the ambitions of the Marineterrein as a hub for innovation. However, through conversations with municipal officials, I learned that the term "innovation district" actually has a well-defined theoretical definition, and it turns out to be a new concept within urban planning that has gained popularity in recent years.

Origin of innovation districts

For the past 50 years, innovation has primarily taken place in isolated innovation campuses or science parks like Silicon Valley or High Tech Campus Eindhoven. These environments, known for their secluded nature, provided a "safe space" for creative minds and researchers to collaborate, find, develop, and experiment with new solutions (Katz & Wagner, 2014). Although these settings have been effective in addressing complex problems, they have not provided answers to the emerging complex problems (Snowden & Boone, 2007)

A new model of urban innovation, known as "innovation districts," is emerging. These areas prioritize building a thriving ecosystem between businesses, educational institutions, government, and residents. Interaction and exchange of diverse ideas are at the centre, and they are strongly connected to the city (gemeente Amsterdam, 2022), allowing for probing-sensing-responding in a real-life setting, with all its complexity (Steen & Van Bueren, 2017). This approach has the potential to address complex problems (Snowden & Boone, 2007).

Barcelona is credited with creating the first innovation district, the 22@Barcelona Project (Leon, 2014) Soon after, the United States followed with innovation districts like Kendall Square in Cambridge, Massachusetts, and South Lake Union in Seattle (Morisson, 2020) Today, the concept is well-known in urban planning and many cities are developing these areas globally (Buck Consultants International, 2021). Strijp-S is the most renowned innovation district in the Netherlands, and presently, every significant city across the country are actively creating their own innovation districts.



Definition of Innovation Districts

In various research fields, such as urban planning, urban economics, and technology and innovation management, innovation districts are widely discussed and analyzed. As a result, there are multiple definitions for the term "innovation district." However, the most widely accepted definition is provided by Brookings Institute, a leading non-profit organization in public governance. According to Brookings (Katz & Wagner, 2014), an innovation district is:

"A geographic area where anchor institutions and leading companies cluster and collaborate with start ups, business incubators, and accelerators. These districts are distinguished by their physical compactness, accessibility through public transportation, advanced technological infrastructure, and a mix of housing, office, and retail spaces"

In the Strategie Innovatiedistricten Amsterdam (2022) the municipality uses the same definition, with the only addition:

"They are areas with meeting places adjacent to high-quality public spaces. They are areas that are attractive to talent and encourage open innovation."

Therefore, it is assumed that the Marineterrein is developed in accordance with the definition of innovation districts provided by the Brookings Institute, and this definition will be adopted as the standard for this project.

Strijp-S, the most renowned innovation district in the Netherlands.

Characteristics of Innovation districts

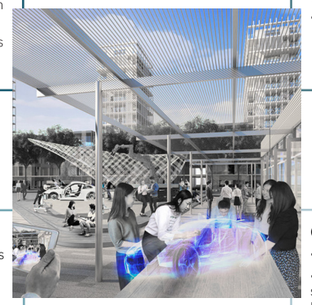
In addition to the definition, there is abundance of academic literature that explores the characteristics that contribute to the success of innovation districts. The following framework, describing the key characteristics of innovation districts, draws from several frameworks presented by authors such as Leon (2008), Katz & Wagner (2014), Rietbergen (2017), Morrison (2020), Buck Consultants International (2021), and Kayanan (2022).

ECONOMIC ASSETS:

- Diverse mixture of tech innovation-led companies. Needs to be a critical mass of companies present.
- Innovation drivers: Anchors / innovation multipliers
- Innovation cultivators: Incubator / accelerators/ tech transfer offices, shared work spaces, high schools, job training firms, community colleges
- Financial means to stimulate innovation available
- Attractive rental conditions for start ups and their employees

PHYSICAL ASSETS:

- Multifunctional usage, also housing and neighbourhood amenities (retail, hospitality, medical)
- Centrally located within cities
- Well connected (physical and digital)
- High-quality public space with places to meet and exchange
- (Semi-)Public indoor and outdoor facilities that spark co-creation and innovation
- Certain critical mass of various functions



NETWORK ASSETS:

- Events, workshops, trainings, activities network feeling
- Places for serendipity

GOVERNANCE ASSETS:

- Clear vision & leadership
- Specific semi-public governmental structure. Innovation District often have a lot of semi-public spaces where experiments are going on, this can use governance ambiguity among visitors. Clear and open disclosure structures need to be in place.
- Strong branding & marketing

Framework of the key characteristics of innovation district categorized into four asset clusters

THE MARINETERREIN AS AN INNOVATION DISTRICT

By applying this framework (refer to the illustration on the next page) to the Marineterrein development project, it becomes apparent why some administrative and urban design decisions were made during the transition of the Marineterrein; the decision to attract the AMS Institute as an anchor tenant and to choose the Marineterrein, which is one of the few available areas centrally located in Amsterdam, to become an innovation district. During the current transitional phase, many of the necessary assets are yet to be put in place, and the degree to which this has already been accomplished varies. Some assets are already well established (dark blue), some are in the process of being established (bright blue), and others are still lacking (light blue). In summary, while the economic assets are well-established, there is room for improvement in the governance assets. Furthermore, there are significant opportunities for the development of more network and physical assets. Given the schedule of the area development, it makes sense that there is no residential programming yet, but there is still a clear lack of interconnectedness or collaboration between different visitor groups at the Marineterrein.

Emerging values of the Marineterrein innovation district

Some of these characteristics are reflected in the values that already exist on the current Marineterrein (also refer to page 44), such as innovativeness, connection, financial prosperity, courage, and personal development. After reviewing the generic characteristics of innovation districts in light of various planning documents and interviews with municipal employees, I have identified several emergent values for the Marineterrein, as demonstrated on the page on the right.

Priority shift of the current values of the Marineterrein

Besides the emergence of new values, the scholar of Value Sensitive design also acknowledge that the relevance or priority of values and the conceptualization of values can alter due to

ECONOMIC ASSETS:

- Diverse mixture of tech innovation-led companies. Needs to be a critical mass of companies present.
- Innovation drivers: Anchors / innovation multipliers
- Innovation cultivators: Incubator / accelerators/ tech transfer offices, shared work spaces, high schools, job training firms, community colleges
- Financial means to stimulate innovation available
- Attractive rental conditions for start ups and their employees

PHYSICAL ASSETS:

- Multifunctional usage, also housing and neighbourhood amenities (retail, hospitality, medical)
- Centrally located within cities
- Well connected (physical and digital)
- High-quality public space with places to meet and exchange
- (Semi-)Public indoor and outdoor facilities that spark co-creation and innovation
- Certain critical mass of various functions

NETWORK ASSETS:

- Events, workshops, trainings, activities network feeling
- Places for serendipity

GOVERNANCE ASSETS:

- Clear vision & leadership
- Specific semi-public governmental structure. Innovation District often have a lot of semi-public spaces where experiments are going on, this can use governance ambiguity among visitors. Clear and open disclosure structures need to be in place.
- Strong branding & marketing

Portraying the Marineterrein onto the framework of the key characteristics of innovation districts

VALUE:
STATUS

THE MARINETERREIN ATTRACTS BOTH DOMESTIC AND FOREIGN INNOVATIVE TALENT AND OFFERS HIGH QUALITY PRIVATE AND PUBLIC SPACES.

VALUE:
RESPONSIBIL-ITY

THE AREA HAS SEEN A SIGNIFICANT INCREASE IN POPULATION, WITH OVER 1000 AMSTERDAM RESIDENTS CHOOSING TO MAKE IT THEIR HOME.

VALUE:
ENTREPRE-NEURSHIP

ENTREPRENEURS WITH BUSINESS IDEAS CAN UNLEASH THEIR POTENTIAL HERE. CITIZENS ARE INVITED TO CONTRIBUTE WITH THEIR IDEAS AND SKILLS.

VALUE:
BEAUTY

THE ARCHITECTURAL VALUE OF BOTH INDOOR AND OUTDOOR PUBLIC SPACES IS HIGH, AND INVESTMENT HAS BEEN MADE IN CREATING OUTDOOR MEETING AREAS.

VALUE:
ECOLOGICAL STEWARDSHIP

START UPS ARE TRANSFORMING ORGANIC WASTE STREAMS FROM THE LOCAL HOSPITALITY INDUSTRY INTO HIGH-VALUE CONSUMER PRODUCTS.

Emerging values when the Marineterrein further develops into an innovation district

systemic chances. Such changes can eventually affect human behaviour and interaction with products, services or spaces (van der Poel, 2018). I anticipate that the following three values of the marineterrein will gain priority over the coming years, if the area development will continue as planned:

| INNOVATIVENESS, COURAGE AND FINANCIAL PROSPERITY.

In the conclusion of this chapter, I will delve into a value tensions that may arise as a result of this.

Understanding innovation district in the Amsterdam Context
The previous paragraphs explain some of the administrative and urban design decisions made during the transition of the last 10 years, but it is also interesting to zoom out and look at the bigger system, in this case, the city of Amsterdam. By applying this expansionisms approach, it made sense to my, why in the first place, the municipality of Amsterdam wants to have an innovation district. Therefore, I conducted a thorough DEPEST analysis of the city of Amsterdam and analysed the 2021 Environmental Vision (Omgevingsvisie 2050) of the municipality (van Boeijen et al., 2013). This document provides insight into the challenges facing the city and the strategies proposed by the municipality to address them. The defined goals outlined in the Environmental Vision clarify the direction and aspirations of the municipality regarding the future development of the city. For this analysis, please refer to Appendix J. The main findings of this analysis are presented in the following paragraphs.

AMSTERDAM'S RANK IN MOST VALUABLE TECH ECOSYSTEM OF EUROPE (2020):
3rd

(Startup Genome, 2020)

Amsterdam is renowned for its legacy of being an early adopter of advancements and innovations. In the past decade, the number of technology-based businesses in Amsterdam has seen substantial growth. In 2019, there were approximately 4,700 tech companies in the city employing a total of 69,000 workers. (gemeente Amsterdam, 2022). The city faces a number of challenges, including urbanization, health, climate change, mobility, circular economy, energy, and digital transition, to name a few. Technology will play a critical role in addressing these challenges, but it also raises social concerns, particularly in relation to the growing influence of Big Tech in Amsterdam's society and the impact of digital technology on freedom of speech. Thus, it is imperative to ensure that access to the digital environment remains free and fair. Additionally, Amsterdam strives to be an inclusive digital city, where all residents have the opportunity to develop and participate in the digital environment. To further encourage the development of innovative technologies that can tackle the city's urban challenges, Amsterdam is establishing an innovation district strategy. The city plans to convert eight different areas into innovation districts, one of which is the Marineterrein.

THE GENTRIFICATION RISK OF INNOVATION DISTRICTS

The global trend of rising socio-economic inequality has gained traction in recent years (International Monetary Fund, 2022). Research has indicated that cities with a knowledge-intensive economic structure exhibit a higher rate of increasing inequality (Florida, 2014). This phenomenon, referred to as the "great divergence," is not only evident between innovative and non-innovative cities, but also within cities themselves. As can be read in Appendix I, this trend is also apparent in the case of Amsterdam.

MOST EXPENSIVE BOSTON-AREA NEIGHBOURHOOD
Kendall Square

(van Voorhis, 2020)

RENT INCREASE IN KENDALL SQUARE 2008-2018
200%

(Boston.com, 2018)

There has been growing criticism regarding innovation districts, suggesting that they contribute to this societal fragmentation. With their focus on innovation and R&D, these districts attract mainly highly-skilled and educated, thereby forming homogeneous enclaves for the "knowledge class" who possess a higher purchasing power. This is illustrated by Kendall Square in Cambridge. The success of the district has led to gentrification, with rising real estate prices in and around the area (Sisson, 2018). Moreover, a mono-culture inherently has an exclusive nature, leading also to socio-cultural gentrification (Rietbergen, 2017). The communities within the innovation district exhibit similar lifestyles and interests, leading to a reinforcement of their shared experiences, while outsiders become increasingly unfamiliar and mystified by the activities taking place within the district. As a result, these individuals may begin to feel excluded and unwelcome. (Kayanan, 2022). Given the central character of innovation districts, they are often surrounded by residential neighbourhoods. Since Innovation District are often developed in centrally located underutilized areas (historical industrial, warehouse or waterfront districts), they are often in the close proximity of working-class neighbours (Katz & Wagner, 2014), just like the Marineterrein. The contrast between innovation district and surrounding neighbourhoods is therefore significant and the gentrification poses a serious threat to the social cohesion between neighbourhoods (Rietbergen, 2017).

WEDNESDAY 21 DECEMBER
11:30 - 12:15

DIGITAL INTERVIEW
Zoom

INTERVIEWEE
Sandra Winkels

The lack of inclusiveness is not only a concern for the widening social and economic divide within cities, but it also has negative implications for the innovation district itself. Interaction and exchange of diverse ideas are the core of innovation (gemeente Amsterdam, 2022). With a less diverse pallet of perspectives and ideas coming in, the innovative capacity of innovation districts decreases and complex challenges will remain unsolved. Furthermore, innovative solutions are eventually intended to be implemented in the society of Amsterdam in order to effect positive change, which greatly depends on their compatibility with the cultural and social context and needs of the intended end-users (Jones, 2014).

Gentrification in Dutch innovation districts
In order to examine the risk of gentrification in innovation districts, and determine whether this is also an issue in the Netherlands, an interview was conducted with Sandra Winkels, the Senior Communication Advisor and a member of the project team for the Central Innovation District (CID) at Gemeente Den Haag. The CID is a newly emerging innovation district in The Hague.

Winkels acknowledged the problem of gentrification and stated that it is also a challenge in the CID and other innovation districts in the Netherlands. The Innovation District is encountering resistance from local residents who express a feeling of discomfort in the area.


Sandra Winkels

THURSDAY 3 NOVEMBER
09:00-16:35

AMS INSTITUTE
Marineterrein, building 027W

PARTICIPANTS
Stephan van Dijk
Maike Simmens
Mark Kauw,
Ioannis Ioannidis
Joppe van Driel
Titus Venverloo
Tom Kuipers
Arjen van Nieuwenhuijzen
Thijs Turel
Gerben Mol
Juanita Devis
Lieke Dreijerink
Paul Voskuilen

The perspective on segregation of the knowledge class of the Marineterrein
As an Anchor of the innovation district, AMS holds a crucial position in the development of the Marineterrein. The employees of AMS can be considers the "knowledge class". During the team day for project developers (also refer to Appendix K), I was asked to serve as a creative facilitator and took the opportunity to explore AMS' perceptions regarding the innovation district and their awareness of the potential risks of segregation. Utilizing a proven method in design projects (van Dijk & Hekkert, 2011), participants were asked to describe their vision of the Marineterrein through the use of metaphors. The participants were grouped into four heterogeneous teams, and as a collective, they formed a metaphor. By employing a creative toolkit (Sanders & Colin, 2003), the teams were able to visually represent their metaphors through tangible artefacts, which further inspired creativity. The main four resulting metaphors, are presented below. Examining the metaphors, I can arrive at the following conclusion:

The AMS employees hold varying views on how the Marineterrein will look in the future. However, overall a kind of "messiah complex" is portrayed through the metaphors. They perceive the Marineterrein, and especially their contributions to it, as a solution machine to significant urban issues. The first two metaphors depict the Marineterrein as insular and self-reliant, requiring protection. The employees have a deep trust in technological fixes to solve societal challenges. This perspective strongly aligned with the risk of the formation of a 'knowledge-class' enclave in innovation districts.

METAPHOR 1: WOMB / NURSERY
A special breeding ground for innovation. Imaginative and visionary thinkers are free to explore and experiment in a safe atmosphere. Innovation is fostered with care and when it has matured to the required extent, it can reveal itself and venture beyond the confines of the Marineterrein to make a difference.

METAPHOR 2: ORCHARD
A self-sustained place that produce more that it needs and contributes to the neighbourhoods - or even the city- around it.

METAPHOR 3: OCTOPUS
A flexible and adaptable location. As the environment or context evolves, it has the ability to modify its appearance and characteristics, ensuring it remains ready for whatever the future brings or can provide society with what it requires.

METAPHOR 4: CIRCUS
Representative of the diversity and challenges of Amsterdam. It is a place where everybody feels at home and which empowers residents to appropriate the area in a playful way and learn by dwelling.

The four metaphor created during the R&V team day


Participants using the creative toolkit during the metaphor workshop

CONCLUSION UNDERSTANDING THE INNOVATION DISTRICT PLANS

Marineterrein: The new centrepiece of the Amsterdam knowledge economy
Innovation districts have become a popular topic among urban planners, who have established a clear definition and set of necessary characteristics. Thanks to the transition of recent years, the Marineterrein is on track to meet these requirements and soon become the new innovation district that the city of Amsterdam has been striving for. This development will solidify Amsterdam's position as a key hotspot for the tech-based knowledge economy.

Not without risk
Rapid growth often comes with growing pains, as is the case with innovation districts. There is growing criticism that innovation districts focus too much on attracting tech-minded highly skilled and educated people, leading to gentrification. An enclave of a homogeneous group does not bode well for social cohesion within cities, and is also a limiting factor for the emergence of new creative solutions to complex problems.

An emerging value tension
The Marineterrein's values are undergoing changes with the emergence of new innovation district characteristics. One value that is assumed to emerge is status. Additionally, courage will play a more dominant role. To attract domestic and foreign talent to work on new innovations, the Marineterrein must have a progressive and impressive allure. While status and courage can be admirable values to strive, they can also compromise other values. Status and courage align well with the aforementioned risk of gentrification. Not everyone will feel comfortable in a place of international allure where experimentation is abundant, especially if they feel excluded and are not invited to engage. In the previous chapter, I identified inclusiveness as an important value of the current Marineterrein. I therefore, predict that an interesting value tension will arise between inclusiveness and status/coursage. A value tension does not necessarily have a negative connotation and can even create interesting (design) opportunities. However, deliberate choices must be made to ensure that the tension does not lead to a rupture where one value takes precedence, unless that is the intended goal.

VALUE:
INCLUSIVE-NESS

PEOPLE FROM ALL WALKS OF LIFE IN AMSTERDAM, RANGING FROM HIGHLY EDUCATED RESEARCHERS TO STREET KIDS FROM KATTENBURG, COME TO THE MARINETERREIN FOR THEIR OWN REASONS.

Current value

value tension

VALUE:
STATUS

THE MARINETERREIN ATTRACTS BOTH DOMESTIC AND FOREIGN INNOVATIVE TALENT AND OFFERS HIGH QUALITY PRIVATE AND PUBLIC SPACES.

Emerging value

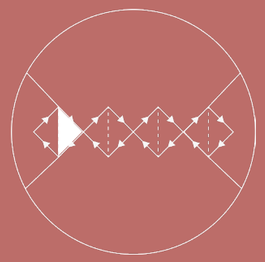
VALUE:
COURAGE

THE MARINETERREIN URBAN LIVING LAB PROVIDES A UNIQUE AREA FOR CONDUCTING EXPERIMENTS NOT ATTAINABLE ELSEWHERE IN THE CITY.

Current value with expected increased dominance

SECTION 3. FIRST REFRAMING

In this section, I will be exploring the first reframing phase based on my research on the transitional phase of the Marineterrein. Through the explore phase, I have significantly enhanced my understanding of the system and uncovered some unforeseen challenges. This has led to novel perspectives and a shift away from opportunity-based design (creating a shared future vision) towards challenge-based design for this project. Correctly framing the problem, will provide new solution directions. As you delve deeper into exploring the solution frame, your perspective on the problem will inevitably undergo alterations and refinements, leading to adjustments in the solution. This dynamic interplay between problem and solution is known as co-evolution (Dorst & Cross, 2001). In the following section, I will discuss the problem statement that emerged during the exploration phase, which ultimately resulted in reframing my initial project brief.



3.1 FIRST REFRAMING

PROBLEM STATEMENT: NO SHARED FUTURE VISION WITHOUT INCLUSIVENESS

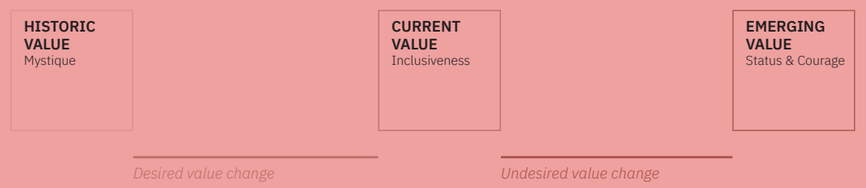
The Marineterrein is in the midst of an intriguing transition, leading to the constant addition of new values and shifts in priorities of values. My goal was to gain a complete understanding of the values offered to various stakeholders to design a shared future vision. However, the significant number of stakeholders involved in the social system means that my understanding will remain limited. So implementing Value Sensitive Design is not entirely feasible within this project's scope. However, based on the values that I have indicated with my exploration, I can still priorities the values that I, as a designer, consider crucial for the area. By integrating the values that I consider significant, I can align my design process and final outcome with my world-view, making this project more relevant and meaningful. I acknowledge that design is inherently subjective, and personal perspectives are essential to this project.

I consider inclusiveness as one of the crucial values that has emerged during the recent transformation of the Marineterrein. Amsterdam has long been known for its tolerant and compassionate character, but I have observed a decline in these fundamental principles in recent times. The city centre has become a place exclusively for "the happy few" and tourists, while diversity is fading away from the streets. A growing number of Amsterdam citizens feel alienated in their own city. I aim to prevent this from happening at the Marineterrein. In my opinion, the area has gone through a positive evolution, shifting from a military base into a popular destination for various user groups. It is an open and green space where people gather to relax and exercise. It is a place where people get exposed to Amsterdam's rich diversity. However, the decision to convert the Marineterrein into an innovation district poses a threat to this positive development. While this new function is appropriate given the area's history, it is crucial to ensure that it does not replicate the pattern of gentrification seen in other innovation districts and result in becoming an enclave again, this time for the "knowledge-class". It would be a negative development for the city's social cohesion if an "island on an island" emerged and the Marineterrein drifts apart from its neighbouring areas.

Furthermore, inclusiveness is a key condition for creating a shared future vision. First of all, it is essential that all relevant stakeholders feel invited to engage in an open and inclusive dialogue to identify the collective values they consider important. If certain groups feel marginalized and that their voice does not have an impact, they will quickly disengage. Secondly, without inclusiveness, the implementation of a shared future vision will be challenging. A shared future vision is an ongoing process that is not shaped in one day. Various stakeholder groups must remain engaged throughout a longer period, which becomes difficult if they feel like they no longer belong on the Marineterrein. Before I even start thinking about what a shared future vision looks like, it is necessary to focus on how we can ensure that the most important condition for a shared future vision, inclusiveness, is maintained.

In conclusion, from both a practical feasibility and relevance standpoint, I believe it is more urgent to focus on the following problem statement than to focus on creating a shared future vision:

HOW TO MAINTAIN THE VALUE OF INCLUSIVENESS AT THE MARINETERREIN, WHILE THE AREA IS BEING TRANSFORMED INTO A INNOVATION DISTRICT?



REFRAMING OF RESEARCH QUESTION

So I want to make sure that the Marineterrein remains its inclusive character, but ***how*** can I do that?

During my exploration of the Marineterrein transition, I have interviewed several experts including Van der Putten, Van Schriek, and Winkels. They all stressed the significance of citizen engagement during area development projects. Citizen engagement is a useful method to maintain interaction between the newly developed area and the city's residents. By giving citizens a voice in the project, a sense of ownership can be established, and the relationship between the residents and the newly emerging area can be enhanced. Additionally, through citizen engagement, the planning parties can gain valuable insights into the concerns, wishes, and interests of various stakeholders, and can better align its implementation and programming with the needs of the native residents. In the end, engaging citizens in the development process will result in area developments that align better with the diverse range of perspectives and foster a stronger sense of belonging, resulting in a more inclusive use of the area.

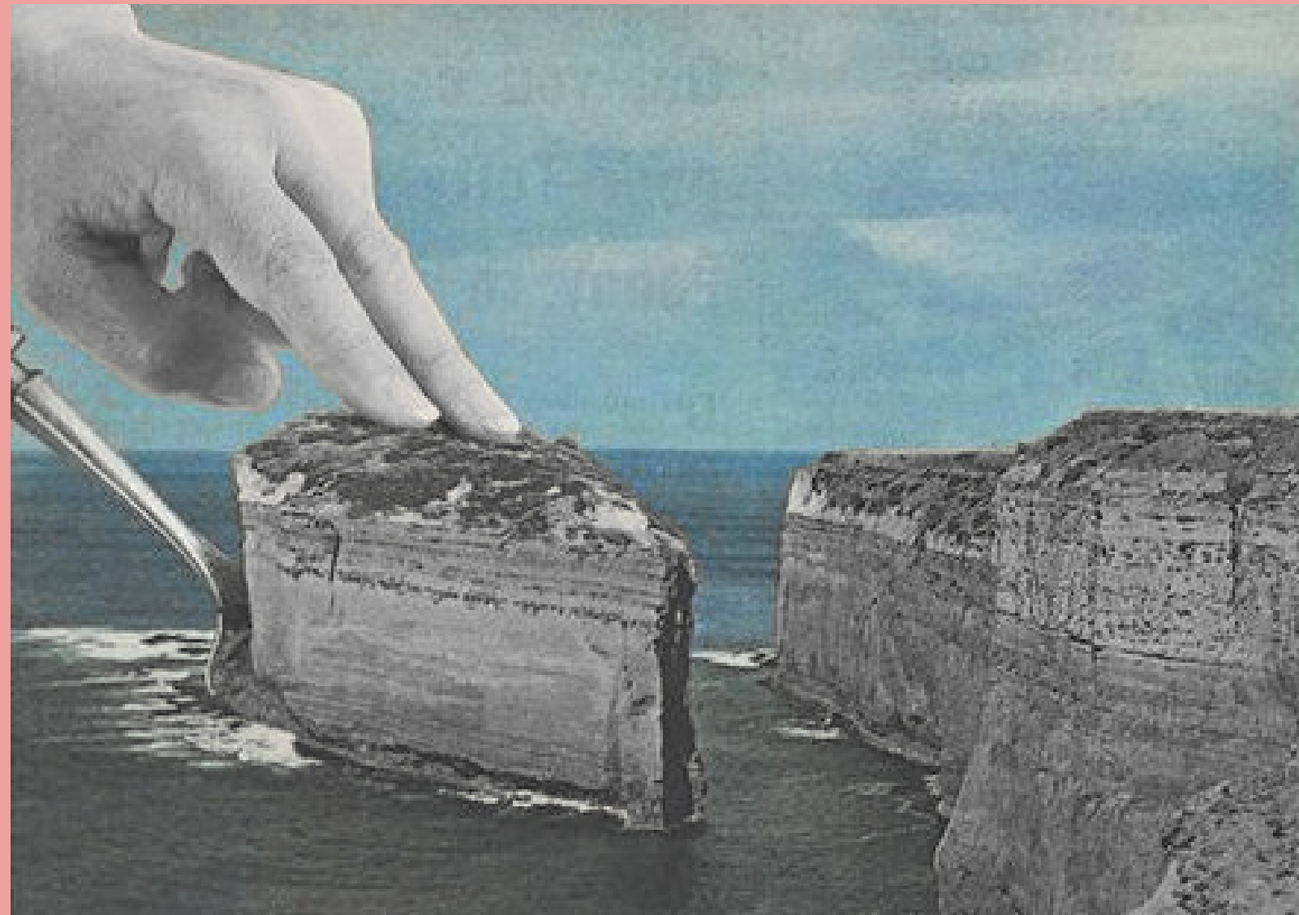
Based on this insight, I have reframed the initial research question to the following:

HOW CAN WE DESIGN A SHARED FUTURE VISION FOR THE MARINETERREIN THAT BALANCES THE CURRENT AND EMERGING VALUES PRESENT IN THE SYSTEM.

↓

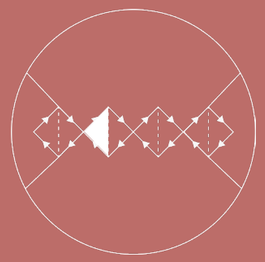
HOW TO ENHANCE THE CITIZENS ENGAGEMENT IN THE AREA DEVELOPMENT OF THE MARINETERREIN

Despite having a more relevant research question for my graduation project, it also means that conducting further research is essential to make well-informed design decisions. As a result, I went through on another exploration phase, specifically delving into citizen engagement in area development projects, with a particular focus on the Marineterrein context. The discoveries from this second exploration phase are presented in the following section.



SECTION 4. EXPLORING CITIZEN ENGAGEMENT IN AREA DEVELOPMENTS

Through reframing, I have found a more urgent challenge to focus on for this project. However, I have also been taken back to a point where I need to gather more information to create a well-informed design. In this section, I will discuss the second exploration phase, where I delved deeper into citizen engagement. The objective of this phase is to comprehend what citizen engagement is. Since I aim to develop a design that effectively enhances citizen engagement in the Marineterrein area development, it is necessary to understand the principles of citizen engagement. Additionally, the goal is to understand what is feasible in the context of the Marineterrein. Ultimately, all the knowledge gained during this exploration phase further deepened my knowledge on the Marineterrein system and led to another reframing of the research question.



4.1 EXPLORE APPROACH

Deriving from my reframed research question

HOW TO ENHANCE THE CITIZENS ENGAGEMENT IN THE AREA DEVELOPMENT OF THE MARINETERREIN

I derived the following three sub questions to be researched:

1. What is citizens engagement and how is it applied in area development project?
What is the definition of citizen engagement and how does it compare to participation and consultation? Can providing information to citizens be classified as citizen engagement or does it only refer to active collaboration? What are the motives for engaging citizens in area development initiatives?

2. What are proven methods for citizens engagement?
What motivates citizens to engage in citizen engagement, and what factors discourage them from doing so? What are the essential roles of citizen engagement tools? Furthermore, how have these functions been incorporated into the citizen engagement tools currently utilized by the Municipality of Amsterdam? How can I test these methods with Marineterrein stakeholders?

3. What citizens engagement procedure has taken place thus far at the Marineterrein and how successful was that?
What measures has the Steering Group taken to involve citizens in the Marineterrein area development project thus far? What feedback have citizens provided about this approach, and how does the municipality respond to this feedback?

Taking into consideration the three sub research questions that need to be answered, various research methods where appropriate to use. The following four research strategies were applied to obtain the knowledge

1. Investigate
To answer the first two sub research question, I conducted research both in breadth and depth on citizens engagement. The aim is to understand what citizens engagement entails, why it is used, and how citizens engagement needs to be applied during area development project to get an desired outcome. With this knowledge I can make better design decisions. Besides a literature study, I also had the opportunity to witness some participation events myself and observe in practices what strategies work. The research methods used to achieve this are exploratory desk research and fly-on-the-wall observations. In chapter 4.2 and 4.3 the main finding of this research strategy can be found.

2. Prototype
A prototyping research strategy was employed to further investigate the second sub research question. By utilizing the aforementioned Investigate research strategy, effective methods for citizen engagement were identified. As a designer, it is crucial to translate theoretical concepts into practical solutions and test them with actual users. As such, I designed a prototype co-creation session and tested it with a transdisciplinary group. This activity allowed me to display design leadership and strengthen relationships and connections within the network, which are two crucial enabling activities of the systemic Design Approach (also refer to page 17). The prototype test yielded valuable insights on design principles, which were integrated into the final design. In chapter 4.3 this strategy is further discussed.

3. Emphasize
The last sub-question was addressed using an emphasis research strategy. This approach allowed me to gain a comprehensive understanding of how the citizen engagement procedure has unfolded thus far at the Marineterrein and, more importantly, how various stakeholders have experienced it. This understanding was essential to identify design opportunities for further enhancing citizen engagement in the context of the Marineterrein. Expert interviews and journey mapping were the research methods employed during this investigation, and the findings can be found in chapter 4.4.

Through this additional exploration, I encountered another challenge that shifted my perspective and prompted a second re-framing, which will be discussed in the fifth section.

4.2 UNDERSTANDING CITIZEN ENGAGEMENT IN AREA DEVELOPMENTS

Literature on citizen engagement has been studied to gain a better understanding of the concept. In this chapter, I discuss the findings of this literature research. I explain the difference between citizen engagement, participation, and consultation - three terms that are closely related but have slightly different meanings, which can cause confusion. Additionally, I have read literature on the different levels at which citizens can engage in area development projects. I also briefly shed light on the benefits of involving citizens in area development projects. I also examined the current state of citizen engagement in the Netherlands and the range of tools that the municipality of Amsterdam employs for citizen engagement. However, as this information is not essential for comprehending my final design, I refer readers to Appendix L for this study.
This knowledge has formed the basis for a deeper investigation into a critical analysis of what is needed to make citizen engagement effective.

DEFINITIONS OF CITIZENS ENGAGEMENT, PARTICIPATION AND CONSULTATION

Whiles interviewing several experts, during the first exploration phase, I observed that they were using different terms to describe the involvement of citizens in area development projects interchangeably. This created a lot of confusion. Although consultation, participation, and citizen engagement all refer to various methods of public engagement in the decision-making process, they have subtle differences. The literature distinguishes between citizen engagement (in Dutch: participatie), participation (in Dutch: inspraak), and public consultation (in Dutch: consultatie). This can be particularly challenging as in Dutch, citizen engagement is translated as “participatie,” which bears a resemblance to the term “participation.” For the purpose of this project, the following definitions for the various terms will be used.

Public consultation is a formal process in which the government seeks advice, opinions, or perspectives from stakeholders or the general public to make informed decisions. It is often used to ensure that decisions are well-informed and meet the needs of those affected (OECD, n.d.).

Participation is a mechanism for public input or influence in decision-making, where individuals or groups are given the opportunity to voice their opinions or provide recommendations. In the Netherlands, public participation procedures are mandated by law, and must be conducted before final governmental decisions are made on area development projects (Overheid.nl, 2019).

Citizen engagement refers to active involvement of citizens in a process or decision-making. This term emphasizes the idea that individuals or groups have a meaningful role in shaping the outcome of a decision-making process (Arnstein, 1969). There are different levels of citizen engagement, ranging from passive participation to active co-creation. These levels will be further explained in the following paragraph

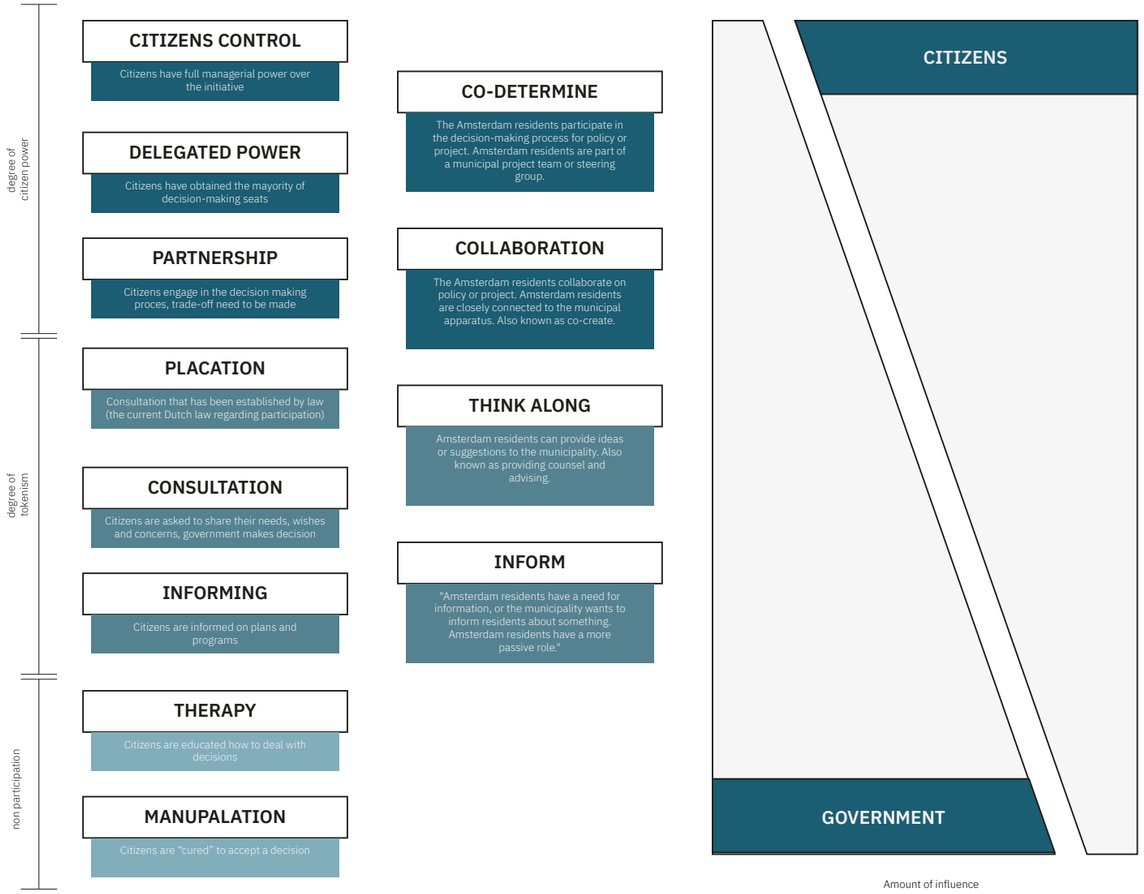
DIFFERENT LEVELS OF CITIZENS ENGAGEMENT

One of the most dominant researchers on citizens engagement is the American Sherry Arnstein. In 1969 she wrote a journal paper with has a lasting impact on how many field of research examine citizens engagement. She suggests that Citizen engagement can vary in degree and can be classified into several levels. This means that the level of involvement and decision-making power of citizens can range from being only informed about decisions, to having significant influence on the decision-making process. Arnstein’s ladder is the most commonly cited framework outlining the different levels of citizen engagement (see figure on following page). It is useful in understanding citizen empowerment and involvement. However, current participation processes are often fluid, leading many municipalities to tailor the traditional Arnstein ladder to fit their context. The municipality of Amsterdam has also created their own “Guideline for Citizens Engagement”.

BENEFITS OF CITIZENS ENGAGEMENT IN AREA DEVELOPMENT PROJECTS

During the interviews, experts emphasized the significance of involving citizens in area development projects. This approach allows for a broader range of perspectives to be considered, resulting in better alignment with the needs and desires of surrounding communities, as well as promoting a greater sense of community involvement. The literature supports this notion, an highlighting also additional benefits that arise when citizens are given the opportunity to engage in area development project, such as enhanced social cohesion and better trust between government & citizens. A complete list of benefits can be found in Appendix L.

Engaging youth in area development projects remains specifically challenging



A comparison between Arnstein's ladder of citizen engagement and the "Guideline for Citizen Engagement" developed by the municipality of Amsterdam.

A neighbourhood day organised at the Marineterrein by Bureau Marineterrein Amsterdam.

4.3 CONDITIONS FOR EFFECTIVE CITIZENS ENGAGEMENT

Based on the basic knowledge I gained about citizen engagement, I delved further into the topic and attended three citizen engagement events organized by the Municipality of Amsterdam.

The first activity was a neighbourhood consultation meeting regarding the housing crisis in Amsterdam. It did not focus on area development or the Marineterrein, but nevertheless provided valuable insights. The other two meetings were about the area development at the Marineterrein. The first was a closed informal gathering between the citizens collective W.O.M. (Werkgroep Ontwikkeling Marineterrein) and the municipality, in which the municipality addressed several questions and concerns that the W.O.M. had regarding the NvU. The second was a public information meeting in which the surrounding neighbourhoods were informed about the upcoming Response Note regarding the Marineterrein area development. Using the fly-on-the-wall technique (Zeisel, 2006), I observed what was happening during the events and how the interaction was between citizens and the municipality.

By conducting these observations, I was able to critically analyse the success and shortcomings of the citizens engagement activities. Ultimately, I summarized my findings from these three meetings into a set of conditions for effective citizen engagement. In this chapter this list is presented. For a complete overview of the insights I gained during the various citizens engagement activities, please refer to Appendix M, N, and O.

Finally, I translated this list of conditions into my own framework of "design functions for effective citizen engagement." This framework proved to be an important guideline for my final design.

NEIGHBOURHOOD CONSULTATION MEETING

MONDAY 14 NOVEMBER
19:30-21:30

COMMUNITY CENTRE MEEVAART
Balistraat 48A

INSTRUMENT
Consultation meeting (Think Along)

ATTENDEES
28

ESTIMATED AVERAGE AGE
58

ESTIMATED # ETHNIC MINORITY
2

ESTIMATED GENDER RATIO
50/50

LANGUAGE SPOKEN
Dutch

INFORMAL GATHERING

TUESDAY 22 NOV
19:00-21:00

COMMANDANTS WONING
Marineterrein, Building 001

ATTENDEES
Sylvia Blasius (municipality)
Veronika Meijer - Skouratovskaja (municipality)
Marlene Rienstra (municipality)
Danny Konings (municipality)
Joris Broekhuizen (municipality)
Eight members of the W.O.M.

PUBLIC INFORMATION MEETING

THURSDAY 29 NOVEMBER
19:15-21:30

ECA-COMPLEX
Marineterrein, Building 030

INSTRUMENT
Information evening (Inform)

ATTENDEES
+/- 120

ESTIMATED AVERAGE AGE
60

ESTIMATED # ETHNIC MINORITY
3

ESTIMATED GENDER RATIO
50/50

LANGUAGE SPOKEN
Dutch

CONDITIONS FOR EFFECTIVE CITIZENS ENGAGEMENT

During the three citizens engagement activities, I made a comprehensive list of observations. After carefully analysing them, I filtered out 10 conditions that are essential for effective citizens engagement. However, it is important to note that not all of these conditions were present in the activities that I observed. In fact, some of them were actually absent, which was also quite noticeable. It is worth mentioning that this list is based on my personal observations of only three activities and may not be applicable in all scenarios.

IT ALL STARTS WITH COMMUNICATION

For effective citizen engagement to start you need citizens to attend. Therefore it is crucial to invest in clear and effective communication strategies. This includes ensuring that invitations or announcements are sent to a broad range of stakeholders, using multiple communication channels, and creating a compelling theme that is of interest to the target audience. Additionally, it is important to encourage attendees to invite others, such as through word-of-mouth, to increase the diversity of perspectives and ensure a sufficient number of attendees.

GIVE TIME INDICATIONS

To ensure effective citizen engagement, it is crucial to provide clear indications of the duration of activities. This includes providing a time-line or agenda for the event, as well as regular updates or reminders throughout the event. Giving attendees a clear sense of how long activities will take helps to maintain their engagement and ensures that time is used efficiently. Moreover, providing a clear time-line shows that their time is valued and respected, building trust with stakeholders and enhancing the overall success of the engagement activities.

MAKE IT BILINGUAL

For effective citizen engagement, it is important to promote inclusivity by offering options for participation in multiple languages. Many individuals in Amsterdam come from diverse backgrounds and may not have full proficiency in Dutch, yet still feel a strong sense of connection to the city. Providing the option to participate in English or other languages would foster a more inclusive environment, allowing a wider range of individuals to engage and share their perspectives.

CREATE A SOCIAL ATMOSPHERE

To enhance citizen engagement, it is important to create a welcoming and enjoyable social atmosphere that encourages interaction and engagement among participants. This interaction need not necessarily be limited to the topic being discussed. This can lead to higher attendance and greater enjoyment during the activity. Additionally, this condition is essential for promoting social cohesion and new network relations through citizen engagement.

WORK GOAL ORIENTED

Only one of the engagement activities I attended began with a clear explanation of its goal. I observed that it was important to work in a goal-oriented manner. Clearly stating the goals and objectives of the engagement activity can help participants understand what is expected of them and how their engagement can have an impact. This helps create a sense of purpose, which can increase engagement and motivation among participants.

IMPORTANCE OF PERSONAL AND OPEN INTERACTIONS

At all of the events I attended, the presence of a large number of municipal employees was noticeable and beneficial. This provides an opportunity for more personal and meaningful interactions between citizens and civil servants, which can help establish trust and understanding. The municipality employees could ask follow up questions to gain a better understanding of the needs of the citizens, and citizens feel that their concerns are taken seriously. This kind of interaction also promotes better understanding of each other's perspectives, and when disagreements arise, both parties can clarify their viewpoints.

SUPPLY GOOD INFORMATION

To ensure that citizens engagement is effective, it is crucial to ensure that people feel sufficiently informed and knowledgeable about the topic being discussed. From my observation, when individuals feel like they lack adequate knowledge, they tend to lose interest and stop engaging or contributing their ideas and opinions. To overcome this challenge, it is important to present information in a clear and understandable manner, and offer people the opportunity to familiarize themselves with the topic.

USE THE POWER OF COLLECTIVE IDEATION

During two events, a collective brainstorming session took place, and from my observation, it significantly increased the engagement of the participants. This approach was an effective way to gather both quantitative and qualitative ideas. I noticed that as individuals elaborated on what others had to say, the discussion became more productive, and ideas were built upon each other to reach a greater level of creativity and depth

USE BOUNDARY OBJECTS AND VISUALS

During two of the activities, there were several models of the future Marineterrein present, as well as stands with visual representations. From my observation, these boundary objects served as significant discussion starters as they provided a tangible and visual representation that was easy to understand for all the participants.

AND IT ALL END WITH COMMUNICATION

Setting appropriate expectations among participants is arguably the most critical factor in ensuring successful citizen engagement. It is essential to communicate clearly and transparently about how their input will be used and to what extent it will have an impact. Nothing is more disheartening than investing time and energy in something and feeling that it was not used. Municipalities must be upfront about the anticipated results of citizen engagement to demonstrate that participants' voices are highly regarded and that their contributions will have a significant influence. This approach is vital in establishing a foundation of trust, which leads to increased involvement and participation in future initiatives.

The tree citizens engagement activities I attended and observed, placed in chronological order

FRAMEWORK OF DESIGN FUNCTIONS FOR EFFECTIVE CITIZEN ENGAGEMENT

After conducting a further analysis of the observed conditions, I was able to translate them into a framework that can serve as guidance for my own design. I identified four key design functions that can be seen as building blocks for citizen engagement tools to approach citizen engagement effectively and achieve the desired outcome. In essence, the framework is a way to map out the different stages of citizen engagement and ensure that all necessary components are in place to successfully engage citizens. By following this framework, I am confident that I can design a comprehensive approach to citizen engagement that takes citizens from initial awareness to lasting engagement. Moreover, I noticed similarities with the RACE (Reach, Act, Convert, Engage) frameworks originating in marketing research, used by companies to convert leads into loyal customers (Chaffey & Patron, 2012). I believe that this framework is not restricted to any specific level of citizen engagement. The framework is illustrated below.

Chronological stages

INVITE

The initial step involves persuading participants to join in the appropriate way. It is crucial to minimize participation thresholds, especially if the goal is to utilize citizen engagement to promote inclusiveness. It is essential to ensure that all interested groups feel welcomed.

INFORM

To encourage participants to share their thoughts and opinions, it is crucial to ensure that they understand the subject matter on which engagement is desired. Therefore, it is essential to communicate in a clear and honest manner, enabling participants to engage effectively.

INCITE

To achieve the desired outcomes and gain valuable insights, it is essential to keep participants engaged and interested in the activity. Therefore, sustaining motivation throughout the process is crucial.

INSPIRE

Ultimately, the objective of citizens engagement is to obtain new insights by uncovering participants ideas and opinions. Often, participants are unaware of the depth of knowledge they possess. Therefore, it is essential to guide them in the right direction and inspire them to share their knowledge.

Framework of design functions for effective citizen engagement

4.4 EXPERIMENTING WITH EFFECTIVE CITIZENS ENGAGEMENT

Embodiment is a fundamental aspect of design. To further explore the framework of “design functions for effective citizen engagement”, I chose to utilize a prototyping approach. Prototyping is a powerful tool that enables designers to rapidly experiment with different ideas and possibilities. By creating prototypes, I was able to test out various design options and collect valuable feedback from users, which was used to refine and improve the design. Additionally, prototyping provided me with a hands-on experience, allowing me to gain a better understanding of how the designs would function in the real world and uncover unexpected findings.

My goal was to develop a more concrete understanding of the design functions and identify effective design principles to enable these functions. Although the design functions I created were a good starting point, they were not sufficient for creating an effective citizens engagement tool. There are multiple design principles that can be used to achieve the design function, and my aim was to explore and determine which approach worked best for my project. For example, consider how MacOS and Windows apply completely different design principles to create high usability for their PCs. MacOS computers are known for their simplification, while Windows computers offer more accessibility for users to make adjustments. The effectiveness of simplification versus accessibility in enabling usability strongly depends on the context. In abstract terms, there is more than one way to skin a cat, and I wanted to investigate which skinning method is most effective.

This chapter will focus on the prototype experiment that I conducted and the initial design principles that I identified through the experiment. These design principles were subsequently integrated into my final design.

A CO-CREATION SESSION TO TEST DESIGN PRINCIPLES

To remain in the spirit of citizens engagement and the area development of the Marineterrein, I decided that the prototype would be an transdisciplinary co-creation session. The theme of the sessions was:

COLLECTIVE IDEATION ON INNOVATIVE AND INCLUSIVE CITIZENS ENGAGEMENT TOOLS FOR THE MARINETERREIN AREA DEVELOPMENT.

During the initial exploration phase, I established relationships with a range of stakeholders, enabling me to invite a transdisciplinary group of academic researchers, municipality employees, and citizens to the co-creation session. I designed multiple brainstorm activities, each rooted in a distinct design principle. Each brainstorm activity was focused on the overarching theme of the co-creation session. These brainstorm activities essentially functioned as prototypes. Although the primary objective of the co-creation session was to experiment with brainstorming activities founded on different design principles, the results of these sessions also served as a direct inspiration for the embodiment of my final design. In the following paragraph, I will provide further information regarding the brainstorming activities and the design principles upon which they were based.

Please refer to Appendix P for a detailed explanation of the transdisciplinary co-creation session, including the participant selection strategy, rules, and materials used, survey result. Additionally, you will find supplementary findings that, although they did not directly impact my design, may still be of interest.

TUESDAY 8 DECEMBER
13:15-17:15

CULTURE CLUB
Marineterrein, Building 027E

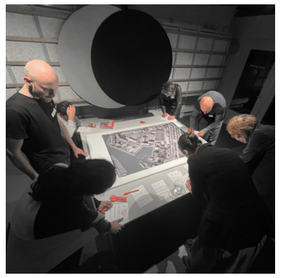
PARTICIPANTS
Juanita Devis (AMS Institute)
Fabian Geiser (AMS Institute)
Sophie van Opstal (BMA)
Luka Vogel (municipality of Amsterdam)
Didi Visser (AHK)
Danny Konings (municipality of Amsterdam)
Gedi van Schriek (W.O.M.)
Bart Uitdenbogaart (W.O.M.)

FACILITATORS
Jaap Tjebbes
Mila van Rijs

THE IMPLEMENTATION OF DESIGN PRINCIPLES IN THE PROTOTYPES

In the following paragraphs, I will outline per each design function what design principle was tested and how the prototype that was used looked like. It should be noted that no design principles were tested for the inform design function, as the majority of participants were already experts in the topic and required little to no additional information before engaging in the co-creation session.

Testing design function Invite through Laddering
I did not have a specific design principle in mind that I wanted to test for this design function. Instead, I used the Laddering technique to uncover the design principle (Reynolds & Gutman, 1988). Since I already had a personal relationship with the participants and approached them directly to participate, a significant step in inviting them had already been taken. However, I was still unsure about what motivated them to allocate an entire afternoon of their time and join the co-creation session. To help answer this question, I used an introduction round that centred around a big map of the Marineterrein. Participants were asked to indicate their location and provide background information about their expertise on the theme of the co-creation session. This helped sensitize the participants to the explicit question: “Why did you come today?”. By using the Laddering technique, I gained valuable insights into the motivations of the participants that made the co-creation session appealing enough to participate in. Through analysis of the responses, I identified design principles that could be incorporated into my final design, as will be discussed later on in this chapter.


Introduction round

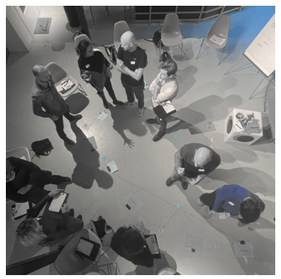
Testing design function Incite through Social facilitations
The design principle that I tested for the Incite design function was social facilitation. This principle suggests that people are more motivated and productive when they work together with others instead of working alone (Zajonc, 1965). This phenomenon is rooted in the field of social psychology and has been observed in a range of settings, such as sports, academic tasks, and work environments. To test this principle, I used a combination of prototypes rather than a single prototype. The first two brainstorming activities were individual, while the last one was collective. Additionally, there was a collective closing in the form of pitches and a central discussion. By observing how engaged people were in the various activities, I examined the effectiveness of this design principle.


Brainstorm activity “How To’s”

Testing design function Inspire through the Reductionism, Visual Priming & Collective ideation
I tested out three design principle for the Inspire design function. For all of these three principles I designed an individual prototype, in the form of three brainstorm activities. Through personal observations and a survey where participants could give feedback on the brainstorming activities I examined the effectiveness of the various design principles. I will briefly discuss each brainstorm activity and how the principle is integrated in it.

“How To’s” Brainstorm (Reductionism)
The participants were divided into subgroups of about three individuals each, with diversity in mind.

Brainstorm activity “The museum”



Brainstorm activity “Guided serendipity”

Each subgroup received an envelope with several ‘how-to’ cards. In addition, each participant was given a personal clipboard and idea templates to facilitate the documentation of emerging ideas through writing and sketching. The ‘how-to’ cards aimed to break down the overall challenge of “designing a participation tool” into more manageable components. Breaking down these more approachable and understandable parts is less cognitively demanding which can enhance problem-solving and the generation of new ideas. Besides it allows for greater focus on specific aspects of a problem, which can help to identify new connections and insights leading to creative thinking. This design principle is based on research in the field of design (Van Boeijen, Daalhuizen, Van der Schoor & Zijlstra, 2013). This was an individual brainstorm activity.

“The museum” Brainstorm (Visual Priming)
Participants were taken to a room full of inspiring visuals related to innovation, participation, and the future Marineterrein. The participants they could walk around freely, write down ideas, and use green and red post-its to show which visuals inspired or bored them. The visually immersive room was designed with the principle of visual priming in mind. Visual priming is a potent mechanism for igniting inspiration, as it capitalizes on the fact that visuals are easily comprehensible and tell stories and can evoke emotions directly. Furthermore, pictures activate related concepts in individuals’ minds, further fuelling creativity (Sundmark, 2018). This principle is exemplified by designers’ use of moodboards, collages & image boards to stimulate creative ideas (Stappers & Sanders, 2003; Hughes, 2008; Kaptelinin & Nardi, 2006). This was an individual brainstorm activity.

“Guided serendipity” Brainstorm (Collective ideation)
The participants gathered in a circular formation. They were invited to approach one another and share their most promising ideas that had emerged during the preceding brainstorming sessions. Together, they then collaborated to refine these concepts and develop novel idea. When people are stimulated to elaborate on each other’s ideas it provides new perspectives, insights, and information that can broaden the collective understanding of a problem and cross-polination can inspire the generation of new ideas. The quality of ideas can also improve by providing feedback and validation. 1+1=3 is the idea. This design principle is based on research in the field of design as most collective brainstorm methods are based on this principle (Nielsen & Dusurvire, 1993).

SELECTION OF DESIGN PRINCIPLES TO INCLUDE IN FINAL DESIGN

The prototype test proved to be a successful means of exploring and analysing the framework of “design functions for effective citizen engagement”, and I was able to select the first design principle to include in my final project. Based on the observations and survey results, I can conclude that certain pre-determined design principles were more effective than others in enabling the various design functions. In addition, new and unexpected design principles emerged during the prototype testing that also steered my final design. Per design condition I will list which design principles I found, including a small elaboration on the argumentation for picking that design principles.
Besides the principles I also had some additional findings that had a direct influence on my design choose.

DESIGN CONDITION
INVITE

1. DESIGN PRINCIPLE **SOCIAL PROOF**

Through the Laddering technique it became apparent that most participants attended the co-creation session because the invitation mentioned the presence of other stakeholder groups, which encouraged them to participate and created a sense of social influence. They believed that if other stakeholders were present, then they should also be there to voice their opinions and preferences, representing their own stakeholder group and demonstrating its significance and participation. This observation is consistent with a previous finding I had during the Green Market, where people were motivated to participate after seeing others engage, indicating that social proof is an effective strategy for inviting people into civic engagement.

DESIGN CONDITION
INCITE

1. DESIGN PRINCIPLE **SOCIAL FACILITATION**

There are various reasons to believe that this is a effective principle. During the introduction round, a significant number of participants expressed their interest in meeting and connecting with other actors in the network. I also noticed that the collective brainstorming activities had a positive effect on participant engagement. One particular group even transformed their individual “How To’s” brainstorming session into a collective one by using the how-to cards as conversation starters. On top of that, the survey results showed that the primary criticism was the inadequate time allocated for discussions and the concluding idea pitching activity. It is noteworthy that this group of participants who are actively involved in the development of the Marineterrein area are more inclined towards this principle. Despite this, I still believe that social facilitation is an effective strategy for encouraging people to engage in citizen activities. This conclusion is also supported by prior observations during citizen engagement activities (also refer to page 68).

2. DESIGN PRINCIPLE **PERSONALIZATION**

I came across an unexpected principle that could enhance the design function incite. This is the design principle of personalization. I observed this principle during both the initial round of introductions and the subsequent brainstorming activity. Several participants showed a keen interest in the topic of inclusive citizen engagement and were willing to dedicate an entire afternoon to the co-creation session. Moreover, during the museum activity, I observed that people spent more time examining images that resonated with their personal experiences. By incorporating options for personalization based on individual interests, I can potentially increase participants’ motivation to engage with my final design.

3. DESIGN PRINCIPLE **AESTHETIC APPEAL**

I invested significant effort into the aesthetic appeal of the materials I provided to the participants. Through conversations I had with them during the closing drinks and in survey results, it became clear that this had a positive impact on their motivation to actively engage. Aesthetically pleasing designs have the ability to captivate people’s attention and evoke positive emotions, which in turn can lead to a more immersive and memorable experience. This, in turn, can increase participants’ motivation to participate.

DESIGN CONDITION
INSPIRE

1. DESIGN PRINCIPLE **VISUAL PRIMING**

I noticed that the “Museum” prototype, which incorporated visual priming as a design principle, was the most inspiring for the participants. They were highly engaged in generating ideas and made extensive use of the green and red post-it notes. This observation is further supported by the survey results, which indicate that the participants found the museum activity to be the most effective in generating ideas.

2. DESIGN PRINCIPLE **COLLECTIVE IDEATION**

I can conclude that the guided serendipity activity, which was based on the mechanism on group ideation, was the most inciting activity. Despite the possibility that it did not generate the largest quantity of ideas, it did generate the most qualitative ideas, as supported by the survey. The survey results confirmed that the guided serendipity activity was the most enjoyable, which corresponds with my personal observations.

ADDITIONAL FINDINGS

THE APPEAL OF LARGE MAPS

As previously observed in the graffiti walls experiment (also refer to page 36), large maps are highly eye-catching and possess an inviting quality. In the introductory activity, I utilized a large A0 map of the Marineterrein and many participants were captivated by it, spending time identifying buildings and locations. I contend that maps are popular because they offer a visual representation of space and geography, satisfying people’s curiosity and desire for knowledge while providing a sense of control and orientation.

BILINGUALISM IS A MUST

The participants from international backgrounds highly valued the bilingual (Dutch and English) communication approach. They remarked that, as expats, they frequently feel excluded from engaging in citizen activities, despite considering themselves part of Dutch society.

POPULARITY OF KNOWLEDGE ROUTES

The overall idea of the co-creation session was to collectively think about innovative and inclusive citizen engagement tools for the Marineterrein Area development. Many of the emerged ideas were related to knowledge routes : knowledge routes with QR codes, knowledge routes with AR, knowledge routes with audio guides, virtual knowledge routes , and knowledge routes along experiments. Apparently, participants find this an accessible way to be more involved in the area development.

Participants around the A0 map of the Marineterrein

CONCLUSION EXPERIMENTING WITH THE DESIGN FUNCTION FOR EFFECTIVE CITIZENS ENGAGEMENT

Strengthening the relationship within the network
The prototyping approach proved to be an effective method for delving deeper into citizen engagement. Through the facilitation of a transdisciplinary co-creation session, I was able to find the first design principles that I plan to integrate into my final design. The design rationale is starting to take shape, as evidenced in the illustration below. What particularly excites me about the transdisciplinary co-creation session is the emergence of new relationships within the network by bringing together diverse stakeholders. At the closing drinks event, the participants engaged in extensive conversations and exchanged phone numbers and contact information. In accordance with the Systemic Design Approach, strengthening network ties during the design process is an inherent goal in itself.

EMERGING DESIGN RATIONALE

WHAT
(design embodiment)

T.B.D.

\+

HOW
(design functions)
& (design principles)

INVITE	**INFORM**	**INCITE**	**INSPIRE**
SOCIAL PROOF	**T.B.D.**	**SOCIAL FACILITATION** **PERSONALIZATION** **AESTHETIC APPEAL**	**VISUAL PRIMING** **COLLECTIVE IDEATION**

enables

WHY
(value)

ENHANCING THE CITIZENS ENGAGEMENT IN THE AREA DEVELOPMENT OF THE MARINETERREIN TO MAINTAIN THE VALUE OF INCLUSIVENESS AT THE MARINETERREIN

Relevance of design functions and design principles despite reframing
After acquiring more knowledge on citizens engagement in the area development of the Marineterrein, as will be described in the following chapter, I decided to reframe the research question once again (also refer to section 5). Despite this reframing, I was still able to utilize the design functions and underlying design principles that I had discovered during the observations of the three citizens engagement activity and the transdisciplinary co-create session.

4.5 CITIZENS ENGAGEMENT PROCEDURE AT THE MARINETERREIN

Drawing upon my knowledge gained from studying literature on citizen engagement in area development projects and insights gained through observations and prototyping, I have investigated how the citizen engagement procedure has unfolded thus far at the Marineterrein. Through expert interviews, I sought to empathize with both citizens and the municipality to better understand their experiences with the process. However, upon diving into the context of the Marineterrein, it became evident that this is not a typical area development project. Due to various complex factors, the municipality is not willing to allow citizens to engage in the area development plans. Therefore, designing an additional reframing of the research question is imperative to steer this project in a more prospective direction. In this chapter, I will provide further elaboration on this issue.

THE CITIZENS ENGAGEMENT PROCEDURE AT THE MARINETERREIN AREA DEVELOPMENT

To obtain a comprehensive understanding of how the citizens engagement procedure at the Marineterrein, I conducted an interview with Sylvia Blasius, project manager of the municipal project team and Luka Vogel, intern on citizens engagement at the project team. A journey map template (refer to Appendix Q) was used to visualize the procedure together with the two interviewees. This filled in journey map and the interview findings (refer to Appendix R) gave me the following interesting new perspective.

FRIDAY 10 NOVEMBER
10:00-11:00

MUNICIPALITY OF AMSTERDAM
Weesperplein 8, Amsterdam

INTERVIEWEES
Sylvia Blasius
Luka Vogel

Citizens' engagement is currently not feasible

During the interview, it was discovered that the official citizens' engagement process for the area's development has not yet commenced. Instead, only a consultation and participation procedure have been conducted. The municipality of Amsterdam recognizes the importance of involving citizens in the area's development, but they are unable to begin the citizens' engagement process until the land's acquisition, which is anticipated to occur simultaneously with the construction phase in 2026/2027. This engagement process will primarily focus on the final programming the innovation district and participating in ongoing experimentation. Currently, the municipality is drafting plan documents outlining their approach to the citizens' engagement process. Blasius noted that the Bureau Marineterrein Amsterdam's presence, responsible for organizing community activities in neighbouring areas, and the consultation procedure, although not officially required, are already indications of the municipality is putting additional efforts into involve citizens in the Marineterrein area development. Citizens have been adequately informed about the area's development plans, but their engagement in co-creation or idea generation on the urban design plan remains infeasible at present.

"Where is there still room for citizens to engage or co-design?"
Tjebbes
"Co-Design on the framework is not going to happen. That's not the case, because we're not in that position as a municipality. The land belongs to the national government, so we're working on the neighbour's land. There simply is not any space to co-design a framework there."
Blasius

FRUSTRATION OF CITIZENS ON THE CITIZENS ENGAGEMENT

Already during the preliminary orientation discussions that I conducted with the local community before initiating this project (also refer to Appendix D) and during the Graffiti Walls activity (also refer to page 36) I noticed that the local community has a high degree of dissatisfaction with the manner in which the municipality has engaged with and listened to them. In the interview with Van Schriek I conducted a comprehensive inquiry into the W.O.M.'s experience with citizens engagement. The criticism is anything but gentle:

The municipality has been criticized for their utilization of participatory events as a final objective rather than as a means to gather input and enhance their plans. The citizens feel unheard and dissatisfied as the input obtained through various consultation events is not being utilized to make necessary adjustments to the plans. The municipality perceives citizens as people who can only give criticism instead of valuable contributors of ideas. The W.O.M. holds the perception that the municipality is not acting in an honest manner and is purposely misleading them. Lack of transparency in the decision-making process and insufficient information sharing by the municipality leads to confusion and ambiguity among citizens.

The primary cause of the frustration seems to be the lack of clear communication and ambiguity surrounding the terms, Participation, consultation, and citizen engagement. As a result, citizens have formed incorrect expectations regarding their involvement. It is my conclusion that although citizen engagement could effectively increase trust between the municipality and citizens, in the case of the Marineterrein, it has resulted in distrust instead.

So that thing (Editor's note: Nota van Uitgangspunten) is filled with those kinds of deceptions."
Van Schriek
"Are you really calling them deceptions?"
Tjebbes
"Yes, I think they are deceptions."
Van Schriek

"We are not a club that is only against plans. No. We're not just like: against! No. We would like to think along. We want to be taken seriously."
Van Schriek

"The urban planner who designed this, Veronika, was always focused on this strip development and would say "this is it" and that was it! I would ask her every time, "explain it to us! Explain why it should be this way. What's the argument?" ... They tried different layouts, but this was what they came up with. Then I said, "show us what you've tried and tell us the reasons why it ended up like this?" So far, we have not seen it."
Van Schriek

THE MUNICIPALITY'S COUNTERARGUMENT TO THE CRITICISM

During my attendance at an informal gathering between W.O.M. and the Municipality (also refer to page 68), it became clear to me how the municipality responds to citizens' criticisms on their involvement in the area development. The municipal authorities acknowledge that the participatory process has not gone smoothly and has resulted in a loss of trust among citizens. The municipality stated that they place great emphasis on improving their relationship with citizens and moving forward in a positive direction. However, despite this, the decision remains unchanged that citizens can only participate after the municipality has officially purchased the territory, which is not expected to happen before 2026/27. The following three arguments were mentioned by the municipality to support this decision:

No ownership

As already mentioned by Blasius, is not possible to initiate a participation procedure if the area is not owned. In my opinion, this argument is questionable. Although the area is not owned by the

municipality, they have signed an official collaboration agreement with the National Real Estate Agency (Rijksvastgoedbedrijf) giving them some level of authority over the area. Furthermore, both the municipality and the ultimately fall under the national government.

Political constrains
The project team is significantly limited by the political decision made in 2013, as outlined in the Strategy Note, which dictates that the Marineterrein is to be developed into an innovation district. The designation of an innovation district imposes strict definitions and characteristics (also refer to Chapter 2.4) and limits the potential for functional or programming changes

Delayed project
In 2018, the Ministry of Defence made a surprising decision to partially remain at the Marine site. This has caused a significant amount of puzzle work for urban planning and has resulted in notable delays. As a result, implementing further significant changes would require additional time and money, which is not desirable.

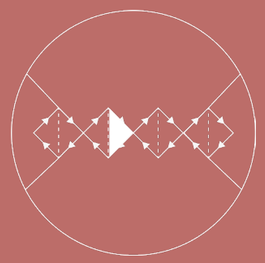
Blasius and Vogel filling in the journey map template

CONCLUSION CITIZENS ENGAGEMENT PROCEDURE AT THE MARINETERREIN

Necessity for reframing
Although I have some doubts about certain arguments of the Municipality of Amsterdam, it would not be wise to continue designing for citizen engagement in area development plans. Due to the exceptional structures of ownership and responsibility at the Marineterrein, it is not a straightforward area development. The constraints imposed by the municipality make it highly unlikely that my design would have any impact. However, by approaching the problem from a new perspective, I have discovered an interesting reframing of the research question, which is detailed in the following section. While remaining within the realm of citizen engagement, the insights gained from this chapter remain relevant.

SECTION 5. SECOND REFRAMING

In this section, I will delve into the second phase of reframing, which is based on my research on the “citizens engagement” procedure for the Marineterrein’s area development plans. Through this phase, I gained a deeper understanding of citizens engagement and formulated a framework for effective engagement, which was implemented in my final design. However, as I continued to study citizens engagement at the Marineterrein, I encountered a new perspective on the challenge at hand. In this section, I will provide a brief summary of the problem statement that arose and how, through reframing, I was able to identify a new design direction.



5.1 SECOND REFRAMING

REFRAMING OF RESEARCH QUESTION

Citizen engagement in the area development plans of the Marineterrein is not something that the municipality is willing to consider. As a result, ensuring the value of inclusiveness through this way becomes a challenging task, and I must let go of this design direction.

By looking at the challenge from a different perspective, I have found a new design direction. In the last couple of year a large community of businesses has emerged on the Marineterrein, better known as the Marineterrein Community. From start ups to research institutions, there are all kinds of innovative companies active on the Marineterrein. A distinguishing characteristic of Innovation Districts is that there is plenty of room for semi-public spaces where experimentation, cross-pollination, and co-creation are facilitated. By involving citizens in this experimentation and development of new innovations, it may be possible to create a sense of involvement and ownership. By giving people the feeling that they can be part of the innovative character of the Marineterrein, innovation does not deter, but can promote inclusivity.

In addition, innovation is only meaningful if it aligns with the wishes of society. The more inclusive this input from society, the greater the chance of new out-of-the-box ideas and the success of innovation. This creates a win-win situation. By involving citizens in the experimentation and development of new innovations, they can continue to feel a part of the Marineterrein Community, while companies gain valuable insights into societal trends and needs. This open approach to innovation development has become increasingly popular in recent years and is better known as open innovation. An additional advantage is that by focusing on the relationship between citizens and companies, my design has a more direct relevance to the AMS Institute, as they are themselves part of the Marineterrein Community.

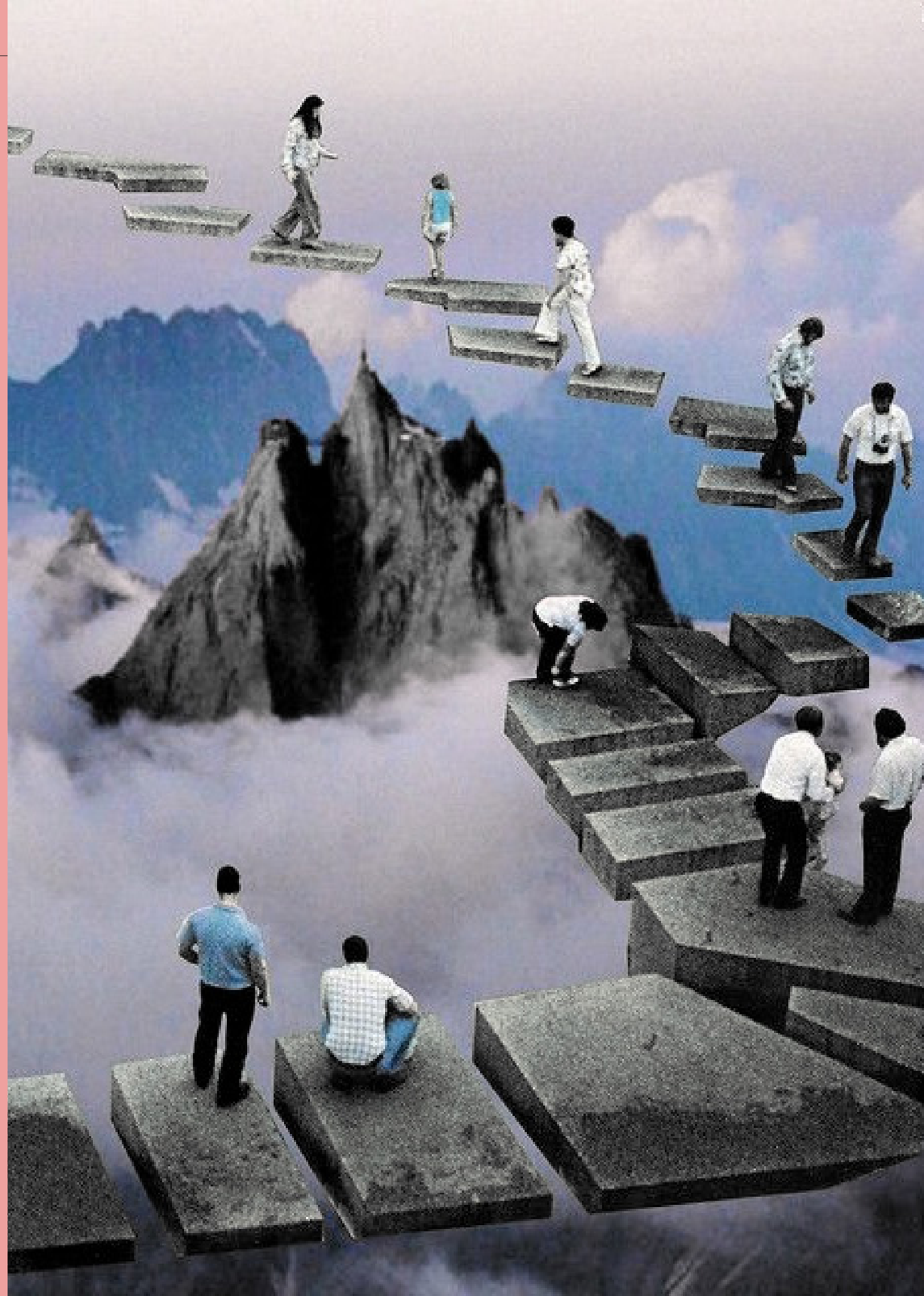
This new perspective leads to the following reframing of the research question.

HOW TO ENHANCE THE CITIZENS ENGAGEMENT IN THE AREA DEVELOPMENT OF THE MARINETERREIN

↓

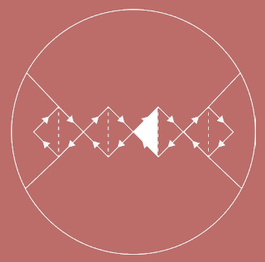
HOW TO ENHANCE THE CITIZENS ENGAGEMENT IN OPEN INNOVATION AT THE MARINETERREIN?

To approach this design direction successfully, I have once again conducted new research. I have looked into what open innovation entails and what strategies it uses to let citizens engage. I have also analysed the current state of the relationship between citizens and the Marineterrein Community, and where opportunities lie for joint experimentation and cross-pollination. This can be read in the next section.



SECTION 6. EXPLORING CITIZEN ENGAGEMENT IN OPEN INNOVATION

By another reframing of the project, I have identified a more realistic challenge to tackle. However, this has also brought me back to a stage where I need to gather more information in order to create a design that is well-informed. In this section, I will discuss the third, and last, exploration phase, where I delved deeper into citizen engagement on open innovation. The objective of this phase is to comprehend what open innovation is and how citizens are effectively take part in the development of new innovative solutions. Additionally, the goal is to explore what is desirable and feasible in the context of the Marineterrein. Ultimately, all the knowledge gained during this exploration phase led to the creation of my design brief.



6.1 EXPLORE APPROACH

Deriving from my reframed research question

HOW TO ENHANCE THE CITIZENS ENGAGEMENT IN OPEN INNOVATION AT THE MARINETERREIN

I derived the following two sub questions to be researched:

1. What is open innovation and how are citizens engaged in it?
What is the definition of open innovation and what is the idea behind it? Which different approaches are employed for open innovation? How do these approaches relate to citizens engagement in governmental decision making process? How is open innovation beneficial for innovation districts?

2. What is the status of citizens engagement in open innovation at the Marineterrein?
To what extent are citizens contributing to the innovative character of the Marineterrein? Through which facilities are they currently doing this, if at all? Are these facilities effective and adequate, or is there a potential design opportunity to improve citizen involvement?

Taking into consideration the two sub research questions that need to be answered, various research methods where appropriate to use. The following two research strategies were applied to obtain the knowledge

1. Explore
To address the first sub-research question, I conducted extensive research on open innovation and connected the findings to my earlier research on citizen engagement. The objective was to gain a deeper understanding of open innovation, its various forms, and how citizens engage with it. While I had already developed a framework for effective citizen engagement in area development projects, I needed to determine whether it was applicable to open innovation. Additionally, I sought to explore the relationship between open innovation and innovation districts. The research methods used included exploratory desk research and re-analysis of previous expert interviews. Chapter 6.2 provides the main findings of this research strategy.

2. Investigate
This research strategy was used to answer the second sub research question. After examining broader theoretical knowledge through a zooming-out approach, it was necessary to zoom in on the specific context of the Marineterrein. In order to critically analyse the extent of citizen engagement in open innovation at the Marineterrein, I re-analysed previously collected data. Besides I conducted additional field research. Chapter 6.2 provides the main findings of this research strategy.

This final exploration phase led to the identification of the design opportunity for this design project.

6.2 UNDERSTANDING CITIZEN ENGAGEMENT IN OPEN INNOVATION

In this chapter, I delve into the literature on open innovation and its practical applications. I begin by explaining the concept of open innovation and then proceed to analyse the degree to which citizen engagement in open innovation compares to that of governmental decision-making processes, such as area development projects. To further develop my understanding of effective citizen engagement, I examine literature on the Urban Living Lab approach, which serves as a basis for verifying my own framework for effective citizens engagement. Lastly, I explore the use of open innovation in innovation districts and its potential benefits. This research is crucial in making a persuasive argument for the need to focus on this specific topic in my final design.

DEFINITION OF OPEN INNOVATION

Henry Chesbrough first introduced the concept of Open Innovation in 2003. It is a paradigm for innovation management that prioritizes collaboration and the sharing of ideas and resources among internal and external stakeholders and organizations. This approach recognizes that all stakeholders, including citizens, can contribute valuable knowledge, skills, and resources to co-create solutions for complex societal challenges. By embracing open innovation, organizations can tap into a wider range of resources, expertise, and knowledge, which can increase the speed, efficiency, and quality of the innovation process (Chesbrough, 2003).

In addition to the business benefits, open innovation also creates products and services that better align with public needs and interests, can lead to a more equitable distribution of benefits from innovation, and stimulates the creation of new knowledge networks and partnerships (Huizingh, 2011). While innovation is often associated with high-tech industries, the open innovation paradigm is not limited to this industry and is increasingly adopted in other sectors, such as healthcare, energy, design, and education (Chesbrough & Crowther, 2006).

OPEN INNOVATION APPROACHES AND THE RESEMBLANCE WITH ARNSTEIN'S LADDER OF CITIZENS ENGAGEMENT

Open innovation is a paradigm that has become increasingly popular in various concrete innovation approaches, such as the Urban Living Lab approach used by AMS. These approaches emphasize collaboration and inclusiveness by involving citizens in the innovation process. Examples of these approaches include crowdsourcing, living labs, open-source innovation, hackathons, co-creation, and citizen science.

Interestingly, these various open innovation approaches can be compared to the different levels of citizen engagement proposed in Arnstein's ladder. For instance, crowdsourcing may be more comparable to consultation, where citizens are asked for their opinions and ideas but do not have a significant role in decision-making. On the other hand, citizen science relies more on delegated power, where citizens actively participate in a specific part of the scientific process by collecting and analysing data.

During the ideation phase, I used this insight to make a decision on the direction of my final design. By considering the different levels of citizen engagement and the various open innovation approaches available, I was able to choose an approach that would best align with my goals and objectives.

ARNSTEIN'S LADDER	OPEN INNOVATION APPROACHES
Citizens control	Hackathons, open source innovation
Delegated power	Citizens science
Partnership	Co-creation, living labs
Placation	
Consultation	Crowdsourcing
Informing	

ANALYSING THE FRAMEWORK FOR EFFECTIVE CITIZEN ENGAGEMENT IN THE CONTEXT OF CITIZEN ENGAGEMENT IN OPEN INNOVATION

In my research on citizen engagement in area development, I developed a framework for effective citizen engagement. However, I realized that there are differences between engaging citizens in area development projects and open innovation. To test whether my framework could be applied in the context of open innovation, I explored the methods used to engage citizens in this field. With the vast variety of approaches available, as present in the previous paragraph, I focused my investigation on the Urban Living Lab Approach, as AMS Institute provided excellent resources on this method.

The Living Lab Approach emphasizes collaboration between academics, public and private actors, and end-users (citizens) to develop innovation. The method involves eight steps, each with its own set of conditions and actions to involve all parties in the innovation process. The conditions and actions of the first three steps show significant similarities to the framework I developed for effective citizen engagement. For example, the initiation step requires good communication to establish contact, persuasion of partners to participate, and an open mind. This mirrors the conditions for the invite step in my framework (Steen & van Bueren, 2017). On the right side you also see how the Inform, Incite & Inspire step relate back to the Urban Living Lab Approach method.

Based on this, I can conclude that my framework is also useful for involving citizens in the initial stages of open innovation, and I maintain it as blueprint for my design. However, due to time constraints, I focused my final design only on the first critical steps of engaging citizens in open innovation, rather than implementation, evaluation, and refinement. To ensure that my final design addresses all stages of engaging citizens in open innovation effectively, additional design research is necessary to further refine or extend it (also refer to chapter 10.4).

8 STEPS OF URBAN LIVING LAB APPROACH	FRAMEWORK FOR EFFECTIVE CITIZENS ENGAGEMENT
1. Initiation (get in touch, persuade, be open)	Invite
2. Plan development (Jointly define goals and ambitions, embed all stakeholders interest, motivate & inspired participants	Inform, Incite & Inspire
3. Co-creative design (Keep momentum, continuous development of intrinsic motivation)	Incite & Inspire
4. Implementation	out of scope
5. Evaluation	out of scope
6. Refinement	out of scope
7. Dissemination	out of scope
8. Replication	out of scope

OPEN INNOVATION IN THE CONTEXT OF INNOVATION DISTRICTS

According to the official definition provided by the municipality of Amsterdam (2022), Innovation districts directly incorporate the concept of open innovation (also refer to page 49) For three reasons open innovation strongly utilize the concept of open innovation.

The central idea behind Innovation districts is to create an innovative ecosystem by mixing working, living, and education, bringing together stakeholders with different perspectives. There is no single dominant paradigm leading the innovation, but rather a diversity of worldviews and ideas. The Cynefin framework by Snowden & Boone (2007) suggests that for tackling complex problems, diversity should be encouraged when making decisions based on the context of the problem. As our society is facing increasingly complex problems (Pendleton-Jullian & Brown, 2018), Innovation districts have gained popularity over campuses (Katz & Wagner, 2014) due to the encouragement of diversity and collaboration.

One local resident put it quite directly, saying: "The CID is for hipsters and types who drink expensive lattes and work on incomprehensible innovations on laptops. They often do this as a start up or scale-up in old industrial buildings that they call accelerators, and a lot of subsidies are put into these buildings, but they are impenetrable for local residents." "
Sandra Winkels

From the citizens' perspective, open innovation is also important. During the initial exploration phase, I interviewed experts on innovation districts and urban living labs, including Winkels and van der Putten. They especially emphasized the importance of citizen engagement in the experimentation that takes place in innovation districts (also refer to chapter 2.3 & 2.4). They stated that citizens who actively participate and contribute gain a deeper understanding of the experimentation and become more interested in innovation. The shift from a manufacturing economy to a knowledge economy has made many innovations less visible, creating a sense of mystery for the general public. When citizens interact with innovators, they may find that the differences between them are less pronounced than they initially anticipated.

In today's society, technological innovation has become an essential component of nearly every aspect of life, and it is crucial for citizens to have a better grasp of it. Not all technological advancements contribute to improving society, and ethical concerns can arise. As a result, it is necessary to have checks and balances, preferably at the beginning of the innovation process, and to participate in ethical discussions to ensure that technological advancements align with public values and interests (van den hoven, 2014). To engage in meaningful conversations and raise important questions, citizens must have a fundamental understanding of the innovation.

Facilities in innovation districts play a crucial role in creating a interface for accessible interaction between different stakeholders and promoting open innovation (gemeente Amsterdam, 2022; Katz & Wagner, 2014).

To achieve success in innovation districts, it is essential to involve citizens in the innovation process.

6.3 CURRENT STATUS OF OPEN INNOVATION AT THE MARINETERREIN

Drawing upon my knowledge gained from studying literature on citizen engagement in open innovation, I have investigated what the status was of citizen engagement in open innovation at the Marineterrein. By gaining an understanding of the current status and identifying areas of success and improvement, it was possible to pinpoint design opportunities. Fortunately, extensive additional research was not required. Based on the data collected during the initial exploration phase, which focused on examining the transition of the Marineterrein, a clear picture of the current status was established. To verify this information, I conducted field research by walking through the Marineterrein. In the following chapter, I will elaborate on this process.

NO INTERACTION BETWEEN CITIZENS AND INNOVATORS

From my initial exploration of the transition occurring at the Marineterrein, I looked into how citizens are using the area and what experts think of the innovation district. Based on the knowledge I gained, it can be concluded that there is hardly any interaction between citizens and innovators, and there is very limited open innovation happening.

"I do not find it to be a very nice place because all I see are people working behind their desk. I know that there are all sorts of start ups here and I'm always curious about what they're up to. But the way they work now, they could just as well be accountants or bankers. They should show more of what they're doing."
Visitor, +/- 70 y.o.

Citizens do not see the Marineterrein as an place for open innovation and have no idea what is going on

Firstly, from the input received through the graffiti wall activity (also refer to page 38), two interesting things stand out. A long list of activities was mentioned by visitors, but none of these activities had anything to do with innovation. This is in line with the finding of the interview with van der Putten (also refer to page 35) Looking at areas where people feel comfortable, one post-it note stands out in particular. An elderly couple marked the Poortgebouw area, a picturesque location showcasing the architectural heritage of the space, as a place they do not appreciate. They expressed disappointment in the lack of visibility into the activities of the start ups and innovation within the Poortgebouw. They expressed their appreciation for start ups and a desire for more opportunities to observe their work.

Urban Living Lab experiments use citizens as passive data objects

After analysing the experiments conducted in the context of the Marineterrein Amsterdam Living Lab (also referred to Appendix H), I came to the conclusion that there are very few experiments where visitors can actively participate (2 of the 15). Most experiments are geared towards testing the scalability of technology in a real-life environment, and if visitor data is collected, it is done passively, with visitors being solely monitored for data purposes.

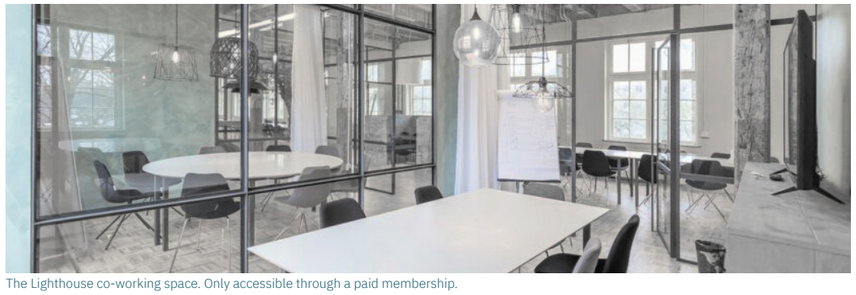
Innovators remain isolated in their bubble

Furthermore, the metaphor workshop with the R&V team also highlighted that the AMS staff have little involvement with the citizens who visit the Marineterrein (also refer to page 53).

Nameplates of companies


Outdated information board

Worn-down information board


The Lighthouse co-working space. Only accessible through a paid membership.

POOR STATUS OF FACILITIES TO STIMULATE NETWORK INTERACTION

I conducted field research to determine the status of public facilities that can initiate network interaction. The following four findings provide a good picture of their poor condition.

Map and welcome sign

Unclear and discouraging invitation into the innovation district

When entering the Marineterrein, there is a large map, including a sign indicating that you are entering the Urban Living Lab. However, the wording on this sign is very abstract, and as a visitor, it is not clear what to expect. The map does not provide a clear overview of the experiments and innovations taking place. This does not encourage participation in open innovation and is more likely to discourage visitors.

Closed facades & little information on companies

As a visitor, it is difficult to discern the nature of innovative companies operating on the Marineterrein. The innovation largely occurs behind closed doors, with brick facades that conceal the activities taking place within the buildings. While companies may have nameplates outside their offices, the specific work they are engaged in remains a mystery.


Facades of buildings

Outdated information boards that does not allow further engagement

Some areas feature analogue information boards regarding ongoing outdoor experiments. Regrettably, numerous of these boards are obsolete, and the experiments have already ceased. A few of these signs appear worn down, resulting in an unprofessional look. Moreover, it is a one-way communication process, and the signs do not encourage citizens to further engage. Visitors acquire information, but they cannot respond with their opinions or ideas. The information boards are only in Dutch.

No official network facilities

Although there are a few co-working spaces, they are all run by private companies and are not easily accessible to visitors. Moreover, there are no public facilities, indoors or outdoors, that provide opportunities for networking. The absence of public facilities for networking was a common concern expressed during the graffiti wall activity (also refer to page 38-39).

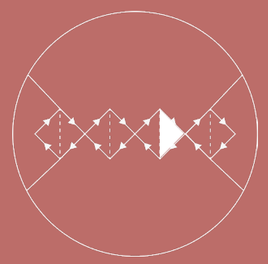
CONCLUSION EXPLORING CITIZEN ENGAGEMENT IN OPEN INNOVATION

An interesting design opportunity

Open innovation is becoming an increasingly popular paradigm for involving citizens in innovation processes. It is a crucial element for creating innovative communities and can enhance the relationship between citizens and researchers. The framework for effective citizen engagement in area development projects can also be applied to open innovation since both require citizen involvement. However, there is a key difference when it comes to the Marineterrein. While citizen engagement in area development is not feasible, citizen engagement in open innovation is highly encouraged. This presents an opportunity to improve citizen involvement in the innovative character of the Marineterrein. Currently, many citizens are unaware of the innovative character of the Marineterrein, and the interface between citizens and innovators is currently in a poor state. In the next section, we will explore this design opportunity in more detail.

SECTION 7. DESIGN BRIEF

In this section, the foundation for the ideation and implementation phases of this project will be presented through the design brief. The design brief is based on my research on citizen engagement in open innovation at the Marineterrein, which provided valuable insights into feasible and relevant design directions. The section provides a brief summary of the problem statement that led to the establishment of a particular design goal. Furthermore, I will introduce the four design functions that I have selected to guarantee that my final design achieves the desired outcome.



7.1 DESIGN BRIEF

PROBLEM STATEMENT

My initial approach to the design project was to develop a shared future vision for the Marineterrein. However, after examining the complexity of the system, I realized that this approach would not lead to a meaningful design outcome. Through two reframings, I identified a problem frame that was worth designing for. Further exploration of this problem frame revealed a very specific solution space - enhancing the facilities at the Marineterrein to support open innovation. The current lack of an interface for citizens and innovators to connect and exchange ideas and perspectives on innovation development results in a weak connection between the two stakeholder groups. Given that the AMS Institute's mission is to "connect science with societal problems and collaboratively solve them," the lack of connection on their own home-ground is cause for concern.
In summary:

CITIZEN ENGAGEMENT IN OPEN INNOVATION IS ESSENTIAL FOR FOSTERING INNOVATION AND BUILDING CONNECTIONS BETWEEN INNOVATION DISTRICTS AND SOCIETY. HOWEVER, AT THE MARINETERREIN, CITIZENS HAVE A LIMITED UNDERSTANDING OF ITS INNOVATIVE CHARACTER, AND THERE IS A LACK OF FACILITIES FOR ENGAGEMENT.

DESIGN GOAL

Based on the problem statement, a logical design goal can be derived. As a designer, I possess the necessary skills to develop concrete products or services that have the potential to address the issue. The precise design goal that I am pursuing during the ideation phase is:

DESIGN AN INTERFACE THAT DEMYSTIFIES THE INNOVATIVE CHARACTER OF THE DISTRICT AND STIMULATE CITIZENS TO ENGAGE IN OPEN INNOVATION

DESIGN FUNCTIONS

In order to attain this design goal, the design needs to meet certain functions. These functions are condensed within the Framework for Effective Citizen Engagement.

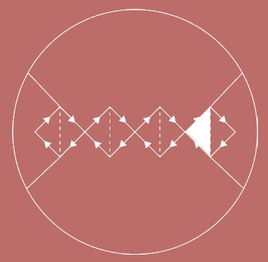
INVITE **INFORM** **INCITE** **INSPIRE**

This framework should be seen as a starting point. The key to achieving my design goal is by integrating precise design principles into this framework. Some of these principles were identified during the transdisciplinary co-create session (also refer to page 72-73), but I believe that discovering more principles will enable me to strengthen the underlying rationale of my design.

SECTION 8. FROM DESIGN BRIEF TO DESIGN CONCEPT

In this section the create phase is discussed, this a crucial stage that focuses on generating ideas and solutions for the identified problems. The co-evolution of the problem and the solution from the reframing phases informs the ideation process, as the correct definition of the problem sets the direction for the solution (Dorst & Cross, 2001). The aim of this phase is to make the design goal more tangible and actionable. Besides this section examines the search for additional design principles to include in the final design.

Systemic design theory argues that solutions can range from multiple actions, interventions, or practical steps towards the larger goal (Design Council, 2021). Some interventions may involve small practical steps, while others may be bold and provocative, pushing the boundaries of current thinking and challenging the status quo. Given the scope of this project it is not be feasible to execute all of the ideas. Therefore, it is essential to prioritize and determine which intervention are most valuable in shifting towards the desired system change I am trying to achieve. The selected idea can then be further developed and refined during the catalyse phase.



8.1 CREATE APPROACH

Deriving from my design goal

DESIGN AN INTERFACE THAT DEMYSTIFIES THE INNOVATIVE CHARACTER OF THE DISTRICT AND STIMULATE CITIZENS TO ENGAGE IN OPEN INNOVATION

I derived the following two three questions for further ideation :

1. On what level of citizens engagement does the interface have to focus?
What level of involvement is expected of visitors in open innovation at the Marineterrein? Would simply informing visitors about ongoing innovation efforts be sufficient, or should they actively collaborate with innovators? Should visitors have decision-making power in the development of innovation?

2. What form should the interface have?
What form should an interface for citizens and innovators to engage in open innovation take? Should it be an object, service, event, or ritual? Should it be physical or digital? Should it consist of a single intervention or a combination of interventions?

3. What design principles could be implemented so that the interface is “informing”?
There are already design principles for the design functions “invite”, “incite” and “inspire”, but what design principle can be utilized to inform people on the innovation that is going on at the Marineterrein?

Taking into consideration the three sub research questions that need to be answered, various evaluation and ideation methods where appropriate to use. The following five strategies were applied to obtain the knowledge

1. Determine
To address the first sub-research question, I assessed which level of citizen engagement, according to Arnstein’s ladder, would be the most effective to concentrate on within the Marineterrein context. This was a well-informed decision derived from all the insights acquired during the three exploratory phases. The findings of this evaluation strategy is presented in chapter 8.2

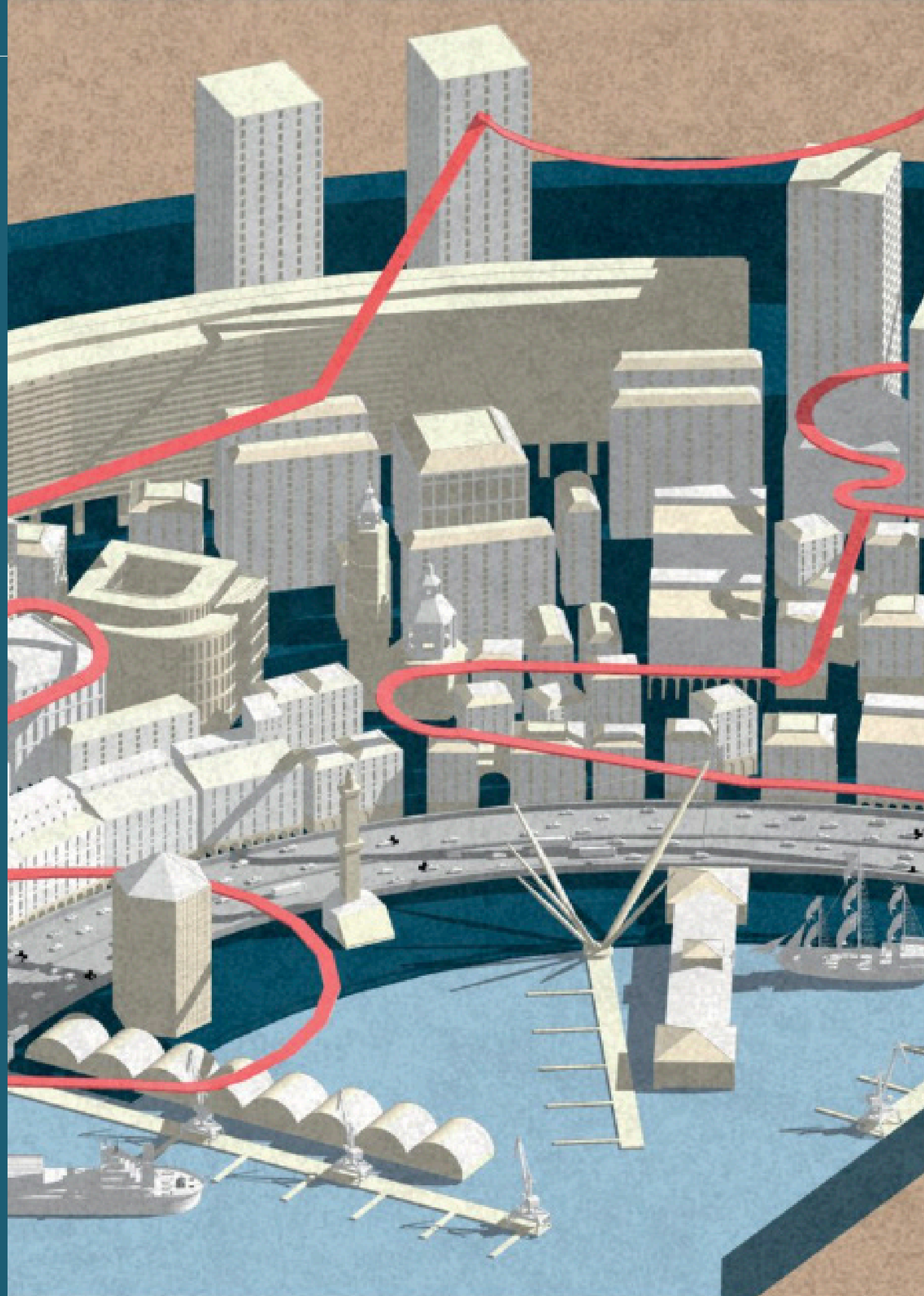
2. Visualize
To address the second sub-research question, I utilized a ideation method based on visual priming. This involved gathering existing images of interface that stimulate citizen engagement and derive inspiration from these images for my own design. Ultimately, these images were organized into three distinct design directions. In chapter 8.2 I further discuss this ideation strategy

2. Collaborate
In addition to utilizing the visual priming ideation method, I also employed a collective ideation approach to address the second sub-research question. This method had already been implemented during the transdisciplinary co-creation session. The ideas generated were further analysed to determine design directions for my own project. In chapter 8.2 I further discuss this ideation strategy

4. Prioritize
To address the second sub-research question, I eventually had to make a decision on which design direction to choose for my final project. This decision was made by weighing various arguments against each other to arrive at a final design direction for this project. This evaluation strategy is discussed in further detail in chapter 8.2

5. Abstract
To address the third sub-research question, I utilized a metaphor ideation method. This involved examining the Marineterrein from a different lens, enabling me to identify a design principle that could effectively inform visitors about the ongoing innovation and encourage their engagement with it. The ideation strategy is elaborated upon in chapter 8.3.

Eventually this create phase laid the basis for my final design, which is presented in the following section.



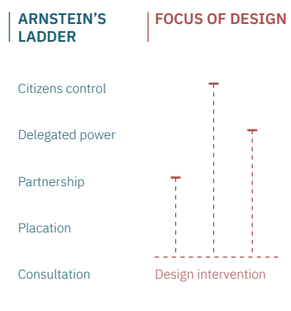
8.2 IDEATION ON DESIGN EMBODIMENT

The design goal is to develop an interface that supports innovators and the interface at Marineterrein in collaborative open innovation and demystifies the innovative character. The interface can take on various forms, such as a product, service, space, event, activity, and can involve a single intervention or a combination of interventions. Furthermore, the interface can cater to different levels of engagement. The process of ideation has led to the embodiment of this design goal into more tangible and specific idea directions.

This chapter examines the decision-making process regarding the level of engagement to prioritize in the design, and describes the two design ideation methods employed to explore various idea directions of the interface. Subsequently, one idea direction was selected and developed into the final design. I will conclude this chapter with a argumentation for this particular direction.

LEVEL OF ENGAGEMENT TO FOCUS THE IDEATION ON.

To achieve a more focused create phase, I made a decision on which level of citizen engagement should I prioritize in my design. To help guide my decision-making process, I have turned to Arnstein's ladder. Through my research, I have concluded that Arnstein's ladder is also applicable to citizen engagement in open innovation, which therefore turned out to be a useful tool (also refer to page 66). I made the decision focus mainly on the stage of Inform & Consultation for two reasons.
Firstly, While inform and consultation may be considered the most basic forms of citizen engagement, they are also fundamental building blocks (Arnstein, 1969). At the current Marineterrein context, there is a absence of any citizen involvement in open innovation. As such, it is essential to prioritize establishing a foundation before delving into more advanced forms of citizen engagement (collaboration, citizens control etc.).
Secondly, I believe that for most companies at Marineterrein, at least in the short term, citizen engagement in the form of informing and consultation can provide the most added value. Informing and consultation are much easier to implement in the business operations than direct collaboration or joint decision-making. After all, which company would not want to source the ideas and insights from end-users?
By making this choice, I do not want to exclude higher forms of citizen engagement. The exchange of ideas and perspectives can be a starting point for possibly emerging further collaboration or synergies.



DESIGN DIRECTIONS THAT EMERGED FROM TWO IDEATION METHODS.

To explore various concrete directions for an interface, two distinct ideation methods were employed: Image Boards (Hughes, 2008) and Collective Brainstorming (van Boeijen et al., 2013). These methods are founded on established design principles derived from design research and were integrated into my final design, emphasizing visual priming and collective ideation. This further affirmed the efficacy of these design principles in evoking inspiration. I will briefly outline the ideation methods and the resulting design directions. Appendices S and T contain the raw materials.

Image boards

I searched online for images that would inspire me for the interface. I created an image board to organize my findings. Eventually, I divided the images into three design directions: shared facilities (such as co-creation spaces, kiosks, information routes, etc.), shared activities (such as information markets, open days, games), and shared communication (such as marketing campaigns, local currency, informative applications).

Collective brainstorming

In the transdisciplinary co-creation session (also refer to chapter 4.4), I collaborated with different stakeholders to collect ideas. We conducted three brainstorming activities, which led to the creation of inclusive and innovative tools for citizen engagement. Although the focus was on the development of the Marineterrein area, these ideas have demonstrated their value. In the end, we generated 28 individual ideas, which can be clustered in the following design directions: Speculative design, smart sensing tools, communal meeting facilities, routes, network building activities, discussion platforms, representative democracy instruments


Collective brainstorm activity

MOST PROMISING IDEA DIRECTION: INFORMATIVE KNOWLEDGE ROUTES

After reviewing the various idea directions that emerged from the two ideation methods, I concluded that the following idea direction would be further elaborated upon in my final design: **information knowledge routes** . This decision was based on a careful evaluation of the available options. Firstly, I prioritized a shared facility (as opposed to shared activity or shared communication) because of its continuous availability. Knowledge routes can be accessed at any time, making them more accessible and low-threshold than time-limited activities. The ultimate objective of my interface is to ensure that people remain engaged with the Marineterrein and that the area retains its value of inclusiveness. Therefore, I prefer an accessible and low-threshold interface that caters to a broad range of target audiences, prioritizing quantity of users over quality of users. Secondly, I preferred a physical interface over a digital one, considering that digital tools can also exclude various target groups. Thirdly, this design direction was popular among all stakeholder groups during the collective brainstorming activity (also refer to page 73). Apart from being frequently mentioned as an idea, an image of information knowledge routes also received the most positive markings during the museum workshop.

Before creating the final design, I also created an additional moodboard further visualize its concrete embodiment of the informative knowledge routes . This moodboard can be found in Appendix U.

8.3 IDEATION ON ADDITIONAL DESIGN PRINCIPLE

The final design will takes the form of informative knowledge routes , with a framework for effective citizen engagement (invite, inform, incite, inspire) guiding the interaction between the user and the routes. Concrete design principles are established within this framework, and will embedded in various elements of the informative knowledge routes . By integrating these design principles into the physical design, I can enable the design goal and create a comprehensive design rationale (Dorst, 2011). However, I have not identified any design principles to accomplish the “inform” function. To address this, I used a metaphor ideation (Hey, Linsey, Agogino & Wood, 2008) to derive a design principle that I could be incorporate into the informative knowledge routes . In this chapter presents the metaphor and the resulting design principle.

METAPHOR IDEATION; THE MARINETERREIN AS OPEN-AIR MUSEUM

The design principle for the “inform” function in my framework was inspired by the metaphor of a museum. I believe that if the knowledge routes at the Marineterrein can offer a similar interactive experience to that of a museum, it could have a meaningful impact. My vision for Marineterrein is to transform into a open air museum of innovation, where residents of Amsterdam can convene to learn, explore, and engage in discussions on future solutions.

I found this metaphor by analysing my framework for effective citizen engagement. I noticed that the design functions described in this framework align closely with the product qualities of museums (van Dijk & Hekkert, 2011). A well-designed museum is also an inviting place, informs visitors about the exhibited objects, keeps people excited to discover more rooms, and have an inspiring effect. Many museums today also incorporate interactive elements that encourage visitors to share their perspectives and ideas, making them dynamic spaces for social discourse. By adopting the principles of a well-designed museum, my knowledge routes can become an engaging and informative for all.

STORYTELLING AS EXTRA DESIGN PRINCIPLES

Upon examining how museums convey information to their visitors, it became evident that storytelling is a prevalent design principle employed by many institutions. This is observable in various techniques, such as audio tours, guided tours, museum apps, and thematic routes, that rely on narratives to provide visitors with information about the exhibits. Storytelling is an influential method of conveying complex and challenging subjects to diverse audiences. Stories to tap into the personal experiences of listeners and evoke emotions. This creates a stronger connection between the discussed topic and the audience. Therefore, the information presented through stories is more relatable and accessible than straightforward factual information. Additionally, the presence of a clear plot in stories enhances comprehension and engagement. Due to this capacity I believe storytelling is an effective design principle to incorporate into the informative knowledge routes to inform people about the complex topics of innovation.

A podcast tour about the history of the Marineterrein

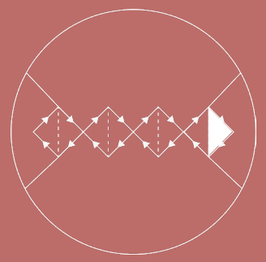
CONCLUSION CREATE PHASE

Through the use of two ideation methods, I was able to select a design direction for this project. The interface that enables visitors to explore the innovative character of the Marineterrein and participate in open innovation will be informative knowledge routes. These routes will incorporate various design principles, most of which were filtered from the transdisciplinary co-creation session. During the creation phase, I also discovered an additional design principle through a metaphor to ensure the project meets the “inform” design function: storytelling.

In the next section, I will merge the design direction and principles to present the final design: My.I.D.

SECTION 9. CATALYSING THE FINAL DESIGN

In this section, I will present and discuss my final design concept. The focus is on bringing together all the research and iterations into a usable and comprehensive design. Embodiment and visualization are crucial aspects of design. Approaching systemic design can be fuzzy and overwhelming, and creating tangible things help can make the problem more manageable. Creating a tangible interaction enhances understanding of the impact of a design on the larger system. By concretizing the idea, it becomes easier to see how it fits within the system, and any boundaries or limitations are brought to light. Moreover, a tangible representation provides a concrete narrative of a novel idea, allowing others to comprehend it, potentially change their thinking, and help validate and refine it.



9.1 THE DESIGN PRINCIPLES OF MY.I.D.

Using abductive reasoning, I have developed the design rationale of this project. Firstly, the exploration phase identified the problem that I aim to solve; the value I try to create with my design. In the case of this project, I aim to ensure that despite the transition to an innovation district, the Marineterrein remains a place within Amsterdam where the value of inclusiveness is preserved. For this, it is essential to increase citizen engagement in the innovations taking place on the Marineterrein. Therefore, the relationship between citizens and the Marineterrein Community must be improved to foster open innovation.

To address this challenge, I conducted parallel research on the HOW and WHAT aspects of the Design rational. By combining literature research with a prototyping approach, I identified and tested design functions and underlying design principles. Through these prototyping, I simultaneously discovered new design principles, which ultimately resulted in a set of seven design principles. These principles were the guidelines that helped me make design decisions and prioritize certain design elements over others, resulting in the creation of My.I.D. In the following chapter, I will demonstrate how these design principles are concretely incorporated into the physical elements of My.I.D. through annotated renders.

The illustration below represents the design rationale, which is the outcome of the abductive reasoning process I followed throughout this project.

DESIGN RATIONALE

WHAT
(design embodiment)

MY.I.D.

+

HOW
(design functions)
& (design principles)

INVITE
- SOCIAL PROOF

INFORM
- STORYTELLING

INCITE
- SOCIAL FACILITATION
- PERSONALIZATION
- AESTHETIC APPEAL

INSPIRE
- VISUAL PRIMING
- COLLECTIVE IDEATION

enables

WHY
(value)

ENHANCING THE CITIZENS ENGAGEMENT IN OPEN INNOVATION AT THE MARINETERREIN TO MAINTAIN THE VALUE OF INCLUSIVENESS AT THE MARINETERREIN

9.2 THE CONCEPT OF MY.I.D.

DESCRIPTION OF MY.I.D

My.I.D. is a communication interface that gives visitors the opportunity to watch and listen to innovative stories of the Marineterrein Community and give their own reaction to these stories. Through eleven different informative knowledge routes the visitors will be guided over the Marineterrein. Each knowledge routes highlights a different innovative element of the Marineterrein, ranging from bio-innovation to cultural innovation.

Visitors will encounter various “inspiration points” as they traverse the routes. These points provide an immersive and entertaining experience where visitors can hear stories about the innovative projects and experiments that the Marineterrein Community is working on. At each inspiration point, there are “idea catchers” which allow participants to share their thoughts on the story they’ve just been told. These may include ideas, opinions, wishes, or concerns. Earlier responses from past visitors are also available for viewing to serve as inspiration.

Through the idea catchers, My.I.D. is not only an information provider but also facilitates a two-way communication system that enables crowd-sourcing. Companies can use the crowdsourced data to gain a better understanding of citizens’ thoughts and opinions about the innovation they are working on. It’s possible that visitors may even offer fresh perspectives worth further exploration.

TARGET GROUP OF MY.I.D

Although it goes against the typical practice of designers, I have intentionally refrained from selecting a specific target audience for My.I.D. This decision is driven by my goal to create an Marineterrein that is inclusive to everyone. By approaching innovation as a broad concept and offering 11 different themed routes, I hope that My.I.D. will appeal to the interests of as many Amsterdam residents as possible.

My.I.D. is primarily aimed at citizens, but not exclusive to them. Employees of the Marineterrein Community’s various companies may find it interesting to discover what the other community members are working on. By doing so, My.I.D. has the potential to not only reinforce the connections between citizens and innovators, but also to let new synergies emerge within the Marineterrein Community network.

My.I.D. has also the potential to be used of the Royal Netherlands Navy, particularly in its early years, if the Navy is open to it. This stakeholder is also a hub of interesting innovation, yet the knowledge exchange between citizens and the Navy is also very limited. Given the Navy’s persistent recruitment challenges, My.I.D. could help address this issue by shedding light on the organization’s work. Furthermore, members of the Marineterrein community may find it valuable to gain insight into their neighbour’s activities.

NAMING OF MY.I.D

I chose the name My.I.D. with the following reasoning. The abbreviation I.D. sounds like the word “idea”; through My.I.D. visitors are enabled to contribute their ideas to the open innovation. Furthermore, I.D. is an abbreviation for “Innovation District.” So, by leaving my idea, I become more engaged and committed, and it becomes “My Innovation District.”

SERVICE BLUEPRINT OF MY.I.D

The My.I.D. interface consist of various touch-points. These touch-point embody the various design principles. A complete service blueprint of My.I.D. is demonstrated on in Appendix V. I will further elaborate on each touch-point in the following paragraphs.

TOUCHPOINT 1. WEBSITE

DESIGN FUNCTION
Inform

DESIGN PRINCIPLES
n/a

Bureau Marineterrein's existing website will be expanded with a new section about My.I.D.. This section will provide visitors with information about innovative companies that are part of the walking routes, and will provide an schedule of the guided tours.

TOUCHPOINT 2. EXPLORATION STATION

DESIGN FUNCTION
Invite & Inform

DESIGN PRINCIPLES
Social proof

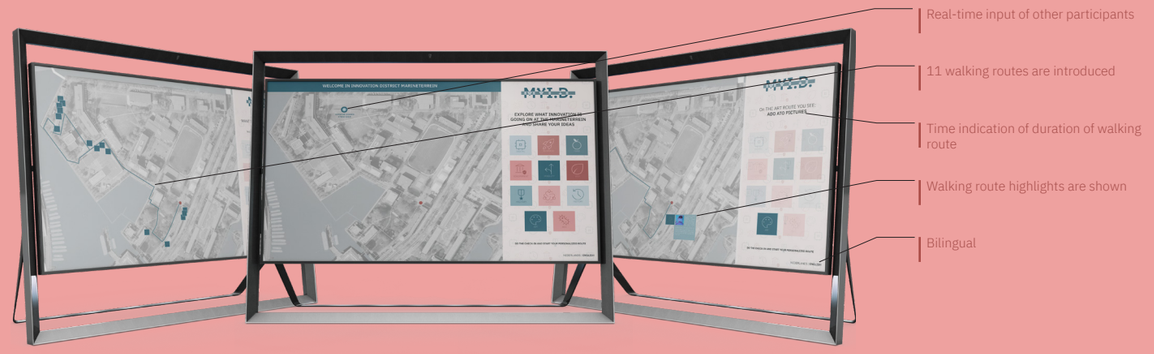
The exploration stations are the central starting point for the walks. You have one large exploration station located at the main entrance of the Marineterrein, and two smaller once are placed at the Poortgebouw Gate and the pedestrian bridge on the north side of the island The exploration stations are large digital display, where people can see which businesses are on the Marineterrein and which different routes they can follow.

To make sure people feel invited to engage in My.I.D. this touchpoint makes use of **social proof** mechanism. The exploration stations are of such a large size and display a map of the Marineterrein, which makes them attract to passersby. Through group formation around the exploration stations, more and more people are attracted. The board also demonstrates the real-time input of other participants. If people see that other people are also actively engaging in My.I.D., they will be encouraged to start a walking route themselves and share their own ideas.

Exploration station at the Poortgebouw

Mock-ups of exploration stations

Exploration station at the main entrance



Mock-ups of exploration stations

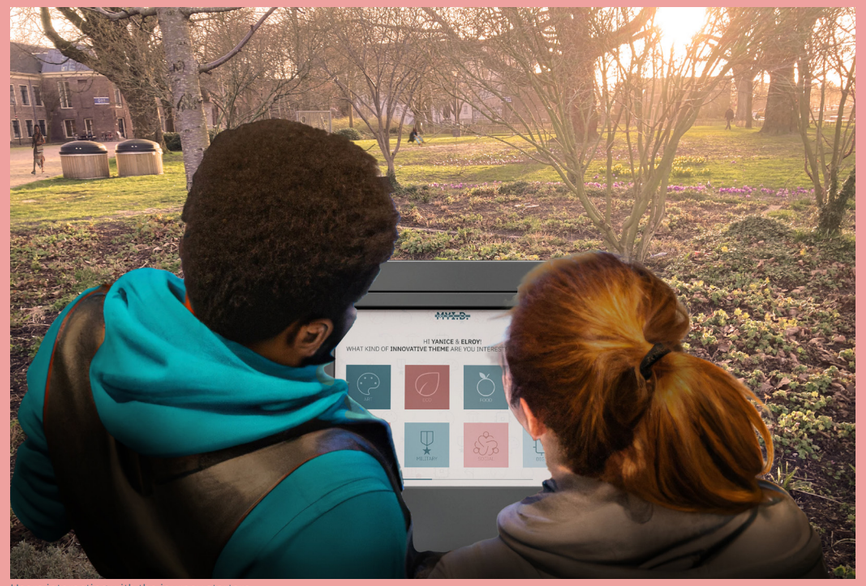
TOUCHPOINT 3. JOURNEY STARTERS

DESIGN FUNCTION
Incite

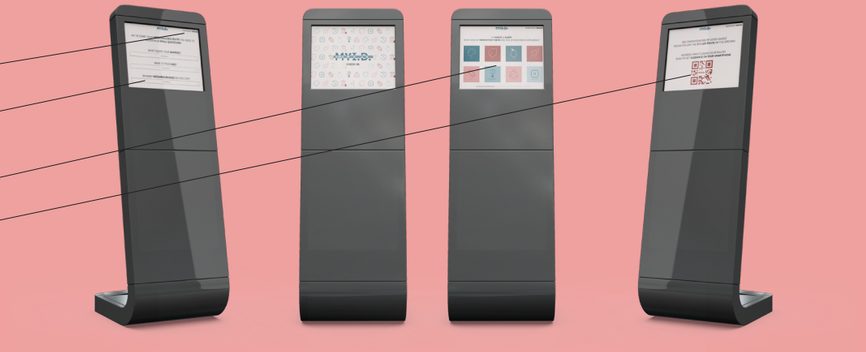
DESIGN PRINCIPLES
Personalization

Next to the exploration stations, there are journey starter. These are interactive booths where people can check-in to start their own personalized walking route. The check-in consists of a few demographic questions and a preference question for which innovation theme best fits the visitor's interests. At the end of the check-in a QR code is shown through which users can get wayfinding guidance on their smartphone.

To make users feel incited to engage in My.I.D. this touchpoint makes use of **personalization** mechanism, by offering the option to match the walking route theme with personal interests.



Users interacting with the journey starters



Mock-ups of journey starters

DESIGN FUNCTION
Incite

DESIGN PRINCIPLES
Aesthetic appeal

TOUCHPOINT 4. LED WAYFINDING

Since the Marineterrein is meant to become Amsterdam's innovative hub, the wayfinding should also look technologically advanced. Visitors will be navigated on their routes through coloured LED markings. Each theme has its own colour and this will be indicated on the journey starter. The LED strips project a few meters in front of the person based on the GPS location of their smartphone. On very bright days, visitors can also use their phones to navigate. The LED routes start from the journey starters

To make sure people feel incited to keep engage in My.I.D. this touchpoint makes use of **aesthetic appeal** mechanism. The LED's give a beautiful appearance in the dusk and night

Users following the LED guidance

TOUCHPOINT 5. APP

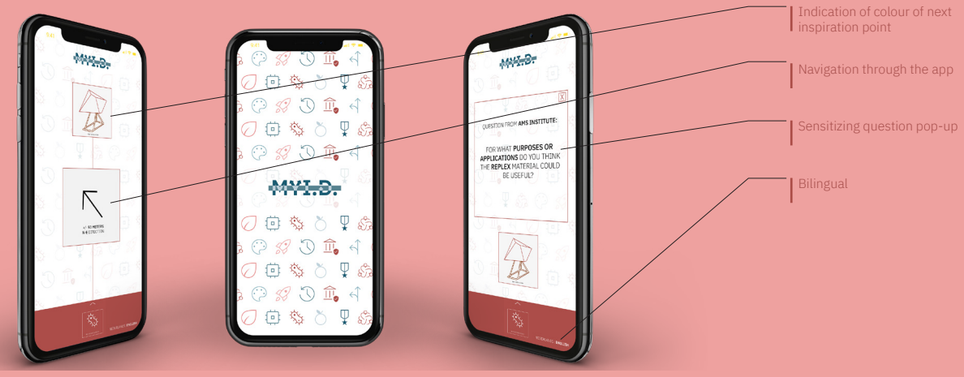
In addition to the LED wayfinding, visitors can also follow their personal route through an app. As soon as visitors approach a new inspiration point, they receive a pop-up with a question in the app. This question is the same one that they will be asked in the story at the following inspiration point. Of course, visitors do not have an answer to the question yet, but the purpose of the question is to sensitize the visitors. This helps in increasing curiosity and they will listen more carefully to the stories since they know what input is expected from them.

The app also has a function for after the entire My.I.D. experience. Users can review their walked route, including the stories and businesses they have seen. They can share the route on social media. Via the app, participants can also be kept informed when the walking routes are updated with new content and when special guided tours are organized.

To make users feel incited to engage in My.I.D. this touchpoint makes use of **sensitizing** mechanism, by offering the question in advance of the next. This principle was found during the end-test validation and will be further discussed in the following section.

DESIGN FUNCTION
Incite

DESIGN PRINCIPLES
Sensitizing



Mock-ups of the app

DESIGN FUNCTION
Invite, Inform, Incite & Inspire

DESIGN PRINCIPLES
Social proof
Storytelling
Aesthetic appeal
Visual priming

TOUCHPOINT 6. INSPIRATION POINTS

The inspiration points are the core of My.I.D. This is where visitors learn more about the innovative character of the Marineterrein and are enabled to actively think about innovative projects and experiments. The inspiration points all have the same playful and challenging shape, but each has different bright colours. The bright colours attract attention and help visitors identify whether they found the right inspiration point. The inspiration points are half-open. From the outside, visitors can see the legs of visitors standing inside, but not what those visitors are looking at/listening to. This arouses curiosity. As soon as visitors step into the installation, they are surrounded by displays. Different routes can be displayed in one installation. Visitors must find the display that matches their personal route and can start the story using a touch screen. The various companies of the Marineterrein provide the content for the stories. This can be both audio and video content. At the end of every story a concrete question is asked where the companies wants input on from the visitors.

To make sure visitors feel invited to step into the inspiration point it makes use of **social proof** mechanism. You see the legs of other people underneath the installation.

To make sure visitors are well informed on the innovation, the inspiration point makes use of **storytelling** mechanism. All the information is presented in a narrative way.

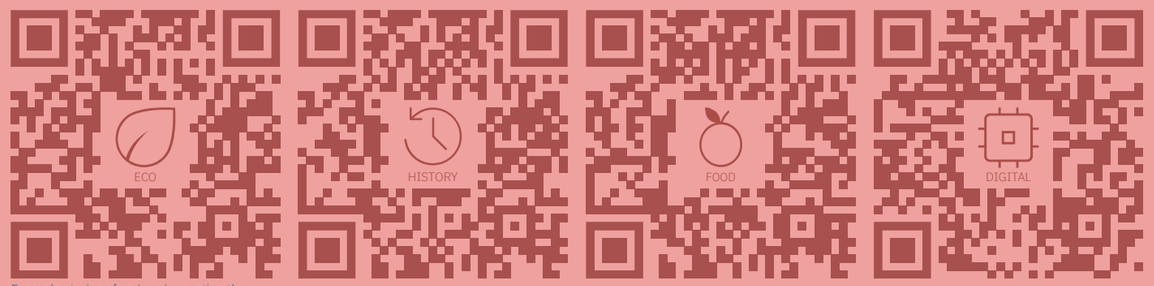
To make sure visitors are incited to engage in My.I.D., the inspiration point makes use of **Aesthetic appeal** mechanism. The inspiration have interesting and playful shapes and have bright colours.

To make sure visitors are inspired to share their own ideas and opinion the inspiration point makes use of **Visual priming** mechanism. The visitors are completely surrounded by visual displays.

Several inspiration points around the Marineterrein harbour

Example stories of various innovation themes

Users standing inside the inspiration points



Example stories of various innovation themes

TOUCHPOINT 7. IDEA CATCHERS

The My.I.D. system serves as a two-way communication platform where visitors not only receive information but also have the opportunity to provide feedback. To facilitate this, an idea catcher is placed next to each inspiration point. On this interactive booths visitors can leave their messages either by speaking or typing. Along with providing solution ideas, visitors can also share their opinions, concerns, or wishes related to the innovation. Additionally, visitors can view and respond to previous input left by others on the idea catchers by giving kudos or expanding upon it.

The Marineterrein Community is given access to the input gathered by the idea catchers, and they are free to determine how to proceed with each idea or opinion. If certain ideas or opinions seem worth further exploring, the companies can choose to connect with the individual who submitted those messages. This approach makes the idea catchers a valuable tool for companies to collect a wealth of data from visitors, without needing to engage in direct, one-on-one interactions.

To make sure visitors are inspired to share their own ideas and opinion the inspiration point makes use of **Collective ideation** mechanism. The visitors can get inspired and react on the input from other visitors

DESIGN FUNCTION
Inspire

DESIGN PRINCIPLES
Collective ideation

Idea catchers are right next to the inspiration points

Bilingual

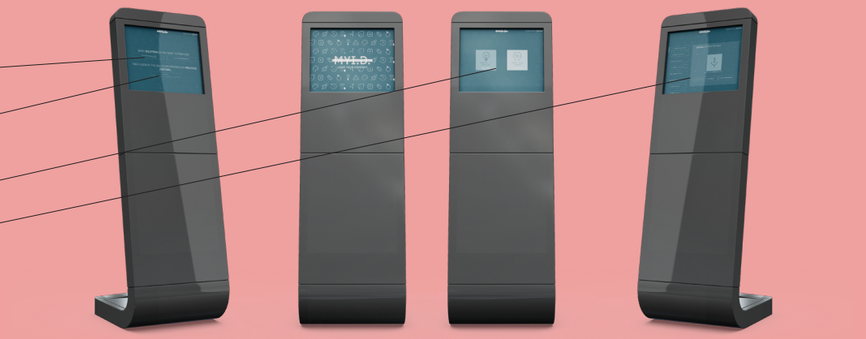
Users interacting with the idea catcher

Visitors can leave input through typing or speech

Visitors can also look into previous input from other participants

Visitors can either leave ideas or opinions

kudo's, feedback, or new solutions can be given based on the input of others



Mock-ups of idea catchers

DESIGN FUNCTION
Inspire & Incite

DESIGN PRINCIPLES
Social facilitation
Personal contact

TOUCHPOINT 8. GUIDED TOURS

From time to time, guided tours are arranged for visitors. Marineterrein community members that want to foster more interaction with their guests and offer them deeper insights into their innovative projects and experiments can coordinate these tours. For guests, this can be an enjoyable social experience. The announcement of these guided tours can be found on the website and app.

To make sure visitors get inspired to share their ideas, the guided tours makes use of **Personal contact** mechanism. Direct one-on-one contact between innovators and citizens can further clarify the innovative project and follow-up conversations can spark ideation. This principle was found during the end-test validation and will be further discussed in the following section.

To make sure visitors are incited to engage in My.I.D. the guided tours makes use of **Social facilitation** mechanism. The presence of others in the guided tours can stimulate visitors to also participate.

Innovator gives additional information on the project he has been working on

A group of friends that collaboratively decided to join

A guided tour stopping by an inspiration point

TOUCHPOINT 9. POP-UP POINTS

My.I.D. also steps outside the walls of the Marineterrein to familiarize citizens with the innovation district. At strategic locations in the neighbourhoods surrounding the Marineterrein, an inspiration point occasionally pops up to inspire local residents to come take a look at the Marineterrein.

To make sure visitors are inspired to share their own ideas and opinion the inspiration point makes use of **Surprise** mechanism. The sudden appearance of something new in your familiar living environment can be an invitation to explore. This principle was found during the end-test validation and will be further discussed in the following section.

DESIGN FUNCTION
Invite

DESIGN PRINCIPLES
Surprise

A neighbourhood resident exploring what the pop-up point is

A pop-up point behind the Oosterkerk on Wittenburg

ARNSTEIN'S LADDER

FOCUS OF MY.I.D.

Citizens control

Delegated power

Partnership

Placation

Consultation

Informing

My.I.D.

ROLE OF MY.I.D. WITHIN ENGAGING CITIZENS IN OPEN INNOVATION AT THE MARINETERREIN

It is crucial to highlight that My.I.D. represents a significant initial step towards increasing citizen engagement in open innovation. Its primary focus is on informing citizens and providing them with an interface to express their desires and interests. For the Marineterrein community, many of the ideas generated may not be desirable, feasible, or viable. However, the underlying thought processes behind *why* people say certain things, can be of great interest to them.

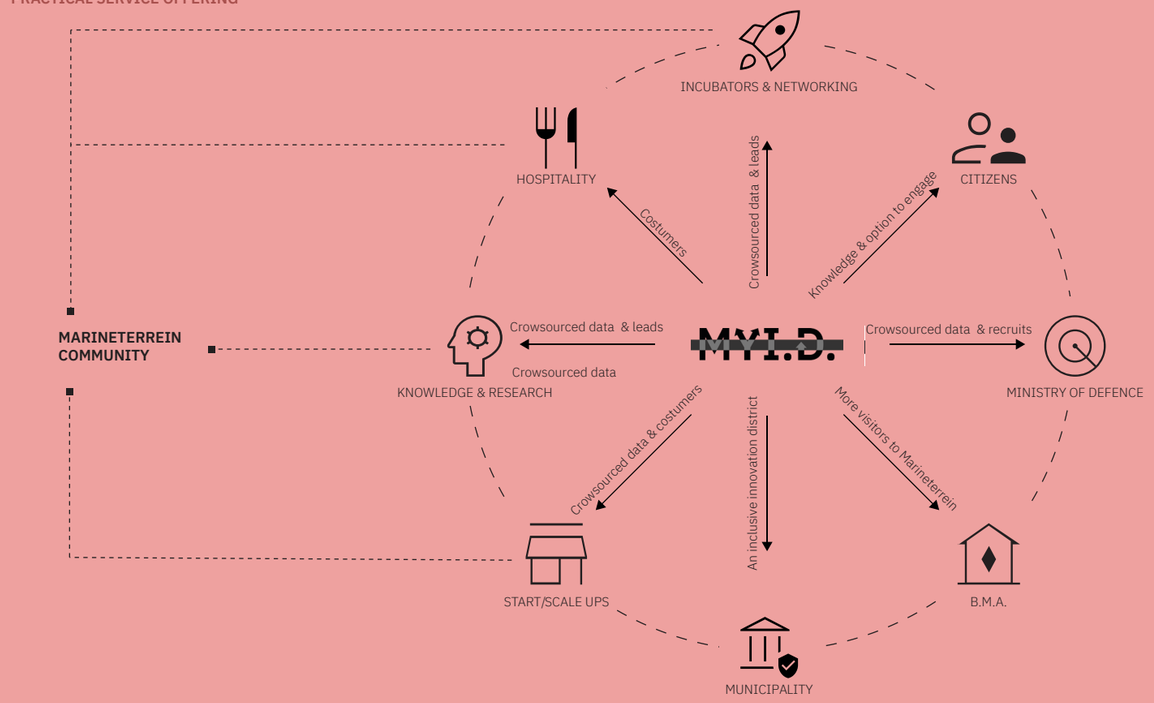
My.I.D. is not so much an interface that stimulates further implementation of ideas. This is a deliberate design choice. Whether an idea evolves into a collaboration or partnership between citizen and innovator is dependent on so many factors, including the company's operations, the citizen's personality, and the nature of the idea itself. It is crucial to maintain a level of freedom and spontaneity within the system and avoid restricting the input or the potential collaborations and synergies that may arise. This design principle is better known as infrastructuring or Thinging and (Björgvinsson et al., 2012) is applied in various successful networking interfaces like LinkedIn and Wikipedia, which prioritize freedom of user input and self-organization to explore how ideas might work beyond the design. My.I.D. fills in this critical initial gap in citizen engagement in open innovation, as there is currently no interface for cross-pollination between citizens and innovators.

VALUE OF MY.I.D. FOR VARIOUS STAKEHOLDERS

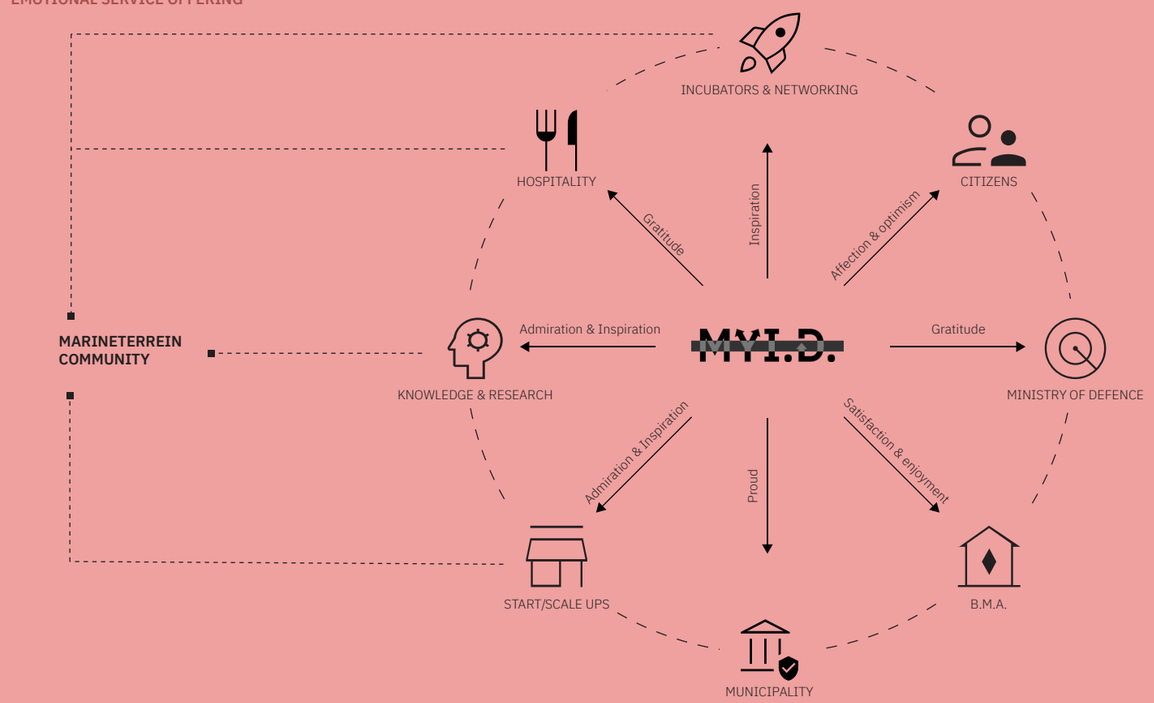
I believe that My.I.D. offers value for different stakeholders in the system. Bellow, the service offering map of My.I.D., both in terms of practical and emotional value, can be found

From a systemic design perspective, perhaps the greatest value of My.I.D. is that it aims to improve human relationships within the network. I believe that through My.I.D., almost all social flows of the identified stakeholders will improve, and some new ones might emerge. On the next page, I have visualized how I think My.I.D. facilitates new social flows.

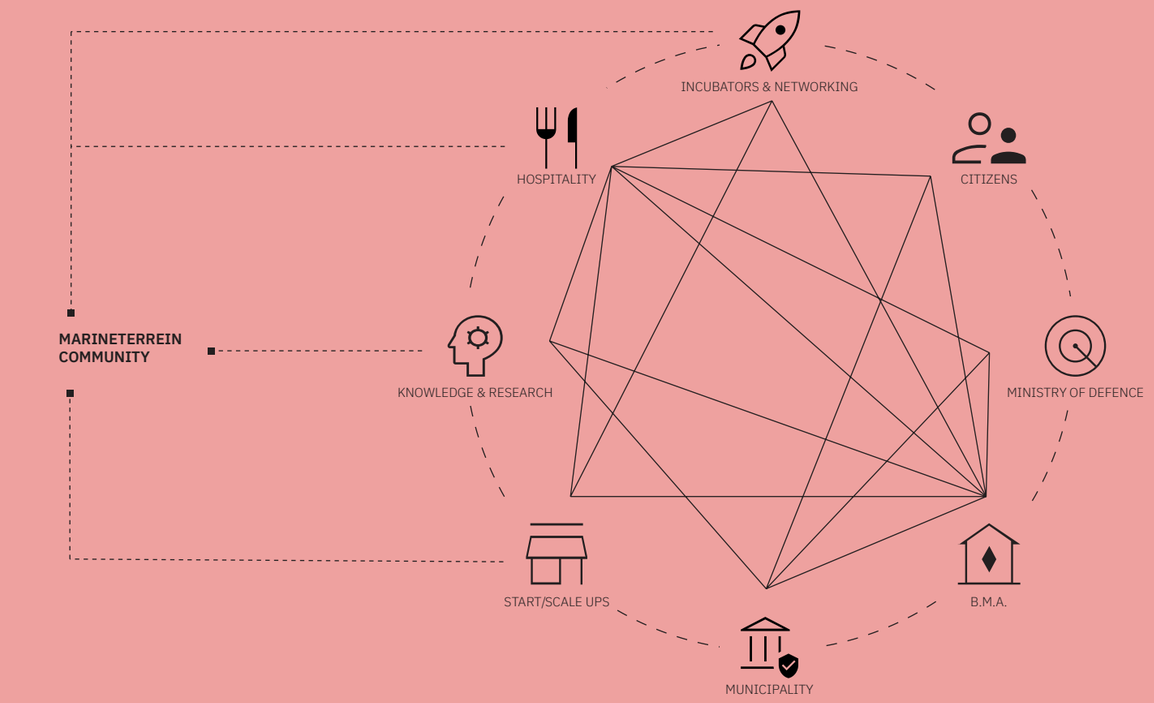
PRACTICAL SERVICE OFFERING



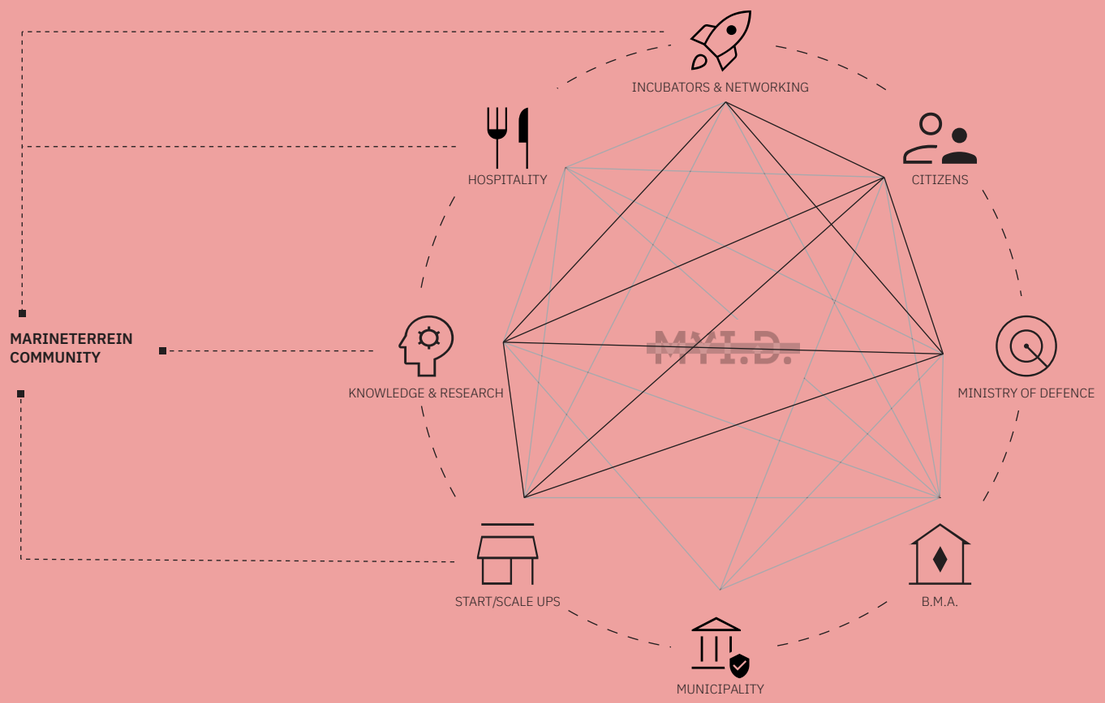
EMOTIONAL SERVICE OFFERING

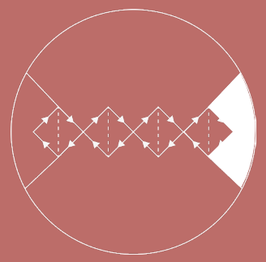


EXISTING SOCIAL FLOWS



EMERGING SOCIAL FLOWS





SECTION 10. VALIDATION OF THE FINAL DESIGN

Through embodying the My.I.D. concept in the catalyse phase, I was able to validate and refine my design principles. This validation process provided valuable insights on how to ensure the concept can withstand real-life settings and achieve its intended results. This section offers an overview of the validation process for My.I.D., which included prototyping and presenting. Both the citizens' and Marineterrein Community perspectives on My.I.D. are discussed as the concept was validated with both stakeholder groups during this project phase. To validate the concept with citizens, I created a physical prototype and tested it for three days in the public space of the Marineterrein. For the validation with Marineterrein community experts, I used the visual embodiment presented in the previous section to gather their evaluation of My.I.D.

The main objective of this validation experiment was to assess the design principles of My.I.D., in addition to testing its overall desirability, viability, and feasibility. Through prototyping, I obtained a wealth of valuable insights. I will concentrate on how My.I.D.'s design principles were modified and new ones emerged. Some of the new design principles could be effortlessly integrated into My.I.D., as mentioned briefly in the previous section. However, some of the newly identified design principles were more intricate, and I have formulated them as recommendations.

Conducting this validation enabled a critical examination of the successful and less successful factors of the concept. This examination allowed for a critical discussion of the design, which will be discussed in the following section.

10.1 VALIDATION APPROACH

Deriving from the catalyse phase I have the following design concept:

MY I.D.

I derived the following three sub research questions for further validate My.I.D. and make sure the journey continues beyond this project.

1. How do end-users evaluate My.I.D.?
Is it feasible to design My.I.D.? Do people find My.I.D. a desirable way to learn more and engage in the innovation that is going on at the Marineterrein? Are the design principles that worked during the transdisciplinary co-creation session effectively embodied in My.I.D.? Does the storytelling principle work in practice?

2. How does the Marineterrein Community evaluate My.I.D.?
Do the stakeholders who will ultimately have to further develop My.I.D. believe in the idea? Do they consider it to be a feasible design? Can My.I.D. have a lasting impact on the Marineterrein?

3. How does this validation can sharpen my design and how to continue with My.I.D.
Do I need to modify the design principles based on the needs and desires of end-users and experts? Are there any design principles that I may have overlooked? Are there any other design adjustments that can further improve the integration of My.I.D. into the Marineterrein? How can this integration be achieved?

Taking into consideration the three sub-research questions that need to be answered, various design and validation methods were appropriate to use. The following four validation and advice strategies were applied to answer the three sub-research questions

1. Prototype
This method was used to answer the first sub-research questions. As a designer, it is common to translate theoretical concepts into practical solutions to test them with actual users. As such, I designed a prototype of My.I.D. and tested it on the Marineterrein with actual end-users. In chapter 10.2 this validation strategy is further discussed.

2. Present
Besides the physical prototype, I also embodied My.I.D. through visuals, as presented in the previous section. With this visuals I was able to clearly communicate the complete journey of My.I.D.. To validate the second sub research I presented these visuals to a group of experts on the Marineterrein area development. In chapter 10.3 discussed the of findings of this validation strategy

3. Iterate
To answer the last sub research question I critically analysed the data I have gained through the prototyping and presenting strategy. I have evaluated the input I received and determined which was valuable and which had to be disregarded. Furthermore, I had to deliberate on how to integrate this input into the My.I.D. concept and which input to present solely as recommendations. The findings of this strategy can be found in chapter 10.2 and 10.3.

4. Advise
To address the final sub-research question, I applied this advice strategy. Of course, this design process does not end with a ready-made design that can be used immediately. In order to further develop the concept into actual objects that can be installed at the Marineterrein, I made some recommendations. The list of recommendations can be found in chapter 10.4.

Eventually this create phase laid the basis to the formation of the final design rational and a process plan to further implement the innovation of My.I.D.

10.2 END-USER VALIDATION

In this chapter, I will discuss the validation process of My.I.D. with end-users. As My.I.D. is an public outdoor design intended for visitors of the Marineterrein, it was important to conduct the validation in that specific environment. To achieve this, I utilized a yellow container located in front of the AMS Institute building, which had previously been used for living lab experiments. By placing a My.I.D. prototype in the container, I was able to test it with actual visitors to the Marineterrein and validate the concept with the citizens and innovators for whom My.I.D. is designed.

To gain valuable insights, I used a combination of observations, interviews, and surveys during the validation process. Through this approach, I was able to critically examine the My.I.D. concept and identify iterations for improvement. In addition to validating the initial design, I also discovered four unexpected new design principles that could be used to enhance the framework for effective citizen engagement. Although two of these design principles were not directly implemented in My.I.D., I believe they are worth mentioning as recommendations for future projects beyond this one.

A YELLOW CONTAINER TO VALIDATE MY.I.D. IN THE REAL LIFE CONTEXT

Ultimately, I extensively tested the prototype for three consecutive days with a large number of visitors from the Marineterrein, including citizens and members of the Marineterrein community, to validate the following question:

TO WHAT EXTEND DOES MY.I.D. DEMYSTIFY THE INNOVATIVE CHARACTER OF THE DISTRICT AND STIMULATE CITIZENS TO ENGAGE IN OPEN INNOVATION

The main purpose of this end-user validation was twofold: on the one hand, I wanted to test the overall desirability and feasibility of My.I.D. On the other hand, I was curious if the design principles I had established would also generate the aspired value in a real-life context. Many of these design principles were identified and tested during the transdisciplinary co-creation session, but that was on a smaller scale and in a more controlled setting. Moreover, I embodied many of these principles in My.I.D. in a completely different way. Additionally, I had not yet tested the design principle of “Storytelling” with users. Therefore, I tested this design principle, using an abductive reasoning pattern; the design principle and prototype of My.I.D. were created and tested in parallel (Dorst, 2011).

To achieve a realistic validation, it was necessary to create an experience similar to that of My.I.D. Therefore, I created a prototype for all the key touchpoints: a large A0 map as an exploration station, a Google form as a journey starter, floor marking tape as LED wayfinding, a hanging display box and listening chairs as inspiration points, and post-it notes as idea catchers. This allowed participants to go through the same journey that I envisioned for My.I.D. For a comprehensive list of the materials utilized to prototype each touchpoint, please refer to the Appendix X.

JANUARY 25,26 & 27
09:30-17:30

YELLOW CONTAINER
Marineterrein, in front of Building 027E

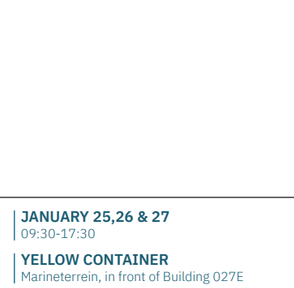
PARTICIPANTS
+/- 60 citizens
+/- 30 innovators & experts

AIM
Validate the desirability, feasibility and design principles of My.I.D. in the real life context to further iterate on the design

ELEMENTS
1 yellow container
1 check-in forms to pick a story
2 taped wayfinding paths
7 innovation stories
2 chairs with audio stories
1 hanging display box with
1 A0 ideation map
Plenty of post its & pencils to leave ideas
7 QR codes leading to the websites of the companies that contributed with a story
Brochures of the companies that contributed with a story
1 QR code with navigation to the public Marineterrein Amsterdam Living Lab experiments
1 consent form
1 party tent
1 marketing campaign

METHOD TO TEST THE DESIRABILITY AND FEASIBILITY OF MY.I.D.

To assess the desirability and feasibility of My.I.D., I employed three research methods: observations, interviews, and surveys. During prototype use, I observed users and afterwards, I asked visitors a set of questions about their motivations for testing the prototype, their willingness to use it again, and their interest in engaging in open innovation. These insights provided valuable information about My.I.D.’s desirability. Of course, the creation of a prototype itself already tested the feasibility of My.I.D.. Additionally, I evaluated the feasibility of the prototype by questioning visitors about the ease of use of the prototype. For those who were unable to participate in an interview, a survey was available with similar questions to the interview guide. The interview guide and survey can be found in the Appendix X.



Interviewing participants to validate desirability and feasibility

METHOD TO TEST THE DESIGN PRINCIPLES OF MY.I.D.

The design principles are integrated into the various touchpoints of My.I.D. To investigate these principles, I embodied the touchpoints into prototypes and observed the participant’s interaction with them. This allowed me to determine if the design principles resulted into the desired effect. However, not every principle was highly visible through observations. To address this, I also included questions in the interview guide to let users express which elements triggered them to interact in certain ways. Below, I will briefly describe how I prototyped each design principle.

Prototype of Design Principle Social Proof (Invite)
I have validated this principle with a prototype of an exploration station and inspiration points. I had an A0-sized map of the Marine terrain on which I marked the stories that could be heard. Visitors were also supposed to leave their messages, based on the stories that they had heard, on the same map with post-its. This way, passersby could clearly see that other people had already participated in the prototype test. Additionally, I placed the hanging display box and listening chair (the prototypes of the inspiration points) at the front of the container, so that passersby could clearly see if other people were using them.

Participant leaving their message on the AO map of the Marineterrein

Prototype of Design Principle Storytelling (Inform)
This was a design principle that was particularly interesting because it had not yet been tested in the transdisciplinary co-creation session. I validated this design principle with seven different stories about innovative projects and experiments taking place at the Marineterrein. I designed these stories myself. I received content from various companies in the Marineterrein community for these stories and then edited this content into a story that was approximately five minutes long.


Inspiration stations strategically located at the entrance of the container

I had four audio stories and three video stories. I demonstrated these stories using two different types of prototypes of the inspiration station: a hanging display box and two listening chairs. The hanging display box was a black box with three displays mounted inside, on which the video stories could be played. The listening chairs were seats with an attached MP3 player and headphones, on which the audio stories could be played. The 7 stories are the same stories that were presented in chapter 9.2.

Prototype of Design Principle Social facilitation (Incite)
I validated this principle through two guided tours. In the first tour, I hosted it myself and invited the Research Fellows of AMS to collectively come and test out the prototype. The second tour was organized by the Bureau Marineterrein, where some members of the municipality area development project team were updated on the status of Marineterrein. Coincidentally, this tour took place on the same day as my prototype tests. Since Bureau Marineterrein knew about my experiment and had given final permission, they asked if this group could also test out my prototype.


The hanging display box

Prototype of Design Principle Personalization (Incite)
I validated this principle through a prototype of the journey starter. The prototype test, started with participants scanning a QR code that directed them to a survey. The survey presented the seven different stories, each based on a district innovation theme. Participants could choose a story that aligned with their interests, and were then directed to the corresponding inspiration station via floor markings in different colours.

Prototype of Design Principle Aesthetic appeal (Incite)
I validated this principle through the overall appearance of all the prototypes. While prototypes are always a bit makeshift and the container was not exactly the most aesthetically pleasing environment, I did try to put effort into the materials I designed myself and hung lights and set up a party tent to make the container a bit more cosy.

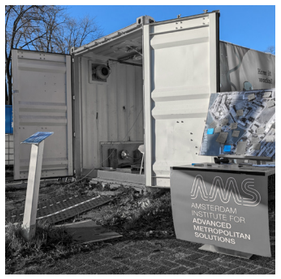

The listening chair (for the picture located at the waterfront)

Prototype of Design Principle Visual priming (Inspire)
I validated this principle through the hanging display box prototype. When participants stepped into this box, they really secluded themselves from the outside world and were surrounded by three visual displays. The videos demonstrated in the hanging display box showed in a purely visual way what innovation is taking place at the Marineterrein.

Prototype of Design Principle Collective ideation (Inspire)
I validated this principle by creating a prototype of the idea catcher. To make this prototype, I used the A0 map of the Marineterrein that I had previously used to invite people to participate. Once the participants were finished listening to the stories, they could leave their messages on post-it notes and stick them onto the map. I kept these post-it notes hanging on the board so that people could also read the ideas of previous participants and use them for inspiration or to build upon them**.**


Group of research fellows of AMS institute queuing to test out the prototype of My.I.D.


Participants busy with the check-in survey



Considering that the prototype test took place in a container, it still looked quite aesthetic


A participant getting visually primed in the hanging display box

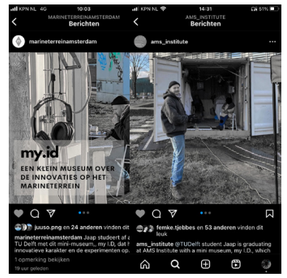
VALIDATION OF THE DESIRABILITY, FEASIBILITY AND DESIGN PRINCIPLES OF MY.I.D.

Ultimately, by testing for three days, I gained a vast amount of insights. An overview of all observation, interview results, and survey results can be found in Appendix Y. In the following paragraphs, I will summarize these insights as I briefly explain the validation of the desirability, feasibility, and design principles.

A participant observing the ideas of previous participants

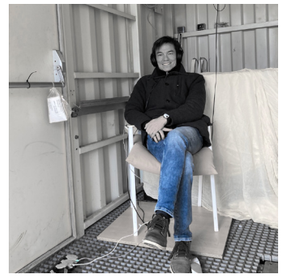
DESIRABILITY

Both citizens and innovators acknowledge the problem and see potential in My.I.D.
This end-user validation shows promising initial results about the desirability of the My.I.D. concept for end-users.
From a citizen's perspective, I observed that most participants visibly enjoyed and showed interest in testing the prototype. From a citizen's perspective, I observed that most participants visibly enjoyed and showed interest in testing the prototype. Furthermore, the interviews and survey results further support this observation. Numerous citizens opted to extend their prototype test and listen to multiple stories, and there was even one visitor who returned the following day and brought along some of this neighbours to let them listen to the stories as well. From the interviews, I can conclude that the interest to become more involved in the innovative character of the Marineterrein is high among citizens. Many participants suspected that there is a lot of innovation happening on the Marineterrein, but almost no one could give a concrete example of a project or living lab experiment that is taking place at the Marineterrein. Many visitors indicated that they found this lack of knowledge and contact unpleasant since they are interested in innovation.



The prototype test getting posted on the Instagram of various Marineterrein Community members

From the perspective of the innovators, I also notices hopeful indicators of the desirability. I observed that the yellow container went a bit "viral" among the Marineterrein Community. Quite a few innovators who tested the prototype said they came because they were tipped off by colleagues or saw it on the Instagram Stories of AMS Institute and Bureau Marineterrein. These innovators stated they enjoyed learning more about the innovative stories of other companies and said they would use My.I.D. if it were permanently stationed on the Marineterrein. Moreover, several noteworthy stakeholders with high decision power have tested the prototype (e.g. the entire management team of AMS Institute, head of communications of AMS Institute, director of Bureau Marineterrein, head of communications of Bureau Marineterrein, members of the project team of the municipality). They unanimously recognized the problem that the innovative character of the Marineterrein is insufficiently communicated to the citizen and that more cross-pollination with citizens needs to take place. Many saw this prototype as a possible solution to enable this system change.


Kenneth Heijns, managing director of AMS, testing out the prototype

Two significant bottlenecks for desirability emerged from the validation test. Firstly, the success of My.I.D. hinges on effective communication - people need to be informed and understand what they can do with My.I.D. Secondly, many visitors indicated that they would only use it repeatedly if it is well-maintained and regularly updated.

FEASIBILITY

I experienced no significant feasibility constrains
Based on the results of the validation test, it appears that the project's feasibility is promising. Despite working with limited resources, I successfully ran seven different stories for three days in freezing temperatures. Feedback from interviews and surveys indicate that the user journey is user-friendly. I also conducted a test to confirm if visitors could conduct the prototype test without my presence by observing some participants from a distance, and it was successful. While there may be some financial decisions that could pose a challenge, I do not foresee any significant technological or legal issues. Bureau Marineterrein gave an official permit for this experiment with great ease.

DESIGN PRINCIPLE **SOCIAL PROOF**

I had a greater number of participant than I had initially anticipated, and I had participants form various target audiences. A large physical map again showed to attract people. Additionally, the presence of other visitors had a clear inviting effect, occasionally resulting in a small queue forming. Unfortunately, on a winter weekday at Marineterrein, there were very few young people present, making it difficult to conduct adequate testing on this demographic

DESIGN PRINCIPLE **STORYTELLING**

The storytelling principle proved to work well. People indicated that they understood the information well and easily maintained their interest. Among the younger participants, there was a preference for video stories.

DESIGN PRINCIPLE
SOCIAL FACILITATION

This principle proved difficult to validate. However, it was noticeable that seniors, in particular, have a need for social contact. Some participants from that age group stayed much longer to talk to me about various things.

DESIGN PRINCIPLE
PERSONALIZATION

Visitors seemed to appreciate having options and some of them listened to several stories.

DESIGN PRINCIPLE
AESTHETIC APPEAL

I was hesitant about the embodiment of this principle but during prototype testing I regularly saw people taking selfies or photos of friends testing out the prototype. In particular, the hanging display box had a photogenic appearance

DESIGN PRINCIPLE
VISUAL PRIMING

Even though the box was a little too tight so participants were a little too close to the displays, people were interested. However, inspiring participants generally seemed to work the least well. Here and there people shared their thoughts, but many participants were also satisfied with just taking in information. From the interviews, I filtered two additional design principles that could contribute to this design function. These are further discussed below.

DESIGN PRINCIPLE
COLLECTIVE IDEATION

I cannot give a definite conclusion on this principle. On the one hand, I noticed that many participants did have a look at the messages of previous participants and after the first post-its were put on the board more people started to leave their message. On the other hand, in many cases it just remained at looking at the comments of others and not necessarily bringing new ideas or feedback.

FOUR NEWLY EMERGING DESIGN PRINCIPLES

In addition to validating the established design principles, the end-user validation process also led to the discovery of four new design principles. Two of these principles were directly incorporated into the existing My.I.D. concept, and were discussed in the previous section. In this section, I will provide further explanation for these two principles. The remaining two design principles are not within the scope of this project. However, I do have an idea for an additional touchpoint that could integrate these principles into the My.I.D. system, which I will present as a recommendation. The following four new design principles were discovered:

DESIGN FUNCTIONS
INVITE

1. DESIGN PRINCIPLE **SURPRISE**

The data gathered from the interviews and surveys indicated that many people were drawn to the prototype test because they were surprised to find the container open. This was particularly true for visitors who were familiar with the Marineterrein and its usual appearance. The sudden change in their familiar surroundings arose their curiosity and motivated them to approach the container to investigate what was inside. Using this design principle of Surprise, I incorporated the pop-up points in My.I.D. For further details on the pop-up points, please refer to chapter 9.2.

DESIGN FUNCTIONS
INCITE

2. DESIGN PRINCIPLE **SENSITIZE**

During the interviews, some participants expressed difficulty leaving a message on My.I.D. because they were unsure of what kind of contribution was expected of them. To address this issue, I found that sensitizing people beforehand can be effective in getting them excited and better prepared to share their latent knowledge. This is a known mechanism from contextmapping theory (Sanders & Stappers, 2012). I believe that incorporating this mechanism into My.I.D. can further encourage participation. As such, I added a sensitizing pop-up question in the app touchpoint in My.I.D.. For more information on this, please refer to chapter 9.2.

DESIGN FUNCTIONS
INFORM & INSPIRE

3. DESIGN PRINCIPLE **TANGIBILITY**

Participants often inquired about where they could observe the innovation in real life during the interviews. This was in order to gain a deeper understanding of the concept and better equipped them to share their ideas and opinions. While visual stories can be a good way to introduce people to the innovation, seeing or experiencing something first-hand can provide a deeper understanding and can further inspire creativity. Visual stories often only capture a snapshot of the innovation process, typically at the point when the innovation is finished. However, involving citizens in the development of intermediate prototypes, mock-ups, or test versions can be a more intriguing opportunity to gather their input. I believe that making the innovation process more tangible can further inform and inspire citizens to engage in open innovation and citizen engagement.

4. DESIGN PRINCIPLE **PERSONAL CONTACT**

DESIGN FUNCTIONS
INFORM & INSPIRE

During the validation session with end-users, the design principle of personal contact emerged as an effective way to better inform and inspire people. Some visitors approached me directly with questions about the different stories, and having a one-on-one personal contact with me, who was quite familiar with the background of the stories, allowed me to provide them with better information. Some of these conversations even sparked new ideas, not only for the citizens but also for me. I strongly believe that personal contact between innovators and citizens is the ultimate way to convey information and inspiration . These design principles is partially integrated into My.I.D. through guided tours (also refer to chapter 9.2). Additionally, I recommend an additional touchpoint to incorporate this design principle into My.I.D., as explained in the next paragraph.

RECOMMENDATION FOR A VISITOR CENTRE

To fully embody the last two design principles, I suggest concluding the My.I.D. journey in a visitor centre. This location would be ideal for exhibiting prototypes and test models of the innovations developed at the Marineterrein, making innovation even more tangible and inspiring visitors with new ideas. Moreover, the space could function as a co-working space for open innovation, where companies and visitors can have personal contact to further develop their ideas. This creates a physical space on the Marineterrein where citizens and innovators can come into direct contact with each other, and citizens can witness the innovation in real life without disturbing the companies in their own office space. The visitor centre can also serve as a central location for events around innovation, such as public discussions, lectures, or training sessions, and can be the starting point for guided tours. Additionally, for My.I.D. participants, the visitor centre can provide a place to take a break and reflect on their walking experience. I suggest that the old gatehouse, located at the central entrance of the Marineterrein, is an appropriate location for the visitor centre.

Impression of how the visitors centre could look like

QUICK DESIGN ADJUSTMENTS

In addition to the somewhat higher level design principles, there were also 5 very practical tips from participants that I immediately used to improve My.I.D. to refine. These were the following:

- Ensure that it is **dog-friendly.** Since many people walk their dogs on the Marineterrein, allowing dogs to be attached to inspiration points can make My.I.D. more accessible to these visitors.
- **Communication about updates** in the app. The frequency of route updates determines how appealing it is for visitors to walk the routes repeatedly. Previous visitors can be informed of updates through the app.
- **Time indication of the duration** of the route. Participants should be made aware of the time investment required to walk a route. This can be done at the exploration station or journey starter.
- **Additional exploration stations**. To encourage more people to participate in open innovation on the Marineterrein, communication must also take place outside the wall. Additional exploration stations at the Poortgebouw and pedestrian bridge on the north side would be helpful.
- **Bilingual**. Visitors highly appreciated the prototype was being available in two languages.

Dog in the container

10.3 EXTERNAL EXPERT VALIDATION

In this chapter, I will discuss the validation session that took place with a group experts on the area development at the Marineterrein. Already during the container experiment various stakeholders with expertise had already tested the prototype. Through interviews with them, the focus was primarily on assessing the desirability of My.I.D., which I can conclude to be quite high. However, to ensure the feasibility and viability of My.I.D., I felt it necessary to seek additional input from experts. To accomplish this, I conducted a presentation where I took the experts on a journey of My.I.D. through the visualizations I had created. The outcome of this session validated the feasibility and viability of My.I.D.

VALIDATION WITH THE PROJECT GROUP MARINETERREIN FROM KNOWLEDGE COALITION

A suitable team of external experts seemed to be the Marineterrein project group of the Knowledge Coalition AMS Institute x AHK x CODAM. This project group consists of delegates from the three education and research institutes at Marineterrein. Additionally, tow external policy advisors have been hired to assist this project group. Their task is to represent the interests of the Knowledge Coalition during the area development of Marineterrein. During this graduation project, AMS Institute decided to hand over the tasks of the AMS City Team to this project group.

I arranged to conduct a validation session with them during one of their regular weekly meetings. After a brief presentation about My.I.D., there was a short discussion about the feasibility and viability of My.I.D. I also sent out a survey to gather further data, but unfortunately, only two participants provided input on this survey. These were the same participants who had time to provide direct feedback after the presentation. Although the data has somewhat low reliability, it provides initial insights and three concrete iteration options. The insights form the discussion and survey results can be found in Appendix Z.

TUESDAY 16 MARCH
14:00-14:15

HYBRID THROUGH ZOOM
Some participants sat together

PARTICIPANTS
Joke Durfourmont (AMS Institute)
Matthijs ten Berge (AHK)
Erik Duiker (AHK)
Ebe Treffers (UPwind Development)
Lot Frijling (Yellow Concepts)

AIM
Validate the feasibility and viability of My.I.D.

ELEMENTS
1 presentation
1 survey

VALIDATION OF THE FEASIBILITY & VIABILITY OF MY.I.D.

Experts predict that My.I.D is feasible

From the survey results and the brief discussion afterwards, it became clear that the Knowledge Coalition considers the feasibility of My.I.D. to be high. With the container prototyping I already experienced that My.I.D. was technologically feasible and this was further acknowledged by the expert. I had some doubts about the financial feasibility, but these were dispelled by the expert.

Firstly, the municipality of Amsterdam really sees the innovation district as a new centrepiece of the city, and there are hundreds of millions of Euros involved in the area development. This is acknowledged by the Parool (Meershoek, 2021).

Furthermore, the experts acknowledged that integrating and seeking connections with surrounding neighbourhoods is one of the most urgent issues of the Marineterrein transition. There is therefore political momentum for solutions like My.I.D.

FEASIBILITY

"Creating an open innovation district where people outside of existing educational and knowledge institutions can actively participate is crucial for the success of the Marineterrein. My.I.D. is therefore an important project and the question at hand is to the point and urgent."
Matthijs ten Berge

The challenge for My.I.D. lies in achieving viability

During the validation with experts, it became apparent that the viability of My.I.D. still requires additional attention beyond this project.

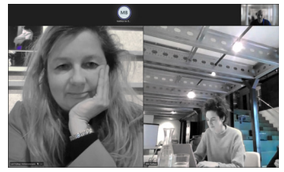
The experts stated that My.I.D. is an important first step in better informing citizens and giving them a chance to share their perspectives on innovation. However, an important question still remains on how this crowdsourced data can be presented in a manageable way for companies. My.I.D. does not provide a solution for converting citizens' ideas into directly implementable collaborative projects in open innovation. If citizens input ultimately remain indefinitely on the shelf and collaboration between citizens and innovators does not take off, My.I.D. will only make limited contribution to open innovation. As previously discussed, I deliberately left this implementation step outside the scope (also refer to chapter 9.2), but I understand that this infrastructuring freedom raises doubts about the viability of My.I.D.

The expert also recognized the importance of regularly updating and maintaining the content of My.I.D. Otherwise, My.I.D. will quickly become a useless object in space (as is unfortunately the case with some information boards). The expert provided feedback that the responsibility for this maintenance and management needs to be further investigated.

The upcoming chapter will delve into how to proceed with My.I.D.'s journey and offer recommendations on how I believe the viability concerns should be further examined.

VIABILITY

"The key is in capturing these types of stories or learning opportunities for us. That's where the crux lies."
Matthijs ten Berge



The external expert validation meeting

QUICK DESIGN ITERATIONS

In addition to validating the feasibility and viability, there was also additional feedback worth mentioning. The following three points are noteworthy:

ADDITIONAL FINDINGS

Importance of personal contact

The guided tours were viewed as a valuable touchpoint of My.I.D. Users should not only have "technical contact." This further confirms the necessity of my recommendation for a visitors centre.

It should become a simple yet highly attractive object that draws users in and encourages interaction, and is so unique that they want to share it with others. So, what makes this concept wanting to share?
Lot Frijling

“Aesthetic appeal” should also be principle for inviting
The Inspiration Points were found to have a good aesthetic appeal, but those are not necessarily the touchpoints that invite people. The embodiment of the exploration stations, in particular, should be more playful and artsy. Aesthetic appeal is not just a design principle to keep people incited, but should also be used to attract people. Simple pre-fabricated information pillars do not belong on the progressive character of the Marineterrein.

Naming of touchpoints should be more playful
During expert validation, the touchpoints still had very formal names (e.g. Welcome map, interaction booth) that did not necessarily contribute to the accessibility of My.I.D.. There was criticism about this, and I have altered to the names of the touchpoints.

CONCLUSION VALIDATION OF THE FINAL DESIGN

Final design rationale of My.I.D.
After conducting validation meetings with both end-users and experts, I was able to further improve my design rationale by incorporating new design principles. These validation sessions provided me with a deeper understanding of the needs and expectations of my target audience, which helped me refine My.I.D. Ultimately, I want to summarize this design project with the following design rationale.

DESIGN RATIONALE

WHAT
(design embodiment)

Exploration station
Inspiration point
Inspiration point
Visitors centre *
Guided tours
Journey starter
Inspiration point
Idea catcher
Pop-up point
LED wayfinding
App
Visitors centre *

+

HOW
(design functions)
& (design principles)

INVITE
- SOCIAL PROOF
- AESTHETIC APPEAL
- SURPRISE

INFORM
- STORYTELLING
- TANGIBILITY
- PERSONAL CONTACT

INCITE
- SOCIAL FACILITATION
- PERSONALIZATION
- AESTHETIC APPEAL
- SENSITIZE

INSPIRE
- VISUAL PRIMING
- COLLECTIVE IDEATION
- TANGIBILITY
- PERSONAL CONTACT

enables

WHY
(value)

ENHANCING THE CITIZENS ENGAGEMENT IN OPEN INNOVATION AT THE MARINETERREIN TO MAINTAIN THE VALUE OF INCLUSIVENESS AT THE MARINETERREIN

** Merely a recommendation*

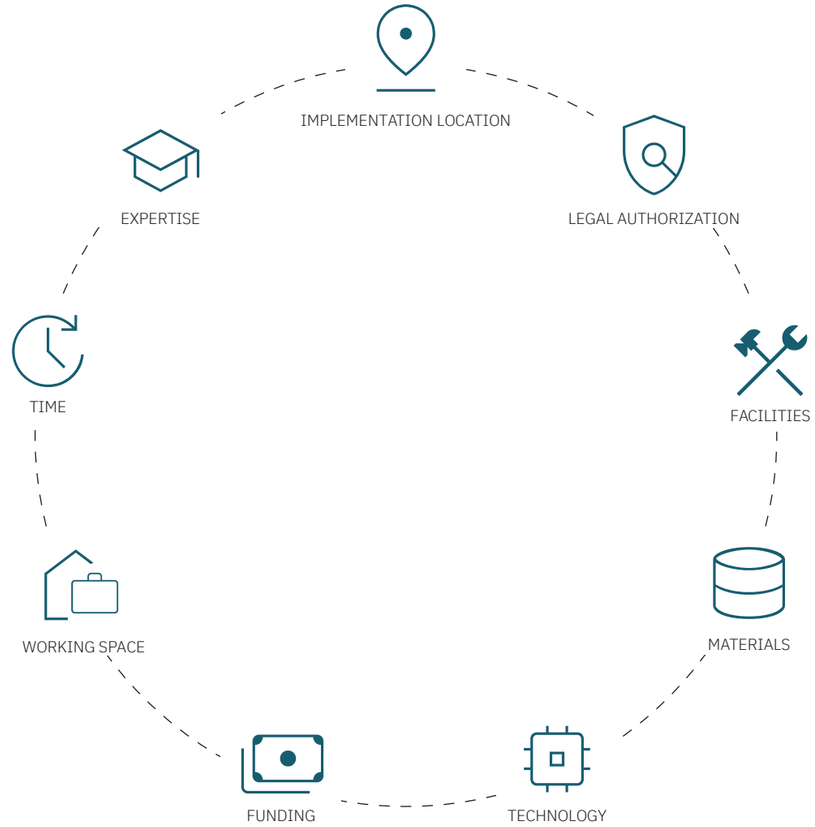
10.4 CONTINUE THE JOURNEY

The process of designing has now come to a close, for me. However, I wish that the story of My.I.D. does not end here. I have strived to create a compelling narrative that illustrates how My.I.D. can play a role in transforming the Marineterrein Innovation District into a space that is both innovative and inclusive, where all residents of Amsterdam can feel a sense of belonging. I hope that this narrative will motivate the AMS Institute and other stakeholders to continue pursuing the vision that I have been striving to achieve through this project. Nonetheless, My.I.D. remains only a concept. A concept still allows for interpretation. Before My.I.D. can be put into action at the Marineterrein and bring about the transformation I envision, further (design) studies, analysis, and decisions must be made. In that sense, this design project is open-ended.

In this chapter, I aim to offer guidance towards closing this open-ended project by listing several recommendations. It is clear that further development, implementation, and scaling are necessary, and drawing from my knowledge gained through this project concerning the Marineterrein, citizen engagement, and open innovation, I strive to advise on the next steps to be taken. By doing so, I hope to hand over the responsibility of this project in a satisfactory manner. My.I.D. has evolved into a design that takes root in various areas of the Marineterrein network. As such, it has become more than a design solely for AMS Institute, and multiple stakeholders are required to carry this project forward. I trust that these recommendations can serve as a foundation for the Marineterrein stakeholders to collectively build upon and take ownership of this journey.

FRAMEWORK FOR FURTHER DEVELOPMENT OF MY.I.D.

As a starting point for the recommendations, I have used the Framework for Recurring Conditions for the Development, Implementation, and Replication of Innovation (Steen & van Bueren, 2017). This has enabled me to formulate the process of further development of My.I.D. in a structured way. This framework takes into consideration a comprehensive list of conditions crucial for the success of further development and implementation of innovation concepts. In addition to this list, I have also looked at the responsibility and roles in the further journey of My.I.D.



Framework for Recurring Conditions for the Development, Implementation, and Replication of Innovation

RESPONSIBILITIES & ROLES

In the end, the My.I.D. design has the potential to benefit the entire Marineterrein Community, but it also requires contributions from all parties involved. It would make the most sense for larger anchor parties, such as the AMS Institute, to take the lead in this effort. Additionally, My.I.D. is directly in line with the mission of the AMS Institute to bridge the gap between science and practice. Collaborating with the Knowledge Coalition and NEMO Studio would also be strategic, as they are also anchor-like companies with a responsibility to kick-start innovation on the Marineterrein. Bureau Marineterrein Amsterdam would be a logical final party to involve, as they have the official responsibility to stimulate and organize activities in line with the Marineterrein's ambitions, as well as manage temporarily available spaces. With this team, I believe there are enough capabilities to implement the different conditions, as mentioned in the Framework, required for success.

IMPLEMENTATION LOCATION

My.I.D. has a very obvious implementation location: the outdoor space of the Marineterrein. Fortunately, there is abundance of space availability. However, careful consideration must be given to the exact routing - the map on appendix V can assist - as well as the strategic placement of touchpoints. It is also important to identify strategic locations outside the walls of the Marineterrein for the pop-up points. I would suggest to start with the direct surrounding neighbourhoods and pick points close to popular facilities (supermarkets, schools, churches etc.)

LEGAL AUTHORIZATION

By having Bureau Marineterrein as a collaborative partner on board, many legal issues are already resolved, as they have the official mandate over the public areas of the Marineterrein. The Marineterrein has already been designated an official Living Lab, providing an excellent opportunity to leverage its status. If the Military Innovation Route is also to be realized, agreements must be made with the Ministry of Defence. Additionally, I recommend already discussing the legal authorization with the municipality, as they are likely to become the owner of the site in the future. Do not wait until the official purchase.

Another legal point that needs further investigation is the legal rights regarding the safe collection, distribution, and storage of crowdsourced data that is obtained with My.I.D. It also needs to be investigated what legal aspects are involved in personalizing the LED wayfinding based on the GPS location of someone's phone.

FACILITIES

In essence, My.I.D. does not require many facilities. However, the infrastructural adjustments for installing the LED wayfinding needs to be considered. Furthermore, a suitable building needs to be allocated for the visitors centre. I think that the visitors centre would be a valuable addition, as it can make innovation tangible and facilitate personal contact between citizens and innovators. However, from a facility perspective, it does make My.I.D. more complex.

MATERIALS

The materials required to set up the My.I.D. experience have been extensively discussed in the report. However, it is important to activate the Marineterrein community to provide content for the innovative stories that can be demonstrated.

TECHNOLOGY

From a purely technological perspective, there are not any significant feasibility concerns. However, this is a crucial factor for the long-term viability of My.I.D., as validated by end-users and experts. Proper management and maintenance of the content and data is crucial for My.I.D.'s continued impact. Companies must be motivated to regularly upload new stories. Additionally, establishing a robust and user-friendly IT network is critical for delivering the crowdsourced data to the Marineterrein Community effectively. Implementing filters, such as popularity, keyword-based, credibility, novelty, may be necessary to ensure companies receive only relevant ideas and opinions. The emergence and improvement of AI-based filters is highly intriguing in this regard. Furthermore, the communication between the phone and the LED wayfinding must be reliable. Only if these technological criteria are met will My.I.D. has the potential to remain interesting for visitors beyond a single visit, and it will lead to collaborations between citizens and innovators in open innovation, rather than just sending information. While anything is technologically possible, it must be executed properly.

FUNDING

My.I.D. is certainly not a affordable design, and funding will be crucial for its realization. It seems logical to involve the municipality for funding. The validation with experts shows that there is a lot of political momentum to improve the connection between citizens and the Marineterrein. Even outside of this validation, several experts have indicated that the success of the innovation district largely depends on the involvement of citizens. If the municipality wants to see the Marineterrein as an innovation district, they might be filling to support initiatives that contribute to the success of the district.

WORKING SPACE

The aforementioned collaboration team has enough office space to continue working together on My.I.D.

TIME

The timeline for getting My.I.D. operational largely depends on the amount of time each party is willing to invest. Nonetheless, it's recommended to conduct a prototype test during the summer to reach a younger target audience that visits the Marineterrein during this season. This will facilitate testing with younger individuals, which was challenging in the winter. In the meantime, AMS can adopt simpler strategies to increase citizens' involvement in open innovation. For instance, organizing open house days, public exhibitions (e.g., at NEMO), lectures, or workshops could be effective. Alternatively, a banner could be put up on the AMS building with information about the activities taking place at the AMS institute, as well as contact details.

EXPERTISE

In addition to the knowledge available within the aforementioned collaboration team, external design and technological expertise is also necessary. My expertise as a strategic designer has reached its limits. I have delivered a concept, including strategic reasoning, but for the further development of My.I.D., I recommend involving other types of designers who can further conceptualize, test, and iterate on this concept. The following designers are recommended: interactive and UX designers, integrated product designers, service designers, and communication and graphic designers. Additionally, I will involve IT specialists for the technological criteria. The digital branch of the AMS institute could also play a role in this regard.

SECTION 11. DISCUSSION & REFLECTION

In this final section, a critical reflection on the journey I have undertaken over the past six months is presented. Through this discussion, I will summarize the relevance of this project and the potential impact it may have. Additionally, I will use this critical reflection as an opportunity to identify the limitations of my design and research methodology, and suggest areas for future exploration. Moreover, I will examine my personal and professional development as a designer throughout this section. Ultimately, this final section serves to effectively synthesize the key components of my project.

11.1 CONCLUSION

RELEVANCE OF PROJECT GOAL

In the end, this project took an unforeseen direction, and as a result, I did not address the research question that the AMS City project team had initially posed to me. While I was unable to formulate a shared future vision based on the capacity of the AMS Institute, I was able to reframe the project by delving deeply into the complexity of the Marineterrein. This reframing gave me a new project goal of enhancing citizen engagement in open innovation to maintain the value of inclusiveness at the upcoming innovation district at the Marineterrein. Eventually I think this project goal is more meaningful then the initial research question and aligns better with my dreams for the city of Amsterdam. Given two pressing societal issues, the goal of this project has a high sense of urgency.

Inclusiveness: a value under pressure in Amsterdam

Firstly, as a native Amsterdammer, I have noticed the city undergoing changes that are not necessarily positive. A city that was once renowned for its diversity and tolerance is gradually turning into an enclave for the privileged few. Tourists have overrun the city centre, and the "ordinary Amsterdammer" increasingly feels like an outsider in their own city. Under neoliberalism politics, economic gain and a continuous pursuit of efficiency have taken precedence in my city, and social cohesion has been suppressed. Therefore, the transformation of the Marineterrein in recent years has positively surprised me. The former closed military base has become a unique and inclusive area for recreation and sports, bringing together residents of Amsterdam of all ages and backgrounds. It is crucial that the welcoming character of the area is maintained and it does not become dominated by a knowledge-class monoculture when it turns into a innovation district. This is why I consider the goal of this project to be vital, and it's something I am committed to pursuing.

Boosting the innovative capacity to solve complex problem

Secondly, I believe that this project's goal contributes to the innovative capacity of the Marineterrein. My preference for inclusiveness does not mean that I do not support the decision to make the area an innovation district. I think that innovation is precisely what is necessary. As societal problems become increasingly complex and larger, new progressive ideas are of vital importance. To address such complex problems, a multi-perspective approach is beneficial. Therefore, involving citizens in the innovation development at the Marineterrein is also a crucial project goal.

POTENTIAL OF MY.I.D.

Sparking a new vision

I believe that My.I.D. has the potential to facilitate a first step in a better connection between citizens and innovators at the Marineterrein. The initial validation results show some positive signs of the desirability and feasability. Citizens showing a keen interest in and enjoyment of the prototype, and experts confirming the need for interventions like My.I.D. While it is debatable whether interactive knowledge routes the most ideal form of interface, I believe that the real potential of My.I.D. lies in the vision it represents. My.I.D. can serve as an inspiring project that motivates stakeholders to consider innovation at the Marineterrein in novel and imaginative ways, and also become more mindful of the risks that an Innovation District may pose. My.I.D. provides a concrete example of how citizens can be more involved in open innovation, including a practical framework for effectively engaging citizens and presenting design principles that have been tested in practice.

A design aligned with AMS institutes mission

In my view, My.I.D. holds significant potential for the client of this project, the AMS Institute, as its goals align directly with the institute's mission. The crowdsourced data gathered through My.I.D. can provide valuable insights that will help AMS Institute to better align their science-based projects with societal needs. This belief of mine is further reinforced by the fact that AMS Institute has already expressed interest in further implementing My.I.D.. In fact, on April 13th, a festival on circularity will be held at the Marineterrein, and AMS Institute has asked me to help showcasing their circular innovation projects to passersby by rebuilding the My.I.D. prototype. Besides AMS Institute has decided to hang a large banner on the yellow container in which my experiment was located, explaining what AMS Institute is.

Value across the social network

In addition to the client of this project, My.I.D. has potential for the larger Marineterrein network. Ultimately, the idea is for My.I.D. to be available for all businesses in the Marineterrein network, thus building new relationships between citizens and innovators, as well as between innovators and citizens themselves.

RELEVANCE OF PROJECT BEYOND MY.I.D.

Beyond the final outcome of this design process, I think that this project was also relevant throughout the process itself. I believe that the design process added value in three different ways.

Enhancing relationships within network
Firstly, by organizing the transdisciplinary workshop, I brought together various stakeholders who would not have otherwise come into contact with each other. This led to an interesting exchange of perspectives and possibly led to new relationships within the network.

Building design expertise at AMS Institute
Secondly, there was little expertise within AMS in the area of design methods. By facilitating several internal design sessions, knowledge within AMS in this design research has increased. Often, AMS technicians found the assignments at the beginning of such a session to be too abstract, but afterwards they often saw the added value.

Increasing awareness of citizen engagement beyond the project team
Lastly, by choosing to carry out my graduation project at the AMS Institute office, I had many interesting conversations, including with people outside of the project team, and hopefully made more AMS employees aware of the importance of citizen engagement in technical innovation.

LIMITATIONS OF MY.I.D.

Besides the confidence I have in My.I.D., I also see three important limitations of My.I.D.

Limited attention to higher levels of engagement
Firstly, My.I.D. is primarily designed for informing and consultation engagement levels. I assumed that this focus on lower levels of engagement would flow through to higher levels of engagement (e.g. collaboration, collective decision-making), but this is a bold assumption. It is uncertain whether My.I.D. will move beyond informing and consulting citizens.

Viability bottlenecks
Secondly, the viability of My.I.D. is quite precarious. The lasting impact of My.I.D. strongly depends on the willingness of many stakeholders to participate. Additionally, it has not yet been thought out how My.I.D. will present crowdsourced data in a manageable way to the innovators. If this knowledge transfer does not go well, My.I.D. will quickly become a useless service that can create false expectations and even worsen the relationship between citizens and innovators. The follow-up steps required to go from ideation to actual collaboration may not have been adequately discussed during this project.

Lack of inclusiveness
Finally, I believe that My.I.D. is not inclusive enough. I have tried my best to make the design as inviting and inciting as possible for many different target groups, but I forgot to design for people with physical limitations. I also did not really have the opportunity to test My.I.D. with young people, but I doubt whether young people will be really enthusiastic about walking routes.

11.2 DISCUSSION

LIMITATIONS OF RESEARCH METHOD

Despite making every effort to conduct my research in accordance with academic guidelines, I have identified certain shortcomings in my research methodology.

Subjectivity of reframing
Ultimately, my decision during the initial reframing stage was influenced by subjectivity and bias. Although I had identified multiple values of the Marineterrein, my decided to focus solely on inclusiveness. This choice had a clear impact on the sequential process of this project. I recognize that I should have opted a more objective approach, which could have been achieved by engaging with the AMS City Project team. As a result of this biased decision, it is possible that I fall into a tunnel vision, in which I started interpreting data in a way so I would convinced myself of my own truth.

Insufficient research into other ways to enhance sense of ownership
During the initial reframing stage, citizen engagement was identified as the proposed solution for maintaining a sense of ownership among all citizens of the Marineterrein. However, this solution was based solely on three qualitative interviews and may have been oversimplified. I had not thoroughly explored whether there were alternative, more effective ways to create a sense of ownership among people. By relying solely on the opinions of a few experts, and failed to approach this with more critical thinking.

Validated the financial feasibility with the wrong experts
I realize that I should also have applied more critical thinking when assessing the financial feasibility of My.I.D. I relied on a small group of experts to validate the feasibility, but they were not the individuals who would ultimately be responsible for financing the project. Consequently, their statements carried no risk, and it was easy for them to offer their opinions without being held accountable nor responsible.

Limited time to do research on open innovation
As a result of significant re-framing, I had to undertake several exploration phases. While I feel that my research on citizen engagement in area development is adequate, I would have preferred to conduct a similar investigation of citizen engagement in open innovation. I have made an assumption, based solely on a brief self-assessment, that the framework for effective citizen engagement that I have developed can be directly applied to both area development projects and open innovations. This assumption has influenced the design of My.I.D., and I would have liked to validate it with experts in the field of open innovation.

External influences during end-user validation
There have been two important external influences that have affected the end-user validation with the prototype in the container. The combination of the winter season and testing during weekdays in the daytime resulted in a relatively higher turnout of seniors. Additionally, my presence and guidance might have effected participants perception on the prototype. It is difficult to assess the ultimate impact of these external factors.

FUTURE RESEARCH

Diving into the context of the Marineterrein, citizens engagement and systemic design, I found various directions for interesting future design projects. I have indicated the following four.

Further iteration on My.I.D.
The recommendation for further development (also refer to chapter 10.4) and limitations of My.I.D. generate interesting design project to further work out this concept design. More design research (interaction design, integrated product design etc.) is needed on the further implementation of this concept into a concrete design. Furthermore, it is possible that the issue of viability bottlenecks in My.I.D. could be resolved through design solutions. Lastly, it is interesting to investigate how to make My.I.D. also accessible for people with physical limitations and younger target groups.

Addressing the initial research question
While I intentionally reframed the initial research question, I believe there is still value in creating a shared future vision for the Marineterrein that balances its historical, current, and emerging values. The list of values provided in this thesis might be a good starting point. Given the complexity of the Marineterrein, I advise against pursuing this as a graduation project. I recommend collaborating with an urban planner and government policy advisor who can offer the necessary expertise.

Designing for citizens engagement at the Municipality
The stories I heard from local residents and the municipality's approach to citizen engagement in the Marineterrein project surprised me. Furthermore, it was alarming to witness the lack of individuals under the age of 50 at the participation meetings I attended. I strongly believe that there are numerous fascinating design projects for designers to explore in the realm of citizen engagement and the municipality of Amsterdam.

Further investigating the infrastructuring principle of My.I.D.
It would be worthwhile to conduct further research to determine if the systemic design principle of infrastructure is successfully in My.I.D. Although I purposely provided the opportunity for companies and citizens to transform crowdsourced ideas into actual collaboration in a self-organizing manner, it remains uncertain if this will actually occur. Follow-up research should demonstrate whether ideas emerge into collaboration. If not, additional design interventions may need to be considered.

11.3 PERSONAL REFLECTION

Reflecting on my graduation project, I can confidently say that I take pride in my design process and have experienced an improvement in my design skills both in breadth and depth. Additionally, I have gained a clearer understanding of my identity as a designer and how I aspire to position myself. Undoubtedly, this project was challenging, and I faced difficulties with its complexity, which resulted in moments of uncertainty and doubt. But by reflecting on my learning objectives, I do feel that I am more I do feel that I am more comfortable and confident when it comes to systemic design. If someone would have told me half a year ago that I would independently design and facilitate a half-day transdisciplinary co-creation session, create an entire product-service system, and conduct a three-day prototype testing with numerous end-users in the actual public space of the Marineterrein, I would not have believed them.

When I look at the learning points of this project, I want to highlight the following three things:

Applying abductive reasoning in a design project
This is probably the first project where I have applied abductive reasoning so thoroughly. As designer I also work from a design goal, but in many previous projects, I often felt that time constraints prevented me from conducting thorough enough research and my designs often relied heavily on assumptions. In this project, I was able to immerse myself in the project context and had sufficient time to find and test the design embodiment and principles in parallel. While I am not the strongest prototyper, I prefer to support my designs with theoretical research. Thus, testing the design principles at both small and large scales (co-creation and container experiment, respectively) was a significant step forward. However, using abductive reasoning in this project presents a risk for me because it has no single endpoint that can be accepted as true. This project has gone in many directions and was sometimes a confusing blend of detailed information and interconnected insights. My pitfall is that I want absorb to much info and include every detail in my design narrative. I noticed that once I began creating a concrete design, it became easier to concentrate my design narrative.

First steps in systemic design
Working on this project, I began to appreciate the complexity. Although it sometimes causes the necessary headache, it also worked motivating. This project allowed me to explore the intersection of design, urban planning, and political governance. Compared to my previous projects, designing for an area development project was much more complex and ambiguous, with numerous interconnected stakeholders. To navigate this complexity, I turned to systemic design, which provided valuable guidance. I collaborated with a transdisciplinary team for the first time (van der Bijl-Brouwer, Kligyte & Key, 2021), enabling new stakeholder relationships (Design Council, 2021). I tried my best to design a service for human relationships (van der Bijl-Brouwer, 2022) My.I.D. can be considered a Thing (Björgvinsson et al. 2012) that facilitates the exchange of knowledge between innovators and citizens, creating the freedom for further collaboration in open innovation and emerging collaborations. By taking an expansionist approach (Ackoff, 1975), I placed the Marineterrein area development within the larger perspective of societal problem within the city of Amsterdam, leading to an interesting reframing and increased social relevance. However, as I delved into creating concrete design solutions, I sometimes felt like I was losing sight of the complexity. Looking back at the My.I.D. concept, I realize that it will not single-handedly change the system or solve the societal issues I uncovered. This realization made it sometimes difficult to believe in the concept, but I remain hopeful that it might be the small adjustments can set larger things in motion.

I need societal project
I have further discovered that I am particularly passionate about designing solutions for societal issues. During my Bachelor's degree, I often felt that the products I was designing contributed solely to consumerism, and I struggled to find meaning in what I was doing. While doing SPD, the purpose of the projects became clearer, but they were so often focused on process innovations for businesses. I do not find joy in creating card games, roadmaps, or manuals to make companies more efficient. Sometimes, it seems that designers are searching for problems that do not exist, wasting their energy when there are real societal problems that demand attention. I much rather see designers as avant-gardist's who prioritizes the greater good for society and set new visions. I may not be the designer who can deliver immediate, tangible benefits for a company, but I am not so interested in participating in this capitalist system either. Designing for society instead of business development, as I have been able to do in this project, feels much more fulfilling to me.

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