Haven - Stad

Research on a new housing typology for harmonious coexistence between city and industry in Haven-Stad.

By David Oudega

Content Research Plan

Personal Information
Name: David Oudega
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Studio
Name of studio: Architectural Engeneering
Design tutor: Dafne Sara Swank
Research tutor: Siebe Broersma
Argumentations of choice of the studio:

I chose the Architectural Engineering Studio because it offers a unique integration of technical innovation and creative design, enabling me to address the urgent environmental challenges of our time. The studio's emphasis on finding practical and innovative solutions for complex ur-ban issues aligns perfectly with my academic interests. My research is focused on the housing shortage in the Netherlands, where extreme solutions are needed to meet the demand. Spe-cifically, I aim to explore the integration of residential spaces with industrial activities in urban areas, and to develop a strategy to address the challenges of these mixed-use environments.

The flexibility to define my own problem and context based on personal fascination is a signi-fi ficant factor in my decision. My project explores the integration of residential and industrial spaces, and I believe that the studio's emphasis on research-driven design is the ideal platform to further develop this concept. I also value the studio's technical approach, as I believe that ar-chitecture should merge design and engineering seamlessly, ensuring that technical solutions enhance the overall concept rather than being added later in the process.

This studio allows me to refine my skills in harmonizing design and technical solutions while addressing complex societal challenges, making it the perfect environment for my graduation project.

Keywords

Industrial-residential coexistence, Haven-Stad, sustainable urban development, urban Integration, symbiotic relationships, pas-op-de-plaats areas.

General problem statement

The City of Amsterdam aims to undertake a large-scale transformation in Haven-Stad, an area located in the western port zone within the A10 ring road. Currently, this area is primarily used for industrial and port activities. Haven-Stad is considered the “missing piece of the pie” within the A10 ring, where the city center of Amsterdam is expanding in a circular pattern. This makes it a highly promising location for developing high-density, mixed-use urban districts that combine residential and work spaces. The plan for Haven-Stad envisions a living-working mix, aiming to construct approximately 40,000 to 70,000 new homes and create 58,000 jobs between now and 2040. This transformation must be carried out sustainably, focusing on ensuring a healthy living environment and good accessibility. With this plan, the Municipality of Amsterdam is seeking to create a balanced living-working environment. (Antea Group, 2017, p. 15)

Figure 1: Visionmap of Haven-Stad plan

A significant obstacle to the transformation of Haven-Stad is the “pas-op-de-plaats” agreement established in 2008 between the City of Amsterdam, the Province of North Holland, and companies such as Cargill, ICL Fertilizers, and Eggerding, located in the Coen- and Vlothaven areas. This agreement stipulates that no residential construction may take place in certain parts of the area until 2040 to prevent disruption to the operations of the existing heavy industries. Paradoxically, these “pas-op-de-plaats” zones house the most intensive industrial activities while also being the areas with the highest demand for housing and employment opportunities. (Provincie Noord-Holland, Gemeente Amsterdam, & Cargill B.V., et al., 2008)

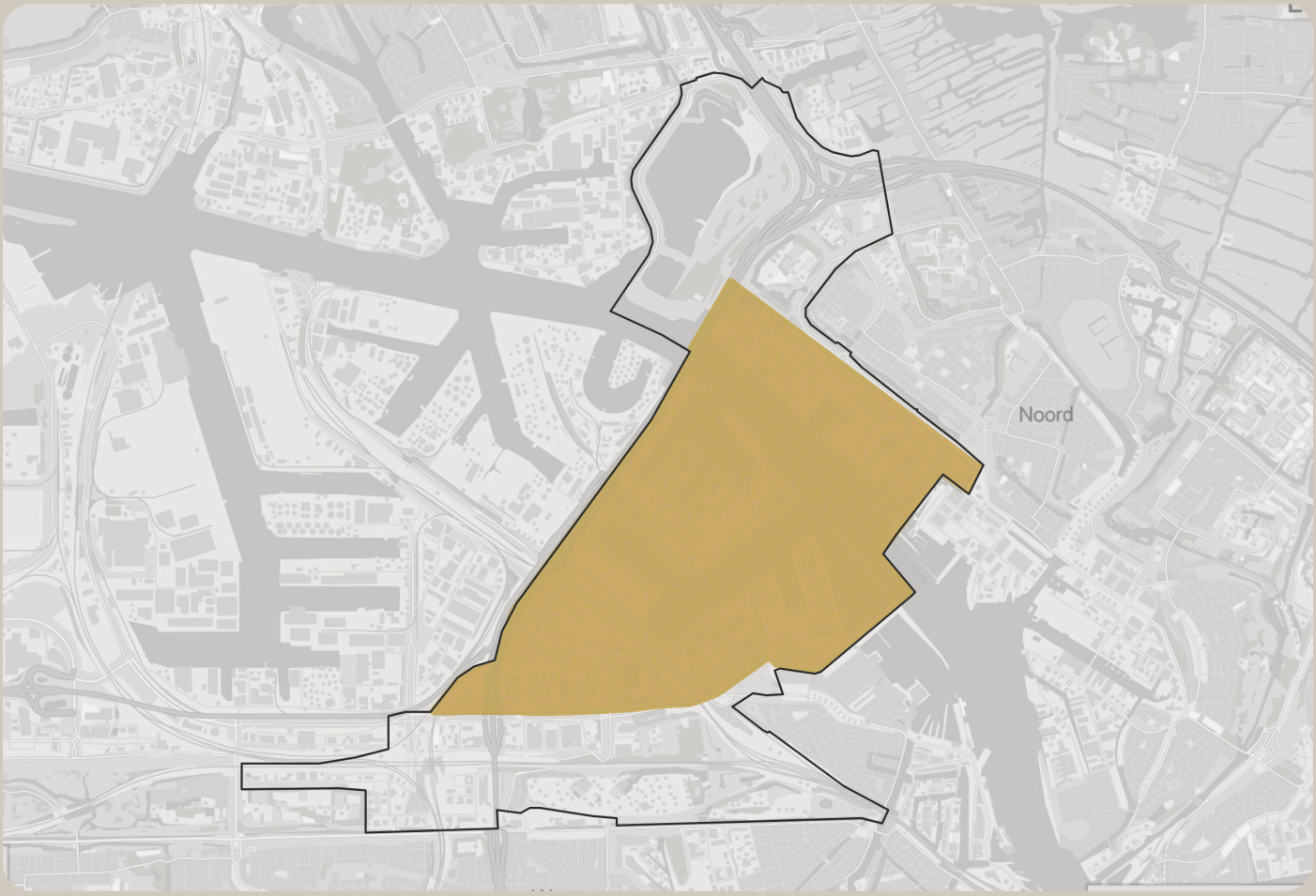

Figure 2: Map of pas-op-de-plaats area

There exists a contradiction in the municipality's policy regarding Haven-Stad. On one hand, the municipality advocates for an integrated relationship between the harbor industries and new housing developments, aiming to create an area where living and working harmoniously coexist. On the other hand, companies are being asked to make way for housing development, resulting in one function displacing the other. (Antea Group, 2017, p. 160) This approach contradicts the very essence of "Haven-Stad," where the "haven" (harbor) represents industry and the "stad" (city) represents residents. Instead of fostering a symbiotic co-existence between industry and residential living, the current strategy leads to their separation. (Gemeente Amsterdam, Ruimte en Duurzaamheid, 2017) This paradox underscores the necessity for a new housing typology that is not only technically suitable for an industrial environment but also enhances the relationship and co-existence between industry and residential life.

Furthermore, this contradiction has led to the industry being unwilling to relocate. Recent developments, such as those highlighted in a Parool article discussing how the halted relocation of a fertilizer plant is stalling construction in the Minervahaven, emphasize this issue. (Zanelli, 2024) The urgent need for affordable housing requires quick action to ease the pressure on the housing market (Capital Value & ABF Research, 2023).

To effectively address the housing shortage, it is essential to pursue more extreme solutions, as current efforts are insufficient to meet the scale of this challenge. One such approach is the integration of industrial and residential areas, enabling them to coexist in harmony. Building a strong connection between these two sectors offers a promising path forward, fostering a balanced relationship where both industry and housing can mutually benefit. This approach would free up significant space across the Netherlands for housing development.

Overall design objective

The goal of this graduation project is to design housing that allows the industry and city to coexist within the “pas-op-de-plaats” areas of Haven-Stad. Instead of just existing next to each other, the aim is for these two different worlds to interact and bring benefits to one another. This project will focus on exploring and highlighting the relationship between industrial activities and residential life as the main theme of the design.

The primary challenge is to investigate and understand the connections between residential living and industrial activities within these areas. Where do these two worlds clash, where do they need each other, and how can they mutually benefit? By analyzing the current interactions and identifying potential future changes, the project aims to uncover how these connections can be improved or reimagined for the benefit of both the harbor industries and the residents.

With the urgent housing shortage in the Netherlands, especially in Amsterdam, there is a need to consider new and possibly radical solutions. This project offers an innovative approach by encouraging collaboration between industrial stakeholders and residents to create shared spaces where work and living can exist side by side. By supporting cooperation between these groups, this research aims to open new ways to meet housing needs and improve quality of life.

This housing design aims to be not only technically suitable for an industrial area but also to encourage a connection between the harbor and the city. By creating spaces where both sides can see and experience the benefits of working together, the project seeks to close gaps and build mutual understanding. The main goal is to develop strategies that show how industrial activities and residential life can coexist and thrive, setting an example for other urban areas with similar challenges.

Overall design question

How can a new housing typology be developed for the “pas-op-de-plaats” areas of Haven-Stad that enhances the co-existence and relationship between industry and residential living, while also being technically suitable for a heavy industrial environment?

Reflection on the relevance

This graduation project is socially relevant because it addresses Amsterdam’s urgent need for affordable and sustainable housing amid rapid population growth. By focusing on transforming the “pas-op-de-plaats” areas of Haven-Stad, the project aims to integrate residential and industrial activities. This approach efficiently utilizes space while preserving existing industries. By developing a new housing typology that ensures health and livability within an industrial environment, the project offers solutions that extend beyond Haven-Stad.

This new housing typology can be applied in other industrial parts of the world facing similar challenges. The primary stakeholders are residents, who will gain access to healthy and sustainable housing, and industrial companies, which will benefit from integrated and functional urban development. By addressing these needs, the project contributes to more sustainable and harmonious urban growth globally, serving as a model for urban areas where housing and industry must coexist.

Thematic research objective

The primary objective of my research is to explore the complex relationships between residential living and industrial activities in the “pas-op-de-plaats” areas of Haven-Stad. The aim is to understand how these two different worlds—the city and the harbor—can coexist harmoniously and benefit from each other within the same area.

This research will examine the current industrial landscape to understand why these industries are located here, their importance to the city, and the benefits they bring. At the same time, it will look at who the future residents will be, what they need and expect, and how living near industry impacts them. By identifying the key values and interests of both the industrial sector and potential residents, this study aims to find shared interests and mutual benefits.

A key part of this research is to analyze the existing links between industry and residential life. The study will look at shared interests, possible conflicts, and areas where they already work together or could collaborate in the future. It will explore questions like who benefits from whom and what compromises each side might need to make to coexist. This includes examining whether their relationship is parasitic (one-sided), commensal (neutral), or mutualistic (mutually beneficial).

The primary goal is to develop a strategy that meets health and sustainability standards while enhancing the connection between industry and residential life. This approach will enable housing development in highly industrial areas. By providing strategies at various levels, the research aims to offer guidance for a range of stakeholders.

Through this thematic exploration, the research intends to address Amsterdam’s space shortage by proposing innovative solutions that bridge the gap between industrial activities and residential needs. The findings could serve as a model for other urban regions facing similar challenges.

Thematic research question

How can heavy industrial areas, such as Haven-Stad, incorporate residential housing without disrupting industrial operations, ensuring harmonious coexistence between them?

Subquestions:

1. What is the current state of industrial activities in Haven-Stad?
• What industries operate in Haven-Stad, and why are they located here?
• What disturbances or environmental impacts do these industries cause?
• How does the industrial zone connect with Amsterdam's urban fabric?

2. Who are the potential residents of this area, and what are their needs and expectations?
• What is their attitude towards living near industrial activities?
• What housing preferences and lifestyles do they have?

3. What are the potential interactions and relationships between industry and residents in an industrial urban harbour such as Haven-Stad?
• Where do industrial and residential interests align, and what opportunities exist?
• What conflicts and synergies emerge, and how can they be addressed?
• What key elements are missing to make the area suitable for residential development?

4. What urban, architectural, and technical solutions can address the interactions and relationships between residential living and industrial activities in an industrial urban harbour?
• What urban planning measures can support coexistence and improve integration?
• What architectural solutions can reduce conflicts and improve harmony?
• What technical solutions can resolve challenges related to health, safety, and sustainability?
• How can these solutions foster harmonious coexistence and reduce tensions between industry and residents?

5. What strategies can build on design solutions to establish mutualistic relationships between residential living and industrial activities such as Haven-Stad?
• How can design strategies be developed ensure a harmonious coexistence between residents and industries?
• In what ways can stakeholders implement these strategies to promote sustainable and balanced coexistence across varying industrial contexts?

6. How can these strategies, solutions, and measures be combined in a general approach to incorporate residential buildings in urban industrial areas?

Reflection on the relevance

This research is socially, scientifically, and technologically significant, addressing the challenge of integrating residential living with industrial activities in space-constrained cities like Amsterdam. Socially, it proposes innovative housing solutions to alleviate the city's space shortage, enabling harmonious coexistence between residents and harbor industries and fostering mutual benefits.

Scientifically and technologically, the study contributes new insights into urban planning and architectural design by analyzing complex relationships between industry and residential life. It explores technological solutions required to meet health and sustainability standards in industrial environments. By developing a new housing typology that incorporates advanced technologies—such as noise reduction, air quality control, and sustainable energy systems—the research provides practical tools adaptable to industrial areas. These innovations are crucial for creating healthy living environments within industrial zones. The findings will be integrated into these strategies, offering solutions that support integration of housing into other industrial regions.

Thematic research methodology

To develop a housing typology that enables harmonious living alongside heavy industrial activities in Haven-Stad's "pas-op-de-plaats" areas, I will follow a structured methodology focused on theory, site analysis, stakeholder engagement, and design solutions.

1. Literature and policy analysis

• I'll establish a theoretical foundation by reviewing academic literature on urban planning and industry-residential coexistence and analyzing relevant municipal policies and the "pas-op-de-plaats" agreement.

2. Context and site analysis

• Field visits will allow me to observe industrial operations, infrastructure, and environmental conditions like air quality and noise. This will help map the spatial and operational relationships between industry and potential housing zones.

3. Stakeholder interviews

• Organize interviews with industries and residents.

4. Interaction and relationship analysis

• I'll synthesize findings using ecological concepts like parasitism and mutualism to identify zones of conflict and collaboration, highlighting factors that support harmonious coexistence.

5. Design strategy development

• I will create innovative designs that meet health and sustainability standards, focusing on noise reduction, air quality improvement, and energy efficiency. These strategies will be applied at various project levels to ensure comprehensive and flexible solutions.

6. Validation and feedback integration

• The final phase will involve validating and refining the methodology based on user feedback, ensuring both theoretical rigor and practical relevance for Haven-Stad and similar contexts.

Expected results of thematic research and design

The thematic research aims to produce key outcomes that will directly enhance the overall design approach of the project.

Expected outcomes and deliverables:

1. Understanding interactions:
• Detailed insights into existing and potential interactions between residential living and industrial activities in the “pas-op-de-plaats” areas.
• Identification of key values, interests, and needs of both the industrial sector and prospective residents.

2. Mapping conflicts and synergies:
• Clear identification of overlapping interests, potential conflicts, and coopera-tive opportunities between industry and residents.
• Categorization of relationships (parasitic, commensal, mutualistic) to frame interactions.

3. Development of a new housing typology:
• Design proposals for housing that can be developed in heavy industrial areas.
• Architectural and technical solutions to address challenges such as noise, air quality, and safety.
• Architectural solutions focused on coexistence and housing quality.

4. Creation of strategys
Development of strategies that support the coexistence of residential and industrial areas, focusing on solutions that enhance health, sustainability, and quality of life in heavy industrial zones. These strategies will provide adaptable frameworks applicable to similar urban-industrial contexts worldwide.

Measurement of Success (KPIs):
• Stakeholder engagement:
- Feedback from industry representatives, resi-dents, and policymakers.

• Practicality of the strategies:
- Successful testing demonstrating effectiveness and adaptability.

• Achievement of objectives:
- Timely completion of milestones.
- Successful development of the housing typology and design tool.

• Impact on design:
- Effective incorporation of research findings into final designs.
- Introduction of innovative solutions for integrating housing in industrial areas.

The research aims to deliver actionable insights for developing a strategy that promotes harmonious coexistence between industry and residents. Success will be measured by stakeholder engagement, the strategy’s practicality, achievement of objectives, and positive design impact. By integrating these findings, the project seeks to address Amsterdam’s space shortage in an innovative and sustainable way, offering solutions that can be applied in other cities as well.

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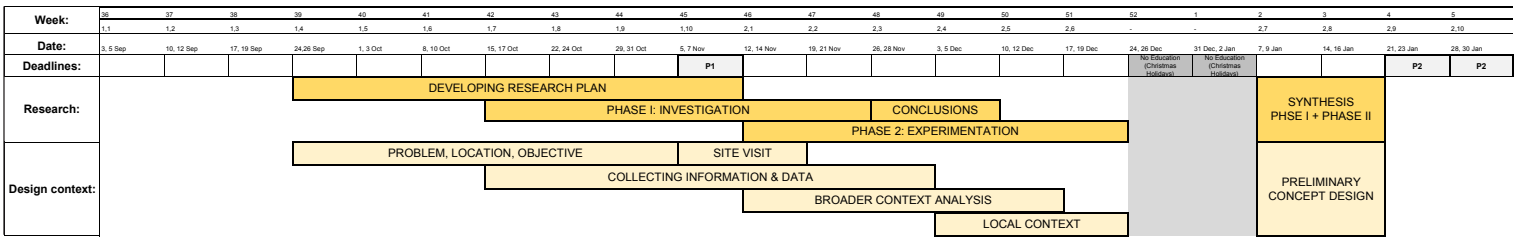
Planning

AE STUDIO CALENDAR - Haven-Stad

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