WOOD WHARF

HORSEFERRY PLACE / THAMES STREET, GREENWICH SE10

LONDON BOROUGH OF GREENWICH

AN ANALYTICAL STANDING BUILDING RECORD AND

PROGRAMME OF ARCHAEOLOGICAL OBSERVATION AND RECORDING

COMPASS ARCHAEOLOGY

April 2005

WOOD WHARF

HORSEFERRY PLACE / THAMES STREET, GREENWICH SE10

LONDON BOROUGH OF GREENWICH

AN ANALYTICAL STANDING BUILDING RECORD AND

PROGRAMME OF ARCHAEOLOGICAL OBSERVATION AND RECORDING

SITE CODE: HOF04

SITE CENTRE NGR: TQ 38020 77845

PLANNING APPLICATION REFERENCE: 00/1520/F

COMPASS ARCHAEOLOGY LIMITED
63 UNION STREET
LONDON SE1 1SG
Telephone: 020 7403 9660
Facsimile: 020 7403 9661
e-mail: mail@compassarchaeology.co.uk
Principal author: Geoff Potter

April 2005

Project 248

Abstract

A programme of structural recording and archaeological observation and recording took place between March and September 2004 on a site adjoining the River Thames, to the northwest of the historic centre of Greenwich. The work was carried out as part of the planning process for redevelopment, and followed a previous desk-based assessment.

*Prior to and during demolition an analytical record was made of the Engine Room of the Greenwich Steam Ferry (*c *1888-1900). This was basically a large (20m by 9m) cellar, originally housing the engines that hauled a landing stage and two smaller carriages on the adjacent foreshore ramp. Although the machinery had been removed the structure retained considerable evidence for its layout and operation, including the positions of the three locomotive-type boilers, two coupled steam engines and a flywheel. As part of the project the 15m wide foreshore ramp and river wall were also surveyed.*

Observations during bulk reduction for a substantial new basement revealed one significant feature, in the form of a probable 17th century drainage channel, parallel with and some 17m south of the modern river. This was traced for 33m and was up to 5m wide, but in the first half of the 18th century underwent two phases of timber revetting and a progressive reduction in width to about 1m. The channel appears to have gone out of use in the 1750s, although a shallow cutting may have survived for long enough to appear on Searles' map of 1777. The excavated fills produced a large range of domestic and imported pottery, notably Portuguese and Italian wares, plus metalwork, kiln furniture and other artefacts.

There was no evidence for earlier (prehistoric to medieval) activity on the site, nor any significant organic horizons. The drainage channel was cut into a clean alluvial deposit up to 2.4m deep, which in turn sealed the fairly level surface of River Terrace sands and gravels.

Contents page

Figures page

Figure 4 based on a pre-development Site Plan by Alan Camp Architects. Drawing no. 362---

1. Introduction

1.1 This report describes the results of archaeological investigation on a redevelopment site at Wood Wharf, Horseferry Place, Greenwich SE10 (approximate centre TQ 38020 77845; Fig 1). The work was carried out during demolition and subsequent groundworks between March and September 2004.

1.2 The site is located on the south bank of the River Thames, just to the east of Deptford Creek and west of the historic centre of Greenwich. The plot lies within a Conservation Area and in an Area of Archaeological Potential as defined by the current London Borough of Greenwich UDP.

This area saw significant development and riverside activity from the 18th century, and it is possible that there was an earlier riverside embankment. In the late 19th century one terminal of the Greenwich Steam Ferry was established in the northeast part of the site.

1.3 The proposed development of the site comprised two main elements: a major new multi-storey building with basement to the north, and a much more limited rebuilding of an existing community centre and playground refurbishment to the south.

The archaeological investigation was required as part of the planning process prior to redevelopment, and was carried out following a desk-based assessment and in response to further recommendations by English Heritage.

The project comprised two basic elements: firstly, recording and analysis of the former Steam Ferry Engine Room and foreshore ramp, and secondly a programme of Observation and Recording during bulk reduction within the new basement area. Both these works were located within the northern part of the site, and included a series of drawn and photographic records as well as written description and a large number of artefacts.

2. Acknowledgements

The archaeological project was commissioned by Weybridge Construction Limited. The author is also grateful for the assistance given during the fieldwork by the on-site staff, and in particular by the site manager, Paul Marshall.

Mark Stevenson (English Heritage Greater London Archaeology Advisory Service) monitored the project on behalf of the London Borough of Greenwich.

A final note should record all the individuals who contributed to the fieldwork and report, especially Clive Chambers for material and ideas on the Steam Ferry and Bill Yendall for metal detecting.

3. Site background

3.1 Location and topography

The site is located on the south bank of the Thames, some 550m to the east of the mouth of Deptford Creek (otherwise the Ravensbourne). The present ground surface at the southern boundary is at c. 3.3m OD, but this rises to the north – towards the river – to about 4.7m OD. This slope presumably reflects the historic riverside embankment.

The site itself is approximately rectangular in plan, with the northern part in which the main development took place covering an overall area of some 30m north-south by 45m east-west. The land was previously occupied by a number of buildings plus some open or vacant land, and included an existing community centre and playground to the south.

The geological survey (British Geological Survey 1998) indicates a natural ground surface of fairly recent Alluvium (mainly sand, silt and clay). This in turn overlies a River Terrace deposit described as gravel, sandy and clayey in part (Kempton Park Gravel). The solid geology consists of London Clay of Eocene date.

In prehistory this part of north Greenwich was low-lying, often marshy or periodically flooded, and may have been cut by several natural channels associated with the Ravensbourne. It is possible that northern areas such as the present site were contiguous with the Thames and fully submerged at high tide.

3.2 Archaeology and history

The historical and archaeological background to the site has already been considered in detail within the desk-based assessment (Compass Archaeology 2003). The following therefore forms a brief summary of the site's background and of the main conclusions of the assessment.

The site was considered to have limited potential for prehistoric, Roman or Saxon remains. It is likely that the area remained predominantly marshy into the post-medieval period, and of limited economic value. The historic settlement of Greenwich lies well to the east and southeast, and early maps show the land as open (*eg,* Jonas Moore 1662; Survey map 1695).

However, it is possible that this area was embanked and/or drained for use as pasture or meadowland. This was certainly the case by the 18th century, although much of the land seems to have remained low-lying with a series of drainage channels (*cf.* Searles' map of 1777: Fig 2).

By the mid 18th century the area around the site had also undergone some development. Rocque's map of 1746 shows a building in the vicinity, and Searles records three buildings and boat building activity. After 1800 there was a dramatic increase in development, which probably included replacement of the earlier buildings on the site (*cf.* Greenwood's map of 1824-6: Fig 3).

From the early 19th century a horse ferry was established at Wood Wharf: this was apparently established (or at least ratified) by an Act of Parliament of 1812. The Local History Library, LB of Tower Hamlets, holds a *Plan of an intended ferry for persons, horses, cattle and carriages… across the River Thames from the Isle of Dogs… to a place called the Wood Wharf.*

The Horse Ferry closed in 1883, and was replaced a few years later by the short-lived Greenwich Steam Ferry (1888 to *c*1900; Figs 7 & 8). The operation of the Ferry is described in detail below (8.1), as a preamble to the survey of surviving Engine Room, river wall and foreshore ramp.

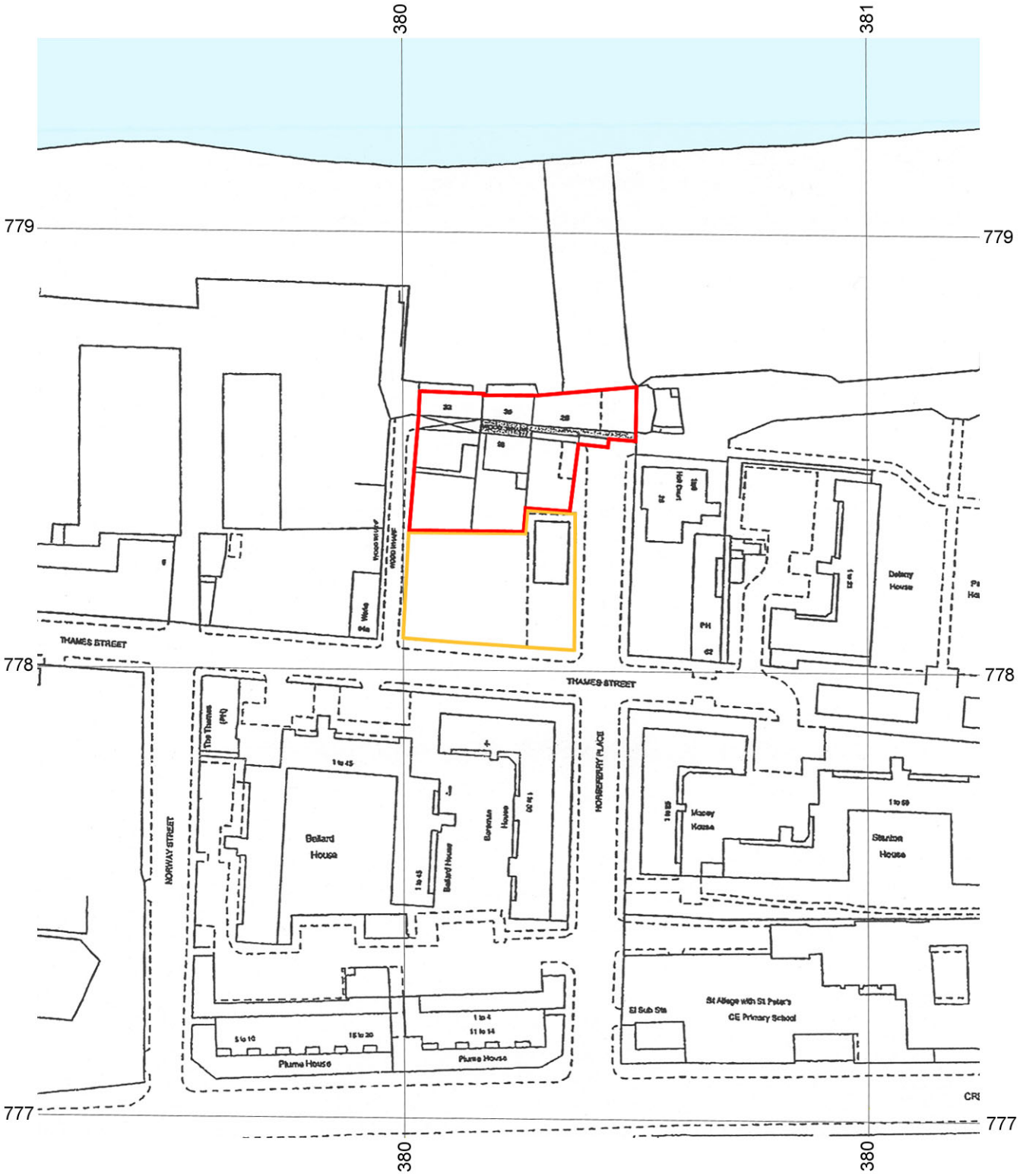


Fig 1 Site location in relation to the 2003 OS 1:1250 map. The site is divided between the principal development area in which the archaeological investigations took place (outlined in red) and that of the proposed new community centre and playground (shown in yellow)

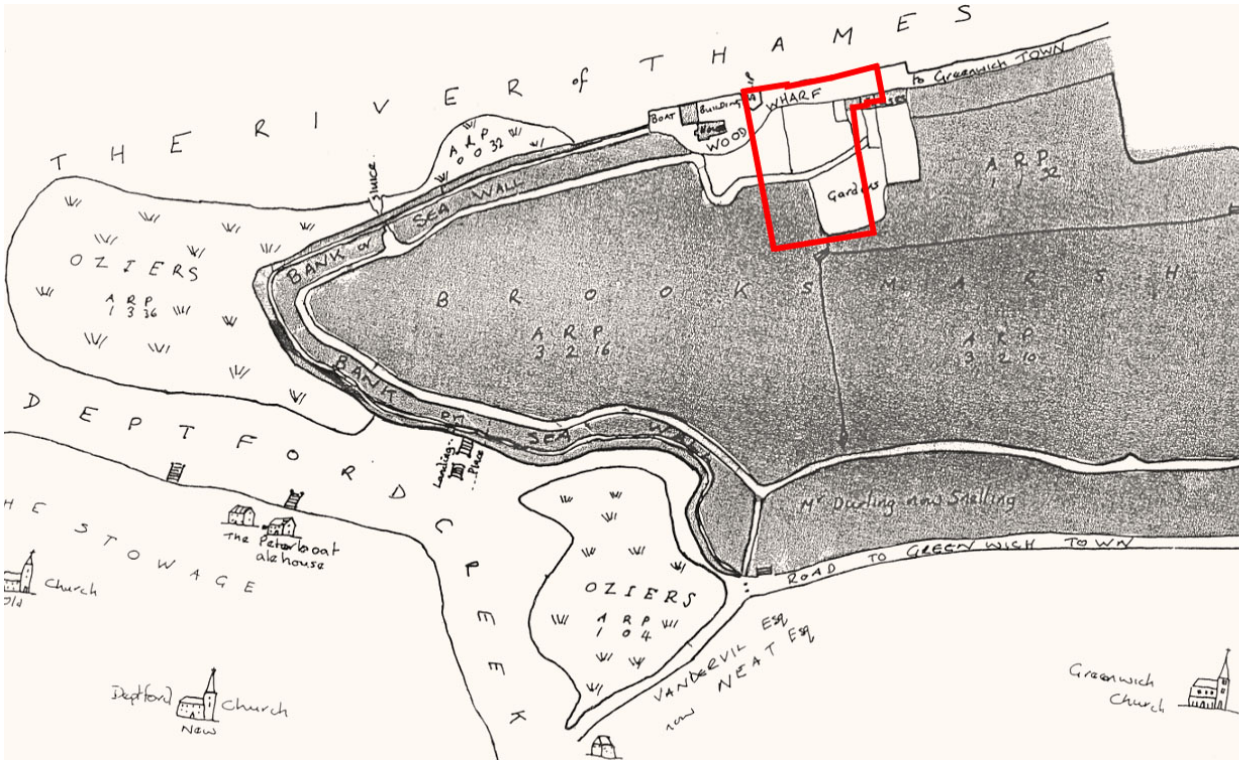


Fig 2 Extract from Searles' map of 1777 showing the approximate site location

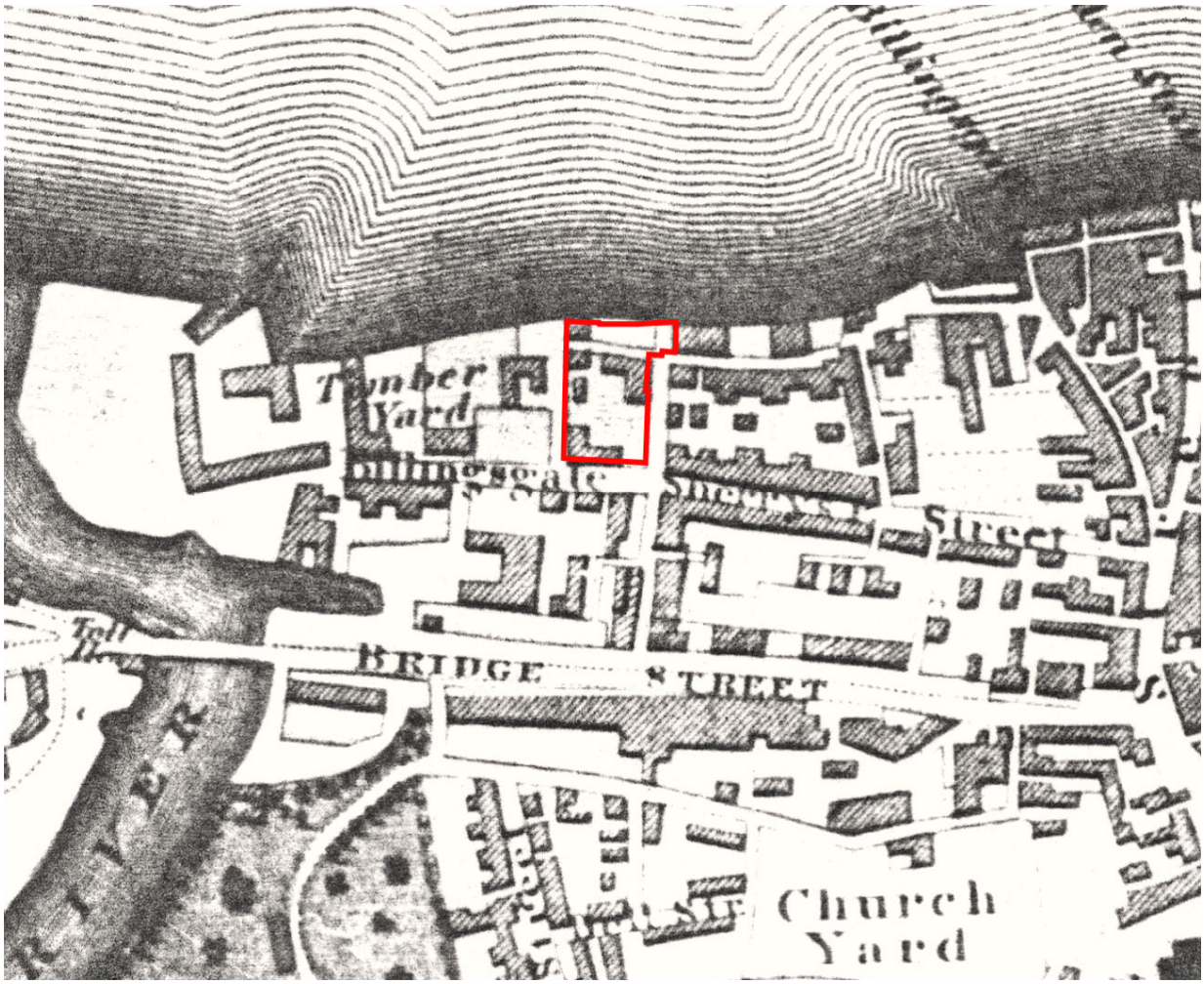


Fig 3 Site location in relation to an extract from Greenwood's *Map of London* of 1824-26

4. Archaeology and planning

4.1 The proposed redevelopment

The Local Planning Authority (London Borough of Greenwich) granted planning permission for mixed-use redevelopment of the site (Planning Ref: 00/1520/F), and also Conservation Area Consent for demolition of the previous buildings.

The development proposal as described in the planning Decision Notice was for: *erection of a six storey building comprising A3 use, 48 residential flats (34 x 2 bed, 12 x 1 bed and 2 x 3 bed) with basement parking, separate riverside buildings, new community centre and playground works*.

The main development was located in the northern part of the site, including an extensive basement primarily for car parking that would intrude into the underlying alluvial deposits and also remove the western end of the former Engine Room (Fig 4). In addition to the main building a four-storey rotunda was proposed to the northeast. Although not basemented the piles for this structure would necessitate removal of much of the remaining floor slab and foundation of the Engine Room.

The southern part of the site is designated within the local UDP for Community Needs and Services. Development here was limited to a new single-storey community centre and adjacent playground refurbishment, in line with a Section 106 Agreement.

4.2 Recommended archaeological fieldwork

The planning consent for redevelopment of the site included a standard archaeological planning condition (No. 10)

Following the conclusions of the preliminary desk-based assessment recommendations were made by English Heritage for archaeological fieldwork, to take place prior to and during development (Feb. 2004). There were two specific proposals:

- The analytical recording of structural remains associated with the Steam Ferry, to include the Engine Room, foreshore ramp and adjacent areas. The recording of these structures was to follow Level 3 guidelines (RCHME 1991), and would cover both structural features and evidence for the operation of the Ferry.

- A programme of pro-active Observation and Recording during subsequent ground reduction. This principally applied to the new basement development across the northern part of the site, although some points were also added to the record of the Engine Room and earlier features in this area during demolition and groundworks.

5. Methodology

5.1 Before starting work arrangements for the archaeological programme (analytical structural recording and observation and recording of groundworks) were set out within a written *Specification* (Compass Archaeology 2004). This also covered off-site processing and assessment and compilation of an illustrated report.

5.2 The archaeological works were carried out in accordance with the *Specification*, and also followed the appropriate standards and guidance produced by English Heritage, RCHME and the Institute of Field Archaeologists.

5.3 The building and structural recording was undertaken in several main phases by the archaeological team, prior to removal of the Engine Room and at agreed points during the demolition programme. This was supplemented by a number of visits made during the final breaking out and removal of the floor slab and parts of the western and southern walls.

The subsequent programme of Observation and Recording during ground reduction within the new basement area followed a broadly similar pattern to the above. The area was monitored by one archaeologist during initial clearance, and throughout the period of bulk excavation to the level of the natural River Terrace gravels. During this programme several periods of more detailed investigation were also carried out by a team of archaeologists on the line of a substantial 18th century timber-lined channel which ran across the full width of the site (Fig 4).

5.4 The deposits and features exposed during the detailed investigation of groundworks were recorded on *pro forma* context sheets (nos. [1] to [34]) and by scaled plans and sections (generally at 1:20 or 1:50), supplemented by 35mm photography. The building/structural recording work on the remains of the Steam Ferry was undertaken on a compatible basis, although with written descriptions appended to drawings rather than in individual contexts.

Levels taken during the fieldwork were derived from OS levels appended to a 1:200 pre-development site plan (Alan Camp Architects, drawing no. 362--; see Figure 4 below). The various areas of investigation were also located with reference to this plan and (during the bulk reduction) in relation to the Secant Pile Layout and Pile Setting Out plans (Bachy Soletanche Dwg No.17868/02; Train & Kemp Dwg No. 9507/01). These plans were in turn related as a 'best fit' to the Ordnance Survey grid derived from the 1:1250 plan (Fig 1).

The records and finds from the archaeological and structural recording project have been allocated the site code: HOF04. The site archive will be ordered in line with the MoL *Guidelines for the Preparation of Archives* and will be deposited in the Museum of London Archaeological Archive.

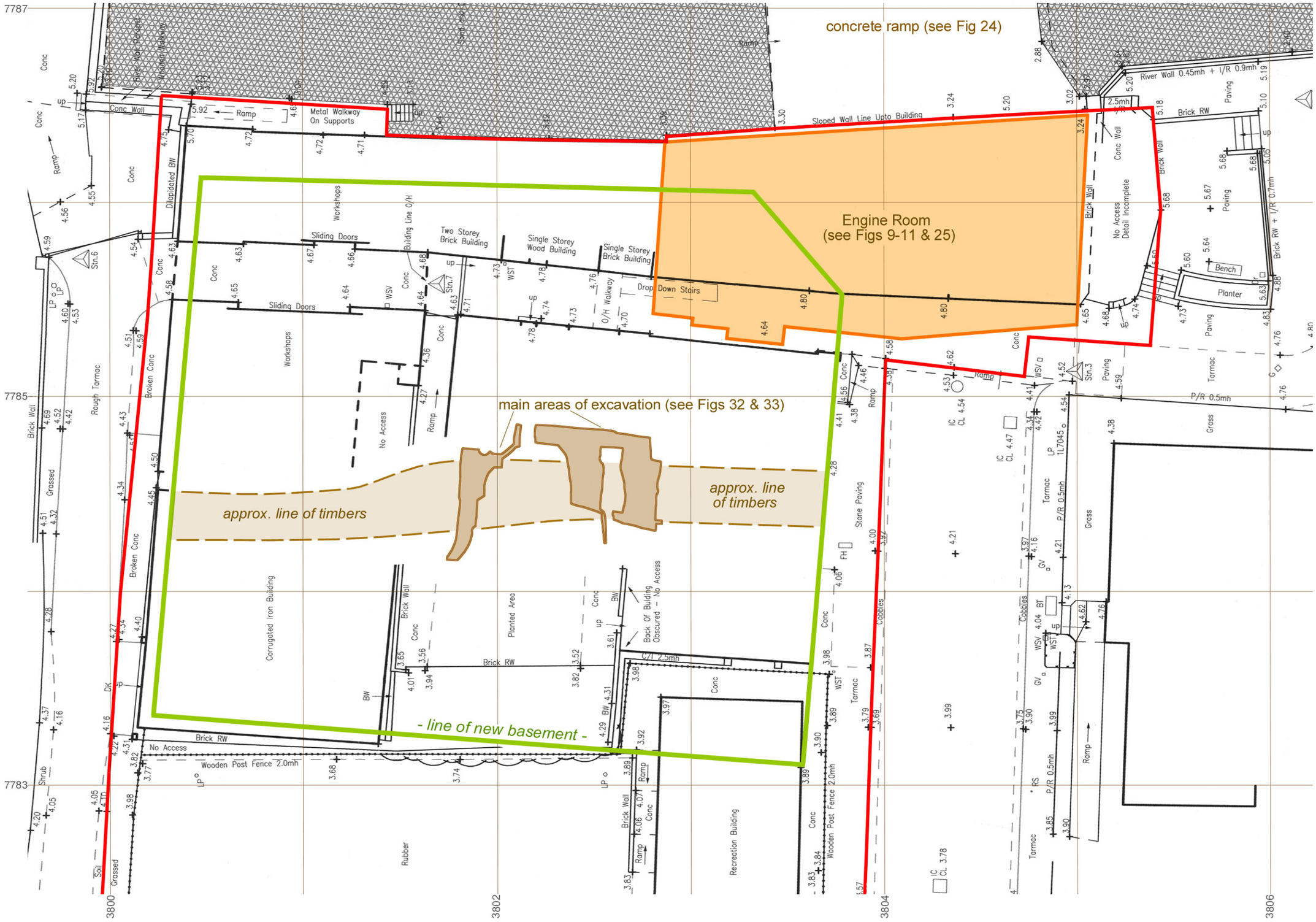


Fig 4 Plan of the northern part of the site, showing the main areas of investigation in the new basement and the Steam Ferry Engine Room to the northeast *(based on a Site Plan by Alan Camp Architects. Dwg no.362--)*

6. The site investigation: introduction

The following text is divided between the two main areas of investigation, in line with English Heritage recommendations and the subsequent *Specification* – a survey of the remains associated with the Greenwich Steam Ferry (Section 8), and the records made during bulk ground reduction (Section 9). There is also preliminary note below (7) on the earlier 19th century remains found below the Engine Room.

Investigation of the Engine Room and associated areas formed the first phase of work, between 8th March and 21st May 2004. There was also some observation during this period of clearance work in the new basement area. The main phase of recording during bulk reduction followed construction of the basement diaphragm wall, and took place between 2nd August and 16th September.

7. The 19th century drain *(Figs 5 & 6)*

The earliest remains recorded within the northeastern part of the site related not to the late 19th century Engine Room but to an earlier outfall drain, probably constructed in the 1840s or 50s. This followed the north-south line of Horseferry Place and was exposed following removal of the Engine Room foundation slab. It is possible that this represents part of a sewer overflow system, discharging directly into the river (Chambers 2004).

The drain comprised two main elements, with a change in construction presumably due to the proximity of the river:

- To the south (landward) a brick-lined structure which ran back some 2.5m beyond southern wall of the Engine Room but was then closed off by a brick blocking wall. The internal width and height were at least 1m, widening to the north although the base of the drain appeared to be more or less level (*c* –0.74m OD). The brickwork was solidly mortared though quite mixed, with at least some yellow stock and frogged brick.

- To the north there were two large and apparently identical cast iron pipes, of 760mm (30 inch) internal diameter. The pipes sloped away at between about 20º and 28º, on the eastern side more steeply although possibly as a result of disturbance from the later Engine Room construction. It is likely that there are further pipes *in situ* to the north, although to the east the direct continuation would clearly have been removed by excavation for the counterweight shaft.

The junction between the two sections was formed by a widened brick structure, up to 3m across and with side walls increased from *c* 0.23m to 0.40m. There was a central brick spine to support the roof, although the upper part had been destroyed by the Engine Room construction and the exposed interior of the drain infilled with made ground and brick rubble.

The probable mouth of the drain is shown on the Ordnance Survey 25-inch map of 1867-9 (Fig 5), located on the foreshore some 30m north of the river wall. This is not visible today and (allowing for some inaccuracy in the plan) it is possible that it is covered by the concrete ramp of the Steam Ferry.

One of the iron pipe sections was recorded in greater after removal. The overall length was 2.91m, external diameter generally 0.815m and wall thickness *c* 27mm. Adjoining pipes would have been fixed by a simple and traditional socket joint: one end of the examined pipe was quite plain, whilst the other end flanged outward so as to create an internal rebate some 130mm deep. No maker's mark or other information was visible on the pipe.

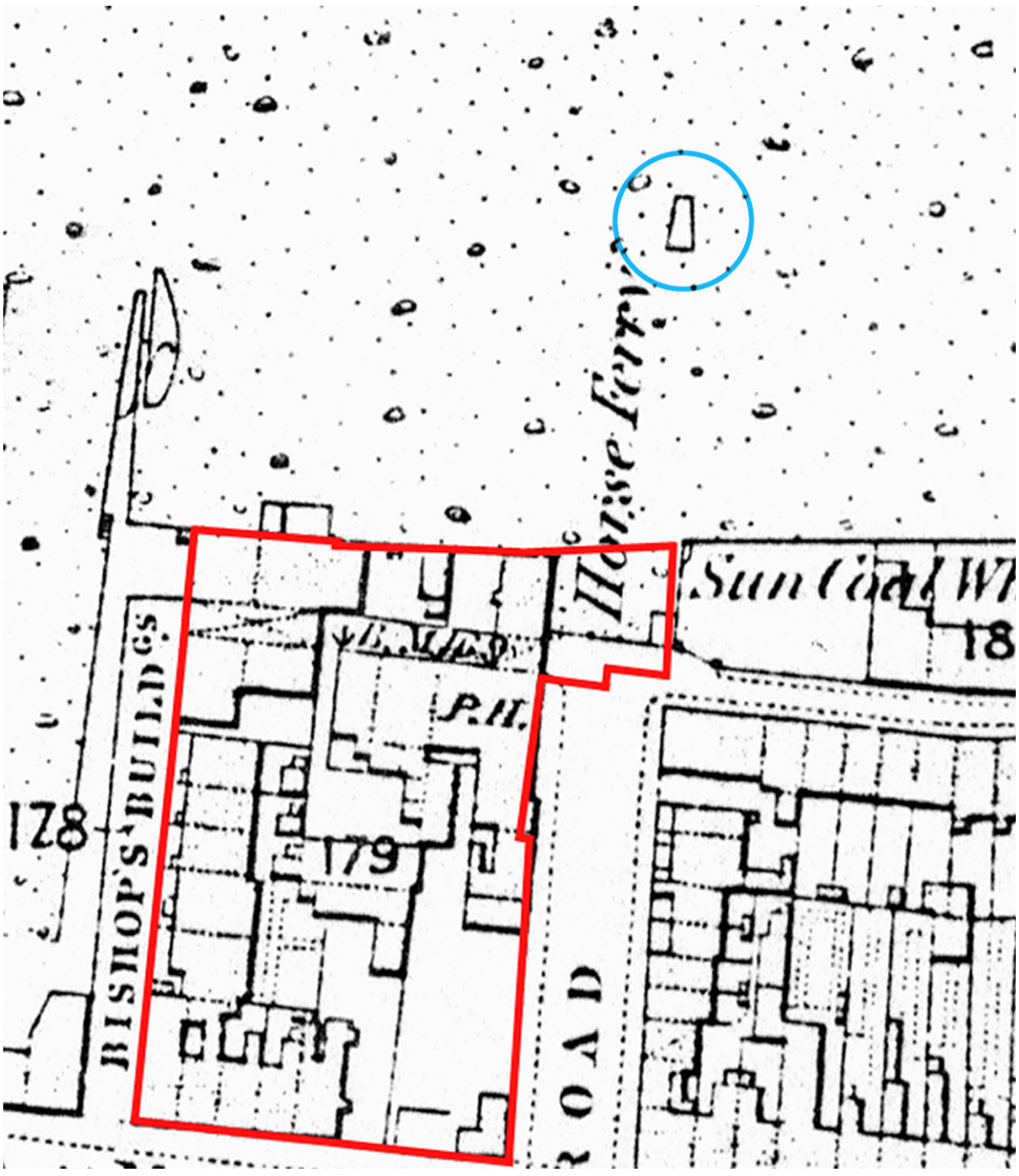
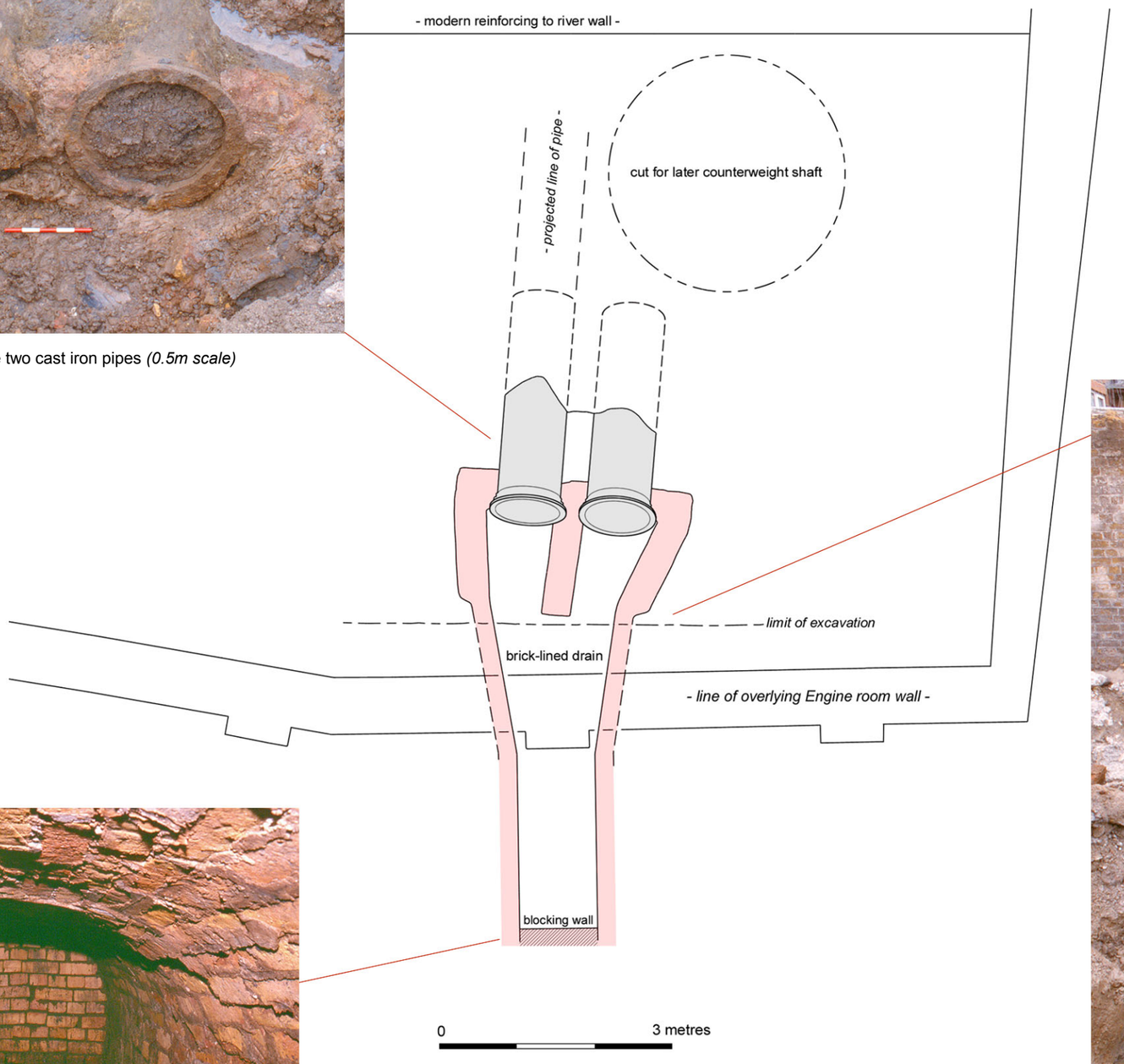
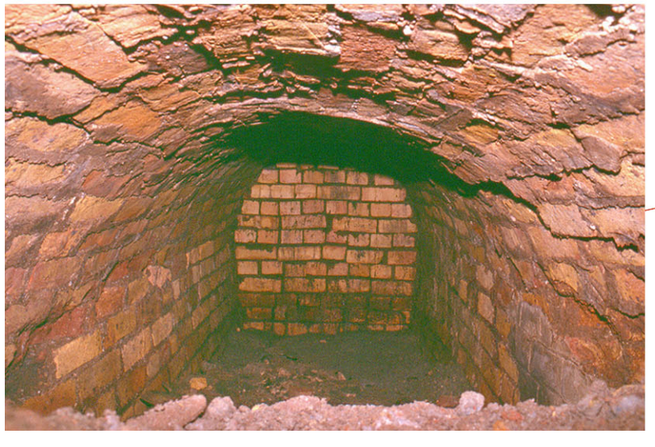


Fig 5 The Ordnance Survey 25 inch first Edition map of 1867-9, showing the site boundary and on the foreshore (circled in blue) the probable outfall of the drain illustrated in Figure 6

The flanged southern ends of the two cast iron pipes *(0.5m scale)*





Below: view looking south along the line of Horseferry Place with drain at base of frame, below the southern wall of the Engine Room

Fig 6 The blocked brick-lined drain and adjoining cast iron pipes which were found below the Engine Room *(0.5m scale)*

8. The Steam Ferry

8.1 Background

The Greenwich Steam Ferry was opened on 13th February 1888. The engineers were Clark and Standfield, a company which survives today as part of the Lobnitz Marine Holdings Group. The Ferry had three basic elements – two purpose-built steamers, and on either shore a landing stage and two carriages connecting the stage with the riverbank. It is recorded that each landing stage was some 70 feet long by 50 feet wide, with a dead weight of 270 tons, and the carriages 60 feet by 23 feet wide with a weight of 125 tons (*The Engineer* 1892, 487). To cope with the tidal regime both the landing stages and carriages were designed to move on wheels and rails up and down an inclined concrete ramp some 15m wide, with the stage synchronised to the movement of the tide. There were four sets of rails on each ramp, laid on a standard railway gauge of 4 feet 8½ inches: the landing stage had sixteen pairs of wheels whilst each of the carriages had twelve.

The power for this operation was provided by stationary steam engines on both sides of the river, located within engine rooms immediately behind the river wall and below the adjacent roadway. The contemporary account (*ibid*) records that the travelling carriages were linked by 4-inch steel wire cables to pair of 16 inch cylinder coupled engines, whilst the much slower-moving landing stage was hauled by a separate 6½ inch two cylinder engine. The cables passed through openings in the upper part of the river wall and were wound onto geared drums. To assist in the operation of the carriages the cables were also coupled to counterweights of over 20 tons, which were suspended within deep shafts inside each engine room.

The steam was supplied by three boilers of locomotive type, reportedly producing up to 140 lb. per square inch although seldom used to capacity. However, with the exception of the source quoted above and Figure 8 below there do not appear to be any detailed contemporary records of the Steam Ferry operation.

The ramp with its four sets of rails is clearly shown in Figure 7, whilst the Engine Room lies immediately to the south (the northeast corner of the present site, outlined in red). These arrangements are also shown in diagrammatic section in Figure 8, with one of the carriages on its wheeled bogies drawn up to the shore. The section also shows one of the two counterweight shafts below the Engine Room floor. Each shaft was nearly 50m deep and about 3m in diameter.

The Steam Ferry did not prove a success – partly through competition, although it is arguable that the system was just too complex – and having been suspended in the early 1890s was finally closed around 1900. It is likely that the principal machinery, boilers, and other equipment were removed soon after this, although some elements such as the external rails may have survived longer.

Sometime after 1914 a single storey building was constructed on the ground above the Engine Room, and there is also a reference to the use of the Room itself as a wartime air raid shelter. More recently the inside face of the riverside wall was heavily reinforced with concrete. This latter has obscured all internal features, and based on the 1892 description of the river wall (*ibid*) probably extends at least 0.5m over the original floor.

However, the approximate positions of the cable ports can still be seen on the external face of the wall.

8.2 The Engine Room – general description

The Engine Room survived up to the present day and remained a structure of some significance, although not listed or scheduled. In general appearance it formed a single large chamber, devoid of *in situ* machinery but with a number of features indicating its former use. Internal measurements were about 20m by 9m in plan, tapering at the western end to just over 7m. The main standing structure was of solidly mortared yellow stock brick, apparently frogged, over a concrete base. The room was divided into a series of bays east to west by more or less centrally placed iron pillars, supporting beams and a roof of the same material.

The Engine Room floor was also constructed at two levels, with the finished surface in the eastern part at about 1.80m OD and the western end (slightly less than one-third of the overall area) some 0.85m to 0.90m lower. These areas were separated by two steps that ran north-south across the room: the roof height was also consequently higher to the west, up to 3.50m against 2.65m to the east. The other most notable feature of the floor surface was the two open counterweight shafts, located within the northern part of the upper area and each about 3m in diameter.

Although the Engine Room was only in use for about twelve years (1888 to *c* 1900) some changes may have been made to the operation or layout: for example, it is known that the Ferry was suspended in the early 1890s.

The following sections describe the Engine Room in more detail, and broadly in terms of its constituent elements from the base up – foundation slab, evidence for machinery below and above floor level, roof support and construction, *etc*.

8.2.1 The foundation *(Figs 12 & 13)*

The Engine Room was founded on a continuous slab of concrete, which during development works was broken out to the west and south (although not exposed to the north in the vicinity of the river wall). Where observed the concrete was generally about 1.0m or 1.7m thick, this variation simply reflecting the two different floor levels (west to east) from a formation level that was more or less flat. There was no proportionate increase in thickness to the west, and in fact one area of about 2.9m by 2.3m in the southwest corner had a shallower base and was only about 0.7m thick. It is not certain whether this extended under the adjacent walls, and there is no obvious explanation for the change.

Although not reinforced the slab was generally very solid. The concrete mix was fairly coarse but homogeneous, with medium flint gravel aggregate plus scattered larger flints and brick rubble in a few areas. There was a finer surface screed (*c* 40-60mm thick where observed), and in some areas a looser basal layer up to 340mm thick.

Deposits immediately below the slab (with the exception of the earlier drain described in 7. above) varied from a 'foreshore' type material of mixed gritty or sandy silt with a few fragments of shell and ceramic building material to a solid grey-green alluvium with occasional organic material. Where present the first of these deposits was quite shallow (generally <0.1m) and probably associated with the construction, thereafter giving way to the sterile alluvium.

The main slab was therefore constructed as a raft over alluvial deposits, and did not (except probably to the north below the river wall) make contact with the underlying River Terrace gravel. This latter deposit was exposed during excavation of the earlier 19th century drain (*cf* Section 7.), its surface recorded just over 1m below the base of the concrete slab (*c* –0.85m OD).

8.2.2 Ground floor layout and features *(Figs 9 & 10)*

The differing floor levels in the Engine Room reflect the two basic elements of steam power: the lower western end evidently forming the boiler area (originally about 7m by 8m in plan), whilst the larger and higher level to the east contained the principal machinery. It was obviously desirable that the engines themselves would be more or less in line with the external cable ports and foreshore ramp.

The boilers

Although defined by the general layout of the Engine Room, the position of the boilers is also reflected in two sets of discrete features:

- At floor level on the southern side there were three circular features within the concrete. The western of these was heavily disturbed and the eastern had been partly removed by a small drain that probably postdates the operation of the Engine Room. However, the centre feature survived as an unbroken circular trough, just over 1m in external diameter and about 100mm wide by 60mm deep.

  It seems clear that these mark the positions of supporting rings for one end of each of the three recorded locomotive-type boilers (Fig 13).

- Within the adjacent southern wall and in line with the above features were three circular shafts, each 1.30m in diameter and between 1.06m and 1.66m deep. The shaft linings had been prefabricated from iron plate riveted together to form sides and end, and then built into the wall during construction.

  It is assumed that the shafts were to give access to the smokebox and tubes at the front end of each of the boilers. It is not known whether the markedly shallower depth of the western shaft indicates a different (?smaller) boiler.

There was no evidence for coal storage within the boiler area (or elsewhere in the Engine Room), although it is possible that there were one or more bunkers set against the now-obscured northern riverside wall, in proximity to the fireboxes. However, it seems likely that the bulk of the coal was stored at ground level. Similarly, there was no sign of a base for a chimney: nor is this indicated on the contemporary OS map (Fig 7) although it does appear prominently in the diagrammatic section (Fig 8).

A few other features in the boiler area are worth noting, although not fully understood. One of these was a metal shelf some 460mm square that was attached to the base of the westernmost roof pillar, some 0.6m above floor level. The western end wall also exhibited some evidence – a solitary metal rung 0.39m wide and 1.5m above the floor (Fig 9), and about a metre to the south two offset slots *c* 150mm square and 1.24m to 1.73m above floor level. Given that this was the only area from which the Engine Room could have been accessed, it is quite possible that both features relate to a ladder or stairs.

The engines

The upper floor area retained considerable evidence for the siting of machinery, including a central flywheel pit and a series of symmetrical features to the east and west that presumably relate to the coupled engines that moved the travelling carriages. The features included further wheel pits, a considerable number of bolts and rebates up to 250mm deep set into the floor surface, and various pipes and channels.

The dimensions of the central flywheel pit (2.3m long by 0.8m deep) suggest that the wheel itself was up to 2.2m (just over 7 feet) in diameter: it is evidently this feature, partially obscured, that can be seen in the contemporary cross-section (Fig 8). On the same basis the smaller pits either side of the flywheel would accommodate wheels with a diameter of about 1.15m.

The various pipes in the Engine Room floor included two of 25mm (1 inch) internal diameter which had been laid around three sides of the presumed engine bases. Each pipe had six junctions (three to the east and three to the west) to take vertical feeders from the engines themselves, and then ran northwards apparently to discharge into one of the counterweight shafts. Elsewhere to the east there is evidence for other equipment, including several features with adjacent pipe channels that may have supported tanks. The circular impression in the southeast corner included a central hollow with a residue of heavy oil, which perhaps indicates storage of this material.

Evidence for the separate two-cylinder engine that was attached to the landing stage is less obvious. However, there are a number of features in the northern part of the area that may relate to the engine and its associated worm gearing (this latter to give the very slow rate of progress required by tidal movement). It is possible for this reason that the engine itself was set out at right angles to the two coupled engines. It has been suggested that the machinery may also have included an electric generator (Chambers 2004).

Above floor level there was limited evidence for the operation of the Engine Room, notably the two sets of brackets attached to the each of the central roof pillars (*cf*. Fig 12). These were identical and both south-facing, set just behind and above the projected line of the east-west crank that held the flywheel. The possible route of feed pipes from the boilers was also marked along the southern wall of the Engine Room. To the west this included a group of holes in a pattern some 0.75m square (Fig 13), and to the east pairs of projecting bolts set vertically *c* 0.25m apart and at intervals of about 2.4m.

The shafts

At floor level within the northern part of the main Engine Room there were three shafts (Fig 9). The larger of these, to east and west, are readily identifiable as the counterweight shafts that complemented the operation of the coupled engines and travelling carriages. It is likely that the drums for the respective cables would have been sited directly over the shafts (again as indicated in Fig 8), although no direct evidence survived. The tops of both shafts were surrounded by a circle of loose fill some 150mm to 200mm wide to which the concrete floor base formed a rough outer edge, which would suggest that a substantial supporting ring or similar has been removed.

The contemporary description gives the depth of both counterweight shafts at over 145 feet (44.2m) below the roadway (*The Engineer* 1892, 487). In recent years the eastern

shaft has been dived and subsequently plumbed to the same depth from within the Engine Room – so in fact nearly 3m lower than the roadway (Chambers 1998, 19).

The counterweight shafts were of similar although not identical construction. Both were lined by a series of cast iron rings, which at top and bottom were flanged inward and securely bolted together (Fig 18). However, the external diameter of the western shaft at ground level was 2.75m (9 feet), as against 3.05m (10 feet) for the eastern shaft. The depth and thickness of the lining rings were otherwise almost identical – respectively 1.53m and 38mm. Both also had an internal horizontal band at their mid-points (Fig 16): this could not be closely examined but no corresponding external feature was exposed when the adjacent floor slab was removed. Thus it seems most likely that the band formed part of the original casting, to give added strength to the ring.

At floor level there was one further slight contrast between the shafts. To the east the exposed ring had rectangular bolt holes of *c* 30mm by 38mm in a plain flange, whereas the slightly smaller ring to the west had circular holes of *c* 32mm diameter in a flange that had been cast with brackets on its underside.

Following excavation of the floor slab around the western counterweight shaft a more significant feature came to light. The smaller iron ring (and that directly below) were set within a larger ring, apparently identical to those used in the eastern shaft (Figs 16 & 17). The reason for this is unknown, although it may be noted that the contemporary account given in *The Engineer* (1892) mentions that the shafts increased in diameter by 18 inches from top to bottom.

Between the two counterweight shafts was a smaller and quite different shaft, some 1.84m (6 feet) in overall diameter. This was recorded in plan and subsequently during reduction of the adjoining slab to a depth of about 0.9m. The interior remained full of water but was plumbed to a depth of about 5.8m.

The shaft lining was constructed from iron plate formed to a cylinder and close-riveted, not unlike the inspection casings set in the southern wall of the boiler area (see above). The shaft included an integral top plate with a central cut-out measuring *c* 0.9m (3 feet) square, and rivet heads cut flush with the external surface (Fig 19). Internally the shaft was divided into two halves by a north-south metal plate, fixed to the adjacent lining. The top of this was just below the central cut-out: the base was not seen although the plate extended down for at least 1m.

The purpose of this third shaft is unknown although it may well have supplied the fairly large quantities of water that would have been required by the boilers. In operation this might not be easily obtained from the counterweight shafts, whilst the tidal and sometimes muddy river would not be an attractive source.

Interior decoration

Close examination revealed that the Engine Room once had a three-part colour scheme: the exposed wall surfaces had been limewashed white, the iron pillars and roof beams given a coat of red oxide paint (Fig 12 *top left*), and the underside of the roof itself painted black. There was no evidence that the floor had ever been other than plain concrete; nor was there any evidence for lighting on the walls or roof – either gas or electric.

8.2.3 Roof construction and access *(Fig 11)*

The principal roof support was provided by five north-south iron beams. These were set on granite blocks within the southern wall (Fig 15), although obscured by modern concrete reinforcing works to the north. All but the westernmost beam were also reinforced by intermediate iron pillars, which were attached by brackets at the top and to a separate metal base set into the Engine Room floor (Fig 12).

Each beam was prefabricated, formed from a number of pieces flat and right-angled iron that were close-riveted together (Fig 23). No single piece was the full length of the finished beam: the junction between the two vertical plates was given additional bracing, but the horizontal (top & bottom) plates appear simply to have abutted. However, it is clear that the junctions were staggered so as to avoid and point of weakness.

The roof beams rose slightly from south to north, by about 280mm, to give a clear camber to the overlying roof. Along the southern wall there was also a slight (and perhaps unintentional) rise of *c* 160mm from east to west.

The overlying roof was basically corrugated, constructed from a series of iron sheets of roughly U-shaped cross section that were laid at right angles to the supporting beams and then riveted together (Figs 20 & 21). The troughs within the upper surface of the completed roof were then filled with concrete, to create a continuous surface flush with upper level of metalwork.

This construction stopped at the westernmost beam. The roof covering within the final bay – an area up to *c* 3.5m by 7.5m in plan – was much less substantial and partly collapsed during demolition of the overlying building. However, it is clear that this was a later structure, quite possibly postdating the operation of the Ferry. Although there is almost no evidence for the original arrangement some points can be made:

- It is clear from its very regular western edge that the main corrugated roof never covered this area.
- Original features are more or less limited to one fairly small and disused rebate in the southern wall, near the southwest corner of the room (Fig 13).
- The 1894-96 Ordnance Survey map (Fig 7) appears to show a building covering this area. However, this could mean that the area ground floor area was open, which would make sense given the heat generated by the three boilers.

  It is also clear that the only access to the Engine Room would have been in this area, probably reflected in the solitary metal rung and adjacent slots seen in the western wall. The modern entrance, through a hatch near the northeast corner of the Room, was a later addition cut through the thickness of the roof.
- At some point following the closure of the Ferry the boilers and engines were removed. They could have been broken up *in situ*, but it is at least as likely that they were lifted out through this open area.
- The surviving section of roof within the southern part of this bay was quite poorly constructed, with a couple of reused girders supporting a plain iron sheet and an overlying wall. The various elements did not appear to have been fixed in position by any rebates, rivets, *etc.* (Fig 22).

8.3 Surface features above the Engine Room *(Figs 24 & 25)*

The main part of the Engine Room lay directly below the ferry approach, and following demolition of the later buildings in this area the previous surface arrangements were exposed. The area survived largely intact, although cut away at its northern extremity by modern concrete reinforcing works to the river wall and disturbed along its southern boundary by earlier 20th century building works.

There were two distinct phases of development over the Engine Room, as described below and shown on Figure 25:

(1) The first development is represented by what appear to be bases for two north-south aligned buildings. The southern extents were not established but dimensions were about 3.75m wide by at least 6m in length. In each case the extant structure consisted of pairs of angled iron girders riveted to the roof, in such a way as to create a central slot some 15mm wide by 78mm deep (Fig 27). The countersunk rivets were set at a centre spacing of just over 0.5m (20 inches).

It is assumed that these features would have supported a planked timber superstructure. Within the area of the western building there were also three north-south impressions, 0.17m wide and 1.13m apart, that may indicate joists for a raised floor.

(2) The second and more substantial development of the area over the Engine Room consisted of a series of rails set into four tracks, with the whole area then given a woodblock surface flush with the rails (Fig 28). Sections of the previous iron footing were cut through to accommodate the rails (*cf*. Fig 27): in a few places the base of the first structure was also sealed by a mortar layer up to 30mm thick into which the rails were impressed.

The woodblocks were quite uniform (?pine, *c* 230mm by 80mm in plan and 145mm deep) and were set in bitumen, overlying both the earlier building remains and the splayed bases of the rails.

The plan that was now created is clearly shown by the Ordnance Survey 60" map of 1894-96 (Fig 7). The rails were laid at standard 4 feet 8½ gauge and in line with those on the foreshore ramp (see below 8.5), and although in fact some 1.7m higher appear in plan to form a direct continuation.

Although clear enough in plan each of the developments described above raise important questions concerning function. The structural bases may reflect a change of plan during construction, or subsequently after the recorded period of closure in the early 1890s. However, it is more likely that they form the remains of temporary buildings put up *as part of* the construction, for accommodation and/or storage. The eastern building in particular is centrally placed on the line of the main approach, which hardly seems possible for a working ferry.

The four sets of rails above the Engine Room would therefore have been laid as part of the original construction, probably close to the end of the job. However, they do not appear to have any practical use and must have been included simply to form a decorative continuation of the rails on the foreshore ramp. Several points make it clear that they could not have directly borne traffic:

- The rails were set flush with the adjacent woodblock surface, with no room for an overlapping wheel flange. This is even better illustrated at the point to the southwest where two rails cross, without a cut-out for a flange in either rail (Fig 29). There is a continuous shallow groove some 20mm deep which is present in all the rails, but this would hardly be adequate to hold a wheel in position.
- The rails do not appear to have been made for load-bearing use: in cross-section the main body consists of a strip of metal *c* 100mm high and 10mm thick, contrasting markedly with the surviving rails on the foreshore ramp (Fig 30).
- In a few places the rails were bedded in shallow (<30mm) mortar layer, and were otherwise held in place by the surrounding woodblocks. There were no brackets or other fixings onto the underlying roof.

8.4 The external river wall *(Fig 26)*

Although wholly obscured within the Engine Room by modern concrete the external face of the river wall retains considerable evidence for the operation of the Steam Ferry.

The wall face is dominated by three rectangular iron panels, each *c* 1.26m by 3.10m and 25mm thick. These are bolted onto slightly larger iron frames that are set into the wall itself. The relatively small intervening areas and the main wall sections to east and west are constructed of finely coursed engineering brick. Set into the wall above this level (except at the western end) is a continuous iron beam some 0.26m high, the top of which is more or less level with the woodblock road above the Engine Room and presumably represents the original surface. The modern river wall has been built up in concrete and is now about 0.7m higher.

The three large panels are in direct line with the two counterweight shafts and smaller central shaft recorded within the Engine Room, and clearly contained the ports through which various cables passed to the landing stage and carriages. These openings are now sealed over by riveted iron plates so an exact picture is not available, although it is assumed that the central cable(s) ran to the landing stage and the outer cables to the moving carriages. The central panel has several areas of blocking which would indicate at least two cables, and the same may have been true of the outer panels – although these have a single blocked area near the top it is about 1.5m long, and on the east covered by three separate plates.

One question remains with regard to the three iron panels. As described these appear to be bolted onto a frame, which would indicate that the river wall was originally constructed with corresponding openings at these points. Attachment of the panels would have created a continuous external face (excepting the cable ports) but inside the Engine Room would have left substantial bays within the upper part of the northern wall, probably up to l.6 m by 3m in plan. The explanation for this is not clear: however, it is worth noting that the contemporary section (Fig 8) shows some form of drum or wheel at exactly this point, rather than a solid wall extending up to ground level.

8.5 The foreshore ramp *(Fig 24)*

The foreshore ramp is nearly 15m wide and was recorded for over 63m to the lowest prevailing tide. The actual length is probably just over 100m, based on the contemporary account in *The Engineer* (1892). The surface is inclined to the north at a constant 1:10 slope, from a maximum adjacent to the river wall of *c* 3.25m OD.

The ramp is constructed of solid concrete, and in at least two places where more heavily eroded can be seen to be reinforced (*cf*. Fig 24). The structure generally rises about 0.5m above the adjacent foreshore: it is recorded that the sides are 5 feet deep (*c* 1.5m), and the main body 3 feet (0.9m: *ibid*).

As already described (section 8.1) four sets of rails were laid along the ramp to support the landing stage and carriages on a standard railway gauge of 4 feet 8½ inches. These have been removed for almost all the observed length, only appearing at the water's edge at particularly low tides (Fig 30). However, the rails had been supported on longitudinal girders that were set into the ramp more or less flush with the concrete surface, and thus survived almost intact. The top of each girder was *c* 160mm wide and retained two offset lines of rivets that had once held the rails, with rivets in each line placed at 305mm (12 inch) spacing (Fig 31).

The foundation girders were not were not fully exposed at any point but probably have an H-cross section, with the base matching the top. There was also some suggestion that the uppermost level of concrete on the ramp may have been laid separately, perhaps as a finer mix. This would help to explain how the rails were attached, if the girder was already in position but with its upper section still exposed.

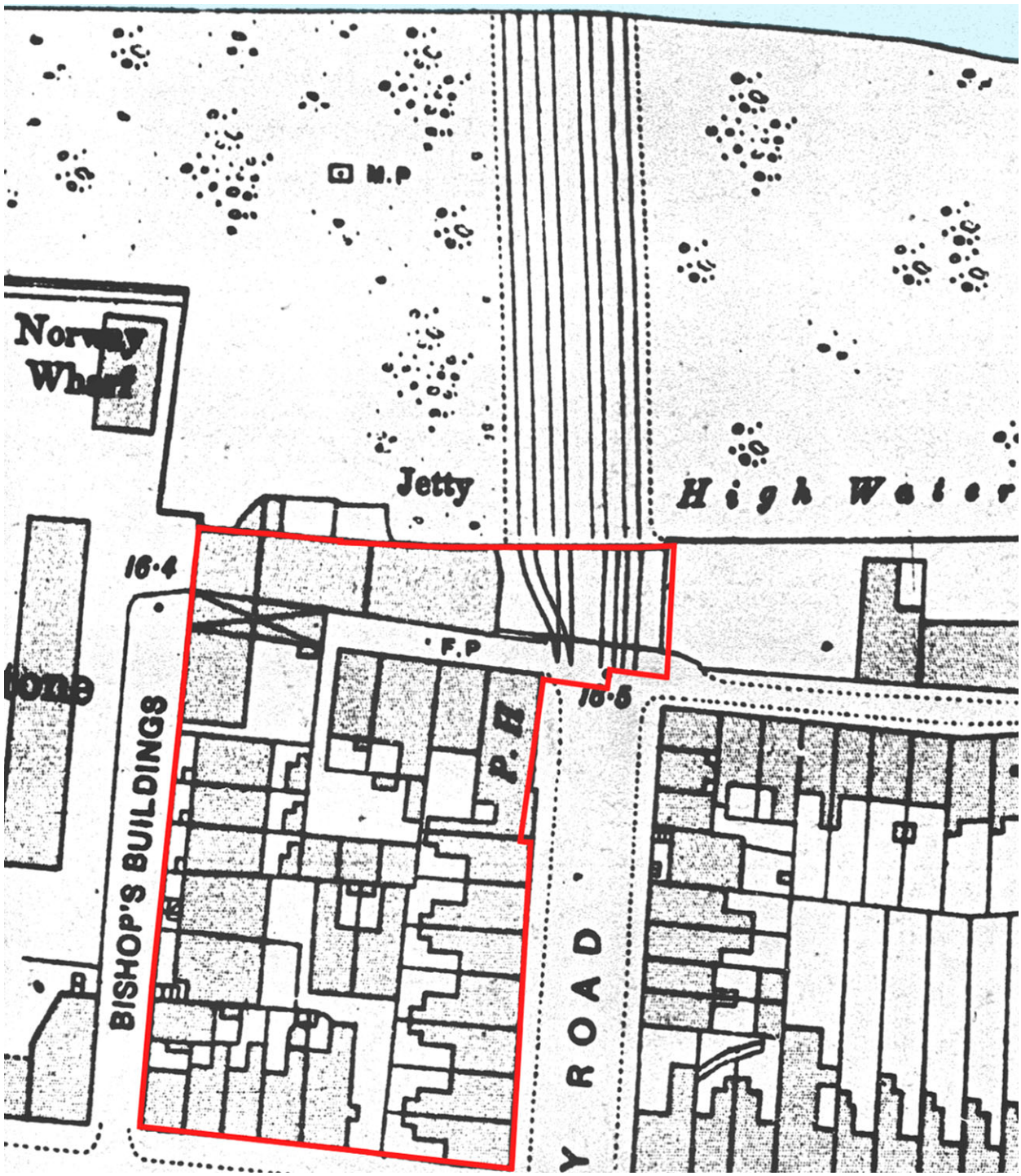


Fig 7 The site in relation to the Ordnance Survey 60 inch map of 1894-96, showing the foreshore ramp and four set of rails of the Steam Ferry

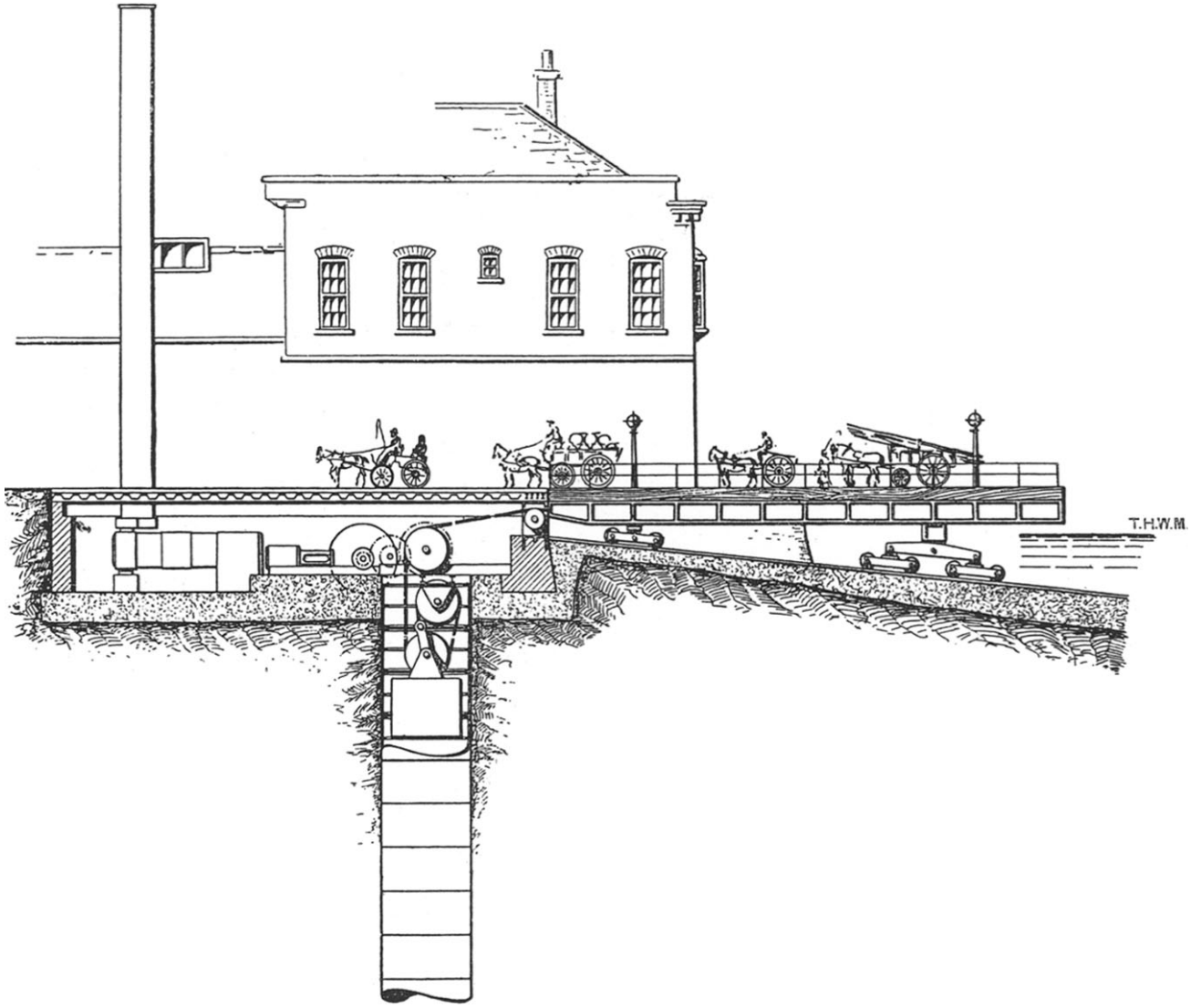


Fig 8 Section through the Engine Room and adjacent ramp of the Steam Ferry, originally published in *The Engineer* of December 2nd 1892. Traffic is shown moving from the carriage onto the adjacent roadway, which is constructed directly over the Engine Room.

The section includes a number of valuable points although it is not wholly accurate. The accompanying text suggests that arrangements were the same on both sides of the river, but it is possible that this drawing more closely reflects the layout on the north bank

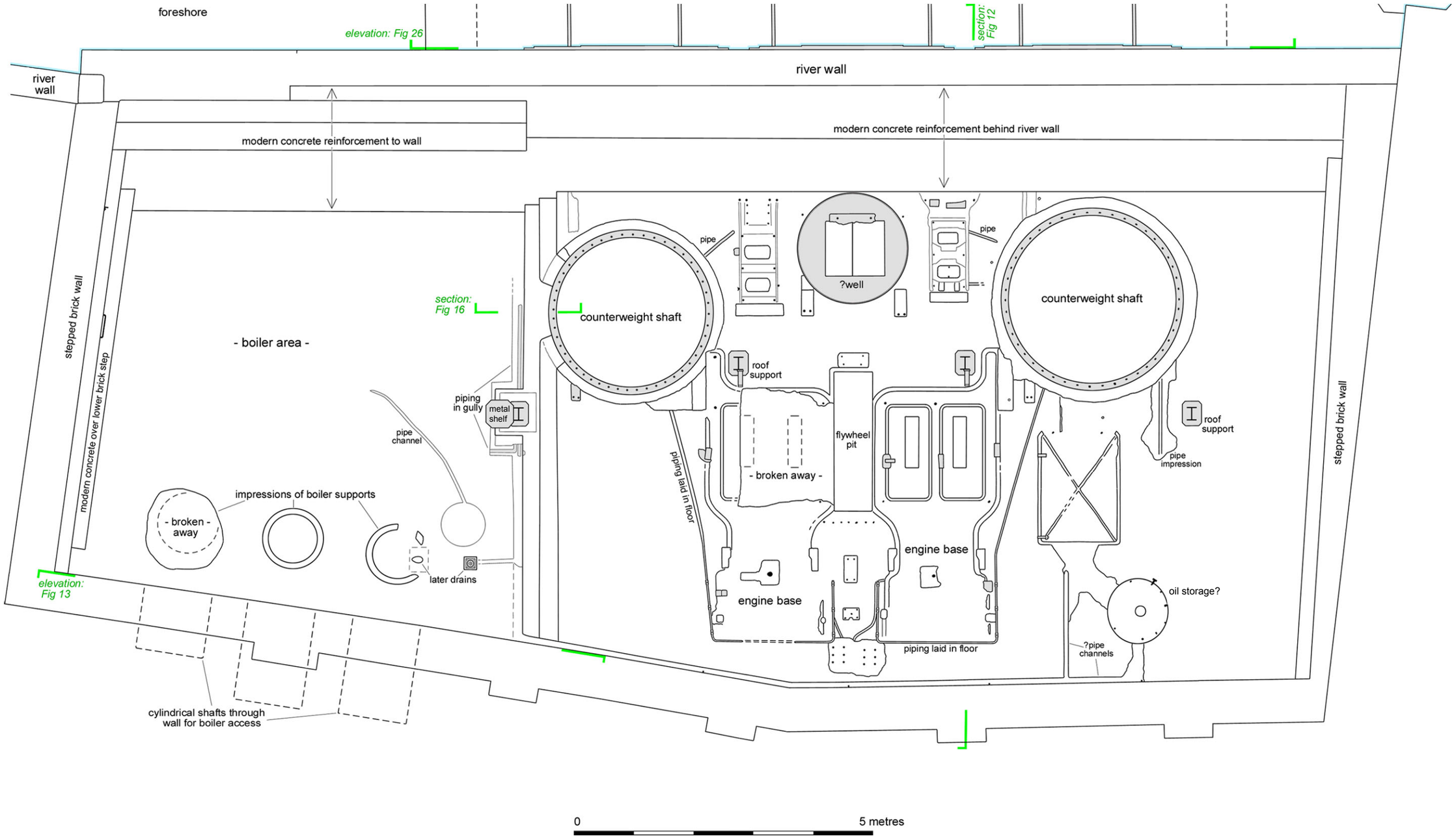
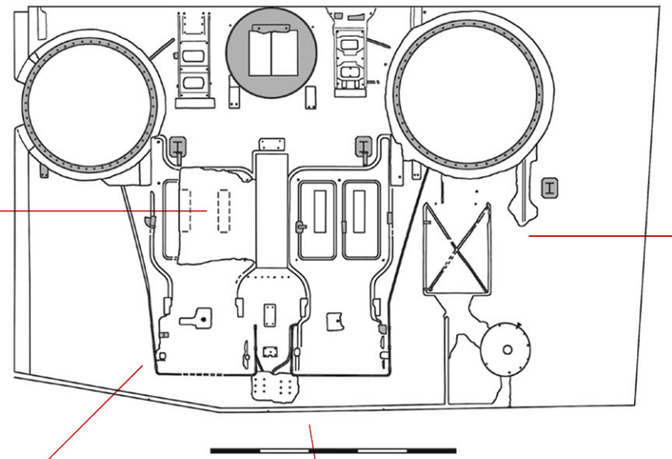


Fig 9 Floor plan of the Steam Ferry Engine Room, also showing location of sections and elevations. Metal features are shown in greyscale



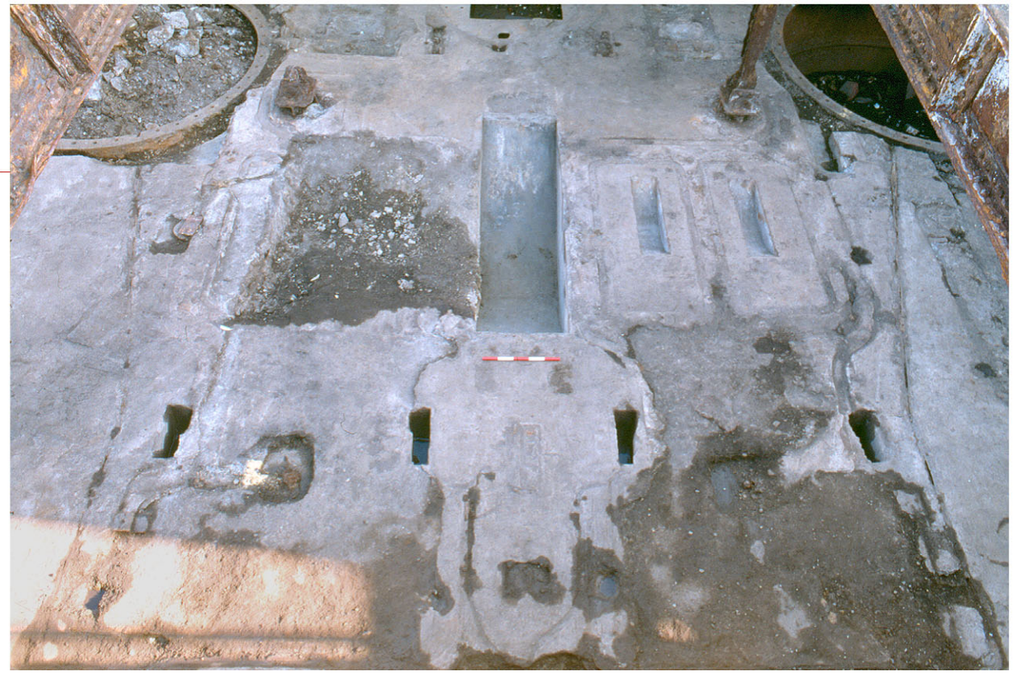


Fig 10 Views of the Engine Room floor, including at top left detail of the flywheel pit *(0.5m scale)*

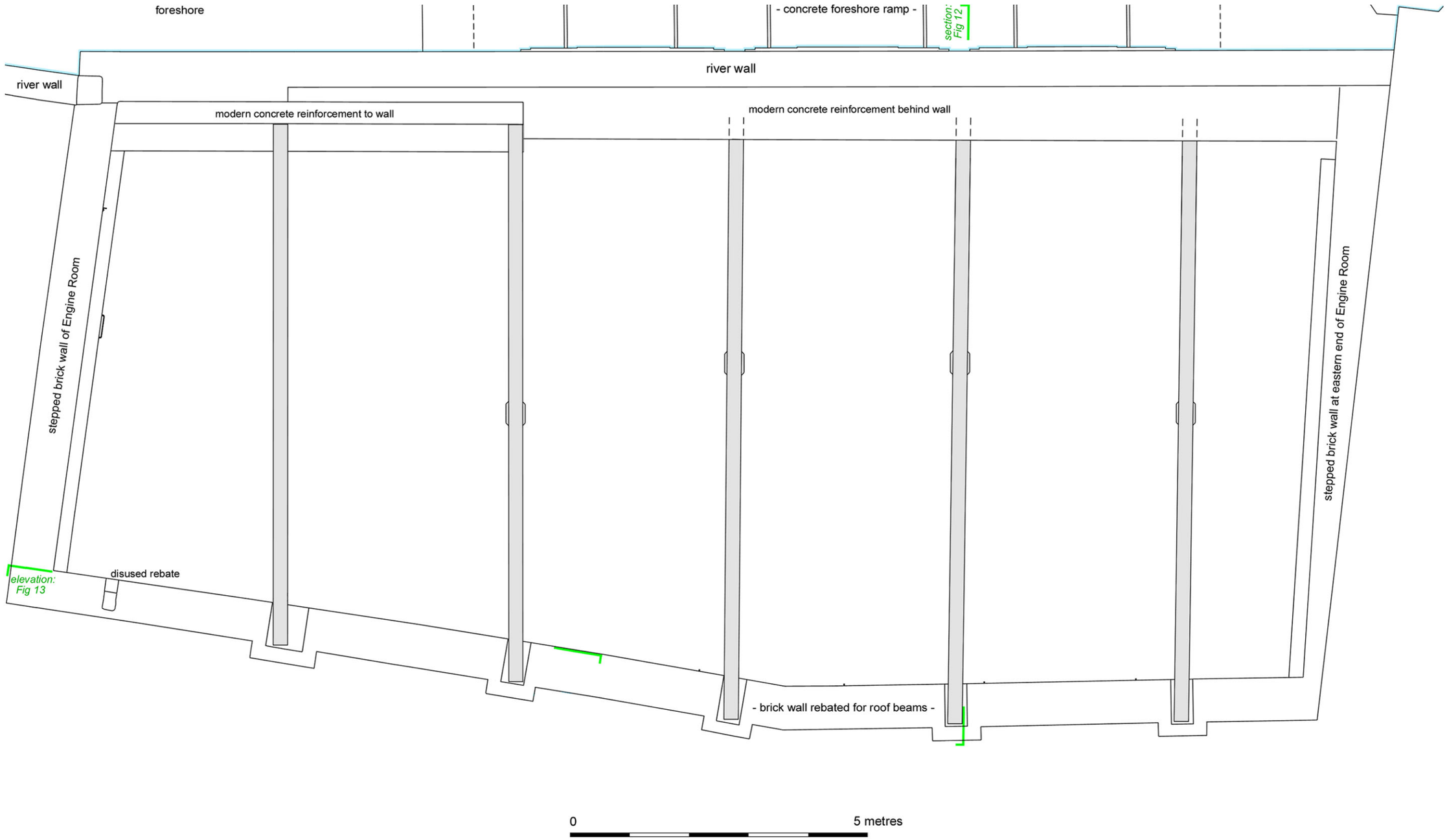


Fig 11 Plan showing the principal roof beams (shaded) within the Engine Room

Detail of the southern end of the beam: note surviving traces of red oxide paint

one of the two sets of brackets attached to the central roof pillars

S

N

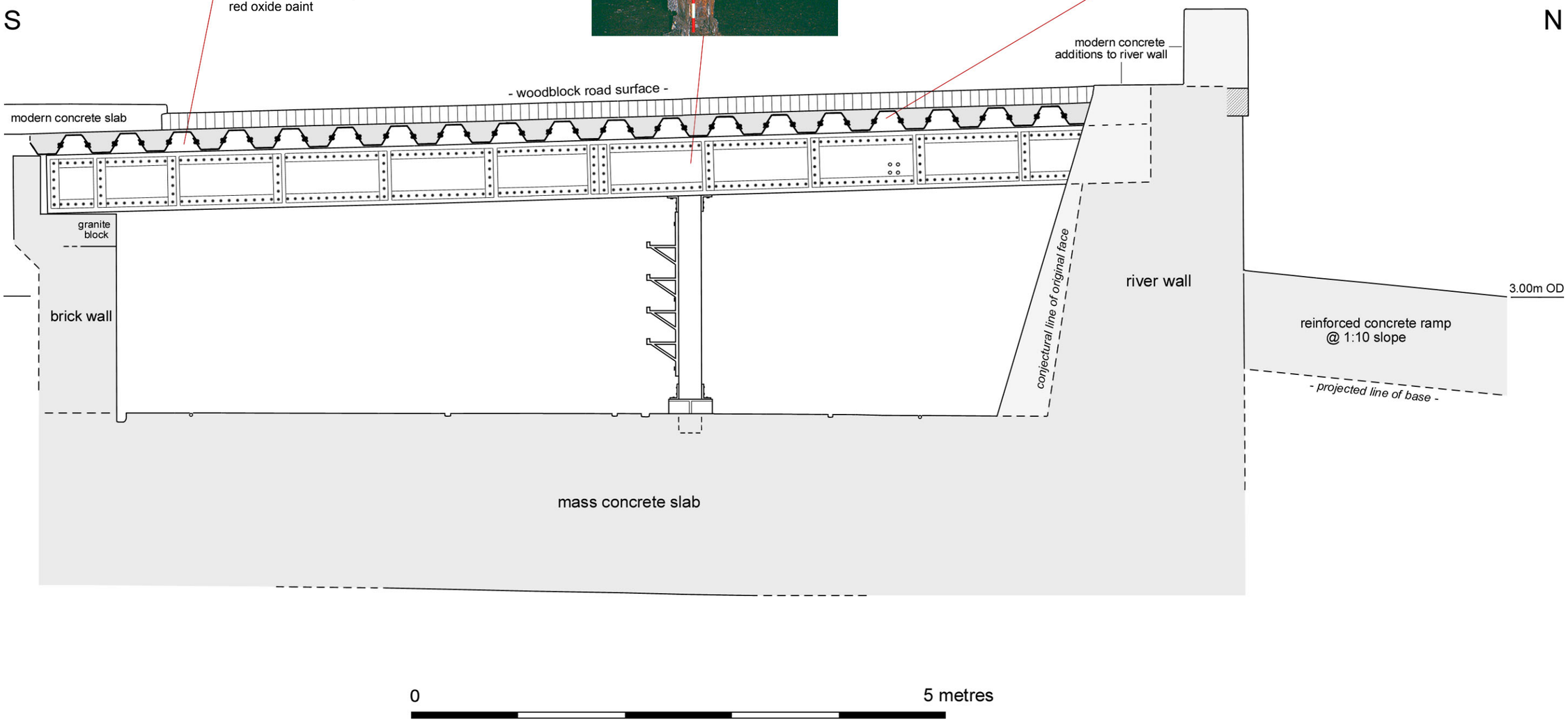
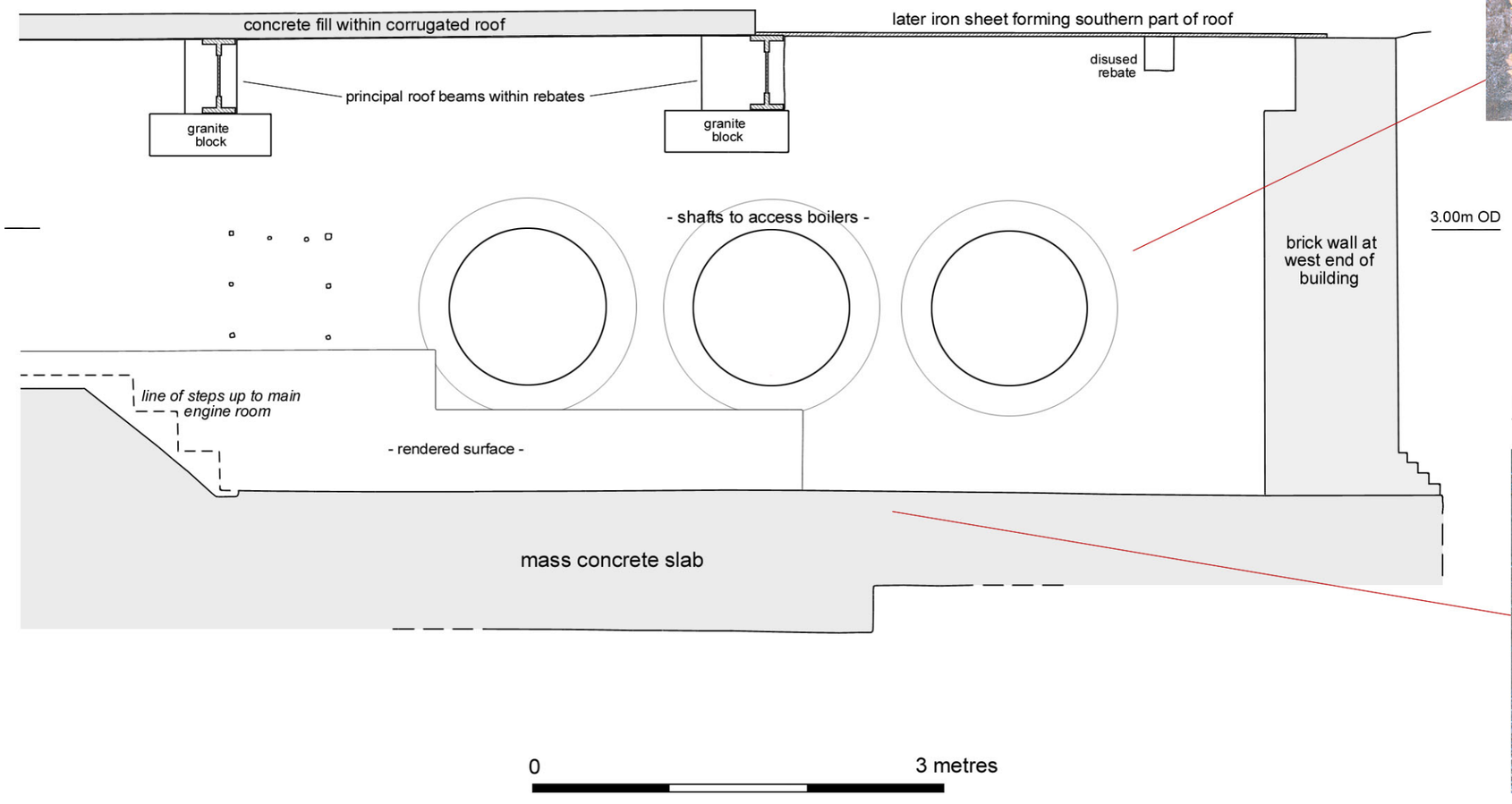


Fig 12 Cross-section through the Engine Room and adjacent area of the foreshore ramp *(see Figs 9 &11 for location; also Fig 8 for historic view)*

E

- later overbuden & slab removed -



W

Impression within the concrete floor of a supporting ring for the front of one of the boilers *(0.2m scale)*

Fig 13 Elevation of the southern wall of the boiler area. Note particularly the shafts to give access to smoke boxes and tubes at the front of the three boilers *(see Figs 9 &11 for location)*

Fig 14 General view of the Engine Room looking east

Fig 15 Detail of the southern wall between first and second roof beams from the east

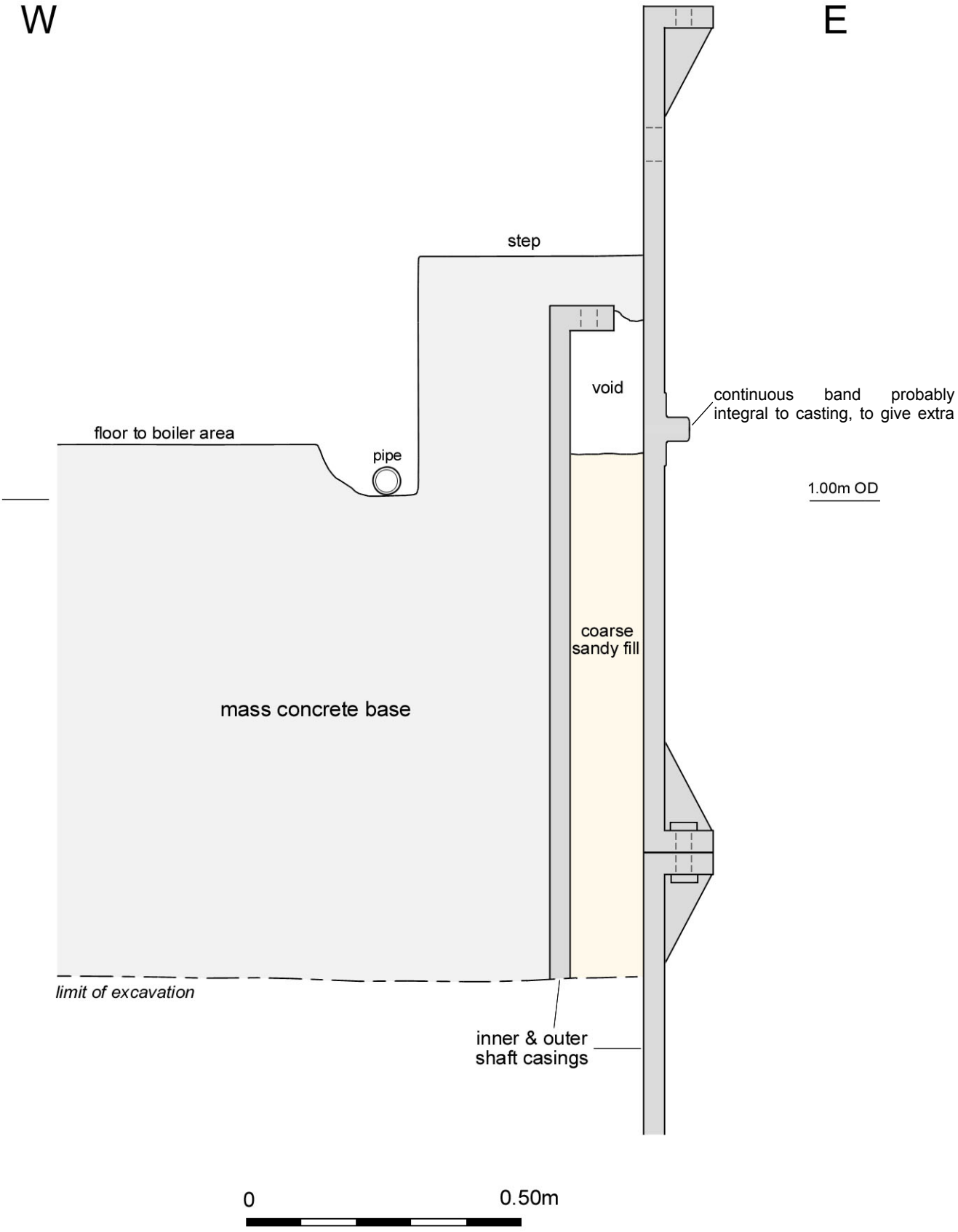


Fig 16 Section through one side of the western counterweight shaft showing the inner and outer cast iron casings or rings, the outer being exposed during demolition
(see also Fig 9 for location & Fig 17)

Fig 17 The western counterweight shaft, showing the outer lining exposed and partially broken away during demolition *(0.2m scale)*

Fig 18 Interior of the eastern counterweight shaft after reduction of the water level to a depth of approximately 6.6m. Four separate lining rings are fully exposed (each 1.53m deep)

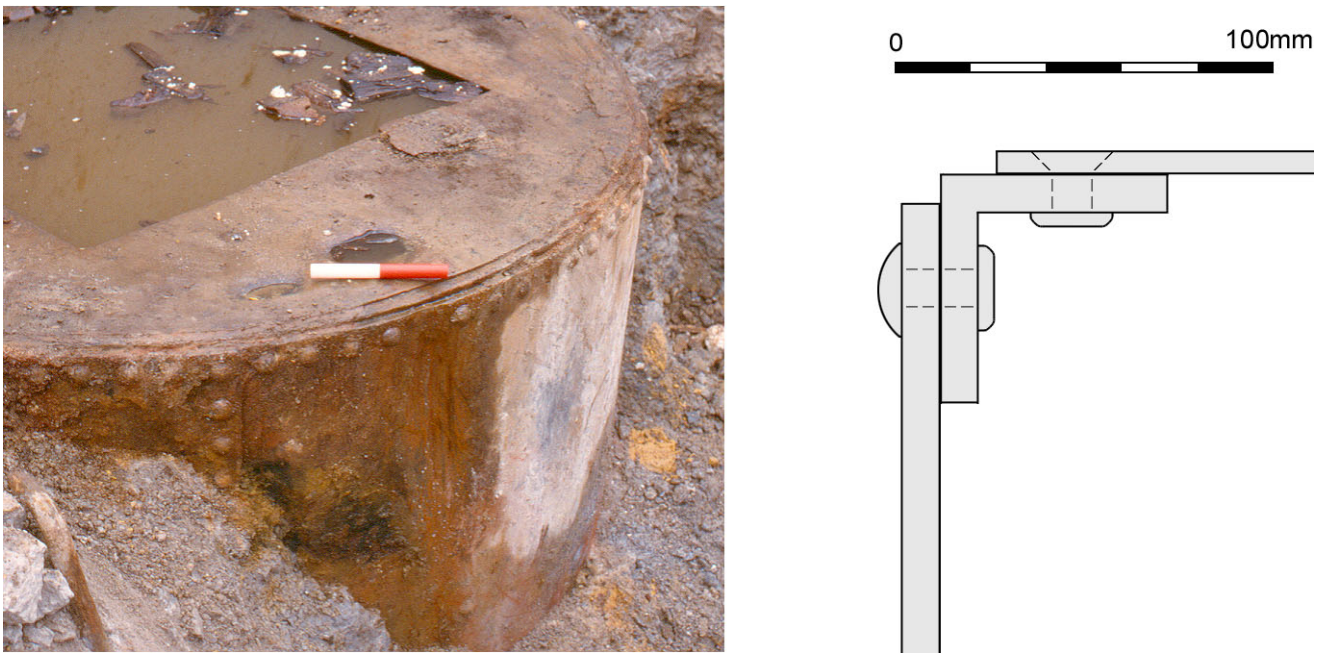


Fig 19 Detail of the smaller central shaft. Unlike the counterweight shafts this was constructed of riveted sheet metal, including an integral top plate with central square cut-out

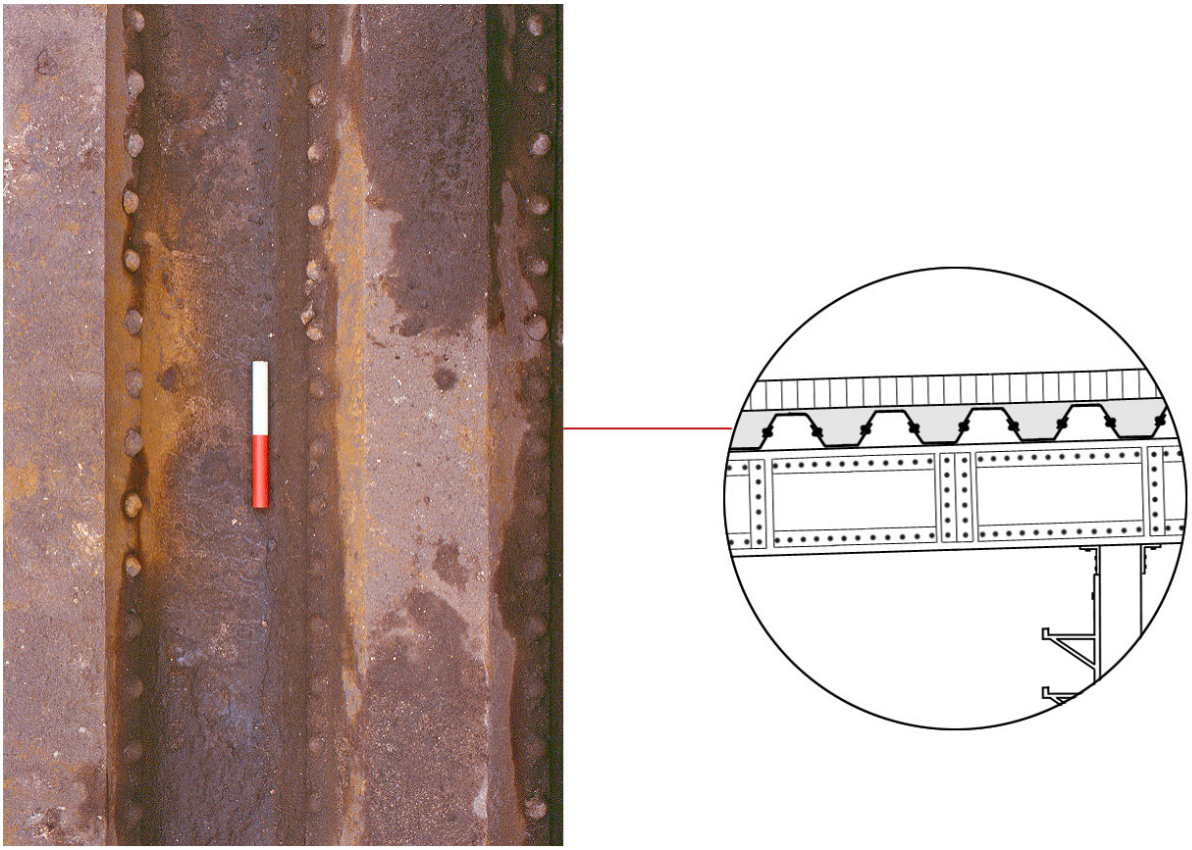


Fig 20 Detail of the corrugated roof, constructed from a series of longitudinal sheets of U-shaped cross section which were riveted together *(0.2m scale)*

Fig 21 View looking east after collapse of the later roof over the boiler area, showing the first major beam and corrugated construction of the main roof to the east *(0.5m scale)*

Fig 22 Detail of the southwest corner of the Engine Room, showing the surviving section of later roof and reused girders behind the main beam

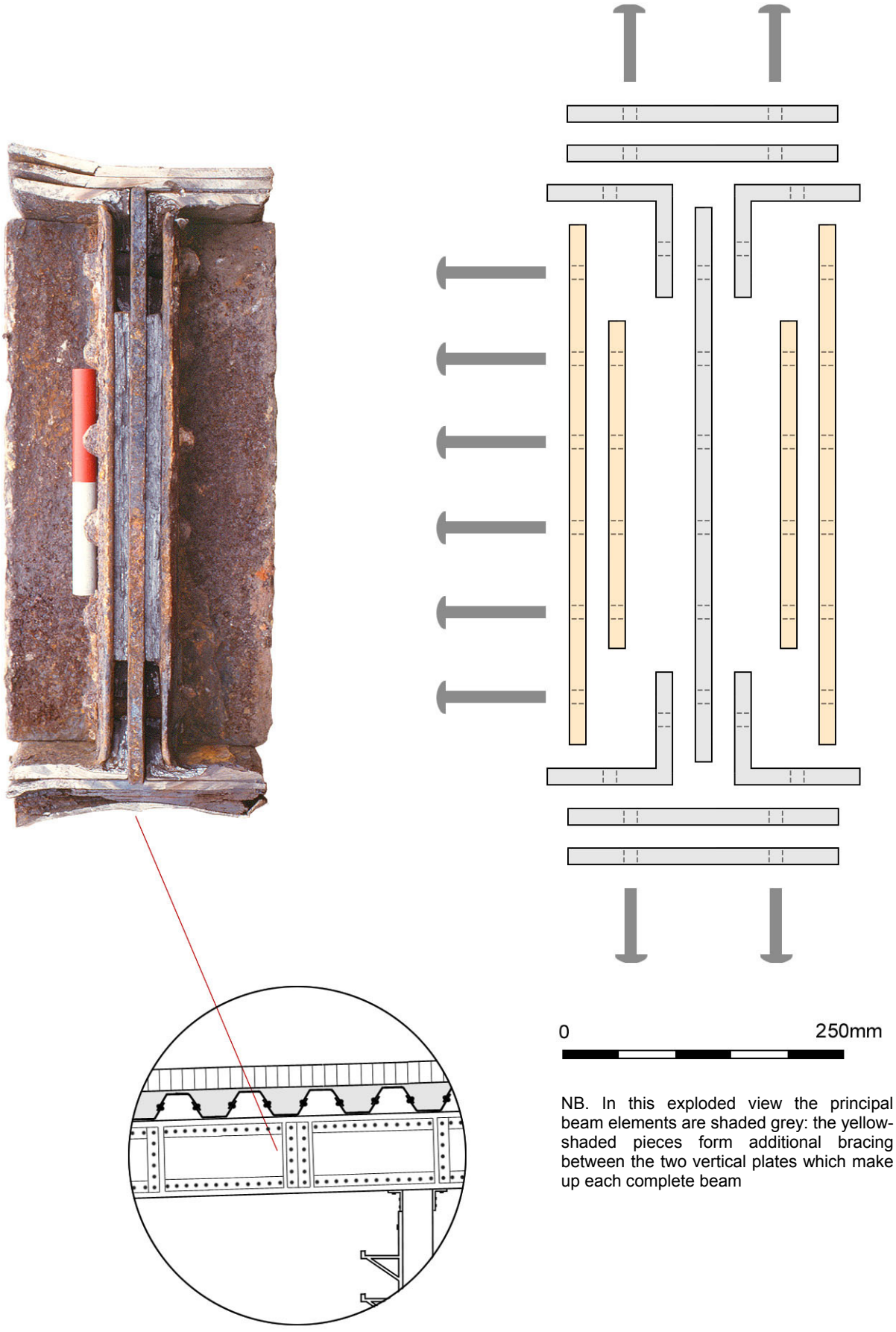
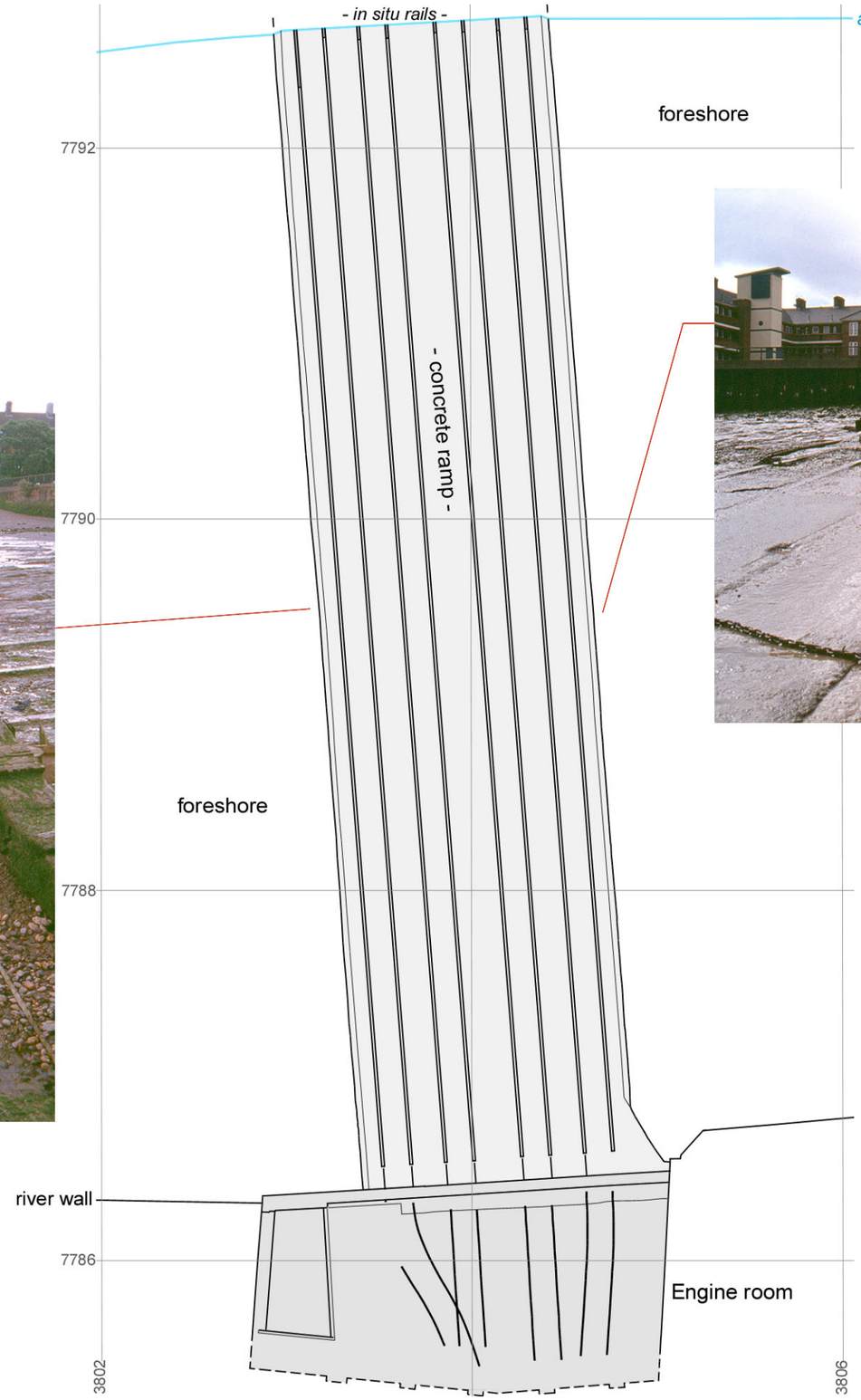


Fig 23 Detail of roof beam construction, illustrated at the point where two vertical plates are joined together. Each beam was assembled from a series of flat and angled elements, close-riveted together

View east across the ramp, showing transverse reinforcing bars where the concrete surface has eroded *(0.2m scale)*

The upstanding pieces of metal and timber on the right



0 25 metres

Fig 24 Plan and views of the foreshore ramp. Except at the northern extremity the rails have been removed, but the supporting girders set in concrete survive *(see also Fig 31)*

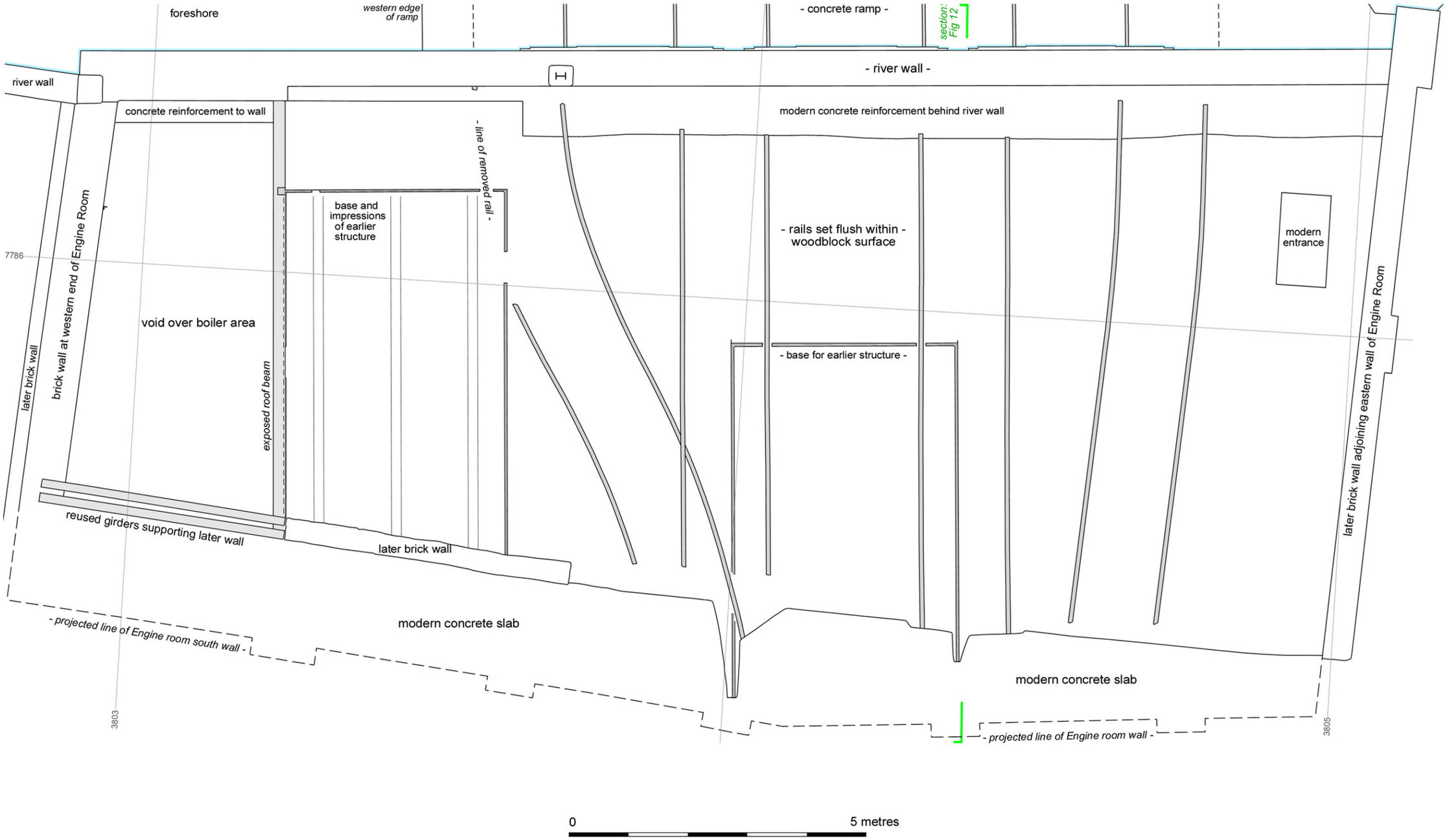
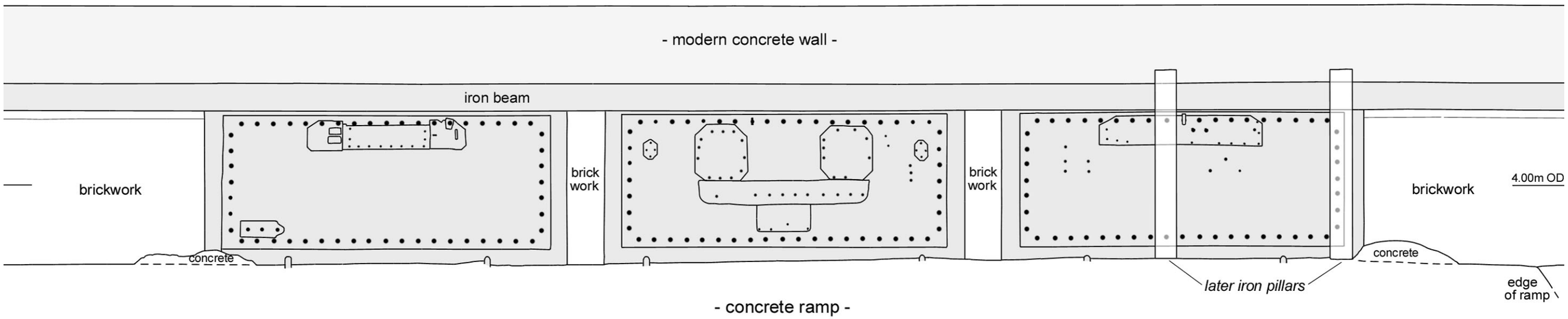
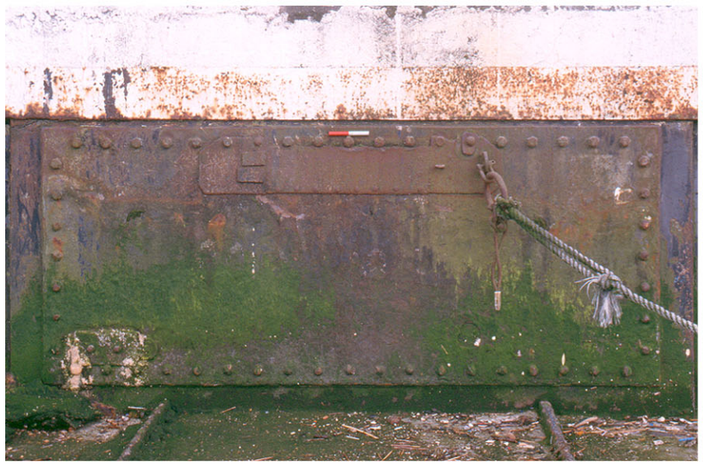


Fig 25 Plan of the ground surface above the Engine Room. Two phases are shown: the bases for two original (perhaps temporary) buildings, and the subsequent rails set in four tracks to form a decorative continuation of those on the foreshore ramp (for the latter see also contemporary plan, Fig 7)





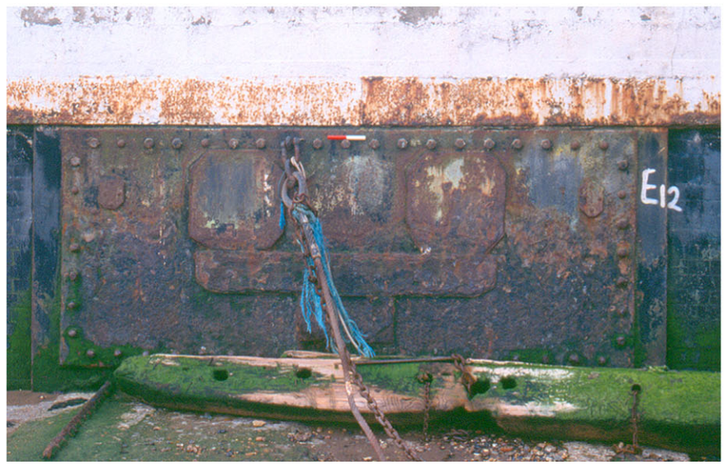


Fig 26 Elevation and views of the riverside wall in front of the Engine Room, including the blocked-off ports for cables which originally attached to the landing stage and moving carriages. The upper iron beam extends the full length of the Engine Room to the east, but only as far as the line of the final roof beam to the west: thereafter it is replaced by yellow stock brick

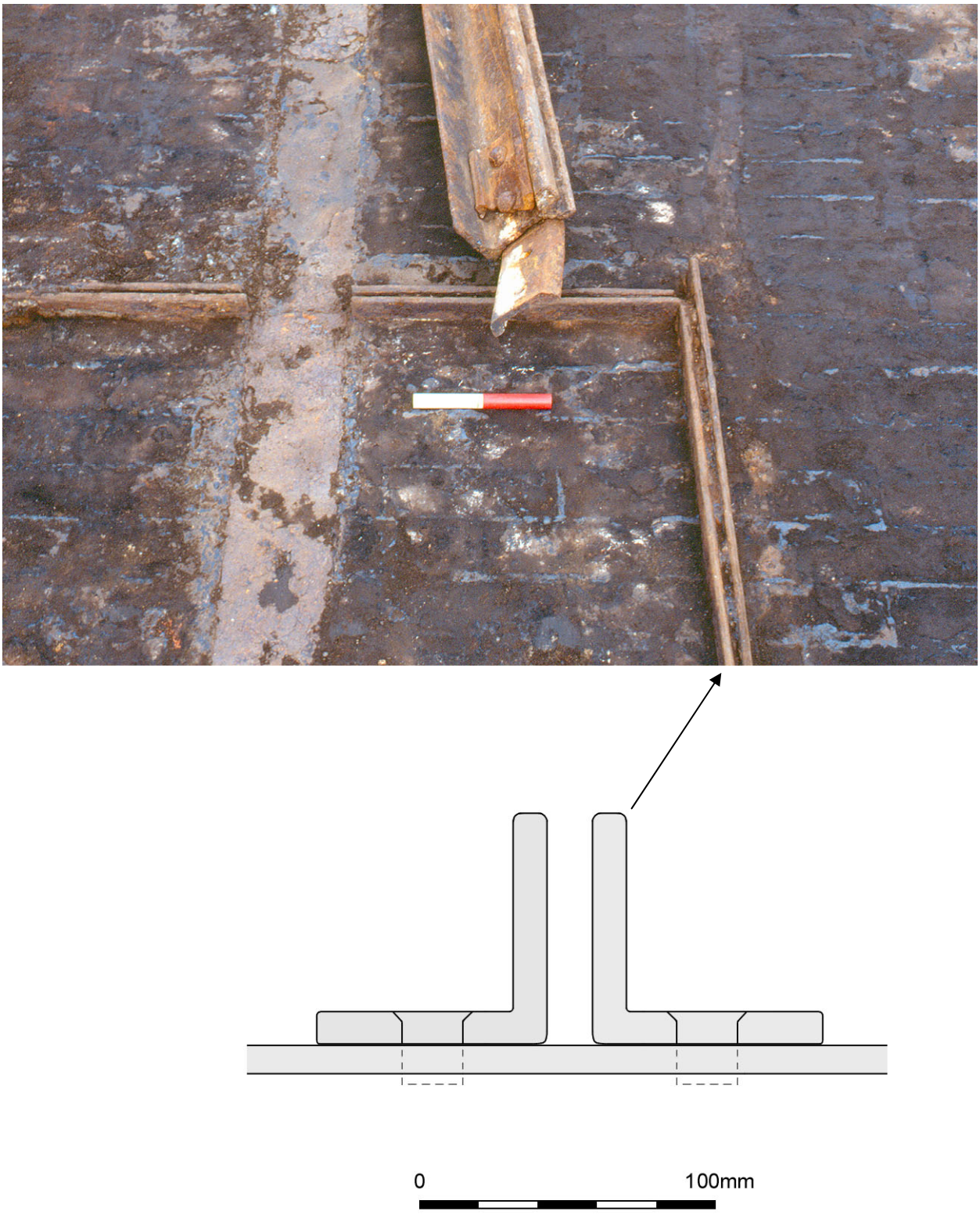
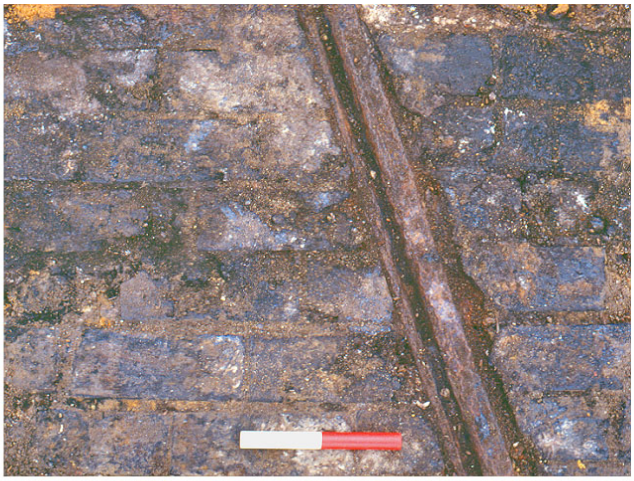


Fig 27 The surface over the Engine Room, showing detail of the base for an original (?temporary) building. This was constructed from two angled girders riveted to the roof, and would probably have supported a timber superstructure.

The photograph also shows a part of a displaced rail with attached fishplates, one of which bore the legend PHÖNIX.R(or B)UH(?N)… (remainder indecipherable)

Fig 28 The surface above the Engine Room after demolition of the later buildings, showing the four sets of rails *(0.5m scale)*



(0.2m scale)

Fig 29 Detail of rails on the western side of the Engine Room: to the left the crossing of two tracks, showing a continuous shallow groove but no cut-out for a wheel flange. On the right the top of the westernmost rail is shown flush with the *in situ* woodblock surface

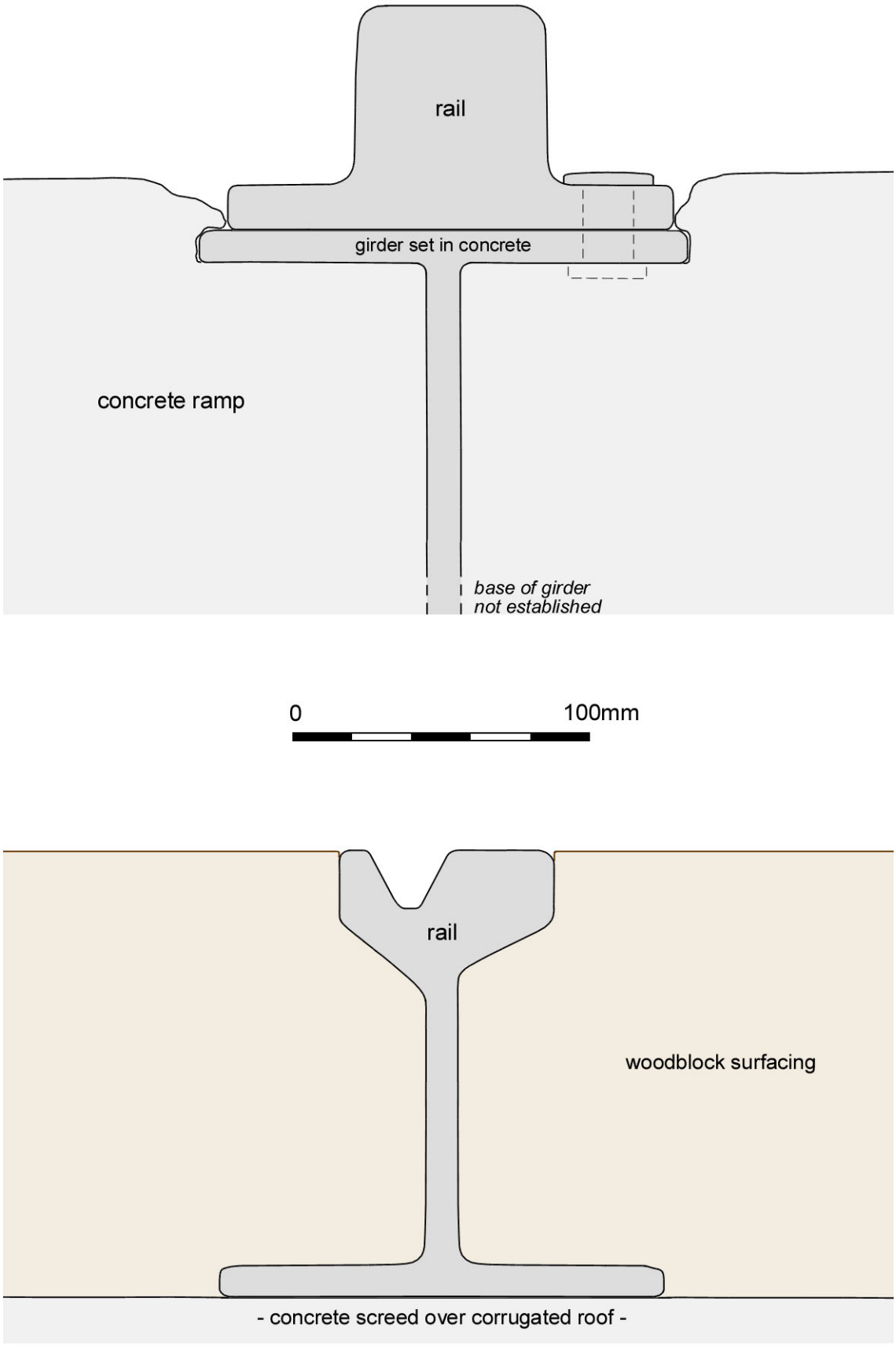


Fig 30 Comparative sections through *(top)* the surviving rails at the northern end of the foreshore ramp and *(below)* those laid above the Engine Room. The latter are held in place only by the surrounding woodblocks and are clearly for decoration

(0.2m scale)

Fig 31 Detail of the foreshore ramp: at the top parallel girders set in concrete to support one set of tracks, each retaining a double line of rivets at 305mm (12 inch) spacing. In the lower view an *in situ* rail, broken away to the top and only seen during particularly low tides at the northern end of the ramp

9. Archaeological Observation and Recording during ground reduction

9.1 Summary

As previously described a programme of Observation and Recording took place during bulk reduction of the new basement, an area some 29m by 33m in plan (Section 4.2; Figure 4). The programme included provision for additional staffing and excavation if significant remains were found.

As anticipated there were no significant medieval or earlier remains. However, three periods of more detailed investigation were carried out on the line of a substantial 18th century timber-revetted channel that ran east to west across the site. Three areas, each measuring approximately 5m by 1.5m in plan, were excavated and recorded across the line of the channel. A large number of artefacts (especially pottery and metalwork) were also recovered and subsequently examined off-site.

The various deposits and features exposed during detailed investigation were given discrete context numbers ([1] to [34]), and are referred to by means of these in the following text and drawings.

9.2 Chronological description of deposits and features

9.2.1 Natural River Terrace Deposit (Kempton Park Gravel)

Natural sands and gravels [34] were observed over the whole area of the basement excavation, and also briefly in excavations below the Engine Room. The deposit was fairly constant and predominantly composed of medium-fine gravel and sand, although there were distinct horizons ranging from mid greyish-brown slightly silty sandy gravel to yellow or orange-brown sandy gravel and finer gravely sand. The top 0.10m to 0.15m was frequently discoloured to slightly darker greyish-brown, and occasionally contained fibrous organic material. No other finds or inclusions were noted.

The surface of the natural was also quite uniform, although there were some localised undulations. The only appreciable slope was west to east, rather than northward towards the present river. Surface levels were at about –1.10m OD on the western side of the basement, dropping to a low point of –1.36m near the southeast corner, and rising again to a height of *c* –0.85m below the Engine Room in the extreme northeast of the site. The base of the Terrace deposit and underlying London Clay was not observed.

9.2.2 Alluvial deposits

Overlying the natural Terrace gravel was a very substantial layer of alluvium [10], comprising a firm grey-green to light buff-grey clayey silt with occasional organic traces. The deposit was slightly lensed and/or sandy in places and tended to be lighter towards the top, but overall was quite clean and homogeneous. There was no evidence for organic horizons or past marine regression, and it appears that the area was underwater or at least tidally flooded.

The alluvium was up to about 2.4m thick, with a surviving surface at *c* +1.3m OD, although even here probably truncated by post-medieval activity. Other areas were more heavily disturbed, particularly by former cellars in the eastern part of the site. No direct dating evidence was recovered although it is assumed that the alluvium was formed over

a very long period of time. The lower levels may well be prehistoric, and the upper were cut by the channel [33] (see below) which is tentatively dated to the 17th century.

9.2.3 The revetted channel *(Figs 32 to 36)*

(i) Summary

During the bulk reduction one significant feature was identified, in the form of a line of timbers and posts some 3m to 4m wide that ran east to west across the site. This was first defined at the surface of the alluvium [10], and was evidently truncated at this level. Initial observations indicated a date in the first half of the 18th century.

Subsequent investigation revealed four roughly parallel (east-west) lines of timber revetment and associated fills, all contained within an earlier cutting or channel [33] that ran through the alluvium at least 17m south of the modern riverfront. These features were traced over a distance of some 33m across the full width of the new basement excavation (Fig 4).

For about 7m on the eastern side of the site the channel was severely truncated by late 19th century cellar construction, leaving little more than the lower part of *in situ* timber posts (see below 9.2.5). However, beyond this point preservation was good, and a series of detailed hand investigations took place (Fig 32). The findings are described below following the probable phases of development as set out in Figure 34.

(ii) The open drainage channel [33] and fills [6/32 & 8/23]

The original channel or cutting was about 4m to 5m wide and at least 1.3m deep, although clearly truncated even at its highest level of survival. Its recorded southern edge extended beyond the later timber post line by up to 1.4m, although to the north the bank had apparently been cut back to accommodate the subsequent revetment (Fig 36).

There was little direct evidence for the origin or date of the channel. Its alignment, east to west and parallel with river, suggests that it was man-made and possibly dug for land drainage. Of the earlier pre-revetment fills only [6] produced a few finds, of which the latest is probably post-1670 (Appendix I). The feature itself may therefore have been dug in the earlier to mid 17th century.

(iii) The timber revetments and fills

There appear to have been two main phases of timber revetting and associated fill within the channel [33], assuming as seems likely that revetments were constructed simultaneously on both sides of the feature (see Fig 34). This process reduced the width of the feature from over 4m to about 2.5m or 3m, and then to 1m or less. A final phase then completed the infilling of the channel, at least at this level (it is possible that a shallow watercourse remained open at a higher level, subsequently lost).

This process of contraction and infilling seems to have taken place over a relatively short period of time, *c* 1700 to 1750. However, caution should be used in relating (and dating) the various areas of fill: some timber planking had been clearly lost as a result of decay or erosion, quite apart from that above the general level of truncation. As a result fills would have slumped into open areas of the channel, which may well explain some of the sherd and vessel links that have been noted between pottery in ostensibly different areas

(*cf* Appendix I, tables 2 & 3). Possible examples of this process can be seen in contexts [3] and [7], and between [15/17] and the intervening fill [16].

The presumed phases of revetting and infilling are summarised as follows, in conjunction with Figure 34:

- *Outer revetments [13], [21] and [31] to the north; [9] and [22] to the south.*
  Of the two revetments that to the north appears to have been more substantial, and was certainly better preserved. To the southwest in particular the timberwork had been constructed at a higher level, over previous fills rather than cut into the side of the channel, and survived only as a series of post bases.

  The northern revetment was present to a height of just over 1m, and consisted of two lines of planking with central support posts (plus a few external) which were generally rounded and minimally worked. The space between the planks was otherwise packed with a redeposited alluvium [1]/[14]/[28] (Figs 33 *top left*, 39 & 40): a similar construction was seen in [22] to the southeast, although the packing was either absent or eroded.

  Only the external face of the northern revetment was fully exposed. The planking was a mixture of softwood, especially at the upper level and not obviously reused, and oak planks that were either probably or definitely reused boat material. The oak timbers were generally larger, with recorded cross-sections in [13] up to 420mm by 50mm, in [21] of 240mm by 75mm, and in [31] 290mm by 70mm. In several areas the outer planks were clearly nailed to posts, notably in [13] where some of the heads were up to 35mm diameter.

  There was relatively little dating evidence from this phase, mainly because the revetments (unlike those of the second phase) did not include substantial quantities of embanked fill. However, it is likely that construction took place seems likely 1700-20: the underlying channel fills [6] and [8] are probably of later 17th century date, whilst the subsequent deposits [2], [15], [25], *etc*., are no earlier than the 1720s.

- *Inner revetments [12], [20] and [29] to the north; [11], [19] & [30] to the south; plus fills*
  These revetments formed a mixture of single and double planking, although it is clear that in some areas at least the external planks had been lost (for example [19]). As before the timbers included both reused material and apparently fresh planking: a notable example of the former was the lower oak plank in revetment [12], which included evidence of repair patching on its northern side and was evidently reused boat material. Also as previously a number of planks were nailed onto the adjacent posts: examples of this were noted in [12] and in the external plank of [20].

  The reused timbers were not quite as substantial as those in the first phase northern revetment: thus the lower plank in [12] was *c* 400mm by 45mm in cross-section, whilst that in [19] was 460mm by 30mm and the possibly reused eastern timber in [29] 450mm by 40mm. Moreover, the plain timbers included both softwood and oak, with the latter forming the four upper planks of [12] and three planks on the northern side of [20]. A final contrast between this phase and the previous revetment was the number of posts that were fully worked to a square or (more commonly) rectangular section.

This revetment phase included a substantial quantity of fill and associated finds (contexts [2], [5], [7], [15], [17], [25], & [27]). The deposits were fairly uniform, typically dark brown-grey mixed silt/sand with frequent pottery and occasional metalwork, plus fragments of clay tobacco pipe, glass and building material. This evidence, together with that from the final infilling of the channel (see below), suggests a date of *c* 1725-40 for the second revetment phase.

- *Final infilling, from west to east [3], [4], [16] and [26].*
  These deposits appear to represent the final infilling of the channel, now effectively reduced to a timber-lined drain some 0.8m to 1m wide. Some elements of the fill – for example the primary layer [4] – may in fact represent collapse of material from the previously revetted areas to north and south.

  The deposits were typically a mid to dark grey-brown sandy silt, containing frequent pottery and occasional ceramic building material, clay pipe, bone and oyster shell. From the pottery (and taking into account the previous phase of revetting) the date of deposition is not likely to be earlier than 1730, and probably no later than the 1750s. A slightly later date appears to be ruled out by the total absence of creamware within the pottery assemblage (see Appendix I).

(iv) Interpretation

As already suggested the channel [33] may have been dug for land drainage, perhaps in the earlier 17th century. The reasons for the subsequent revetting are not known, but could have included improvement of the water flow, a movement towards domestic or commercial drainage and increasing development of the surrounding land. Certainly this process of canalisation, timber revetting and recutting is not uncommon, and may well be accompanied by extensive dumping of waste (*eg.* Chew & Pearce 1999).

A possible reference for the channel is also provided by Searles' *Survey Map of the Medcalfe Estate* of 1777, with the approximate site outline overlaid on the basis of land acreages and a 'best fit' with later maps (Fig 2). Cutting across the centre of the site is an east-west feature that is clearly a drainage channel, with a sluice running through the 'bank or sea wall' further to the west. The remainder of the site area is open, although with small-scale development just to the northwest and east: this also appears to be the first plan to include the name Wood Wharf.

9.2.4 The reused timber baseplate [24] *(Figs 32, 35 & 41)*

Just to the north of the channel [33] investigation exposed a substantial reused oak plank, partly overlying a further piece of timber and brickwork. The structure was aligned east to west, set horizontally into the surface of the alluvium [10], and probably represents the base for a wall.

The plank itself was of oak, up to 490mm by 82mm in cross section and at least 5.8m long, and probably originated as a ship's timber. The eastern end had been broken away by modern intrusion and the western end was not recorded, although subsequent observation established that it was not present 0.7m further to the west.

The eastern half of the plank lay directly over the alluvium, whilst the centre rested on a similar though much shorter length of timber set at right angles and the western end was

underpinned by a single course of brickwork. Unfortunately the feature is not closely dated: the underlying brick is probably of 16th to 17th century date, and possibly pre-1666 (Appendix VI, 2.2), but may have been reused. Similarly [24] cannot be related stratigraphically to the adjacent channel or revetments, although its position and alignment may well reflect the presence of an open watercourse at the time of construction. However, cartographic evidence does suggest that development did not take place in this area until the later 18th century.

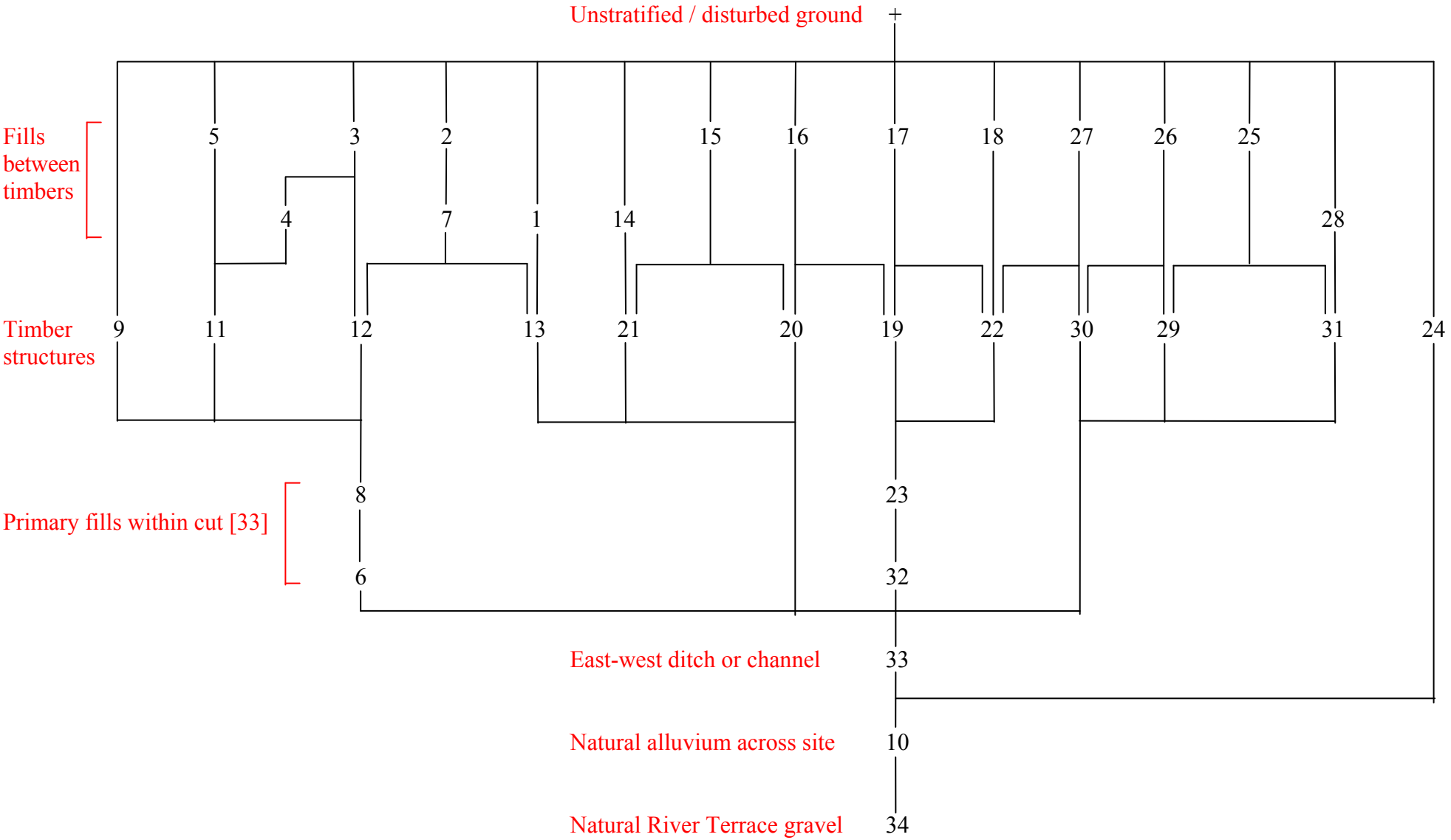
9.2.5 Later development

The various features described above were generally overlain and truncated by activity and deposits of mid 19th to 20th century date. No land surface could thus be identified in relation to the earlier revetted channel.

The more recent remains were not recorded in detail, although in most cases they related to former buildings on the site and included several backfilled cellars, plus more recent concrete bases. The single largest and deepest area of activity was on the eastern side of the site, and can be identified from a lease plan of 1896 as the cellar of the Steam Ferry Tavern. This plan is sufficiently detailed to show the cellar door in Horseferry Place, and this feature was recognisable during site clearance as a brick bay projecting out beyond the eastern wall of the cellar.

The Steam Ferry Tavern dates from the later 19th century, and (as its name implies) probably replaced the previous riverside premises – the *Unicorn* – when the Engine Room was constructed in 1887-8. In fact the depth of the cellar (*c* 3m) and the similarity of yellow stock brick would suggest that the new premises were built as part of the same development.

9.3 Matrix to show the stratigraphic relationship of contexts



9.4 List of deposits and features by context

Context no.	Description	Interpretation	Comment
1	Firm, light buff-grey clayey silt with occasional charcoal flecks, potsherds & CBM	Redeposited alluvium infilling space between the two lines of planks within [13], and forming part of the revetment construction	Assumed to be the same as [14] & [28]
2	Dark brown-grey coarse silty sand with frequent pottery, occasional ceramic building material (CBM), clay pipe & cobbles, and very occ. mortar, glass, coal & shell frags. Fewer large inclusions towards top	Fill between the two parallel lines of planking [12] & [13], & assumed to be contemporary with the former	Probably the same event as [15] & [25] to east
3	Fairly dark grey-brown sandy clay/silt with some pebbles. Includes frequent pottery and occasional CBM, charcoal, clay pipe, bone and oyster shell	Fill between two parallel lines of planking [11] & [12], & representing final infilling of the ditch/channel [33]	?Same as [16] & [26]
4	Loose mid-dark brown gritty silty sand with frequent pot and occasional shell, clay pipe + large pebbles/ flints	Primary deposit between planking [11] & [12], banked up to south against former	–
5	Firm mid grey (occasionally brown-grey) slightly sandy silt, becoming darker & more mixed/ pebbly at upper level. Includes occasional pot & CBM, and very occ. mortar + charcoal frags.	Infill to the south of (& contemporary with) revetment [11]; truncated at upper level but may originally have risen to south to abut further planking above post line [9]	?Same as [17] & [27]
6	Compact mid brown slightly silty coarse sand with frequent pebbles, occasional pot/ CBM & very occ. chalk frags.	Primary fill within channel feature [33], preceding all timber structures	?Same as [32]
7	Dark grey clay-silt with flint pebbles, moderate pottery & occasional CBM + clay pipe	Primary deposit between planking [12] & [13], banked up against base of both	–
8	Solid, light grey clay/silt with some darker mottles & very occ. CBM frags.	Alluvial-type deposit/fill within [33], preceding timber structures. Probably redeposited	?Same as [23]
9	Line of three posts on southern side of [33], c. 90 to 120mm dia. but clearly truncated below their original ground surface	At higher level may originally have retained planking with infill to south	?Associated with [22] to east
10	Firm, homogeneous grey-green to light buff-grey clayey silt with occasional organic traces	Thick alluvial deposit forming a general layer across the site, into which channel [33] was cut	–

Context no.	Description	Interpretation	Comment
11	East-west timber structure, c. 1m exposed and consisting of three softwood (?pine) planks up to 240mm wide with a single oak retaining post to north. No evidence of reuse and no fixings – the middle plank simply rested on the lower	A fairly lightweight structure, presumably retaining fill [5] to south and with originally exposed face to north	?Part of the same revetment as [19] & [30] to east
12	East-west timber structure, c. 1.3m exposed. Comprised a series of oak planks plus an adjacent oak post to the north. At the base was a substantial plank (400mm x 45mm in section) with evidence of repair patching on the north side, almost certainly reused boat material. Above were four overlapping oak boards, at least three nailed to the post & the upper two also reused	An apparent revetment, retaining fill [2] to the north. As such forms counterpart to [11], albeit of slightly more substantial construction	?Part of the same revetment as [20] & [29] to east
13	Substantial east-west revetment exposed for c. 2.15m and surviving to a height of about 0.90m. Consisted of two lines of planking flanking a row of main support posts (& on the south side nailed onto these), the space between the planks being packed with [1]. The lower planks were of reused oak, in two cases on the south side boat material 360mm to 420mm wide. The upper planks were of softwood, not obviously reused	Timber revetment constructed on the northern side of an extant channel or cutting [33]. Retains natural alluvial deposits [10] to the north, and abutted by later fill [2/7] to the south	Same structure as [21] & [31] to the east
14	Firm, light buff-grey clayey silt; quite clean but occasional charcoal & CBM flecks	Redeposited alluvium forming construction fill between the two lines of planks within [21]	The same as [1] & [28] to the W.
15	Dark brown-grey gritty silty sand becoming sandy silt to base. Frequent pottery, occasional clay pipe & CBM and very occ. glass frags.	Infill between the two parallel revetments [20] & [21], & presumably contemporary with the former	Same as [25]; also ?[2/7] to W.
16	Dark grey-brown slightly sandy silt with occasional pebbles. Includes frequent pottery, occasional clay pipe, very occ. CBM & shell	Infill between the two parallel lines of planking [19] & [20], & representing final fill of [33]	Same as [26]; also [3/4] to the west
17	Firm dark brown-grey sandy silt with moderate pebbles. Includes frequent pot, some clay pipe & occasional CBM	Fill between the planking lines [19] & [22], contemporary with the former	Same as [27]; also ?[5]

Context no.	Description	Interpretation	Comment
18	Firm mid to dark grey-brown sandy silt mix with scattered pebbles & pottery	Infill to the south of & contemporary with revetment [22]; only small area exposed & truncated at upper level but may originally have risen to south as far as upper edge of cut [10]	–
19	East-west timber structure, c. 1.6m exposed. One continuous 460mm wide oak plank to the south, and fragment of a second parallel softwood (?pine) plank to the northwest. The southern plank had some evidence of reuse, but simply rested against the *in situ* posts	A timber revetment, presumably retaining fill [17] to the south. Appears to have comprised two parallel lines of planks with a row of posts between, the outer (northern) plank now largely lost but presumably nailed to the posts whilst the inner plank was held in place by fill	Continued to west as [30]; further extent probably = [11]
20	East-west timber structure, c. 1.8m exposed. Comprised two lines of planking with intermediate posts similar to [19] above, but a slightly more substantial survival. On the north side three oak planks are laid on edge, & to the south a single larger (c. 460mm x 45mm) plank is secured to the adjacent posts	A revetment, presumably the counterpart to [19] (on opposite side of the channel or drain) & retaining fill to the north	Part of same structure as [29]; further extent to west probably = [12]
21	Substantial east-west revetment exposed for c. 2.0m and surviving to a max. height of just over 1.0m. Consisted of two lines of planking either side of a row of supporting posts (plus a few posts to N & S), the space between planks being packed with [14]. The southern (external) planking was fully excavated and comprised three oak planks laid on edge, the lower two c.240mm x 75mm in cross-section (& both probably reused)	Timber revetment constructed on the northern side of the existing channel or cutting [33]. Retains natural alluvial deposits [10] to the north, and abutted by later fill [15] to the south	Part of same structure as [13] & [31] to the west
22	East-west timber structure, overall just over 3m exposed. Comprised two lines of planking with intermediate posts, although badly disturbed towards the eastern limit of excavation. Basically one surviving softwood plank on either side of the structure, 230mm and 380mm wide	A revetment constructed on the southern side of the existing channel/ cutting [33], although at least 1m to the north of the original edge. Probably the counterpart to [21] (on the northern side of the feature), although slightly less substantial construction	Truncated continuation to west probably = [9]
23	Firm slightly sandy silt, light grey with occasional darker mottles & organic traces	Alluvial-type deposit within [33] & preceding timber structures. Uncertain if waterlain or redeposited	?Same as [8] to west

Context no.	Description	Interpretation	Comment
24	A large reused oak plank, c. 480mm x 80mm in cross-section and <5.75m long. The western end was founded on a single-course red brick base, and adjoining in the approx. centre was a block of timber, similar in section to the overlying plank & c. 0.65m long	Assumed to be the base for a brick wall or similar. The full extent was not traced although to the west this could not have been more than 0.75m. To the east [24] had been removed by later activity	No relationship with features to south, but may be similar date
25	Dark brown-grey gritty silty sand, similar to [15]. Frequent pottery, plus occasional clay pipe & glass frags.	Infill between the two revetment lines [29] & [31], and assumed to be contemporary with the former	Same as [15]; also ?[2/7] to west
26	Dark grey-brown sandy silt, similar to [16]. Includes pottery & occasional clay pipe	Infill between the two parallel lines of planking [19] & [20], & representing final fill of [33]	Same as [16]; also [3/4] to W.
27	Dark brown-grey sandy silt with pebbles, similar to [17]. Exposed in plan but cut away to south & very limited excavation	Fill between the revetments [22] & [30], & contemporary with the latter	Same as [17]; also ?[5] to W.
28	Firm buff-grey clayey silt; clean but with occasional charcoal & CBM flecks	Redeposited alluvium filling space between the two lines of planks within [31]	Same as [1] & [18]
29	East-west timber structure, c. 1.7m exposed. Comprised a single line of ?oak planks up to 450mm high, with retaining posts to the south	A timber revetment, retaining fill [25] to the north. There may originally have been a second (external) line of planks as still seen in [20]	Part of same structure as [20]; probably also [12] to the west
30	East-west timber structure, c. 1.6m exposed and clearly damaged by later activity. Comprised a single line of planks with a break in the centre; there was also one substantial post just to the north although none directly associated	A revetment, presumably the counterpart to [19] (on opposite side of the channel or drain) & retaining fill to the north	Part of same structure as [19], & possibly also [11]
31	Substantial east-west revetment exposed for c. 1.85m. Consisted of two lines of planking with intermediate posts and two further to the north, the space between planks being packed with [28]. The southern (external) planking was fully exposed and comprised three oak planks laid on edge, the lowest c. 290mm x 70mm in cross-section & probably reused	Timber revetment constructed on the northern side of the existing channel [33]. Retains natural alluvial deposits [10] to the north, and abutted by later fill [25] to the south	Part of same structure as [13] & [21]

Context no.	Description	Interpretation	Comment
32	Firm, mid greenish brown silty sand with scattered pebbles & occasional small CBM frags.	Primary fill within [33]	?Same as [8] to west
33	East-west linear feature, mainly recorded in section. Traced across full width of investigation (c. 43m) and up to 5.2m wide by 1.3m deep	Probably a post-medieval drainage channel; straightness & alignment parallel with river both suggest that this is man-made	–
34	Mid greyish-brown to yellow-brown sandy medium-fine gravel. Top 0.10m to 0.15m discoloured to slightly darker greyish-brown, slightly silty, & occasionally including fibrous organic material	Natural River Terrace Deposit (Kempton Park Gravel)	–

Fig 32 Plan of the main areas of investigation within the new basement, showing the line of recorded timbers and section locations

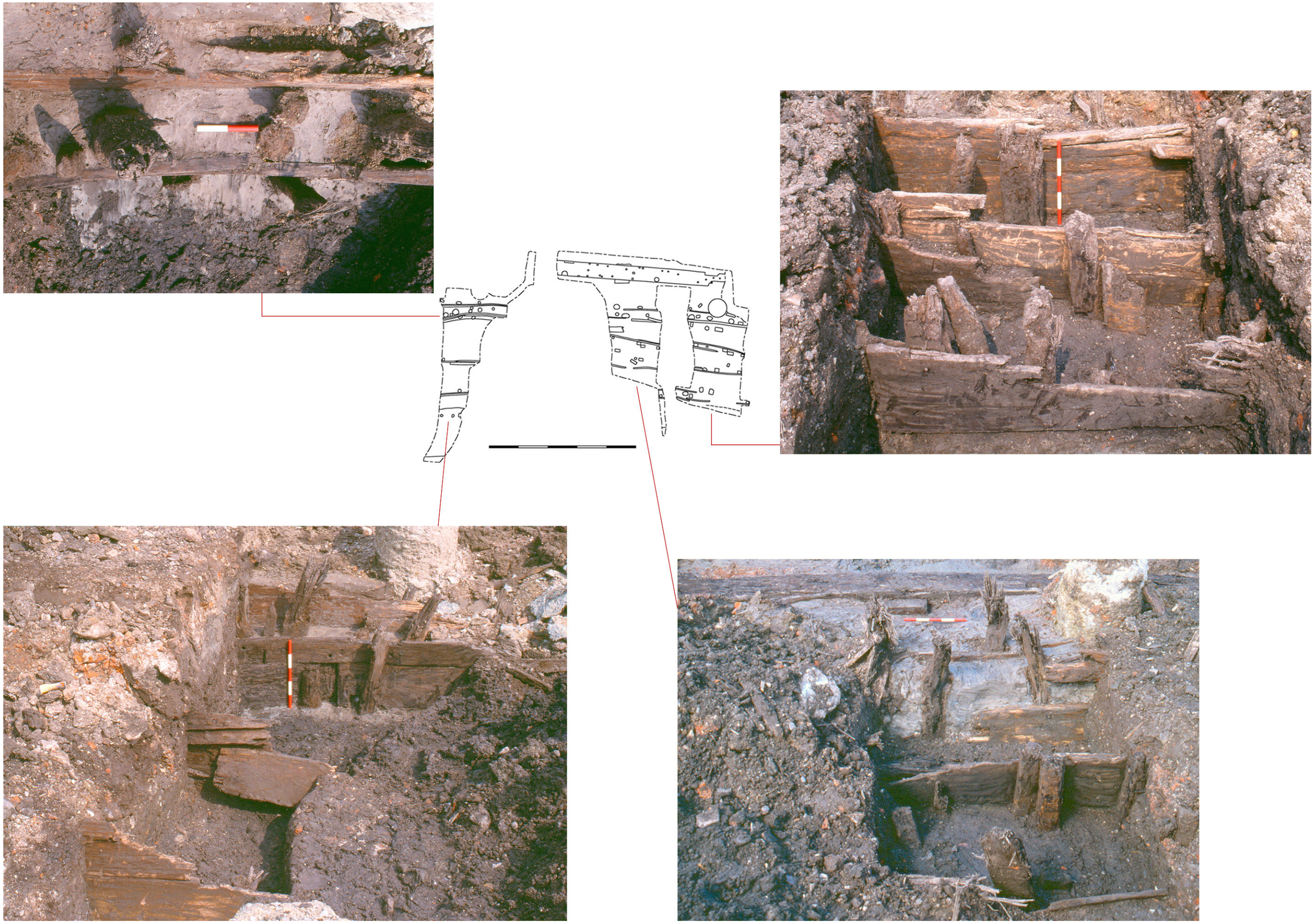


Fig 33 Views of the exposed timbers during basement excavation, looking north and at top left overhead detail of the northernmost double revetment[13]

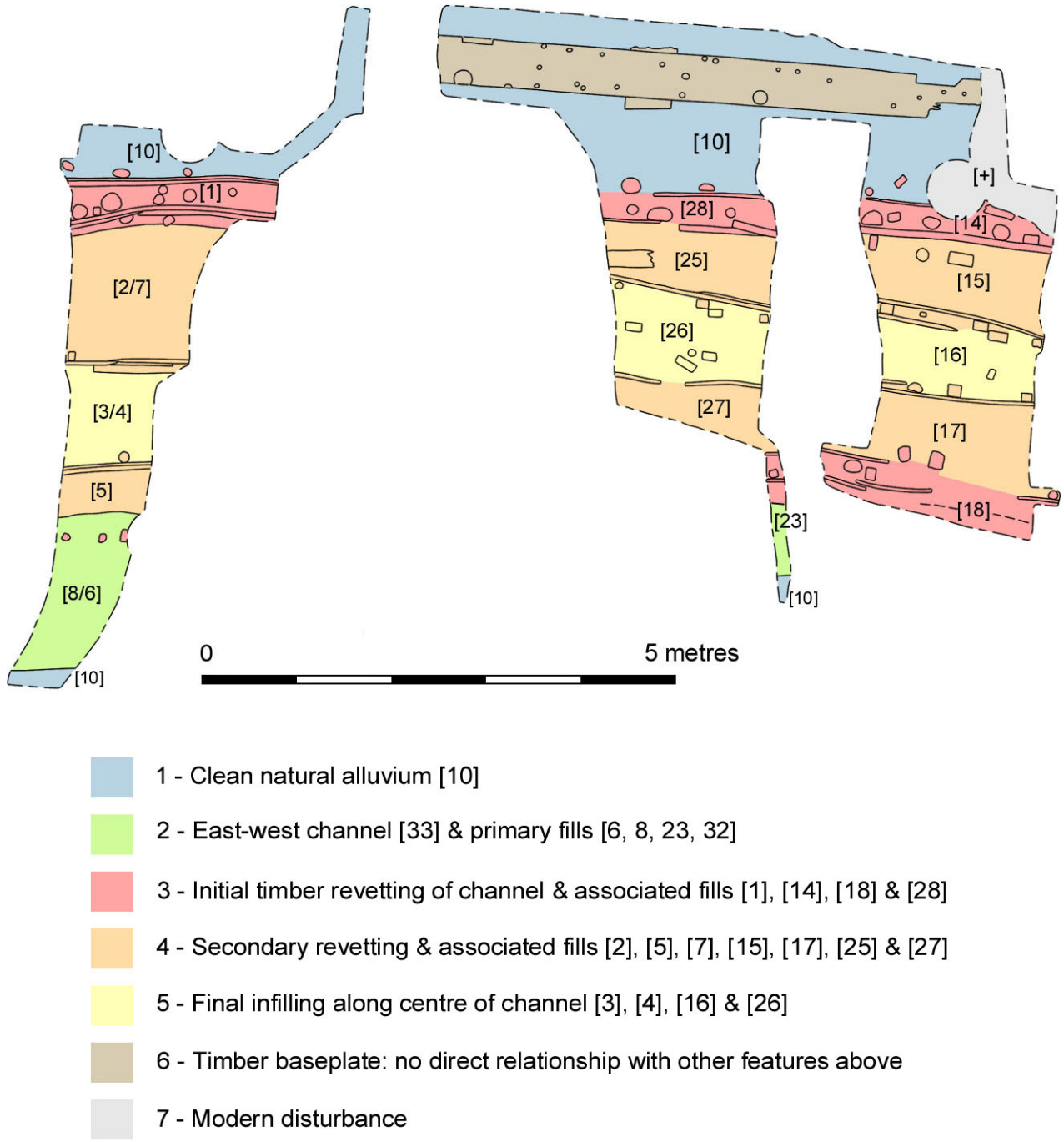
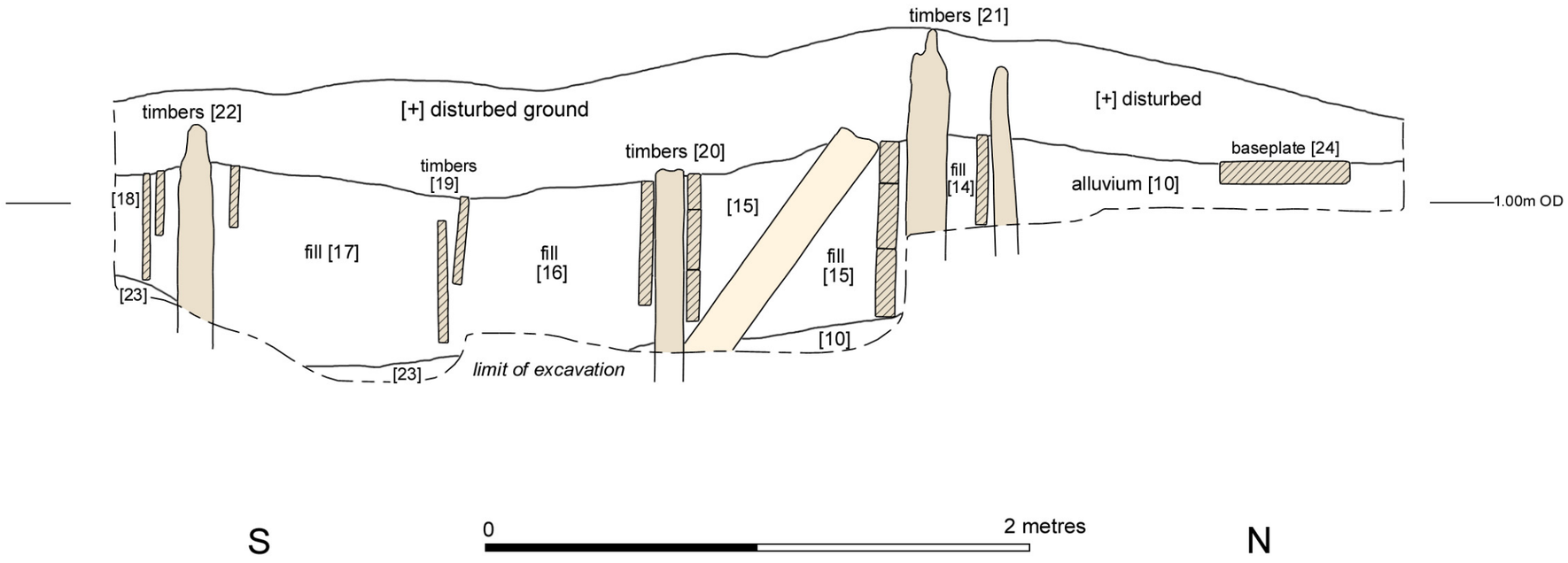
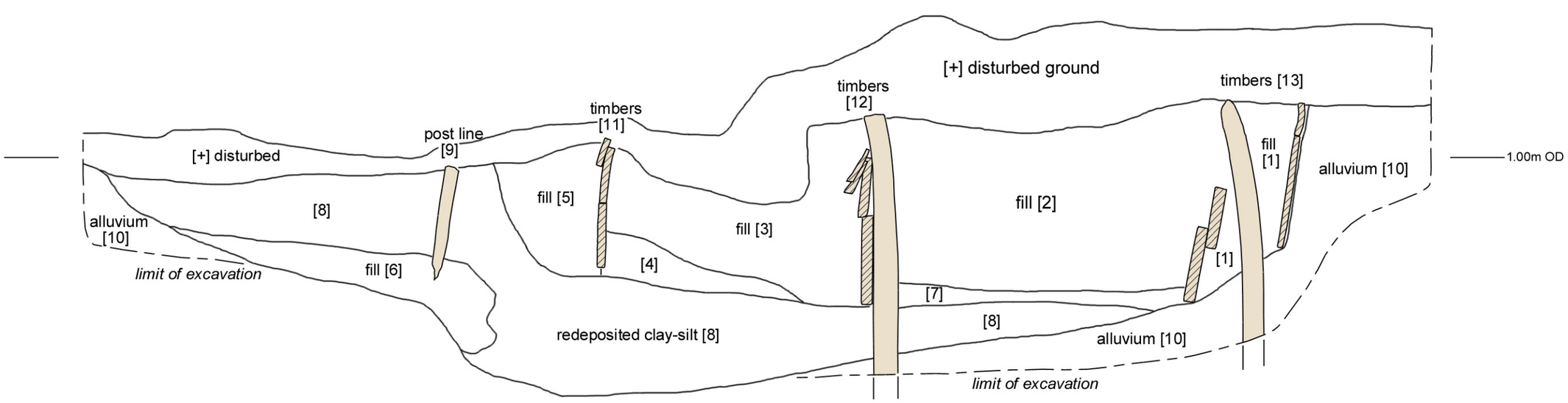


Fig 34 The phasing of timber revetments and fills within the east-west cutting or channel [33].

It is assumed that revetting took place on both sides of the channel simultaneously, giving two main phases of timberwork with a corresponding reduction in width to about 2.5m to 3m and then to 1m or less





Figs 35 (top) & 36 North-south sections through the timber revetments and associated deposits in the eastern and western parts of the investigated area, located on Figure 32

Fig 37 View of the deposits and timbers shown in Figure 35 *(0.5m scale)*

Fig 38 View of the deposits and timbers shown in Figure 36 (excluding southern end)

Fig 39 Detail of the northern revetment [31], showing clean alluvial fill between the two lines of timbers *(0.2m scale)*

Fig 40 The better-preserved revetment [13], including reused timber with pegholes at upper level

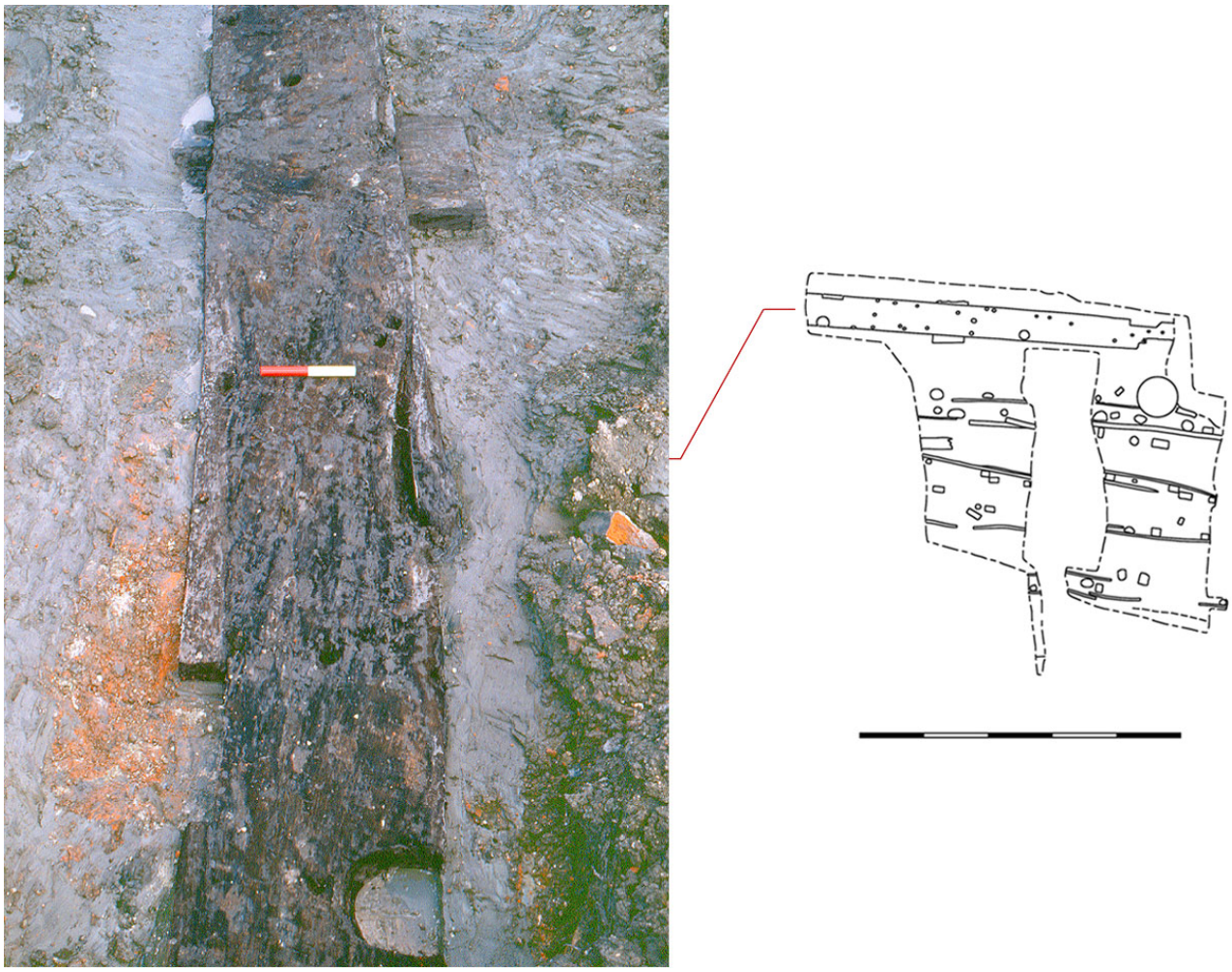


Fig 41 View looking east along the reused oak plank [24] *(0.2m scale)*

10. Conclusion and assessment of the results

The analytical structural record of the 19th century Steam Ferry remains and the programme of Observation and Recording during bulk ground reduction have both produced valuable results, and represent a significant contribution to the history of this part of Greenwich.

10.1 The structural record

This concentrated on the Engine Room, with additional recording of the overlying surface, external river wall and concrete foreshore ramp. Although the broad outlines of the Ferry's operation are well known the project has provided a great deal of further information. In particular, the Engine Room retained far more evidence than expected for the layout and operation of its engines and machinery.

A few questions remain in relation to the arrangements (such as the position of the 2-cylinder engine) and on specific issues such as the shaft construction. It is hoped that some of these points may be answered by further research and by comparitive examples.

The project has also provided a factual record of the Engine Room construction, from the foundation slab thickness to decorative details such as the overlying rails that appear on contemporary plans.

10.2 Observation and Recording during groundworks

There was no evidence for early activity on the site, either prehistoric, Roman, Saxon or medieval, nor any residual finds in later deposits. However, this was not unexpected: the preliminary desk-based assessment indicated that the area had only been developed in the 18th century, although there may have been some earlier land reclamation and drainage.

The groundworks exposed a substantial east-west channel of possible 17th century date. The cutting was some 4m to 5m wide, and may well have dug for land drainage behind the river embankment. The channel had been revetted and progressively infilled during in the first half of the 18th century, although it probably survived for long to appear on Searles' map of 1777. The various fills yielded a large number of artefacts, including pottery and kiln material, metalwork and clay tobacco pipe. These finds have a local significance – both domestic and commercial – and also include an important assemblage of imported ceramics, notably Portuguese and Italian wares.

Appendix I. Assessment of the pottery

Lyn Blackmore, Museum of London Specialist Services

Description and quantification of the material

1. Late Iron Age/Roman pottery (c 50BC –400)

The investigation produced one sherd of Roman pottery, from context [16] (Fig 45). This is the complete base of pedestal jar of sand-tempered ware that probably dates to 50BC – 43 AD (R Featherby pers comm.). The sherd is of interest in that it appears to have been ground down to create a smooth surface at the junction with the main body, possibly for reuse as a gaming piece (93g).

2. Post-medieval (c 1500–1900)

2.1 Summary/Introduction

The post-medieval pottery amounts to 533 sherds from a maximum of 375 vessels (35.627 kg). Although some groups contain residual 16th century material, the finds from the different contexts appear to be quite homogenous, comprising large sherds in fresh condition. The main features of the group are the presence of redware wasters and a cluster of Portuguese tin-glazed wares.

2.2 Methodology

The pottery was examined macroscopically and using a binocular microscope (x 20) where appropriate. It was recorded on paper and in an Excel spreadsheet (Table 5) using standard Museum of London codes for fabrics, forms and decoration; the numerical data comprises sherd count, estimated number of vessels (ENV) and weight. Also noted were links between contexts resulting from scattering of the original vessel, and the types of faults on the redware wasters. The material was first recorded in context order without access to context information. It was then scanned again to see if the links suggested by the site plan might be confirmed or if any chronological sequences could be defined. The finds are discussed with reference to those from PCA excavations to the west of Deptford Creek at Trinity Almshouses and at The Stowage, the site of the East India Company dockyard and part of the Deptford potteries (Divers 2004). This latter site is hereafter referred to as The Stowage or SOA96, while the East India Company is referred to as the EIC.

2.3 Summary of fabrics and forms

The bulk of the assemblage comprises locally produced redwares, with a small proportion of imported wares and relatively little in the way of other English material. Most of the forms present are standard domestic wares, but some industrial vessels are present, while a few of the imports were possibly intended for display only. The overall composition of the group is outlined in Table 1 overleaf and in Fig 42. No crucibles were found, although whiteware examples were present at the Stowage site (Jarrett 2005, 95).

Table 1. The broad distribution of the post-medieval pottery by fabric type/sub-type
See Table 4 below for fabric codes

Fabric	Sherd count	%	ENV	%	Weight GM	%
BORDG	10	1.9%	6	1.6%	217	0.6%
BORDO	5	0.9%	3	0.8%	152	0.4%
BORDY	6	1.1%	4	1.1%	170	0.5%
CHPO	6	1.1%	4	1.1%	114	0.3%
CHPO BATV	1	0.2%	1	0.3%	11	0.0%
CHPO STON	3	0.6%	3	0.8%	206	0.6%
CIMS	4	0.8%	3	0.8%	105	0.3%
CIMS BICR	2	0.4%	2	0.5%	14	0.0%
CIMS POLY	3	0.6%	3	0.8%	57	0.2%
CISG	3	0.6%	2	0.5%	35	0.1%
CITG	2	0.4%	1	0.3%	8	0.0%
DUTR	4	0.8%	2	0.5%	254	0.7%
DUTSL	8	1.5%	3	0.8%	92	0.3%
ENGS	1	0.2%	1	0.3%	40	0.1%
FREC	19	3.6%	14	3.7%	2699	7.6 %
GERSL	2	0.4%	2	0.5%	170	0.5%
MLTG	4	0.8%	1	0.3%	91	0.35
PMR	303	56.8%	216	57.6%	27411	76.9%
POTG	33	6.2%	23	6.1%	676	1.9%
POTG BICR	6	1.1%	5	1.3%	83	0.2%
RBOR	2	0.4%	2	0.5%	31	0.1%
STSL	7	1.3%	4	1.1%	247	0.7%
SWSG	3	0.6%	3	0.8%	32	0.1%
TGW	41	7.7%	28	7.5%	1069	3.0%
TGW A	4	0.8%	3	0.8%	118	0.3%
TGW B	4	0.8%	3	0.8%	148	0.4%
TGW C	24	4.5%	18	4.8%	829	2.3%
TGW D	2	0.4%	2	0.5%	35	0.1%
TGW G	3	0.6%	2	0.5%	94	0.3%
WERR	3	0.6%	3	0.8%	73	0.2%
WEST	9	1.7%	7	1.9%	311	0.9%
WEST PURP	6	1.1%	1	0.3%	35	0.1%
Grand Total	533	100.0%	375	100.0%	35627	100.0%

2.4 English pottery (Fig 44)

2.4.1 Redwares

Redwares amount to *c*. 57% of the assemblage by sherd count and ENV, and *c*. 77% by weight. The fabrics range from fine (almost PMRE) to coarser. All were recorded as post-medieval redware (PMR), which dates to after 1580. It is most likely that these wares derive from the Deptford potteries, some of which were located at The Stowage

site by the Thames on the west bank of Deptford Creek (Nenk 1999, 236-7; Divers 2004, 23-4). One of these was in use by 1737, while another dates to *c.* 1750. It is not known when the industries commenced, but there is documentary evidence for redware production in Deptford in the 1660s, while in Greenwich and Woolwich pottery manufacture began in the 16th and 17th centuries respectively (Nenk 1999, 236-7; Jarrett 2004, 91-92, 94).

As a whole the redware forms are well matched in the assemblages from Trinity almshouses and The Stowage site (EIC dockyard) just to the west of Deptford Creek (Jarrett 2004). The bulk of the collection comprises domestic wares: jars are the dominant type, with 115 sherds. Several of these (and also some bowls) have thumbed necks (*ibid*, Fig 67), while one sherd ([16]) has a large applied rosette motif similar to finds from The Stowage (*ibid*, Fig 65, nos 1-3; see also Fig 46 below). Among the more common forms on both sites are deep bowls and dishes (here 91 and 89 sherds respectively), either rounded or flared with a cordon just below the rolled rim; both types generally have one or two handles. One example has an externally flanged rim ([26]). These forms are long-lived but examples were present in mid- to later 18th century demolition deposits associated with Trinity Almhouses and at The Stowage site (Jarrett 2004, figs 13, 66). Other more common forms include a range of pipkins, while less common types include skillets, jugs, a caudle cup, and part of a condiment dish/candlestick base. A range of forms is present in each context, with no clustering of types, but for its size the group from [7] seems to contain a slightly wider variety than the other dumps.

Dating these wares is problematic as many forms were long-lived, and it is currently unclear what proportion might be residual. It can, however, be noted that decoration is mainly a feature of 17th century wares, becoming less common in the 18th century (Jarrett 2004, 93). Several vessels have rilled surfaces, but more ornate surface treatment such as thumbed bands below the rim is present on only ten vessels. The industrial and horticultural forms are also of help in dating. Sugar moulds (16 sherds, 16 ENV) and collecting jars (12 sherds, 7 ENV) occur in contexts [2], [3], [4], [7], [15], [16] & [17]. These forms were well represented at The Stowage site, where it was noted that the use of internal slip coating was common by 1700, and the norm by *c*. 1730 (Jarrett 2004, 93). The finds from HOF04 fit with this pattern, as almost all are slip-coated. The two flower pots from [7] have perforations in the side rather than in the base, a style that dates from the late 17th to early 18th century and had probably gone out of fashion by 1730 (Jarrett 2004, 93).

2.4.2 Redware wasters

Some 60 sherds (38 ENV) have kiln scars or glaze over the broken edges and appear to be from sub-standard redware vessels and/or kiln waste. These were found in contexts [2], [3], [5], [7], [15], [16], [17] & [26], although most are from [2] and [3]; they include a range of bowls and dishes, jars, pipkins, porringers, skillets and collecting jars for sugar refining. Of interest is a jug with pooled glaze in the base and streaks of discoloured glaze both inside and out that was found in [15] and [16]. The site is too far upstream from Woolwich for the wasters to be derived from that factory (Prior & Blockley 1975; Nenk 1999, 236), and it also seems improbable that they were washed upstream from the Greenwich potteries. They most probably derive from the Deptford potteries, possibly from kilns at The Stowage site (see above). As at SOA96, the finds from HOF04 suggest

that some production may have been taking place in the later 17th century, but the form parallels between the finds from the two sites remain to be checked.

2.4.3 Tin-glazed wares

English tin-glazed wares (TGW) are a minor element of the assemblage (78 sherds, 56 ENV, 2293 gm), but they have aided the dating of the site rather more than the redwares. Context [2] includes sherds from several plates and dishes. In some cases the glaze is blackened but one plate has a bird in foliage design, the leaves being painted in broad angular brush strokes, a style that is broadly datable to the second quarter of the 18th century (Fig 47). Contexts [3] and [4] contain joining sherds from an octagonal plate [4], the floral decoration of which is similar to that on a posset pot dated to *c.*1740 (Britton 1987, 144, no. 125). Context [7] includes sherds from a late 17th or 18th century plate with part of what may be a fish design. Context [16] includes a mix of 17th and 18th century types, the latest comprising a plate and a vase with blue-and-white decoration and a 'Lambeth polychrome' plate (TGW G) that date to the early 18th century. Fabric TGW G was also found in [2]. Some of the profiles are not included in the range illustrated by Britton, and it is possible that a few sherds currently recorded as English are imports. The most unusual find is a small handled object that appears to be a toy iron ([3]; Fig 48); this needs to be researched more fully, and discussed with museum specialists and collectors.

2.4.4 Other English wares

Other English earthenwares are also limited in number. The regional wares include two sherds of Surrey/Hampshire border redware (RBOR) and 21 sherds of the equivalent whiteware (BORDG/O/Y), the most distinctive being a colander from [15] and [17] (Fig 49). Other forms comprise dishes, porringers and pipkins. The non-local wares are mainly from Staffordshire. The slipwares (STSL) comprise sherds two dishes ([16], [26]), a mug and a large decorated lid (Fig 49, [17]). The three/four stoneware sherds (SWSG) are all from [16] and are from a tankard and two bowls/teabowls. The only other find is a sherd of stoneware, very probably from London (ENGS).

2.5 Imports (Fig 43)

Imports are fairly well-represented on this site (21% by sherd count, 14% by weight), and although the assemblage is much smaller than that from SOA96 it compares favourably with it (details in PCA archive report). Most of the imports from the latter site are German or Chinese; a few French and Spanish pieces were identified, but no Portuguese wares. At HOF04, however, 39 tin-glazed sherds from 30 vessels (700 gm) have been provisionally identified as Portuguese. Most are from plates or deep dishes, but one porringer and one or two possible tazza bases are represented. The majority are decorated in blue and white (POTG), but six sherds have designs in blue and manganese (POTG BICR); both types include sherds with some form of decoration on the back. A number of pieces would seem to have been old when discarded. The most obvious of these are two dishes decorated in the Chinese Wan-li style that probably dates to between 1625-1650 (Calado 1987, 14-5; Fig 50). The other blue-and-white wares could be of similar date but those on which the design is outlined in manganese probably date to after 1650 (*ibid*, 14, 17). These include a dish from [4] with a crude Wan-li inspired design, a dish from [2] with a fish-net design derived from Chinese porcelain and/or Montelupo tin-glazed ware, and other pieces decorated with birds in foliage or in a landscape, floral motifs or geometric motifs (*eg,* Fig 51). Possibly the grandest piece is part of a rather

Italianate dish showing with the legs of two standing figures in a landscape; one of these is possibly a centaur, suggesting a mythological rather than religious scene (Fig 52 *top*). The true bichrome pieces, decorated with both blue and manganese, could be contemporary with the above but may be of late 17th or 18th century date; this needs to be researched further. The most impressive piece is a dish from [3] and [7] that has part of a heraldic design (Fig 50).

Two pieces are problematic. The first is a plate decorated with an extremely delicate floral design that could be Portuguese or Italian ([15]); on the back is the letter D and part of the potter's signature. The other is a lid from [26] that is internally fluted but externally smooth, again decorated with a delicate and finely painted floral design; this was recorded as Portuguese, but could possibly be Dutch (Fig 52).

The 17 sherds that are definitely Italian are all from the lower Arno Valley in Tuscany (between Florence and the coast). The tin-glazed wares comprise two sherds from a jug with blue and white decoration and four sherds from a tazza with floral decoration in the Montelupo style (MLTG), although possibly not from that centre itself (Fig 51). The other sherds from several marbled slipware bowls, both simple (CIMS) and with red and white slip (CIMS BICR), and a few sherds with sgraffito decoration (CISG).

Dutch redwares are not common but amount to 13 sherds from six vessels (DUTR); these include two slip-decorated porringers (DUTSL), of which that from [3] bears the date 1728 (Fig 53). Also present is the complete base of a small tripod pipkin ([3]).

Stonewares are not as common on this site as on other waterfront excavations. Most sherds are from Frechen (FREC; 19 sherds, 14 ENV) and some are quite large pieces. The latter include the base of a very large jug and a rare miniature Bartmann-type jug, both from [2]. The latter (Fig 54) is virtually whole but missing the crucial piece so it is not possible to tell if had an applied face mask or not. Two sherds have applied decoration, of which that from [7] has a heraldic medallion. In addition there are 14 fragments of Westerwald stoneware (WEST), some with blue and manganese decoration (WEST PURP). Other German imports comprise fragments two Werra slipware (WERR) dishes with similar designs ([16], Fig 53; & [26]), and one sherd from a Rhenish marbled slipware dish (GERSL; [2]). The former is quite common in 17th-century contexts in London, especially on sites close to the river. The latter is mainly dated to the first half of the 18th century. Although well known in Norway, Rhenish marbled slipwares are rare on this side of the channel. Sherds have been found in the Shetlands (Blackmore 1999, 165), which was in the same sphere of trade as Norway, but the ware is much less common in England. One definite example has, however, been noted in London (Gaimster 1988, fig 4) and it is possible that others exist but have been misidentified.

Finally there are a few imports from the Far East. Chinese porcelain (CHPO) amounts to seven sherds from five vessels (Fig 55), with three tea bowls ([2]; [16]) and two saucers, of which that from [7] is the base of a saucer with a mark (?bird) on the underside. These range from late 17th to later 18th century in date, but most are of Kangxi dynasty (1622-1722; J Martin, C Beecher pers comm). Also present are the base, rim and a body sherd from an unusual stoneware bowl with ring foot and lustre decoration both internally and externally, with a symbol or character inside the bowl (CHPO STON [3], [4], [18]; Fig 55). This piece is probably from southern China (C Beecher pers comm.); it merits further work and should be discussed with specialists in the field of Far Eastern ceramics.

3. Distribution of the pottery

In terms of the distribution on the site, no pottery was recovered from the alluvium [10], either in the western or eastern part of the site. In the western area, a few sherds were recovered from [1], which were dated to 1612-1700. To the south of this, layers [2] and [7] yielded 126 sherds, the largest single cluster by weight (11.598 kg), although most finds are from [2]. This deposit was dated to 1720-1750 by the decoration on a tin-glazed plate, but could be just a little earlier. Most finds from [7] could be of 17th century date, but three sherds are from a tin-glazed dish that dates to the very late 17th or (more probably) the 18th century. It is likely, therefore, that the two layers are contemporary. No links were observed between the finds from these layers during the initial spot-dating, but several links and parallels were noted between [7] and [3], of which the latter contained a Dutch slipware porringer dated 1728 (Fig 53). Two links were also found between [3] and the equivalent layer [4], which was dated to c.1730-1750 by an octagonal tin-glazed plate. Taken together, [3] and [4] yielded 148 sherds (6.811 kg), most of which are from [3]. Layer [5] contained 20 sherds; these can only be broadly dated by a chamber pot to after *c*.1670. There are, however, joining sherds from [4] and [5], while sherds from the same Dutch porringer were found in [5] and [6], and so it would seem that these dumps are of the same or similar date (although [6] is an earlier layer, so joining sherds elsewhere are presumably redeposited). No pottery was found in [8].

In the eastern part of the site, no pottery was found in [14] and [28], which appear to be the equivalent of [1]. In front of this only nine sherds were found in [25]: most could be of 17th century date, but one large sherd is from a tin-glazed plate that is probably of mid 18th century date. The same is the case with the larger group of 72 sherds from [15], where most sherds could date to before *c*.1700, but one sherd is from a Chinese porcelain saucer dating to the mid-18th century. Context [16] is dated to after 1720 by three sherds of Staffordshire salt-glazed ware, but also contained a single sherd of Roman pottery. The equivalent dump, [26] contained a slightly smaller group and one that is harder to date precisely. Most pieces could date to before 1700 and the latest diagnostic form is a tin-glazed chamber pot dating to after 1675; this group was placed at 1675-1725, but could be 1675-1700. The same applies to the finds from [17], where the latest diagnostic finds are a chamber pot and a sugar mould which point to a date after 1675/1680. Sherds from the same vessels were, however, found in [16] and [26], and contexts [15], [16] and [17] are also linked by sherds from the same pots. Therefore it may be concluded that all are contemporary, although it is also possible that material within [15] and [17] has slumped with the decay and partial collapse of timber revetments. Context [18] only contained two sherds, but these include one from the Chinese stoneware bowl noted in [3] and [4].

In terms of overall dating, it is considered significant that there is no creamware (1740 onwards), pearlware (1770 onwards), transfer-printed wares (1770 onwards) or other factory-made wares. Together with the dating of some of the tin-glazed forms and Staffordshire wares, this would point to a date of *c*.1730-1740 for the deposits as a whole. It is currently unclear what proportion of the pottery, and specifically the redwares, is residual, but this may be resolved by closer analysis. Sherd/vessel links were noted within the two areas of excavation, but so far there is only one definite link between the western and eastern sides (the Chinese stoneware bowl found in [3], [4] and [18]).

Table 2. Initial dating of the different contexts, based on the combination of fabrics and form types

Context	Sherds	ENV	Weight	Early date	Late date	Sherd links	Same vessels
1	5	4	468	1612	1700	-	-
2	74	48	8495	1720	1750	-	-
3	113	69	5758	1728	1750	4, 7	4?, 7?, 18
4	35	28	1053	1730	1750	3, 5	3, 6?, 18
5	20	14	115	1670	1750	4	-
6	6	5	56	1670	1750	-	4?
7	53	35	3103	1700	1750	3	3
15	72	55	3748	1730	1750	-	16, 17
16	67	51	3131	1720	1780	-	15, 26
17	28	23	3170	1680	1725	-	15
18	2	2	9	1580	1900	-	3, 4
25	9	7	707	1720	1750	-	-
26	47	32	4778	1675	1725	-	16

Table 3. Correlation of the context groups and their suggested dating

Context	Early date	Late date	Sherd links	Same vessels
1	1612	1700	-	-
2, 7	1720	1750	3	3
3, 4	1730	1750	5, 7	6, 7?, 18
5	1670	1750	4	-
6	1670	1750	-	?4
15, 25	1730	1750	-	16, 17
16, 26	1720	1780	-	15, 26
17	1680	1725	-	15
18	1580	1900	-	3, 4

3.1 Assessment work outstanding (all periods)

When spot-dated the pottery had not been marked and this hindered the laying out of finds in order to check for further sherd links, which almost certainly exist. This may result in some amendments to fabric and form classifications.

4. Potential and significance of the finds

This is an excellent group that includes a number of imports, some unusual for London, although more common on waterfront sites. Of particular note is the cluster of Portuguese tin-glazed ware, which is likely to be derived from the dockyards of the East India Company.

The pottery can contribute to further research at various different levels. Within the local context, the most relevant assemblage with which the pottery should be compared is that from PCA excavations at The Stowage site, on the west bank of Deptford Creek (sitecode SOA96; Divers 2004). This site was partly occupied by the dockyards of the East India Company, and partly by two or three of the Deptford redware potteries (*ibid*, 23). The redwares from the two sites are very similar, but there is a paucity of imported pottery from the Stowage site, the reason for which is unclear. The pottery from this site was mainly dated to the 17th and 18th centuries, although it was felt that a fair proportion (and specifically the redware wasters) was redeposited and residual.

Also of relevance is the assemblage from Creedy's Wharf (Mepham 2002), a short distance downstream and closer to the heart of Greenwich. At the latter site the post-medieval pottery was mainly dated to the 16th and 17th centuries and could thus be contemporary with some of the material from HOF04. It is worth noting, however, that phases 2 to 4 at Creedy's Wharf might have dated slightly earlier if recorded by MoLSS, but this depends on the clay pipes and whether all the redwares are PMR or if they include some of the earlier post-medieval redwares (PMRE). Phase 5 at Creedy's Wharf (late 17th/early 18th century) would appear to be contemporary with contexts [2] and [16] while phase 6 is later than any of the HOF04 contexts.

4.1 The site

Within the local context, the pottery indicates that although medieval activity has been noted elsewhere in Greenwich (*eg,* Mepham 2002, 70-71), and also within Deptford (Divers 2004, 20-1), it did not extend to this area to the east of the creek. Rubbish was, however, being discarded there by the late 16th/early 17th century. The character of the pottery from the site is homogenous, and sherd links were found between different revetments in both the western and eastern parts of the site. This suggests that the infilling of the channel and the construction of the revetments was carried out over a short period of time, and in several cases as parts of as a single event. Once the pottery has been marked the potential most certainly exists to identify further sherd links. This may help to confirm or question the suggested correlation of layers in the two parts of the site, and will also aid the reconstruction of vessel profiles and give a better picture of how many vessels are represented. For this reason, and also because parallels have been published in The Stowage report (Jarrett 2004) only provisional recommendations are made for illustration at present. Some 10-20 redwares could be illustrated, either as types not represented at the Stowage or to give a representative sample of the material, as well as a range of other fabrics/forms.

4.2 Pottery production

Within the regional context, one of the more interesting aspects of the local redwares is that they include a mix of wares that have clearly been used and sherds that are seconds, if not rejects. The latter are represented by several sherds from [2], including two bases with glaze over the broken edge, two bases with pooled glaze inside them, and a rim sherd with kiln scar. The finds from [3] include even more obvious waster material.

The source of these finds is uncertain but they are most likely to be from the Deptford potteries, which were supplying the London region alongside the Woolwich kiln and others in Surrey and Essex. The closest kilns to Wood Wharf are located at The Stowage site (SOA96), on the west bank of Deptford Creek, where large dumps of redware kiln waste were found (*c*.10,000 sherds; Jarrett 2004, 89-90). It is not known when the industries at SOA96 commenced (Divers 2004; Jarrett 2004, 92). It was suggested that much of the pottery from SOA96 could be redeposited (possibly up to 50 years old) and the same may apply at HOF04. There are, however, grounds for dating other pieces to the late 17th or early 18th century (*ibid*). The waster material (and kiln furniture: see Appendix VI, 3.) from HOF04 may be able to shed some light on this problem and will add to the understanding of the pottery industry at Deptford and how it disposed of unwanted debris.

4.3 Trade

The imported wares are of national and international interest. Although now being recognised on sites in London, Portuguese wares are still rare in the capital, and there is no assembled body of comparative material. A cluster of finds such as this suggests more than the occasional souvenir. Despite an apparent lack of similar examples from the site of the East India Company dockyards (SOA96) it seems likely that the finds from HOF04 are derived from the EIC, although they could also have been used by merchants or sailors who were living and/or trading in Deptford. The Chinese stoneware bowl with lustre decoration is a remarkable find (C Beecher pers comm); two other examples of CHPO STON have been recorded at Bermondsey Abbey, but are not necessarily the same. These and other possible finds would need to be checked during analysis.

4.4 Summary

To conclude, the assemblage is primarily of local significance and demonstrates that the channel infilling was probably contemporary with the development of the site on the opposite bank of the Creek as the shipbuilding yard of the EIC. Aspects of the assemblage, however, are of wider significance for the study of trade and industry, and could be published in *Post-medieval Archaeology* as a companion to the report on the Stowage site.

- The redware waster material is of significance for the London region as a whole as it derives from a local industry that was one of the major pottery suppliers to the city in the late 17th and 18th centuries (Nenk 1999, 236-7; Divers 2004, 23-4; Jarrett 2004, 91-2).
- The imported finds, and specifically the cluster of Portuguese and Italian wares are also of national and international significance. They will add considerably to the corpus of forms and decoration found in the capital and in England as a whole.

Table 4. Key to the fabric codes used in this report

Code	Expansion	From	To
BORDG	Surrey/Hampshire border whiteware with green glaze	1550	1700
BORDO	Surrey/Hampshire border whiteware with olive glaze	1550	1700
BORDY	Surrey/Hampshire border whiteware with clear (yellow) glaze	1550	1700
CHPO	Chinese porcelain	1580	1900
CHPO BATV	Chinese porcelain, Batavian ware	1700	1750
CHPO STON	Chinese porcellanous stoneware	1590	1900
CIMS	central north Italian marbled slipware	1600	1750
CIMS BICR	central Italian bichrome marbled slipware	1600	1750
CIMS POLY	central Italian polychrome slipware	1600	1750
CISG	central Italian (Pisa) sgraffitto redware	1550	1700
CITG	central Italian tin-glazed ware	1480	1550
DTGW	Dutch tin-glazed ware	1512	1800
DUTR	Dutch red earthenware	1300	1650
DUTSL	Dutch slipped red earthenware	1500	1650
ENGS	English stoneware	1700	1900
FREC	Frechen stoneware	1550	1700
GERSL	north German slipware	1480	1900
MLTG	Montelupo maiolica	1500	1700
PMR	London-area post-medieval redware	1580	1900
POTG	Portuguese tin-glazed ware	1600	1700
POTG BICR	Portuguese tin-glazed ware with bichrome decoration	1600	1700
RBOR	Surrey/Hampshire border redware	1580	1800
STSL	combed slipware (formerly COSL)	1660	1870
SWSG	white salt-glazed stoneware	1720	1780
TGW	English tin-glazed ware	1570	1800
TGW A	tin-glazed ware with Orton type A decoration (external lead glaze/ Wan Li/blue/yellow)	1612	1650
TGW B	tin-glazed ware with Orton type B decoration (manganese-mottled glaze)	1630	1680
TGW C	tin-glazed ware with Orton type C decoration (plain white glaze)	1630	1800
TGW D	tin-glazed ware with Orton type D decoration (external lead glaze/ polychome painted)	1630	1680
TGW G	tin-glazed ware with Orton type G decoration ('Lambeth polychrome')	1701	1711
WERR	Werra slipware	1580	1650
WEST	Westerwald stoneware	1590	1900
WEST PURP	Westerwald stoneware with purple and blue decoration	1665	1750

Table 5: Detail and quantification of pottery finds (SC = sherd count; ENV = estimated number of vessels)

Context	Edate	Ldate	Fabric	?	Form	?	Decor	State	SC	ENV	Wt (gm)	Flaw	Link	Illus.	Comment
1	1612	1700	BORDY		DISH FLNG				2	1	5				
1	1612	1700	PMR		BOWL	?	CORD		1	1	48				RIM
1	1612	1700	PMR		JUG	?			1	1	398				BASE/BODY
1	1612	1700	TGW A		DISH		WANL		1	1	17				
2	1720	1750	PMR		SUGM		WS		2	2	486				
2	1720	1750	PMR		BOWL FLAR	?	UNGL		1	1	178				
2	1720	1750	PMR		DISH FLNG				2	2	256				
2	1720	1750	PMR		DISH FLNG				1	1	356				
2	1720	1750	PMR		DISH FLAR				1	1	163				
2	1720	1750	PMR		DISH FLAR		GRGL	SB	2	2	185				
2	1720	1750	PMR		BOWL 1HFL				3	1	670				
2	1720	1750	PMR		BOWL 1HFL		THNK	SB	2	1	414	KS			
2	1720	1750	PMR		CHP	?	RIL	SR	4	1	918				
2	1720	1750	PMR		CHP2		RIL	S	3	1	274				
2	1720	1750	PMR		CHP1	?			3	1	291	POOL			
2	1720	1750	PMR		JUG	?	GRGL		2	1	391	GLOE			
2	1720	1750	PMR		BOWL FLAR		RIL		1	1	99				
2	1720	1750	PMR		SKIL		CORD		3	1	262	GLOE			RIM/BASE+STRT HANDLE
2	1720	1750	PMR		JAR				1	1	51	GLOE			BASE
2	1720	1750	PMR		JAR		GRGL		2	1	46	POOL			BASE
2	1720	1750	PMR		JAR				1	1	123				BASE W KILN SCAR
2	1720	1750	PMR		JAR				3	3	131	KS			1 BASE
2	1720	1750	PMR		JUG		GRGL		2	1	74				JAR COL? 2 JOINING
2	1720	1750	PMR		JAR COL		GRGL		1	1	36				RIM
2	1720	1750	PMR		TPIP				1	1	54	POOL			BASE; SLIGHTLY POOLED GL
2	1720	1750	DUTR		BOWL				2	1	130				BASE, RING FOOT
2	1720	1750	FREC		JUG				1	1	966				LARGE BASE
2	1720	1750	FREC		JUG				4	3	672				
2	1720	1750	FREC		JUG MINI				1	1	249			Y	PROFILE
2	1720	1750	WEST		JUG				2	2	45				
2	1720	1750	GERSL		DISH		MARB		1	1	18			Y	RIM
2	1720	1750	CHPO		TBOWL				1	1	24				**BASE; mid-late 18th cent**
2	1720	1750	TGW		PLATE		BIRD		3	1	84			Y	**BIRD IN FOLIAGE; 1720+**
2	1720	1750	TGW		PLATE FBI	?	GEO		5	1	188				PROF; BLACKENED GLAZE
Context	**Edate**	**Ldate**	**Fabric**	**?**	**Form**	**?**	**Decor**	**State**	**SC**	**ENV**	**Wt (gm)**	**Flaw**	**Link**	**Illus.**	**Comment**

2	1720	1750	TGW		PLATE FBI	?			2	2	79				RIM; BLACKENED GLAZE
2	1720	1750	TGW	?	PLATE		FLOR		1	1	15				POTG??
2	1720	1750	POTG		DISH		GEO		2	1	106			Y	CHINESE STYLE ?TGW
2	1720	1750	POTG	?	BOWL		BIRD		1	1	58			Y	BASE, RING FOOT
2	1720	1750	POTG	?	BOWL		GEO		1	1	49			Y	BASE, RING FOOT
2	1720	1750	TGW G		BOWL				2	1	93				
2	1720	1750	TGW C		PLATE				2	1	166				RIM/BASE
2	1720	1750	TGW C		BOWL				1	1	44				BASE, RING FOOT
2	1720	1750	TGW		JAR STR				1	1	51				BASE
3	1728	1750	PMR		DISH FLAR				1	1	63	GLOE			BASE
3	1728	1750	PMR		DISH FLNG		GRGL		2	1	192		J7		RIMS; JOIN [7]
3	1728	1750	PMR		DISH FLNG		GRGL		2	2	128		AS 7?		RIM; AS [7]?
3	1728	1750	PMR	?	PORR		GLI		3	2	98				RIMS
3	1728	1750	PMR		PORR		GLIE		1	1	10				
3	1728	1750	RBOR		PORR				1	1	25				RIM
3	1728	1750	PMR		JAR ST		THNK		5	1	765	KS		Y	RIM; GRGL
3	1728	1750	PMR		BOWL 2HND		THNK		3	1	592			Y	RIM; DK GRGL
3	1728	1750	PMR		JAR		THNK		1	1	115				COLLAR FRAG, UNGL
3	1728	1750	PMR		BOWL 1HFL		GRGL		4	1	288				RIMS X3
3	1728	1750	PMR		JAR HND		GLI		3	1	196				GRGL; HANDLE SCAR; RILLED
3	1728	1750	PMR		JAR COL				3	1	478	GLOE			RIM X2; CRUDE BASE
3	1728	1750	PMR		JAR COL		GRGL		2	1	126				BASE
3	1728	1750	PMR		JAR COL		GRGL		2	1	74	GLOE			BASE
3	1728	1750	PMR		CHP2		GRGL		3	1	113				RIM (CRUDE); BODY+BASE
3	1728	1750	PMR		JAR		GRGL		1	1	48	GLOE; KS			
3	1728	1750	PMR		TPIP		GRGL		3	1	88				
3	1728	1750	PMR		CHP2		CLGL		6	1	423				WHOLE BASE
3	1728	1750	PMR		DISH FLNG		CLGL		1	1	51				RIM
3	1728	1750	PMR		DISH FLNG		CLGL		1	1	35				RIM
3	1728	1750	PMR		PIP	?			1	1	39			Y	RIM
3	1728	1750	PMR		PIP	?			1	1	19				
3	1728	1750	PMR		DISH	?			1	1	29	KS			SLIGHT SCAR UNDERNEATH
3	1728	1750	PMR		PIP	?	GRGL		1	1	31	KS			BASE; SLGHT SCAR ON BODY
3	1728	1750	PMR		JAR		GLI		1	1	18				
3	1728	1750	PMR		JAR		GLIE		2	2	34				
3	1728	1750	PMR		JAR				1	1	192	GLOE		Y	BASE, DISTORTED
3	1728	1750	PMR		JAR		UNGL		4	4	330				
Context	**Edate**	**Ldate**	**Fabric**	**?**	**Form**	**?**	**Decor**	**State**	**SC**	**ENV**	**Wt (gm)**	**Flaw**	**Link**	**Illus.**	**Comment**

3	1728	1750	PMR		SUGM		WS		1	1	38				
3	1728	1750	DUTSL		PORR				5	1	70			Y	DATE 1728
3	1728	1750	CISG		DISH FLNG		POLY		1	1	11				
3	1728	1750	CIMS		BOWL				4	3	105				RIM, 2 BASE
3	1728	1750	MLTG		TAZZ		FOLI		4	1	91				RIM, BASE
3	1728	1750	CITG						2	1	8				
3	1728	1750	BORDG		DISH				2	1	54				
3	1728	1750	BORDY		PIP				2	1	23				RIM+BASE ?PORR
3	1728	1750	FREC		JUG		APD		1	1	16		AS 4?		PART OF MEDAL? AS [4]?
3	1728	1750	WEST		JUG	?			2	1	82				BASE ?TANKARD
3	1728	1750	TGW C		CHP				1	1	36				BASE ?TANKARD
3	1728	1750	TGW C		PLATE				2	1	9				
3	1728	1750	TGW		JAR STR				5	3	54				2 RIMS
3	1728	1750	TGW A		DISH		WANL		3	2	101				DISCOLOURED
3	1728	1750	TGW D		DISH		GEO		1	1	23				DISCOLOURED; BLUE+MANG
3	1728	1750	TGW D	?	DISH		GEO		1	1	12				BLUE/WHITE
3	1728	1750	TGW		PLATE		LAND		4	4	56				RIM; 2 BASES C18th
3	1728	1750	TGW		PLATE OCT	?			1	1	11		J4		RIM; JOINS [4]
3	1728	1750	TGW C		TOY	?			1	1	17			Y	TOY IRON/SHELF; WHOLE
3	1728	1750	POTG		DISH		LAND		2	1	57			Y	MYTHOLOGICIAL SCENE; DEC ON BACK
3	1728	1750	POTG		DISH	?	FLOR		1	1	14			Y	BASE
3	1728	1750	POTG		PORR		ARC		1	1	36			Y	RIM, AS [4]; DEC ON BACK
3	1728	1750	POTG		BOWL		WANL		1	1	4		AS 7?	Y	AS [7]?? DEC ON BACK
3	1728	1750	POTG BICR		DISH		FLOR		1	1	11		AS 3/7?	Y	RIM; DEC ON BACK
3	1728	1750	POTG BICR		TAZZ	?			2	1	11			Y	PED BASE?
3	1728	1750	POTG BICR		DISH		ARM		1	1	13		J7	Y	JOINS [7]
3	1728	1750	CHPO STON		BOWL				1	1	195		AS 4, 18	Y	PED BASE
4	1730	1750	PMR		BOWL	?	CORD		1	1	137				RIM, LARGE
4	1730	1750	PMR		BOWL				1	1	33				RIM
4	1730	1750	PMR		DISH				1	1	131				RIM
4	1730	1750	PMR		PIP			S	1	1	23				BASE
4	1730	1750	PMR	?	PIP				3	1	32		J5		PMRE? JOINS [5]
4	1730	1750	PMR		PIP		GLIE		1	1	3				
4	1730	1750	PMR		CAULPIP		RIL		1	1	12				GRGL
4	1730	1750	PMR		PORR	?		S	1	1	11				RIM
4	1730	1750	PMR		SUGM		WS		1	1	28				
4	1730	1750	PMR		SUGM				3	3	157				
Context	**Edate**	**Ldate**	**Fabric**	**?**	**Form**	**?**	**Decor**	**State**	**SC**	**ENV**	**Wt (gm)**	**Flaw**	**Link**	**Illus.**	**Comment**

4	1730	1750	TGW		DISH				2	1	113				DISCOLOURED; AS [3]?
4	1730	1750	TGW C		VASE	?			2	1	53				BASE, DISCOLOURED
4	1730	1750	RBOR		MUG	?			1	1	6				
4	1730	1750	DUTR		TPIP			S	2	1	124				WHOLE BASE, 3 SMALL FEET
4	1730	1750	DUTSL		PORR				2	1	16		AS 6		RIM
4	1730	1750	FREC		JUG				1	1	21		as		
4	1730	1750	CIMS BICR		BOWL	?			2	2	14				
4	1730	1750	CIMS POLY		BOWL				1	1	19				
4	1730	1750	CISG		BOWL				2	1	24				RIM, BASE
4	1730	1750	TGW		PLATE OCT		FLOR		1	1	32		J3	Y	**RIM, JOINS [3]; c 1740?**
4	1730	1750	POTG		PLATE				1	1	11			Y	
4	1730	1750	POTG		PORR		ARC		1	1	3		AS 3	Y	
4	1730	1750	POTG		DISH				1	1	15			Y	RIM; WANL DEC?
4	1730	1750	POTG		PLATE	?			1	1	4				
4	1730	1750	POTG		TAZZ				1	1	26				
4	1730	1750	CHPO STON		BOWL				1	1	5		AS 3, 18	Y	AS [3]
5	1670	1750	BORDY		DISH FLNG				1	1	63				RIM
5	1670	1750	**TGW C**		**CHP**				1	1	67				BASE
5	1670	1750	POTG BICR		PLATE	?	FLOR		1	1	5			Y	BASE; CF [3]
5	1670	1750	PMR		BOWL 2HND		CORD		3	1	283				RIM
5	1670	1750	PMR		BOWL	?	CORD		1	1	115				RIM, HEAVY
5	1670	1750	PMR	?	PIP	?	GRGL		1	1	38		J4		BASE, JOINS [4]
5	1670	1750	PMR		PORR				2	1	10				RIM
5	1670	1750	PMR		JAR		GRGL		1	1	114				INT GLAZE
5	1670	1750	PMR		JAR		GRGL		1	1	50				INT GLAZE
5	1670	1750	PMR		JAR		BRGL		2	1	50				JOINING
5	1670	1750	PMR		JAR		GRGL		1	1	15				RDCD EXT.
5	1670	1750	PMR		JAR		CLGL		2	1	51				JOINING; RILLED
5	1670	1750	PMR		JAR		CLGL		2	1	273	GLOE			THICK WALL
5	1670	1750	PMR		JAR		CLGL		1	1	17				GLI
6	1670	1750	TGW		PLATE				2	1	16				**BASE, LATE C17/18**
6	1670	1750	PMR		JAR		INCD		1	1	21				
6	1670	1750	PMR		JAR		GLI		1	1	6				
6	1670	1750	PMR		JAR		GLE		1	1	7				
6	1670	1750	DUTSL		PORR				1	1	6		AS 4		AS [4]?
7	1700	1750	FREC		JUG	?	APDA		5	1	321				WHOLE BASE ?BOTTLE
7	1700	1750	FREC		JUG				1	1	63				HANDLE SCAR
Context	**Edate**	**Ldate**	**Fabric**	**?**	**Form**	**?**	**Decor**	**State**	**SC**	**ENV**	**Wt (gm)**	**Flaw**	**Link**	**Illus.**	**Comment**

7	1700	1750	WEST PURP		JUG				6	1	35				RIM
7	1700	1750	CIMS POLY		BOWL				2	2	38				2 RIMS
7	1700	1750	CHPO		SAUC	?			1	1	33				BASE; BIRD MARK ON UNDERSIDE
7	1700	1750	PMR		DISH FLNG		GRGL		1	1	117		J3		RIM, JOINS [3]
7	1700	1750	PMR		DISH FLNG		GRGL		1	1	47		AS 3		RIM, AS [3]
7	1700	1750	PMR		DISH FLNG		CLGL	S	1	1	89		3?		RIM
7	1700	1750	PMR		DISH FLNG		CLGL		1	1	99				RIM
7	1700	1750	PMR		DISH FLAR				1	1	362				RIM, DEEP
7	1700	1750	PMR		JAR ST		THNK		1	1	278				RIM, UNGL EXT
7	1700	1750	PMR		JAR	?	UNGL		1	1	293				RIM, HEAVY
7	1700	1750	PMR		FLP		PERF		2	2	304				BASES, HOLE IN ANGLE
7	1700	1750	PMR		BOT RND	?	UNGL		1	1	201			Y	BASE
7	1700	1750	PMR		JAR COL		GRGL		1	1	139	KS			BASE
7	1700	1750	PMR		JAR		GRGL		3	1	153				BASE
7	1700	1750	PMR		JAR		GRGL		1	1	32				
7	1700	1750	PMR		JAR STR		GLIE	S	1	1	27				CLGL
7	1700	1750	PMR		COND				1	1	43				RIM/BASE
7	1700	1750	PMR		BOWL DEEP				1	1	39				RIM
7	1700	1750	PMR		PORR			S	1	1	17	POOL			RIM
7	1700	1750	PMR		PIP			S	3	1	63				RIM
7	1700	1750	PMR		JAR		GLIE	A	2	2	36				CHP? ABRADED
7	1700	1750	PMR		JAR		GRGL		1	1	8				CHP?
7	1700	1750	PMR		PIP		GRGL	S	1	1	18				
7	1700	1750	TGW		PLATE				3	1	83				C18TH; FISH DESIGN?
7	1700	1750	TGW C		MUG				1	1	9				RIM
7	1700	1750	TGW C		OINT				1	1	8				RIM
7	1700	1750	POTG		DISH		WANL		4	1	88			Y	
7	1700	1750	POTG		DISH				1	1	10				
7	1700	1750	POTG		BOWL	?	FLOR		1	1	7			Y	JUG?
7	1700	1750	POTG BICR		DISH		ARM		1	1	43		J3	Y	
15	1730	1750	**CHPO**		**SAUC**				1	1	4				**V THIN BASE; mid-18th cent; latest find**
15	1730	1750	BORDO		DISH FLNG			S	2	1	60				
15	1730	1750	BORDG		CHP	?			1	1	27				
15	1730	1750	BORDG		BOWL FLAR				2	1	15				RIMS, JOINING
15	1730	1750	BORDG		COL				1	1	6		AS 17		
15	1730	1750	FREC		JUG				1	1	46				RAT TAIL HANDLE
15	1730	1750	FREC		JUG				1	1	22				
Context	**Edate**	**Ldate**	**Fabric**	**?**	**Form**	**?**	**Decor**	**State**	**SC**	**ENV**	**Wt (gm)**	**Flaw**	**Link**	**Illus.**	**Comment**

15	1730	1750	WEST		JUG		APD		1	1	20				
15	1730	1750	WEST		JUG				1	1	12				BASE
15	1730	1750	WEST	?	CHP				1	1	35				BASE
15	1730	1750	TGW		DISH				2	1	106				BASE; DISCOLOURED GLAZE
15	1730	1750	TGW		PORR	?			1	1	7				RIM; DEC INT/EXT
15	1730	1750	TGW		BOWL FLAR				1	1	4				DEC INT ONLY
15	1730	1750	TGW C		PLATE				1	1	9				RIM; DEC INT/EXT
15	1730	1750	TGW C		JAR STR				1	1	37				BASE
15	1730	1750	TGW B		MUG				2	1	45				BASE
15	1730	1750	POTG		DISH		LAND		2	1	37			Y	BASE
15	1730	1750	POTG		DISH		FLOR		1	1	6			Y	BASE W LETTERING ON BACK
15	1730	1750	PMR		CNDST UPRT				1	1	33				BASE
15	1730	1750	PMR		CHP2		CLGL		1	1	51				RIM+HANDLE
15	1730	1750	PMR		JUG	?			1	1	122				VERT HANDLE
15	1730	1750	PMR		DISH FLAR		GLIE		3	1	117				RIM/BASE
15	1730	1750	PMR		DISH FLAR		GLI		1	1	101				BASE, LARGE
15	1730	1750	PMR		PORR			S	1	1	33				RIM
15	1730	1750	PMR		BOWL 2HFL		GRGL		3	1	433				RIM+HANDLE; CORD
15	1730	1750	PMR		BOWL 1HFL		GRGL		1	1	159				RIM/BASE, SMALL
15	1730	1750	PMR		BOWL 1HFL		CLGL		4	1	152				RIM, HANDLE
15	1730	1750	PMR		BOWL HND		CLGL		1	1	47				HANDLE
15	1730	1750	PMR		BOWL		THNK		2	1	361	GLOE			RIM, HANDLE
15	1730	1750	PMR		JAR ST		THNK		1	1	170				RIM
15	1730	1750	PMR		BOWL FLAR		REED		1	1	67	KS			RIM, BRGL
15	1730	1750	PMR		BOWL				1	1	28	KS			RIM
15	1730	1750	PMR		BOWL				1	1	36	GLOE			RIM
15	1730	1750	PMR		DISH FLAR		GRGL		1	1	78				
15	1730	1750	PMR		LID		GRGL		1	1	100				RIM
15	1730	1750	PMR		TPIP2		CLGL		1	1	67				RIM
15	1730	1750	PMR		BOWL	?	GRGL		2	1	77				RIM
15	1730	1750	PMR		TPIP		GRGL	S	2	2	92				BASE+FOOT
15	1730	1750	PMR		JAR	?			1	1	60				BASE, CRUDE
15	1730	1750	PMR		JUG	?			2	1	206	POOL	AS 16		BASE, V CRUDE
15	1730	1750	PMR		JAR	?	RIL		2	2	66				BOWL?
15	1730	1750	PMR		BOWL FLAR		CORD		1	1	23				GR/BRGL
15	1730	1750	PMR		BOWL	?	GRGL		1	1	13				
15	1730	1750	PMR		PIP	?	CLGL		1	1	23				
Context	**Edate**	**Ldate**	**Fabric**	**?**	**Form**	**?**	**Decor**	**State**	**SC**	**ENV**	**Wt (gm)**	**Flaw**	**Link**	**Illus.**	**Comment**

15	1730	1750	PMR		JAR		GLIE		2	1	78				GR/BRGL
15	1730	1750	PMR		JAR		GLIE		1	1	80				
15	1730	1750	PMR		JAR		UNGL		2	2	77				
15	1730	1750	PMR		SUGM		WS		1	1	18				
15	1730	1750	PMR		SUGM				3	3	131				2 RIMS
15	1730	1750	PMR		JAR COL		GRGL		3	2	151				1 RIM, 1 BASE
16	1720	1780	WERR		DISH				2	2	31				BASES
16	1720	1780	GERSL		DISH			A	1	1	152			Y	RIM/BASE, MARK UNDERNEATH
16	1720	1780	CHPO		BOWL				3	1	53				PROFILE; c.1690-1700?
16	1720	1780	CHPO BATV		TBOWL				1	1	11				BASE; c.1700-1710?
16	1720	1780	STSL		DISH		PIE		2	1	47				
16	1720	1780	BORDO		DISH FLNG				1	1	40				RIM
16	1720	1780	BORDG		DISH FLAR				1	1	10				RIM
16	1720	1780	ENGS		TANK		RILL		1	1	40				BROWN WASH OVER RIM
16	1720	1780	SWSG		TANK				1	1	9				BASE
16	1720	1780	SWSG		BOWL	?			1	1	13				BASE
16	1720	1780	SWSG		TBOWL	?			1	1	10				BASE
16	1720	1780	TGW C		CHP				1	1	7				
16	1720	1780	TGW C		BOWL				2	2	22				RIMS
16	1720	1780	TGW B		DISH		STAR		1	1	71				BASE
16	1720	1780	TGW B		JAR				1	1	32				BASE
16	1720	1780	TGW		BOWL	?	FLOR		1	1	8				
16	1720	1780	POTG		PLATE		FLOR		1	1	9				RIM; DTGW?
16	1720	1780	POTG		PLATE		CABL		3	1	32		AS 26	Y	DOTTED FLORAL DEC
16	1720	1780	TGW		PLATE		FLOR		1	1	26				BASE
16	1720	1780	TGW G		PLATE				1	1	1				latest find
16	1720	1780	TGW		PLATE				1	1	4				latest find
16	1720	1780	TGW		VASE	?			1	1	19			Y	RIM; DEC INSIDE ?JUG
16	1720	1780	PMR		CUP CAUD		THD		2	1	250			Y	RIM/HANDLE
16	1720	1780	PMR		BOWL 2HFL	?	RIL		4	1	230				RIM+1 HANDLE
16	1720	1780	PMR		PORR		RIL		1	1	86				RIM ?PORR
16	1720	1780	PMR		BOWL FLAR				2	1	103				RIM
16	1720	1780	PMR		JAR		CLGL		1	1	40				RIM
16	1720	1780	PMR		PORR		GLIE		1	1	24				RIM, GRGL
16	1720	1780	PMR		DISH FLAR				3	1	142				RIM, BASE
16	1720	1780	PMR		BOWL FLAR				1	1	25	GLOE			RIM
16	1720	1780	PMR		JUG	?	RIL		4	1	102		AS 15		AS [15]; GROOVED HANDLE
Context	**Edate**	**Ldate**	**Fabric**	**?**	**Form**	**?**	**Decor**	**State**	**SC**	**ENV**	**Wt (gm)**	**Flaw**	**Link**	**Illus.**	**Comment**

16	1720	1780	PMR		JUG		GRGL		1	1	25				
16	1720	1780	PMR		JAR		RIL		1	1	73				RIM, CLGL
16	1720	1780	PMR		JAR		GRGL		1	1	112	GLOE			RIM
16	1720	1780	PMR		JAR ST		THNK		1	1	162				RIM, CRUDE+HEAVY
16	1720	1780	PMR		JAR ST		ROSE		1	1	119				CRUDE ROSETTE
16	1720	1780	PMR		JAR FLAR		GLIE		1	1	77				BOWL? BASE
16	1720	1780	PMR		JAR		GRLI		1	1	152				LARGE SHERD
16	1720	1780	PMR		JAR		GRGL		1	1	112	GLOE			RIM, RDCD SURFACES
16	1720	1780	PMR		JAR		GRGL		1	1	55	GLOE			GLI ONLY
16	1720	1780	PMR		JAR		BRGL		1	1	36	GLOE			GLI ONLY
16	1720	1780	PMR		JAR		GLE		1	1	49				CL/BRGL
16	1720	1780	PMR		JAR		GRGL		1	1	38				
16	1720	1780	PMR		DISH FLNG				1	1	28				RIM, SMALL
16	1720	1780	PMR		PIP		GLI		1	1	118				LADLE HANDLE
16	1720	1780	PMR		PIP		GLIE		1	1	62				
16	1720	1780	PMR		MISC		THD		2	1	149				2 HORIZ HANDLES
16	1720	1780	PMR		SUGM		WS		2	2	115				
17	1675	1725	BORDG		COL				3	1	105		AS 15	Y	
17	1675	1725	BORDO		PORR				2	1	52				BASE
17	1675	1725	STSL		LID				1	1	100			Y	
17	1675	1725	**TGW C**		**CHP2**				1	1	97				RIM
17	1675	1725	FREC		JUG				1	1	12				
17	1680	1725	PMR		SUGM		WS		3	3	347			Y	1 W LARGE FLAT NIPPLE
17	1680	1725	PMR		COL				3	1	423			Y	RIM, BASE W FOOT
17	1680	1725	PMR		DISH FLNG				1	1	183				RIM
17	1680	1725	PMR		BOWL				1	1	86			Y	RIM
17	1680	1725	PMR		CHP2				1	1	27				RIM
17	1680	1725	PMR		SKIL	?			1	1	29				RIM
17	1680	1725	PMR		JAR ST		THNK		2	2	635	KS			RIMS, 1 W KILN SCAR ON TOP
17	1680	1725	PMR		JAR ST		THNK		2	2	493	GLOE		Y	
17	1680	1725	PMR		JAR		GLIE		1	1	101				
17	1680	1725	PMR		JAR		GLI		1	1	148				
17	1680	1725	PMR		JAR		GRGL		1	1	15				
17	1680	1725	PMR		JAR		GRGL		2	2	222				UNEVEN BASEBASE
17	1680	1725	PMR		MUG	?	GRGL		1	1	95				BASE; GLIE (ALL OVER)
18	1670	1750	PMR		JAR				1	1	3				
18	1670	1750	CHPO STON		BOWL		LUST		1	1	6		AS 3, 4	Y	RIM
Context	**Edate**	**Ldate**	**Fabric**	**?**	**Form**	**?**	**Decor**	**State**	**SC**	**ENV**	**Wt (gm)**	**Flaw**	**Link**	**Illus.**	**Comment**

25	1720	1750	FREC		JUG				1	1	283				BASE
25	1720	1750	TGW C		JAR STR				3	1	79				
25	1720	1750	**TGW**		**PLATE**		LAND		1	1	89				**RIM/BASE; 18th century, latest find**
25	1720	1750	PMR		DISH				2	2	109				RIM, BODY
25	1720	1750	PMR		BOWL 1HCN	?			1	1	77				RIM
25	1720	1750	PMR		CHP				1	1	70				HANDLE (V)
26	1675	1725	BORDY		DISH FLAR				1	1	79				
26	1675	1725	STSL		DISH		PIE		3	1	90				
26	1675	1725	STSL		MUG				1	1	10				RIM/HANDLE
26	1675	1725	TGW C		CHP				1	1	125				BASE/HANDLE
26	1675	1725	TGW C		DISH FLAR				2	1	44				
26	1675	1725	WERR		DISH				1	1	42				
26	1675	1725	FREC		JUG				1	1	28				
26	1675	1725	WEST		CHP				2	1	117				
26	1675	1725	PMR		CHP2				2	1	93	GLOE			RIMS, JOINING
26	1675	1725	PMR		CHP2		BRGL		1	1	226				RIM/HANDLE
26	1675	1725	PMR		BOWL RND	?	CORD		1	1	300			Y	EXT LID SEATED RIM; thumbed cordons
26	1675	1725	PMR		DISH FLAR		GRGL		2	1	250				RIM/BASE
26	1675	1725	PMR		BOWL 1HFL		GLI	S	1	1	153				RIM/BASE
26	1675	1725	PMR		PIP		GLIE		1	1	67				LIPPED
26	1675	1725	PMR		BOWL 2HRN		THD		3	1	575				RIM/HANDLE, COMBED DEC
26	1675	1725	PMR		BOWL 2HRN		GRGL		1	1	394	KS			RIM/HANDLE SCAR
26	1675	1725	PMR		JAR HND		GRGL		1	1	170				RIM, BOWL HRN?
26	1675	1725	PMR		JAR				2	2	410				2 WHOLE BASES
26	1675	1725	PMR		JAR		GLIE		2	2	184				1 BASE
26	1675	1725	PMR		PIP		GLIE		1	1	50				
26	1675	1725	PMR		JAR		BICR		1	1	30				BRGL EXT, CLGL INT
26	1675	1725	PMR		JAR		UNGL		2	1	266				
26	1675	1725	PMR		PIP		GLIE		1	1	69				RIM
26	1675	1725	PMR		JAR ST		COMB		5	1	878	GLOE			BASE, BODY
26	1675	1725	TGW		DISH		POLY		1	1	10				RIM
26	1675	1725	TGW		DISH FLUT				1	1	14				
26	1675	1725	POTG	?	LID				1	1	59			Y	COFFEE POT LID; POTG?
26	1675	1725	POTG	?	DISH		FLOR		1	1	10		AS 16	Y	DTGW?
26	1675	1725	POTG	?	DISH		FLOR		1	1	11		cf 3	Y	DTGW? Cf [3] (not same)
26	1675	1725	POTG	?	BOWL		FLOR		3	1	24		AS 16	Y	DTGW?
TOTALS									**533**	**375**	**35627**				

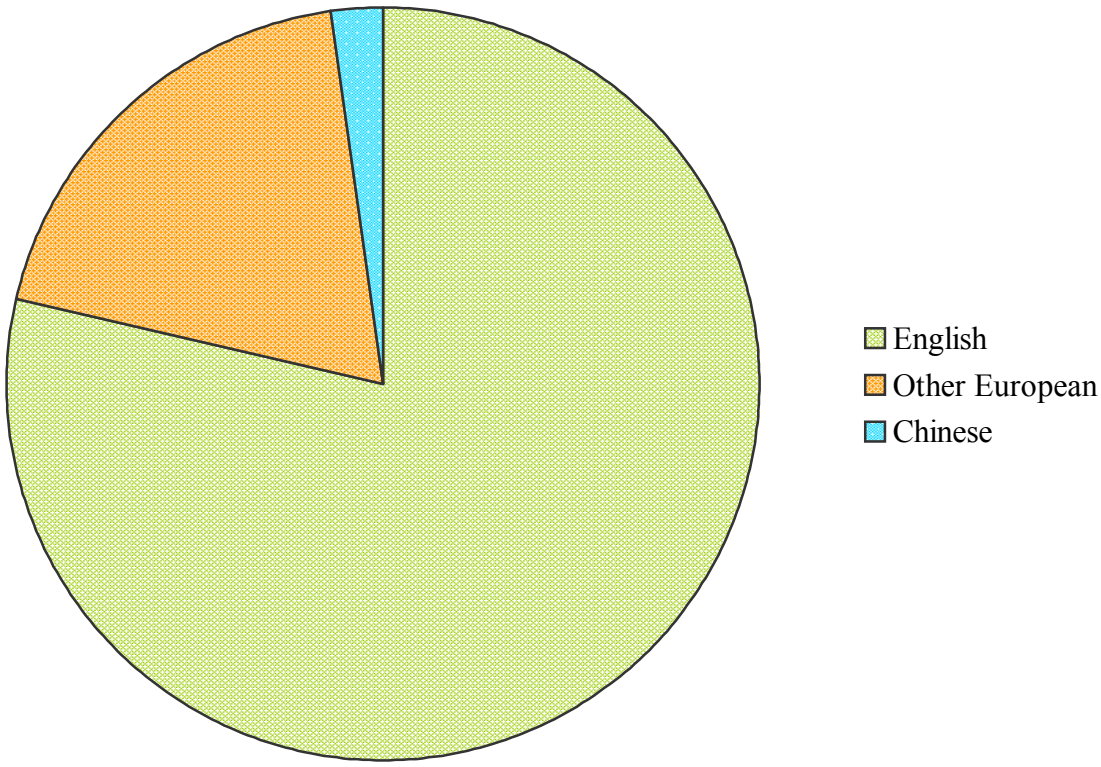


Fig 42 Breakdown of all pottery by broad origin: total estimated number of vessels (ENV) 375

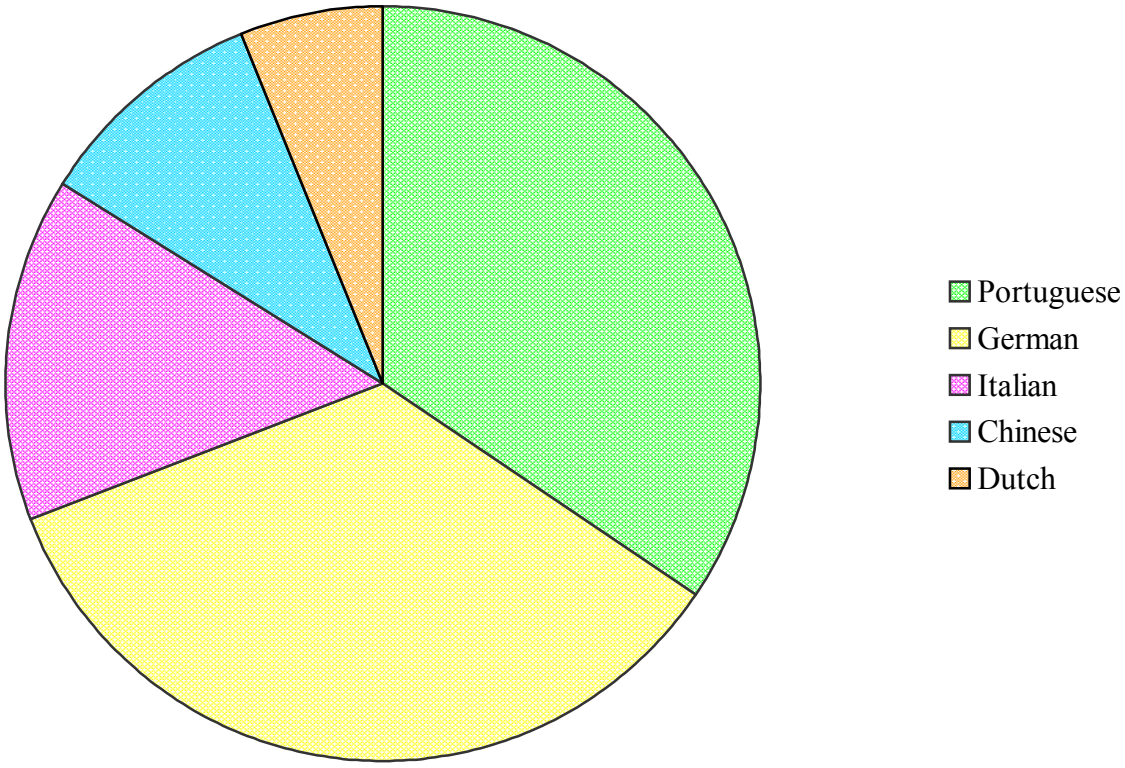


Fig 43 Breakdown of imported pottery by country of origin (total ENV 80)

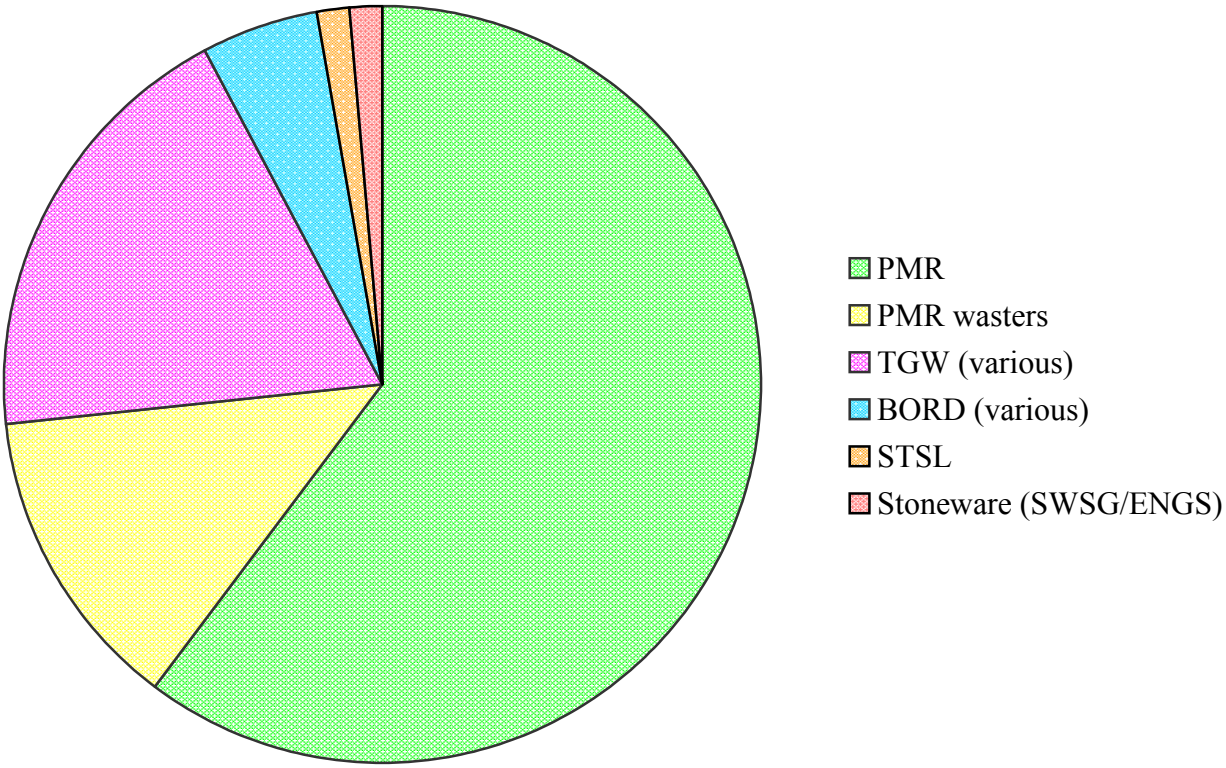


Fig 44 Breakdown of indigenous pottery by type/locality (total ENV 295)

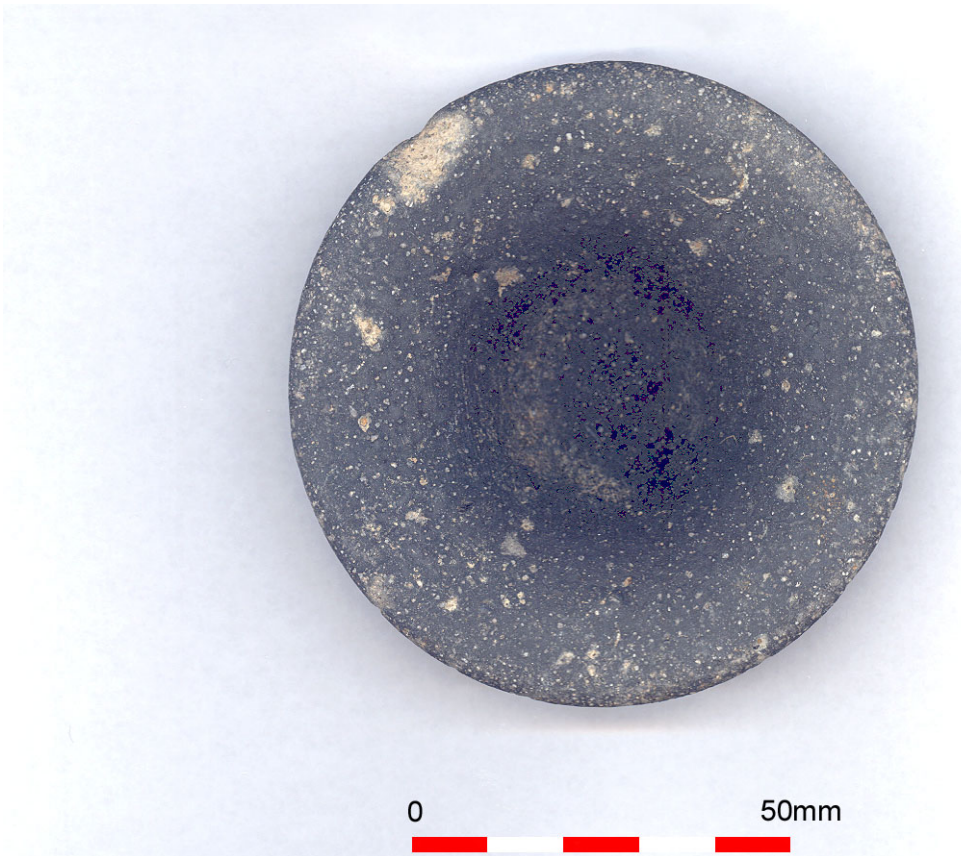


Fig 45 The base of a sand-tempered ware pedestal jar dating to c. 50 BC to 43 AD, from context [16]. This appears to have been reused, possibly as a gaming piece *(scale 1:1)*

Fig 46 Redware jars, probably from the Deptford potteries: at top from [3] showing a thumbed band applied just below the rim, and below a body sherd [16] with rosette motif

Fig 47 English tin-glazed ware plate with a bird in foliage design, stylistically datable to the second quarter of the 18th century *(scale 1:1)*

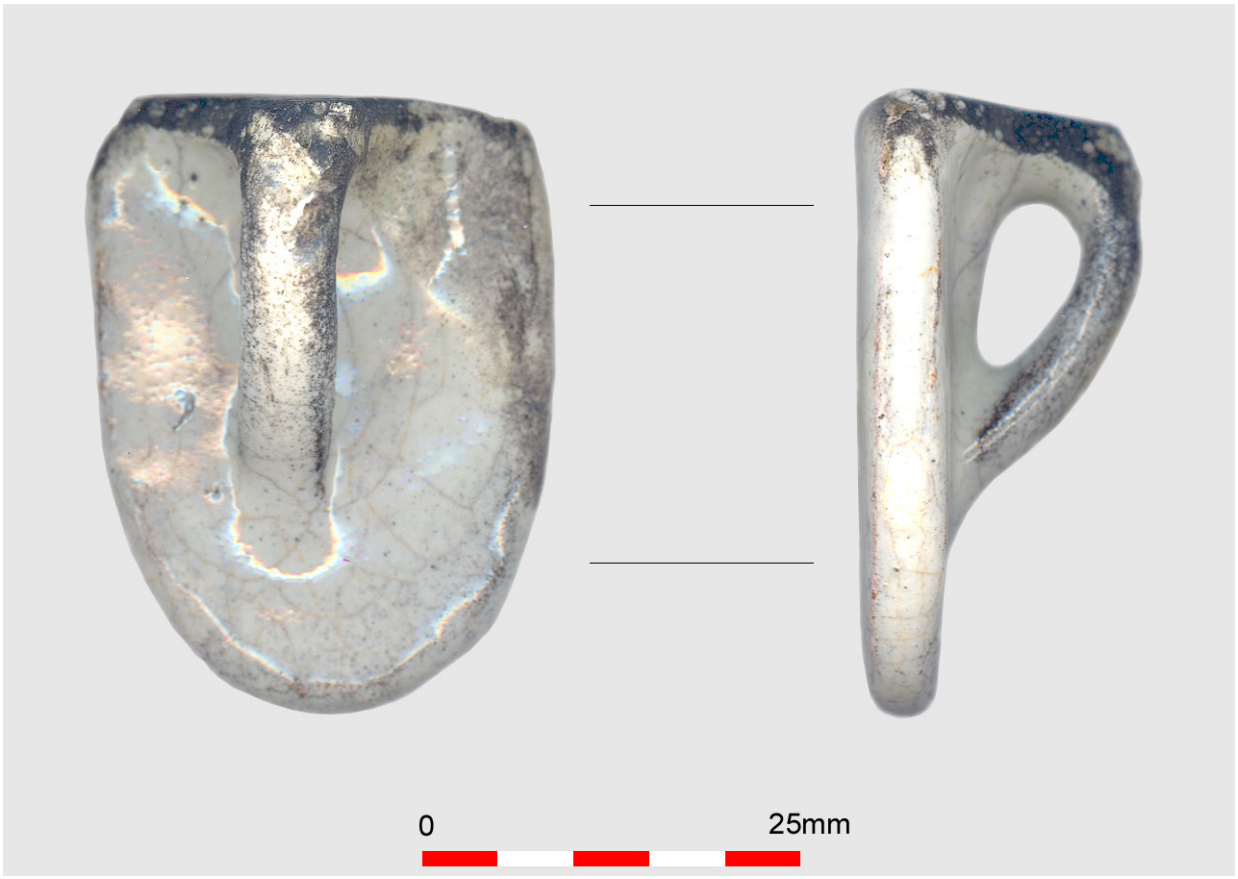


Fig 48 Small English tin-glazed object from context [3] that may be to be a toy iron. One end (shown at top here) appears to have been filed down, so possibly broken and reused? (*scale 2:1)*

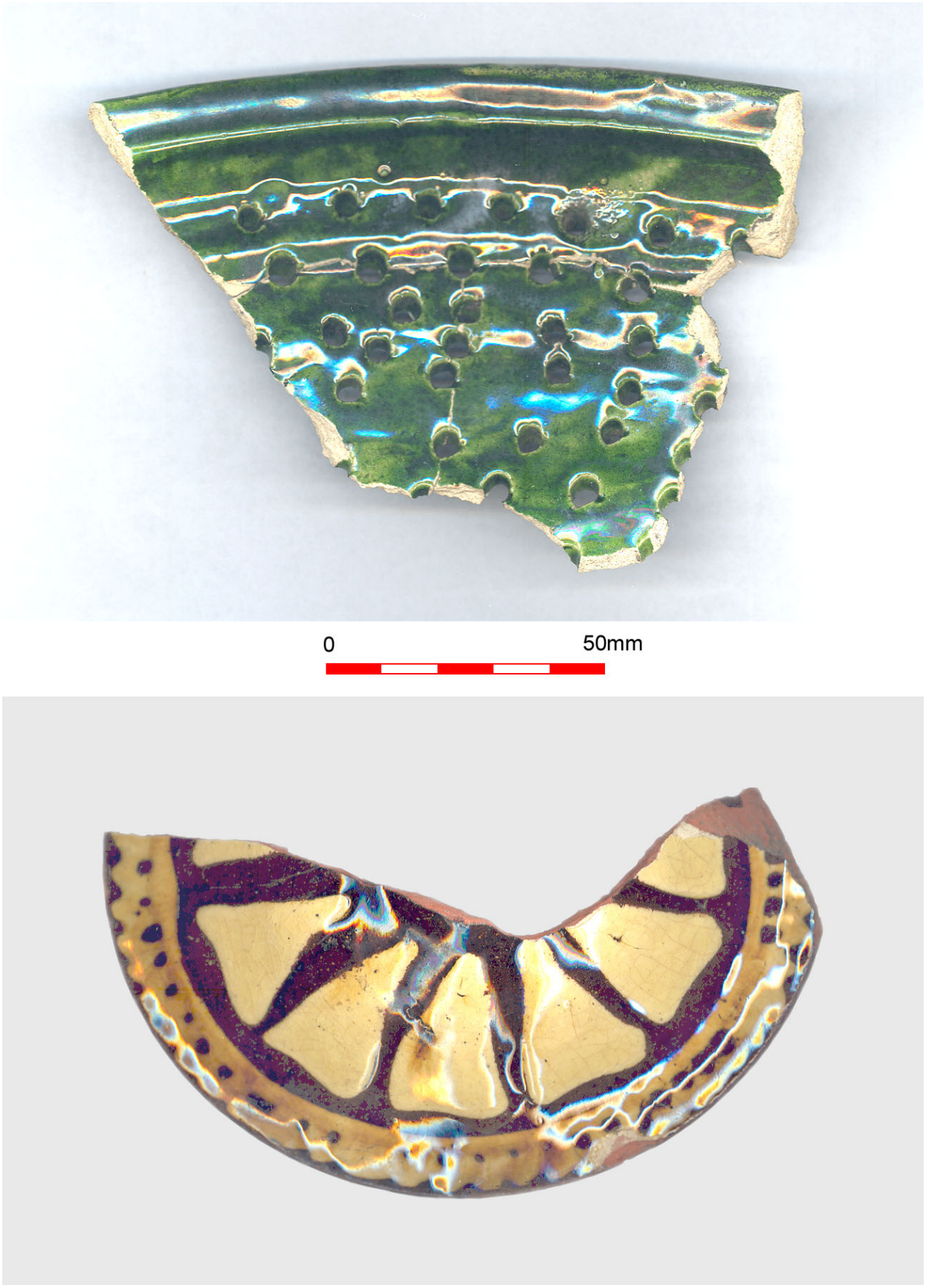


Fig 49 Regional English wares: at top a Surrey/Hampshire border whiteware colander [15], and below part of a large Staffordshire slipware lid [17]

Fig 50 Portuguese tin-glazed wares from [7]: at top part of a dish of possible late 17th or 18th century date with blue and manganese heraldic design, and below a dish decorated in the Chinese Wan-li style, c. 1625-1650 *(scale 1:1)*

Fig 51 Imported tin-glazed wares: at top a Portuguese dish decorated with geometric motifs [2]; below part of an Italian tazza with floral decoration in the Montelupo style from [3]

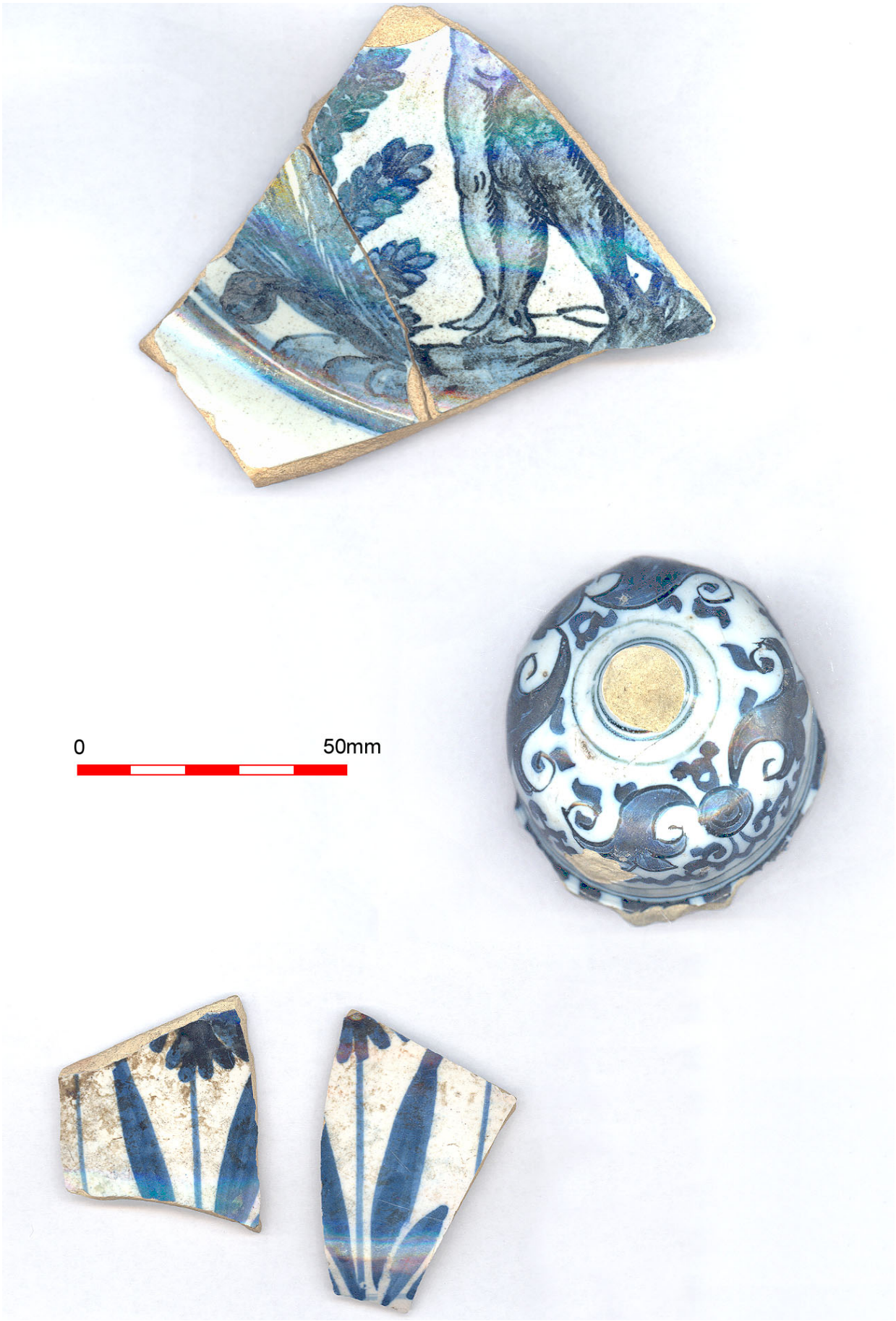


Fig 52 Imported tin-glazed wares: at top part of a Portuguese dish [3] showing the legs of two standing figures: one is possibly a centaur, suggesting a mythological scene. At centre and below are a lid and bowl sherds from [26] that are either Portuguese or Dutch

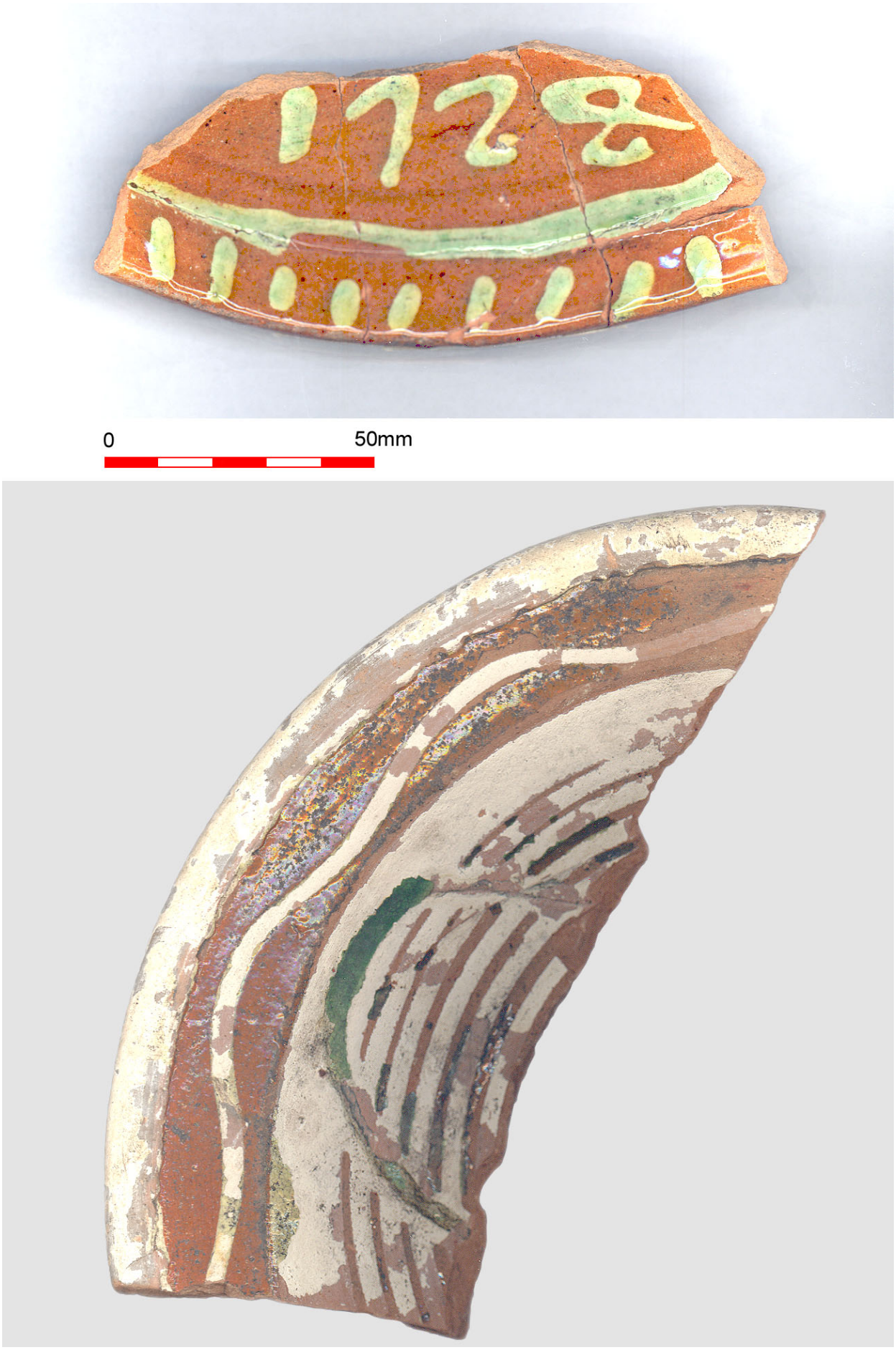


Fig 53 Dutch slip-decorated porringer (top), and below an abraded German Werra slipware dish

Fig 54 A rare miniature Bartmann-type jug from [2], unfortunately missing part of the rim so it is not known if this originally had an applied face mask. Shown at actual size

Fig 55 Chinese wares: at top the base of an unusual stoneware bowl with lustre decoration [3], probably from southern China. Below are two porcelain tea bowls from [16], showing internal decoration and to the right the marked underside

Appendix II. Bulk glass assessment

Beth Richardson, Museum of London Specialist Services

I:/PROJECTS/EXPROJ/compass/HOF04/reg01.doc

1. Introduction/ methodology

Bulk glass was recovered from four contexts: [2], [7], [15] and [25], each representing an area of fill between the first and second revetments on the northern side of [33]. The glass dates to the late 17th/18th century: the material was examined, and identifications and date ranges assigned.

2. Categories by dating and materials

Context [2]

Rim and necks from two wine bottles. One has a short neck, the shoulder of a rounded body and a thin string rim close to the mouth of the bottle. The other has a short but more cylindrical neck and a string rim. Both are mid-green glass. In neither case does enough of the body survive for close dating, but the short necks and broad shoulder suggest a date of *c* 1670/80 to 1740.

Context [7]

Wine bottle base; deep basal kick. Mid-green glass.

Context [15]

Wine bottle base; deep basal kick. Mid-green glass. Also slightly curved, solid oval-sectioned rod in dark green glass, probably a handle.

Context [25]

Wine bottle rim and neck. Short neck, wide string rim close to the mouth of the bottle, shoulder of a rounded body. Mid-green glass. *c* 1680-1740.

3. Assessment work outstanding

There is no assessment work outstanding.

4. Analysis of potential

The small assemblage of bulk glass is broadly datable, but the bottles are not sufficiently complete for close dating. It has no further potential on its own.

Appendix III. Accessioned finds assessment

Beth Richardson, Museum of London Specialist Services

I:/PROJECTS/EXPROJ/compass/HOF04/reg01.doc

1. Introduction/methodology

There were twenty-three accessioned finds from the site; this figure includes two coins and a cloth seal assessed by Geoff Egan, but excludes twenty-six marked clay pipe bowls and one wall tile which were subsequently accessioned (Appendices V, <25> to <50>, & VI, <51>). One accession number was not allocated (<7>).

The finds have been analysed and recorded individually using standard MoLSS procedures. Some lead items will be further cleaned, and all copper alloy and iron accessions and some composite accessions will be further cleaned and x-rayed. A summary of conservation requirements is included below (Liz Barham; section 5).

Table 1. Summary of accessioned finds by material and period

Material	Period	Total	Comment
Ceramic	Post-medieval	1	
Copper alloy	"	6	Includes 2 coins
Iron	"	4	
Lead	"	7	
Ivory	"	2	
Composite	"	3	
Total		**23**	

2. Categories by material

2.1 Ceramic

A counter (<24>, [26]) made from a decorated tin-glazed wall tile of late 17th or early 18th century date.

2.2 Copper alloy

All the copper alloy finds are well-preserved. A circular bell (<9> [4]) is the size and shape of a rumbler bell, but, unusually, has part of a rod extending from its upper surface. Two complete almost identical complete spoons (<20> and <21>; both [17]) with large rounded ('fig-shaped) bowls and straight flat stems have maker's marks, and may be closely datable. One (<20>) is stamped with the owner's or maker's initials. Another complete spoon (<14> [7]) is a slightly later form, with an oval bowl and longer handle, and has its owner's initials scratched onto the handle. All are of late 17th or early 18th century date; the spoons with the rounded bowls have tinned surfaces (imitating pewter or silver) and are very similar in form to the lead spoons <8> and <11> (below).

There were also two worn copper alloy coins: a William III farthing of 1698 [+] <2> and a Charles II farthing of the 1670s [15] <17>.

2.3 Lead

Again there are two complete and almost identical spoons (<8> [4]; <11> [5]) with large rounded bowls and straight flat stems. Both have maker's and owner's marks, and one is dated 1660. A small lid with decorative moulded rim (<16> [15]) may come from a tobacco box. A small open vessel (<22> [26]) is of uncertain function. A roughly cut ovoid disc with a hole through the top is also of uncertain function but may be a weight (<15> [7]). A miniature frying pan (<19> [16]; context dated *c* 1700-1740) is probably the first stratified London example of a form of toy thought to be exclusively 17th century.

Finally, there was a single unstratified cloth seal [+]<1>. This is a French import, dated 1664-1789. The thickness of the seal implies a thick textile, possibly a coarse linen.

2.4 Iron

A 'wavy-shaped' iron fitting from a patten (<18>, [16]) is a good example of a late 17th or early 18th form of patten 'sole'. Half of a pair of scissors <5> [3] (the handle and blade) is of the same date, with characteristic baluster moulding at the finger-loop/handle junction. There are also two fittings: a rove (<12> [5]) and a ?hinge or bracket (<10> [4]).

2.5 Ivory and bone

A near-complete ivory double-sided comb <23> from [26] is a nice example of a common late 16th to 18th century type. The other ivory and bone objects are cutlery handles, three from knives (<3> [2]; <6> [3]; <13>,[7]) and one indeterminate (<4> [2]). The handles are late 17th to early 18th century forms, although one (<4> [2]) is cruder and perhaps a one-off.

3. Catalogue

3.1 Ceramic

<24> [26] (Fig 65)
Complete. D 30mm. Counter made from a piece of manganese and white tin-glazed wall tile with part of a floral motif.

3.2 Copper alloy

<2> [+]
William III farthing, 1698 (date in edge legend); very worn.

<9> [4] (Fig 56)
Almost complete. D approx. 28mm. Circular bell with iron pea and two holes in the upper half as well as the usual two holes connected with a channel in the lower. A solid rod (incomplete) extends from upper surface between the two upper holes.

<14> [7] (Fig 59)
Complete. Spoon. L 150mm, W 32mm. Oval bowl, rectangular-sectioned stem widening to leaf-shaped terminal incised with the owner's initials: M B. The stem/bowl junction is strengthened with a rat tail spinal rib.

[15] <17>
Charles II farthing, ?1672-5 or 1679; very worn/corroded.

<20> [17] (Fig 59)
Complete. L 154mm, W 48mm. Spoon with fig-shaped bowl and straight flat stem which is rectangular in section and square cut at the end. It is stamped with the owner's or maker's initials I R on the underside of the terminal and has a *fleur de lys* maker's mark on the tin-coated bowl.

<21> [17] (Fig 59)
Complete. L 157mm, W 46mm. Spoon with fig-shaped bowl and straight flat stem which is rectangular in section and square cut at the end. ?*Fleur de lys* maker's mark on bowl.

3.3 Lead

<1> [+] (Fig 58)
Complete but worn. D 29mm. Cloth seal; French import with Crown over arms of France // (on rivet) ship on a sea in wreath. Part of the arms of Paris on second stamp; a parallel gives an edge legend around this as GROSE FERME DE FRANCE – one of the textile taxation organisations set up under Colbert from 1664 and in operation through the 18th century up to the Revolution of 1789. The thick, heavy seal implies a thick textile, possibly a coarse linen.

<8> [4] (Fig 59)
Complete; L 174mm, W 50mm. Spoon with fig-shaped bowl and straight flat stem which is hexagonal in section (with two wider sides at top and bottom) and square cut at the end. Very slight rat tail reinforcing junction between stem and bowl. The bowl is stamped I R 1660 in a small beaded circle with N P A in larger lettering (initials of the owner and his wife) stamped around the circle.

<11> [5] (Fig 59)
Complete; L 162mm, W 52mm. Spoon with fig-shaped bowl and straight flat stem which is hexagonal in section (with two wider sides at top and bottom) and square cut at the end. Very slight rat tail reinforcing junction between stem and bowl. The bowl is stamped with a maker's mark of two keys and initials RA, with the letter C in larger lettering above.

<15> [7]
Complete; L 37mm, W 32mm. ?Weight, roughly ovoid with a small hole. There may be the remains of a stamp at the bottom right hand side.

<16> [15] (Fig 56)
Complete; D 47mm. Lid (?from tobacco box) with decorative plain moulded concentric ring on upper surface and internal lid-seating. Moulded central handle.

<19> [16] (Fig 56)
Near-complete; D 30mm. Miniature toy frying pan (handle missing) of standard type, circular with cable moulding around rim and cast decoration of two fish arranged nose to tail surrounded by circular pellets which probably represent cooking bubbles. All 12 examples of pans published in Forsyth 2005 are thought to be 17th century (Forsyth 2005, 119-24). This example, from a context dated *c* 1700-1740, may be one of the first securely dated examples.

<22> [26]
Complete; D approx. 55mm. Vessel with small rim flange. Function unknown.

3.4 Iron

<5> [3] (Fig 57)
Incomplete; L 120mm. Half pair of scissors, with thin blade tapering to a point. The handle may be decorated with baluster moulding at finger-loop/handle junction. Very similar to an example from London, dated 1670-1750/60 (Grew in Thompson, Grew and Schofield 1984, 98-9).

<10> [4]
?Incomplete; L 76mm, W 32mm. L-shaped fitting, possibly a bracket, with four circular holes (one of which plugged with a nail) in its long side.

<18>, [16] (Fig 61)
Incomplete; L 188mm, max. W 90mm. 'Wavy-shaped' iron fitting from a patten (wooden or leather upper missing). Very similar to a published example from London, dated 1660-1720 (Grew in Thompson, Grew and Schofield 1984,106-7), and from Oyster Street, Portsmouth, dated late 17th or early 18th century (Fox and Barton, 1986, 240).

<12> [5]
Complete; L 40mm. Rove with rectangular-sectioned shank, possibly from ship.

3.5 Ivory

<4> [2]
Incomplete; L 80mm, max W 22mm. Round-sectioned flat-ended cutlery handle.

<23> [26] (Fig 57)
Incomplete; max W 54mm. Double-sided comb with finely-spaced teeth (<1mm intervals) on both sides. Common 17th and 18th century type, *cf.* London dated 1670-1750/60 (Grew in Thompson, Grew and Schofield 1984,110-11) and Guildford dated 1650-1714 (Fryer and Shelley, 1997, 196).

3.6 Composite

<3> [2] (Fig 60)
Incomplete; L 78mm; max W 20mm. Roughly polygonal facetted bone cutlery handle; the iron bolster and part of a step for probable knife blade survive.

<6> [3] (Fig 60)
Near-complete. L 130mm, max W 18mm. Knife. Round-sectioned ivory handle with bulbous end. The incomplete blade is parallel-sided, with a small step.

<13> [7] (Fig 60)
Near-complete. L 158mm, W 22mm. Knife. Round-sectioned bone handle with possible two-part bulbous end. The near-complete blade is parallel-sided, with a small step.

4. Analysis of potential

The accessioned finds are of local significance. They are in good condition and are very well-dated, intrinsically and from association with clay tobacco pipes and pottery. They are nearly all domestic items, most of which can be fairly closely paralleled with finds from other London sites, but this does not preclude publication. The spoons have maker's marks, and it should be possible to identify whether they are locally made, and

whether there are naval connections. The finds have the potential to help date the sequence, to provide information about the site and the area in the late 17th and early-mid 18th centuries and to provide well-dated parallels for similar objects from other sites. Some also have good local (museum) display potential.

5. Conservation assessment

Liz Barham

Table 1. Summary of conservation work

	Material	No. accessioned	No. conserved	No. to be treated (see below)
Organics	Ivory	2	-	-
Inorganics	Ceramic	1	-	-
	Copper alloy	6 (inc. 2 coins)	-	2
	Iron	4	-	-
	Lead	7	-	3
Composite	Bone/iron	3	-	1

5.1 Introduction/methodology

The following assessment of conservation needs for the accessioned finds encompasses the requirements for any finds analysis, illustration, analytical conservation and long-term curation. Work outlined in this document is needed to produce a stable archive in accordance with MAP2 (English Heritage 1992) and the Museum of London's Standards for archive preparation (Museum of London 1999).

Any treatments were carried out under the guiding principles of minimum intervention and reversibility. Whenever possible preventative rather than interventive conservation strategies were implemented: procedures aimed to obtain and retain the maximum archaeological potential of each object.

All conserved objects are packed in archive quality materials and stored in suitable environmental conditions. Records of all conservation work are prepared on paper and on the Museum of London collections management system (Multi MIMSY) and stored at the Museum of London.

5.2 Finds analysis/investigation

The accessioned finds were assessed by visual examination of both the objects and the X-radiographs. Closer examination where necessary was carried out using a binocular microscope at high magnification. The finds were also reviewed with reference to the assessment by Beth Richardson. One item was identified for further investigation to look for a stamp: <15> [7] lead weight.

5.3 Work required for illustration/photography

It was recommended in the finds assessment that the five items be surface-cleaned prior to further illustration:

<8> [4] lead spoon
<11> [5] lead spoon
<20> [17] copper alloy spoon
<21> [17] copper alloy spoon.

5.4 Preparation for deposition in the archive

One item: <4>[2] composite handle has a break which needs consolidation. The small finds from this site are otherwise stable and appropriately packed for transfer into the archive.

There is no remedial work outstanding.

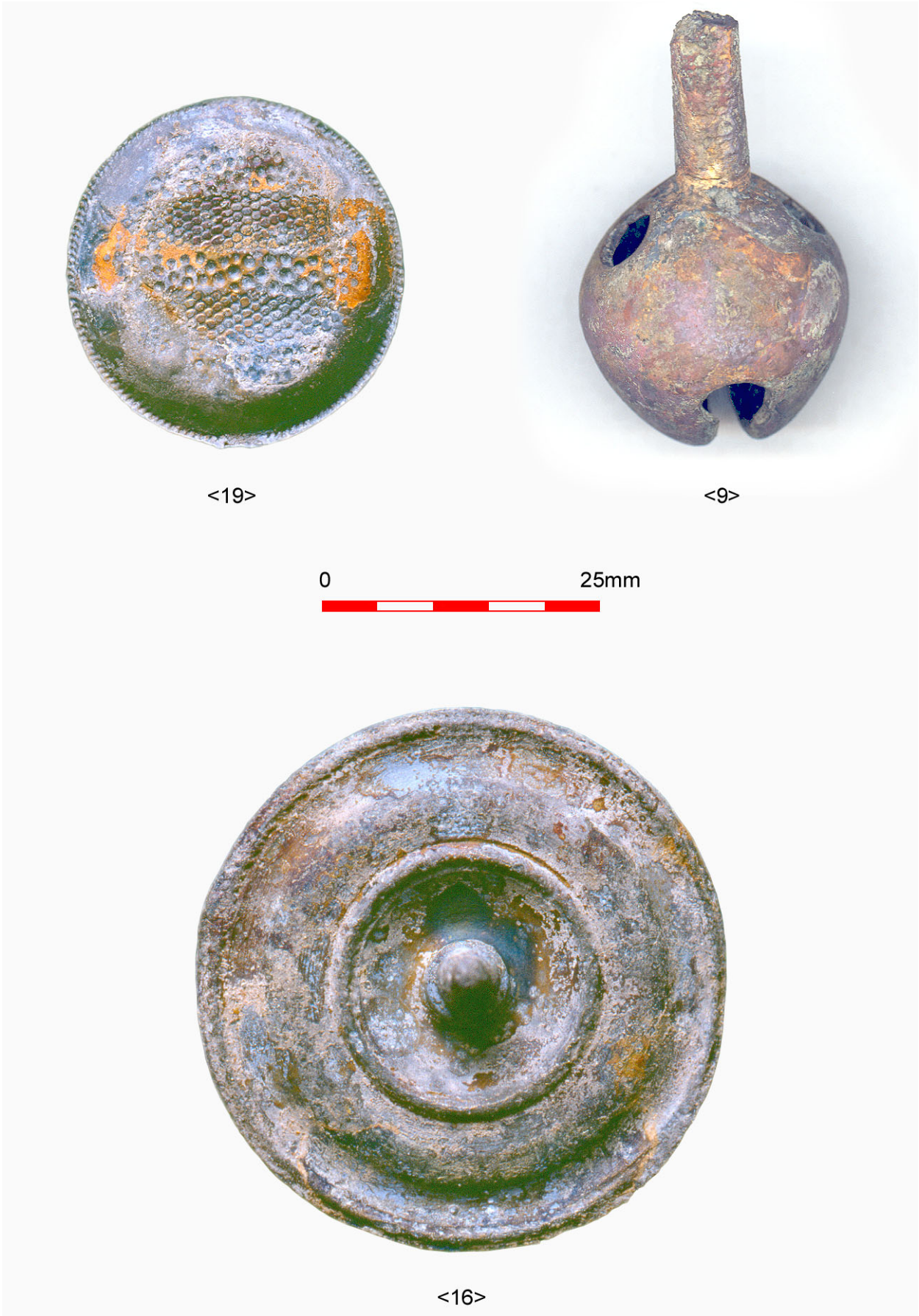


Fig 56 Accessioned finds: <9> Cu alloy bell; <16> circular lid, possibly from tobacco box; and <19> miniature lead toy frying pan *(scale 2:1)*

<5>

<22>

<23>

0 50mm

Fig 57 Accessioned finds: <5 > half of a pair of scissors; <22> open circular lead vessel; and <23> double-sided ivory comb *(scale 1:1)*

Fig 58 <1> French cloth seal; Crown over arms of France, with *fleur de lys* just visible to right *(scale 2:1)*

Fig 58 Accessioned spoons: lead <8> & <11>, both with owner's and maker's marks. Cu alloy <14> (with owner's initials); <20> and <21>

Fig 59 Accessioned cutlery: <3> probable knife with bone polygonal facetted handle; <6> knife with round-sectioned ivory handle; and <13> knife with round-sectioned bone handle *(scale 1:1)*

Fig 60 <18> iron fitting from a patten, the wooden or leather upper part missing

Appendix IV: The lead bullets

1. Five spherical bullets were recovered from contexts [4], [7] & [26]. These are of approximately 17th century date, and all were of very similar type, 16mm to 17.5mm diam. and 30gm to 34gm in weight.

2. Armaments were not standardised or consistent in this period, particularly outside military use. However, the bullets were probably manufactured for a musket, the calibre of this weapon being recorded as about 17mm to 18.6mm *(eg,* Kist *et a1* 1974*,* 34). By weight the bullets are approximately 14 to 16 bore, which is below the 1638 Ordnance standard for muskets but slightly above that for carbines (respectively 12 and 17 bore).

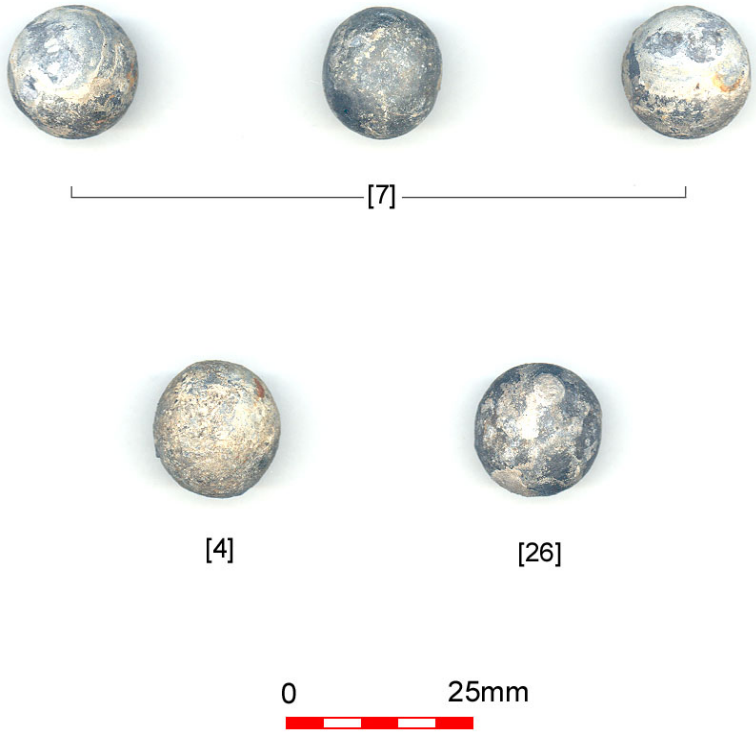


Fig 61 Lead bullets, probably for a musket, from contexts [4], [7] and [26] *(scale 1:1)*

Appendix V. Assessment of the clay tobacco pipes

Tony Grey, Museum of London Specialist Services

I:/PROJECTS/EXPROJECTS/Compass/HOF04/finds/pipe.doc

1. Introduction/methodology

The clay tobacco pipe assemblage from HOF04 was recorded in accordance with current MoLSS practice and entered onto the Oracle database. The English pipe bowls have been classified and dated according to the Chronology of London Bowl Types (Atkinson and Oswald 1969), with the dating of some of the 18th century pipes refined where appropriate by reference to the Simplified General Typology (Oswald 1975, 37–41). The prefixes AO and OS are used to indicate which typology has been applied. Quantification and recording follow guidelines set out by Higgins and Davey (1994; Davey 1997).

1.1 Quantification

There are twenty-six bulk finds pipe bowls and twenty-six accessioned (registered) pipe bowls plus one joining stem. These were recovered from nine contexts; a detailed breakdown of the assemblage is given in Table 2. All twenty-six accessioned pipe bowls have makers' marks though none are decorated. No mouthpieces were recorded.

Table 1. Clay tobacco pipe quantification

Total number of fragments	53
No. of bowl fragments	52
No. of stems	1
No. of mouthpieces	0
Wasters	0
Kiln material fragments	0
Accessioned	26

1.2 Condition

There were no complete or reconstructable pipes and of the fifty-two bowls thirteen were broken and five were burnt. All were smoked.

2. Provenance and dating of the clay pipes

The pipes were made between *c* 1660 and 1740. The earlier pipe dated contexts (1660-1680) are: [3] (fill between planking [11] and [12]), [4] (primary deposit between planking [11] and [12]), [7] (primary deposit between planking [12] and [13]).

The later pipe dated contexts (1700-1740) are: [2] (fill between planking [12] and [13]), [15] (infill between planking [20] and [21]), [16] (infill between planking [19] and [20]), [17] (fill between planking [19] and [22]), [25] (infill between revetments [29] and [31]), [26] (infill between planking [19] and [20].

Contexts [3], [16] and [26] are also considered to represent the final fills of [33].

Table 2. Clay tobacco pipe dates by context

Context	TPQ	TAQ	Bowl	Stem	Mouthpiece	Total
2	1700	1740	4	-	-	4
3	1660	1680	6	-	-	6
4	1660	1680	6	-	-	6
7	1660	1680	1	-	-	1
15	1700	1740	3	-	-	3
16	1700	1740	3	-	-	3
17	1700	1740	11	-	-	11
25	1700	1740	4	-	-	4
26	1700	1740	14	-	-	14
Totals			**52**	**-**	**-**	**52**

Table 3. The chronological distribution of datable clay pipe bowls

	Latest date			
Earliest date	**1680**	**1710**	**1740**	**Total**
1660	15			**15**
1680		7		**7**
1700			30	**30**
Total	**15**	**7**	**30**	**52**

3. Character of the pipe assemblage

The pipes are all of local London manufacture. None are imported and none decorated. All have been smoked. The earlier pipes were milled, totalling twenty-one items. At least five showed signs of light burnishing so most are not of the highest (*ie,* most expensive) quality.

Twenty-six pipes with makers' marks were accessioned as follows, all marks being moulded in relief on the sides of the heel:

AH form OS10 (1700-1740) <35> context [17]. Possible makers: Abel Horton of Southwark, Anthony Haynes (Oswald 1975, 137).

HP form OS10 (1700-1740) <25>, <26> context [2]; <27>, <28>, <30>, <31>, <32>, <33> context [17]; <36>, <37> context [25] and <38>, <39>, <40>, <46>, <47>, <48>, <49>, <50> context [26] *(see Fig 63 below)*.

HP crowned form OS10 (1700-1740) <45> context [26].

HP over flower form OS10 (1700-1740) <41> context [26].

Flower (rose?) over HP form OS10 (1700-1740) <29> context [17].

Known maker: Henry Prick of Greenwich working at Crane Street, Greenwich in 1704 (Bowsher and Woollard 2001, 96-7). A prolific workshop with four mould types as above and at least three different moulds for the simple **HP** mark from this site. Henry

Prick's pipes are noted from the Royal Naval College, Greenwich, from sites RNK00, RNL99, RMN99 and RNP99 where all are type OS10 dated 1700-40. One Henry Prick pipe is reported from the Time Team Project, National maritime Museum, Greenwich (NMA02, Grey and Pearce 2003). Twenty-six Henry Prick pipes are reported from the nearby site KIC02 (Pearce 2003). Henry Prick pipes have also been reported from the Dreadnought Seaman's Hospital (DHS98), Highbridge Wharf, near Crane Street and at Vauxhall Wharf, SE11 (RAN88). **HP** pipes which may be Henry Prick products are reported from Bankside, SE1 (MFB98) and Salamanca Place, Albert Embankment (AEB01). The Lewisham Historical Society recorded 570 **HP** pipes from within the Borough by 2001 (Bowsher and Woollard 2001, fnl. 4).

?IL form OS10 (1700-1740) <44>, context [26]. Possible maker: John Langley, St. Lukes Parish (Oswald 1975, 140).

PS form OS10 (1700-1740) <42>, <43> context [26].

SN form OS10 (1700-1740) <34> context [17]. Possible makers: Samuel Nordwell, Samuel Nunn (Oswald 1975, 142).

4. Analysis of significance and potential

The clay tobacco pipe assemblage has potential for further research into the makers, especially the known Greenwich maker Henry Prick. The study of known local makers and of the distribution of their products is of local significance for Greenwich.

The pipes are dated within a fairly narrow range from 1660 to 1740, with dating by form and maker to 1700-1740 for contexts [2], [15], [16], [17], [25] and [26]. The contexts with Henry Prick pipes can be dated to the years around 1740, viz. context [2] (fill between planking [12] and [13]), [17] (fill between planking [19] and [22]), [25] (fill between planking [29] and [31]) and [26] (fill between planking [19] and [20] and probable final fill of [33]). The later pipes are absent from contexts [3], [4] and [7] which *may* date to 1660-1680. The prevalence of pipes made by Henry Prick is important for knowledge of early eighteenth century pipe making in Greenwich, complementing reports from Royal Naval College sites as above.

A note on the pipe maker Henry Prick could be submitted to the Society for Clay Pipe Research, comparing these finds with those from other sites in Greenwich.

Table 1. Detail and quantification of the clay pipe assemblage

Context	TPQ	TAQ	Accn.	Bowl	S	M	Form	Edate	Ldate	Deco	Mark	I/R	M/S	Pos	State	Comments	Mill	Bur	B/F
2	1700	1740		1			AO15	1660	1680						S		2		B
2	1700	1740		1			OS10	1700	1740						S	broken			B
2	1700	1740	25	1			OS10	1700	1740		HP	R	M	SH	S				C
2	1700	1740	26	1			OS10	1700	1740		HP	R	M	SH	S	broken			C
3	1660	1680		2			AO13	1660	1680						S	one broken	2		B
3	1660	1680		2			AO15	1660	1680						S		3		B
3	1660	1680		2			AO18	1660	1680						S		2		B
4	1660	1680		1			AO15	1660	1680						S		4	Y	B
4	1660	1680		2			AO16	1660	1680						S/B	one broken	3		B
4	1660	1680		3			AO18	1660	1680						S		4		C
7	1660	1680		1			AO13	1660	1680								2		B
15	1700	1740		2			AO20	1680	1710						S		1		B
15	1700	1740		1			OS10	1700	1740						S				C
16	1700	1740		1			AO20	1680	1710						S/B	broken	Y		C
16	1700	1740		2			OS10	1700	1740						S	one broken			C
17	1700	1740		1			AO15	1660	1680						S		3	Y	B
17	1700	1740		1			AO20	1680	1710						S		1		C
17	1700	1740	27	1			OS10	1700	1740		HP	R	M	SH	S				C
17	1700	1740	28	1			OS10	1700	1740		HP	R	M	SH	S	broken			C
17	1700	1740	29	1			OS10	1700	1740		rose H rose P	R	M	SH	S/B			Y	C
17	1700	1740	30	1			OS10	1700	1740		HP	R	M	SH	S				C
17	1700	1740	31	1			OS10	1700	1740		HP	R	M	SH	S				C
17	1700	1740	32	1			OS10	1700	1740		HP	R	M	SH	S	broken			C
17	1700	1740	33	1			OS10	1700	1740		HP	R	M	SH	S				C
17	1700	1740	34	1			OS10	1700	1740		SN	R	M	SH	S				C
17	1700	1740	35	1			OS10	1700	1740		AH	R	M	SH	S	broken			

Context	TPQ	TAQ	Accn.	Bowl	S	M	Form	Edate	Ldate	Deco	Mark	I/R	M/S	Pos	State	Comments	Mill	Bur	B/F
25	1700	1740		2			AO20	1680	1710						S		2		B
25	1700	1740	36	1			OS10	1700	1740		HP	R	M	SH	S				C
25	1700	1740	37	1			OS10	1700	1740		HP	R	M	SH	S				C
26	1700	1740		1			AO21	1680	1710						S			Y	C
26	1700	1740	38	1			OS10	1700	1740		HP	R	M	SH	S				C
26	1700	1740	39	1			OS10	1700	1740		HP	R	M	SH	S				C
26	1700	1740	40	1			OS10	1700	1740		HP	R	M	SH	S/B				C
26	1700	1740	41	1			OS10	1700	1740		H flower P flower	R	M	SH	S				C
26	1700	1740	42	1			OS10	1700	1740		PS	R	M	SH	S/B	broken			C
26	1700	1740	43	1			OS10	1700	1740		PS	R	M	SH	S	broken			C
26	1700	1740	44	1			OS10	1700	1740		IL?	R	M	SH	S				C
26	1700	1740	45	1			OS10	1700	1740		crown H crown P	R	M	SH	S				C
26	1700	1740	46	1			OS10	1700	1740		HP	R	M	SH	S	broken			C
26	1700	1740	47	1			OS10	1700	1740		HP	R	M	SH	S				C
26	1700	1740	48	1			OS10	1700	1740		HP	R	M	SH	S				C
26	1700	1740	49	1			OS10	1700	1740		HP	R	M	SH	S			Y	C
26	1700	1740	50	1			OS10	1700	1740		HP	R	M	SH	S				C

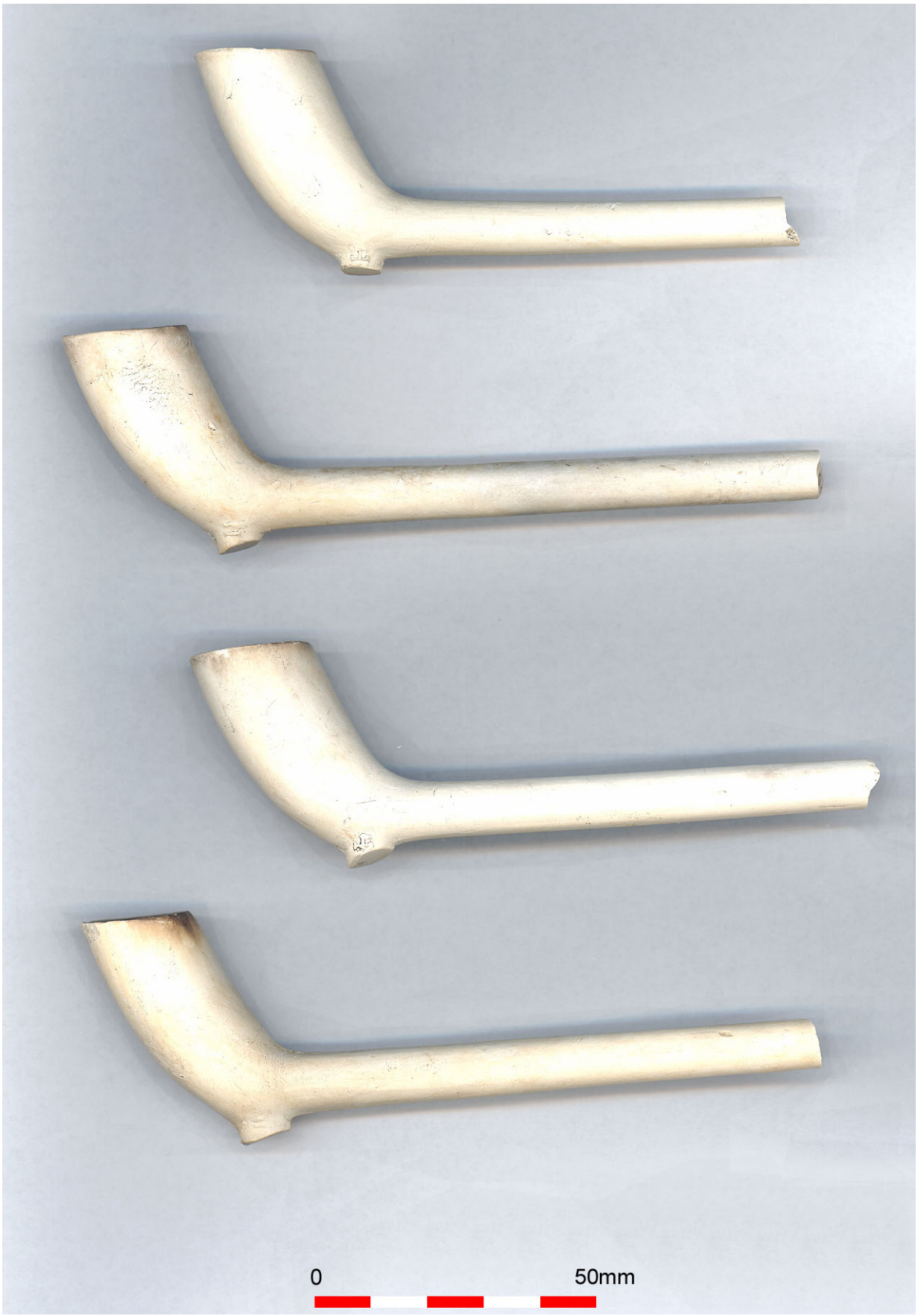


Fig 62 Clay tobacco pipes from context [26]. All four have the maker's mark HP (Henry Prick of Greenwich) moulded in relief on the sides of the heel

Appendix VI. Building materials and kiln furniture assessment

Ian M Betts, Museum of London Specialist Services

I:/projects/exprojec/compass/HOF04/bm01.doc

1. Introduction

All the building and kiln material has been recorded using the standard Museum of London recording forms. This has involved fabric analysis undertaken with a x10 binocular microscope. The fabric numbers used are those in the Museum of London fabric reference collection. The information on the recording forms has been added to an Excel database.

The material comprises 18 fragments of ceramic building material, kiln furniture and stone weighing 6,175gms.

2. The building materials

2.1 Wall tile

2.1.1 Tile <51> [15]. Fabric type: 3078 (Fig 64)

Part of a blue on white tin-glazed wall tile measuring 126mm in height by 7mm in thickness was recovered from context [15]. The tile shows a landscape scene in a circular border with barred ox-head corner decoration. The corner decoration suggests that the tile is Dutch whilst the thickness indicates an 18th century date. More detailed study of the corner decoration and design may provide a narrower date range, although independent dating of this context would indicate that the tile cannot be later than the 1730s.

2.1.2 Counter (<24>, [26]; Fig 65)

A fragment of tin-glazed white and manganese wall tile of late 17th or early 18th century date, reused as a gaming counter (see also Appendix III, 2.1).

2.2 Brick

Fabric type: 3257 (near 3046)

Two brownish-orange brick samples were collected from context [24]. They are not in a central London fabric type so it is not possible to give any sort of precise date, although the presence of an indented border on one brick suggests they could be pre-1666. Their size, 221-226 x 107-109 x 57-60mm, would suggest a 16th to 17th century date.

2.3 Stone moulding (Fig 66)

From context [26] (<52>) came a circular Portland Stone (oolitic limestone) moulding with simple decoration round the edge. The flat upper/lower surface is around 230mm diameter whilst in the sides are eight semi-circular concave depressions with 'V' shaped decoration between. Going through the centre of the stone is a 20mm diameter circular hole.

3. Kiln furniture (Fig 67)

(Ian M Betts with Lyn Blackmore)

Roofing tile fabric types: 2271, 2276 (some near 2816)

Fourteen fragments of peg roofing tile in standard London area fabric types 2271 and 2276 were found in six contexts ([3], [4], [7], [15], [17] & [25]; Table 1). There is little doubt that most, if not all, of these peg tiles were used (or reused) as kiln shelving, and they may relate to the production of local redware pottery (see discussion of pottery, Appendix I, 2.4.1 & 2).

All the tiles have brown glaze attached, although this has clearly been added after they were made as glaze covers parts of the top, bottom and sides – including on some examples broken edges. Most are single fragments but two pieces from [7] are fused together, whilst one piece with two peg holes from context [17] is almost complete. Another example from [17] appears to have part of a circular cut-out like those found on saggars.

Some tiles also show evidence of vitrification and several (including the fused pieces) have the scars of large rims or bases on one side. These appear to derive from ceramic objects which would have rested on the tiles when the glaze was applied.

Most peg tiles used as kiln furniture are of a type first made by London area tilemakers around 1480 (none of which were originally glazed). Many are characterised by the presence of fine moulding sand (tiles in fabric 2276) and a variety of nail hole shapes including square holes which are not found on London-made tiles before the late 15th century. Part of a square hole is present on a tile from context [17].

It is uncertain exactly when the tiles were made as tiles of similar type were made in vast numbers from the late 15th to 18th centuries.

4. Potential

The 18th century wall tile <51> probably derived from a fireplace surround. This was by far the most common location of delft tiles in London during this period, although they were also used in other ways such as in external light wells, as skirting and as panelling in dairies.

The bricks are only of significance in so far as they provide a broad date for the associated structure [24]. However, the peg tiles are of particular interest as they indicate the presence in the area of a kiln producing ceramic material with a lead-glaze, and also reveal something of the methods of staking employed. The origin is likely to have been one of local redware potteries, some of which were located by the Thames on the west bank of Deptford Creek (Nenk 1999, 236-7; Divers 2004, 23-4).

The unusual circular stone moulding <52> requires further analysis by a worked stone specialist in order to ascertain its possible function and date.

Table 1. Detail and quantification of post medieval building material and kiln furniture

context	fabric	form	corners	weight (gm)	length	breadth	thickness	number	comments
3	2276	peg	1	543			13	3	kiln furniture - 'glazed' top, sides & base.
4	2276	peg	0	31			12	1	kiln furniture? - 'glazed' top
7	2271	peg	1	116			10	1	kiln furniture - 'glazed' top, sides & base
7	2276	peg	0	753			13	2	kiln furniture - 'glazed' x2 tiles fused together
15	3078	wall tile	2	50		126	7	1	tin-glazed, blue on white dec.<51>
15	2816	peg	0	150			12	3	kiln furniture - 'glazed' top, sides & base
17	3498	peg	1	722		150	12	2	kiln furniture - 'glazed' , 2 round nail holes 13mm dia
17	2276	peg	1	68			12	1	kiln furniture - 'glazed'
24	3257	brick	1	-	223	109	59	1	sample, near 3046, indented border, brownish-orange
24	3257	brick	1	-	223	108	57	1	sample, near 3046, brownish-orange
25	2276?	peg	0	100	92		13	1	kiln furniture - 'glazed' & part vitrified
26	3110	moulding	0	3700				1	230mm dia with central 20mm hole -see sheet

Fig 63 <51> Blue on white tin-glazed wall tile, possibly Dutch, depicting a landscape scene with barred ox-head corner decoration

Fig 64 <24> Fragment of white and manganese tin-glazed tile reused as a gaming counter

Fig 65 Portland Stone (oolitic limestone) moulding with simple 'V' shaped decoration round the edge between semi-circular concave depressions *(scale 1:2)*

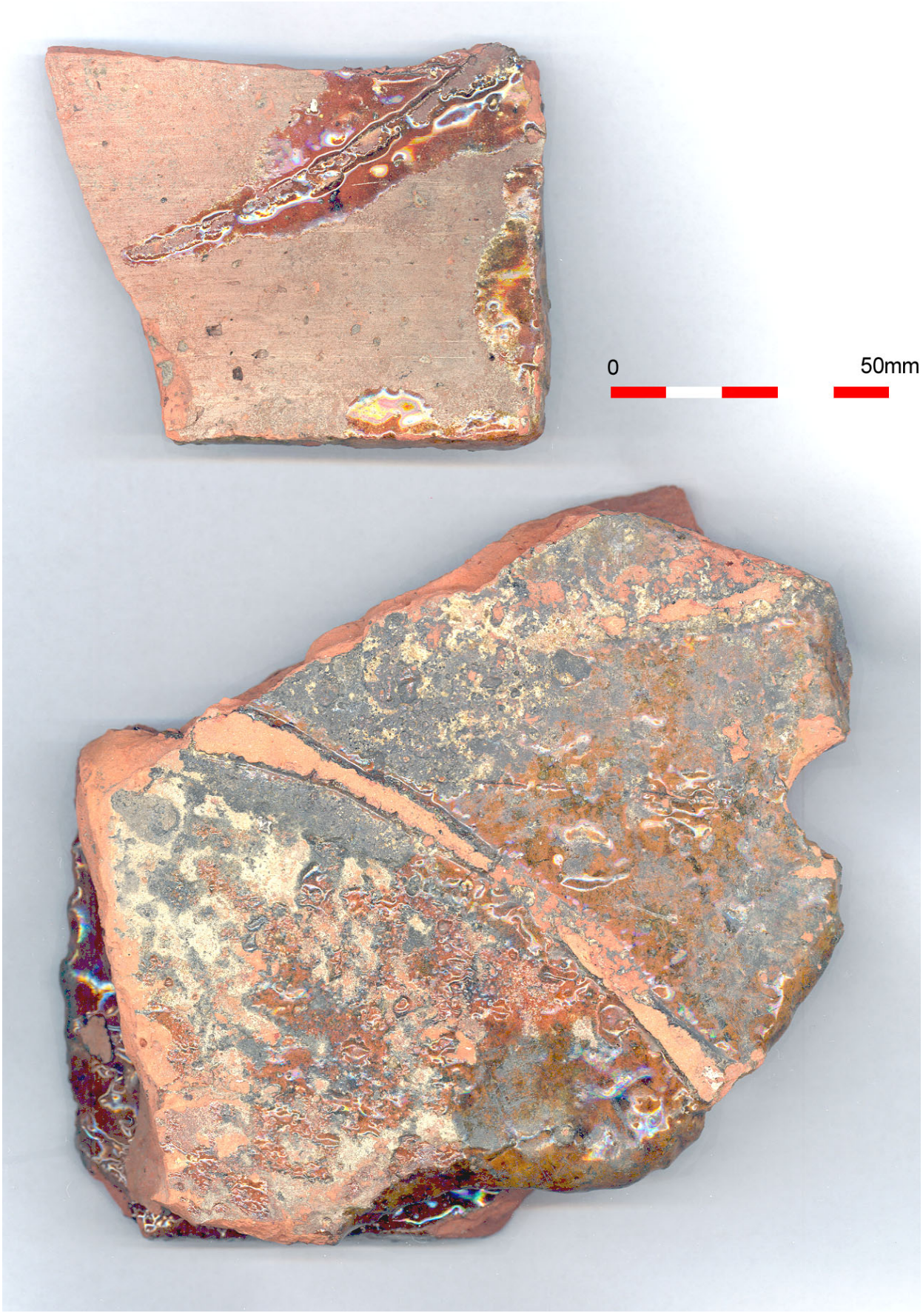


Fig 66 Fragments of peg tile (context [7]) reused as kiln shelf, probably in a local redware pottery, and showing excess glaze and the scars of large rims or bases

Appendix VII. *London Archaeologist* publication summary

Wood Wharf, Horseferry Place/Thames Street, Greenwich SE10 TQ 38020 77845. CA (Geoff Potter). Standing building recording, excavation & watching brief. March-Sept 2004. Weybridge Construction. HOF04

Prior to demolition a record was made of the Engine Room of the Greenwich Steam Ferry (*c* 1888-1900). This was basically a large (20m by 9m) cellar, the boilers and engines now lost but retaining considerable evidence for their location and arrangement. The adjacent river wall and foreshore ramp were also surveyed.

Elsewhere bulk reduction revealed a probable 17th century cutting or channel, parallel with and some 17m south of the modern river. This was traced for 33m and was originally 4m to 5m wide, but in the first half of the 18th century underwent two phases of timber revetting and a final reduction in width to c. 1m. The fills produced a large range of domestic and imported pottery and other artefacts.

The remainder of the site was covered by a thick (c. 2m) layer of clean alluvium that sealed River Terrace gravels.

Bibliography

Atkinson, D R, & Oswald, A, 1969 London clay tobacco pipes, *J British Archaeol Assoc* 32, 171–227

Blackmore, L, 1999 The North German/South Scandinavian redwares, in Crawford & Ballin-Smith 1999, 157-167

Bowsher, J, & Woollard, P, 2001 'Clay Tobacco Pipes from Greenwich', *J. Greenwich Hist. Soc.* 2.4, 94-105

British Geological Survey 1998 *South London. England & Wales Sheet 270 . Solid and Drift Geology* 1:50 000

Calado, R S, 1987 Aspecten van de 17de eeuwse Portuguese Faience in *Historisch perspectief, in Portuguse Faience 1600-1660*, 8-27

Chambers C, 1998 The Great Steam Ferry at Greenwich, in the *Thames Guardian,* Autumn 1998, p 18-19

Chambers C, 2004 The Great Steam Ferry at Greenwich, note in the *Greenwich Industrial History Society Newsletter*, Issue 38, July 2004

Chew, S, & Pearce, J, 1999 A pottery assemblage from a 17th-century revetted channel at 12-26 Magdalen Street, Southwark, *Lon Archaeol* 9 (1), 22-29

Compass Archaeology, 2003 *Wood Wharf & adjacent Playground site, Horseferry Place / Thames Street, Greenwich, SE10, LB of Greenwich. An Archaeological Desk-Based Assessment*

Compass Archaeology, 2004 *Wood Wharf & adjacent Playground site, Horseferry Place / Thames Street, Greenwich…. Specification for a programme of archaeological fieldwork*

Crawford, B E, & Ballin-Smith, B, 1999 *The Biggings, Papa Stour, Shetland, the history and archaeology of a royal Norwegian farm*, Soc Antiq Scot Mong Ser 15

Davey, P, 1997 *Clay pipes from Bolsover church*, unpub archive rep

Divers, D, 2004 Excavations at Deptford on the site of the East India Company dockyards and the Trinity House almshouses, *Post-Medieval Archaeol* 38/1, 17-232

English Heritage, 1992 *Management of Archaeological Projects II*

English Heritage, 1998 *Standards and Practices in Archaeological Fieldwork*

Fox, R, & Barton, K J, 1986 Excavations at Oyster Street, Portsmouth, Hampshire. *Post-Medieval Archaeology* 20

Forsyth, H, with Egan, G, 2005 *Toys, Trifles and Trinkets: Base metal miniatures from London 1200-1800,* Museum of London

Fryer, K, & Shelley, A, 1997 Excavation of a pit at 16 Tunsgate, Guildford, Surrey, 1991. *Post-Medieval Archaeology* 31, 139-230

Gaimster, D R M, 1988 Lower Rhine slipware found in Britain, in Naumann, J (ed), 167-78

The Engineer, 1892 'The Thames Ferry at Greenwich'. Vol LXXIV, July-Dec.1892

GIHS, 1998 Historical Background to Wood Wharf, *Greenwich Industrial History Society Newsletter*, Vol 1, Issue 2, June 1998

Higgins, D A, & Davey, P, 1994 *Draft guidelines for using the clay tobacco pipe record sheets*, unpub rep

Jarrett, C, 2004 The pottery, in Divers 2004, 89-120

Kist, J B, Puype, J P, & van der Mark, W, 1974 *Dutch Muskets & Pistols*

LB Greenwich 2002 *Unitary Development Plan* (First Deposit Draft February 2002)

Mepham, L, 2002 Pottery, in Cooke, N, & Philpotts, C, Excavations at Creedy's Yard, Highbridge Wharf, Greenwich 1997: medieval and post-medieval Thames-side sites, *Trans London and Middlesex Archaeol Soc* 53. 70-74

Museum of London, 1999 *General standards for the preparation of archaeological archives to be deposited with the Museum of London*

Naumann, J, 1988 *Keramikk von Niederrhein*. Cologne

Nenk, B S, 1999 Post-Medieval redware pottery of London and Essex, in Egan G & Michael, R L (eds), *Old and New Worlds*, Soc Post Medieval Archaeol and Soc Hist Archaeol, 235-245

Oswald, A, 1975 *Clay pipes for the archaeologist*, BAR 14, Oxford

Platts B, 1973 *A History of Greenwich*

Pryor, S, & Blockley, K, 1978 A 17th century kiln site at Woolwich, *Post-Medieval Archaeol* 12, 30-85

RCHME, 1991 *Recording Historic Buildings, a Descriptive Specification*

Thompson, A, Grew, F & Schofield, J, 1984 Excavations at Aldgate, 1974. *Post-Medieval Archaeology* 18