

WHAT TO DO WITH
SWARTTOUW'S WAREHOUSES



Breakbulk warehouses of Rotterdam

History Thesis | Johan Boele | 5062756 | TU Delft | April 2023

Front cover: Swarttouw's Warehouses with the entrance gate, the canteen above, and office buildings on either side of the square (Photograph taken by the author on March 14, 2023)

Preface

As a little boy, I was surrounded by the port of Rotterdam, since I was raised in Heyplaat. This garden village was specially built for the Rotterdam Droogdok Maatschappij (RDM) workers on the land of De Heij. The area is surrounded by ports; to the left of the village lies Eemhaven, to the right lies Waalhaven, and to the north, the river Nieuwe Maas flows. In these surroundings, the foundations were laid for my fascination with the port and its activities. When choosing a topic for my history thesis, it was obvious to me that it had to be related to the port of Rotterdam.

This thesis would not have been accomplished without several people I would like to thank. First, Ms. Hilde Sennema for her support during this research and her helpful suggestions to improve this thesis. Second, Mr. Daniël van de Ven for allowing me to use his photographs of Swarttouw's warehouses. These photos give a good idea of the warehouses' heyday. Finally, my wife for her patience and help in editing some parts of this thesis.

This was my first significant English assignment. It has been a difficult journey with ups and downs, but with perseverance, I finally delivered.

I hope you will enjoy reading it!

Johan Boele

Delft, April 2023

Content

Introduction	4
I. The history of warehouses	7
II. The development of Merwehaven	10
III. The history of Swarttouw	13
IV. Swarttouw's warehouses in Merwehaven	16
1. The architects of Swarttouw's warehouses.....	18
2. Other work by the architects Vermeer and Van Herwaarden.....	20
V. Value Assessment of Swarttouw's Warehouses.....	23
1. General historical values	23
2. Ensemble values.....	23
3. Architectural-historical values.....	24
4. Building archaeological values.....	25
5. Values based on the history of use.....	26
VI. Possibilities for the redevelopment of warehouses	28
Conclusions	29
Table with valuation criteria for architecture by the RCE.....	30
Bibliography	31
Illustrations.....	35

Introduction

“The river itself, splendidly beautiful especially when sunlight breaks through dark skies and spreads its glow over foaming heads of lead blue waves, but much more beautiful still by rich dressing, while there the song of labor is sung from a thousand mouths! Proud sea castles, heavily laden, stately follow their way to crowded port basins or are moored by dozens at quays and buoys [. . .] It is a scene of immense charm, as only Rotterdam can show it.”¹

This quote from Gerrit De Jongh told to Abraham Burgdorffer (1917) in Burgdorffer’s obituary about De Jongh clarified in a somewhat archaic way what made and shaped Rotterdam: The river with all its activities.² These activities started in 1250 when a dam was constructed in the river Rotte. From the nineteenth century, the port gradually expanded and grew into the world’s largest port from the second half of the twentieth century until 2004.³ It remained one of the most important world ports to this day. The port expanded westward because it needed more space. The city of Rotterdam wanted to continue to facilitate the ever-growing ships. Finally, port activities started disappearing out of the city and moving closer to the North Sea. As a consequence, the port and its activities became less and less visible to the inhabitants of Rotterdam.

4

The last port that still had a connection with the city is Merwehaven.⁴ G.J. de Jongh and Burgdorffer paved the way for the development of Merwehaven. Gerrit de Jongh, director of the Department of Public Works, initiated the port’s growth in size and number. Abraham Burgdorffer, De Jongh’s successor as director of the Department of Public Works, developed the Driehavenplan.⁵ Then Burgdorffer’s successor, H.S. de Roode, incorporated Merwehaven in the Driehavenplan and started a procedure for the annexation of a part of the municipality of Schiedam. Finally, under the direction of L.W.H. van Dijk, the plan that had started with De Jongh, was realized, and ended port expansion on the city’s western border on the right bank of the river Nieuwe Maas.⁶

¹ Translation by Deepl.com and edited by the author

² A.C. Burgdorffer, "In memoriam Gerrit Johannes de Jongh," (1917), 137-38.

³ "Geschiedenis van de haven," accessed January 26, 2023, 2023, <https://www.portofrotterdam.com/nl/online-beleven/geschiedenis-van-de-haven>.

⁴ At that time most of the ports in Rotterdam got their names from rivers flowing in the Netherlands: Merwe is such a river. The name was established by the board of the Mayor and Aldermen at September 20, 1927 (H.C.H. Moquette and J.M. Droogendijk, *Rotterdamsche Straatnamen*, Second ed., Geschiedkundig verklaard, (Rotterdam: W.L. en J. Brusse, 1928), 159.)

⁵ the plan for three ports to be dug in the western part of the north bank of Rotterdam

⁶ *Rotterdamsch_jaarboekje*, 8e jaargang ed., vol. 3 (Rotterdam: W.L & J. Brusse's uitgeverijmaatschappij N.V., Delpher, 1930), XLV.

However, expansion continued on the left bank of the river as far as annexing a stretch of the North Sea.

The shift in port activities, that was initiated by De Jongh, is not a phenomenon exclusive to Rotterdam. All port areas have to deal with constant change over time; ports are places of transition. On the one hand by changing port activities, such as enabling oil refinery⁷, transshipment, and containerizing the ports.⁸ On the other hand, the volume change has been caused by the draughts and dimensions of ships with ever-increasing capacity. This creates the need for more specific and increasingly larger ports.⁹ This constant change has a twofold consequence: first, the port and the city become physically separated,¹⁰ and second citizens lose the direct relation with the port as it becomes less visible in the city.¹¹

When investigating the topic of transition in port activities, with Rotterdam as an example, it becomes clear that multiple port cities have to deal with these challenges. Several studies on port heritage show how other port cities deal or were dealing with these changes.^{12 13 14} Port heritage has also been studied within the city of Rotterdam. A recent study investigated the abandoned port structures and their development into maker's districts at the terrains of Rotterdam's Droogdok Maatschappij (RDM) and Merwe-Vierhavens (M4H).¹⁵ Research by Kermani et al. (2019) explored the interaction between the port heritage and the city of Rotterdam and how it can revitalize the maritime identity.¹⁶

Also, the City of Rotterdam commissioned an exploratory study of the cultural-historical value of the entire Merwe Vierhavens area. This general exploration included Keilehaven, Lekhaven, IJsselhaven, and Koushaven in addition to Merwehaven, and was executed by

⁷ Carola Hein, "Oil Spaces: The Global Petroleumscape in the Rotterdam/The Hague Area," *Journal of Urban History* 44, no. 5 (2018), <https://doi.org/10.1177/0096144217752460>, <https://dx.doi.org/10.1177/0096144217752460>.

⁸ A. A. Kermani, W. Van Der Toorn Vrijthoff, and A. Salek, "The impact of planning reform on water-related heritage values and on recalling collective maritime identity of port cities: The case of Rotterdam," in *Adaptive Strategies for Water Heritage: Past, Present and Future* (2019).

⁹ Lucija Ažman Momirski, Yvonne Van Mil, and Carola Hein, "Straddling the Fence: Land Use Patterns in and around Ports as Hidden Designers," *Urban Planning* 6, no. 3 (2021), <https://doi.org/10.17645/up.v6i3.4101>, <https://dx.doi.org/10.17645/up.v6i3.4101>.

¹⁰ Ažman Momirski, Van Mil, and Hein, "Straddling the Fence: Land Use Patterns in and around Ports as Hidden Designers."

¹¹ H. Meyer, *De stad en de haven: stedenbouw als culturele opgave in Londen, Barcelona, New York en Rotterdam, veranderende relaties tussen stedelijke openbare ruimte en grootschalige infrastructuur*, (Jan van Arkel, 1996).

¹² C. Hein, L. A. Momirski, and Y. van Mil, "Port city resilience: Piloting a socio-spatial method for understanding, comparing and representing linked maritime heritage," in *Routledge Handbook of Sustainable Heritage* (2022).

¹³ Shaoming Lu, "Port heritage: Urban memory of harbor cities (Case study of Shanghai)," *Envisioning architecture: Image, perception and communication of heritage* (2015).

¹⁴ A. Mah, *Port Cities and Global Legacies: Urban Identity, Waterfront Work, and Radicalism* (London, UNITED KINGDOM: Palgrave Macmillan UK, 2014). <http://ebookcentral.proquest.com/lib/delft/detail.action?docID=1809264>.

¹⁵ M. Jansen, A. Brandellero, and R. Van Houwelingen, "Port-City Transition: Past and Emerging Socio-Spatial Imaginaries and Uses in Rotterdam's Makers District," *Urban Planning* 6, no. 3 (2021), <https://doi.org/10.17645/up.v6i3.4253>, <https://dx.doi.org/10.17645/up.v6i3.4253>.

¹⁶ Kermani, Van Der Toorn Vrijthoff, and Salek, "The impact of planning reform on water-related heritage values and on recalling collective maritime identity of port cities: The case of Rotterdam."

architectural historian Evelien van Es in 2017.¹⁷ The study of value in this area could be further deepened by looking specifically at the buildings themselves and examining them more closely for potential qualities for preservation.

The main question to be answered in this study is: **What is the historic value of breakbulk warehouses for Rotterdam?** The study will focus on a specific warehouse as a case study. The building originates as a warehouse for breakbulk goods for the company of Swarttouw and is located in Merwehaven. This warehouse is not redeveloped yet and has an insecure future. Therefore it is worth finding out if the building is valuable enough to be added to the collective history of the preserved warehouses of Rotterdam.

For the definition of a warehouse, Merriam Webster's dictionary is used: a structure or room for the storage of merchandise or commodities. The dictionary does not distinguish between a single-story building, called a 'loods', and a multistory building, called a 'pakhuis',¹⁸ which is common in the Dutch language. In the present study, the general term warehouse applies to both types. Furthermore, Merriam-Webster's dictionary defines breakbulk as materials shipped in conventional individual packages and not containerized. So these goods are transported, stowed, and handled piecemeal to some degree, typically bundled somehow in unit loads for hoisting, either with cargo nets, slings, or crates or stacked on trays, pallets, or skids.¹⁹

6

To find out whether Swarttouw's warehouses in Merwehaven have historical value, they will be assessed according to the cultural-historical value assessment guidelines of the Rijksdienst voor het Cultureel Erfgoed (RCE).²⁰ Furthermore, it will be compared with previously redeveloped warehouses in Rotterdam to see the potential for redevelopment.

The study is structured as follows: chapter one provides a brief history of breakbulk warehouses in general and those of Rotterdam in more detail. Chapter two focuses on the history of Cornelis Swarttouw and his companies. Chapter three focuses, on the development of Merwehaven and chapter four discusses Swarttouw's warehouses on the Radiostraat. This chapter also provides more insight into the architects of the warehouse and describes the value assessment that has been used to review Swarttouw's warehouses. In chapter five, other redeveloped warehouses in Rotterdam are studied to discover the potential for redevelopment for Swarttouw's warehouses. The conclusion discusses whether Swarttouw's warehouses are of historical value for Rotterdam and should be preserved.

¹⁷ E. van Es, *Cultuurhistorische verkenning Merwe-Vierhavens*, (Projectbureau Stadshavens, 2017).

¹⁸ Hans Bonke and Els Dekker, *Amsterdamse pakhuizen : 16de-20ste eeuw* (Zutphen: Walburg Pers, 2011), 7.

¹⁹ John Frederick Kemp and Peter scheepsbouw Young, *Notes on cargo work*, New ed. (London: Stanford Maritime, 1980), 31.

²⁰ This is the National Cultural Heritage Agency of the Netherlands

I. The history of warehouses

One of the first buildings to appear in artificial ports were warehouses, to store goods that were yet to be shipped or landed and had no destination yet.²¹ The warehouses were the first commercial buildings ever to be found in ports. Until the end of the sixteenth century, goods were stored in the basement or attics of the merchant's own house. With the expansion of shipping, a more efficient way of goods storage was wanted. This need led to specific ports with a quay and warehouses around them.²² These warehouses, from the



Figure 1: Den Dubbelde Palmboom after the renovation of 1975 (Source: Stadsarchief Rotterdam)

seventeenth century onwards standing in the old ports of downtown Rotterdam, were all demolished during the bombardments of World War II. These were mostly tall brick buildings on narrow and deep plots with facades ending in a top and featured large openings closed with shutters and a lifting beam on top. Nowadays, these buildings are mainly found in Amsterdam.²³ However, the annexation in 1886 of Delfshaven gave Rotterdam such an extant example, namely the 1825 warehouse De Dubbelde Palmboom in Voorstraat (Figure 1). Although the façade of this building changed in 1975 into a double bell-shaped façade, it remained the same characteristics of the seventeenth-century versions in Amsterdam.²⁴

From the second half of the nineteenth century onwards, the newly developed ports in Rotterdam and other European cities were able to be closed to prevent the tide from draining the ports. Both Westerhaven and Entrepothaven had been constructed in this way.²⁵ There are still some examples of warehouses on lockable ports in Rotterdam: the 1856 warehouse of N.V. Hollands Veem on Westerhaven, drained in 1903, on today's Calandstraat. But also the Entrepot De Vijf Werelddelen dating from 1879.²⁶ The construction of those warehouses is characterized by load-bearing masonry with cast-iron

²¹ Pierre Tallet and Gregory Marouard, "An early pharaonic harbour on the Red Sea coast," *Egyptian Archaeology* 40 (2012): 3.

²² P. de Winter and J. de Jong, *Havenarchitectuur: een inventarisatie van industriële gebouwen in het Rotterdamse havengebied* (Rotterdam: Rotterdamse Kunststichting, 1982), 14.

²³ Bonke and Dekker, *Amsterdamse pakhuizen : 16de-20ste eeuw*, 19-20.

²⁴ R. Stenvert et al., *Monumenten in Nederland. Zuid-Holland* (Rijksdienst voor de Monumentenzorg, Zeist, Waanders uitgevers, Zwolle, 2004), 110. Retrieved from https://www.dbnl.org/tekst/sten009monu10_01/colofon.php.

²⁵ Winter and Jong, *Havenarchitectuur: een inventarisatie van industriële gebouwen in het Rotterdamse havengebied*, 14.

²⁶ L. de Klerk, P. van der Laar, and H. Moscoviter, *G.J. de Jongh, Havenbouwer en stadsontwikkelaar in Rotterdam* (Bussum: Uitgeverij Thoth Bussum, 2008), 107.

columns and small windows for daylight entry.²⁷ A later example of that building type was the 1903 Santos building on Rijnhaven. The Santos warehouse was a nearly square six-story building with a cast-iron column grid measuring 4.22 by 5.30 meters. It is constructed of brick with natural stone detailing.²⁸ In contrast with Westerhaven and Entrepothaven, Rijnhaven had an open connection with the river Nieuwe Maas. This open connection would become the standard in ports that were yet to be constructed.²⁹

In 1890, reinforced concrete was developed and offered the advantage that buildings were more fire-resistant and cheaper than iron. It took some time before this construction method was introduced in building warehouses in Rotterdam. One of the earliest and still existing examples is St. Jobsveem. It was built in 1914 in St. Jobshaven by the architects J.J. Kanters and Fr. Eriksson. This warehouse, measuring 130 by 25 meters with six floors had very modern features when it was put into use. It had electric elevators, roof cranes that could unload through pour holes in the roof, and a clever platform arrangement with staggered platforms including a movable platform attached to the third layer.³⁰ Another example of a reinforced concrete warehouse is Katoenveem, located west of Rotterdam at Keilehaven, which was realized in 1920 by architect J.J. Kanters. It was designed especially for cotton storage. Because of the flammability of the bales of cotton, this warehouse was equipped with a sprinkler system. The fire-resistant properties of reinforced concrete explained its extensive use for this building.³¹

After World War II efficiency was leading in port structures. The goal was to gain as much floor space as possible by using the most effective technology. This meant the new standard would be a single-story storage building with a clear span of 25 to 40 meters and large sliding doors on both sides of the warehouse. An example of this type of building was the Holland America Line warehouse designed by J.A. Brinkman, J.H. van den Broek, and J.B. Bakema in 1949.³² They constructed a scaled concrete roof with reinforcing ribs for the roof structure. This scaled concrete roof was later copied by the architects W. Vermeer and I. van

²⁷ Winter and Jong, *Havenarchitectuur: een inventarisatie van industriële gebouwen in het Rotterdamse havengebied*, 14.

²⁸ "Pakhuis, Brede Hilledijk 95, 3072 KD te Rotterdam," Rijksdienst voor het Cultureel erfgoed, 2023, accessed March 19, 2023, <https://monumentenregister.cultureelerfgoed.nl/monumenten/513940>.

²⁹ Klerk, Laar, and Moscoviter, *G.J. de Jongh, Havenbouwer en stadsontwikkelaar in Rotterdam*, 129.

³⁰ Winter and Jong, *Havenarchitectuur: een inventarisatie van industriële gebouwen in het Rotterdamse havengebied*, 36.

³¹ Winter and Jong, *Havenarchitectuur: een inventarisatie van industriële gebouwen in het Rotterdamse havengebied*, 45.

³² "Vertrekhal, Wilhelminakade 699, 3072 AP te Rotterdam," Rijksdienst voor het Cultureel erfgoed, 2023, accessed March 18, 2023, <https://monumentenregister.cultureelerfgoed.nl/monumenten/530949>.

Herwaarden for the warehouse IJzerveem of Van der Vliet and De Jonge developed in 1952 in Waalhaven.³³ This was another example of this more efficient type of warehouse.

Warehouses were utilitarian buildings and therefore their importance for preservation was not recognized, for a long time. This made warehouses vulnerable heritage and when they ceased to function, they were replaced. The aforementioned warehouses are still in place and are to be seen in Rotterdam. However, several other warehouses have already been demolished. Examples were several warehouses in Rijnhaven: warehouse De Molukken from 1948 designed by the architect Ph. Kanters, warehouse Japan-China-Korea-Siam from 1947 designed by the architects G. de Ruyter, A. van der Graaf and Tol, and warehouse De Eersteling from 1950 designed by the architects M. Lockhorst and W.F. Overeijnder.³⁴ These three warehouses located on the east side of Rijnhaven were demolished for a transition plan known as 'Plan Kop van Zuid'. In 1991, Riek Bakker, the head of the Urban Development Department, conceived this transition plan for the Wilhelminapier and Rijnhaven's east side and did not include these three warehouses (Figure 2).³⁵



Figure 2: Realization of the warehouses on Rijnhaven's eastside. From left to right: Molukken, Japan/China/Korea/Siam and De Eersteling (Source: Stadsarchief Rotterdam)

³³ Winter and Jong, *Havenarchitectuur: een inventarisatie van industriële gebouwen in het Rotterdamse havengebied*, 83.

³⁴ Winter and Jong, *Havenarchitectuur: een inventarisatie van industriële gebouwen in het Rotterdamse havengebied*, 64-68.

³⁵ Matthijs Dicke, Annelies van der Zouwen, and Irma Thoen, *Stadshavens Rotterdam : de historische ontwikkeling van de Waalhaven, Eemhaven, Merwehaven en het Vierhavengebied in kaart, woord en beeld* (Rotterdam: De Hef, 2006), 90.

II. The development of Merwehaven

Merwehaven was the last port to be developed at the beginning of the 20th century on the north bank of the river Nieuwe Maas, located at the westernmost limits of the city of Rotterdam. The planned site for the port was the Nieuwe Mathenesse polder where Schiedam's drinking water supply was located.³⁶ Burgdorffer's first plans already existed in 1916, but not until after an agreement with Schiedam on the annexation of the polder and drinking water supply, this port could be realized. Finally, the construction began in 1923 and took nine years.

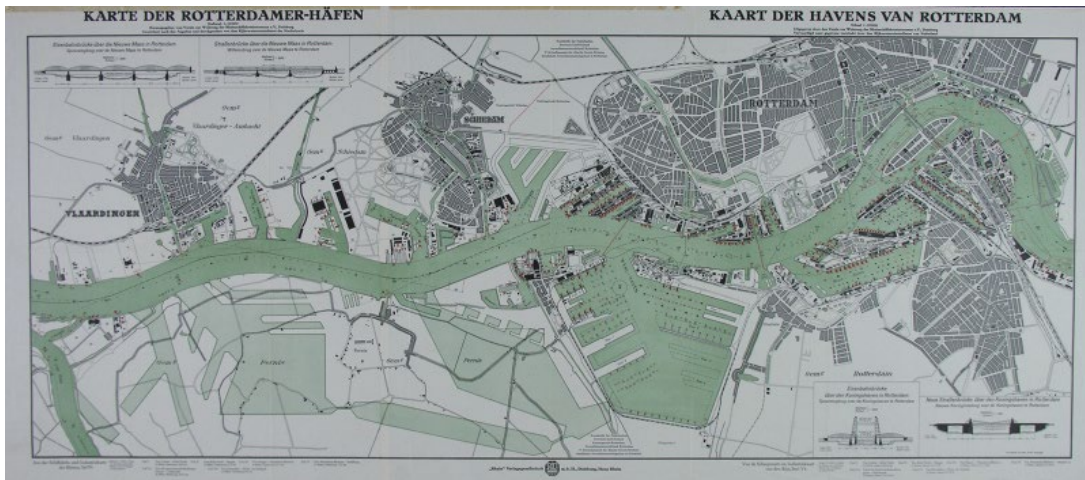


Figure 3: Map of the ports of Rotterdam (1930) with the characteristic form of Merwehaven in the middle (Source: Stadsarchief Rotterdam)

Merwehaven would be the last port to be developed specifically for breakbulk. Rotterdam wanted to add a breakbulk port to maintain the diversity of port activities, because the transit traffic, in which the port of Rotterdam specialized, was declining. Another trade that the port of Rotterdam facilitated, bulk goods, was less lucrative than breakbulk. The port design was adjusted accordingly; the breakbulk needed a lot of quay length. The need for quay length created the port's characteristic shape with one port access that led to three slip-in ports. For the quay walls, concrete caissons were constructed (Figure 4), filled with sand, and strengthened with basalt stones. This construction method was necessary to withstand the larger ships that would dock and to support the cranes and heavy loads on the quay.³⁷



Figure 4: Caissons are used to construct Merwehaven (Source: Stadsarchief Rotterdam)

³⁶ Dicke, Zouwen, and Thoen, *Stadshavens Rotterdam : de historische ontwikkeling van de Waalhaven, Eemhaven, Merwehaven en het Vierhavengebied in kaart, woord en beeld*, 30.

³⁷ Dicke, Zouwen, and Thoen, *Stadshavens Rotterdam : de historische ontwikkeling van de Waalhaven, Eemhaven, Merwehaven en het Vierhavengebied in kaart, woord en beeld*, 50.

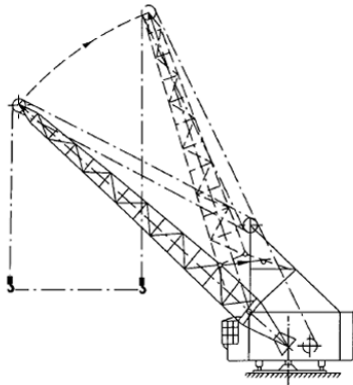


Figure 5: Functioning of a rocker crane
(Source: De la Bruhèze, 2002)

To (un)load breakbulk, an innovation in cranes was used, the so-called rocker crane, and was introduced in the 1920s. This type of electric crane, allowed the load to be lifted horizontally and vertically (Figure 5) while keeping the load at the same height. Another advantage was that the cranes could work closer together and trains and trucks could pass under the portal cranes. Breakbulk still required manual labor, but unloading became more efficient.³⁸

During World War II, the port trade almost stopped, and the Merwehaven port pier was used to house the scrap metal that came from the demolished buildings after the bombing of Rotterdam, in May 1940. In September 1944, the Rotterdam port's quays, warehouses, and cranes were severely damaged by the German occupiers. The Germans feared that the Allied Forces were coming soon and wanted to prevent them from being able to use the ports. Immediately after the war, Rotterdam prioritized restoring the quays, as it was considered significant for economic recovery.³⁹

In those years, Merwehaven's activities grew and contributed to making the port of Rotterdam the largest in the world. Gradually, Merwehaven established its reputation as Rotterdam's fruit port. In 1970, the stevedoring companies Furness and Wm. H. Müller & Co., together with seven fruit importers exploit large cold storage. Together they started a new company, Rotterdamse Fruitpier N.V. Later followed by an even larger climatized warehouse for 400 thousand packages.⁴⁰ It culminated in 1984 when the two largest fruit stevedoring companies merged, making Merwehaven an almost exclusive port for fruit.⁴¹ Fruit transport in Merwehaven collapsed when it became more common to use reefer containers to transport fruit, and Merwehaven was not suitable for container handling. In 2010 the last remaining fruit stevedoring company in Merwehaven, Fruit Terminal Rotterdam, went bankrupt. Through a controlled bankruptcy, the company Rotterdam Fruit Wharf B.V. was able to continue. It would prove to be temporary, as the trade disappeared

³⁸ A.A.A. De la Bruhèze et al., *Techniek in Nederland in de twintigste eeuw*, vol. 5, Transport, communicatie, (DBNL (KB, nationale bibliotheek), 2002), 99.

³⁹ Dicke, Zouwen, and Thoen, *Stadshavens Rotterdam : de historische ontwikkeling van de Waalhaven, Eemhaven, Merwehaven en het Vierhavengebied in kaart, woord en beeld*, 46.

⁴⁰ Dicke, Zouwen, and Thoen, *Stadshavens Rotterdam : de historische ontwikkeling van de Waalhaven, Eemhaven, Merwehaven en het Vierhavengebied in kaart, woord en beeld*, 84.

⁴¹ Het_Vrije_Volk, "Uitbreiding in overslag ten koste van Antwerpen," *Het Vrije Volk* (Rotterdam), March 10, 1984, <https://resolver.kb.nl/resolve?urn=ddd:010961673:mpeg21:p015>.

in 2021 with its sale to Kivits Logistics Group. They saw no future in continuation at that location as Rotterdam was already exploring other developments for the area.⁴²

These explorations led to the adoption of the spatial framework in 2019. Followed by the concept Masterplan for the Merwehaven district presented in the summer of 2022.⁴³ This Masterplan consists of 2,500 new homes, innovative manufacturing companies, and numerous amenities, including an elementary school, a doctor's office, restaurants, a neighborhood supermarket, public sports facilities, accessible quays, and neighborhood parks. All will be accessible via green walking and bicycle trails in a sustainable and car-free residential neighborhood. The intended adoption of the Masterplan is scheduled for the second quarter of 2023.⁴⁴

⁴² FD, "Kivits koopt Rotterdamse handelaar in groente en fruit," *Financieel Dagblad*, July 7, 2021, <https://fd.nl/ondernemen/1391082/kivits-logistics-koopt-rotterdam-handelaar-in-groente-en-fruit>.

⁴³ Gemeente_Rotterdam, Merwehaven, een stedelijk woon-werkmilieu voor de toekomst, (Rotterdam: gemeente Rotterdam, 2022).

⁴⁴ "Planning woningbouw Merwehaven," Gemeente Rotterdam, 2023, accessed April 19, 2023, 2023, <https://www.rotterdam.nl/merwehaven>.

III. The history of Swarttouw

By the end of the nineteenth century, Rotterdam had a close connection with the so-called port barons. A group of entrepreneurs was called that way because of their profession and influence in Rotterdam politics in general and port activities in particular. They maintained a tight business network, where there was little room for newcomers. These small groups of families took risks to invest in port activities and decided together with the city of Rotterdam on how to make the most of the port's opportunities.⁴⁵

One of these families that became important port entrepreneurs started with Leendert Swarttouw (1829-1886). He started his career as a warehouse servant and later became a stevedore in port activities in Rotterdam. He was the middleman who arranged for workers to load and unload ships. His eldest son Cornelis started to work in the business too, later followed by Cornelis's eight-years-younger brother Frans. With Leendert's death, the two brothers had a conflict over the continuation of the business. Cornelis continued with Corns. Swarttouw Stuwadoors Maatschappij (C.S.S.M. [Cornelis Swarttouw Stevedoring Company]), and Frans started his own stevedoring company, Quick Dispatch.⁴⁶ Although they competed fiercely with each other, both were successful and grew with the expansion of the port in the late nineteenth century.

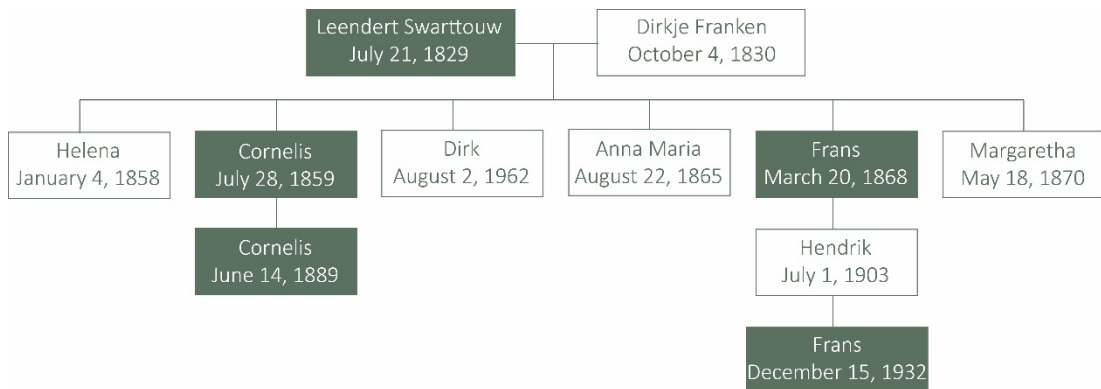


Figure 6: genealogy of Swarttouw (Source: illustration by author)

In 1911, Cornelis Swarttouw founded another company, Swarttouw's Constructiewerkplaatsen & Machinefabriek [Swarttouw's Construction Workshops & Machine Works] which was located in Schiedam. At first, the company, led by his son-in-law C.L. Verpoorten, repaired ships and instruments for C.S.S.M., but gradually extended its business by making steel window frames and heating installations for the greenhouses of the

⁴⁵ J. C. Visser, *Rotterdamse ondernemers, 1850-1950* (Rotterdam: De Hef ; Centrum voor Bedrijfs geschiedenis, Erasmus Universiteit Rotterdam, 2002), 20.

⁴⁶ Visser, *Rotterdamse ondernemers, 1850-1950*, 237-38.

Westland gardening companies. Later, they would build port constructions for oil companies, like storage tanks, pipelines, and pumping installations for Rotterdam and Amsterdam, and at a later stage, they exported these constructions all over the world.⁴⁷

Other than just competing with each other, Cornelis' C.S.S.M. and Frans' Quick Dispatch joined forces in 1922 and cooperated with the third and, at that time, largest stevedoring company in Rotterdam Thomson in a profit pool for bulk goods.⁴⁸

The continuation of C.S.S.M. as a family business was ensured when Cornelis' son, also named Cornelis, joined the company. Cornelis Jr. started his career as a soccer player and played for the first teams of Rotterdam's Sparta, Amsterdam's Ajax, and Utrecht's U.V.V.⁴⁹ After his soccer career, he would become an important director of the company. After the death of his father Cornelis Sr. on May 19, 1937, he continued his work, and under his leadership, the company grew even further.⁵⁰ World War II intervened and prevented further expansion, and port activities almost came to a halt. After the war and damage repair, work resumed. From then on, the port grew rapidly and C.S.S.M. grew with it. It was in this period when the warehouses of Swarttouw on the Radiostraat in Merwehaven were (re)built.



Figure 7: Cornelis Swarttouw (1889-1968) (Source: Stadsarchief Rotterdam)

⁴⁷ "Swarttouw's Constructiewerkplaats en Machinefabriek," Industriemuseum Schiedam, accessed April 3, 2023, <https://indriemuseum-schiedam.nl/swarttouw/>.

⁴⁸ Visser, *Rotterdamse ondernemers, 1850-1950*, 238.

⁴⁹ De_Tijd-Maasbode, "Stukgoed en Azalea's," *De Tijd-Maasbode, Delpher* (Amsterdam), July 20, 1959, 3, <https://resolver.kb.nl/resolve?urn=ddd:011234697:mpeg21:p003>.

⁵⁰ De banier : staatkundig gereformeerd dagblad, "C. SWARTTOUW OVERLEDEN.," *De banier : staatkundig gereformeerd dagblad, Delpher* (Rotterdam), May 20, 1937, 5, <https://resolver.kb.nl/resolve?urn=ddd:010854802:mpeg21:p005>.

The container, the latest invention in freight transport, became both an opportunity and a threat for Swartttouw. It brought the two competing stevedoring companies once again closer together with the opportunity to expand their businesses. In 1966, Cornelis' company C.S.S.M. and Frans' company Quick Dispatch, which was now led by his grandson Frans Jr., teamed up with Thomson, Müller-Progress, Pakhuismeesteren, and the Dutch railway company and developed the first container terminal in Rotterdam. Together they founded European Container Terminal (ECT) in Eemhaven.⁵¹ However, container transport became the new norm in shipping and therefore a threat to most breakbulk transport. As Merwehaven was designed specifically for breakbulk, the port gradually lost its main function as a breakbulk port.

In 1969, less than a year after Cornelis Swartttouw died on May 26, 1968, at the age of 78⁵², his company C.S.S.M. was taken over by Furness.⁵³ With this, the name Cornelis Swartttouw disappeared from the port for good.

⁵¹ Dicke, Zouwen, and Thoen, *Stadshavens Rotterdam : de historische ontwikkeling van de Waalhaven, Eemhaven, Merwehaven en het Vierhavengebied in kaart, woord en beeld*, 70.

⁵² *Algemeen Handelsblad*, "Familieberichten," *Algemeen Handelsblad, Delpher* (Amsterdam), May 28, 1968, 10, <https://resolver.kb.nl/resolve?urn=KBNRC01:000035256:mpeg21:p010>.

⁵³ *De Volkskrant*, "Furness koopt Cornelis Swartttouw," *De Volkskrant, Delpher* ('s-Hertogenbosch), January 18, 1969, 2, <https://resolver.kb.nl/resolve?urn=ABCDDD:010847996:mpeg21:p002>.

IV. Swarttouw's warehouses in Merwehaven

In 1932, with the completion of Merwehaven, C.S.S.M. saw opportunities to expand its operations. The company already had branches in IJsselhaven and Waalhaven, but now had the opportunity to expand its breakbulk shipping and settled on Radiostraat on a port pier of Merwehaven.

Rotterdamsch Nieuwsblad.
Dinsdag 29 December 1931.
 No. 16.491.
DERDE BLAD.

Nieuwjaarsgroeten 1932.
 Woensdag 30 en Donderdag 31 dezer, tot 10 uur v.m., doch dan vrijblijvend, worden nog Nieuwjaarsgroeten aangenomen tegen den gewonen regelprijs: van 1-6 regels f 2.50, iedere regel meer 40 cents.
 DE DIRECTIE.

Stadsnieuws.
 Dames- en Kinderzangvereniging G. C. Bunk.
 Reparatiedag.
 Een ontzaglijk overtuigende kracht moet aan het werk zijn geweest, om de leden van de Dames- en Kinderzangvereniging „G. C. Bunk” zoover te krijgen, dat zij een waarlijk moeilijk werk als de kinderopera „Reparatiedag” — moeilijk vooral door zijn modernen vorm (Strauvinisky-effectjes) — zóó uitstekend ten gehore konden brengen als gisteravond het geval is geweest. Het was een eerste uitvoering, waarover de directeur, de heer J. B. van Gerdingen — en ongetwijfeld is van hem die ontzaglijk overtuigen

Brief- en Pakketpost.
 De laatste buslichtingen resp. laatste aanbieding van aanget. stukken en postpakketten aan het hoofdkantoor alhier zijn:
 Voor Nederlandsch Oost-Indië per s.s. „Marn. v. St. Aldegonde” gewone stukken 5 Jan. 23.30 uur. Laatste aanbieding aan geteekende stukken en postpakketten, de laatste ook met bestemming voor Italië, Egypte en Singapore, Turkije, Syrië, Palestina, Arabië, Britsch Indië, Britsch Oost-Afrika, Birma 5 Jan. 20 uur. Op de per zeepost te verzenden correspondentie te vermelden „Zeepost”.
 Voor Zuid-Amerika niet voor Brazilië per s.s. „Alphacca” gewone stukken 6 Jan. 13 uur. Laatste aanbieding aan geteekende stukken 6 Jan. 12.30 uur, postpakketten 6 Jan. 10 uur.
 Voor Noorwegen per stoomschip „Ariadne” gewone stukken 6 Jan. 16.30 uur. Laatste aanbieding aan geteekende stukken 6 Jan. 16 uur. Laatste aanbieding postpakketten 6 Jan. 10 uur.
 De aangekondigde verzending naar Zuid-Amerika per s.s. „Alcyone” op 1 Januari a.s. vervalt.

INGEZONDEN MEDEDELINGEN.
WAT IS BETER DAN PORTORICO EGETER?
 VAN
 10 ct. p. half ONS - HOOGSTRAAT 224
 49313 11

Hinderwet.
 Ten Raadhuize (afd. Volkshuisvesting, 2e verdieping) zijn ter visie gelegd verzoeken om vergunning van:
 den heer D. Vijfwinkel tot het bergen van 220 L. benzine, 5 L. alcohol, 10 L. petroleum-aether, 5 L. aether en 2 vaten van plm. 300 L. terpentijn aan de Raampoortstraat 5;
 den heer A. Timmermans tot het bergen van 1000 L. petroleum en 10.000 L. smeerolie in vaten, alsmede 500 K.G. poetskatoen achter het pand aan de 2e Schansstraat 42;
 de N.V. American Petroleum Company tot het bergen van 6000 L. benzine in ondergrondse ketels in panden aan de Spangenschekade 45 en 1e Gijssingstraat 6, alsmede tot het uitbreiden van de inrichting tot het bergen van benzine in het pand aan de Bree 65 met een opslag van 6000 L. benzine in een ondergrondsch ketel;
 de Texas Company tot het bergen van 4000 L. benzine in een ondergrondsch ketel in het pand aan de Franciscastraat no. 7;
 de N.V. Corn. Swarttouw's Stuwadoors maatschappij tot het oprichten van een kraanbedrijf en een accumulatoren laad inrichting in de loods aan de Radiostraat;
 den heer A. J. F. Schell tot het oprichten van een inrichting voor het koken en rooken van vleeschwaren met een electromotor tot het drijven van een gehaktmachine in het pand aan de linker Frans

H. W. VAN RIËT.

Figure 8: Section of the Rotterdamsch Nieuwsblad with the establishment notification of C.S.S.M in Merwehaven dated December 29, 1931 (Source: Delpher, edited by author)

Swarttouw developed three attached warehouses with cranes at the pier. However, as mentioned earlier, the economy halted during the war, and these warehouses were also severely damaged during the September 1944 destructions.



Figure 9: First warehouses in Merwehaven dated approximately 1938 (Source: Port of Rotterdam)

With the reconstruction of the warehouses in 1947, two out of the three warehouses (B and C) were demolished and rebuilt again and only one warehouse (A) could be repaired. In addition, a gateway building was constructed against warehouse C. Two extra warehouses (D and E) were constructed up against the gateway building two years later. Now the gateway building stood in the center with symmetrical warehouses on either side. In 1977, warehouse A was replaced and the two additional warehouses D and E have demolished again in about 2010 (Figure 10).

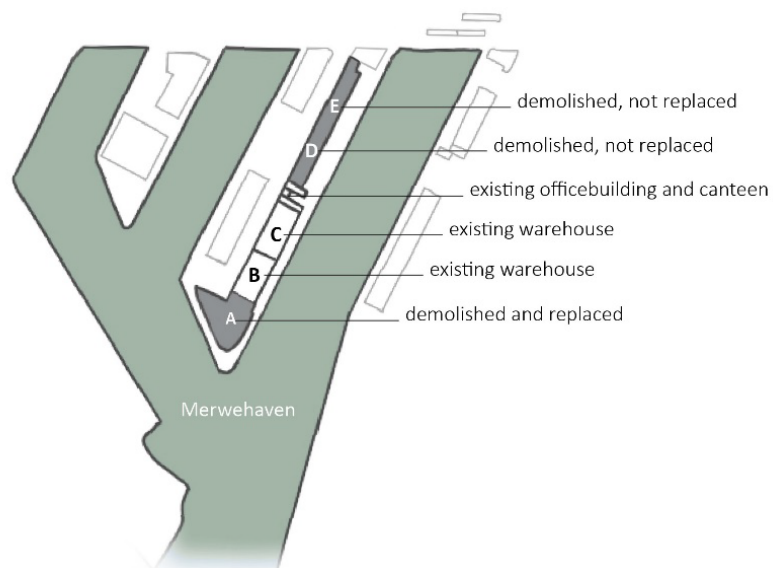


Figure 10: Swarttouw's warehouses on Radiostraat Merwehaven (Source: illustration by author)

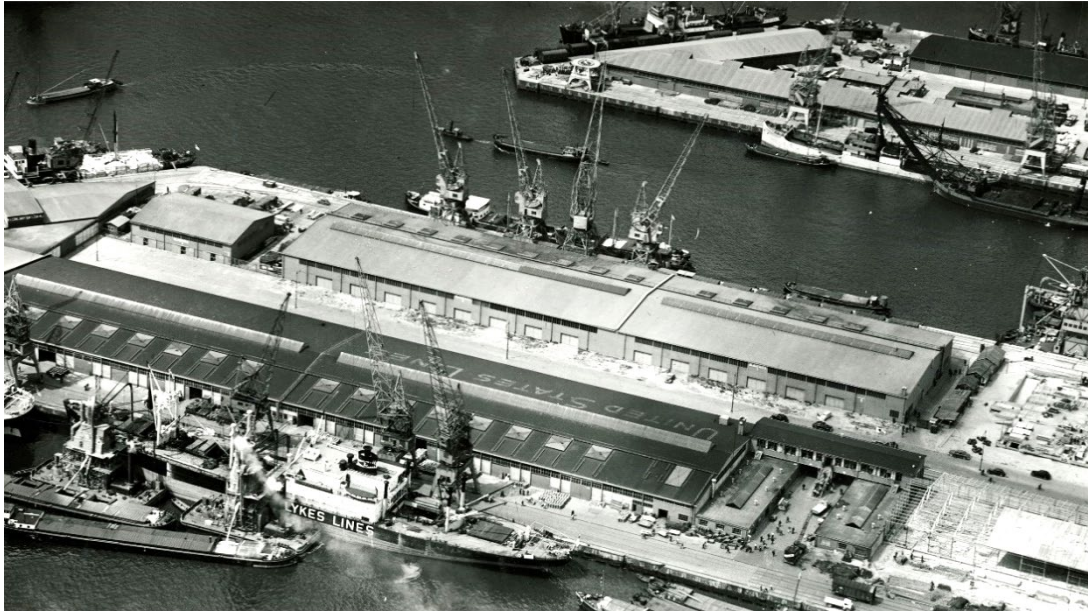


Figure 11: Warehouses and the gateway building of C.S.S.M and construction of warehouses D and E (Source: Stadsarchief Rotterdam)

1. The architects of Swarttouw's warehouses

The architects Willem Vermeer and Jacques van Herwaarden were hired for the design of the warehouses and the gateway building. They designed the warehouses with a two-sided orientation. On one side, the distance from the quayside to the warehouse was determined by the rocker crane with the railroad, and on the other side by the access road: Radiostraat. The other company of Swarttouw, Swarttouw's Constructiewerkplaatsen & Machinefabriek took care of the construction (Figure 12).

18

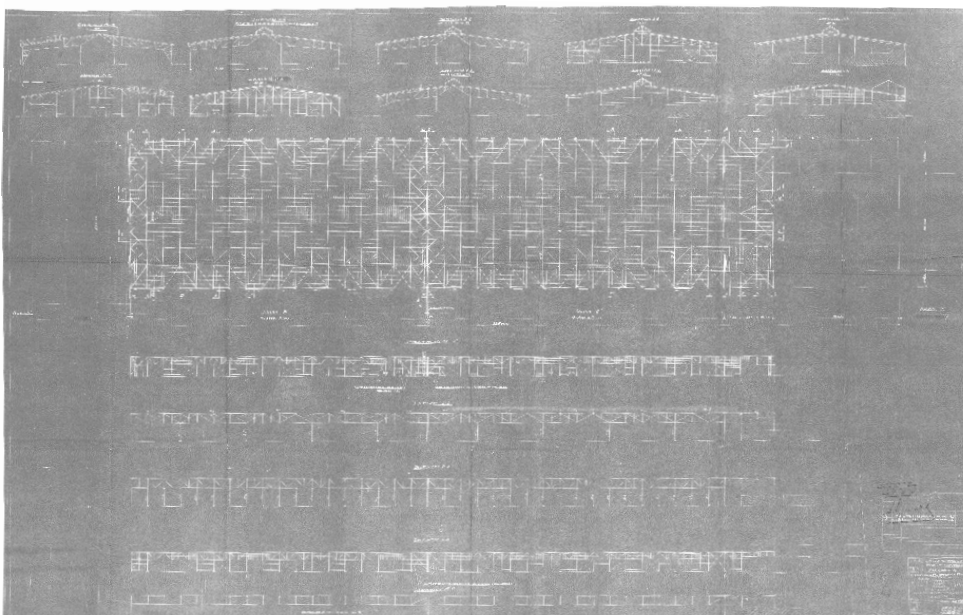


Figure 12: The blueprint of the steel construction by Swarttouw's Constructiewerkplaatsen & Machinefabriek (Source: Stadsarchief Rotterdam)

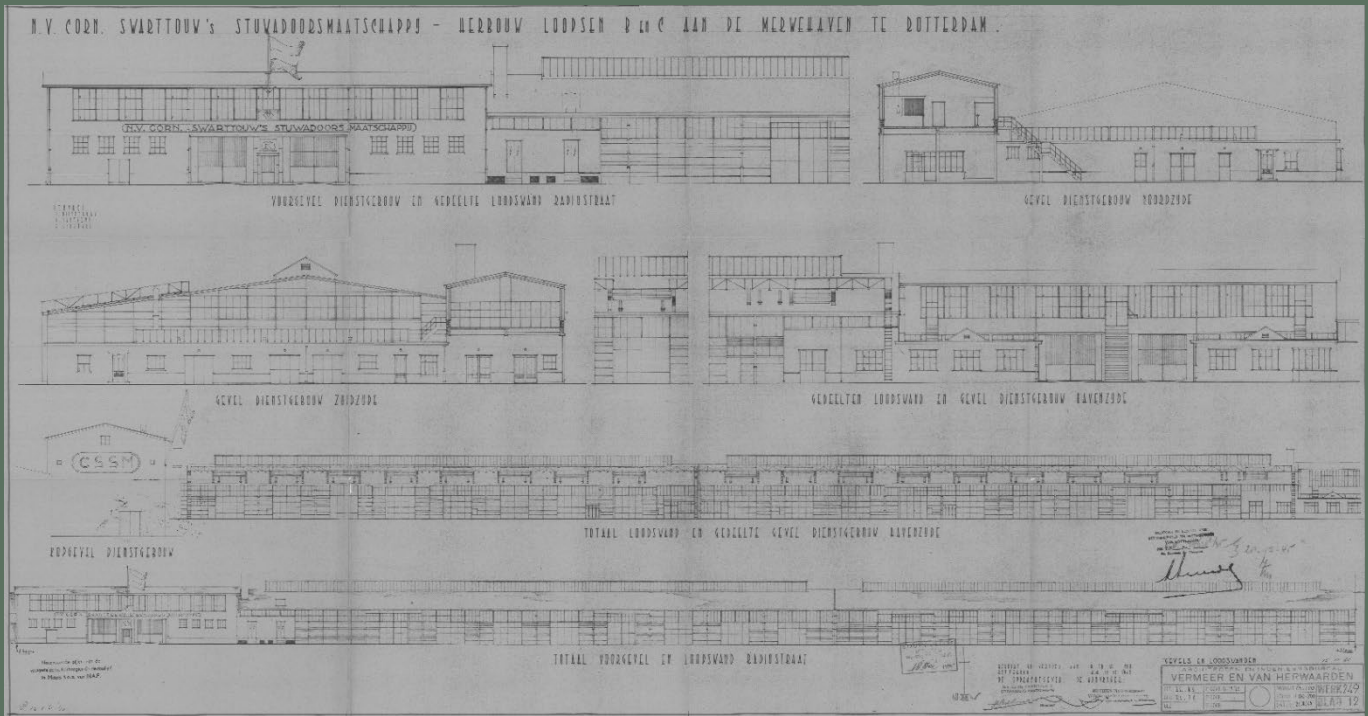


Figure 13: Façade drawings Vermeer and Van Herwaarden architects of warehouses and office building

(Source: Stadsarchief Rotterdam)

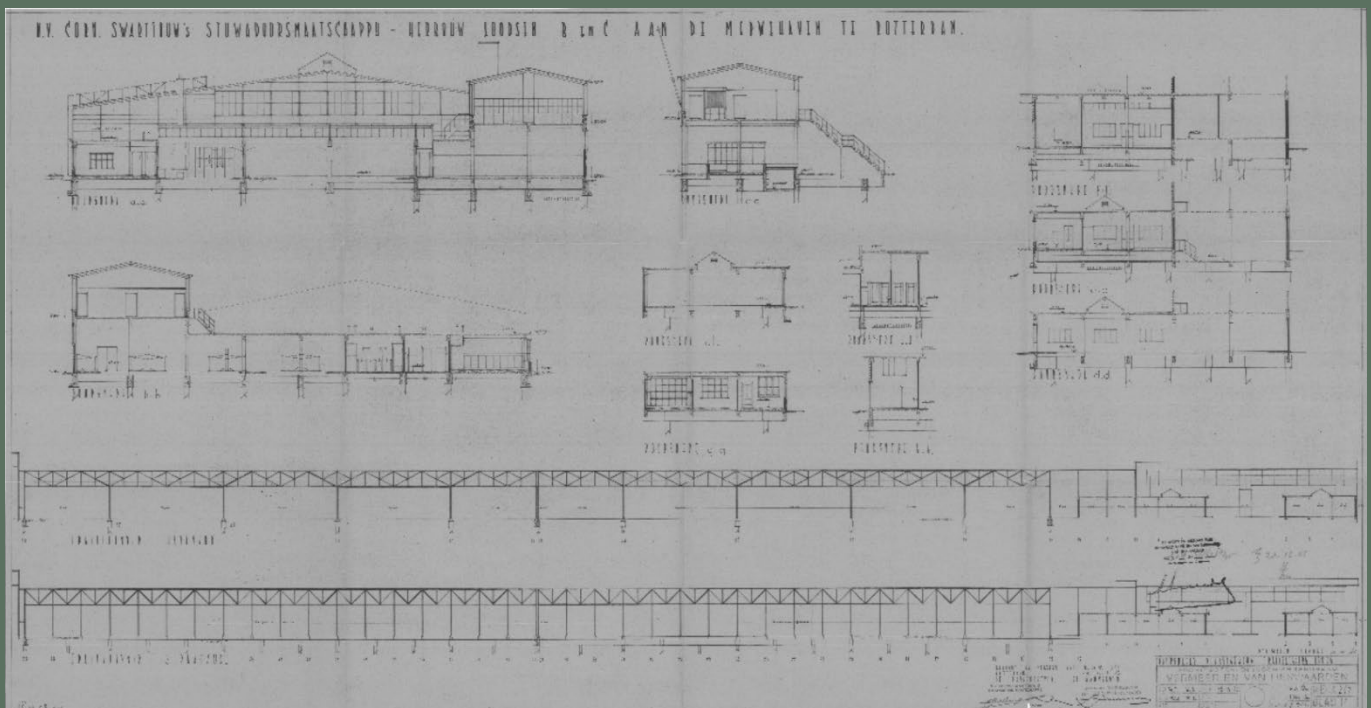


Figure 14: Section drawings Vermeer and Van Herwaarden architects of warehouses and office building

(Source: Stadsarchief Rotterdam)

They used a steel construction with walls of clean brickwork and pumice concrete blocks for the warehouses. The roof was made out of corrugated metal with a light cover in the roof ridge over the entire length of the warehouse. The roof had roof hatches every ten meters, so the cranes could easily dispatch their load.⁵⁴

At the time, the warehouses were equipped with very modern installations, like a sprinkler system for fire prevention and a heating system that could blow warm air into the warehouses in winter and cold air in summer. The firm could assure that goods could be protected frost-free with temperatures of minus 25 degrees.⁵⁵ Necessary conditions for the perishable goods that would be temporarily stored in them.

2. Other work by the architects Vermeer and Van Herwaarden

The Rotterdam-based architectural duo Willem Vermeer and Jacques van Herwaarden have remained fairly unknown architects. However, they designed some outstanding architecture that can still be seen in Rotterdam and to a lesser extent in other Dutch cities. Besides the commission of the warehouses with the gateway building of C.S.S.M, another design of a warehouse with an office building attached to it can be found in Rotterdam. The previously mentioned warehouse IJzerveem (p. 9) was on the other side of the river Nieuwe Maas in Waalhaven. Vermeer and Van Herwaarden designed a building for a steel company and remarkably they did not use steel for the construction of that building. The architects could convince the owners Van der Vliet and De Jonge to use concrete. It was realized in 1952 with a prefabricated scale roof (Figure 15).⁵⁶



Figure 15 (left): Scale roof of IJzerveem (Source: Funda in Business edited by author)

Figure 16 (right): Van den Hulst and Zoethout building (Source: Stadsarchief Rotterdam)

⁵⁴ Winter and Jong, *Havenarchitectuur: een inventarisatie van industriële gebouwen in het Rotterdamse havengebied*, 48.

⁵⁵ De_Maasstad, "Corns Swarttouw's Stuwadoor-Maatschappij," *De_Maasstad*, 6. annual 1947, 205-06, <https://resolver.kb.nl/resolve?urn=MMSARO01:003266010:00001>.

⁵⁶ Winter and Jong, *Havenarchitectuur: een inventarisatie van industriële gebouwen in het Rotterdamse havengebied*, 83.

They had their heyday in post-war reconstruction with a variety of projects, in addition to port warehouses, and many combined housing/business accommodations. Examples include a commercial building with a service house in a traditionalist style for the firm of Van den Hulst and Zoethout at 9 Ketelaarsstraat that was one of the first buildings in the Baan Quarter in the Centrum district from 1947-49 (Figure 16).⁵⁷

With the Institute for the Blind, already designated as a municipal monument, on Kipstraat from 1951-53 (Figure 17) for the facade they used red hand-formed brickwork, Norwegian granite, and vibrated concrete window frames and sculptures by Han Rehm.⁵⁸



Figure 17 (left): architect's drawing of the Institute for the Blind (Source: Platform Wederopbouw Rotterdam)
Figure 18 (right): shop of jeweler Brünott with eight dwellings (Source: Stadsarchief Rotterdam)

In the design for jeweler Brünott's store with eight dwellings above it also from 1951-53 located on the corner of Oude Binnenweg with Karel Doormanstraat (Figure 18), the architects added different materials for the decoration of the facade, such as brown-gray-granite, glazed stone sandwiched in bands of Muschel limestone and concrete lifting beams (a hint to the warehouse). A sculpture by Joan Bakker completed it.⁵⁹

Furthermore, they designed quite a few apartment flats in Rotterdam, like 111/119 Jonker Fransstraat, 132/154 Schiedamseweg, 1/41 (odd numbers) Speelmanstraat, 2/42 (even numbers) Dijkstraat, 16/50 (even numbers) Goudsesingel and 2/8 (even numbers) Goudsewagenstraat all still there.⁶⁰

⁵⁷ "Baankwartier," Platform Wederopbouw Rotterdam, accessed March 22, 2023, <https://wederopbouwrotterdam.nl/artikelen/baankwartier>.

⁵⁸ "Werkinrichting voor blinden (blindeninstituut)," Platform Wederopbouw Rotterdam, accessed March 22, 2023, <https://wederopbouwrotterdam.nl/artikelen/werkinrichting-voor-blinden-blindeninstituut>.

⁵⁹ "Oude Binnenweg 045; 047, Karel Doormanstraat 471 en Karel Doormanhof 012," Platform Wederopbouw Rotterdam, accessed March 22, 2023, <https://wederopbouwrotterdam.nl/objecten/108>.

⁶⁰ "Platform Wederopbouw Rotterdam," Platform Wederopbouw Rotterdam, accessed March 22, 2023, <https://wederopbouwrotterdam.nl/>.

Since they were a Rotterdam-based firm their work is mostly executed in this city, however, they did realize some projects outside Rotterdam. An example is a later design of a combined residential and commercial building Aeckerstyn in Amsterdam, realized in 1965 on a triangular plot. It consists of two discs paired in a kink. A clean vertical city with workspaces on the ground floor, studios in the kink, and five residential floors specially designed to house singles (Figure 19).⁶¹



Figure 19: apartment building Aeckerstyn in Amsterdam (Source: Gemeente Amsterdam stadsarchief)

⁶¹ "Aeckerstyn, W. Vermeer, I. Van Herwaarden, 1965," accessed March 22, 2023, 2023, <https://arcam.nl/architectuur-gids/aeckersteyn/>.

V. Value Assessment of Swarttouw's Warehouses

The value assessment of buildings follows the criteria as summed up by the Rijksdienst voor het Cultureel Erfgoed (for a detailed overview of the valuation criteria see page 30). These criteria are divided into five main categories: general historical values, ensemble and urbanistic values, architectural-historical values, building archaeological values, and values based on the history of use. According to these values, Swarttouw's warehouses are evaluated.

1. General historical values

Architecture is of lesser importance during the Interbellum, especially for utilitarian buildings such as warehouses. Single-story wooden warehouses seem to be the standard, but this attitude changed with the post-war reconstruction, and architects' contribution to functional structures gains ground. Attitudes toward working conditions also change. Improvements are made by constructing a modern canteen and washing and changing facilities.⁶² Swarttouw's warehouses are a very early example of that zeitgeist.

2. Ensemble values

The warehouses follow the entire quay. The distance between the quay and the warehouses is determined by the reach of the rocker crane. The demolished warehouse A (See Figure 10) did follow the quay around the corner, however, the later-built warehouse breaks with this method. The long rhythm of the facade of the warehouses is maintained, which is characteristic of breakbulk warehouses. Breakbulk needs sufficient quay length with warehouses next to it.



Figure 20: section of the facade drawing (Source: Stadsarchief Rotterdam) with inlay (Source: photograph taken by the author on March 14, 2023)

⁶² Winter and Jong, *Havenarchitectuur: een inventarisatie van industriële gebouwen in het Rotterdamse havengebied*, 7.

Moreover, the two-sided orientation of the building is distinctive. Breakbulk goods are further transported, via train transport on the quayside, and by road trucks on the Radiostraat. The ensemble is an iconic example of breakbulk activity. The placement of the warehouses and the width of the quay where the track of the rocker cranes are still present (Figure 21). The train tracks that were in between the tracks of the rocker cranes have been lost with the new paving of the quay.



Figure 21: Tracks of the rocker cranes (Source: photograph taken by the author on March 14, 2023)

The building seen from the side of the street looks like a normal building with a pitched roof. Only the entrance gates betray that it is not just that. On the other side of the gate, is a square with a rectangular volume on both sides, perpendicular to it is placed another volume. The rectangular volumes on either side of the square are the office buildings. The one perpendicular to them and above the entrance is the canteen.

3. Architectural-historical values

Swarttouw's warehouses have remained almost completely intact since they were built in 1947. After more than 70 years of intensive use, changing developments, and new insights into port buildings that have not affected their appearance, they still look the same as when constructed. Attention is paid to achieving maximum results with few resources, such as the detailing of the office doors and the oblong octagonal shape of the porter's lodge. This sparse but apt use of detailing shows the ability of the architects.

Most of the original doors, such as the sliding doors of the warehouse and the doors of the office building with the metal 'S' of Swarttouw still present (Figure 22).

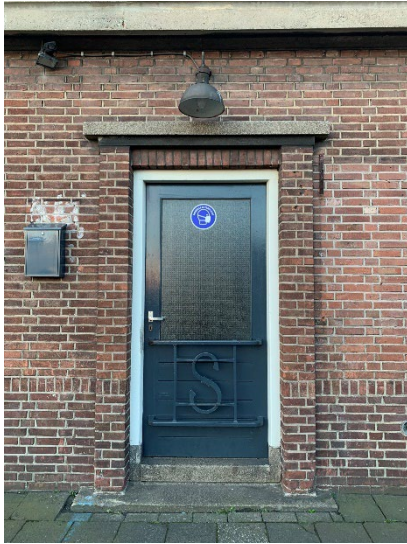


Figure 22 (left): One of the remaining doors in the office building (Source: photograph taken by the author on March 14, 2023)

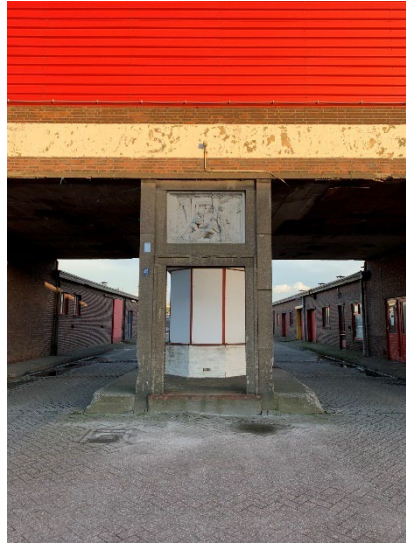


Figure 23 (right): The carved gable stone depicts port labor (Source: photograph taken by the author on March 14, 2023)

The carved gable stone depicts port labor (artist unknown) is also still present, together with the contours of the painted company name on the facades (Figure 23), and the porter's lodge with its remarkable oblong octagonal shape.



Figure 24: The porter's lodge (Source: photograph taken by the author on March 14, 2023)

4. Building archaeological values

Swarttouw's warehouses did not have any important building engineering other than it was steel construction built by another company of Swarttouw, Swarttouw's Constructiewerkplaatsen & Machinefabriek. I could not check the roof, but many buildings of that era reused steel from the demolished buildings after the bombings. The historical significance of this could be investigated further.

5. Values based on the history of use

The name Swarttouw is closely connected to Rotterdam, with a few prominent family members in it. After Leendert Swarttouw's start in stevedoring, his sons the brothers Cornelis and Frans followed in his footsteps. They both ran their own stevedoring company and became prominent port barons. Led by the successor of Cornelis, his son Cornelis Jr., the company grew into one of the largest stevedoring companies in Rotterdam after the war. The name Swarttouw is associated with the profession of stevedoring and both the profession and the name should not be forgotten.



Figure 25: Warehouses at the quayside (Source: Stadsarchief Rotterdam, courtesy of Mr. D. van de Ven)

Figure 26: Warehouses at the quayside (Source: photograph taken by the author on March 14, 2023)



Figure 27: canteen and office building C.S.S.M. (Source: Stadsarchief Rotterdam, courtesy of Mr. D. van de Ven)

Figure 28: canteen and office building C.S.S.M. (Source: photograph taken by the author on March 14, 2023)



Figure 29: office building C.S.S.M. (Source: Stadsarchief Rotterdam, courtesy of Mr. D. van de Ven)

Figure 30: office building C.S.S.M. (Source: photograph taken by the author on March 14, 2023)

VI. Possibilities for the redevelopment of warehouses

Several examples of redevelopment in port areas can be found. In the city of Rotterdam alone, there are quite a few examples where long-term reuse has been found for industrial heritage, specifically industrial warehouses. Some of these Rotterdam examples will be discussed below.

The first example to mention is N.V. Hollands Veem, already mentioned on page 7. This warehouse has been completely transformed into apartments while retaining the complete façade and roof so that the building remains visually the same. The second example of St. Jobsveem (p. 8) is a combination of working spaces with apartments. The architects use the width of the building to create an atrium in the center surrounded by residential units to maximize daylight. An additional floor is added because the roof needed to be replaced anyway. Since the building is quite tall and the additional residential level is slightly set back, it is hardly visible. Another example is the Entrepot De Vijf Werelddelen. In 1997, this was redeveloped into restaurants on the ground floor at the quayside, a supermarket in the core of the building, and housing units on top. Again in this reuse, no elements were added and the building remains visible as it once was.

28

However, those are multi-story buildings, which Swarttouw's warehouses are not. An example of a single-story redevelopment can be found in Rotterdam's Katendrecht neighborhood, where the architects overhauled warehouse Fenix I. By constructing a building on top of it that is separate from the warehouse, space has been created for a multitude of functions, including a college of music, dance, and circus acting, a hotel, a parking garage, catering facilities and apartments in the new building above. Although the warehouse is still visible, the building is somewhat overshadowed by the added volume. Finally, Katoenveem (p. 8) is transformed into a giant art space for art created specifically for Katoenveem's spaces.

The quality of warehouses lies in their large open spaces, allowing for a variety of uses, as shown in the previous examples. Whether by keeping the warehouse as it is or by adding volumes. Preserving the appearance of the warehouse and its relationship with the quay should be at the forefront of the redevelopment task.

Conclusions

Rotterdam's history is closely linked to its ports. The city has grown from the dam in the river Rotte into a world port. As ports shifted westward, unused ports were left behind in and around the city. This provided opportunities for new developments, as Riek Bakker initiated with her plan 'Plan Kop van Zuid'. Bakker's plan already included the redevelopment of maritime heritage but overlooked some. This would set the tone for redeveloping other disused ports in Rotterdam.

Nowadays, Rotterdam still has warehouse heritage from most periods of port history since the nineteenth century. However, this heritage was all built before World War II. Swarttouw's warehouses can add another chapter to Rotterdam's port history. The warehouses were built under architecture in the reconstruction period immediately after the war. These designs show the changing ideas about working conditions, such as the introduction of a modern canteen and washing and changing facilities. It is an example of the decisiveness of the inhabitants to build up the city after the war. This is typically the Rotterdam mentality of no words but deeds.

Swarttouw's warehouses were not only designed as a warehouse but as a complete architectural ensemble. This symmetrically shaped ensemble includes the canteen above the entrance gate with the porter's lodge and office buildings on either side, creating a square with a formal language unique to Rotterdam. What is striking is the architects' ability to achieve maximum results with few resources. The warehouses are almost completely intact as when they were built. The long repetitive façade of the warehouses is typical for breakbulk and has a maximum quay length with sufficient adjacent storage. This is image-defining for Merwehaven as a breakbulk port and marks its history. Therefore, I argue that it should not only be considered an iconic symbol for Merwehaven. Moreover, it should also be given municipal monument status.

The breakbulk warehouses show the use of the waterfront and contribute to awareness of Rotterdam's history as a port city. Due to the variety in typologies of these warehouses, each disused port has its own identity. These sturdy existing structures can therefore reinforce new structures. However, new structures have to be carefully introduced as they may negatively disrupt these existing structures. The relationship between the quay and the warehouse should always be preserved, thus preserving the identity of the site.

History is preserved in buildings, what is demolished can never be brought back.

Table with valuation criteria for architecture by the RCE

- I. General historical values (related to developments in society)
 - a. Importance of the property/complex as an expression of (a) cultural, socio-economic, and/or spiritual development or developments.
 - b. Importance of the property/complex as an expression of (a) development or developments in geography, landscape, and/or public administration.
 - c. Importance of the property/complex as an expression of (a) technological and/or typological development or developments.
 - d. Importance of the property/complex because of its innovative value or groundbreaking character.
- II. Ensemble values (interconnection) and urbanistic values
 - a. Importance of the property/complex as an essential component of a larger whole with national or international cultural-historical, architectural-historical, and urbanistic significance.
 - b. Importance of the property/complex as a result of its siting, related to the development/expansion of a region, town, or neighborhood.
 - c. Importance of the property/complex as a result of the way it has been parcelled out/developed/its facilities.
 - d. Importance of the property/complex for the appearance of a region, town, village, or neighborhood.
 - e. Importance of the property/complex because of the high quality of the building and the historic-spatial relationship with green areas, roads, water parties, and/or the soil condition.
- III. Architectural-historical values
 - a. Importance of the property/complex for the history of architecture.
 - b. Importance of the property/complex for the oeuvre of a master builder or architect.
 - c. Importance of the property/complex as a result of the pronounced aesthetic qualities of the design.
 - d. Importance of the property/complex as a result of the ornamentation.
 - e. Importance of the property/complex because of the interior finish (in connection with the exterior).
- IV. Building archaeological values
 - a. Importance of the property/complex for the history of building engineering.
 - b. Importance of the property/complex as a result of the readability of its construction history (historical layering);
 - c. Importance of the property/complex because of its use of materials.
- V. Values based on the history of use (related to the object of study)
 - a. Importance because of the planning, interconnection, or development of buildings or spaces in line with a (historical)
 - b. function, use, or production in the property/complex.
 - c. Importance as a result of a (historical) function, use, or production in the property/complex.
 - d. Importance of the property/complex as a reminder of a historic event or prominent inhabitant/user/client.

Bibliography

- Algemeen_Handelsblad. "Familieberichten." *Algemeen Handelsblad, Delpher* (Amsterdam), May 28, 1968.
<https://resolver.kb.nl/resolve?urn=KBNRC01:000035256:mpeg21:p010>.
- "Aeckerstyn, W. Vermeer, I. Van Herwaarden, 1965." accessed March 22, 2023, 2023,
<https://arcam.nl/architectuur-gids/aeckersteyn/>.
- Ažman Momirski, Lucija, Yvonne Van Mil, and Carola Hein. "Straddling the Fence: Land Use Patterns in and around Ports as Hidden Designers." *Urban Planning* 6, no. 3 (2021): 136-51. <https://doi.org/10.17645/up.v6i3.4101>.
<https://dx.doi.org/10.17645/up.v6i3.4101>.
- Bonke, Hans, and Els Dekker. *Amsterdamse Pakhuizen : 16de-20ste Eeuw*. Zutphen: Walburg Pers, 2011.
- Burgdorffer, A.C. . "In Memoriam Gerrit Johannes De Jongh." 132-49, 1917.
dagblad, De banier : staatkundig gereformeerd. "C. Swarttouw Overleden." *De banier : staatkundig gereformeerd dagblad, Delpher* (Rotterdam), May 20, 1937.
<https://resolver.kb.nl/resolve?urn=ddd:010854802:mpeg21:p005>.
- De la Bruhèze, A.A.A., H.W. Lintsen, A. Rip, and J.W. Schot. *Techniek in Nederland in De Twintigste Eeuw*. Transport, Communicatie. Vol. 5: DBNL (KB, nationale bibliotheek), 2002.
- De_Maasstad. "Cornis Swarttouw's Stuwadoor-Maatschappij." *De_Maasstad*, 6. annual 1947.
<https://resolver.kb.nl/resolve?urn=MMSARO01:003266010:00001>.
- De_Tijd-Maasbode. "Stukgoed En Azalea's." *De Tijd-Maasbode, Delpher* (Amsterdam), July 20, 1959. <https://resolver.kb.nl/resolve?urn=ddd:011234697:mpeg21:p003>.
- De_Volkskrant. "Furness Koopt Cornelis Swarttouw." *De Volkskrant, Delpher* ('s-Hertogenbosch), January 18, 1969.
<https://resolver.kb.nl/resolve?urn=ABCDDD:010847996:mpeg21:p002>.
- Dicke, Matthijs, Annelies van der Zouwen, and Irma Thoen. *Stadshavens Rotterdam : De Historische Ontwikkeling Van De Waalhaven, Eemhaven, Merwehaven En Het Vierhavengebied in Kaart, Woord En Beeld*. Rotterdam: De Hef, 2006.
- "Pakhuis, Brede Hilledijk 95, 3072 Kd Te Rotterdam." Rijksdienst voor het Cultureel erfgoed, 2023, accessed March 19, 2023,
<https://monumentenregister.cultureelerfgoed.nl/monumenten/513940>.
- "Vertrekhal, Wilhelminakade 699, 3072 Ap Te Rotterdam." Rijksdienst voor het Cultureel erfgoed, 2023, accessed March 18, 2023,
<https://monumentenregister.cultureelerfgoed.nl/monumenten/530949>.

- Es, E. van. *Cultuurhistorische Verkenning Merwe-Vierhavens*: Projectbureau Stadshavens, 2017.
- FD. "Kivits Koopt Rotterdamse Handelaar in Groente En Fruit." *Financieel Dagblad*, July 7, 2021. <https://fd.nl/ondernemen/1391082/kivits-logistics-koopt-rotterdam-handelaar-in-groente-en-fruit>.
- Gemeente_Rotterdam. *Merwehaven, Een Stedelijk Woon-Werkmilieu Voor De Toekomst*. Rotterdam: gemeente Rotterdam, 2022.
- "Planning Woningbouw Merwehaven." Gemeente Rotterdam, 2023, accessed April 19, 2023, 2023, <https://www.rotterdam.nl/merwehaven>.
- Hein, C., L. A. Momirski, and Y. van Mil. "Port City Resilience: Piloting a Socio-Spatial Method for Understanding, Comparing and Representing Linked Maritime Heritage." In *Routledge Handbook of Sustainable Heritage*, 471-83, 2022.
- Hein, Carola. "Oil Spaces: The Global Petroleumscape in the Rotterdam/The Hague Area." *Journal of Urban History* 44, no. 5 (2018): 887-929. <https://doi.org/10.1177/0096144217752460>. <https://dx.doi.org/10.1177/0096144217752460>.
- Het_Vrije_Volk. "Uitbreiding in Overslag Ten Koste Van Antwerpen." *Het Vrije Volk* (Rotterdam), March 10, 1984. <https://resolver.kb.nl/resolve?urn=ddd:010961673:mpeg21:p015>.
- Jansen, M., A. Brandellero, and R. Van Houwelingen. "Port-City Transition: Past and Emerging Socio-Spatial Imaginaries and Uses in Rotterdam's Makers District." *Urban Planning* 6, no. 3 (2021): 166-80. <https://doi.org/10.17645/up.v6i3.4253>. <https://dx.doi.org/10.17645/up.v6i3.4253>.
- Kemp, John Frederick, and Peter scheepsbouw Young. *Notes on Cargo Work*. New ed. London: Stanford Maritime, 1980.
- Kermani, A. A., W. Van Der Toorn Vrijthoff, and A. Salek. "The Impact of Planning Reform Onwater-Related Heritage Values and on Recalling Collective Maritime Identity of Port Cities: The Case of Rotterdam." In *Adaptive Strategies for Water Heritage: Past, Present and Future*, 345-61, 2019.
- Klerk, L. de, P. van der Laar, and H. Moscoviter. *G.J. De Jongh, Havenbouwer En Stadsontwikkelaar in Rotterdam*. Bussum: Uitgeverij Thoth Bussum, 2008.
- Lu, Shaoming. "Port Heritage: Urban Memory of Harbor Cities (Case Study of Shanghai)." *Envisioning architecture: Image, perception and communication of heritage* (2015): 71-81.

- Mah, A. *Port Cities and Global Legacies: Urban Identity, Waterfront Work, and Radicalism*. London, UNITED KINGDOM: Palgrave Macmillan UK, 2014.
<http://ebookcentral.proquest.com/lib/delft/detail.action?docID=1809264>.
- Meyer, H. *De Stad En De Haven: Stedebouw Als Culturele Opgave in Londen, Barcelona, New York En Rotterdam*. Veranderende Relaties Tussen Stedelijke Openbare Ruimte En Grootschalige Infrastructuur. Jan van Arkel, 1996.
- Moquette, H.C.H., and J.M. Droogendijk. *Rotterdamsche Straatnamen*. Geschiedkundig Verklaard. Second ed. Rotterdam: W.L. en J. Brusse, 1928.
- "Baankwartier." Platform Wederopbouw Rotterdam, accessed March 22, 2023, <https://wederopbouwrotterdam.nl/artikelen/baankwartier>.
- "Oude Binnenweg 045; 047, Karel Doormanstraat 471 En Karel Doormanhof 012." Platform Wederopbouw Rotterdam, accessed March 22, 2023, <https://wederopbouwrotterdam.nl/objecten/108>.
- "Platform Wederopbouw Rotterdam." Platform Wederopbouw Rotterdam, accessed March 22, 2023, <https://wederopbouwrotterdam.nl/>.
- "Werkinrichting Voor Blinden (Blindeninstituut)." Platform Wederopbouw Rotterdam, accessed March 22, 2023, <https://wederopbouwrotterdam.nl/artikelen/werkinrichting-voor-blinden-blindeninstituut>.
- "Geschiedenis Van De Haven." accessed January 26, 2023, 2023, <https://www.portofrotterdam.com/nl/online-beleven/geschiedenis-van-de-haven>.
- Rotterdamsch_jaarboekje. 8e jaargang ed. Vol. 3, Rotterdam: W.L & J. Brusse's uitgeverijmaatschappij N.V., Delpher, 1930.
- "'Swarttouw's Constructiewerkplaats En Machinefabriek'." Industriemuseum Schiedam, accessed April 3, 2023, 2023, <https://indriemuseum-schiedam.nl/swarttouw/>.
- "Stadsarchief Rotterdam." Stadsarchief Rotterdam, accessed March 13, 2023, 2023, <https://stadsarchief.rotterdam.nl/>.
- Stenvert, R., C. Kolman, S. van Ginkel-Meester, E. Stades-Vischer, S. Broekhoven, and R. Rommes. *Monumenten in Nederland. Zuid-Holland*. Rijksdienst voor de Monumentenzorg, Zeist, Waanders uitgevers, Zwolle, 2004. Retrieved from https://www.dbnl.org/tekst/sten009monu10_01/colofon.php.
- Tallet, Pierre, and Gregory Marouard. "An Early Pharaonic Harbour on the Red Sea Coast." *Egyptian Archaeology* 40 (2012): 40-43.
- Visser, J. C. *Rotterdamse Ondernemers, 1850-1950*. Rotterdam: De Hef ; Centrum voor Bedrijfs geschiedenis, Erasmus Universiteit Rotterdam, 2002.

Winter, P. de, and J. de Jong. *Havenarchitectuur: Een Inventarisatie Van Industriële Gebouwen in Het Rotterdamse Havengebied*. Rotterdam: Rotterdamse Kunststichting, 1982.

Illustrations

- p.7 Stadsarchief Rotterdam. *Gerestaureerd pakhuis aan de oostzijde van de Voorhaven. Per 1 september 1975 in gebruik bij het Historisch Museum*. Photograph. Stadsarchief Rotterdam. March 18, 2023. <https://hdl.handle.net/21.12133/D2A7D3C7D37D4C61BA3425B1C53D34E2>
- p.9 Fototechnische Dienst Rotterdam. *De bouw van pakhuizen aan de Rijnhaven Oostzijde, van links naar rechts de Molukken, Handelsveem, en de Eersteling van Pakhuismeesteren. Op de voorgrond enkele binnenvaartschepen*. Photograph. Stadsarchief Rotterdam. March 19, 2023. <https://hdl.handle.net/21.12133/7025DFB9C00848ADB46EE24B70A5DC0E>
- p.10a Stadsarchief Rotterdam. *Kaart van de havens van Rotterdam*. Map. Stadsarchief Rotterdam. February 13, 2023. <https://hdl.handle.net/21.12133/67EF0F47B48645C1B15C7250EB0D5C61>
- p.10b Anoniem. *De bouw van de kademuur in de Merwehaven*. Photograph. Stadsarchief Rotterdam. March 9, 2023. <https://hdl.handle.net/21.12133/EA1D414014F8407AB63950FBB8A69E6C>
- p.To (un)load breakbulk, an11 De la Bruhèze, A.A.A., Lintsen H.W., Rip A., and Schot, J.W. *Wipkraan*. De la Bruhèze, A.A.A., Lintsen H.W., Rip A., and Schot, J.W. In *Techniek in Nederland in De Twintigste Eeuw. Deel 5. Transport, Communicatie*. 2002, 99. Zutphen: KB, nationale bibliotheek. 2002.
- p.14 Groeneveld, A.. *C. Swarttouw, directeur van Cornelis Swarttouw Stuwadoors Maatschappij, bij een modelbouw havenkraan*. Photograph. Stadsarchief Rotterdam. April 10, 2023. <https://hdl.handle.net/21.12133/8F23654008574C929307F568AF34F520>
- p.16 Rotterdamsch Nieuwsblad. *Ingezonden mededeelingen*. Fragment newspaper edited by author. Delpher. March 6, 2023. <https://resolver.kb.nl/resolve?urn=MMKB32:164656060:mpeg21:p00009>
- p.16a Port of Rotterdam. *geschiedenis van de haven*. Photograph. Port of Rotterdam. March 2, 2023. <https://www.portofrotterdam.com/nl/online-beleven/geschiedenis-van-de-haven>.
- p.18 Stadsarchief Rotterdam. *Luchtopname van loodsen aan de Merwehaven. In het water aan de kade enkele schepen*. Photograph. Stadsarchief Rotterdam. February 15, 2023. <https://hdl.handle.net/21.12133/CCDD67F3533B4CCB8C685A8504EC4A6C>

p.18b Swarttouw's Constructiewerkplaatsen en Machinefabriek Schiedam. *Tekening Plan verbouwing loods B en C November 8, 1945*. Drawing. Stadsarchief Rotterdam. March 17, 2023.

<https://hdl.handle.net/21.12133/F5FC4176210B4B9590CA0B84C4DD9390>

p.19a Vermeer, W. and Herwaarden, I. van. *Tekening Gevels en loodswanden November 8, 1945*. Drawing. Stadsarchief Rotterdam. March 17, 2023.

<https://hdl.handle.net/21.12133/9DE7A571697F4A61B760EF3BEEE86971>

p.19b Vermeer, W. and Herwaarden, I. van. *Tekening Doorsneden dienstgebouw November 8, 1945*. Drawing. Stadsarchief Rotterdam. March 17, 2023.

<https://hdl.handle.net/21.12133/3C884075150144D6B115D9C9C4D4825B>

p.20a Funda in Business. *Nijmegenstraat 31*. Funda in Business. Photograph. Funda in Business. March 19, 2023.

<https://www.fundainbusiness.nl/bedrijfshal/verhuurd/rotterdam/object-42960125-nijmegenstraat-31/#foto-3>

p.20b Stadsarchief Rotterdam. *De zuidwest hoek van de Hoornbrekerstraat bij de Ketelaarsstraat met het bedrijfspand van A.N. v.d. Hulst*. Photograph. Stadsarchief Rotterdam. March 16, 2023.

<https://hdl.handle.net/21.12133/A26AA25ED2764B1388E23E38185093A4>

p.21c Platform Wederopbouw Rotterdam. *Werkinrichting voor blinden (blindeninstituut)*. Drawing. Platform Wederopbouw Rotterdam. March 19, 2023.

<https://wederopbouwrotterdam.nl/artikelen/werkinrichting-voor-blinken-blinkeninstituut>

p.21d Vrijmoet, H.M.. *Zicht op het Binnenwegplein, de Oude Binnenweg en de kruising met de Karel Doormanstraat. Foto is genomen vanuit de kabelbaan. Op het Binnenwegplein zijn de gekleurde polyester afdakjes te zien die tijdens C70 in de binnenstad stonden*. Photograph. Stadsarchief Rotterdam. March 19, 2023.

<https://hdl.handle.net/21.12133/6DA7CB89CA98430DAA2BAA9A39DAB634>

p.22 Stadsarchief Amsterdam. *Luchtfoto Osdorp-Midden*. Photograph. Stadsarchief Amsterdam. March 20, 2023.

<https://archieff.amsterdam/beeldbank/detail/be8621e0-1056-5670-f0d2-811e4d5e638a>

p.23 Vermeer, W. and Herwaarden, I. van. Tekening Gevels en loodswanden November 8, 1945. Drawing. Stadsarchief Rotterdam. March 17, 2023.

<https://hdl.handle.net/21.12133/9DE7A571697F4A61B760EF3BEEE86971>

p.27a Ven, D. van de. Loodsen van het havenbedrijf Corn. Swarttouw's aan de Radiostraat/Merwehaven. Photograph. Stadsarchief Rotterdam. March 16, 2023.

<https://hdl.handle.net/21.12133/5084F8759E344821A1COC19F3573B7D5>

p.27c Ven, D. van de. Het terrein van het havenbedrijf Corn. Swarttouw's aan de Radiostraat/Merwehaven. Op de achtergrond het gebouw van de kantine. Photograph. Stadsarchief Rotterdam. March 16, 2023.

<https://hdl.handle.net/21.12133/A76364AC9F0943968114A7C153A10880>

p.27e Ven, D. van de. C.S.S.M., het gebouw van NV Corn. Swarttouw's Stuwadoorsmaatschappij aan de Radiostraat/Merwehaven. Photograph. Stadsarchief Rotterdam. March 16, 2023.

<https://hdl.handle.net/21.12133/436A63418DBD435D9EFCBE2C5EDB26DA>

