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Voorburg-Arentsburg: a Roman harbour with a British connection in the hinterland of the *Limes*

Mark Driessen

Abstract

In 2007-2008, the Amsterdam Archaeological Centre of the University of Amsterdam excavated in the small Roman town of Voorburg (Forum Hadriani) near The Hague in The Netherlands. The excavations were undertaken in the expectation of examining one or two *insulae* of this Roman town. We were very surprised when a dredged channel (110 x 32m) with quay installations consisting of two successive periods of driven piles was uncovered. An immense quantity of portable finds – especially pottery – was retrieved from this channel. The provenances in combination with the form and function of the retrieved pottery make clear that the settlement played a role in trade and military supplies. At first there seems to be a British connection by means of retrieved Romano-British artefacts in Voorburg. Next to that there are some striking resemblances between the Roman harbours of Voorburg-Arentsburg and London when comparing the origin of pottery and several formation processes. Secondly, the pottery provenances and the form and function of the retrieved ware show that the harbour of Voorburg played an important role in supplying the regional coastal forts in the C2nd and C3rd.

Introduction

In the Roman period the Low Countries can be characterized as a coastal delta area, where several waterways essential for logistics, infrastructure and safety of the northwestern part of the Roman Empire converge (Figure 1). Although the lower Rhine area was important for the recruitment of military manpower, the economic potential was of little value. The establishment of the northern frontier line and the efforts to maintain Roman authority in this area are connected to the strategic importance of the transit routes here which were of special significance for the control over Britannia.

The Rhine was the basis of the northern *limes* and in addition was an important medium for military and civilian distribution management. This is shown by the infrastructural adjustments to transport lines in this area (Graafstal 2002; Van der Kamp 2009). The Meuse formed an alternative inland transport route for our region and was connected to the Rhine via the Waal in our eastern river area.¹ The several military and civilian settlement complexes at Roman Nijmegen play an important role as a junction for logistics and infrastructure by means of this connection (Driessen 2007, 39-40, 99-108, 148-50).

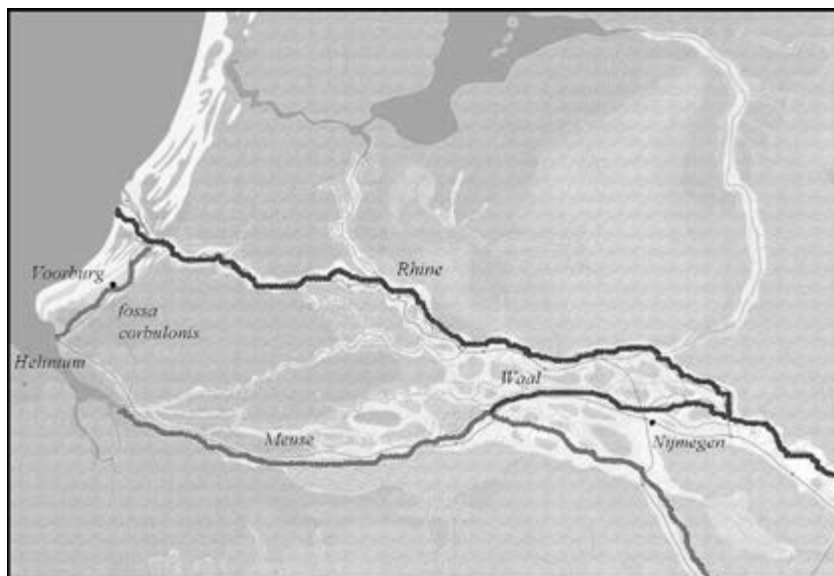


Figure 1. Paleogeographical map of the coastal delta of the Netherlands (AD 50) with the most essential waterways for this paper.

¹ Caes., BG. 4.10, 4.15; Tac. Ann. 2.6; Driessen 2007, 39, §3.2.2.

The Meuse connected also with the Rhine in our western river area near the North Sea coast through the *fossa corbulonis*. This western connection between Meuse and Rhine was canalized in the Claudian era, probably under control of Gnaeus Domitius Corbulo: the commander of the Germania inferior armies. The North Sea coast line of the Low Countries which is to be characterized as a continental shelf with a marked tidal regime did not have a natural seaport. A few miles further inland about halfway on the *fossa corbulonis* we can find the Roman town of Voorburg-Arentsburg – probably the Roman Forum Hadriani – which was the western pendant of Nijmegen. This new town was not only the central place in the *civitas* of the Cannanefates, but recent excavations here have revealed distinctive features which suggest that it formed a logistical base.

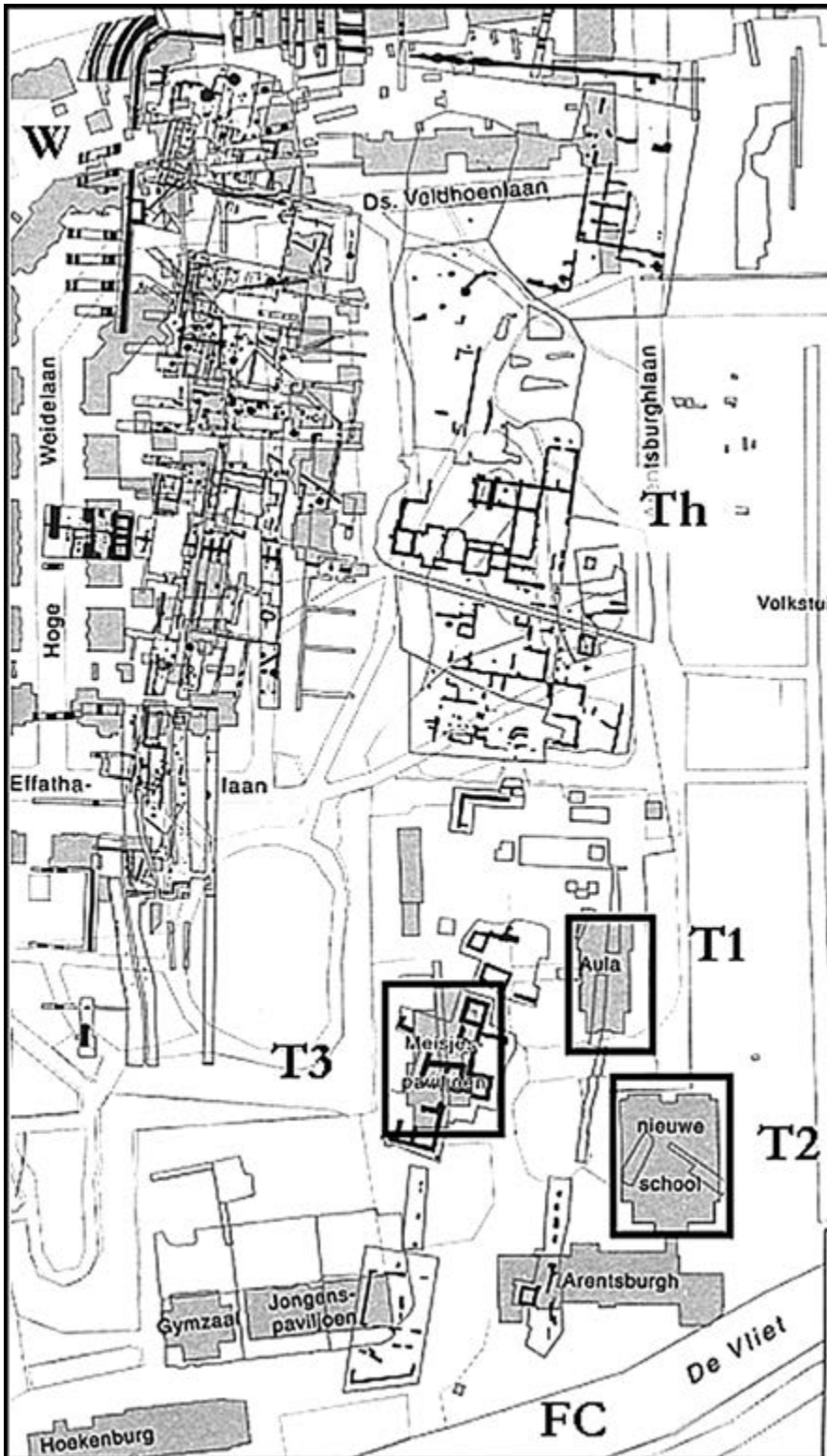


Figure 2. Map of Voorburg/ Arentsburg today with the excavated Roman features. **W** surrounding wall and ditches; **Th** *thermae*; **FC** De Vliet, most probably the course of the *fossa corbulonis*; **T1-T3** the rough lay-out of the excavation trenches of the University of Amsterdam (2007-2008). Source: Cultural Heritage Agency, The Netherlands (with own adaptations).

The Roman town at Voorburg-Arentsburg

Excavations in Voorburg-Arentsburg carried out in the C19th by Reuvens and in the early C20th by Holwerda have uncovered structures which are typical for a Roman-planned settlement. This settlement had for instance a surrounding wall with ditches, a rectangular street grid and lay-out and large Roman public baths (Buijtendorp 2006). Firstly, this site was interpreted as a fleet station of the *classis germanica* (Holwerda 1923). Later on this hypothesis of Holwerda was rejected and the site was reinterpreted as the Roman town Forum Hadriani (Bogaers 1972, 303). The estimated size of this small Roman town was first put at 30 acres (Buijtendorp 2006, 96-97), but recent excavations suggest that a more modest size is in order (Bink and Franzen 2009, 433-9; Driessen *et al.* 2009, 51-63). Parts of a large bronze statue of an emperor may indicate that this settlement had some kind of representative function.

Excavations carried out in three large trenches by the University of Amsterdam in 2007/2008 were undertaken in the expectation of examining two – possibly three – *insulae* of this Roman town (Figure 2). In the most westerly trench, the Roman surface was severely disturbed by later buildings and earlier excavations. Only small parts of foundation trenches and post alignments, which remained here, can give us some insight in the building lines and the dimensions of the plots in this part of the settlement. At a lower level ten wells made of re-used Roman wine barrels were found. These wells were filled in with deposits which might give us some insights in the function and use of the disturbed and missing features here. At the bottom of one of these wells a large unused quern stone made of tephrite was discovered.

The Roman harbour of Voorburg-Arentsburg

We were very surprised when the excavations in the other two trenches uncovered a dredged channel of at least 110 by 32 metres (Figure 3). The natural watercourse that formed the base of this dredged channel is most probably an offshoot of a very old creek named the Gantel that flowed from the Helinium (the estuary of the Meuse) in a northward direction. The Gantel most probably formed the southern part of previously existing natural waterways which were used as a basis for the *fossa corbulonis* and connected to the Rhine. To the western and eastern sides of the excavated channel we found a fossil beach covered with peat and drift-sand deposits. The channel itself had been filled in with a blue-grey fine marine clay (features 29-27-38 in Figure 4) subsequent to several structural dredging operations carried out in the second half of the C2nd and the first decades of the C3rd.

Alignments of pointed straightened oak piles were driven in the ground along the western and eastern banks of this watercourse. These piles, with a width of 30 x 30cm and a preserved length of 2.5 metres, were placed in straight more-or-less north-south orientated rows. There are several ancient references to the driving of piles, for which a *fistuca* was used.²

As everywhere in Europe, archaeological research forms part of site preparation for construction projects. Due to this we were restricted in the location of the excavation trenches and only a part of the dredged channel and alignments could be examined. In spite of this limitation, more than 90 of these piles were discovered. Almost all were perfectly conserved as they had remained below the modern and ancient groundwater level.

A collapsed quay installation next to an undisturbed equivalent that came up during the excavation gave rise to the hypothesis that at least two building phases can be distinguished. The dendrochronological analysis of the piles confirmed this. The later

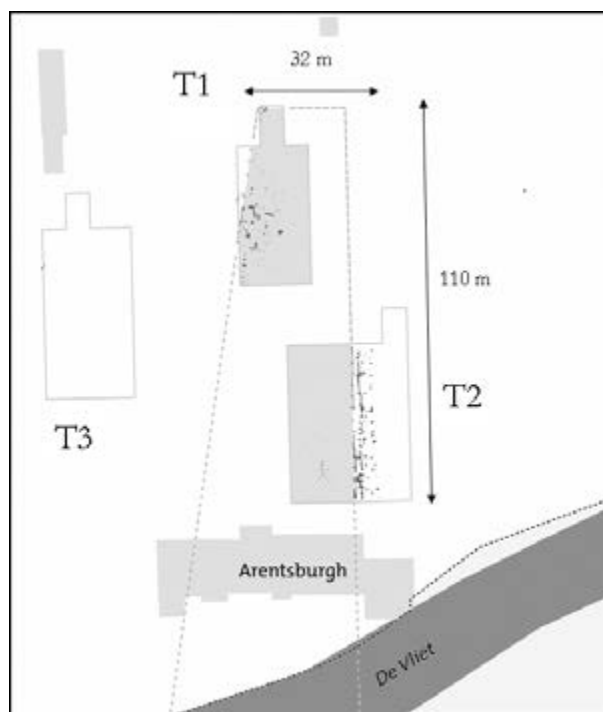


Figure 3. The dredged channel in trenches 1 and 2 with the wooden quay installations on the edges.

² Vitruvius 3.4.2; Caesar BG 4.17

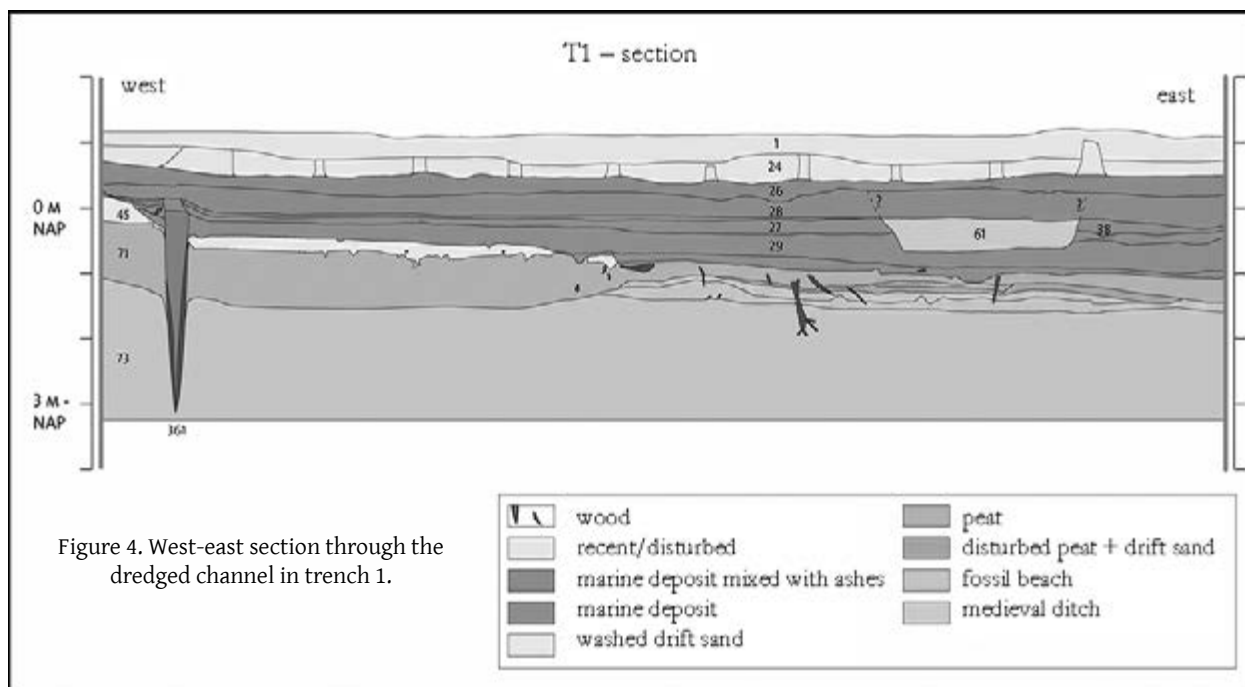


Figure 4. West-east section through the dredged channel in trench 1.

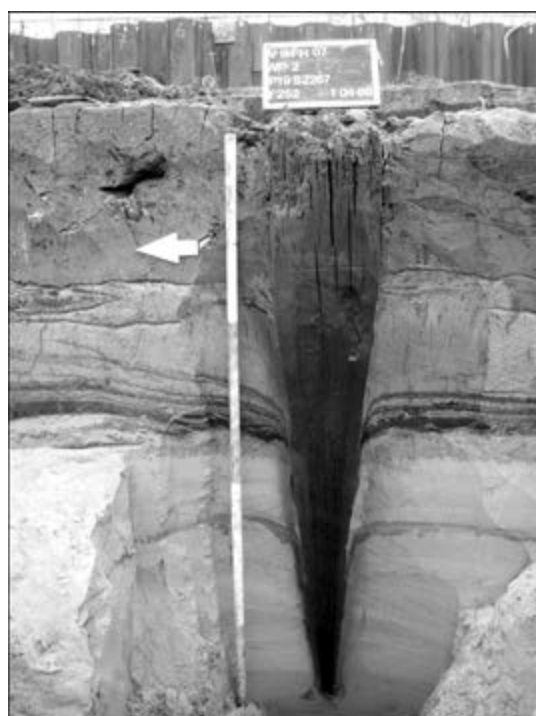


Figure 5. One of the driven-in piles of the later eastern embankment in trench 2, AD 211 ± 14.



Figure 6. Part of the south-eastern embankment piles in trench 2. The last phase is dated around AD 210.

embankment dates to AD 205-210. This later phase concerns the inner quay installations at the north-western bank of the watercourse – in our trench 1 – as well as in the more south-eastern part in our trench 2 (see Figure 5). This rebuilding was probably necessary due to the collapse of earlier quay installations. The collapsed quays on the south-eastern bank were part of an earlier construction phase dated around AD 159 (Figure 6). This period could not be distinguished in the north-west because of the position of the trenches and the later embankment. The earlier embankment did not collapse as result of a sudden incident, but slowly subsided as the ‘slow-motion’ in figure 7 shows. The most easterly row in trench 2 (Figure 8) is contemporary with the collapsed quay works.

Standing parts of the quay installations such as landing stages, gang boards, jetties, or wear on mooring posts have – except for a few cross-beams and cross-planks – not survived. These were probably all above the Roman and post-Roman water levels and have decayed, as have the upper parts of the driven piles. The few cross-beams and planks that survived were part of the collapsed embankments and were found below the (post-)Roman water level. Above this level at several places we could spot the shadow of decayed piles.

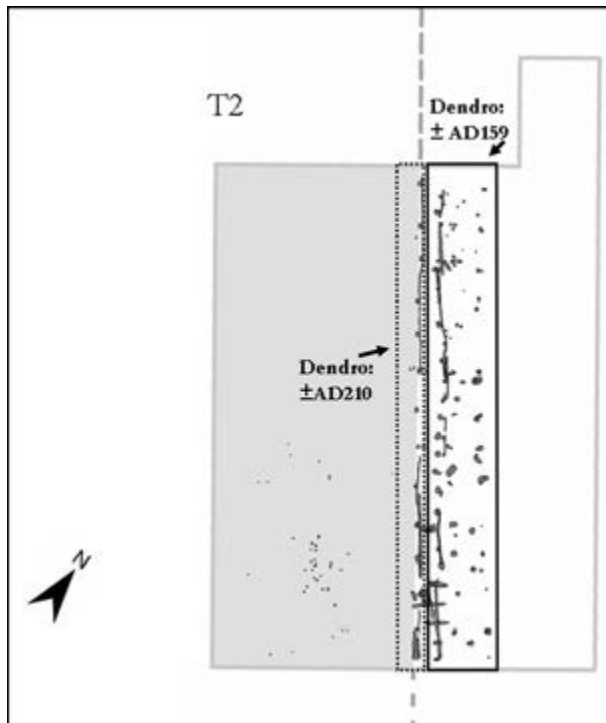


Figure 7. The excavated south-eastern embankment in trench 2. The last phase is dated around AD 210 and the first phase – which is partly subsided – around AD 159.

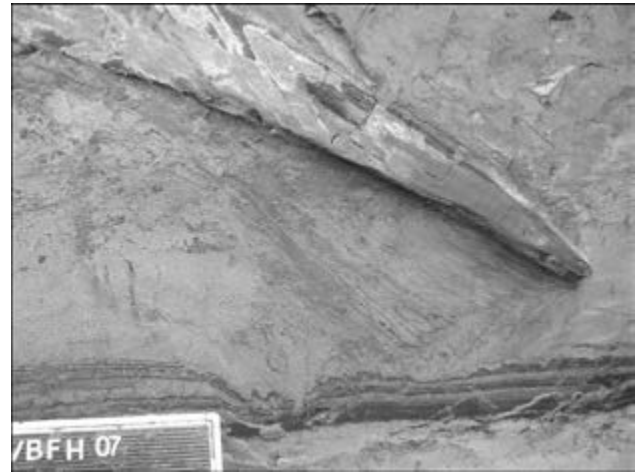


Figure 8. One pile of the subsided embankment of around AD 159.

No Roman building traces or features were discovered east of the embankment in the south-eastern part of the harbour. The north-western embankment was only partly excavated as the sheet piling of the northern trench cut right through it. For Roman features that connect the harbour with the adjacent town we are dependent on the meagre and severely-disturbed features from our most westerly trench and traces found at an earlier excavation by a commercial archaeological company more to the west of our excavation (see Bink and Franzen 2009).

A full harbour bed

The earliest bed of the harbour in the northern trench contained already a substantial amount of Roman artefacts, consisting of more than 25,000 mostly quite large fragments and also complete vessels of Roman wheel-thrown pottery, more than 7000 animal bones; almost 4000 fragments of Roman building ceramics and approx. 12,000 pieces of stone building material. Next to that we found here quite an amount of leather, metal and wooden artefacts. These portable finds were retrieved from the bottom fillings of the channel that has been dredged regularly in Roman times. Higher marine clay fillings contained considerably fewer artefacts.

It is remarkable that the bottom layer of the channel filling in the southern trench contained significantly fewer Roman artefacts. Micromorphological research has shown that identical natural and anthropogenic processes occurred in these different sections of the channel, leading to the assumption that more activities like ship movements took place in this southern part of the harbour than at the northern dead end.

Of the till now 35 tree-ring-dated oak piles only seven probably came from forests in the Netherlands, while the others originated from the Rhine region of central and southern Germany. The piles with an origin from the Netherlands grew in a more-or-less open environment while the trees that were harvested in Germany seem to have originated from a closed forest stand. These oak piles from central Germany come from the Saar-Moselle Region and correlate with the dendrochronological calendar from the Roman bridge from Koblenz. Probably all the German wood was transported over the Rhine and possibly the Waal to Voorburg-Arensburg.

In total almost 25,000 fragments of Roman building ceramics with a complete spectrum except antefixes and *tubuli* have been found. These also have a Rhine origin with, predominantly, stamps from the *exercitus germanicus inferior*, its detachment the *vexillatio exercitus germanicus inferior* and the *classis germanica*.

The natural stones (in total approx. 15,000 pieces) can be divided into tufa, slate, carboniferous limestone, schist, bioclastic limestone and tephrite. Next to that a considerable amount of coal, jet and carboniferous shale has been found. Globally, the Eiffel-Ardennes massif can be pointed out as the provenance for the natural stones. The tufa

most probably originates from the Brohltal, south of Bonn, and the tephrite from around Mayen. The carboniferous limestone has most probably a provenance from the north side of the Ardennes between Liege and Doornik. Quarrying or collection has most probably been done around navigable rivers like the Meuse, the Sambre or even the Scheldt or the Dender. The valley of the Rhine and the Meuse-valley are most probably the origins of the slate and schist. Roof slabs of slate with drilled holes are an indication that next to retrieved ceramic roof tiles and wooden shingles these have also been used for roof covering.

Outcrops of coal can be found in the Worms-valley near Herzogenrath and may have been available in the Meuse-valley near Liège. However, the British shore near Newcastle where both coal and jet outcrops occur cannot be excluded. Petrochemical research will hopefully answer this question. The origin of the bioclastic limestone is also still unclear. This material may come from the north-west of France and could have reached Voorburg-Arentsburg via the Meuse, but also via the North Sea coast as this material has also been reported near Boulogne-sur-Mer or near Portland in Britain.

Concerning the origin of the pottery – of which in the whole excavation more than 68,000 fragments and complete vessels have been excavated – at first glance a regular pattern for our river area seems to appear. Colour-coated ware and jugs from the Rhineland around Cologne, coarse ware from the Eifel region and the locally-produced so-called Low Lands ware were found in abundance. Samian ware and black-slipped ware from Trier and the Argonnes, Gaulish and Spanish *amphorae* are also the kinds of pottery we might have expected here. Rarer is pottery from North Gaulish production centres with *mortaria* and bronzed ware from Bavay, Pompeian red ware from Rue de Vignes and pottery in a Menapien tradition from the Oudenburg region. When Romano-British wares – as for instance black burnished ware and colour-coated ware from Colchester – were discovered, we suspected that our harbour might also have a British connection. This British connection is further supported by the presence of some Romano-British *fibulae*.

An important focus of the pottery study is the provenance. The provenances in combination with the form and function of the retrieved pottery make it clear if considering the changing networks that the settlement played a role in trade and military supplies (Van Kerckhove in prep.). The pottery can be divided into two components. On the one hand, it concerns pottery with a homogeneity in fabrics from specific provenances. This component consists of large sherds and more or less complete vessels with little or no wear. It mainly originates from the Rhineland and the Eifel region. The other pottery component has many different provenances. The sherds of this component are much more fragmented and show signs of normal wear. This component was predominantly retrieved near the embankment of the harbour and from the settlement. It can be interpreted as the debris of the settlement.

The first component, which was predominantly found in the bed of the harbour, could support the hypothesis that Forum Hadriani was a centre for transport and distribution. At first there is the British connection by means of Romano-British artefacts. Next to that there is a noteworthy likeness when comparing the provenance of the pottery with that retrieved from recent excavations in the harbour of London. The similarity between the harbours of Voorburg-Arentsburg and London is not only limited to the same imports of pottery, but identical ritual deposits and formation processes underline the resemblances between these sites (Van Kerckhove in prep.). Secondly, the pottery provenances and the form and function of the ware retrieved in the well-dated contexts of this component show that the harbour played an important role in supplying the local and regional coastal forts in the C2nd and C3rd.

The hand of the central Roman authority can be felt all around the coastal delta area of the Rhine and Meuse rivers. This varies from infrastructural adjustments, keeping up the frontier line and all kind of military installations to the construction of new planned towns. With such investments the lower Rhine area was incorporated into the greater strategy of the empire. This hand can also be felt in our harbour by means of the regular dredging and the driven-in embankment piles with a dominant origin from central and southern Germany. The location of the harbour between the Rhine and Meuse near the North Sea coast which lacked natural harbours, and the provenances and of the retrieved materials fuel speculation that this harbour was not only laid out to supply this small Roman town. Our natural coastal delta with favourable off-shore winds and currents will have stimulated not only the Roman coastal trade but also that to and from Southern and Northern Britain. The Low Countries as a transfer and transit zone – a ‘Gateway to Europe’ – had an origin in the Roman period in which the harbour of Voorburg-Arentsburg might have had a function as a transit port. With this – and the fact that this harbour played a role in the supply of the regional coastal forts – in mind the initial idea of Holwerda in 1923 that this site might have been a fleet station is not that ridiculous any more.

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