

Traces of Timber Traffic

Inventoring remnants of the pre-industrial
wood-processing industry in the Waterdriehoek



Delft University of Technology
Architecture, Urbanism and Building Sciences
Graduation Studio 'Revitalising Heritage'
Research tutor: Dr. M.T.A. van Thoor

Wietse Haitsma Mulier | 4781651

March 21st 2024

Introduction

In 1299, Count Johannes I van Holland and Count Johannes van Avesnes granted Dordrecht staple rights. Consequently, all goods that were transported over the rivers Merwede and Lek had to be offered on the market of Dordrecht first before they went anywhere else.¹ This secured Dordrecht's position as a trading city, which it had become due to its strategic location at the intersection of east-west and north-south trade routes.² Significant for Dordrecht was the trade of wine, grain, and wood.³ The latter had already started in 1287. In that year, the first known report was made of a German wood raft flowing down the river to Dordrecht.⁴ This marked the beginning of Dordrecht as one of the most important Dutch centres of wood trade for more than six centuries.⁵

A significant amount of the wood sold in Dordrecht stayed in the direct surroundings of the city. In the 18th century, approximately twenty per cent was further processed in or nearby Dordrecht.⁶ The logs were sawn by sawmillers, whose most important clients were shipyards.⁷ The presence of wood in combination with the fishing and trading industries caused the shipbuilding industry to thrive around Dordrecht.⁸ Industries related to the shipbuilding industry, like rope- and sailmakers, emerged as a result.⁹ Other industries also used wood, including coopers, hoop- and clog makers.¹⁰

During the Dutch Industrial Revolution, timber was increasingly being replaced by iron and later by steel.¹¹ In combination with the introduction of the steam engine, this affected, among others, shipbuilding and its related industries.¹² The new materials and techniques often resulted in a change or complete disappearance of a craft.¹³

Many of the sites and buildings where the pre-industrial wood-processing industry took place have disappeared. Causes such as fire, dike reinforcement, and the development of the plot by either a private party or a municipality have led to the disappearance of these structures.¹⁴ Inquiries with several institutions have shown that there is no inventory

1 Van Herwaarden et al., 1996, p. 80

2 Benschop et al., 2013, p. 12

3 Van Herwaarden et al., 1996, p. 82

4 Van Prooije, 2005

5 The importance of Dordrecht as wood trading centre fluctuated through time and was influenced by economic, political, and natural (changing course of rivers) circumstances. A detailed description of this process can be read in the articles by Van Prooije, 1992 and 2005.

6 Van Prooije, 1992

7 Müller, 1995, p. 4

8 Van Herwaarden et al., 1996, p. 196

9 Kwast, 1919, p. 12

10 Kooij & Sleebe, 2000, p. 26, 27; Müller, 1995, p. 6, 15

11 Müller, 1995, p. 27

12 Kuiper & Teunisse, 2000, p. 2.5

13 Müller, 1995, p. 15

14 Müller, 1995, p. 71, 72; An example of a building that had to make way for a dike reinforcement was the wainwright workshop in Zwiindrecht (De Jongh, 2018). Moreover, personal communication (October 20, 2023) with the Historical Society of Sliedrecht has revealed that many industrial barns there were demolished during the dike reinforcement of 1994-2000.

of remnants of the pre-industrial wood-processing industry in the area around Dordrecht, called the Waterdriehoek.¹⁵ Since this industry has played a significant role in the history of the area, it is important to preserve the remaining structures and buildings that relate to it. Hence, an inventory of the remnants of the wood-processing past is needed. That is why this research is centred around the research question:

What are the physical remnants of the pre-industrial wood-processing industry in the Waterdriehoek?

Two types of physical remnants are inventoried: landscape remnants and timber buildings. Landscape remnants include remnants of shipyards, harbours, and man-made storage spaces for wood, called 'balkengaten' in Dutch. In short, the first subquestion is:

What traces has the pre-industrial wood-processing industry left in the landscape of the Waterdriehoek?

The second subquestion initially focused on pre-industrial timber buildings, mostly barns, in which industrial processes took place. Due to the finding that only one of such barns is preserved, the research scope has been expanded. It now also includes timber barns with other functions and of younger age, with the limit set at around 1914.¹⁶ Still, the barns' structure and cladding have to be made from timber. So, the second subquestion is:

Which pre-1914 timber buildings are left in the Waterdriehoek?

The appearance, structure, and history of the most illustrative landscape remnants and timber buildings will be described in more detail. Most attention will be paid to a barn in Kinderdijk, which will soon be restored.

Method

The inventory of landscape remnants required an approach based on literature and old (river) maps. These were compared to contemporary satellite imagery to find the landscape remnants.

The timber buildings were found with the help of literature, local inhabitants, local experts, and field research. The literature consisted of books about the villages in the Waterdriehoek and the city of Dordrecht, books about the wood and shipbuilding industry, and the Monumenten Inventarisatie Project (MIP; Monuments Inventory Project). The field research was done by bicycle, mostly along the (former) dikes along which the villages arose. Former harbours and wood-processing centres were also explored. The routes followed are shown in Appendix A.

¹⁵ The Waterdriehoek consists of three rivers and their shores in the province of South Holland: The Beneden Merwede, the Noord, and the Oude Maas next to Dordrecht.

¹⁶ Because of World War One, wood trade came to a halt. This led to financially challenging times for the wood-processing industry (Kooij & Sleebe, 2000, p. 77). After World War One, trade picked up again and the Netherlands "was flooded with wood from German countries", according to Visscher (1995, p. 59).

The found remnants

In total, seven pre-industrial landscape remnants and eighteen pre-1914 timber barns have been inventoried. Only four pre-industrial timber barns have been found. A full overview of the remnants is provided in Appendix B. It should be noted that not all remnants may have been included. Literature about them may be missing or not have been read, and the remnants could have been overlooked during the field research. However, local experts and inhabitants also did not know of any landscape remnants or timber barns other than the ones inventoried.

The landscape remnants sometimes are merely street patterns that follow former contours of harbours or balkengaten. Other remnants are still close to their original state. They best show the physical impact of the wood-processing industry on its surroundings, especially on Dordrecht.

The barns are more spread out over the Waterdriehoek, but their appearance is often similar. They often have gable roofs, which are covered with black or red roof tiles. The facades are either made of rebated planks or weatherboarding, mostly oriented horizontally. Ogees are sometimes present in the facades or bargeboards. Whether (sliding) doors, windows, or shutters are applied, differs per barn. Moreover, the degree of decoration of gable posts, if used, varies greatly.

In the sequel, the most illustrative remnants will be described in more detail. Dordrecht will be the starting point since this city has been an important centre of the Dutch pre-industrial wood trade.

Dordrecht

The trade and processing of wood once was one of the most important economic drivers of Dordrecht.¹⁷ Moreover, wood transport and trading were clearly visible in the city. The German wood rafts, which flowed down the rivers to the city, could reach three hundred meters in length and 45 meters in width in the 18th century.¹⁸ Hundreds of workers navigated the rafts.¹⁹ Having arrived in Dordrecht, the rafts were dismantled on the rivers and thereafter the wood was stored in water. It was believed that wood would be made more durable when stored in water for multiple months.²⁰ This whole affair must have been impressive, as is evident from the large number of paintings in which this process is central.²¹

The wood-processing industry in Dordrecht has concentrated in various areas over time. According to Visscher (1995, p. 37), the wood trade originally took place in the north

17 Ten Veen, 1992; Van Prooije, 1992

18 Van Prooije, 2005

19 Benschop et al., 2013, p. 35

20 Klaassen & Gierveld, 2005, p. 15

21 Many paintings of the transportation, storage, and dismantling of the wood rafts in Dordrecht can be found in the book 'Dordrecht 1650-1800' by Ten Veen (1992).

of the city next to the Wijnhaven. Due to the lack of space in this harbour, the wood traders moved to the west of the city, west of the Grote Kerk. This site bordered the river, with enough space to store the logs on sandbanks. However, in 1410 the Nieuwe Haven was constructed, with an open connection to the river, little current, and little wind. This attracted the wood traders. More than two centuries later, the wood traders were displaced by newly developed warehouses.

From the 17th century onward, there were two main wood-processing centres in Dordrecht. One of them was located around the Kalkhaven, which was constructed in 1655.²² Bouman (1995, p. 92) writes that there used to be two smaller harbours next to the Kalkhaven. The northern harbour was filled in with soil that was excavated to construct the Kalkhaven. This provided enough space for the wood-processing industry to settle. The southern harbour was turned into a balkengat, in which wood could be stored. The availability of space and wood storage created optimal conditions for the development of sawmills and shipyards. For two centuries wood processing took place here, but the last shipyard closed in 1881.²³ The only remnant is the street pattern, shown in Figure 1.

Just south of the Kalkhaven lay the Papegat. Together they formed one large industrial area. According to Bouman (1995, p. 105), the plot of the Papegat originally was a meadow, which was surrounded by low dikes. Next to the meadow was a brickyard, which used the clay from the meadow. As more clay was dug from the meadow, the ground level lowered. As a result, the former meadow could eventually be used as balkengat. When a new dike was built in 1603, it followed the original low dikes around the balkengat, so that wood rafts could still enter from the river. This dike is still present as a 3.5-meter elevation in the landscape and can clearly be seen on the map, as is visible in Figure 2.

Many mills arose along the Papegat, including sixteen sawmills.²⁴ The smallest sawmill, the paltrok mill 'Het Spinnewiel', is the only surviving sawmill from Dordrecht to date.²⁵ It currently stands in the Dutch Open-Air Museum in Arnhem.²⁶ The other mills either burned down or were broken down to make way for new buildings like steam sawmills. At the end of the 20th century, the balkengat was filled in. Nowadays, it still is an industrial area, but without wood-related industry.

The other main wood-processing centre of Dordrecht was located along the Noordendijk. On this side of the city, the rafts arrived from Germany. Visscher (1995,

22 Frijhoff et al., 1998, p. 46

23 Sigmond, 1995, p. 75

24 Berger, 2001, p. 54

25 According to *Geschiedenis van Zuid-Holland* (n.d.), paltrok mills are mills of which the entire hull had to be turned to face the wind. There are many other types of mills, including the bovenkruier, of which only the top part had to be turned to face the wind.

26 Bouman, 1995, p. 107

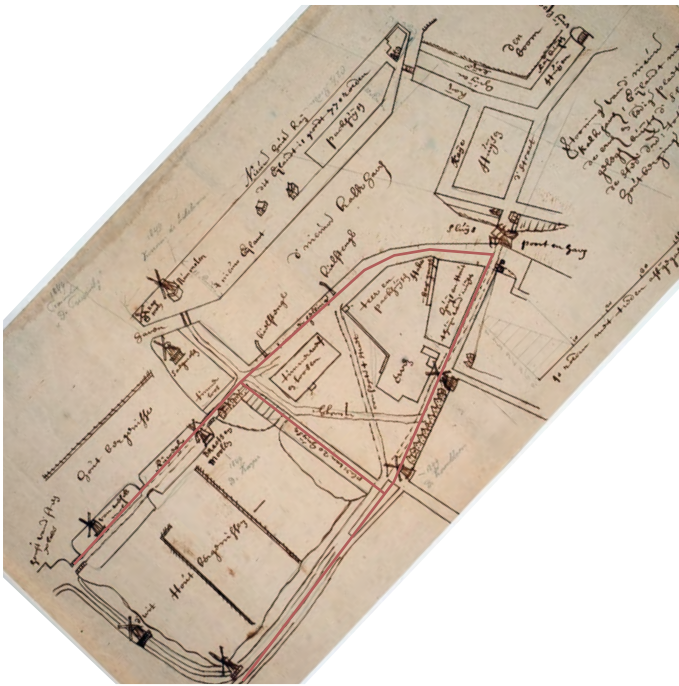


Figure 1. The area around the Kalkhaven in Dordrecht in 1698 compared to today. The street pattern around the two former harbours, which were already turned into land and balkengat by 1698, can still be seen today. Left image from "Regionaal Archief Dordrecht," by M. van Nispen, 1698 (<https://beeldbank.regionaalarchiefdordrecht.nl/search/detail/id/3C072F84505693014BF0BE585C8AA86/showbrowse>). Right image from "Beeldmateriaal Nederland," 2022 (<https://opendata.beeldmateriaal.nl/pages/downloaden>).

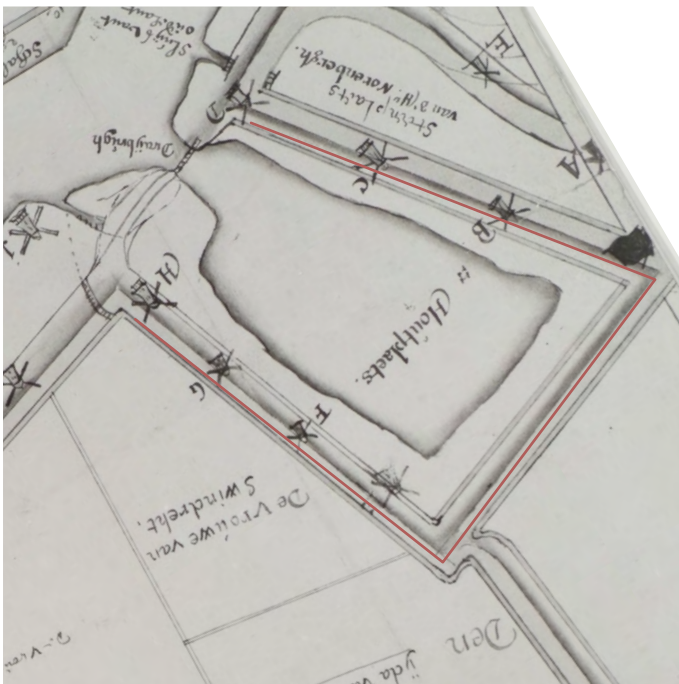


Figure 2. The area around the Papegat in Dordrecht around 1688 compared to today. The dike can still be seen in the current street pattern. Left image from "Regionaal Archief Dordrecht," by M. van Nispen, 1688 (<https://beeldbank.regionaalarchiefdordrecht.nl/search/detail/id/BC179B61AC8711E489FB00163E535DC5/showbrowse>). Right image from "Beeldmateriaal Nederland," 2022 (<https://opendata.beeldmateriaal.nl/pages/downloaden>).

p. 38) explains that the Noordendijk was constructed in 1603. Along the dike, there was enough space to develop the wood-processing and maritime industry. One of the first activities to be employed here was a ropewalk. Next to the ropewalk the harbour Lijnbaanhaven was dug. In 1643, the harbour Houthaven was constructed and wood-processing firms like shipyards settled around it. The adjacent Riedijkshaven was used to store wood and to launch the ships, mostly riverboats.²⁷ The timber for the bent rafters of the ships was sawn in a special sawmill, which was located in the nearby street called Kromhout.²⁸ More sawmills stood along the Noordendijk.²⁹ In the 19th century, the harbours were extended and multiple balkengaten were added.³⁰ Only the newest, easternmost balkengat has remained and is currently in use as a marina, as can be seen in Figure 3. The other balkengaten were either filled in as unemployment relief projects in the 1920s or were used as landfills.³¹ The sawmills have also disappeared. The Houthaven and Lijnbaanhaven have only left traces in the current street pattern, as shown in Figure 4. They were filled in to create space for factories and houses at the end of the 19th century.³²

At the same time, a rail bridge was built near the entrance of the Kalkhaven. This made it difficult for ships to enter. A new harbour, called Zeehaven, turned out to be the only solution.³³ The first company to settle around the Zeehaven was a wood-processing factory, which treated wooden railway sleepers.³⁴ This factory originated next to another harbour, the Spoorweghaven.³⁵ Both are post-industrial remnants and show that Dordrecht continued to be a centre for wood processing during and after the Dutch Industrial Revolution.

Today, street names in Dordrecht also refer to the former trade and processing of wood. For example, Kuipershaven is named after the coopers who made their timber barrels there in the 17th century.³⁶ Houtkopersplein refers to the timber trade and Hellingen to shipyards. The spatial distribution of these street names shows that wood was processed all around the city, not only in the aforementioned wood-processing centres.

Shipyard of C. Smit in Alblasserdam

One of the best-preserved landscape remnants outside of Dordrecht lies in Alblasserdam, which originally was an agricultural municipality.³⁷ Due to its favourable location along the river Noord, the maritime industry grew here in the 19th century.³⁸

27 Ten Veen, 1992, p. 84; Sigmond, 1995, p. 70

28 Visscher, 1995, p. 49

29 Bouman, 1995, p. 101

30 Visscher, 1995, p. 55

31 Visscher, 1995, p. 59

32 Kooij & Sleebe, 2000, p. 405

33 Sigmond, 1995, p. 79

34 Müller, 1995, p. 10

35 Vink, n.d.

36 Frijhoff et al., 1998, p. 44

37 Gemeente Alblasserdam, 1979

38 De Reus et al. (1999-a) have listed the largest shipyards that were active in Alblasserdam. Detailed information about their history is provided.

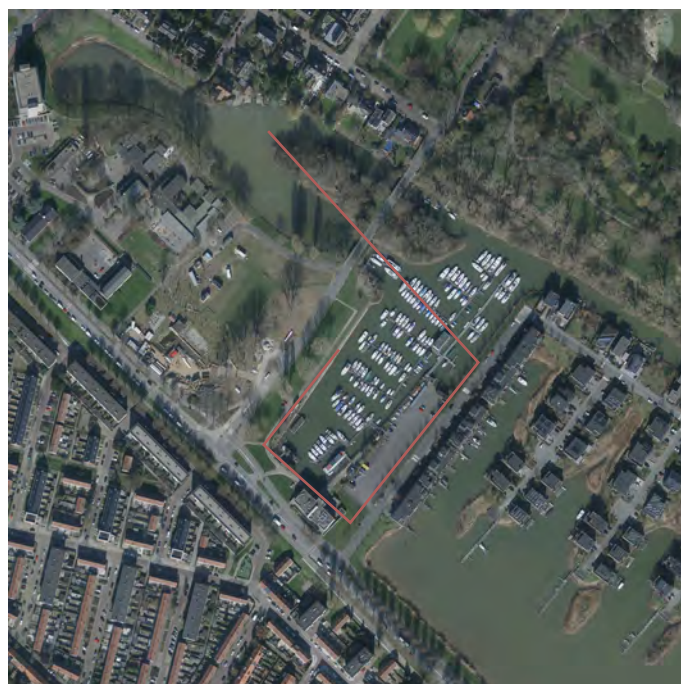


Figure 3. The area along the Noordendijk in Dordrecht at the end of the 19th century compared to today. The easternmost balkengat is currently in use as a marina. Part of the canal that connected it to the river is also still there. Left image from "Topotijdreis," end 19th century (<https://topotijdreis.nl/kaart/1874/@106910,424874,11.52>). Right image from "Beeldmateriaal Nederland," 2022 (<https://opendata.beeldmateriaal.nl/pages/downloaden>).



Figure 4. The area around the Lijnbaanhaven and Houthaven in Dordrecht in 1849 compared to today. Contours of the former harbours are the basis for the current street pattern. Left image from "Regionaal Archief Dordrecht," by A.A. Nunnink, 1849 (<https://beeldbank.regionaalarchiefdordrecht.nl/search/detail/id/3C0725F0505693014B43C2CC7E8778CE/showbrowse>). Right image from "Beeldmateriaal Nederland," 2022 (<https://opendata.beeldmateriaal.nl/pages/downloaden>).

C. Smit founded his shipyard in Alblasterdam in 1812.³⁹ According to Belder (2005, p. 28, 31), Smit let his employee F. Kloos build a sawmill in 1842 to ensure timber supply. Next to the mill, a balkengat was dug. A small canal connected it to the river. This canal ran along the 'kielgat', a pond in which the undersides of ships could be repaired. Furthermore, there was a berth. In 1948 the shipyard was bought by C. Verolme, who filled in the balkengat and broke down the sawmill.⁴⁰ The kielgat, berth, and a part of the canal remained untouched, as can be seen in Figure 5. Even the mill is still standing. In 1973 it was rebuilt in Uitgeest.⁴¹

Timber barn in Oostendam

On the opposite side of the river Noord lies the hamlet of Oostendam. Around 120 to 140 years ago, a construction company placed a barn here.⁴² According to the owner, it is only half of the original barn, which used to stand in Zwijndrecht as an agricultural barn. So, the barn has housed different functions over time. Moreover, the barn combines different types of facades, see Figure 6. The northern facade is made of horizontally oriented rebated planks; the eastern and western facades are made of horizontally oriented weatherboarding; the southern facade is made of brick because this is where the cattle used to stand. Furthermore, the barn has one gable with and one without a stable post. The stable post, which is applied on the western facade, is unconventionally placed between the bargeboards, see Figure 7. Usually, stable posts are placed on top of the bargeboards.⁴³ The catslide roof, which has a kink in it, is covered with red roof tiles. From the inside of the barn, the reed can be seen which is placed underneath the roof tiles. The roof structure consists of rafters with two horizontal beams and struts underneath the lower horizontal beam, see Figure 8.

Timber carriage house in Sliedrecht

Three of the eighteen inventoried barns were used as carriage houses. One of them stands in Sliedrecht. Already in the 15th century, some people from Sliedrecht were active as groundworkers.⁴⁴ The groundworkers used willow wood to construct dikes, for example. The willow wood was cultivated in nearby swampy fringes of rivers, called 'grienden'.⁴⁵ Over time, the groundworkers specialised in dredging. This resulted in Sliedrecht being known as a dredging village from the 19th century onwards.⁴⁶

One of the families that owned a dredging company was the Kalis family. A member of this family built a carriage house in Sliedrecht in 1871.⁴⁷ Its western, northern, and part of

39 Belder, 2005, p. 9

40 De Reus et al., 1999-b, p. 14

41 The story of this mill is described in detail in the book "Historie houtzaagmolen 'Ons Genoegen'" by Korpel (1987).

42 L. de Jong, personal communication, November 20, 2023

43 De Haan, 1980, p. 7

44 Bos, 1969, p. 26

45 Lissenburg, 1994, p. 15

46 Bos, 1991, p. 81

47 B. Baars, personal communication, December 2, 2023

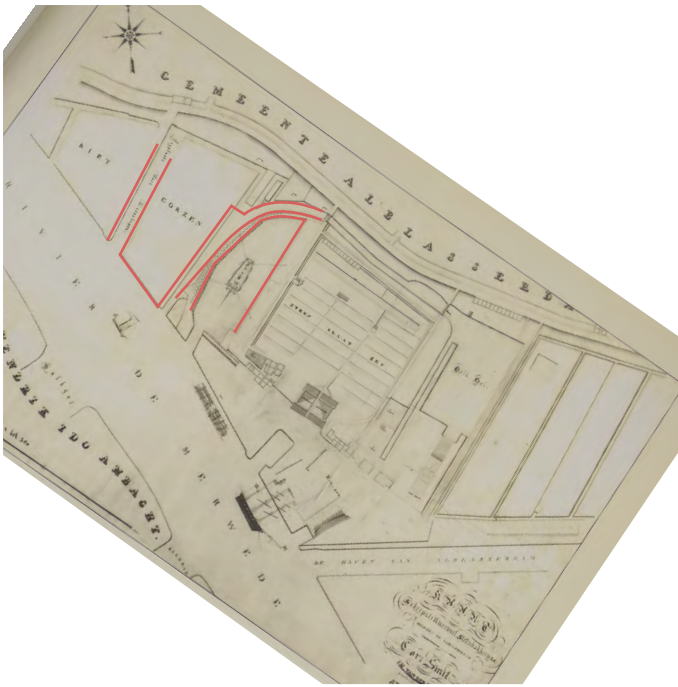


Figure 5. The shipyard of Smit in Alblasterdam in 1842 compared to today. The gantel, kielgat and berth can still be seen in today's landscape. Left image from *De Ouwe Werf* (p. 29), by B. Belder, 2005, *De Stroombaan*; map made by J. M. van der Mall, 1842. Right image from "Beeldmateriaal Nederland," 2022 (<https://opendata.beeldmateriaal.nl/pages/downloaden>).



Figure 6. The northern facade, with rebated planks, and the eastern facade, with weatherboarding, of the barn in Oostendam.



Figure 7. The western and southern facade of the barn in Oostendam. The stable post is visible between the bargeboards.



Figure 8. The roof structure of the barn in Oostendam.



Figure 9. The carriage house in Sliedrecht. Ogees are present at the sides, just underneath the roof.

its eastern facade are made of black tarred horizontally oriented weatherboarding. On the northern facade, the weatherboarding forms ogees at the sides, just underneath the roof, see Figure 9. The richly decorated southern and part of the eastern facade consist of likely non-original, white rebated planks. The load-bearing structure of the carriage house consists of link beam trusses with simple rafters on top, see Figure 10. These rafters carry the gable roof, which is covered with black and red roof tiles.

Timber barn of a baker in Hardinxveld-Giessendam

Besides functioning as storage places for farms, carriages, and ropewalks, timber barns were also used by bakeries. One of such barns stands in the combined village of Hardinxveld-Giessendam. Hardinxveld was known for its fishing and especially for its hoop-making industry.⁴⁸ The willow wood chips, the waste product of this industry, were sold to bakeries to heat their ovens.⁴⁹ Baker J. van Mill stored them in a timber barn, of which the year of construction is unknown.⁵⁰ The gable roof with red roof tiles and the facades with horizontally oriented planks can be seen from afar, see Figure 11. The barn could not be viewed up close, but it tells the story of local bakers and hoop makers, as well as the frugality of past societies.

Balkengat and timber barn of a shipyard in Kinderdijk

The only pre-industrial timber barn with an industrial function was found in Kinderdijk. This village is located at the confluence of the rivers Noord and Lek, a strategic location for a shipyard. Already in the mid-17th century, Jan Blasius founded a shipyard in 't Elshout, which used to be the name of Kinderdijk.⁵¹ Three generations of Blasius owned the shipyard. Afterwards, in 1753, the shipyard was bought by Joost Pot.⁵² He started a family business that would last generations and would eventually be renowned not only for its ships but also for its high-quality iron and steel rods for windmills.⁵³ The Pot company stopped in 1944, after which multiple people owned the site.⁵⁴ Since 2017 the southwestern part of the former shipyard has been owned by Stichting Werelderfgoed Kinderdijk (SWEK; Kinderdijk World Heritage Foundation).⁵⁵

Over time, multiple buildings have stood on the outer dike plot of the shipyard. On an 1833 map, several small buildings can be seen next to two inlets.⁵⁶ On the subsequent 1879 map, three large barns have been added, as illustrated in Figure 12.⁵⁷ To the west of the barns was a balkengat, which extended to the dike. The arrangement with three barns and a balkengat remained till at least 1940. By 1958 two of the three timber

48 Den Breejen, 1984, p. 29, 48, 49

49 De Jong, 1994, p. 52

50 F. de Ruiter & K. de Ruiter, 2000, p. 81

51 Deelen et al., 2002, p. 329

52 Van Blokland, 2011

53 Keunen, 1988, p. 575

54 De Hollandsche Molen, 1952, p. 74

55 J.-W. de Winter, personal communication, March 5, 2024

56 Departement van Oorlog, 1833

57 Topographische inrigting, 1879

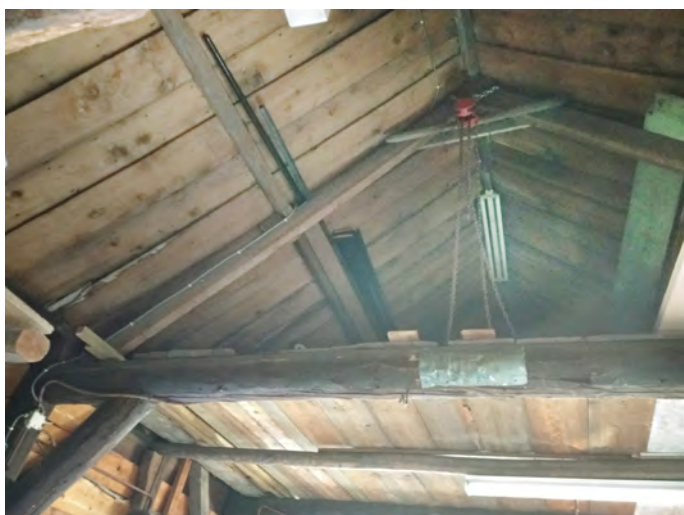


Figure 10. The load-bearing structure of the carriage house in Sliedrecht.



Figure 11. The barn of the baker in Hardinxveld, seen from afar.

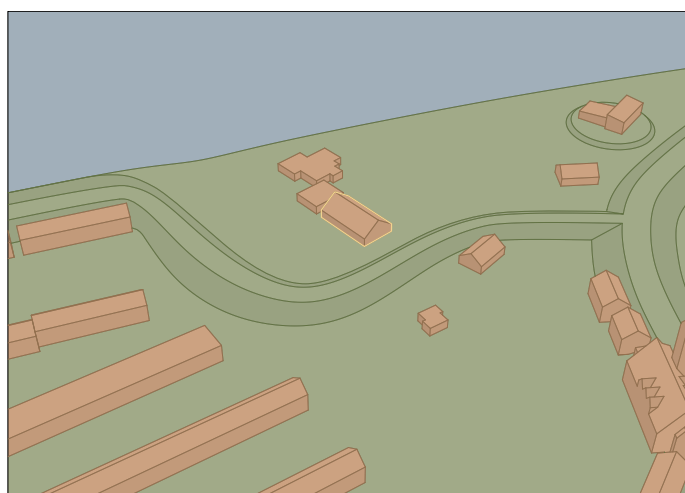
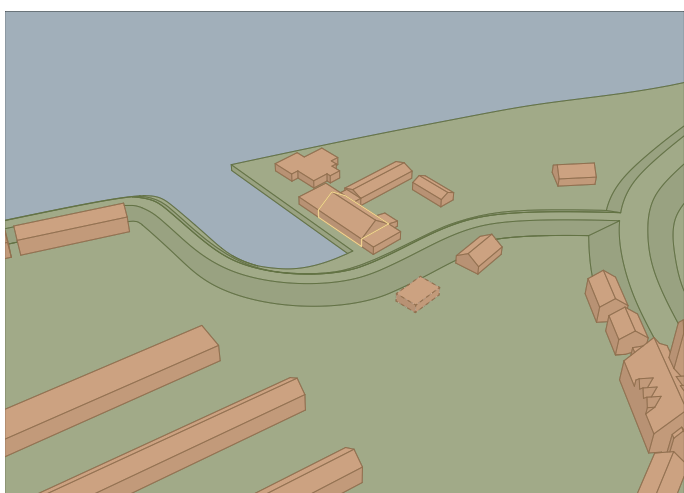
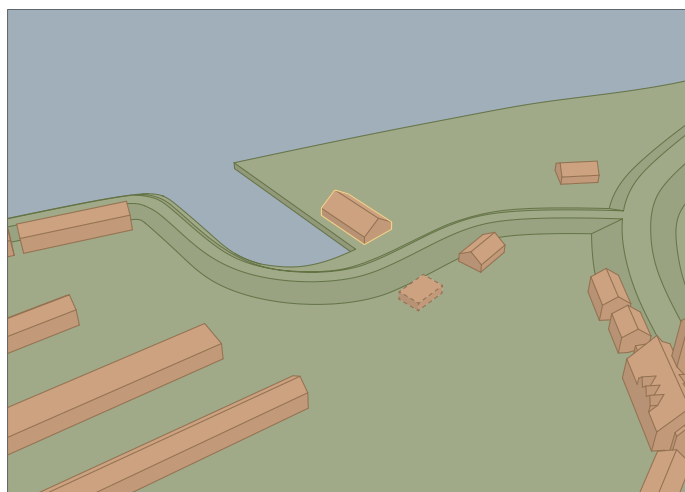
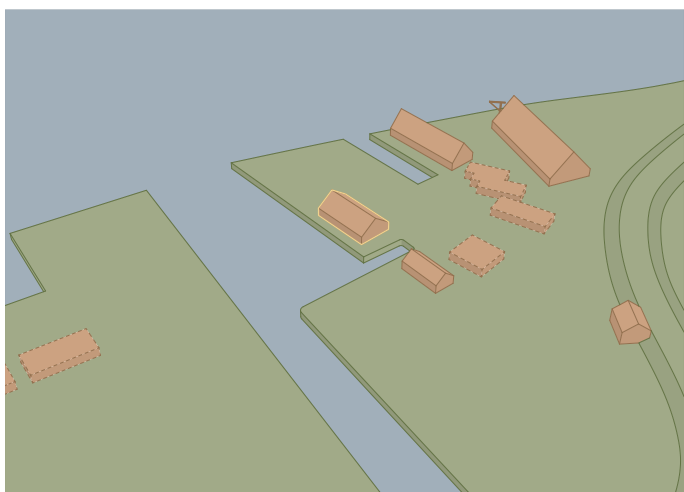


Figure 12. Schematic overview of the site in 1879 (top left), 1958 (top right), 1968 (bottom left), and 2024 (bottom right). Building volumes of which the roof shapes are unknown are indicated by dashed lines.

barns had been removed and the balkengat had partially been filled in.⁵⁸ Around 1968, new buildings were connected and placed next to the remaining timber barn.⁵⁹ Currently, these additions have been removed, and a house with a shed stands next to the barn. The balkengat has completely been filled in. However, contours of the filled-in balkengat can still be seen in the outline of the playground and the orientation of the new dike, as is shown in Figure 13.

The only remaining timber barn of the shipyard was probably built between 1833 and 1879. Two reasons support this hypothesis. Firstly, on the 1833 map, there is no building volume at the current location of the barn. On the 1879 map, a building volume appears at this location. Secondly, the timber load-bearing structure of the barn consists of Philibert trusses. These were mainly used in the mid-19th century.⁶⁰

The Philibert trusses support the gable roof, which protrudes on the northern end and is mostly covered with red Dutch pantiles ('Oude Hollandse pan' in Dutch). Underneath the roof tiles is a layer of reed, which can be seen from inside the barn, see Figure 14. Horizontally oriented rebated planks are applied to almost all facades. Only the southern facade consists of, likely non-original, vertically oriented staves on the ground floor, see Figure 15. The horizontally oriented planks on this facade form ogees at the sides, just underneath the roof. In the southern gable are two shutters, with in between them a timber ventilation grille. In both longitudinal facades are windows and non-original sliding doors. The northern facade is mostly clad with unoriginal large timber panels.

The original appearance of the barn is uncertain since original drawings of the barn could not be found in the archives. However, there are archival photographs of the barn, often undated. Although they do not show the original state of the barn, they do show what the barn has looked like at a certain moment back in time. The photographs mostly show the western facade. However, all facades have been photographed in the past, be it partially or in low quality, see Figures 16, 17, 18, and 19. All facades seem to have consisted of horizontally oriented rebated planks. The photographs show five regularly positioned windows with twenty-five windowpanes each in both longitudinal facades. In the northern and southern facade, there were probably two windows on the ground floor and two on the first floor. In the northern facade, the windows consisted of sixteen windowpanes, while in the southern facade, both sixteen and twenty-five-pane windows were applied. The original placement of the door(s) is uncertain, but based on the historical pictures and comparison to other barns they probably were placed in the northern and/or southern facade. Also, shutters through which the first floor could be accessed have likely been present in the northern and/or southern facade. Finally,

58 Topotijdreis, n.d.

59 Stam & Zoon, 1967

60 Janse, 1989, pp. 308-314



Figure 13. The site of the shipyard of Pot in Kinderdijk in 1879 compared to today. The outline of the playground and the orientation of the dike follow the contours of the former balkengat. Left image from "Rijkswaterstaat data," by Topographische inrigting, 1879 (https://downloads.rijkswaterstaatdata.nl/rivierkaart/geogegevens/eerste_herziening/Serie_1/). Right image from "Beeldmateriaal Nederland," 2022 (<https://opendata.beeldmateriaal.nl/pages/downloaden>).



Figure 14. The Philibert trusses and the reed underneath the roof tiles of the barn in Kinderdijk. By L. de Keijzer, 2024.



Figure 15. The southern and eastern facade of the barn in Kinderdijk.



Figure 16. The western facade of the barn in Kinderdijk. From "Fotobasebank," by K. van den Heuvel, n.d. (<https://www.fotobasebank.nl/public/zoeken.php> number A0064).



Figure 17. The northern and eastern facade of the barn in Kinderdijk as seen from the river Lek. From "Fotobasebank," by Stichting Cultuurbezit Familie Smit, n.d. (<https://www.fotobasebank.nl/public/zoeken.php> number A1147).



Figure 18. Part of the southern facade of the barn in Kinderdijk can be seen in the background. From *Tussen Lek en Boezem* (p. 61), by T. J. Schep, 1982, De Klaren.

Figure 19. The northern and western facade of the barn in Kinderdijk in 1931. From "*Stichting Werelderfgoed Kinderdijk*," by KLM Aerocarto, 1931. Personal communication, September 20, 2023.

the decorated gable posts on the southern facade stand out. Not only were they used at the top of the bargeboards, but also along the bargeboards. It is uncertain whether they were there from the beginning or were added later as decoration.

The current condition of the barn is far from the condition in the archival pictures. The main cause for the poor condition of the barn probably is the irregular settlement of the timber trusses. This has caused gaps to form between the roof tiles. The water that went through these gaps has caused considerable damage. A combination of brown and white rot is present in the columns and floorboards. Another reason for the columns to rot is their direct contact with the soil. This results in the timber columns sucking up water. Furthermore, the 1986 additions to the barn have left traces in the facades. The original rebated planks are often missing, objects have been added to the facades, and the composition of the facades has changed, as is shown in Figure 20.

Repairing the technical issues is a prerequisite for the upcoming restoration. Also, the facades will largely have to be replaced with new planks. This offers the opportunity to go back to the earliest known composition of the facades, shown in the archival pictures. However, keeping some use traces, like the vertically oriented planks in the southern facade and the sliding doors in the longitudinal facades, will demonstrate the historical practical approach to the barn. Furthermore, the new plans should highlight the unique characteristics of the barn: the Philibert trusses and the reed underneath the Dutch pantiles. The large size of the barn could be accentuated in the restoration plans too. Dendrochronological research on the Philibert trusses should point out their age. If they are the original mid-19th-century trusses, they should be treated with great care.

To conclude, the barn in Kinderdijk is unique for multiple reasons. First of all, it is the only remaining pre-industrial timber barn in the Waterdriehoek with an industrial function. Secondly, the barn reminds of the pre-industrial shipyards that were founded in the area because of the good accessibility by water. Finally, the Philibert trusses, the reed underneath the red Dutch pantiles, and the size of the barn are valuable features. Therefore, the barn is worth preserving.

Word count: 3629

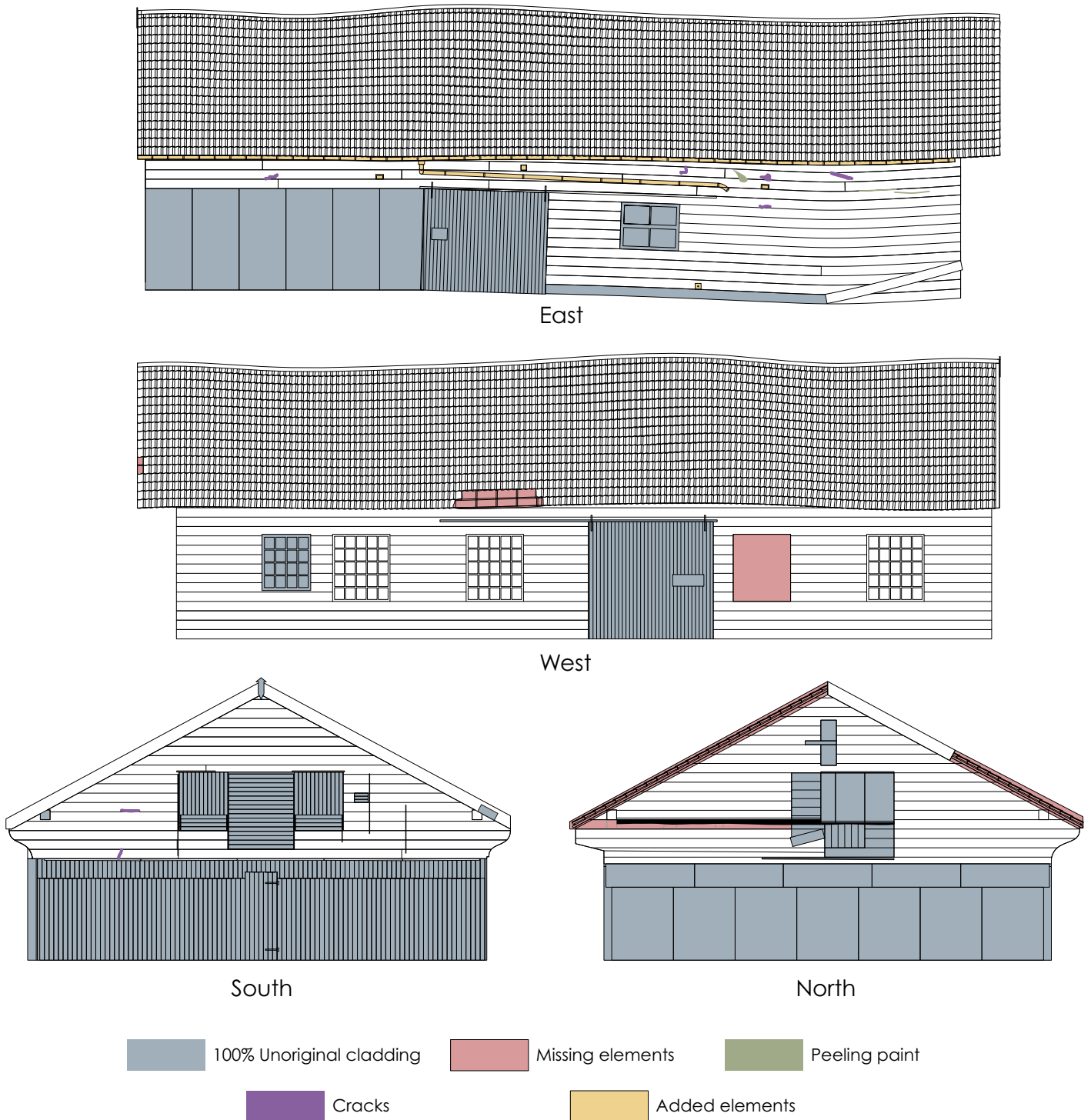


Figure 20: Schematic representation of the damage and changes to the facades of the barn in Kinderdijk. Indicated in blue is the cladding that certainly is unoriginal. Other parts of the facade might be unoriginal as well.

Literature

3D geoinformation research group (TU Delft) and 3DGI. (2022). 3DBAG Viewer. <https://3dbag.nl/en/viewer>

Belder, B. (2005). *De Ouwe Werf: van Cornelis Smit tot Cornelis Verolme 1812-2005*. De Stroombaan.

Benschop, R., De Bruijn, T., & Middag, I. (2013). *Historische atlas van Dordrecht: Stad in het water*. Uitgeverij Vantilt.

Berger, J. (2001). Rotterdamse houthandel in Dordrecht. *Oud-Dordrecht*, year 19 no. 3, p. 54-58.

Blacquièrè, C. (2021, January 13). Scheepswerf Van der Pol (I) voor kleine vaartuigen. *De Combinatie Zwijndrecht*, p. 5.

Bos, W. (1969). *Sliedrecht: Een dorp van wereldvermaardheid*. Europese bibliotheek Zaltbommel.

Bos, W. (1970). *Sliedrecht zoals het was 1890-1940*. J. Rijkhoek.

Bos, W. (1991). *De tijd van toen: Geschiedenis van Sliedrecht (750 jaar)*. Uitgeverij Van den Dool.

Bouman, J. (1995). De molens van Dordrecht. In W. van Wijk (Ed.), *Dordt in de kaart gekeken*. (pp. 83-110). Waanders Uitgevers.

De Haan, A. (1980). *Makelaars in Hardinxveld-Giessendam*. Historische Vereniging Hardinxveld-Giessendam.

De Hollandsche Molen. (1952). *Vierde Jaarboek 1943 – 1952 van De Hollandsche Molen vereeniging tot behoud van molens in Nederland*. <https://www.delpher.nl/nl/tijdschriften/view?coll=dts&identifier=MMKB16:003709001:00086&objectsearch=departement&query=moleroeden+pot>

De Jong, D. J. (1988). *Hardinxveld en de Riviervisserij*. Historische Vereniging Hardinxveld-Giessendam.

De Jong, D. J. (1994). *De Heggen en de Steggen: Straatnamenboek van Hardinxveld-Giessendam*. Stichting Dorpsbehoud Hardinxveld-Giessendam.

De Jongh, M. (2018). Drie generaties wagenmakers in Zwijndrecht. De families Francois en Van Rijs. *Swindregt Were*, year 32 no. 2, p. 5-24.

De Reus, M. J. C., De Bruin, P. A. C., Koppenol, C., Korpel, A., Ouweneel, G., & Somford, J. (1999-a). *De scheepsbouw*. Gemeente Alblasserdam.

De Reus, M. J. C., De Bruin, P. A. C., Koppenol, C., Korpel, A., Ouweneel, G., & Somford, J. (1999-b). *De molens van Alblasserdam*. Gemeente Alblasserdam.

De Reus, M. J. C., De Bruin, P. A. C., Koppenol, C., Korpel, A., Ouweneel, G., & Somford, J. (1999-c). *Alblasserdam en zijn monumenten*. Gemeente Alblasserdam.

De Rooter, F., & De Rooter, K. (2000). *De Peulenstraat in 1950*. Historische Vereniging Hardinxveld-Giessendam.

Deelen, J. W., Janse, G., De Jong, A., & Van der Wulp, A. (2002). *Nieuw-Lekkerlandse winkels en bedrijven in vroeger jaren*. Stichting Publicaties West-Alblasserwaard.

Den Breejen, P. (1984). *Hardinxveld en Giessendam, van vissers- en hoepmakersdorpen naar industriegemeente: De sociaal-economische koerswijziging van twee Hollandse dijkdorpen van de 19e naar de 20e eeuw*. Historische Vereniging Hardinxveld-Giessendam.

Departement van Oorlog. (1833). *Blad N. 16*. Rijkswaterstaat data. https://downloads.rijkswaterstaatdata.nl/rivierkaart/geogegevens/eerste_druk/Serie_2/

Frijhoff, W., Nusteling, H., & Spies, M. (1998). *Geschiedenis van Dordrecht van 1572 tot 1813*. Hilversum Verloren.

Gemeente Alblasserdam. (1979). *Gemeente Alblasserdam*. Gemeente Alblasserdam.

Geschiedenis van Zuid-Holland. (n.d.). *Molentypes en functies*. <https://geschiedenisvanzuidholland.nl/verhalen/verhalen/molentypes-en-functies/>

Gids voor Zwijndrecht. (1933). Nederlands Uitgevers- en Reclamebureau te Hilversum.

Janse, H. (1989). *Houten kappen in Nederland 1000-1940*. Delftse Universitaire Pers / Rijksdienst voor de Monumentenzorg.

Jorissen, F. (1982). De ontwikkeling van nijverheid en industrie langs de dijk. In G. P. Alders (Ed.), *Hendrik Ido Ambacht 1332-1982: 650 jaar waard*. (pp. 117 – 136). Historisch Genootschap Hendrik Ido Ambacht.

Keune, S. C. Ph. M. (1951). *Gemeente Hendrik-Ido-Ambacht*.

Keunen, G. H. (1988). Waterbeheersing en de ontwikkeling van de bemalingstechniek in West-Nederland. De historische ontwikkeling van poldermolens en gemalen tot heden. *Bijdragen en Mededelingen betreffende de Geschiedenis der Nederlanden*, 103, 571-606.

Klaassen, R. K. W. M., & Gierveld, H. (2005). Gewaterd hout in de monumentenzorg. In H. Piena (Ed.), *Houttechnologie voor meubelrestauratoren*. (pp. 15-20). Stichting Ebenist.

Kooij, P., & Sleebe, V. (2000). *Geschiedenis van Dordrecht van 1813 tot 2000*. Hilversum Verloren.

Korpel, A. (1987). *Historie houtzaagmolens 'Ons Genoegen'*. Stichting Publicaties West-Alblasserwaard.

Kuiper, H. H., & Teunisse, S. F. G. (2000). *Scheepsbouw* (PIE Rapportenreeks 38). Stichting Projectbureau Industrieel Erfgoed.

Kwast, B. A. (1919). *Nederland in woord en beeld: scheepswerven langs de Noord. Kinderdijk*. J.B. Wolters.

Lissenburg, B. (1994). *Grienduilen en baggerboeren: Het welen wee van Sliedrechtenaren*. Oudheidkundige Vereniging Sliedrecht.

Monumenten. (n.d.). *Benedenrijweg 66, Ridderkerk*. <https://www.monumenten.nl/monument/32491>

Müller, E. (1995). *Houtindustrie* (PIE Rapportenreeks 17). Stichting Projectbureau Industrieel Erfgoed.

Popijus, H. C. (2007). *De Ringdijk: Zwijndrechts eerste winkelcentrum*. In L. J. Pons (Ed.), *Zwijndrechtse wetenswaardigheden III*. (pp. 268-323). Historische Vereniging Zwijndrecht.

Schneider, J.-W. (2022, September 14). *Omwonenden verzetten zich tegen verbouwplannen Elimschuur*. Weekblad de Brug. <https://www.weekbladdebrug.nl/nieuws/algemeen/21254/omwonenden-verzetten-zich-tegen-verbouwplannen-elimschuur>

Sigmond, P. (1995). *De havens van Dordrecht*. In W. van Wijk (Ed.), *Dordt in de kaart gekeken*. (pp. 61-82). Waanders Uitgevers.

Stam & Zoon. (1967). *Aannemingsbedrijf Stam & Zn. B.V. betreffende een timmerwerkplaats, 5 januari 1967* (Collectie van Hinderwetvergunningen van de Milieudienst Zuid-Holland Zuid 14871). https://www.regionaalarchiefdordrecht.nl/archief/?mivast=46&mizig=445&miadt=46&miview=tbl&milang=nl&mizk_alle=molenstraat%20155a

Ten Veen, D. (1992). *Dordrecht 1650-1800*. Waanders Uitgevers.

Topographische Inrigting. (1879). *Blad N. 17 Lek, Noord en Nieuwe Maas*. Rijkswaterstaat data. https://downloads.rijkswaterstaatdata.nl/rivierkaart/geogegevens/eerste_herziening/Serie_2/

Topotijdreis. (n.d.). *Kaart 1958*. <https://topotijdreis.nl/kaart/1958/@103230,433641,12>

Van Blokland, H. W. G. (2011). *300 Jaar scheepsbouwersfamilie Pot uit Papendrecht en Kinderdijk vanaf 1685*. Dordtenazoeker. https://blokland.dordtenazoeker.nl/scheepswerf_04.htm

Van Dalen, J. L. (1925). *Papendrecht*. De Dordrechtsche drukkerij en uitgevers maatschappij.

Van der Es, J. (1988). *Ridderkerk in de Gouden Eeuw*. Stichting Oud Ridderkerk.

Van der Es, J., Van Rangelrooy-Sweben, K. H., Huygen-de Wit, C., De Jong-Nugteren, S., Bouman, M., Canters, A. C., Crezée, J. A., & Van Splunder, H. (1990). *Ridderkerk en Rijsoord omstreeks het jaar 1840*. Stichting Oud Ridderkerk.

- Van der Esch, C. (n.d.). *Eeuwenoud Dordts huisvuil bij Papendrecht langs de Merwede*. Stichting Dorpsbehoud Papendrecht. <https://www.dorpsbehoudpapendrecht.nl/historie/eeuwenoud-dordts-huisvuil-bij-papendrecht-langs-de-merwede/>
- Van Groningen, C. L. (1992). *De Alblasserwaard*. Waanders Uitgevers.
- Van Herwaarden, J., De Boer, D., Van Kan, F., & Verhoeven, G. (1996). *Geschiedenis van Dordrecht tot 1572*. Hilversum Verloren.
- Van Lopik, E., & Van der Meijden, A. C. (2021). *Dorpsinventarisatie Hardinxveld-Giessendam*. Stichting Dorpsbehoud Hardinxveld-Giessendam & Historische Vereniging Hardinxveld-Giessendam.
- Van Noordennen, A. (2014). *Buitendams 150 tm 399*. jAlbum. <https://arievnoordennen.jalbum.net/Buitendams%20150%20tm%20399/index.html>
- Van Prooije, L. A. (1992). De verwerking in en distributie vanuit Dordrecht van hout in de 17de en 18de eeuw. *Kwartaal & Teken*, year 18 no. 4, p. 7-16.
- Van Prooije, L. A. (2005). De houtvlotterij en Dordrecht in de 17e en 18e eeuw. *Oud Rhenen*, year 24 no. 2, p. 12-25.
- Vink, M. G. (n.d.). *Houtbereiding*. Vinkendrecht. <http://www.vinkendrecht.nl/Aansluitingen%20Zeehaven.htm>
- Visscher, T. (1995). De houthandel van Dordrecht. In W. van Wijk (Ed.), *Dordt in de kaart gekeken*. (pp. 37-60). Waanders Uitgevers.
- Visser, H. A. (1976). *Papendrecht in oude ansichten deel 2*. Europese Bibliotheek Zaltbommel.
- Visser, H. A. (1977). *Papendrecht dorp aan de rivier: Beschrijving van een Zuid-Hollands dijkdorp* (2nd ed.). J. N. Voorhoeve.
- Visser, H. A., & Van der Giessen, J. (1970). *Papendrecht in oude ansichten*. Europese Bibliotheek Zaltbommel.

Figures

Beeldmateriaal Nederland. (2022). Figure 1 & B.2: The area around the Kalkhaven in Dordrecht in 1698 compared to today; Figure 2 & B.1: The area around the Papegat in Dordrecht around 1688 compared to today; Figure 3 & B.4: The area along the Noordendijk in Dordrecht at the end of the 19th century compared to today; Figure 4 & B.3: The area around the Lijnbaanhaven and Houthaven in Dordrecht in 1849 compared to today; Figure 5 & B.5: The shipyard of Smit in Alblisserdam in 1842 compared to today; Figure 13 & B.6: The site of the shipyard of Pot in Kinderdijk in 1879 compared to today; Figure B.7: The area around the shipyard of Smit in Slikkerveer in 1879 compared to today [Satellite imagery]. <https://opendata.beeldmateriaal.nl/pages/downloaden>

De Keijzer, L. (2024). Figure 14: The Philibert trusses and the reed underneath the roof tiles of the barn in Kinderdijk [Unpublished photograph].

Google. (n.d.-a). Figure A.1: Route of the field research in Dordrecht. Retrieved January 5, 2024 from <https://www.google.com/maps/@51.808913,4.6726735,4673m/data=!3m1!1e3?entry=ttu>

Google. (n.d.-b). Figure A.2: Route of the field research through Papendrecht, Alblisserdam, and Kinderdijk. Retrieved January 5, 2024 from <https://www.google.com/maps/@51.8528216,4.6791216,10788m/data=!3m1!1e3?entry=ttu>

Google. (n.d.-c). Figure A.3: Route of the field research through Hardinxveld-Giessendam, Sliedrecht, and Papendrecht. Retrieved January 5, 2024 from <https://www.google.com/maps/@51.8265752,4.7766995,8165m/data=!3m1!1e3?entry=ttu>

Google. (n.d.-d). Figure A.4: Route of the field research through Hardinxveld-Giessendam. Retrieved January 5, 2024 from <https://www.google.com/maps/@51.827028,4.8542026,4671m/data=!3m1!1e3?entry=ttu>

Google. (n.d.-e). Figure A.5: Route of the field research through Zwijndrecht, Hendrik-Ido-Ambacht, Oostendam, Ridderkerk, and Slikkerveer. Retrieved January 5, 2024 from <https://www.google.com/maps/@51.8543124,4.6516552,14262m/data=!3m1!1e3?entry=ttu>

Google. (2022-a). Figure B.11: A former agricultural barn in Papendrecht [Photograph]. <https://www.google.com/maps/@51.8296894,4.729989,3a,43y,337.23h,89.79t/data=!3m6!1e1!3m4!1sNlkdY-JcPmuULyaQwViLXA!2e0!7i16384!8i8192?entry=ttu>

Google. (2022-b). Figure B.23: A barn in Hendrik-Ido-Ambacht [Photograph]. <https://www.google.com/maps/@51.8454467,4.6528621,3a,83.4y,340.05h,92.64t/data=!3m6!1e1!3m4!1sOoeyvG7B2ZntEC5UEaqf4w!2e0!7i16384!8i8192?entry=ttu>

KLM Aerocarto. (1931). Figure 19: The northern and western facade of the barn in Kinderdijk in 1931 [Unpublished photograph from Stichting Werelderfgoed Kinderdijk].

Nunnink, A. A. (1849). Figure 4 & B.3: The area around the Lijnbaanhaven and Houthaven in Dordrecht in 1849 compared to today [Drawing].

<https://beeldbank.regionaalarchiefdordrecht.nl/search/detail/id/3C0725F0505693014B43C2CC7E8778CE/showbrowse>

Schep, T. J. (1982). Figure 18: Part of the southern facade of the barn in Kinderdijk [Photograph]. In *Tussen Lek en Boezem*. De Klaroen.

Schweihofer, S. (2013). Year Rings [Photograph]. <https://pixabay.com/photos/tree-year-annual-rings-wood-ring-73363/>

Stichting Cultuurbezit Familie Smit. (n.d.). Figure 17: The northern and eastern facades of the barn in Kinderdijk as seen from the river Lek [Photograph]. <https://www.fotobasebank.nl/public/zoeken.php> number A1147

Topographische inrigting. (1879). Figure 13 & B.6: The site of the shipyard of Pot in Kinderdijk in 1879 compared to today; Figure B.7: The area around the shipyard of Smit in Slikkerveer in 1879 compared to today [Drawing]. https://downloads.rijkswaterstaatdata.nl/rivierkaart/geogegevens/eerste_herziening/Serie_1/

Topotijdreis. (End 19th century). Figure 3 & B.4: The area along the Noordendijk in Dordrecht at the end of the 19th century compared to today [Drawing]. <https://topotijdreis.nl/kaart/1874/@106910,424874,11.52>

Van den Heuvel, K. (n.d.) Figure 16: The western facade of the barn in Kinderdijk [Photograph]. <https://www.fotobasebank.nl/public/zoeken.php> number A0064

Van der Mall, J. M. (1842). Figure 5 & B.5: The shipyard of Smit in Alblasterdam in 1842 compared to today [Drawing]. In *De Ouwe Werf*, by B. Belder, 2005, De Stroombaan.

Van Nispen, M. (1688). Figure 2 & B.1: The area around the Papegat in Dordrecht around 1688 compared to today [Drawing]. <https://beeldbank.regionaalarchiefdordrecht.nl/search/detail/id/BC179B61AC8711E489FB00163E535DC5/showbrowse>

Van Nispen, M. (1698). Figure 1 & B.2: The area around the Kalkhaven in Dordrecht in 1698 compared to today [Drawing]. <https://beeldbank.regionaalarchiefdordrecht.nl/search/detail/id/3C072F84505693014BFB0BE585C8AA86/showbrowse>

Appendix A: Field research routes



Figure A.1: Route of the field research in Dordrecht. From "Google Maps," by Google, n.d.-a (<https://www.google.com/maps/@51.808913,4.6726735,4673m/data=!3m1!1e3?entry=ttu>).



Figure A.2: Route of the field research through Papendrecht, Alblasterdam, and Kinderdijk. From "Google Maps," by Google, n.d.-b (<https://www.google.com/maps/@51.8528216,4.6791216,10788m/data=!3m1!1e3?entry=ttu>).

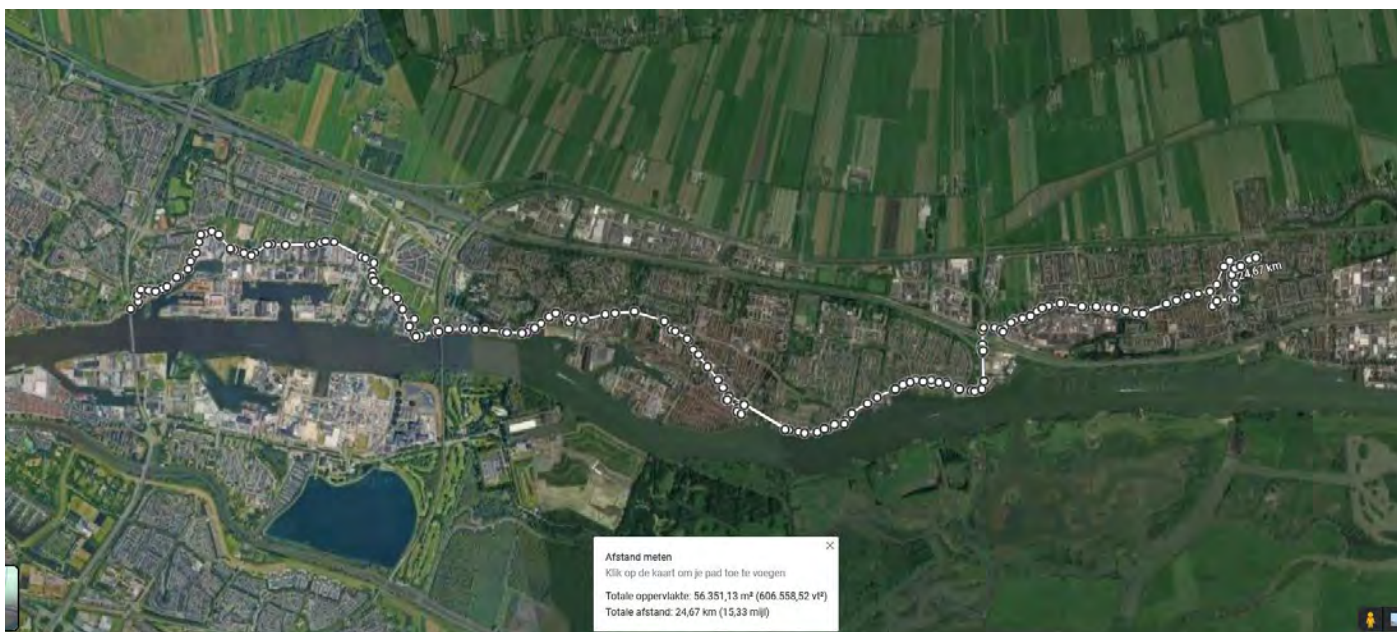


Figure A.3: Route of the field research through Hardinxveld-Giessendam, Sliedrecht, and Papendrecht. From "Google Maps," by Google, n.d.-c (<https://www.google.com/maps/@51.8265752,4.7766995,8165m/data=!3m1!1e3?entry=ttu>).



Figure A.4: Route of the field research through Hardinxveld-Giessendam. Only this route was travelled by car. From "Google Maps," by Google, n.d.-d (<https://www.google.com/maps/@51.827028,4.8542026,4671m/data=!3m1!1e3?entry=ttu>).



Figure A.5: Route of the field research through Zwijndrecht, Hendrik-Ido-Ambacht, Oostendam, Ridderkerk, and Slikkerveer. From "Google Maps," by Google, n.d.-e (<https://www.google.com/maps/@51.8543124,4.6516552,14262m/data=!3m1!1e3?entry=ttu>).

Appendix B: Inventory of pre-industrial landscape remnants and pre-1914 timber buildings

Pictures of almost all the pre-industrial landscape remnants and pre-1914 timber barns are presented at the back of this appendix. For a clear overview, the descriptions of the pictures are collected in a list. The numbers in the list correspond to the numbers in the pictures.

Landscape remnants – ordered by location

- 1) The area around the Papegat in Dordrecht. Described in the main text. Left image from “Regionaal Archief Dordrecht,” by M. van Nispen, 1688 (<https://beeldbank.regionaalarchiefdordrecht.nl/search/detail/id/BC179B61AC8711E489FB00163E535DC5/showbrowse>). Right image from “Beeldmateriaal Nederland,” 2022 (<https://opendata.beeldmateriaal.nl/pages/downloaden>).
- 2) The area around the Kalkhaven in Dordrecht. Described in the main text. Left image from “Regionaal Archief Dordrecht,” by M. van Nispen, 1698 (<https://beeldbank.regionaalarchiefdordrecht.nl/search/detail/id/3C072F84505693014BFB0BE585C8AA86/showbrowse>). Right image from “Beeldmateriaal Nederland,” 2022 (<https://opendata.beeldmateriaal.nl/pages/downloaden>).
- 3) The area around the Lijnbaanhaven and Houthaven in Dordrecht. Described in the main text. Left image from “Regionaal Archief Dordrecht,” by A.A. Nunnink, 1849 (<https://beeldbank.regionaalarchiefdordrecht.nl/search/detail/id/3C0725F0505693014B43C2CC7E8778CE/showbrowse>). Right image from “Beeldmateriaal Nederland,” 2022 (<https://opendata.beeldmateriaal.nl/pages/downloaden>).
- 4) The area along the Noordendijk in Dordrecht. Described in the main text. Left image from “Topotijdreis,” end 19th century (<https://topotijdreis.nl/kaart/1874/@106910,424874,11.52>). Right image from “Beeldmateriaal Nederland,” 2022 (<https://opendata.beeldmateriaal.nl/pages/downloaden>).
- 5) The shipyard of Smit in Alblasserdam. Described in the main text. The shipyard of Smit in Alblasserdam in 1842 compared to today. The gantel, kielgat and berth can still be seen in today’s landscape. Left image from *De Ouwe Werf* (p. 29), by B. Belder, 2005, *De Stroombaan*; map made by J. M. van der Mall, 1842. Right image from “Beeldmateriaal Nederland,” 2022 (<https://opendata.beeldmateriaal.nl/pages/downloaden>).
- 6) The balkengat in Kinderdijk. Described in the main text. Left image from “Rijkswaterstaat data,” by Topographische inrigting, 1879 (https://downloads.rijkswaterstaatdata.nl/rivierkaart/geogegevens/eerste_herziening/Serie_1/). Right image from “Beeldmateriaal Nederland,” 2022 (<https://opendata.beeldmateriaal.nl/pages/downloaden>).
- 7) The area around the shipyard of Smit in Slikkerveer in 1879 compared to today. The only pre-industrial landscape remnant of the wood-processing industry in the Waterdriehoek on the side of the Zwijndrechtse Waard is located in the former hamlet of Slikkerveer. F.

Smit, who was born in Kinderdijk, founded a shipyard here in 1835.⁶¹ His second son, J. Smit, was put in charge of the shipyard. A balkengat was dug to store the necessary wood. This balkengat is now used as a marina. A small inlet of the shipyard is still there too. Left image from "Rijkswaterstaat data," by Topographische inrigting, 1879 (https://downloads.rijkswaterstaatdata.nl/rivierkaart/geogegevens/eerste_herziening/Serie_1/). Right image from "Beeldmateriaal Nederland," 2022 (<https://opendata.beeldmateriaal.nl/pages/downloaden>).

Timber buildings – ordered by location

- 8) The barn of the shipyard in Kinderdijk. Described in the main text.
- 9) A carriage house in Kinderdijk. This carriage house dates from 1850.⁶² It stands along the dike and is made in Swiss chalet style. All timber staves are oriented vertically. The protruding gable roof, which is covered with black roof tiles, is decorated with carved timber. Ogees are on both ends of the profiled bargeboards. The gable post has a decorated top and bottom. A timber pediment tops the window on the first floor. The plinth is probably unoriginal because wide doors for carriages to enter are missing.
- 10) A carriage house in Alblasserdam. The only remaining pre-1914 timber building in Alblasserdam is a carriage house built in 1900.⁶³ The Swiss chalet style is used here too. The load-bearing timber frame can be seen on the outside. The timber staves are mostly oriented vertically. Black roof tiles cover the protruding gable roof. This roof's profiled bargeboards have small ogees on both ends.
- 11) A former agricultural barn in Papendrecht. Originally, most inhabitants in Papendrecht worked in agriculture and cultivated hemp.⁶⁴ The hemp fibres were used in ropes and sailcloth.⁶⁵ These products were typically used by shipbuilders. Several shipyards were located in Papendrecht.⁶⁶ Papendrecht was also home to a wood trading company from 1890 to 1930.⁶⁷ Large sailing ships delivered wood from Russia and Scandinavia.⁶⁸ The balkengat and buildings of this trading company have disappeared. All the barns of the former shipyards have also disappeared.

The only remaining timber barn in Papendrecht was built in 1914.⁶⁹ The timber barn was built along the dike, on a ground floor made of brick. The eastern facade was originally

61 Van der Es et al., 1990, p.25

62 3D geoinformation research group (TU Delft) and 3DGI, 2022

63 De Reus et al., 1999-c, p. 22

64 Van Dalen, 1925, p. 16

65 Van Groningen, 1992, p. 50

66 The shipyards which were active in Papendrecht have been described in the book 'Papendrecht: Dorp aan de rivier' by Visser (1977). Pictures of the last shipyards along the Geul can be seen in the two books 'Papendrecht in oude ansichten' part 1 and 2 by Visser & Van der Giessen (1970) and Visser (1976).

67 Van der Esch, n.d.

68 Visser, 1977, p. 72

69 Information and old pictures have been provided by the former owner of the barn (K. Timmer, personal communication, December 24, 2023)

made of horizontally oriented weatherboarding. Over time, this has been replaced by rebated planks. The southern facade was made of horizontally oriented rebated planks with a small ogee on the eastern end, just underneath the roof. In this facade, there is a double door. The gable roof is covered with black roof tiles. On both ends of the roof, there were gable posts with decorated tops. These have been replaced. Image from "Google Maps," by Google, 2022-a (<https://www.google.com/maps/@51.8296894,4.729989,3a,43y,337.23h,89.79t/data=!3m6!1e1!3m4!1sNlkdY-JcPmuULyaQwViLXA!2e0!7i16384!8i8192?entry=ttu>).

- 12) A barn of a ropewalk in Baanhoek, Sliedrecht. The hamlet Baanhoek is located west of Sliedrecht and housed several ropewalks. Two barns of former ropewalks remained, one built in 1930 and the other in 1912.⁷⁰ The former was built after the examined period, the latter could not be viewed up close but has black tarred planks and a gable roof.
- 13) A barn of a shipyard in Sliedrecht. Next to dredging companies, there were also some shipyards in the village.⁷¹ The only remnant of the shipyards in Sliedrecht is a part of a barn built in 1900.⁷² Probably it was owned by shipyard Lanser along the former Middeldiep, a water which currently is filled in. It used to be a longer barn.⁷³ The facades are made of horizontally oriented weatherboarding. It has a gable roof covered with red and black roof tiles. In the southern facade, there is a large opening on the ground floor and a smaller one in the gable. It looks like many alterations have been made.
- 14) The carriage house in Sliedrecht. Described in the main text.
- 15) A barn of a blacksmith in Giessendam. In Giessendam, the only remaining timber building was built in 1905 by blacksmith W. de Keijzer.⁷⁴ It has a single-pitched roof, of which the cladding is unoriginal. The facades are made of black tarred, horizontally oriented rebated planks. In the eastern facade are double doors and two windows. In the northern facade are double doors and two single doors.
- 16) The barn of the baker in Hardinxveld. Described in the main text.
- 17) A carpenter workshop in Hardinxveld. Carpenters also used timber. Two carpenter workshops remained in Hardinxveld. This workshop was built at the end of the 19th century, according to Van Lopik & Van der Meijden (2021, p. 212). The building volume with the multi-gable roof was placed on dike level on columns, which created space to store and dry wood underneath it. In the facades, which consist of horizontally oriented rebated planks, are multiple windows and a doorway.
- 18) A carpenter workshop in Hardinxveld. This workshop was built around 1900 with its gable

70 H. de Keijzer, personal communication, December 2, 2023 (barn built in 1930); 3D geoinformation research group (TU Delft) and 3DGI, 2022 (barn built in 1912)

71 Bos, 1970, p. 3

72 3D geoinformation research group (TU Delft) and 3DGI, 2022

73 This can be seen on a picture in the book 'Sliedrecht zoals het was 1890-1940' by Bos (1970), p.

80.

74 Van Noordennen, 2014

roof parallel to the dike.⁷⁵ The roof is covered with black Tuile du Nord roof tiles. The front facade has black tarred, horizontally oriented rebated planks. In this facade are double doors and a window opening.

- 19) The ropewalk of J. W. Bosman was located in Hardinxveld.⁷⁶ The barn that is still there, which was built around 1900, has horizontally oriented rebated planks. The gable roof is covered with black roof tiles and the gutter height is around four meters. Together with its width, this makes it a slender barn. The roof structure is made of rafters with one tie beam and ashlar posts.⁷⁷
- 20) Probably a fisherman's house in Hardinxveld.⁷⁸ The house was built in 1889.⁷⁹ The truncated gable roof is covered with black roof tiles. On the western end, there are two gable posts on the kinks of the bargeboards. Multiple windows with shutters are placed in the southern facade.
- 21) A barn of a cigar factory in Hardinxveld. It was built around 1899.⁸⁰ The facades are made of horizontally oriented, black tarred weatherboarding. On the eastern end of the gable roof, the gable post is attached on top of the bargeboards, as usual. On the western end, the gable post is placed in between the bargeboards and points downwards. In the eastern gable is a shutter and the roof is covered with black roof tiles.
- 22) A barn of a shipyard in Zwijndrecht. Zwijndrecht was known for its salt extraction and horticulture.⁸¹ There were also some sawmillers, wood traders, and shipyards.⁸² One barn of the shipyards remained. This barn was part of the shipyard of M. van de Pol in 1906.⁸³ Probably, the barn was completely made of timber. Currently, however, the facades are made of brick, because the original facades and windows had sunk in the ground.⁸⁴ The barn has a gable roof, which is covered with black roof tiles. The wooden planks that are still there are rebated and horizontally oriented. On the eastern gable, there is a gable post with the year of construction written on it.
- 23) A barn in Hendrik-Ido-Ambacht. In Hendrik-Ido-Ambacht, most inhabitants worked in flax production and processing.⁸⁵ Additionally, there were some pre-industrial shipyards.⁸⁶ However, the village is most famous for its post-industrial ship breaking yards.⁸⁷ With materials from demolished ships, a barn was made along the dike.⁸⁸ It

75 Van Lopik & Van der Meijden, 2021, p. 195

76 De Jong, 1988, p. 310, 311

77 In accordance with the wishes of the owners, no pictures of this barn are included.

78 A.C. van der Meijden, personal communication, December 2, 2023

79 3D geoinformation research group (TU Delft) and 3DGI, 2022

80 Personal communication with the owners, December 16, 2023.

81 Gids voor Zwijndrecht, 1933, p. 50

82 Popijus, 2007, p. 303, 311, 323

83 Blacquièrè, 2021

84 M. Beers, personal communication, January 22, 2024.

85 Keune, 1951, p. 39

86 Keune, 1951, p. 38

87 Jorissen, 1982, p. 130

88 Schneider, 2022

was built in 1900 and consists of horizontally oriented, black tarred weatherboarding.⁸⁹ Only the northern facade is made of brick. In the southern facade are two double sliding doors. The gable roof is covered with boulet roof tiles and there are four dormer windows in the northern roof surface. Image from "Google Maps," by Google, 2022-b (<https://www.google.com/maps/@51.8454467,4.6528621,3a,83.4y,340.05h,92.64t/data=!3m6!1e1!3m4!1sOoeyvG7B2ZntEC5UEaqf4w!2e0!7i16384!8i8192?entry=ttu>).

24) The former agricultural barn in Oostendam. Described in the main text.

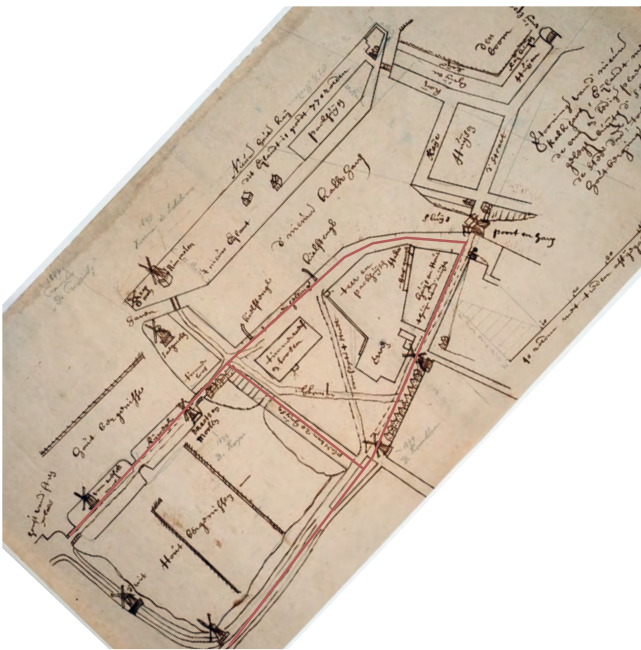
25) A monumental agricultural barn in Ridderkerk. Like in the villages nearby, most people worked in agriculture.⁹⁰ There is one agricultural, black tarred, timber, and monumental barn along the dike.⁹¹ The southern half of this barn is the oldest and has horizontally applied planks. There is a pointed stable post at the top of the catslide roof, which is covered with red roof tiles. The northern half, which has a similar appearance, was added in the second half of the 19th century.⁹² In its western facade is a large sliding door. Above it is an opening with a shutter. A similar shutter is present in the older southern part of this facade.

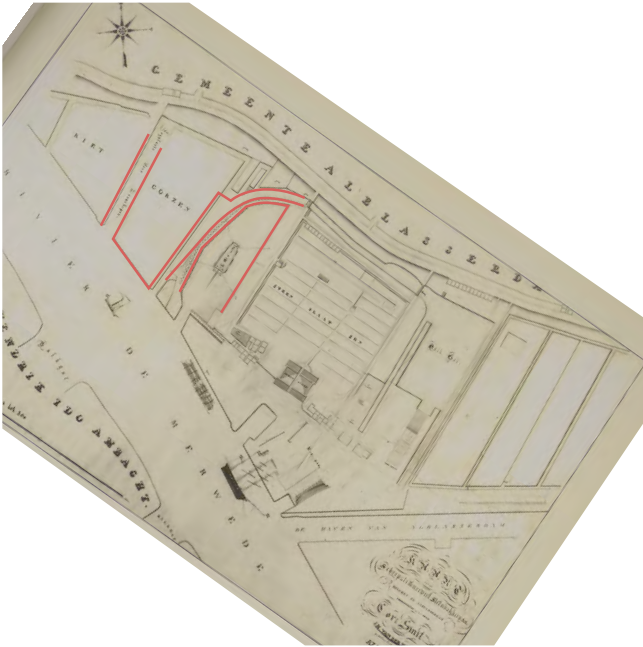
89 3D geoinformation research group (TU Delft) and 3DGI, 2022

90 Van der Es, 1988, p. 18

91 Further inland, westwards of the dike, are more pre-industrial agricultural barns. They are outside of the examined area.

92 Monumenten, n.d.











21



22



23



24



25