The Historical Waterfronts of Stadswerven

Discovering Value for Design

Student: Daan Zimmerman 5097681
Course: Graduation Studio Revitalizing Heritage
Delft University of Technology
21/03/2025

Table of Contents

1. Introduction

1.1. The Historical Waterfronts of Stadswerven

An extra direct connection between Stadswerven North and South is desired to improve the solidarity between public functions and the present heritage (Fig. 1[1]). Currently, public functions are fragmented due to the river Wantij. By bridging the river, the public functions will be better connected, allowing them to strengthen each other.

Stadswerven encompasses a rich history that has been influential for Dordrecht. To achieve a meaningful design for the connection, the history must be understood thoroughly. Therefore, this paper elaborates on the waterfronts[2] of Stadswerven in Dordrecht from 1600 till today. It aims to discover historical elements that describe the heritage of the subareas of Stadswerven; Lijnbaan, Watertorenterrein, and Kop van de Staart, which will guide the design of the new connection.

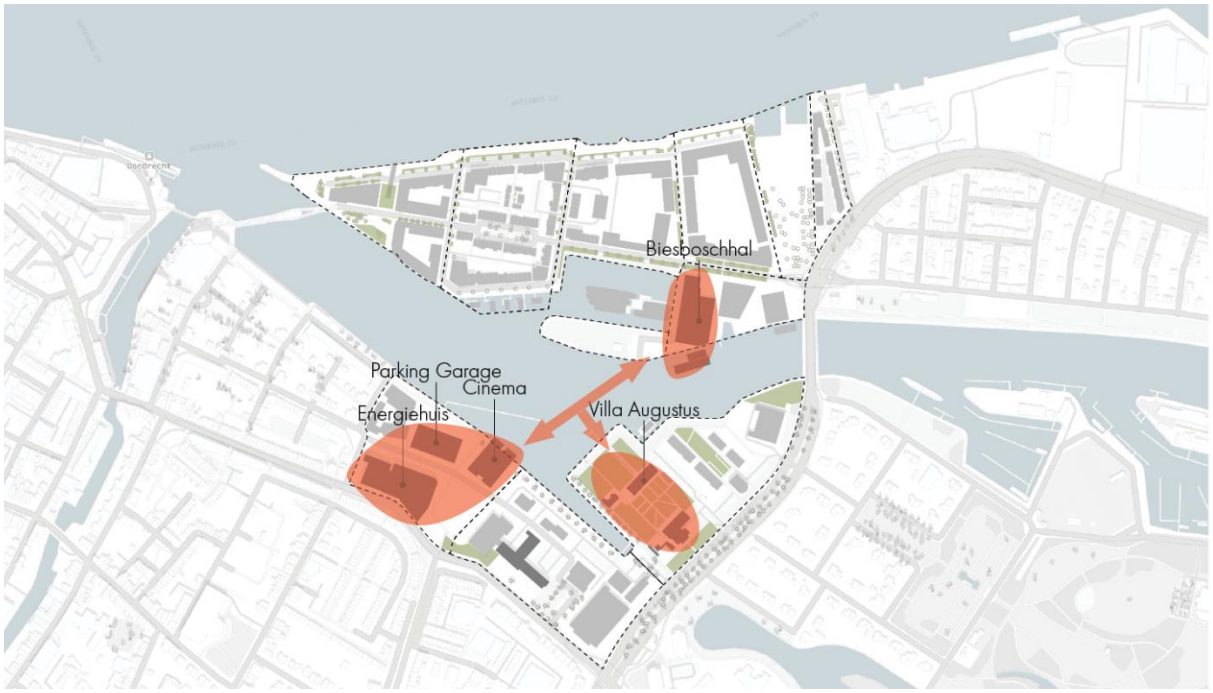


Figure 1 The Masterplan of Stadswerven, in which public areas (indicated red) are disconnected by the river Wantij (Source: Author, 2024).

First, this research describes a short history of Dordrecht, providing a general understanding of topics that are addressed later in the paper. Afterwards, each subarea's functional and physical changes are discussed chronologically, providing specified knowledge on the locations' history. Subsequently, specific elements are highlighted that embody positive historic value and today's situation is analysed on the presence of those elements. After establishing a balance of what valuable elements are still present and which are not, a design proposal is presented that fits within the historic context of the location and reflects on missing historic values.

[1] Fig. is the abbreviation of Figure.

[2] "A waterfront is a part of a town that is next to an area of water such as a river or the sea" (Cambridge Dictionary, 2024).

1.2. Methodology

To guide this research, the following research question has been formulated:

What historical waterfront elements of Stadswerven embody positive value for the design of the connection?

As Fig. 2 shows, Stadswerven can be subdivided into three areas: Lijnbaan, Watertorenterreinm and Kop van de Staart. The red line defines the waterfronts this research investigates. This range is selected for its proximity to the connection's location. The depth of the studied waterfronts depends on the plot of the river-adjacent function.

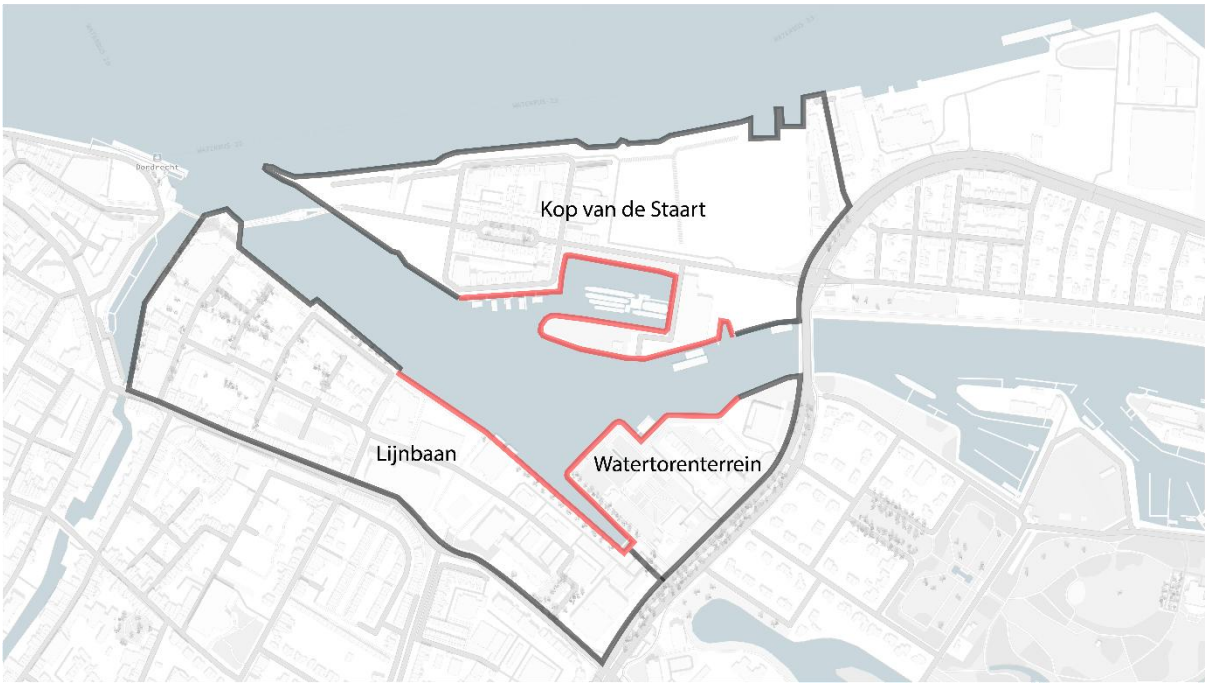


Figure 2 The length of the waterfronts considered in this study (Source: Author, 2024).

The steps undertaken in this research are discussed in the following subchapters.

1.2.1. Map Analysis and Archival Research

First, a historical investigation and context analysis must be conducted to answer the research question. The motives for change and physical transformation must be clearly understood before historical elements can be considered valuable.

Therefore, a map analysis assisted by archival research must be executed to discover and understand past transformations. Moments of transformation can be identified first by analysing alterations in historic maps. Subsequently, if the motives are not understood yet, they can be retrieved from archival research. Photographs, old news papers and articles provide the missing information. Dordrecht's rich history is well documented and preserved in local archives that can be consulted, such as the Regionaal Archief Dordrecht and Documentatie- en Kenniscentrum Augustijnenhof.

1.2.2. Value-assessment

Afterwards, it is crucial to value elements that have been influential for different periods. In the chapter "Conclusions", isometric 3D tiles illustrate the historical situations' essences. They visualise the transformations and indicate influential or characterising elements with positive value.

1.2.3. Design Concept

Lastly, a design concept is created based on the positively valued historical elements. Here, the translation of research to design is made. It serves as the basis of the design of the connection.

1.3. Relevance

The areas Lijnbaan, Watertorenterrein, and De Staart have been analysed and studied by others before. Zondervan-van Heck, J, and Grol, K, both members of the history association "Vereniging Oud-Dordrecht", have written about the history of Lijnbaan in "Jaarboek Ver. Oud-Dordrecht 2001". Similarly, "Vereniging 'De Binnenvaart'" has published the book "In 100 jaar van scheepswerven naar Stadswerven", which is focused on the history of Scheepswerf De Biesbosch, a shipyard located on De Staart. However, this paper's focus differs from the literature mentioned above. Where they are a fine source for genealogists (Zondervan-van Heck & Grol, 2001) or serve as a memory of a shipyard, this research contributes to historical documentation through the lens of an architecture student, resulting in a new type of documentation. This research seeks historical value for design and not so much a historical narrative.

This specific area of Dordrecht has undergone several historical transformations, is undergoing a major transformation, and is likely to be transformed in the future. Documentation on how and why this area has physically transformed and valuable historical elements is helpful for mainly (landscape) architects and will directly inspire the author's graduation project and perhaps others in the future.

Although the research's outcome is unique to a specific location, the methods applied can be used for other locations.

2. Short History of Dordrecht

2.1. Early Days

Dordrecht originated due to its strategic location at the confluence of three rivers. The settlement grew and was the first in Holland to receive city rights in 1220. Due to its favourable location, the Count of Holland granted Dordrecht the "stapelrecht"[3] in 1299. This privilege provided a significant economic boost, and Dordrecht became a trade centre. It was a prosperous time for the town.

In 1421, the dikes broke due to the St. Elizabeth's Flood. The Grote Waard[4] was completely flooded, turning Dordrecht into an island and restraining it from growth (Fig. 3). It caused a setback for the local economy, especially compared to other cities.

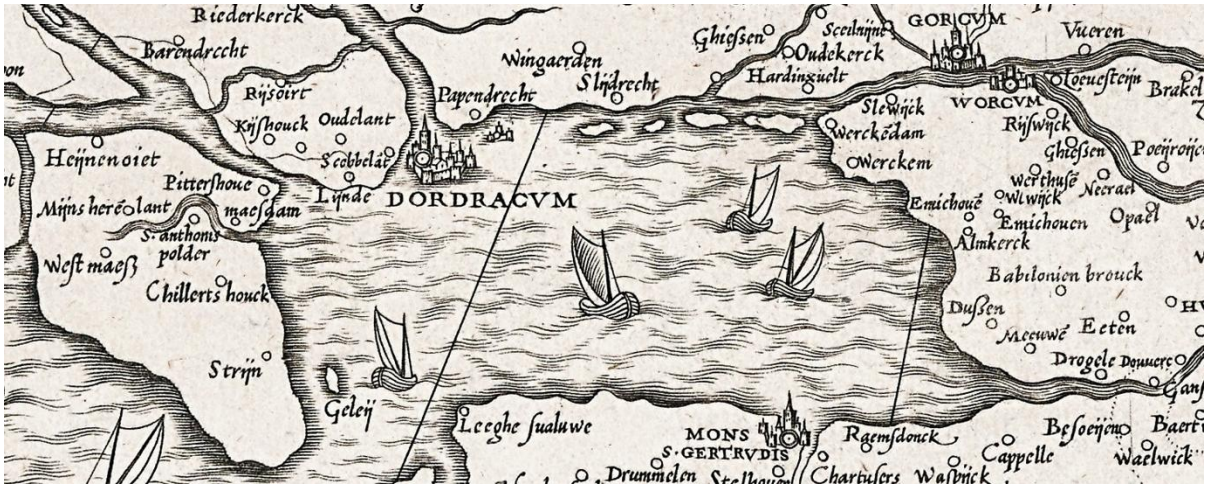


Figure 3 The 1558 map by Jacob van Deventer illustrates the result of the St. Elizabeth's Flood of 1421, which left Dordrecht surrounded by water (Source: DordrechtPlattegronden, n.d.).

It wasn't until the late 16th century that the land south of Dordrecht began to dry. Between 1601 and 1603, the polder Het Oude Land van Dubbeldam was the first to be diked and reclaimed. The Noordpolder followed in 1616, and the Zuidpolder in 1617. This made the land south of Dordrecht more accessible and provided opportunities for city expansion. In 1604, the city purchased land from the Ambachtsheerlijkheid van der Merwede[5], where industries could establish themselves favourably along the wide river Merwede. (Zondervan-van Heck & Grol, 2001).

2.2. Houtvlotterij[6]

Timber, mainly originating from Schwarzwald in Germany, was easily transported downstream to Dordrecht by timber rafts. This industry, called "Houtvlotterij", took on severe forms, making Dordrecht a hub of timber trade (Fig. 4) (Van Prooije, 2005).

[3] The "stapelrecht" constitutes that all goods passing Dordrecht via the waterways had to be offered for trade in the city.

[4] A large peat terrain between Maasdam en Heusden was partly reclaimed and used for agriculture.

[5] Ambachtsheerlijkheid van der Merwede was a part of county 'Van der Merwede' and took care of the reclamation of the peat landscape so it could be used for agriculture (Archeologie en Monumentenzorg, 2000).

[6] Houtvlotterij translates to Timber Rafting, which was the method of timber transport.

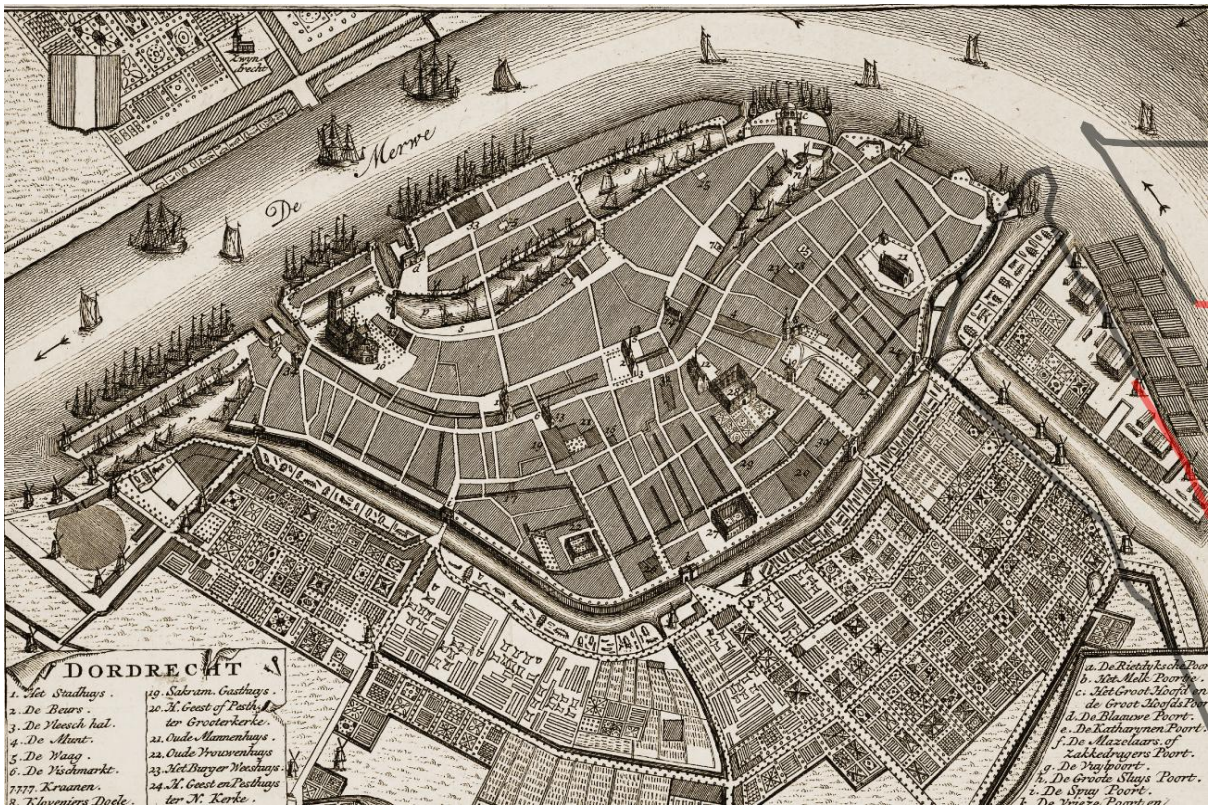


Figure 4 The 1742 map by Is. Tirion illustrates the timber industry "houtvlotterij" on Lijnbaan (the author indicates Lijnbaan like in figure 2) (Source: DordrechtPlattegronden, n.d.).

This trade centre was primarily located at Lijnbaan, the newly acquired land, just south of Dordrecht's city centre and outside the current of the Merwede River. The imported timber was stored in "balkhavens"[7] and processed in sawmills (Fig. 5).

Figure 5 A painting by A. van Strij depicting many timber rafts on the river in front of Lijnbaan and many mills on the horizon (Source: Jaarboek Ver. Oud-Dordrecht 2001, 2001).

2.3. Maritime Industry

From 1872, Dordrecht shifted towards being a city of industry rather than trade. The construction of the Nieuwe Waterweg in 1872 positioned Rotterdam as the main port of Holland (Canon van Nederland, n.d.). This development diminished Dordrecht's long-standing position as a trade centre. The rise of Rotterdam's port ensured that Dordrecht and its surroundings could act as port-supporting industrial areas. This transition heralded the Maritime Industrial Era, during which numerous shipyards were established in the

[7] "Balkhavens" are harbours created for storing logs. It translates to timber harbours.

Waterdriehoek region (Rijkdienst voor het Cultureel Erfgoed, n.d.). The maritime industry in Dordrecht was, for example, found in Lijnbaan and Kop van de Staart (Fig. 6).

Figure 6 An aerial photograph from 1924 by KLM of the maritime industry on Lijnbaan and De Staart (Source: RegionaalArchiefDordrecht, n.d.).

2.4. Stadswerven

Before this paper was written in 2025, a shift had occurred. In the late 20th century, many shipyards in Waterdriehoek merged for financial reasons, moved to new harbours in the Port of Rotterdam, or had to stop due to a shortage of production requests, leaving former maritime industrial sites seeking new functions.

An example of a new purpose can be found in the redevelopment project Stadswerven, where former sites of the Scheepswerf ‘De Biesbosch’, Scheepswerf Hoebee and other industrial sites are being transformed into a new neighbourhood near the historic city centre.

3. Lijnbaan

This chapter describes the transformations Lijnbaan has experienced.

3.1. Introduction

The map of 1645 (Appendix 1) illustrates the first industrial activities in Lijnbaan. A harbour, including a shipyard and "balkhavens", is created, and a sizeable rope-making company is established here, from whom this area derives its current name[8]. Also, the windmill Kyck Over Den Dyck was built (1612 - <1713) (MolenDatabase, n.d.). Due to the "houtvlotterij", many more windmills would be established in Lijnbaan (Fig. 7).

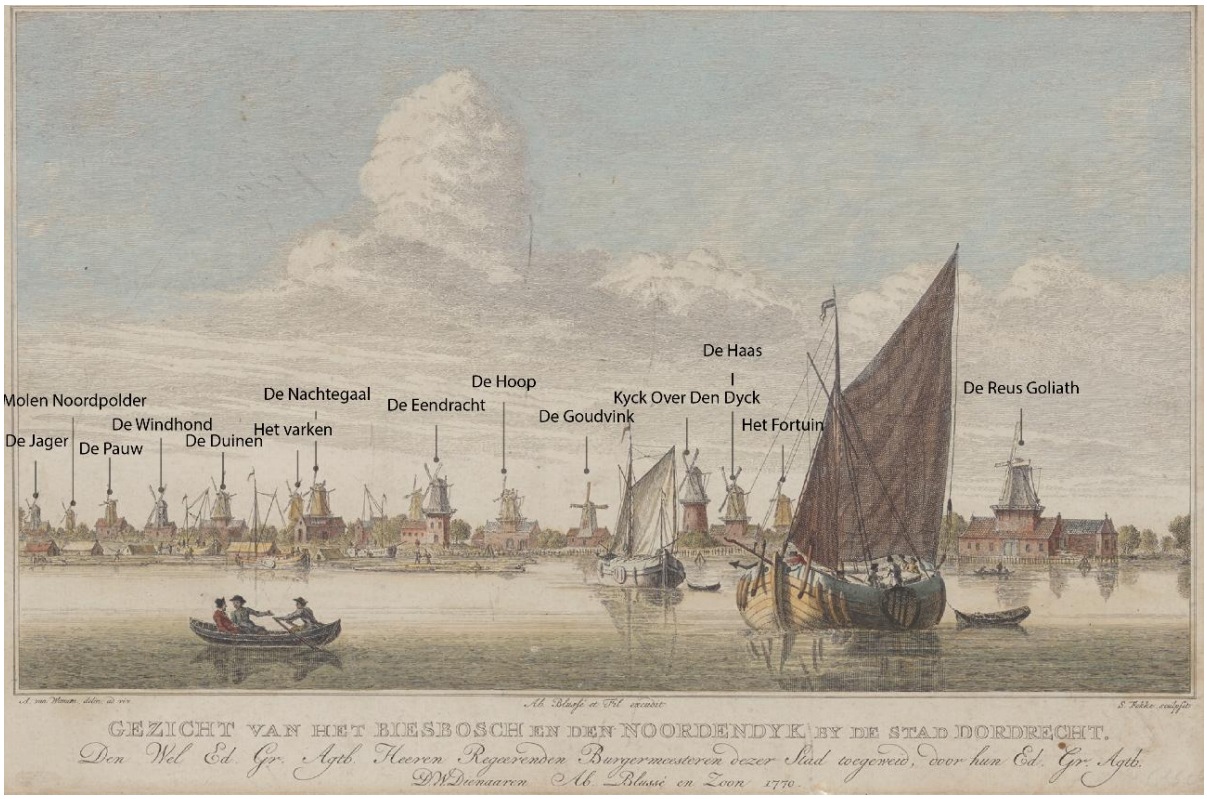


Figure 7 A painting by Arie van Wanum from 1770 illustrates the large number of mills present and several timber rafts floating in the river (the names have been indicated by the author) (Source: RegionaalArchiefDordrecht, n.d.).

3.2. Windmills and Balkhavens

The map of 1676 (Appendix 2) indicates the two first waterfront structures within the research area. Two windmills, De Goudvink and De Eendracht, were established. Both remained until 1872. This period is characterised by windmills and "balkhavens".

3.2.1. De Goudvink

The post mill De Goudvink was built in 1671 and operated as a sawmill (MolenDatabase, n.d.). The land around the mill was turned into a "balkhaven" as storing capacity needed to be optimized, which is well visible on the map of 1833 (Appendix 3). The mill burned down in 1872 and was not rebuilt as wind-powered sawing was no longer profitable. The "balkhaven" was filled in 1909 and acquired by Hoebee and the Meterfabriek (Zondervan-van Heck & Grol, 2001).

[8] Rope-making company translates to lijnbaan in Dutch.

3.2.2. De Eendracht

The octagonal mill De Eendracht was built in 1693 and functioned as an oil mill until 1803 (Fig. 8). Afterwards, the mill started operating as a sawmill and needed, for that reason, a "balkhaven", which was constructed east of the mill. The mill operated until 1871 when Hoebee bought the land (Zondervan-van Heck & Grol, 2001).

Figure 8 A Drawing from 1867 of "De Eendracht" and timber rafts in the river (Source: RegionaalArchiefDordrecht, n.d.).

3.3. Industry and the Disappearance of Balkhavens

"Houtvlotterij" gradually diminished as the Industrial Revolution started. Windmills disappeared, "Balkhavens" were filled, and different industries emerged.

3.3.1. Scheepswerf Hoebee

The brothers Hendrik and Pieter Hoebee relocated their already established shipyard from "De Hellingen" to the newly acquired plot in 1871, where the windmills De Eendracht and partly De Goudvink were previously located. They placed several smaller buildings on the plot (Fig. 9).

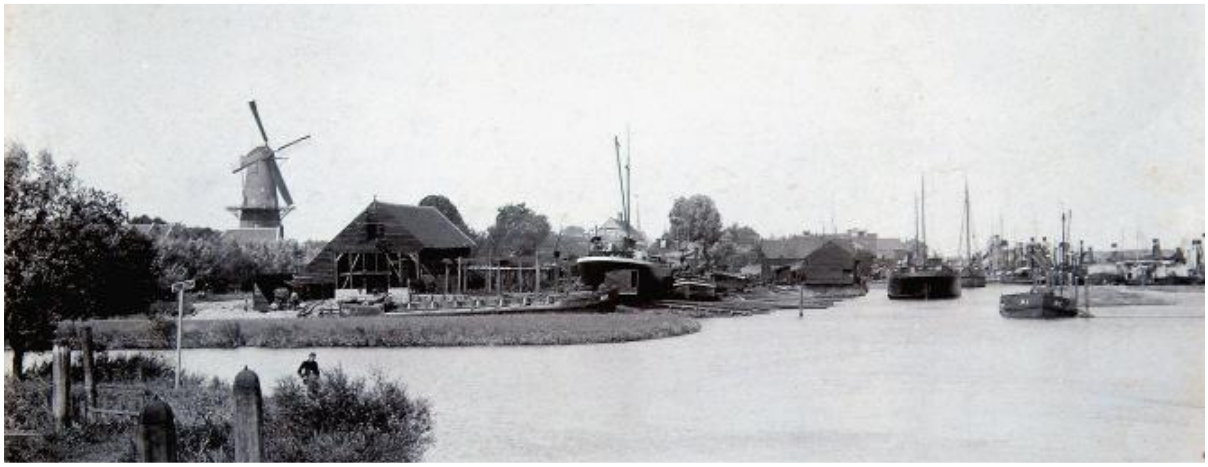


Figure 9 A photograph from 1901 of Scheepswerf Hoebee from river Vlij (Source: GemeenteDordrecht, 2017).

Hoebee expanded its plot slightly when the “balkhaven” of De Eendracht was filled in 1909. The layout of the plot was changed one final time, which lasted until 1965 when Hoebee relocated to De Staart (Fig.10). Their plot is well visible on the map of 1923 (Appendix 4) (Zondervan-van Heck & Grol, 2001).

Figure 10 A photograph from 1935 of Scheepswerf Hoebee in its final layout. Also, the second factory of Meterfabriek is visible (top right) (Source: RegionaalArchiefDordrecht, n.d.).

3.3.2. De Meterfabriek

The Meterfabriek, officially named Maatschappij ter vervaardiging van Gasmeters, was located on Lijnbaan since 1897. In 1910, the Meterfabriek acquired an additional plot on Lijnbaan adjacent to the Hoebee plot. A second factory was built here. Fig. 10 shows the new building directly next to the shipyard Hoebee. The Meterfabriek moved from Lijnbaan in 1981 to Dordtse Kill. The plot was completely cleared of buildings afterwards.

3.3.3. Gemeentelijk Energie Bedrijf - ENECO

The power company located on Lijnbaan called Gemeentelijk Energie Bedrijf, or G.E.B., constructed a 150 kV substation on the former location of a “balkhaven” in 1942, where multiple power networks were interconnected. Two more substations were built in 1950. One is located near the initial substation, and the other is on the Watertorenterrein (Fig. 11) (Monumenten Dordrecht, n.d.).

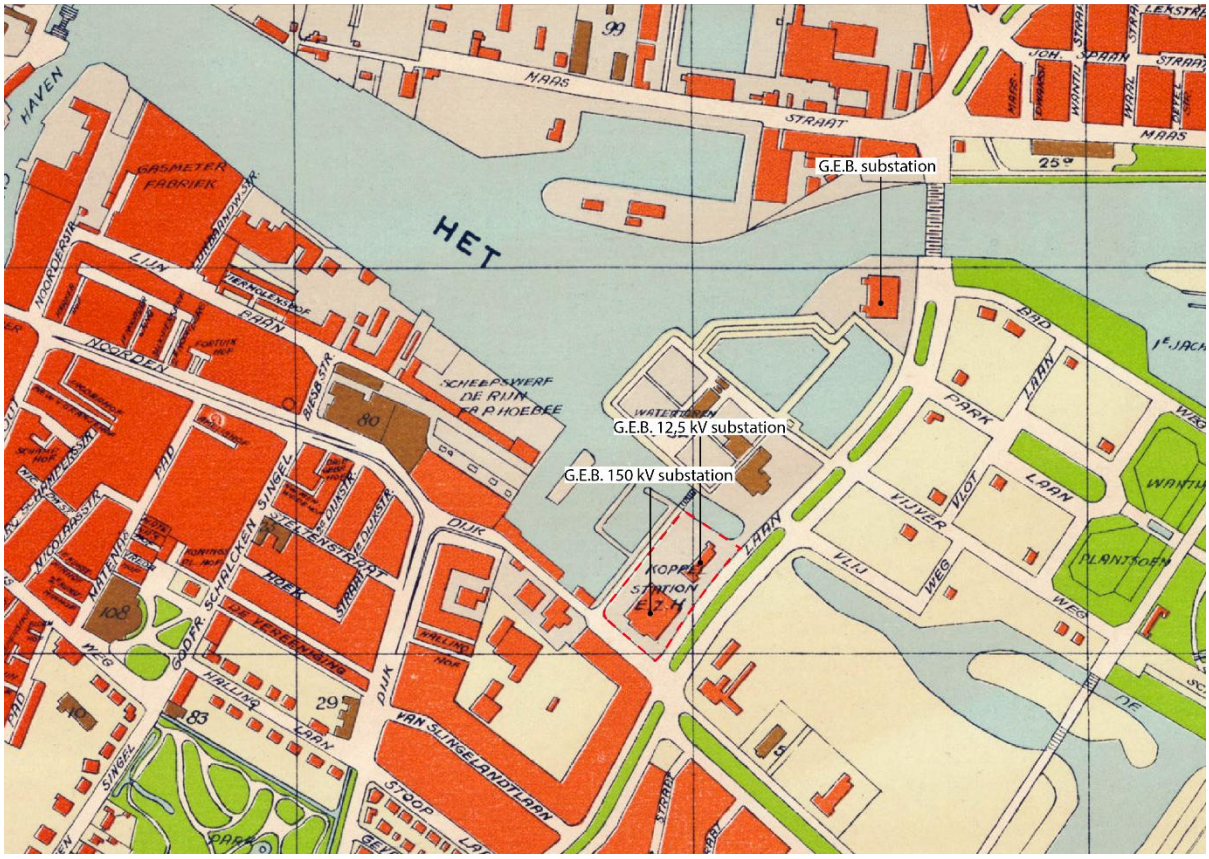


Figure 11 The 1956 map illustrates the new substations (the author indicates the former "balkhaven" with a red dotted line) (DodrechtPlattegronden, n.d.).

A new building was constructed in 1959 on the plot of a previous "balkhaven" adjacent to the plot of the substations. The building belonged to the G.E.B., the power company (Fig. 12).

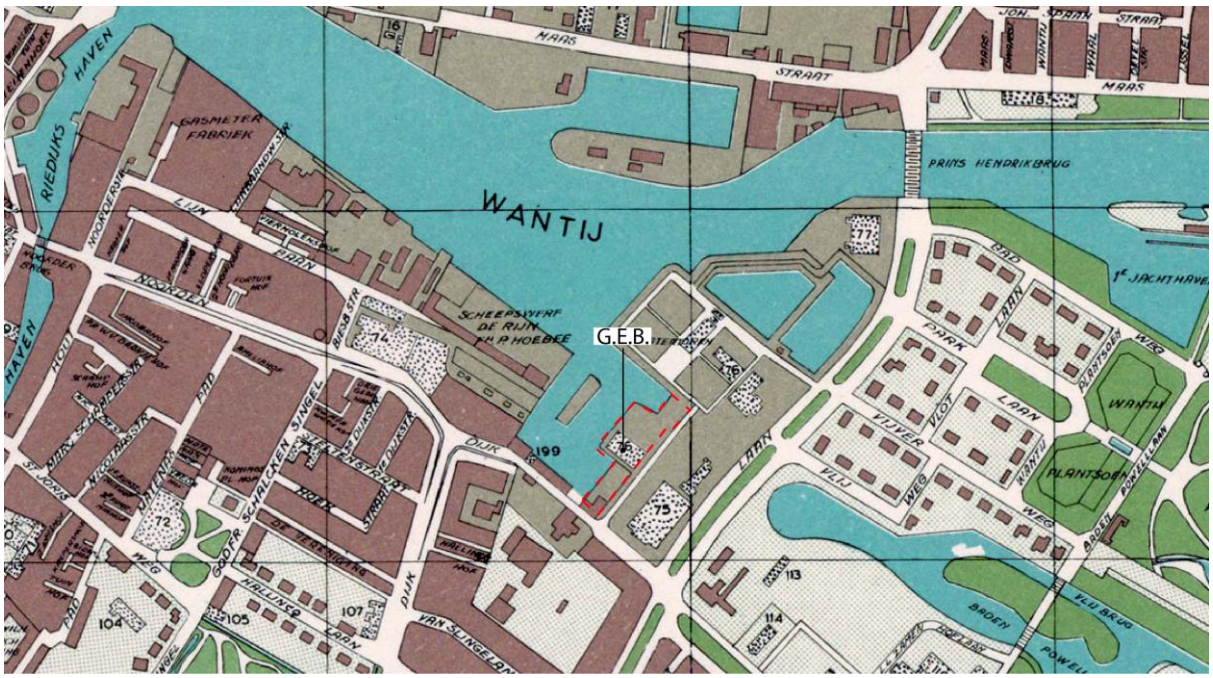


Figure 12 The 1963 map shows a G.E.B. building on a new plot (the author indicates the former "balkhaven" with a red dotted line) (Source: DordrechtPlattegronden, n.d.).

Another expansion by G.E.B. was executed in 1969, when the last "balkhaven" on Lijnbaan was filled in on which an extra building was placed (Fig. 13).

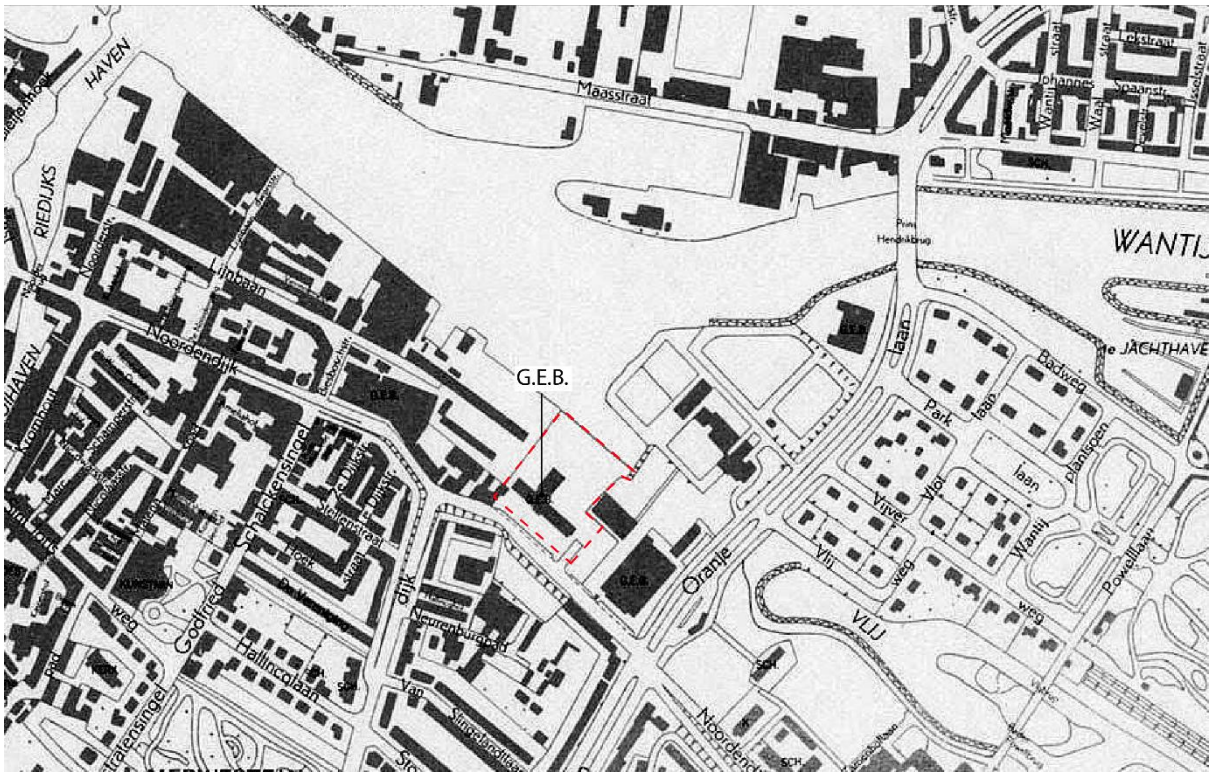


Figure 13 The 1970 map shows an additional G.E.B. building on a new plot (the author indicates the former "balkhaven" with a red dotted line) (Source: DordrechtPlattegronden, n.d.).

G.E.B. expanded one final time in 1973 when the plot previously owned by Hoebee was extended to the site of Watertoren. Images show that it was mainly used for storing construction materials and parking. Also, G.E.B. expanded to the plot of Watertoren (Fig. 14) (Watertorens, n.d.).

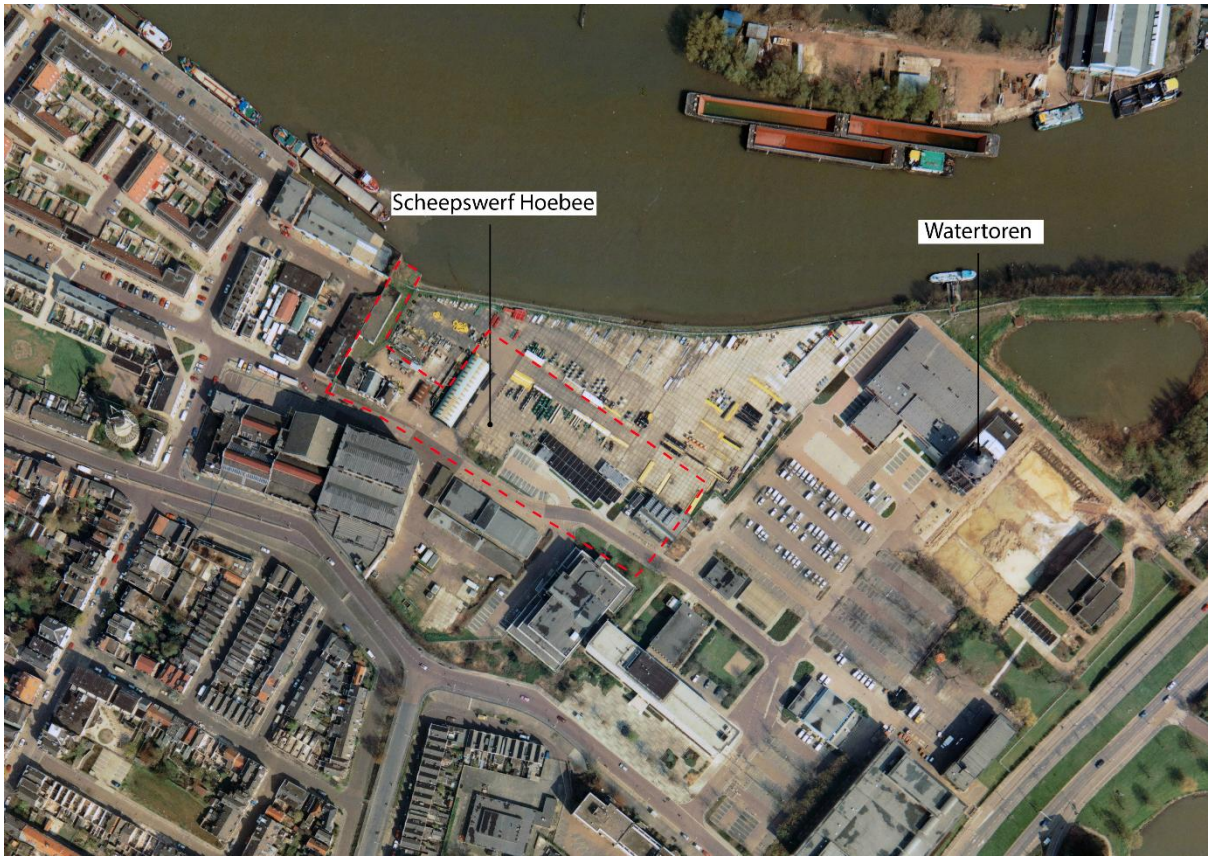


Figure 14 An aerial photograph from 1994 showing the extension in front of the previous plot of Hoebee (Source: DordrechtPlattegronden, n.d.).

G.E.B. changed its name several times, eventually becoming ENECO. In 2000, ENECO merged with six other companies and moved its business to a different location (Zondervan-van Heck & Grol, 2001).

4. Watertorenterrein

This chapter describes the transformation Watertorenterrein has experienced.

4.1. Introduction

The 1878 map (Appendix 5) shows a newly constructed piece of land in the water previously used for “houtvlotterij.” The cholera epidemic of 1866 in Dordrecht underscored the critical need for clean drinking water. Plans for a water tower emerged, which was executed on the new land in 1882. The tower was designed by J.A. van der Kloes (Van Blokland - Visser, 2007).

The water tower purified river water using open sand filtration basins and distributed it throughout the city via high-pressure pipelines. The company behind the cleaning and distribution of water was called “Hoogdrukwaterleiding” (DordtseMonumenten, n.d.).

By creating this new island, the river Vlij emerged between Lijnbaan and Watertorenterrein (Fig. 15).

Figure 15 A photograph from 1908-1912 of Watertoren seen over the river Vlij (Source: RegionaalArchiefDordrecht, 1908-1912).

Several transformations to the building and the terrain have occurred, discussed in the following subchapter.

4.2. The Water Tower and its Terrain

The 1907 map (Appendix 6) indicates the first change from 1901, when two ponds were constructed north of the terrain where water was stored, as visible in Fig. 16.

Figure 16 An aerial photograph of the Watertorenterrein from 1917-1927. The tower with its original four basins is visible, as well as the two additional ponds north of the tower (Source: RegionaalArchiefDordrecht, n.d.).

The second change to the building occurred in 1938 when the tower was extended by a 16-meter steel tube, which increased the water pressure (Fig. 17) (Baarda & Oerlemans, n.d.). The four towers were also removed during this transformation. The extension was removed in 1982 (Watertorens, n.d.).

Between 1941 and 1942, a new building, the Pompstation, was added to the terrain. This building retrieved groundwater used for purification, which was already cleaner than river water. Two basins were removed to construct the new Pompstation (Fig. 17).

Figure 17 An aerial photograph of the Watertowerterrein from 1964. The image depicts the added steel tube and the two removed basins (Source: RegionaalArchiefDordrecht, n.d.)

The Watertoren lost its initial function in 1965. Due to new techniques, the water reservoir was no longer necessary (Watertorens, n.d.). The other basins disappeared between 1990 and 1994 when G.E.B. expanded to Watertoren's terrain (explained in section 3.3.3.).

5. Kop van de Staart

This chapter describes the transformations the Kop van de Staart[9] has experienced.

5.1. Introduction

De Staart is a marshland that gradually formed after the St. Elizabeth Flood. Until 1872, this area was largely unused and depicted on maps as a landscape of osier beds and reeds (Appendix 7). The first documented functions near the study area appear on the 1872 map, which marks a "Schietbaan"[10] and a "Pontonniers terrein"[11] (Appendix 8). Photographs and maps from the 20th century confirm that the Pontonniers conducted exercises in this area until the 1920s (Fig. 18), though no additional visual documentation of the shooting range has been found.

Figure 18 A photograph from 1920-1929 showing how the "De Pontonniers" used De Staart as exercise terrain (Source: RegionaalArchiefDordrecht, n.d.).

In 1901, the municipality prepared De Staart for industrial use by raising the ground level and constructing two harbours (Fig. 19).

Figure 19 A photograph from 1901-1909 illustrating De Staart, just prepared for the maritime industry. (RegionaalArchiefDordrecht, n.d.).

[9] Kop van de Staart is part of De Staart which is how this area is further addressed to in this research.
[10] Translates to shooting range.
[11] An exercise terrain for a military division specialized in building (temporary) bridges (Ministerie van Defensie, n.d.).

By 1909, N.V. Scheepswerf Dordrecht was the first to establish operations on De Staart. They operated at Maasstraat on De Merwede's side. N.V. Machinefabriek 'De Biesbosch' was established in 1917 on Merwedestraat near Maasstraat. In 1924, the Machinefabriek expanded to Maasstraat and rented the plot where Kalis, Hoefijzerfabr. and P.Bos (who are not further discussed for their short existence and minor influence on De Staart) were positioned according to the 1911 map (Appendix 9). In 1927, N.V. Scheepswerf Dordrecht and N.V. Machinefabriek 'De Biesbosch' merged into Scheepswerf en Machinefabriek De Biesbosch and continued on Maasstraat (Van 't Verlaat, 2017).

The shipyards grew into a sizable business and experienced several expansions, discussed in the subsequent subsection.

5.2. Scheepswerf en Machinefabriek De Biesbosch

Initially, most industrial activities occurred on Merwede's side of De Staart. A large "dwarshelling," or transverse slipway, was located at the harbour, and a "langshelling," or longitudinal slipway, was positioned East of the harbour, where ships were repaired or assembled (Fig. 20).

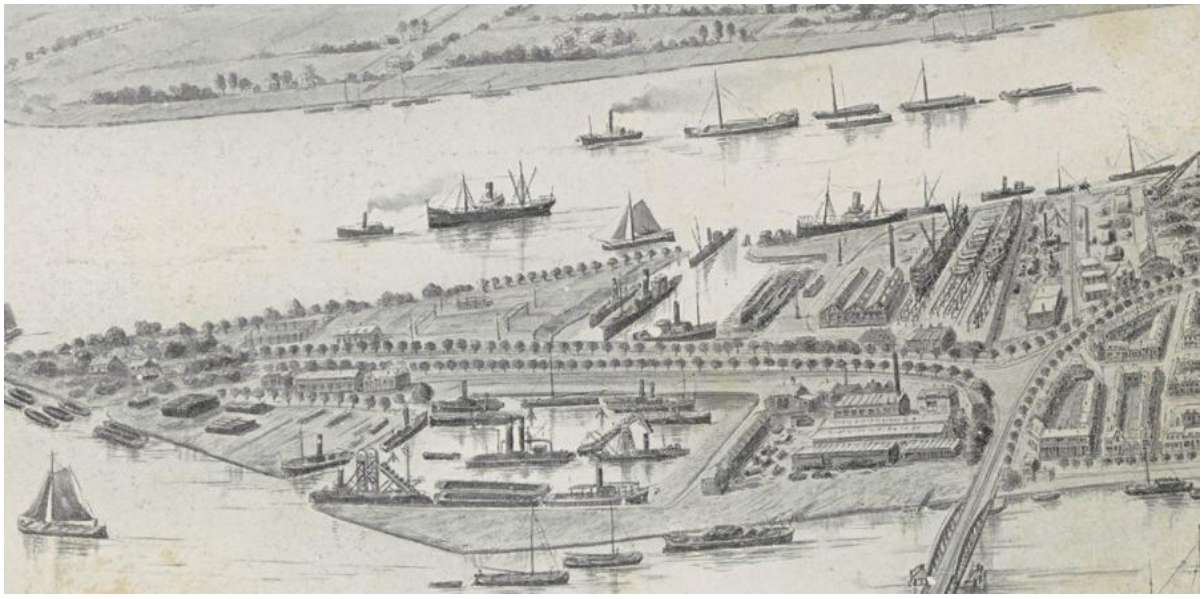


Figure 20 A drawing from 1911-1919 shows the initial layout, with two slipways on Merwede's side of De Staart (top half) (Source: RegionaalArchiefDordrecht, n.d.).

Historical maps from 1927 to 1986 indicate one specific moment of expansion on Wantij's side of the shipyard's plot, which occurred after World War II. The French awarded the shipyard a significant contract for assembling many prefabricated ships from The United States of America. An additional transverse slipway, called the "Amerikaanse Helling", was constructed for their new production line at Wantij's bank (Fig. 21) (Van 't Verlaat, 2017).

Figure 21 A photograph from 1948 shows the new "Amerikaanse Helling," on which French ships were assembled in series. The ships progressed step by step towards the Wantij, where they were finally lowered into the river when finished (Van 't Verlaat, 2017) (Source: RegionaalArchiefDordrecht, n.d.).

In 1951, a large machine factory (now known as Biesboschhal) was constructed, contributing to the production of French ships (Fig. 22).

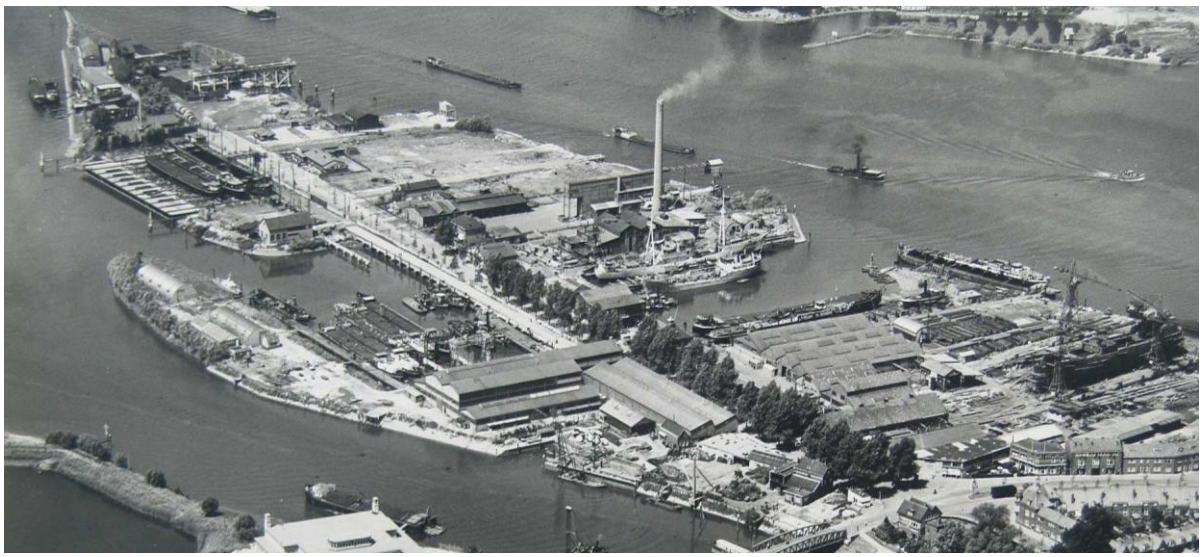


Figure 22 An aerial photograph from 1952 illustrates the new machine factory positioned East of the harbour adjacent to Wantij (bottom middle). The "Amerikaanse helling" is visible West of the harbour (top left) (Source: RegionaalArchiefDordrecht, n.d.).

The 1966 map (Appendix 10) marks two structures as "Rohney hutten", also visible in Fig. 22. Their placement is remarkable, although their function remains unclear. The 1986 map indicates several other new buildings. However, none of them are related to Wantij in terms of position or function and are therefore not discussed in this paper.

N.V. Scheepswerf en Machinefabriek De Biesbosch operated until 2000, when it filed for bankruptcy. Since then, all previous structures have been removed except the machine factory, a crane way, and a crane (Fig. 23).

Figure 23 A photograph depicting the plot after most structures had been removed. The crane (in front) and machine factory (left) are visible. In the distance, the first block of Stadswerven is visible (Source: Rob van der Pas, n.d.).

6. Stadswerven

After ENECO and N.V. Scheepswerf en Machinefabriek De Biesbosch stopped operating on Lijnbaan, Watertorenterrein, and De Staart in 2000, the municipality initiated a search in 2002 for a new purpose for the areas which resulted in the plan Stadswerven (Fig. 24).

Figure 24 A render of the plan Stadswerven (Source: JPVanHeesteren, n.d.).

The municipality decided to integrate the industrial area into the city centre and make it suitable for residential use. The plan has been divided into subareas A through J, of which only B, E, and J have been fully completed (Appendix 11). Other sections are partially completed or are yet to be initiated.

Several buildings mentioned in the previous chapters have been repurposed since. The Watertoren has been transformed into a hotel called Villa Augustus, and the Pompstation serves as a restaurant. Its terrain is transformed into a large vegetable garden (Baarda & Oerlemans, n.d.). One of the G.E.B. buildings functions as a fire station, and another G.E.B. building has been transformed into a primary school and apartment complex (Schaap en Sturm Architecten, n.d.). The substations will be converted into apartment complexes (Groeneweg van der Meijden Architecten, n.d.). The Biesboschhal is the only building left from the Industrial Era within the studied areas that has not been assigned a new function yet.

7. Valuing Historic Elements

Additional to the transformed buildings, which have been briefly discussed in the previous chapter, more subtle elements are part of the heritage of these areas too. This chapter highlights influential or typical elements from the varying waterfronts that embody positive historical value.

Afterwards, the paper concludes with the connection's design concept based on the positive historic values.

7.1. Positive Historic Values

1. The Wantij

The most essential essence of Lijnbaan's, Watertorenterrein's, and Kop van de Staart's waterfront is the water itself. Without the river, none of the developments would have occurred in these areas. Therefore, Wantij is the first and highest valued feature of the waterfronts.

Also, the Vlij is considered of positive value. The Vlij has recently been reintroduced after it had been partially filled by Eneco. It should be respected in the connection's design.

2. River-oriented Functions

Most functions located on the waterfront have a strong relationship with the river. They required access or proximity to the river. To maintain the functional use of the river, new functions should interact with the river as well.

3. Industry

The studied areas were typified by several types of industry. New functions related to industry would reflect the history of Stadswerven.

4. Floating Elements in the River

The river was frequently used for its density, which allowed timber logs and ships to float on the river. It is typical for the area as many "balkhavens" were located here as well as shipyards who utilized the river as storage space. Those have disappeared, but the river is still used intensively by pleasure boating during summer.

More subarea-specific values are discussed in the following subsections.

7.1.1. Lijnbaan

Fig. 25 visualises the transformations Lijnbaan has experienced.

5. Timber

The material timber, or wood, is considered of high value. Lijnbaan functioned as a large hub for the timber trade until 1872. Wood was processed by the mills and stored in "balkhavens". Today, no traces are visible anymore from this industry within the area of study.

6. Transverse slipway

The transverse slipway of Hoebee is considered of high value. It is one of the typical features of the shipyard industry, the most significant industry for Dordrecht during the 20th century. An interesting feature of the slipway is the gradual transition between land and water, which can be recognized in different forms in Lijnbaan through time. In plan Stadswerven, the gradual transition is available by means of a staircase, which makes the river accessible.

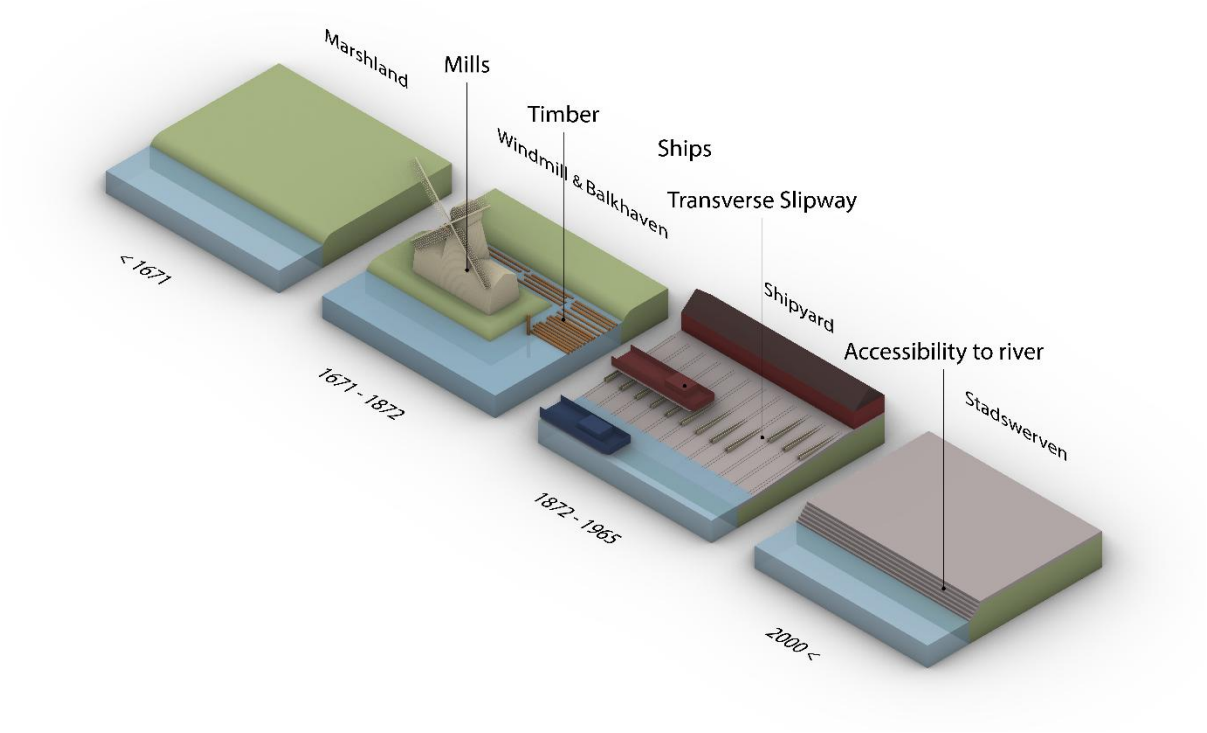


Figure 25 A representation of the transformations of Lijnbaan's waterfronts (Source: Author, 2025).

7.1.2. Watertorenterrein

The essences of the transformations of Watertorenterrein are visualised in Fig. 26.

7. Makeability of Land

Watertorenterrein exemplifies the makeability of land, as the terrain was newly constructed in Wantij. The negative effect of making land is the simultaneous action of sacrificing the river. When G.E.B. required more land, the river Vlij was sacrificed, diminishing Watertorenterrein's relationship with the river. The balance between land and water is valuable.

8. Purification and Innovation

Secondly, the Watertoren's initial function of purifying river water is highly valued. This innovative project resulted in clean, drinkable water that is vital for all lives. The tower still visually represents its past, but the actual function is no longer present.

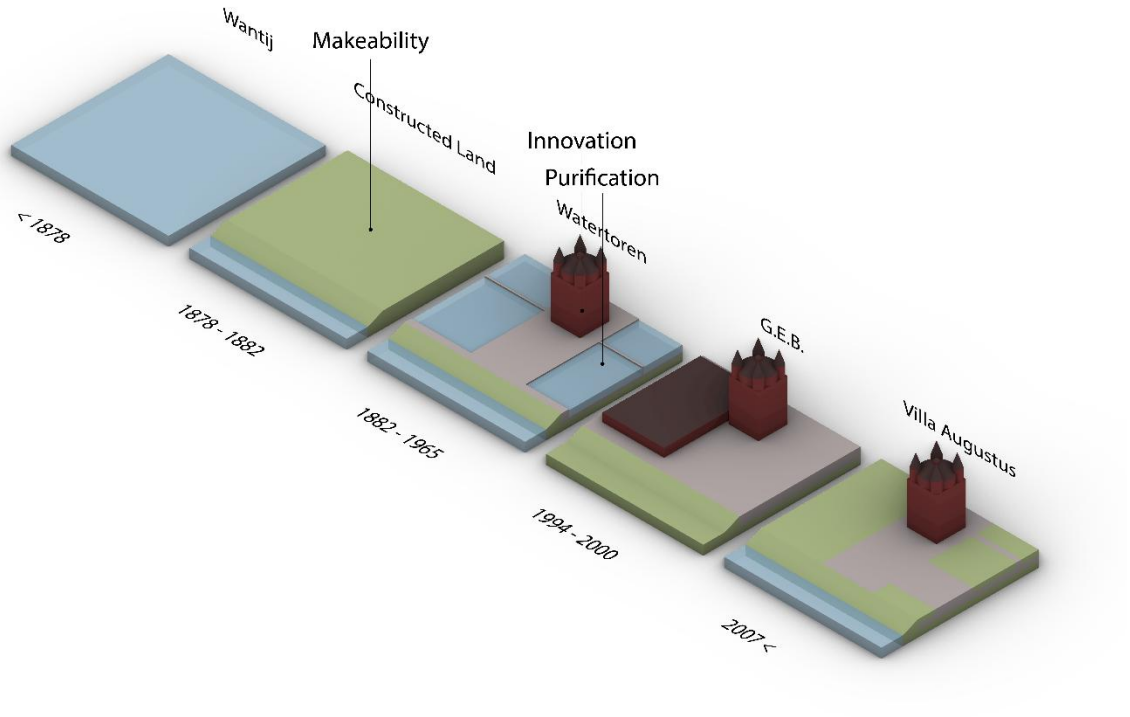


Figure 26 A representation of the transformation of Watertorenterrein's waterfronts (Source: Author, 2025).

7.1.3. De Staart

Fig. 27 and Fig. 28 show De Staart's transformations.

9. Maritime Industry

De Staart is strongly characterised by the maritime industrial atmosphere, of which the "Amerikaanse Helling", the machine factory, and the harbour are highly valued historical elements. They were essential elements of the shipyard positioned near Wantij. The machine factory and the harbour are still present today and should be respected and strengthened in the master plan.

10. Steel

The material steel has contributed to the Maritime Industry. Historic images depict steel ships, steel building constructions, cranes, rails, and other steel shipyard elements. The material steel should be reintroduced to reflect on the industrial history of shipmaking.

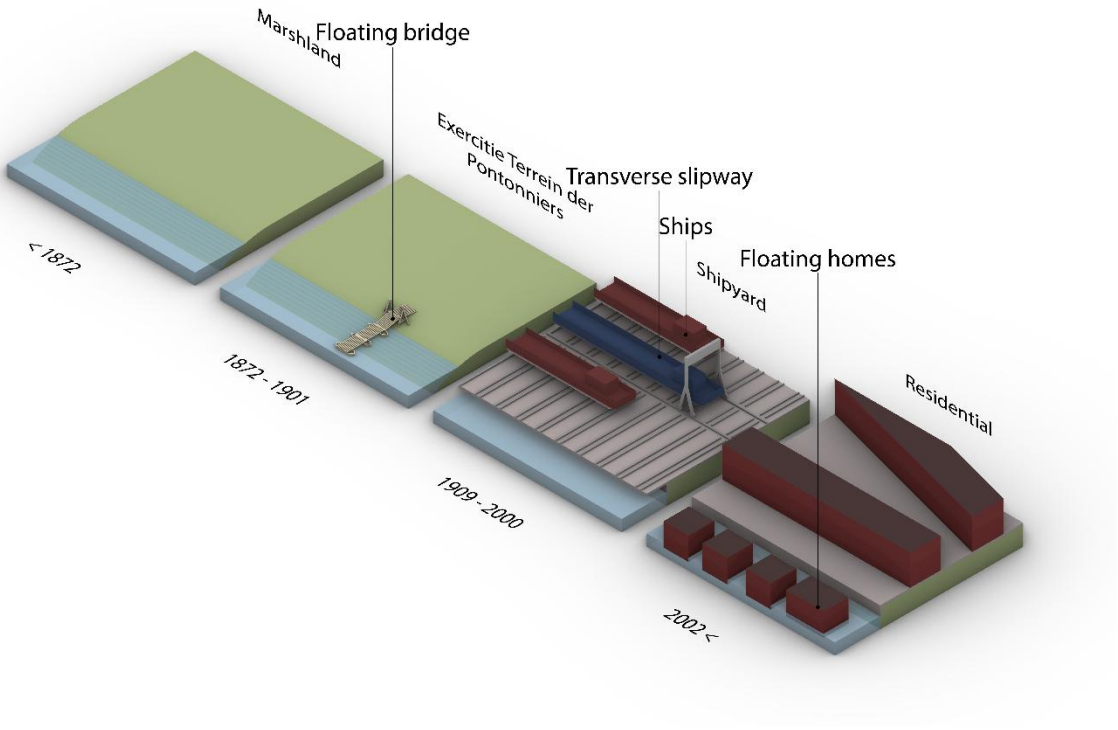


Figure 27 A representation of the transformation of De Staart's waterfront, focused on the transverse slipway location (Author, 2025).

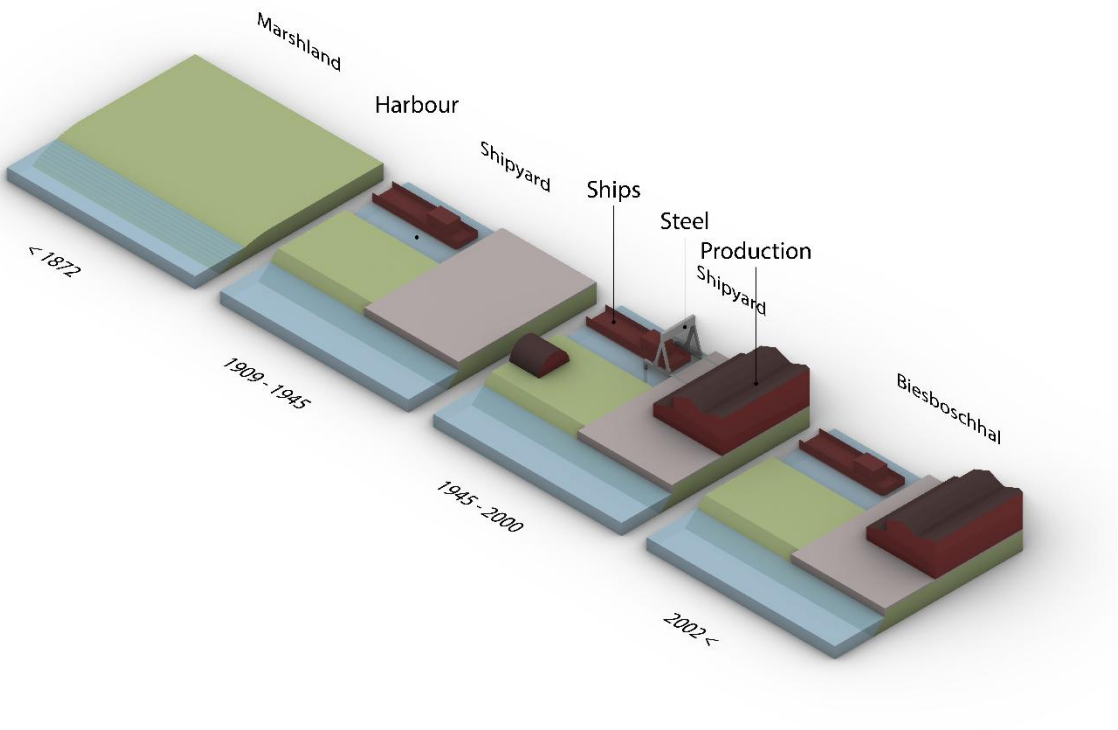


Figure 28 A representation of the transformation of De Staart's waterfront, focused on the harbour's location (Source: Author, 2025).

7.2. Values Translated into a Design Concept

The concept of the connection between Stadswerven Noord and -Zuid (Fig. 29) is grounded in the historical values of the area. Beyond serving as a physical link, this connection facilitates improved accessibility to

the Wantij River while simultaneously reinforcing the cultural and historical identity of the region. The design integrates elements that acknowledge historical heritage and accommodate contemporary needs.

Spatial Configuration and Design Principles

The proposed connection is composed of three floating islands, each interconnected by bridges. These islands are strategically positioned to maintain the continuity of the Vlij and Wantij rivers. Structurally, each island comprises four interconnected concrete pontoons, a direct reference to the ships that were positioned in front of the Hoebee shipyard (as illustrated in Fig. 6, 10, 16, and 17). The incorporation of timber as a finishing material on the pontoons refers to the timber industry, reinforcing the connection to the area's industrial past.

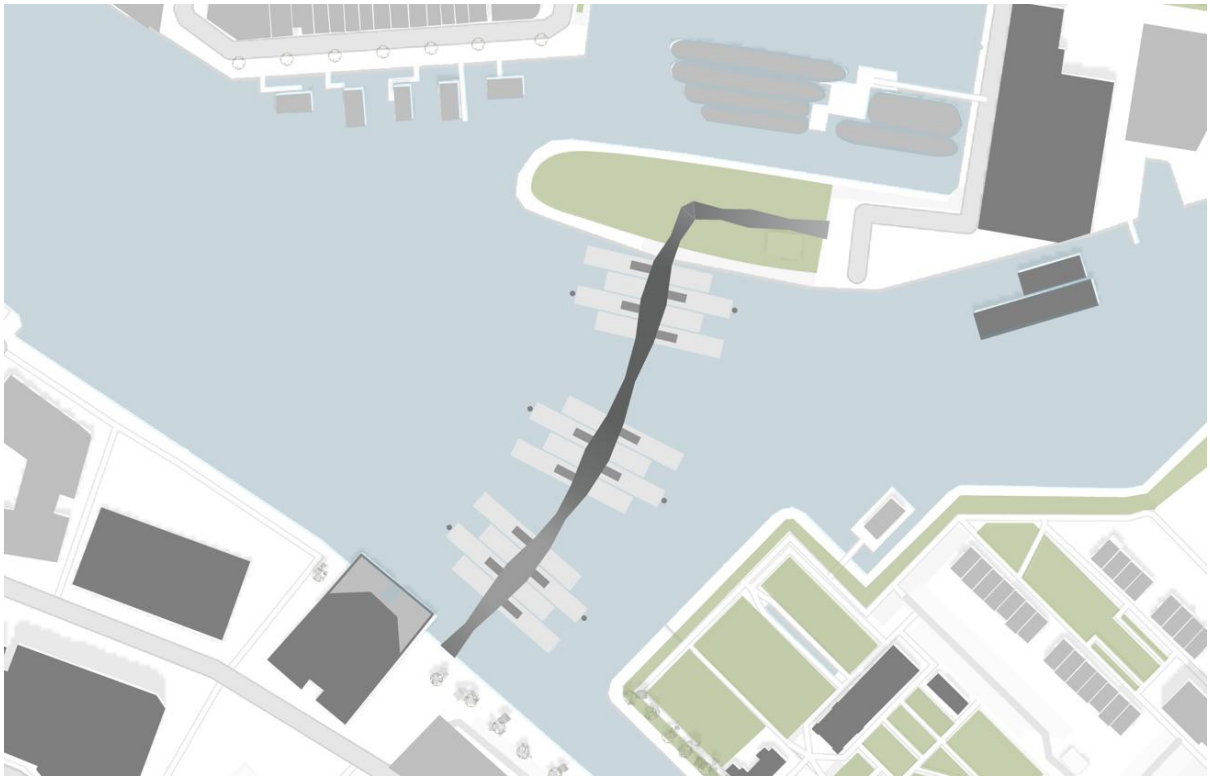


Figure 29 The connection concept in the master plan of Stadswerven (Source: Author, 2025).

Functional Zoning

The functions housed within and upon the pontoons are carefully selected to reflect historical narratives while addressing contemporary demands. To achieve coherence, the islands are zoned according to specific uses:

- **Lijnbaan Island – Light Industry**

  The island adjacent to Lijnbaan is dedicated to "light industry," referring to the industrial history of the area. The hollow concrete pontoons accommodate ateliers, flexible co-working and study spaces, meeting rooms, and fitness facilities. At the deck level, provisions for leisure and recreational activities are incorporated. Furthermore, an open-air museum is integrated into the spatial program to narrate the historical significance of Lijnbaan.

- **Watertorenterrein Island – Watersports**

  The central island is designated for water-based recreational activities. Facilities are designed to support swimming, canoeing, and stand-up paddling, promoting active engagement with the water. The pontoons serve as a watersports school, equipment storage facility, retail space, and

accommodation for summer camp participants. Similarly to the Lijnbaan Island, recreational space and an open-air museum on Watertorenterrein's history are integrated into the spatial program of the pontoons' decks.

- **De Staart Island – Binnenvaart Museum & Offices**

  The island adjacent to De Staart will function as an extension of Museum 'De Binnenvaart' and office space for small businesses. Two pontoons relate to the maritime industrial past and the other two provide accommodation for new businesses. Also, on the decks will be an open-air museum that communicates the history of De Staart as well as open space for leisure activities.

By integrating historical references with contemporary urban functions, this concept seeks to foster a dynamic and symbiotic relationship between the built environment, the river, and the cultural heritage of the region.

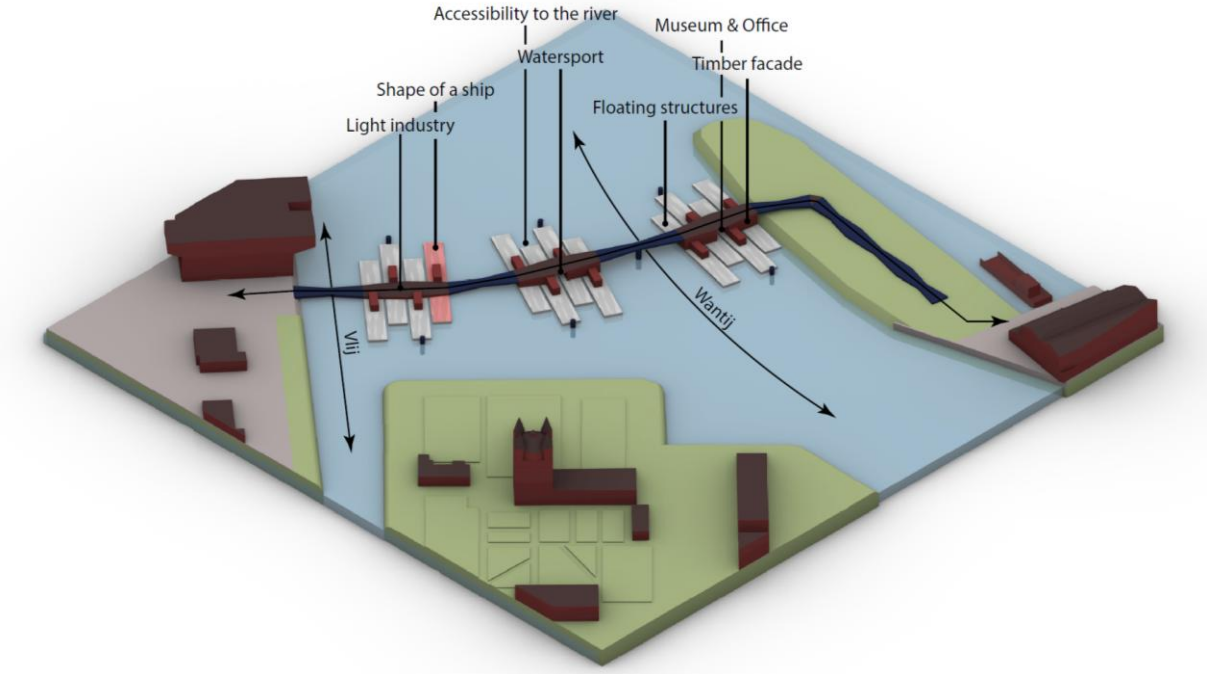


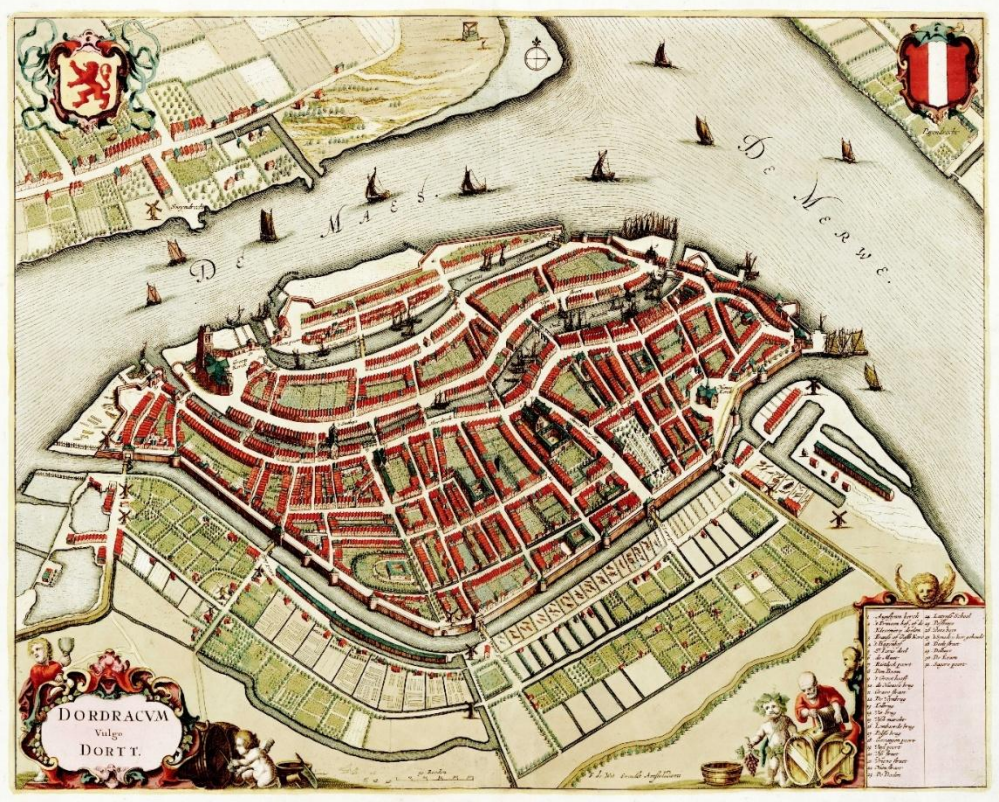
Figure 30 The graduation project's concept is based on historical values (Source: Author, 2025).

Bibliography

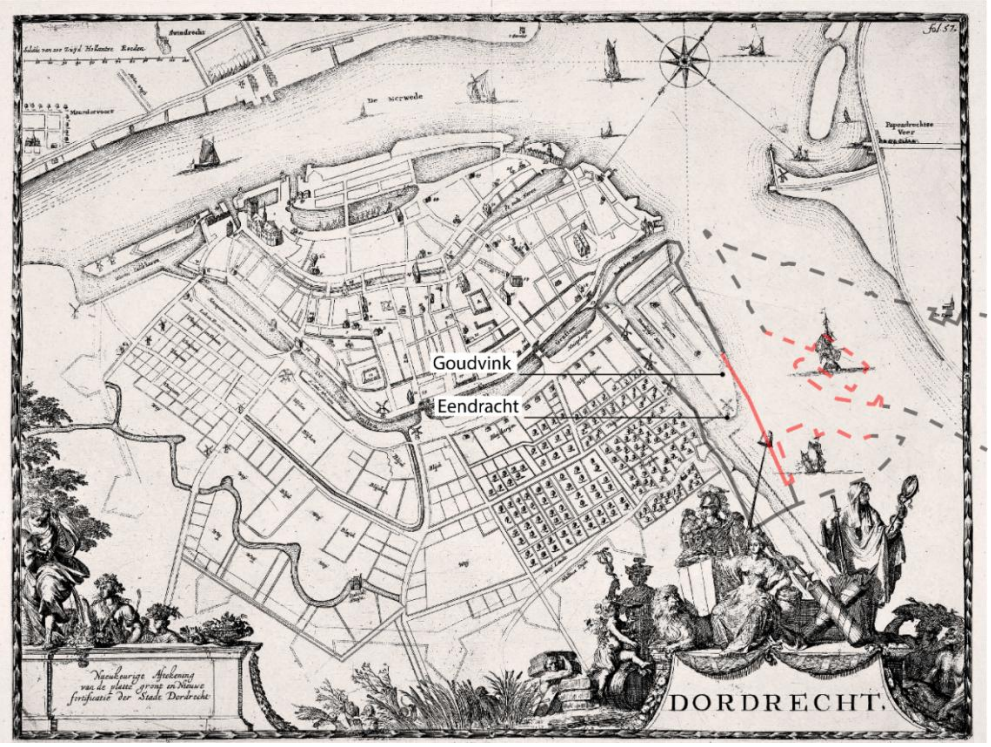
- Archeologie en Monumentenzorg. (2000). *Dordrecht in Historisch Perspectief*. Gemeente Dordrecht.
- Baarda, F., & Oerlemans, A. (n.d.). *Geschiedenis van Villa Augustus Dordrecht*. Villa-augustus.nl. Retrieved January 13, 2025, from https://www.villa-augustus.nl/geschiedenis/
- Canon van Nederland. (n.d.). *De Nieuwe Rotterdamsche Waterweg*. Canonvannederland.nl. Retrieved January 13, 2025, from https://www.canonvannederland.nl/nl/page/32626/de-nieuwe-rotterdamsche-waterweg
- Groeneweg van der Meijden Architecten. (n.d.). *Schakelstation 150 KV*. Groenewegvdmeijden.nl. Retrieved January 14, 2025, from https://www.groenewegvdmeijden.nl/herbestemming-schakelstation.html
- Ministerie van Defensie. (n.d.). *Embleem Regiment Genietroepen (Pontonniers)*. Defensie.nl. Retrieved January 16, 2025, from https://www.defensie.nl/onderwerpen/emblemen/emblemen-koninklijke-landmacht/regiment-genietroepen-pontonniers
- Monumenten Dordrecht. (n.d.). Gemeentelijk Monument: GM-nummer // 9121931. In *drechtsteden.enl-mcs.nl*. Retrieved January 14, 2025, from https://drechtsteden.enl-mcs.nl/server/rest/services/Hosted/DRD_Monumenten/FeatureServer/1/26/attachments/18
- Miedema, T. (1987). *Houtvlotterij in de 17de en 18de eeuw in Nederland*.
- Monumenten. (n.d.). *Watertoren, Dordrecht*. Monumenten.nl. Retrieved January 13, 2025, from https://www.monumenten.nl/monument/526400
- Monumenten Dordrecht. (n.d.). Gemeentelijk Monument: GM-nummer // 9121948. In *drechtsteden.enl-mcs.nl*. Retrieved January 14, 2025, from https://drechtsteden.enl-mcs.nl/server/rest/services/Hosted/DRD_Monumenten/FeatureServer/1/166/attachments/85
- Monumentenzorg Dordrecht. (n.d.). *Geschiedenis van Dordrecht*. Gemeente Dordrecht.
- Nederlandse Watertoren Stichting. (n.d.). *Nederland Dordrecht 1882*. Watertorens.nl. Retrieved January 13, 2025, from https://www.watertorens.nl/watertorens/59-dordrecht-1882

- Rijkdiens voor het Cultureel Erfgoed. (n.d.). *Waterdriehoek vergroot bekendheid en bevordert beleefbaarheid*. cultureelerfgoed.nl. Retrieved January 12, 2025, from https://www.cultureelerfgoed.nl/onderwerpen/praktijkvoorbeelden/overzicht-praktijkvoorbeelden/waterdriehoek-vergroot-bekendheid-en-bevordert-beleefbaarheid
- Schaap en Sturm Architecten. (n.d.). *Woongebouw Volt - Transformatie Regiokantoor*. Schaapsturm.nl. Retrieved January 19, 2025, from https://www.schaapsturm.nl/projecten/woongebouw-volt-transformatie-regiokantoor-dordrecht
- Van Blokland – Visser, H. W. G. (2007). *Jaargang 27 (2007) no.2*. Vereniging Oud-Dordrecht.
- Van Prooije, L. A. (2005). *Oud Rhenen: vierentwintigste Jaargang Mei 2005 no.2*. Historische Vereniging Oudheidkamer Rhenen.
- Van 't Verlaat, J. (2017). *In 100 jaar van scheepswerven naar Stadswerven: Historie scheepswerf "De Biesbosch."* Vereniging "De Binnenvaart."
- Zondervan-van Heck, J., & Grol, K. (2001). *Jaarboek Ver. Oud-Dordrecht 2001*. Vereniging Oud-Dordrecht.

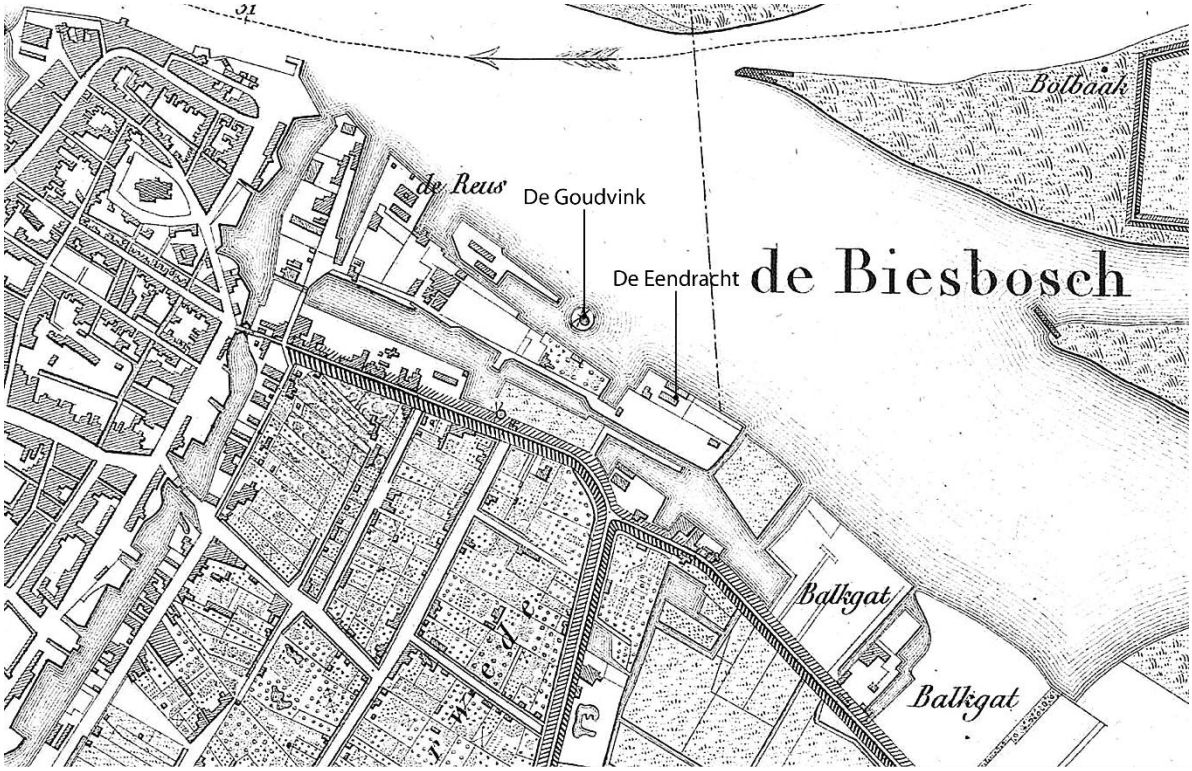
Appendix



Appendix 1 The 1645 map by Frederik de Wit depicting a harbour with a shipyard and a long hall on Lijnbaan (Source: DordrechtPlattegronden, 1645).

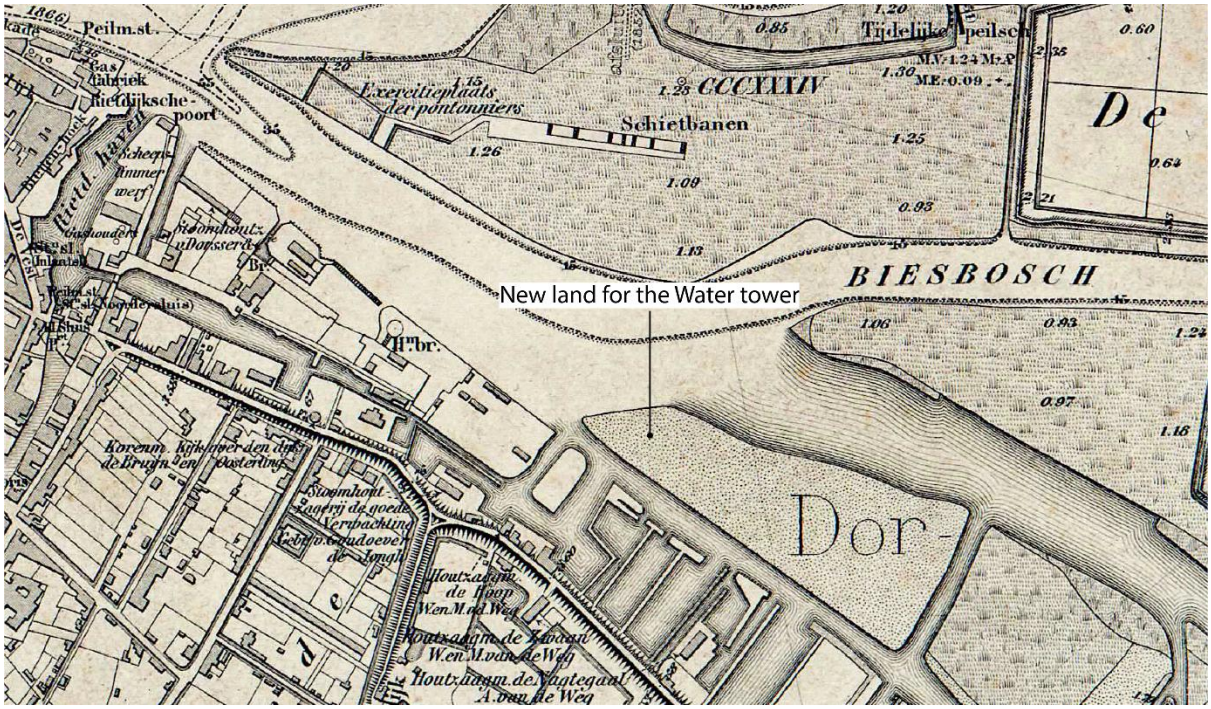


Appendix 2 The 1676 map by Romeyn de Hooghe shows two newly established windmills (Lijnbaan is indicated by the author like in figure 2) (Source: DordrechtPlattegronden, n.d.).



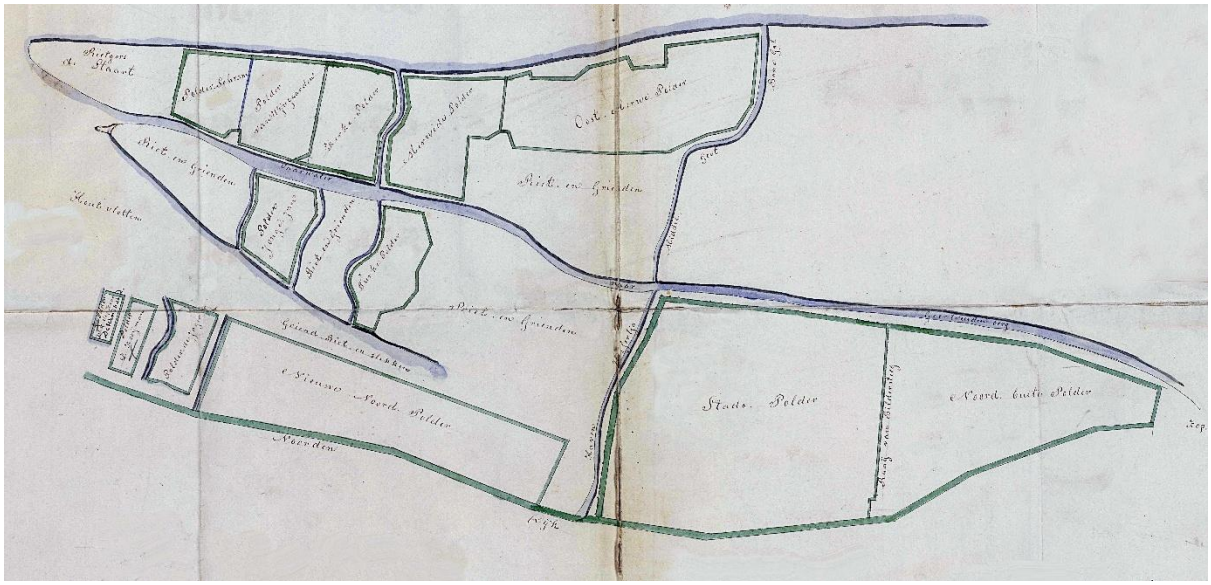
Appendix 3 The 1833 map of Bernardus Hermanus Goudriaan illustrates the "balkhaven" around De Goudvink and other "balkhavens" (Source: DordrechtPlattegronden, n.d.).

Appendix 4 The 1923 map illustrates the complete plot of Scheepswerf Hoebee (plot indicated with a red dotted line by the author) (Source: DordrechtPlattegronden, n.d.).

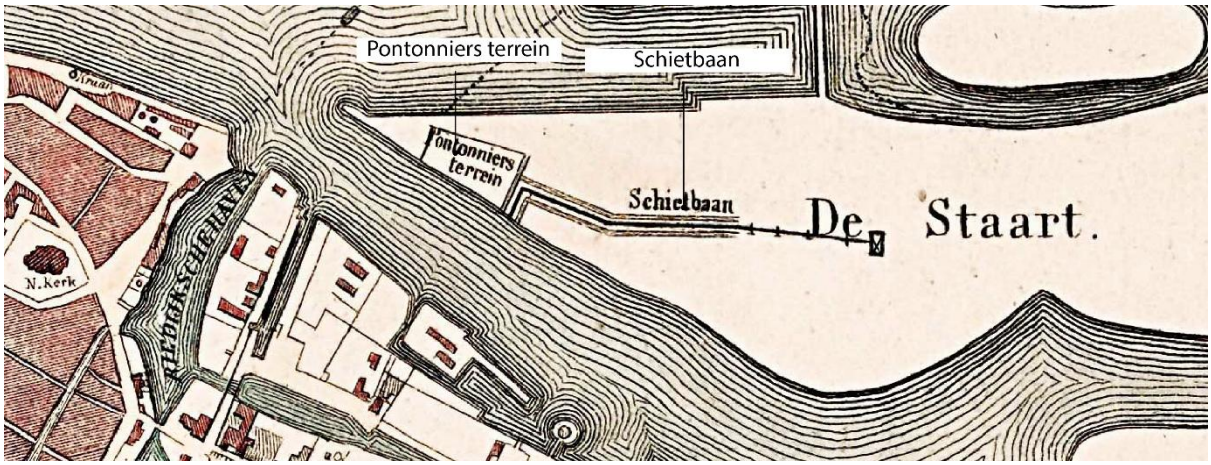


Appendix 5 The 1878 map by Rijkswaterstaat shows a newly constructed island on which the Watertoren was later built (Source: DordrechtPlattegronden, n.d.).

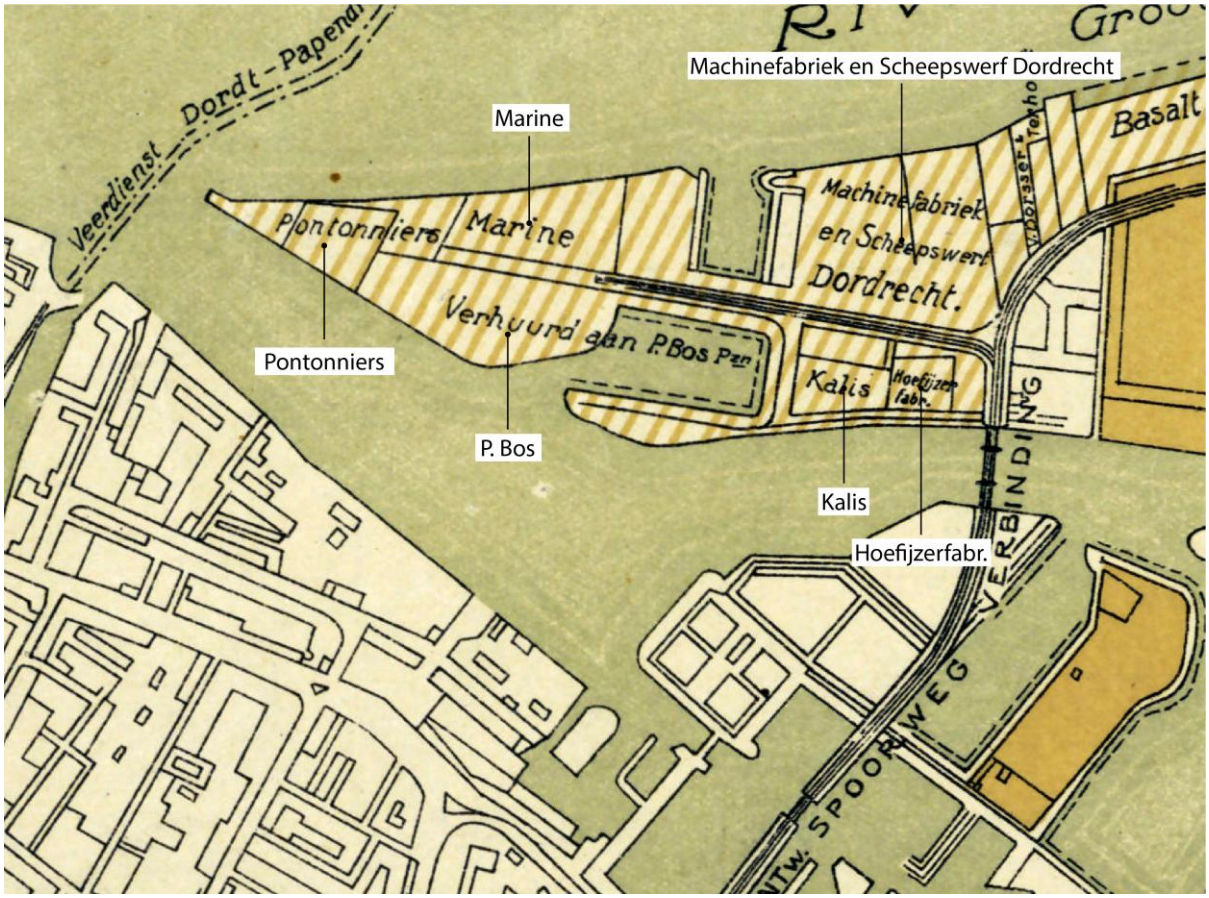
Appendix 6 The 1907 map shows the four initial and two additional basins (Source: DordrechtPlattegronden, n.d.).



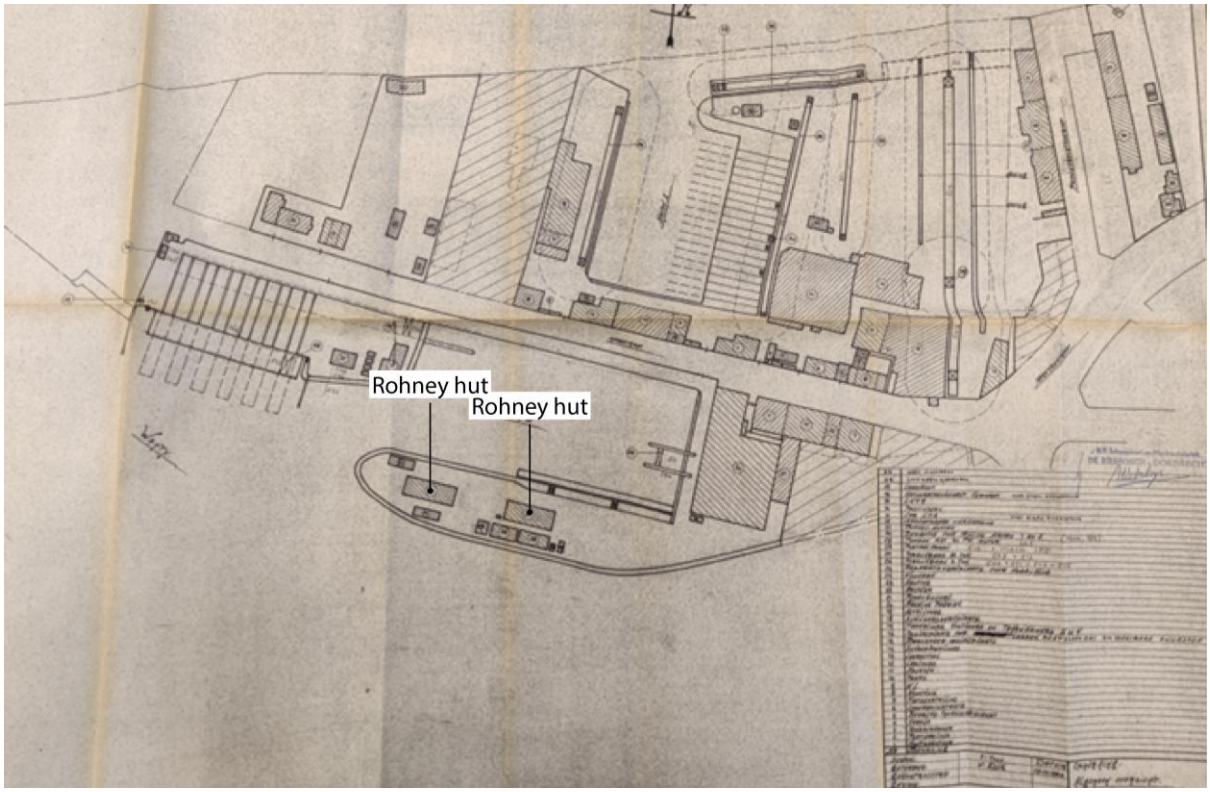
Appendix 7 A schematic map of 1857 indicates the land types and vegetation (Source: PlattegrondenDodrdrecht, n.d.).



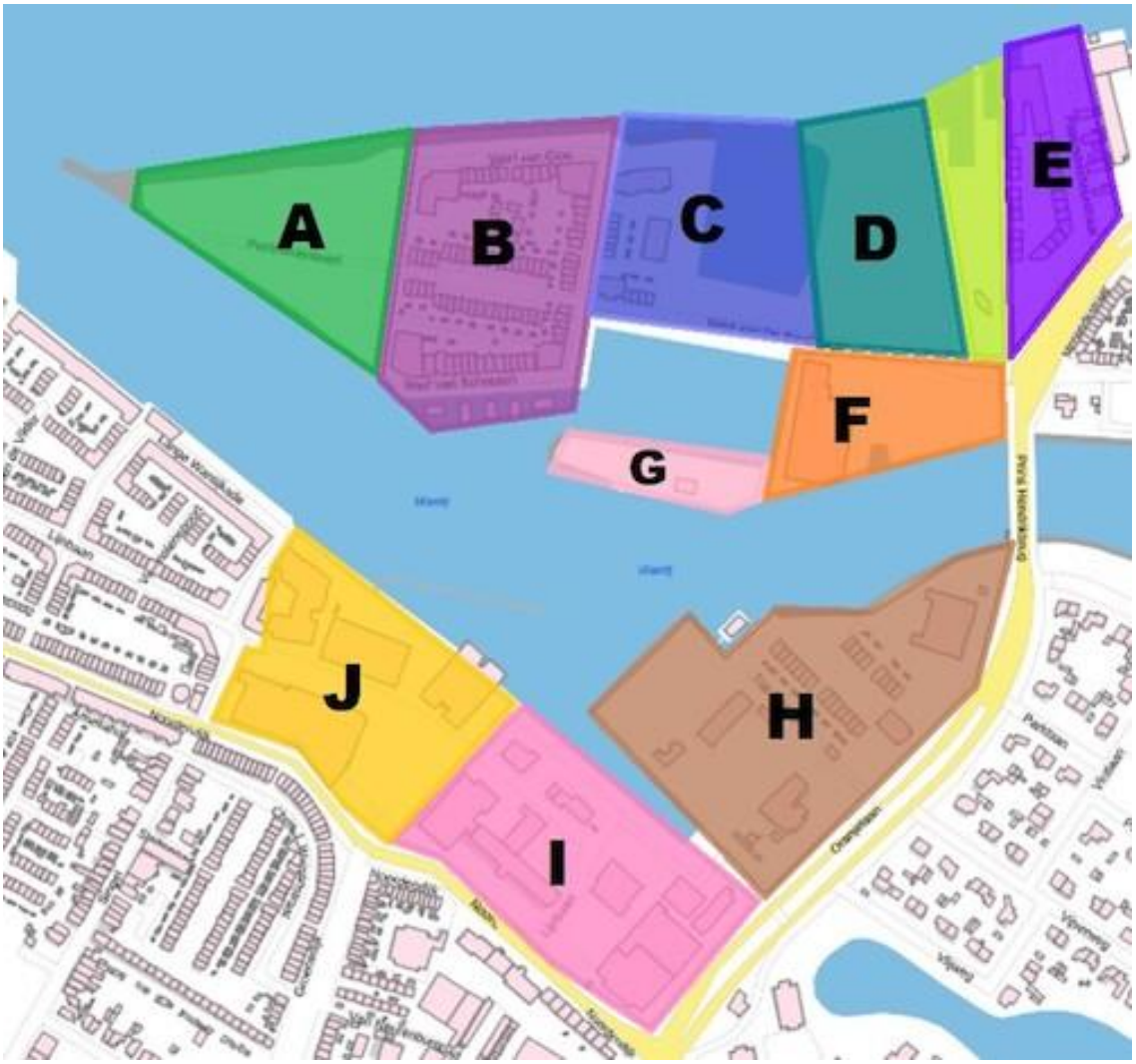
Appendix 8 The 1872 map illustrates the first functions on De Staart (Source: DordrechtPlattegronden, n.d.).



Appendix 9 The 1911 map indicates several De Staart businesses (Source: DordrechtPlattegronden, n.d.).



Appendix 10 The 1966 map indicates two buildings marked as "Rohney Hutten" (Source: RegionaalArchiefDordrecht, n.d.).



Appendix 11 A visualisation of Stadswerven divided into subareas A through J (Source: Stadswerven, n.d.).