

# Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



## Graduation Plan: All tracks

Submit your Graduation Plan to the Board of Examiners ([Examencommissie-BK@tudelft.nl](mailto:Examencommissie-BK@tudelft.nl)), Mentors and Delegate of the Board of Examiners one week before P2 at the latest.

The graduation plan consists of at least the following data/segments:

<b>Personal information</b>		
Name	Eun Bin, Boo	
Student number	5948134	
<b>Studio</b>		
Name / Theme	AR3RE100 Veldacademie / Resilient Rotterdam Graduation Studio	
Main mentor	Robbert Guis	Architecture
Second mentor	Frank Schnater	Building Technology
Third mentor	Fransje Hooimeijer	Research
Argumentation of choice of the studio	<p>Veldacademie Graduation Lab is one of the most unique design studios of the Master's curriculum that sets foot in a real and immediate setting. With an emphasis on fieldwork, students engage with the target groups to have discussions with field experts in the process of research and incorporate ongoing/future planning of the municipality into the design. This means that research and/or design outcomes can contribute to society.</p> <p>Personally, this was the perfect choice for me since I moved to the Netherlands, hoping to learn the "Dutch way" of building architectural and social environments. For someone who wishes to stay in the Netherlands after graduation, it not only prepares me to face the problems in real life but also helps me get equipped with the multifaceted methods to solve these issues.</p> <p>One says the world is changing not by information, but by knowledge, which stems from interaction. In this studio, researching on foot, rather than only on paper, was a pleasant challenge of getting myself out of my comfort zone - ready to be confronted with the unexpected and unknown..</p>	

<b>Graduation project</b>	
Title of the graduation project	Turning “Virtual Fence” into Safety Net for Heijplaat : External Safety Risks from Working Ports, Elephants around the Port-Nested-Village
<b>Goal</b>	
Location:	Heijplaat, Rotterdam, Netherlands
The posed problem,	<p>Whereas the port was making the city in the past, today, the city is (re-)making the port. Rotterdam port has been developing westwards to the North Sea since the 1960s, but the city continues to employ the romanticized image this manmade landscape offers to the city. The question then is, how does this image make us oblivious of what port delivers to the people of Rotterdam, rather than to the city of Rotterdam?</p> <p>Conceived in the 1910s by Rotterdam Dry Dock Company, Heijplaat is a garden village completely encircled by the last operational city ports (Stadshaven) of Waalhaven and Eemhaven. In this “port-nested-village,” administrative complexity and illegible separation between the village ground and the port ground demand a more nuanced discussion about “safety”, especially given the friction of the notion of safety in the village and security in the port.</p> <p>The municipality of Rotterdam measures objective and subjective safety (veiligheid) for every neighborhood based on five categories. However, the research urges that due to the historical background and geographical specificity, the safety index of Heijplaat, in particular, should be expanded to reflect the external safety risks that derive from the port.</p> <p>How should we define safety in Heijplaat? How can we safety-fy the working ports of and the port-nested-village as a whole?</p>
research questions and	Can architectural/urban intervention activate spatial qualities that create a safety net for the port-nested-village against external safety risks from the port?

	<p>Sub Question 1: How can we develop a common architectural/urban language between industrial security and village safety?</p> <p>Sub Question 2: In what ways can a spatial structure safety-fy the external risks from the port at a local level?</p> <p>Sub Question 3: What kind of structural flexibility and scalability can integrate a public space in the middle of the village and the port?</p>
<p>design assignment in which these result.</p>	<p>A public complex of a cultural building with a configurable plaza, a water square with flood mitigation strategies, and a parking tower with an observation deck</p>

While answering each sub-questions, the outcome of the research translates to the urban strategy, program & location, and architectural concept, in the respective order. The public complex aims to serve as a “middle ground” on three different levels.

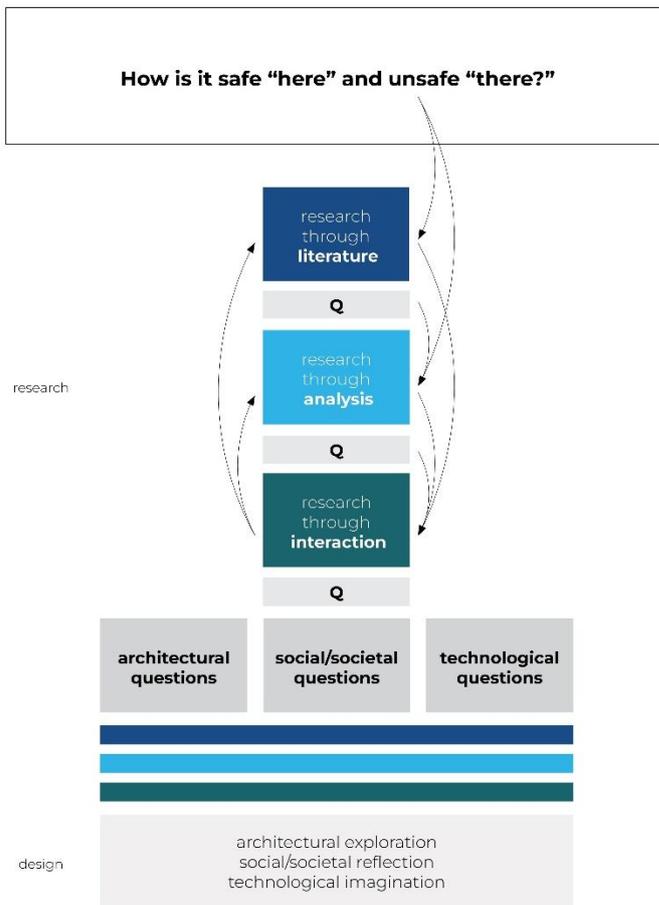
One, a middle ground between Rotterdam Center and Rotterdam South. Remote Heijplaat with limited accessibility will become a unique destination, offering scenes that are out of everyday-ness for the city dwellers. This will help the village to be a strong marker on the map of Rotterdam, further empowering their heritage townscape. It should redistribute the cores across Rotterdam South, making Rotterdam a polycentric city.

Two, a middle ground between the industrial port and the residential village. Two adjacent grounds with distinctive scales, aesthetics, systems, languages, protocols, and mentality will find a transitional space. It should blend in the vitality and technology of the port and the tranquillity and human-ness of the village. The unconventional combination of contrasting scale and aesthetics and the integration of “port language” into the project should familiarize people with the formerly unknown and distant world, which will add to the sense of safety in the end.

Three, a middle ground between a system of security and a sense of safety. There is a profound limitation of safety index and measures, specifically for the case of Heijplaat at the moment. The project will turn the current insignificant fence into a safety net that mitigates the external safety risks from the port, believing that “Good fences make good neighbors,” quoting Robert Frost. With a design concept inspired by the symbiosis of the two worlds, it aims to co-grow the village and the port.

## Process

### Method description



The research initiated with a spark of instinctive question upon observing the illogical distinction between security in the port and safety in the village despite the geographical adjacency - "How is it safe here and unsafe there?" This has led to the first round of questions, which were answered by research through literature, analysis, or interaction in the preliminary research phase (P1). By the end of P1, further generated and unanswered questions were formulated into the operational questions in three umbrellas: architectural, social/societal, and technological.

MAIN RESEARCH QUESTIONS

# Can architectural/urban intervention activate spatial qualities that create a safety net for the port-nested-village against external safety risks from the port?

SUB-RESEARCH QUESTIONS

How can we develop a common architectural/urban language between industrial security and village safety?

In what ways can a spatial structure safety-ify the external risks from the port at a local level?

What kind of structural flexibility and scalability can integrate a public space in the middle of the village and the port?

OPERATIONAL QUESTIONS

**A1**  
How have divergent interests of the village and the port been spatialized since the village was established by the port company?

**A2**  
What are the existing tangible/intangible elements that create a sense of safety in the village or achieve security in the port?

**S1**  
What are the prominent spatial politics that challenge the port-nested-village to establish symbiosis with the port?

**S2**  
Through what method can we localize external safety risks at institutional, municipal, national, or international levels?

**T1**  
Which current port innovations have the possibility to counteract the identified external safety risks?

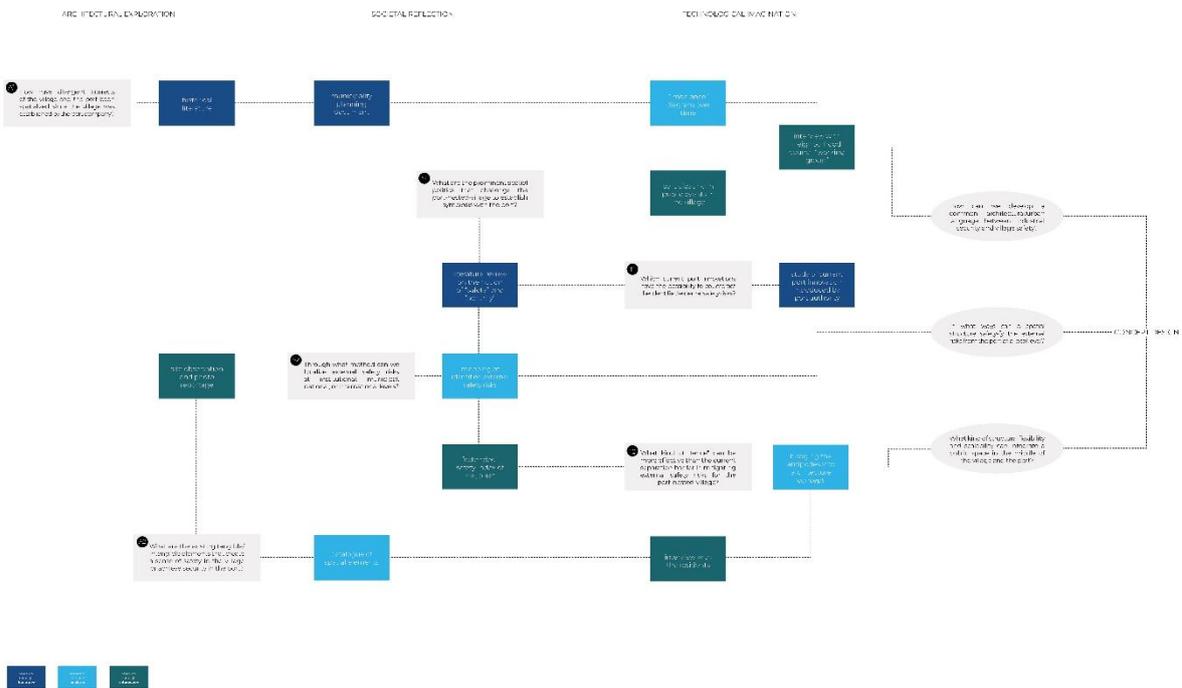
**T2**  
What kind of "fence" can be more effective than the current separation barrier in mitigating external safety risks for the port-nested village?

ARCHITECTURAL EXPLORATION

SOCIAL REFLECTION

TECHNOLOGICAL IMAGINATION

Again, in the research phase (P1 onwards), research through literature, analysis, and interaction has led to answering these operational questions. The combination of operational questions from two categories answered each one of the sub-questions. Ultimately, all three sub-questions together helped provide the possible solution to the main research question.



## Literature and general practical references

### Research through literature including but not limited to:

- 1) Historical research (e.g. planning report, newspaper, print books)
- 2) Literature review (e.g. research papers and print books on relevant topics)
- 3) Collection of data from online sources (e.g. Heijplaat local blog, Port Authority, Rotterdam Municipality/Government of Netherlands, documentary film)

Dicke, Matthijs, and Annelies van der Zouwen. 2006. *Stadshavens Rotterdam: De Historische Ontwikkeling van de Waalhaven, Eemhaven, Merwehaven En Het Vierhavengebied in Kaart, Woord En Beeld*. de HEF Publishers.

Gemeente Rotterdam. *Wijkakkoord Heijplaat 2023-2026*. Mijn Rotterdam, August 2023. <https://mijn.rotterdam.nl/link/project/wijkakkoordheijplaat>

Gemeente Rotterdam, and Port of Rotterdam. 2011. "City Ports Rotterdam – Structure Vision." *Circular Flanders*. September 2011. <https://circularports.vlaanderen-circulair.be/publication/city-ports-rotterdam-structure-vision/>.

Ghosen, Danny. 2021. "Zij Halen Cocaine uit de Containers (1/2)" *DANNY'S WERELD* #12. November 4, 17:12. <https://www.youtube.com/watch?v=fLdoB7dHres>

Newman, Oscar. 1972. *Defensible Space: Crime Prevention through Urban Design*. New York: Collier Books.

Port of Rotterdam. 2023. "Ondermijnende Criminaliteit." Port of Rotterdam. February 2023. <https://reporting.portofrotterdam.com/jaarverslag-2022/a2857-ondermijnende-criminaliteit>.

Rotterdamsche Droogdok Maatschappij, N.V. 1920. *Tuindorp "Heijplaat" van de Rotterdamsche Droogdok-Mij*. Rotterdam: Hofdrukkerijen Arps & Zoon.

van der Laan, Franca, Anne Bakker, Kars de Bruijne, Sheila Jacobs, Lennart Landman, Thomas Rijken & Wouter Zweers, *Het grenzeloze werkveld van de politie: Externe veiligheidsontwikkelingen en hun implicaties voor internationale samenwerking*, The Hague, The Netherlands, Netherlands Institute of International Relations 'Clingendael', 2016.

*\* A full list of literature references can be found in the research paper.*

### **Research through analysis including but not limited to:**

- 1) (Comparative) mapping series in city-scale and village-scale
- 2) Safety/Security elements diagrammed into a categorized catalog
- 3) Chronological cartography of societal changes
- 4) Collages and sketches as representation of findings

### **Research through interaction including but not limited to:**

- 1) On-site observation and documentation (e.g. photo reportage)
- 2) On-field participation in port-related events (e.g. PortCityFutures), public events in Heijplaat (e.g. Harbour Run 2024), and community events organized by Heijplaat community center (e.g. Monday evening stroll, Tuesday dinner sharing)
- 3) Interviews with residents and city experts/neighborhood council
- 4) Discussion with port/safety/security related topics

### **Reflection**

1. What is the relation between your graduation (project) topic, the studio topic (if applicable), your master track (A,U,BT,LA,MBE), and your master programme (MSc AUBS)?

I have always believed that architecture gains huge potential when the design reflects on societal issues and seeks technological innovation - it should strive to incorporate something beyond the preconceived.

In the course of the research, I had few chances to discuss with the experts relevant to the topics of external safety, security, and port, whose expertise is outside the field of architecture (e.g. Computer science, former police department). There, I was often questioned, "So, what can architecture even do to help with this problem?" Striving to understand and translate the issues when others see no direct connections with the built environment, it was a valuable lesson that trained me to work for architecture that "bridges."

2. What is the relevance of your graduation work in the larger social, professional and scientific framework.

The topic of safety is complex but crucial to discuss in building social sustainability – for one, Rotterdam has begun a new safety initiative ("Veiligheidkoers") in 2022 to make the whole city, including the port, more resilient. As the leading contributor to the delta and water-related issues globally, the discussion of the port-city interface is critical and immediate in the Netherlands. Especially, the case of Heijplaat and Waal-Eemhaven requires a special classification of "port-nested-villages" that will initiate a specialized and nuanced approach to expanding the notion of safety.

