AMSTERDAM AND THE INTERNATIONAL TRADE IN STONE, BRICK AND WOOD

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The international trade in building materials has been a side theme in art historical studies. The grain trade, the main business in the Baltic Sea and North Sea region, was much more decisive for the development of networks that were also important for trade in other products.1 This section will focus on how the Amsterdam and Dutch trade in building materials developed, which building materials were imported and exported, and which European areas experienced an architectural influence from the Low Countries that can be linked directly to the trade in building materials. Stone, brick and wood will be surveyed to gain insight into the trade streams to and from Amsterdam and Holland.

Economics, politics, and consumption needs closely connected various areas in Europe with different geographical, social, and cultural situations.2 However, the geographical range of Netherlandish-influenced architecture resulted from the network of operators who mutually influenced each other in their views on trade and aesthetics. The decisive condition for the reception, adaptation, and acculturation of ‘Flemish’ or ‘Dutch’ architectural forms diverged considerably in these different areas. Recipients of Netherlandish influence belonged to differently organised societies separate from the mainstream influence of prints and publications. Tradesmen and entrepreneurs held different social positions and belonged to distinct classes, of which only a few acted as important building commissioners. Accordingly, few examples are extant of entrepreneurs who, while importing large quantities of building materials, such as wood, into the Dutch Republic, simultaneously introduced Netherlandish architecture abroad. These conditions have prompted the following question concerning the role of building material trade networks in the dissemination of architectural ideas: To what extent did the expanding Dutch material trade in the sixteenth and seventeenth centuries keep up with the diffusion of architectural concepts and forms?3

Stone

In 1585, the Amsterdam city government decided to expand the town on a large scale, followed by a second enlargement in 1592 (fig. 1). The use of stone in Amsterdam and Dutch buildings changed considerably during those years. Previously, travelling building and stone entrepreneurs from the Southern Low Countries directed the architectural mainstream,4 but in the second half of the sixteenth century, the Northern Low Countries’ building trade became emancipated from the South. The enlargement of the Oude Kerk’s tower in Amsterdam in 1563 may be regarded as an early example of this change. Architectural designs were no longer supplied by masters from the South who were involved in the stone trade. Instead, Joost Janszoon Bilhamer from Amsterdam assumed responsibility for the design of the tower, forcing stone traders into the role of mere material supplier.5

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1 van Tielhof 1995.
2 Kaufmann 2004b.
3 Dutch tiles (faience) are not regarded in this study.
4 Hurx 2012.
5 van Tussenbroek 2006b, 85–91; van Tussenbroek 2007.
Workshops in Holland increasingly engaged in stone cutting. The last decades of the sixteenth century witnessed this development in Amsterdam. In 1594, the municipal building fabric was reorganised, and carpenter Hendrik Staets, mason Cornelis Danckerts, and stone cutter Hendrick de Keyser were brought into municipal service. These three men became responsible for most municipal building commissions over the next twenty-five years. The reorganisation of the municipal building agency resulted in a new creative architectural centre. Hendrick de Keyser assumed responsibility for the designs (modellen, patronen ofte ontwerpseelen) and for anything cut and hewn (gesneden ende gehouwen). Little is known about his responsibility for purchasing stone for the city, but he was active as a private stone trader.

Between 1595 and 1621, the year De Keyser died, two types of stone were dominant in the Dutch Republic – ‘blue’ stone from Namur and sandstone from Bentheim (fig. 2). The Van Neurenberg family, who originated from the Meuse Valley but resided in Dordrecht since 1585, controlled the trade in blue stone. Other families from the regions of Liège and Namur participated in the blue stone trade as well. In contrast, the sandstone trade was controlled mainly by entrepreneurs from the Northern Low Countries; the quarries were rented from the duke of Bentheim. In 1616, all the quarries were rented to Joost Krull from Zwolle, whose business became a staple market for sandstone. Bentheimer sandstone was used for quays or decorative elements in mainly brick façades. In most cases, Hendrick de Keyser’s architecture exhibited an intermingling of brick walls with sculptural decorations in stone. Most of the municipal buildings and prestigious private houses of his time demonstrate this use of materials (fig. 3).

Luxurious marbles and homogeneous red, grey, and black limestones were conspicuous new materials on the northern market. From the 1590s onward, trade with northern Italy intensified. Grain from the Baltic Sea area was transported to Genoa and Livorno via Holland. On the return journey, luxury goods, such as marble from Carrara, were picked up and taken along. In 1612, Hendrick de Keyser declared himself the sole trader in the entire Republic who worked with this material. In rare cases, the exclusive nero portoro giallo, another Alpine marble, was shipped to the Republic. Hendrick de Keyser used it for the funeral monument of Willem of Orange in the Nieuwe Kerk in Delft (svorte Italiaensche gemengelde merber) and in the wall claddings of the guild’s chamber of the master masons in the Weigh House on the Amsterdam Nieuwmarkt (fig. 4).

In 1611, the Amsterdam jeweller Hans van Wely hired Hendrick de Keyser to design a house that was more luxuriously wrought than normal buildings with coloured and black...
2. Map indicating most of the towns mentioned in this chapter (drawing by the author).

3. Amsterdam, Herengracht 170–172, ‘Huis Bartolotti’, by Hendrick de Keyser (attr.)

marbles, and which he built at the Oudezijds Voorburgwal 127 (fig. 5).\textsuperscript{14} For other projects, such as a statue of Saint John for the 's-Hertogenbosch rood loft (fig. 6), he used English alabaster.\textsuperscript{15} De Keyser’s son-in-law, Nicholas Stone, and his sons, Pieter and Hendrick de Keyser Jr, purchased marble in Italy themselves. They relied on their good relations with the Van Neurenberg family for the supply of coloured and red marbles from the Southern Low Countries.\textsuperscript{16} De Keyser and Stone were also involved with a stone quarry in Portland.\textsuperscript{17} In 1612, the States General awarded De Keyser a patent for the invention of an artificial marble – apparently a kind of stucco, which possibly justified his need for these materials.\textsuperscript{18}

Only one kind of ‘marble’ – a very homogeneous species of Namur blue stone – was in use during the sixteenth century, often for gravestones. This deep black stone hailed from Mazy-Golzinne. However, this material was also used for epitaphs and paving stones.\textsuperscript{19}

\textsuperscript{14} “boven de gewoonlijken aert van Burgerlijcke Gebouwen, gantsch uyt-steeckende” (\textit{Architectura Moderna} 163, 19, plate 33). Ottenheym et al. 2008, 87–88.
\textsuperscript{15} About alabaster: Dubelaar 2009.
\textsuperscript{16} van Tussenbroek 2001, 60–61.
\textsuperscript{17} Ottenheym et al. 2008, 18.
\textsuperscript{18} Kossmann 1929; Doorman 1940, 121.

5. Amsterdam, Oudezijds Voorburgwal 127, house of the jeweller Hans van Wely, 1611, by Hendrick de Keyser (\textit{Architectura Moderna} 1631, plate XXXIII).

Soon the material was popularly combined with white Carrara marble for making pavements, as evidenced by the uttering of a French marshal, who, visiting Amsterdam in 1629, stated that almost all houses had marble floors.19

**Export from Amsterdam**

The function of Amsterdam as a staple market and the innovative architecture of the municipal building agency made the city an export centre. Experts from other cities were brought to Amsterdam to provide design and technical solutions for difficult building projects, such as the Hoorn weighing house, which was designed in 1608 by Hendrick de Keyser, with stone supplied by Pieter van Neurenberg.20 However, the export continued far beyond the boundaries of the Republic. Dutch traders were especially active in Northern Europe, thus continuing the way stone cutters and traders from Antwerp had worked until 1585. Cornelis Floris executed luxurious funeral monuments for the king of Denmark and the duke of Prussia. Sixteenth-century red marbles from the Meuse Valley could be found in cities such as Lübeck, Rostock, Wismar, and Stralsund.21

Such supplies hailed from Amsterdam in the first quarter of the seventeenth century (fig. 7). In 1618, the painter and agent Pieter Issacsz supplied a marble floor in Fredriksborg for Christian IV of Denmark, which probably came from Hendrick de Keyser’s workshop.22 Also, at the marble gallery of Fredriksborg, designed by Hans van Steenwinckel the Younger, architect of the Danish crown, the sculptures were made in Hendrick de Keyser’s workshop (see chapters 3.3 and 3.4).

Stone trader Laurens Sweys brought Gotland sandstone – for the statues in the marble gallery – to Amsterdam in 1619. A year later, the Danish king sent Sweys to the Archdukes Albert and Isabel Clara Eugenia in Brussels with a request for a tax exemption on the transport of blue stone, red marble, and black marble from the Southern Low Countries.23 Most probably this material was needed for the marble altar of the Trinity Church (Trefoldighedsstirke) in Christianstadt which Sweys supplied in 1620 and which possibly was made by De Keyser’s studio as well.24 In the following years, Sweys delivered the same kind of red and black marbles from the Southern Low Countries to Vilnius to be used for the interior decoration of the St Casimir’s Chapel in the cathedral (1623–1636), designed by the Italian architect Constantino Tencala for King Sigismond III of Poland (fig. 8).25 The interwoven nature of the network of

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21 Huysmans et al. 1996. See also Weissman 1912.
stone traders and building entrepreneurs was evidenced by the fact that Sweys was a son-in-law of Amsterdam municipal mason Cornelis II Danckerts. In 1621, Sweys maintained contact with Willem II van Neurenberg for the deliverance of six blocks of marble, and this was not the only time. This period also witnessed the transport of coloured marble from the Meuse Valley to Wrocław, Königsberg as well as England. In 1636, Hendrick de Keyser Jr signed a contract to supply a black marble chimney piece and other objects to Sir John Byron. This delivery was dispatched by ship via Hull to Newstead in July 1638.

In the second half of the seventeenth century, Amsterdam retained a central role in the export of luxurious stone products. In 1663, Hendrick de Keyser III was contracted to supply stone for the Bishop of Durham’s works at Durham. Bishop Auckland stated that ‘all such blacke marbell stones and stones as shall be necessary and expediënt to performe the worke abovesaid, and to procure it either from Holland, Newcastle or elsewere’.

In 1660, Artus Quellinus supplied the first marble epitaph in Berlin in the Marienkirche for Otto von Sparr. On 24 January 1660, Amsterdam burgomaster Witsen granted von Sparr permission to use marble supplies from Amsterdam provided he paid one Thaler per foot. Quellinus supplied an epitaph of white Carrara marble and black Belgian marble, like the ‘model’ he sent to Von Sparr previously. The epitaph was sculpted in Amsterdam and then sent to Berlin where servants of Quellinus assembled it in the Marienkirche. The work was finished in 1663, and even the Prussian princes went to the church to see the magnificent epitaph (see chapter 4.7).

In the same year, sculptor Bartholomeus Eggers supplied work to the Great Elector of Brandenburg, although the exact nature of the work has remained unknown. Eggers worked together with Artus Quellinus, and in 1682, the elector commissioned a Minerva figure. Eggers’ workshop and his fame were impressive. Thus, in 1687, when Swedish architect Nicodemus Tessin the Younger travelled to Amsterdam, he also visited Eggers’ workshop and described the statues Eggers prepared for the Brandenburg elector. The portrait of the elector was executed in marble, like two portraits of Apollo and Diana. In four weeks, Eggers left Amsterdam for Berlin to install the statues and sign a contract for five more. A portrait of Hendrick Ruse, military engineer in Brandenburg and Denmark, made by Eggers now stands in the National Museum Fredriksborg. In 1680, a sun and moon by Eggers stood on the terrace of the estate of Tamsel (Dabroszyn today). Between 1684 and 1686 Eggers also supplied marble statues of emperors and electors for the Great Hall in the Berlin Palace.
Brick

Although not a product of high status, brick proved to be an important export product. In the medieval period, sand was used as ballast for ships. However, by the fifteenth century, more harbour cities were faced with the problem of silting up. Additionally, captains recognised that using heavy trade goods such as coal, stone, and brick as ballast was more beneficial than just throwing away sand after use.36

In the Northern Low Countries, brick was mainly produced in Holland, Utrecht, and Friesland. Cities such as Delfzijl, Harlingen, Stavoren, Amsterdam, Enkhuizen, Hoorn, and Medemblik exported brick.37 In 1585, 632,500 Dutch bricks were transported through the Sound; in 1635, 1,953,000 bricks were exported. The Dutch brick trade mostly involved ships from Frisia and Holland, although many ships were only ballasted at the Dutch Wadden Islands.38

Britain was already importing bricks from the Low Countries in the late medieval period.39 The continuous influence of brick could be seen in the east of England.40 In the seventeenth century, Britain acquired considerable quantities of its basic building materials from the Dutch Republic because of its high quality.41 Bricks and pantiles were imported in great numbers, which led to concerns surrounding the effect of these imports on the English economy and efforts to reproduce the clay in England itself.42

Laurens I van Steenwinckel bought Dutch bricks for the Emden town hall in 1575 (fig. 9).43 ‘Klinkers’ and red and yellow bricks from Groningen as well as gable stones of sandstone, chimney pieces, and wood from Amsterdam were imported for the building of Friedrichstadt in Schleswig, founded in 1621.44 Like the ones imported to England, the Dutch bricks shipped elsewhere were of high quality.45

Examples of bricks imported from the Dutch Republic abounded in Denmark. Around 1520, the Amsterdam tradesman and banker Pompeius Occo sent 12,000 bricks from Gouda, 5000 bricks from Leiden, and pantiles to Sybrech Willemsdochter, agent of Christian II (see chapter 4.3).46 The bricks from Gouda and Leiden were meant for visual application. One hundred years later, many Dutch bricks existed in Glückstadt, in Holstein.47 Dutch bricks were used for Fredriksborg Slot (1602) As well as in the Copenhagen exchange (fig. 10). Bricks from Frisia were imported for the restoration of Kronborg (1631).48

36 Arntz 1947, 61.
37 Arntz 1947, 73.
38 Arntz 1947, 68.
40 Arntz 1953.
41 Louw 2009, 85.
42 Clifton-Taylor 1972, 275; Louw 2009, 86.
44 Arntz 1947, 81–82.
45 About gauged brickwork: Clifton-Taylor 1972, 244; Louw 1981, 21, n. 60; Lynch 2007.
46 Arntz 1947, 83.
47 Arntz 1947, 84.
48 Arntz 1947, 85.
Little has been known about the export of bricks to Norway and Sweden. However, Dutch bricks were used in Finspång, built by Louis de Geer the Younger, replicating his father’s residence in Stockholm (illustration; see chapter 3.1, fig. 29).49 The export of Dutch bricks spread along the entire Baltic coast region. Dutch bricks were likely used in Rostock and Wismar. In Gdańsk, Dutch bricks were certainly used, for example by Reinier of Amsterdam in the Green Gate (1568–1571) (fig. 11). 50 In 1584, Dutch bricks were used in the palace in Königsberg.51 Although bricks were exported as bulk material, they should not simply be considered as filler material. Examples from Leiden and Gouda indicated that these bricks were bought and broadly applied because of their quality, more so than their volume. As such, brick should be considered, like the stone mentioned above, as a subtle contribution to visual architecture, and not just an interchangeable building material.52

**Wood**

Contrary to brick, wood was imported to the Dutch Republic. Hundreds of dendrochronological datings gathered in 2006–2011 in combination with literature and published sources have allowed insight into the origins and application of wood in Amsterdam.53 Dendrochronological provenance revealed the origins, shifts, and changes concerning the wood trade between 1500 and 1700.54

In the second half of the fourteenth century, the Amsterdam wood trade boasted a supra regional character. Between 1350 and 1370, traders from Hamburg transported considerable amounts of wood to Amsterdam.55 In 1373, wood was purchased for repair measurements of the castle of Muiden (Muiderslot), a stronghold east of Amsterdam, by ‘Peter Holland tot Aemstelredamme’.56 In the beginning of the fifteenth century, wainscoting

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49 Noldus 2004, 64ff. and 164.
50 Arntz 1947, 91–92. He mentions also the town hall, armoury, city gates and dwelling houses in Danzig.
51 Arntz 1947, 93.
52 More research is necessary to come to more detailed conclusions.
53 Bärbel Heußner (Petershagen, Germany) was responsible for the laboratory analysis of the Amsterdam wood samples. van Tussenbroek 2009. An introduction to dendrochronology is to be found in de Vries 1994, 367–385. See also Jansma 1995.
54 It concerned oak wood and pine wood as well. For methodological aspects Heußner 2005, 127 and Eckstein & Wrobel 2006.
55 *Maandblad Amstelodamum* 1 (1914), 77; van Dillen 1914, 136.
56 Janse 1965, 38.
was bought in Amsterdam for St Peter's Church in Leiden. In 1412, the Leiden city council bought Prussian deals in Amsterdam for their town hall.\footnote{Maanblad Amstelodamum 1 (1914), 77; van Dillen 1914, 137.} For Utrecht Cathedral, wood for scaffolding was bought in Amsterdam.\footnote{Janse 1965, 39.} Also, large amounts of wainscoting were purchased in Amsterdam for the rebuilding of the castle in Hoogstraten (Brabant), under Rombout II Keldermans.\footnote{Archive Bureau Monumenten & Archeologie Amsterdam, letter by W. Aerts to H.J. Zantkuijl, 19 August 1979, with copies of the accounts; Gelderse Rekening, 4, Sept.–Dec. 1525, fol. 27 v: “Betaelt bijden drossaert voer de vrecht van eenen hondert wagescot gecomen van Amstelredamme tot inde logie iiii£ i st Ende noch voer de oncosten vanden anderien iie wagescots gesonden bijden Rentmeester van Noortholland XXXVII st.” See also Mertens 2006.}

Wood was also exported further away. In 1488, Jan Aertsz from Amsterdam supplied 500 pieces of wainscoting to a buyer in Newcastle.\footnote{Ketner 1946, 179–180; Meischke 1994, 48.} Between 1544 and 1545, wood accounted for between approximately 2.5 percent and 3.5 percent of the total export to areas outside the Burgundian territory. Most of this wood export – in the form of deals, rafters, wainscoting, and beams – went to Portugal.\footnote{Meischke 1994, 48.} On 4 January 1610, the Amsterdam tradesman Volcker Overlander signed a contract with Captain Jacob Janes on behalf of Manuel Ximenes from Antwerp to ship 100 deals and 100 pieces of wainscoting to Setúbal in Portugal.\footnote{Winkelman 1983, 90, no. 1118.} On 7 July, Overlander and Willem Hooft signed a contract to ship, among other things, “een hondert ende een quartier wagenschot” to Setúbal.\footnote{Winkelman 1983, 108, no. 1148.} In 1616, tradesman Hillebrant den Otter from Amsterdam commissioned captain Dirck Jansen to transport ‘een 100 wagenschot, 2, 3, oft 4 met een partije claphout” to Setúbal.\footnote{Winkelman 1983, 456–457, no. 1741.}

Naturally, much of this wood originally came from elsewhere, which necessitates a closer look at the wood trade of Norway, Brandenburg, Gdansk, and the Baltic regions.\footnote{Schillemans 1947, chapter IV.} Each area shall be analysed according to when the wood trade with the Republic reached its summit, and whether and how this trade can be linked to regional architectural influences.

**Norway**

In the 1440s, the trade between Dutch cities and Bergen in Norway, part of the Danish reign since 1380, was opened.\footnote{Van der Hegge 1985, 509; Wubs-Mrozewicz 2008, 208.} Although wood was purchased in Christiansand and Trondheim, it could have originated in Central Sweden.\footnote{Buis 1985, 510.} The first dendrochronological dating in Amsterdam showed that the Swedish provinces of Dalarna and Jämtland were important to the import of construction wood, although these dates do not go further back than the end of the sixteenth century. The products that were bought included pine and fir deals, beams, and masts.\footnote{Buis 1985, 509; Wubs-Mrozewicz 2008, 208.} The quantity of wood on the Dutch market originating from this region increased around 1580.\footnote{Buis 1985, 108; Sogner 2004, 45; Lesger 1992; Willemsen 1988.}

Numerous sawmills were active in Norway at the beginning of the sixteenth century.\footnote{Langhelle 1999, 25.} In 1519, farmers from the Neset area paid their taxes with textiles from Deventer.\footnote{Ibidem.} From the sixteenth century until 1717, when direct trade with Norwegian farmers was forbidden by royal decree, the Norwegian wood trade played a major role in the wood supply in Holland and Scotland.\footnote{Lillehammer 1999, 7.} Captains sailed by Stavanger and dealt directly with these local
farmers and wood traders. After 1635, trade in Ryfylke controlled by the Scottish and the Dutch disappeared. However, larger and more important wood areas existed in Agder, Telemark, and further to the east. Here, the ‘wood nobility’ (Planke adel) consisted of rich traders with international contacts, unlike the farmers from Ryfylke. Further inland, rivers were suited for rafting wood. In the sixteenth century, wood from the west of Sweden, pine as well as oak, was applied in Amsterdam.

The Dutch import from Norway increased in the 1620s and 1630s due to the diminishing trade with Gdańsk. In 1628, the Danish king permitted the export of oak wood to the Dutch Republic. The number of sawmills was enormous (fig. 12). Following reduced trade in the Ryfylke area, problems developed in 1640 prompting Denmark to halt the export of wood from Norway to Holland and leading to a war in 1645 between Denmark and the Republic. Over the course of the seventeenth century, the Norwegian trade shifted to the east as the south and west became deforested, which led to increased transport by inland rivers.

In 1647, the States General contracted a Danish-Norwegian envoy and arranged for Dutch ships in Norway to pay toll on the volume rather than the quality of the goods. Three hundred and eighty-seven ships of more than 50 last (a last equalled approximately 1250 kilograms) transported Norwegian wood and were registered in the Dutch Republic. In 1647 and 1648, these ships transported at least 47,000, but possibly 60,000 to 70,000 last of Norwegian wood. Although the captains often lived elsewhere, 58 percent of the ships hailed from Amsterdam.

Romsdal and Nordmøre, regions north of Bergen, served as loading ports, as did Trøndelag close to Trondheim, Swinesund, and Idefjord. In 1671, the Danish king granted Hendrick Ruse, the Dutch fortress builder, entrepreneur, and former municipal engineer of Amsterdam (see chapter 5.1), the trade in Norwegian masts for six years. The wood Ruse bought was exported to Amsterdam. Amsterdam tradesmen Jan and Heinrich Decquer held a monopoly on the trade; by September 1671, they had imported 10,000 to 12,000 masts. However, the Danish king attempted to reserve the best forest products for his own fleet. Thus, wood trade with the Republic was problematic in the second half of the seventeenth century.

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73 Ibidem.
74 Lillehammer 1999, 11 and 19.
75 Newland 2007, 41.
76 Tossavainen 1994, 78.
78 Schreiner 1934, 303, 326–327.
79 Schreiner 1934, 307; Bruijn 1999, 64.
81 Schreiner 1934, 324.
82 Römelinge 1973, 508.
83 Hart 1976, 85.
84 Hart 1976, 85; Schreiner 1934, 305.
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Brandenburg

After the castle of Amerongen burned down in 1673, Godard Adriaan van Reede, the lord of Amerongen, wrote a letter to Michiel Matthijszoon Smids, the Dutch building entrepreneur and wood trader in Berlin, requesting wood (see chapter 4.7). Van Reede worked in Berlin as a diplomat and probably knew Smids personally, just as he knew the Great Elector. After mediation by Johan Maurits of Nassau-Siegen, the elector decided to give Van Reede the wood. Benjamin Raule, another wood trader of Dutch origin in Brandenburg, supplied deals of pine wood for Amerongen. This wood came from Königsberg, and the deals were selected especially for Van Reede to realise a spectacular floor in the great hall of Amerongen. Raule and Smids were active wood tradesmen who played an important role in introducing and realising buildings with Dutch architectural influences in Brandenburg during the second half of the seventeenth century.

The wood trade between Holland and Brandenburg reflected the elector’s efforts in 1648 to restore his territory after the Thirty Years’ War (fig. 13). People like Michiel Matthijszoon Smids, Benjamin Raule, and Cornelis Ryckwaert were deeply involved in the organisation of the wood trade as well as their own building projects.

In 1662, Michiel Smids rented two sawmills in Fürstenwalde and built new mills in Berlin. In 1668, he renewed an old sawmill on the Berlin Mühlemdamm, where in the middle of the River Spree a number of watermills with different functions were situated. Shortly after the Oder-Spree canal opened, he built a bridge 250 meters long, in the vicinity of Köpenick, east of Berlin. Smids was paid in wood, which he used to build ships that were eventually sold in Hamburg.

Smids’s masterpiece of mill building was a wind sawmill in the Stralauer Vorstadt east of Berlin, built in 1685 and 1686. On 16 December 1685, the elector ordered Benjamin Raule to oversee the building of a mill, which could increase the production of ships. The innovative sawing installation was imported from the Republic (fig. 14). Michiel Smids built the mill next to the Rosenfelde estate of Benjamin Raule. The new mill was much more effective than the traditional Brandenburg mills. A shipbuilding company was founded with electoral finances, and in 1676 Benjamin Raule established shipbuilding wharfs, first in Kolberg, then later in Havelberg, Berlin, and Pillau. Forests were replanted as wood was supplied from the inner regions of the country. The ships built on the Berlin wharf were sold to tradesmen in Hamburg. In Berlin, an oak tree cost only one and a half to two Thaler. In Hamburg, the cost was tenfold, and twentyfold in Holland.

Gdańsk and the Baltic States

From the middle of the thirteenth century, trade between the Low Countries and the cities along the Baltic coast developed, prompting cities such as Stralsund and Greifswald to export wood to the west. From 1360 onwards, merchants from Amsterdam were active on the Baltic Sea coast, where tradesmen from that region went to Amsterdam. The oak from

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85 van der Bijl & Quarles van Ufford 1991, 102.
87 Viersen 2008, 118–119.
88 In 1678 Cornelis Ryckwaert got permission to trade in wood with the privilege of toll exemption like Michiel Smids. Galland 1911, 231–232.
89 Herzberg & Rieseberg 1987, 136.
90 Galland 1893, 192.
91 Herzberg & Rieseberg 1987, 137; Mager 1987.
92 Jorberg 1965; Jorberg 1968; Voigt 1938, 45.
93 Jorberg 1965, 4.
94 Müller 1938.
95 van Dillen 1914, 68.
96 van Tielhof 1995, 86–121.
Wood also came from further away, probably fed by the increasing grain trade. Prussia (a source of oak, beech, and pine), the duchy of Mazovia (in central Poland), and Lithuania became important regions supplying wood (see the map of fig. 2). This wood was transported by river to the harbour towns.97

Until the middle of the fifteenth century Gdańsk profited even more from the steadily increasing demand for wood in Western Europe. However, a shift occurred in the second half of the fifteenth century and the amount of wood exported from Gdańsk decreased.98 The wood trade in the region was by then almost entirely controlled by tradesmen from Gdańsk, but the role played by Netherlandish traders grew rapidly in the second half of the fifteenth century.99

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(Kaliningrad), Memel (Klaipėda), Riga, Pernau (Pärnu), Reval (Tallinn), and Dorpat (Tartu). By opening their own trade posts, tradesmen from the Low Countries bought wood directly from local nobility and large landowners, and sailed around, thus circumventing, the staple market of Gdansk.

Traces of these products in Amsterdam have been found in buildings dating only from the late sixteenth century onwards. By then, the Dutch had taken over large parts of the trade, especially in grain and wood, in the Baltic Sea region. Conflicts with Lübeck occasionally led to the closure of the Sound for Dutch ships, but a treaty in 1532 and the Peace of Speyer in 1544 put an end to this difficulty. For the remainder of the sixteenth century, the Dutch trade in the Baltic was threatened incidentally only by wars, bad harvests, and internal political problems.

Pine wood from the Baltic was imported, in addition to enormous quantities of wainscoting. The various wood products included klip boards, wainscoting, deals, planks, staves, sticks, masts, and ready-made products. Until 1585, Gdansk exported more wainscoting and boards than any other harbour, and was followed by Königsberg, which was strongly developing its wood exporting role. However, after the start of the Eighty Years’ War, the trade in wainscot decreased in favour of the trade in boards.

In the 1580s, the northern part of the newly created duchy of Kurland (the region south and west of Riga), a Polish fief from 1561 onwards, outstripped Königsberg in the wainscot trade. Wainscot could also be purchased in Lübeck and Stralsund. After the fall of Antwerp in 1585, the number of Dutch ships in the Sound increased remarkably. As before, Gdansk, Königsberg, and Kurland remained the main suppliers. The conspicuous newcomer was the export of deals and planks from Sweden. However, these products formed only a minor part of the entire wood export.

Travels to the East Indies and changing trade policies in the East Sea area precipitated an increased need for wood for shipbuilding at the end of the sixteenth century. The demand for wainscots increased as well, even as forests began to thin in the exporting regions.

In the first decade of the seventeenth century, Riga started to overtake the trade in wainscots. As the heavier wood products became scarce in the southern part of the Baltic, Finland and Sweden slowly began trading these products. The Baltic Sea trade also experienced the negative effects of the Thirty Years’ War. However, during the Twelve Years’ Truce Dutch trade increased again. The enormous ship building activities in Holland increased the demand for wainscot. Sweden, at war with Denmark, nonetheless managed to increase its wood export. Between 1610 and 1621, Sweden exported no less than 250,000 deals and planks.

In the second half of the 1620s, the number of Dutch ships that passed through the Sound halved because of the war between Sweden and the Habsburg empire. Consequently, from 1622 until 1648, the export of wood from Gdansk was strongly reduced. Blockades, 107 Which can be deduced from the, perhaps incidental, planting of an industrial forest. Poklewski-Koziell & Wazny 2006.
111 Tossavainen 1994, 72.
badly managed forests, and the increasing demand of growing inland Polish cities led to a
dramatic setback in the supply of oak to Gdansk.\textsuperscript{113}

The role of Dutch wood traders in the Baltic Sea trade diminished in the seventeenth
century.\textsuperscript{114} Wainscot was still bought in Kurland, Riga, and Königsberg, while Sweden became
more important in the export of deals, a development that had begun earlier. Additionally,
as the harbour of Göteborg became the most important exporting harbour for wood, Dutch
ships and traders were no longer dependent on passing through the Sound, a change in route
that saved time and taxes. Most of the wood transported through the Sound between 1622
and 1648 came from Sweden. Königsberg came second, with approximately 65 percent of the
Swedish export, followed by Lübeck, which partly sold Swedish wood. Riga also remained
an important centre for wood export.\textsuperscript{115}

**Conclusion**

In the history of building materials trade in the Dutch Republic, two different tendencies
can be discerned: on the one hand, the export of high quality, luxury stone and brick,
and on the other the bulk import of wood. The export of stone and brick was associated
with the diffusion of architectural ideas and models. Stone was often cut in Antwerp or Amsterdam
and exported from various ateliers elsewhere. Bricks were used for outer walls of buildings,
due to their high quality.

The wood trade was less unambiguous. The nature of the network of traders and
building commissioners decided whether a Netherlandish influence could be discerned or
not. The three geographical areas analysed in this chapter – Norway, Brandenburg, and the
Baltic area – each had their own histories concerning the reception of architecture from the
Low Countries. In Norway, this influence was nearly nonexistent because the Dutch were
hardly present on a structural basis. They seem “to have stayed the necessary time to achieve
what they had come for, and then returned home”.\textsuperscript{116} The Norwegian wood trade was mainly
in the hands of local farmers, and thus without a strong, internationally oriented cultural
network.

Apart from some sixteenth-century examples, Dutch influences in Brandenburg were
concentrated between 1648 and 1688. The presence of Dutch traders in Brandenburg was
due to the restoration politics of the Great Elector Friedrich Wilhelm. He attracted traders and
master builders who introduced Dutch architecture, and granted them the wood trade for
export to Holland.

In the Baltic area, more gradual influences were visible from the sixteenth to the end
of the seventeenth century, with Gdansk as a main receptor in the second half of the six-
teenth century, and later influences in northern towns such as Königsberg, Riga, Tallinn, and
the surrounding countryside. Until the middle of the sixteenth century, the trade between
Gdansk and the Low Countries was controlled mainly by merchants from Gdansk. Afterwards,
Amsterdam traders began settling in Gdansk. After 1585, Amsterdam and the Dutch Republic
took the lead in the Baltic Sea trade. Unlike Norway, a permanent Netherlandish presence
was established in Gdansk. The interaction between Gdansk and the Low Countries in the
second half of the sixteenth century left its traces in Gdansk streets and in Amsterdam interi-
ors both.\textsuperscript{117} The shift along the Baltic coast took place in the second half of the seventeenth
century, when Riga became an important harbour for the Baltic trade, and where Dutch trad-
ers, who built partly in a ‘Dutch’ way, settled down.\textsuperscript{118}

\textsuperscript{113} Tossavainen 1994, 77–78.
\textsuperscript{114} van Tilhof 1999.
\textsuperscript{115} Tossavainen 1994, 79.
\textsuperscript{116} Sogner 2004, 43.
\textsuperscript{117} Among others: Kucharzki 1990; Glaudemans 2007.
\textsuperscript{118} Noldus 2004, 159, 204.