

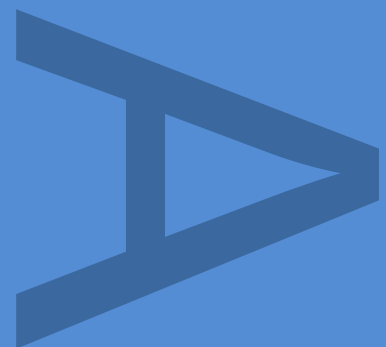
**96 NARROW STREET
LIMEHOUSE
LONDON BOROUGH OF TOWER
HAMLETS, E14**

**ARCHAEOLOGICAL WATCHING
BRIEF**

PCA REPORT NO: R11607

SITE CODE: NAR13

JANUARY 2014



PRE-CONSTRUCT ARCHAEOLOGY

DOCUMENT VERIFICATION

96 NARROW STREET
LONDON BOROUGH OF TOWER HAMLETS

ARCHAEOLOGICAL WATCHING BRIEF

Quality Control

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**AN ARCHAEOLOGICAL WATCHING BRIEF ON GROUNDWORKS AT 96
NARROW STREET, LIMESHOUSE, LONDON E14**

Local Planning Authority: London Borough of Tower Hamlets

Planning Refs: PA/11/03183; PA/12/01156

Site Code: NAR13

Central National Grid Reference: TQ 36585 80698

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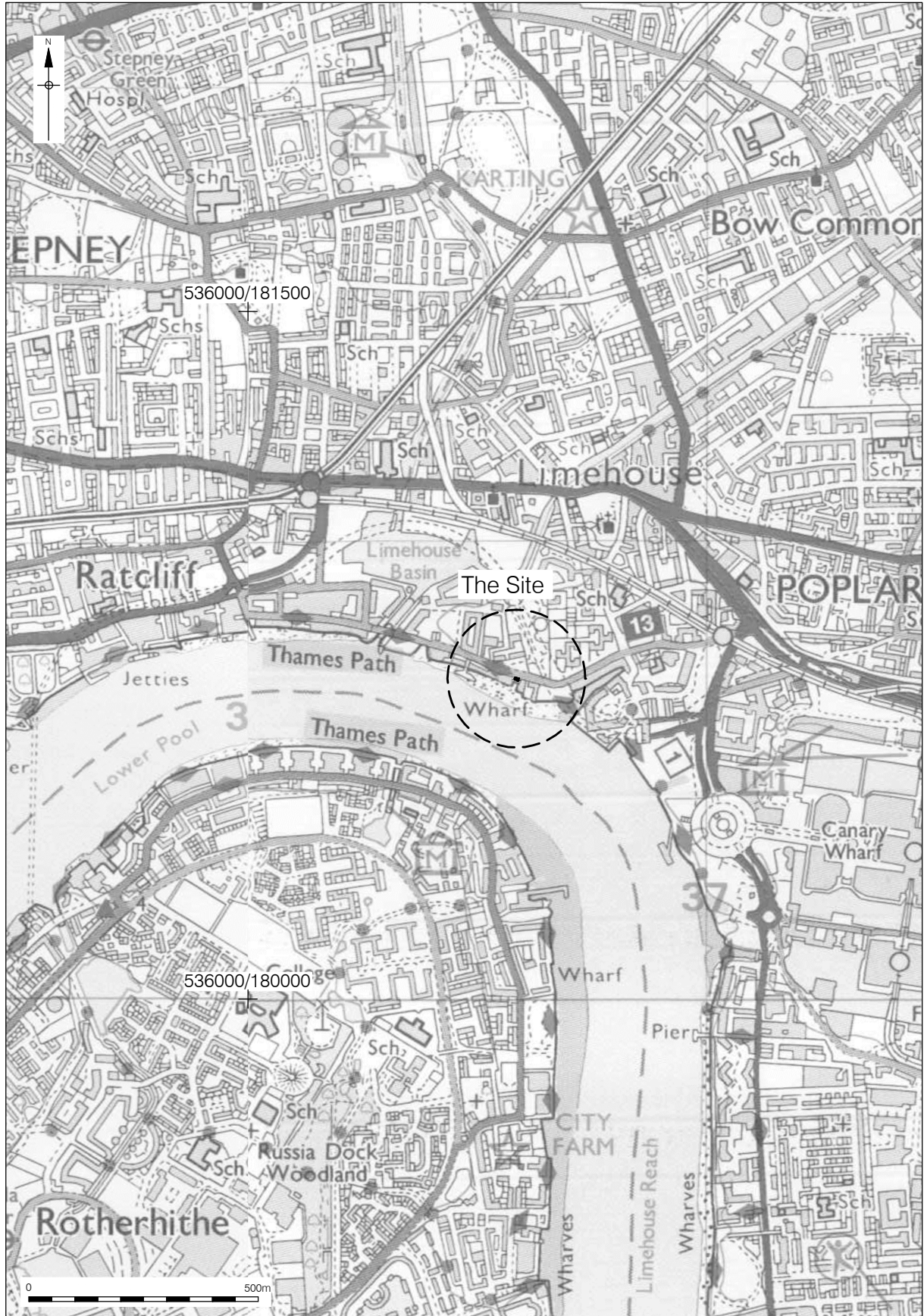
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1 Abstract

- 1.1 Pre-Construct Archaeology Ltd. conducted an archaeological watching brief during groundworks at 96 Narrow Street, Limehouse, London E 14 between 9th October 2013 and 15th January 2014. The watching brief monitored the excavation of underpinning pits on the Thames foreshore at the south of the site and basement excavation in the main development area.
- 1.2 The underpinning pits at the south of the site revealed a basal deposit of natural gravel, into which a single surviving driven post was recorded. This is likely to have been part of a structure that pre-dated the existing river wall and it was covered by a layer of alluvium. Driven into the alluvium along the southern face of the existing river wall was a series of timber posts, interpreted as part of a structure to protect the wall. The posts were overlain by a deposit of tar and pitch, which appeared to be a residue from former usage of the site for boat building and repair, and the stratigraphic sequence was completed by a thick layer of material comprising modern foreshore deposits.
- 1.3 The basal deposit in the sequence north of the wall was again natural gravel which was also overlain by alluvium. Cut into and lying on the surface of the alluvium was a series of posts and beams which supported a rectangular, predominantly brick-built structure, though the later floor of the structure comprised re-used stone fragments overlying brick bedding. Overlying the floor and the internal wall faces was a deposit of pitch and tar similar to that observed to the south and the sequence was completed by a thick layer of recent infilling and made ground.
- 1.4 The overall sequence recorded at the site comprised a number of phases, beginning with the natural gravel seen in all areas. The earliest evidence of human activity was provided by the single post driven into the gravel, which may have dated as early as the 17th century. This and the gravel were sealed by an alluvial deposit which could also be seen sealing the gravel in the basement excavation area. Post dating the alluvial deposition was the brick structure supported on piles and beams, which was protected to the south by the contemporary timber structure. This structural phase probably dated to the 18th century. Subsequent activity probably associated with boat building and repair and likely dating to the 19th century was evidenced by insertion of the floor and tar and pitch deposition north and south of the river wall, whilst the most recent deposits comprised the foreshore material to the south and infilling/ground-raising material to the north.

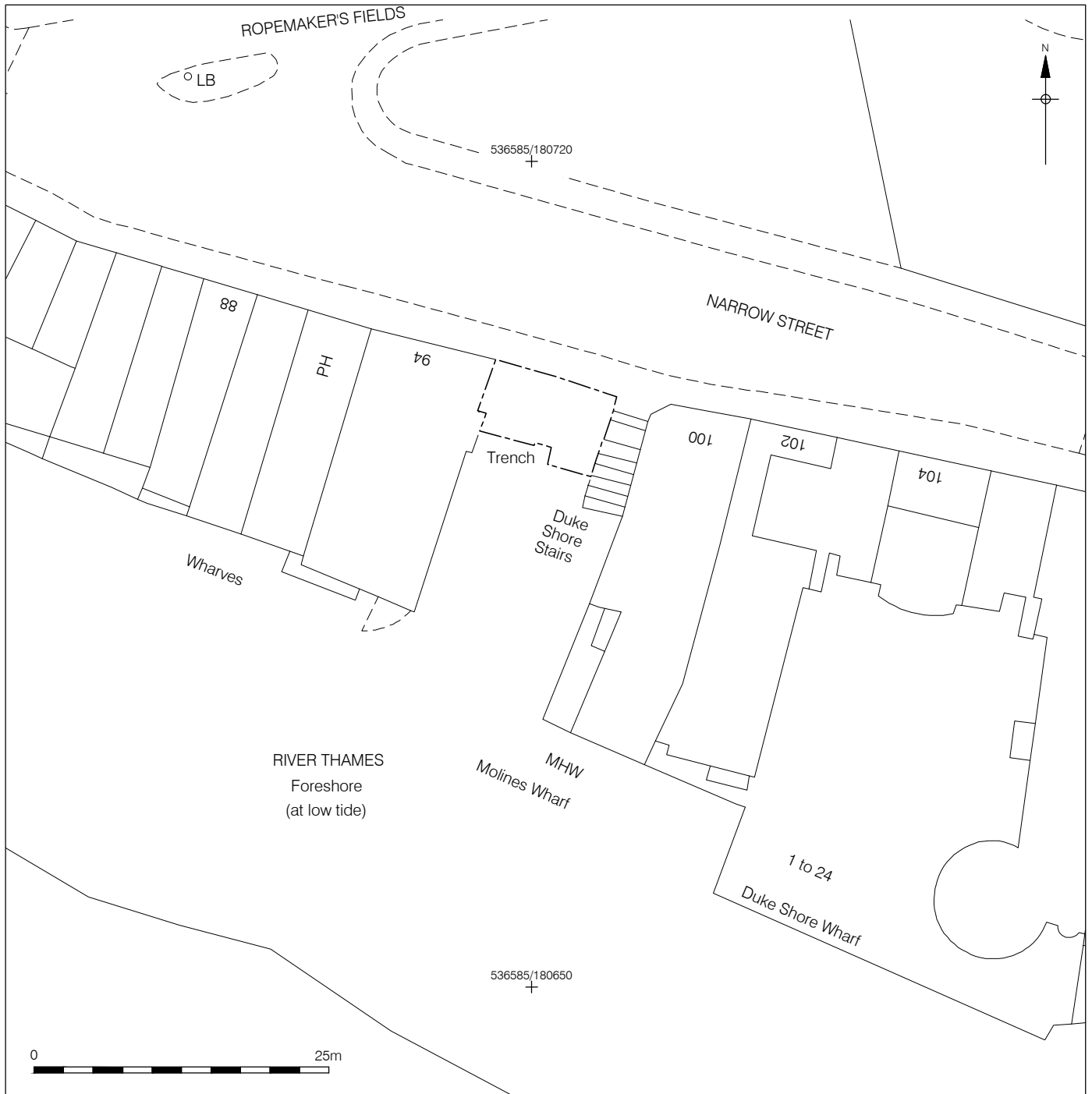
2 Introduction

- 2.1 Between the 9th October 2013 and 15th January 2014 Pre-Construct Archaeology Ltd. (PCA) carried out an archaeological watching brief on construction groundworks at 96 Narrow Street, Limehouse (Figures 1 & 2).
- 2.2 It is proposed to redevelop the site with a single, four-storey residential building above a basement level. Initial intrusive works on the development included underpinning the pre-existing river wall and constructing a stronger, concrete wall to protect the new development from the tidal River Thames, and excavating the basement area. Both of these phases of work involved excavation of more than 3m below modern ground level and were likely to impact on buried archaeological remains.
- 2.3 The work was commissioned by CgMs Consulting and comprised the archaeological monitoring of the excavation of underpinning pits at the south of the site and the basement in the main area of development (Figure 2).
- 2.4 The site is located at National Grid Reference (NGR) TQ 36585 80698.



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Figure 1
 Site Location
 1:12,500 at A4



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Figure 2
Trench Location
1:500 at A4

Figure 2: Detailed Site Location

3 Geology and Topography

- 3.1 The site lies on the south side of Narrow Street, immediately north of the foreshore of the River Thames, a short distance to the west of the inlet that forms Limekiln Dock, beyond which the river turns to the south, forming the Isle of Dogs.
- 3.2 According to the British Geological Survey (Sheet 256; North London) the underlying geology of the site comprises Eocene Woolwich and Reading Beds overlain by sand silt and clay of the Palaeogene (Eocene) London Clay formation, deposited between c. 34 and 55 million years ago. This in turn is overlain by Quaternary Kempton Park Terrace gravels, which are capped by alluvium, though in more marginal areas of the Thames floodplain, fluctuating sea and river levels resulted in the creation of marshy areas and localised peat formation, which was most prevalent during the Tilbury IV regression phase that equated with the Middle to late Bronze Age.
- 3.3 The site lies on ground that slopes downwards towards the river to the south though has been significantly modified by ground-raising associated with previous developments. Pavement level at the north of the site currently lies at c. 4.3m AOD.
- 3.4 The site is bounded to the west by a residential block at 94 Narrow Street, to the north by Narrow Street, to the east by Duke Shore Stairs with a residential block at 98 Narrow Street beyond, and to the south by the Thames foreshore. At high tide level the water of the Thames laps up against the wall at the southern edge of the site, whilst at low tide level the waters retreat approximately 50m to the south.

4 Archaeological and Historical Background

- 4.1 There is no evidence for human activity within the vicinity of the site during earlier prehistoric periods and during the Neolithic and Bronze Age it would have lain in a marshy area at the margins of the Thames floodplain. As such it would have been exploited for its abundant natural resources with some settlement on higher ground in the area. Archaeological investigations as part of the Limehouse Link Project some 70m east of the site recovered small quantities of prehistoric pottery along with burnt and struck flint (Hoad 2010, 5). Further to the east an archaeological evaluation at Cyril Jackson School recorded a north-east to south-west aligned channel of probable Bronze Age date, though no artefactual evidence was recovered (Greenwood and Maloney 1994, 215).
- 4.2 The study site lay some distance to the east of the Roman settlement of *Londinium* and consequently there is little evidence of activity in the vicinity at this time. However, a Roman road probably followed the course of the present Highway from Tower Hill at the east of the city to the Ratcliff area north-west of the site and possibly beyond (Merrifield 1983, 133). Another road may have extended eastwards from the city to Shadwell or Ratcliff and it is possible that one of the roads extended further east along the top of the Isle of Dogs and the present Poplar High Street (Black 1977). Such a road may have passed quite close to the site.
- 4.3 Much of the modern Borough of Tower Hamlets was covered by the Manor of Stepney, which was probably part of the original foundation endowment of the Bishopric of London in AD 604 (Taylor 1976) and the Bishops held the lands throughout the medieval period. The name Stepney probably has Saxon origins, deriving from *Stebbunuth*, meaning the landing place of *Stebba* (Field 1980). The landing place was most likely at Ratcliff, to the north-west of the study site or at Limekiln Dock to the east.
- 4.4 Limehouse is not recorded in Domesday Book but was part of the Bishop of London's Manor of *Stibenhide* (Stepney), which included much of the area covered by the current Boroughs of Hackney and Tower Hamlets. Limehouse is first recorded in the coroners rolls for Middlesex of 1367 as *le Lymostes*, meaning lime oasts or kilns. Lime kilns had been established a short distance east of the study site at Limekiln Dock in 1363 by John Dik (Hoad 2010, 5). Narrow Street probably follows the alignment of the medieval embankment to the north of the Thames in the area of the site, though the actual line of the embankment is not known.
- 4.5 The character of Limehouse, and neighbouring Ratcliff to the west was determined by its growth as a riverside strip development east of the City of London. Commerce in the area was focussed around the maritime trades. England's expanding role in maritime affairs is demonstrated by the formation of trading companies.

- 4.6 Limehouse was probably flooded during the mid-15th century. On March 25, 1448 the riverbank at the Isle of Dogs (an area of c 600 acres), opposite Deptford Strond, was breached by the Thames and 1,000 acres were flooded (Dugdale 1662, 72). Documentary and archaeological evidence suggested the foreshore between Narrow Street and the Thames had been reclaimed in the late 16th century after which wharves were constructed, probably between 1584 and 1602. The Dik family probably lent their name to Duke Shore Wharf, identified as Dick Shore in 1635 (Marr and Goodwin map of 1635, PRO MR 248), the river access now referred to as Duke Shore Stairs still in present which lies adjacent to the site today. Narrow Street itself is mentioned as the 'common way and passage leading from Rattcliffe to Lymost' in a lease of 1590 (Tower Hamlets Local History Library MISC/28/1/1).
- 4.7 The publication of Stow's 'Survey of London' in 1603 shows the eastward development linking neighbouring Ratcliff with Limehouse. The earliest depiction of Narrow Street is the Marr and Goodwin map of 1635. The Newcourt and Faithorne map of 1658 shows the Limehouse waterfront as fully built up, it is uncertain if the site lay within the river defence at this date. Later mapping, such as Rocque map of 1746 suggests the site lay in reclaimed land within the river defences and is shown as built up at the west of the site and located next to 'Dukes Shoar'. Horwood's map of 1799 shows the site as containing a small building where the one demolished prior to commencement of the current project stood. The 1870 Ordnance Survey map shows the site as containing a small building at the west with a yard area to the east following a similar layout of the present day property prior to demolition of the building. The 1914 Ordnance Survey map also shows the site as containing a small building at the west with a yard area to the east. The London County Council Bomb Damage Maps (Saunders 2005, map 64) indicates the site itself has not been affected by bomb damage.
- 4.8 The exterior of the most recent building on site suggested this was most probably built at the end of the 19th century although may have been earlier in date, this building was not listed and consequently demolished prior to commencement of the archaeological watching brief. A cluster of Grade II listed buildings are located directly to the west of the site and are comprised of 18th- and 19th-century structures including houses (some with shop fronts), warehouses and a public house. The site lies adjacent to a set of stairs leading down to the Thames foreshore referred to as Duke Shore Stairs. These were known as Dukes Shoar in the 18th century have their origins in Duke Shore Wharf established in the 17th century. It is uncertain if this wharf usage extended into the site area during the post-medieval period however this should be taken into account during site monitoring.
- 4.9 Other sites in the area have revealed evidence of post-medieval buildings, foreshore development including revetments, wharf deposits, ship fitting or building activity and

sites such as Victoria Wharf to the west (Tyler 2001), see 1.4.6 below, revealed an east-west timber revetment which acted as a wharf to the south of Narrow Street. Finds from the foreshore in front of the revetment at Victoria Wharf contained a wide and varied range of finds, either discarded or accidentally dropped into the river. Similar material could be present on the site at 96 Narrow Street.

5 Planning Background

- 5.1 The development of the site is subject to planning guidance and policies contained within the National Planning Policy Framework (NPPF), The London Plan and policies of The London Borough of Tower Hamlets, which fully recognises the importance of the buried heritage for which it is the custodian.
- 5.2 In March 2012, the government published the National Planning Policy Framework (NPPF). In summary, current national policy provides a framework which protects nationally important designated Heritage Assets and their settings, in appropriate circumstances seeks adequate information (from desk based assessment and field evaluation where necessary) to enable informed decisions regarding the historic environment and provides for the investigation by intrusive or non-intrusive means of sites not significant enough to merit *in-situ* preservation. Relevant paragraphs within the NPPF include the following:

128. In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.

129. Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise. They should take this assessment into account when considering the impact of a proposal on a heritage asset, to avoid or minimise conflict between the heritage asset's conservation and any aspect of the proposal.

132. When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation. The more important the asset, the greater the weight should be. Significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. As heritage assets are irreplaceable, any harm or loss should require clear and convincing justification. Substantial harm to or loss of a grade II listed building, park or garden should be exceptional. Substantial harm to or loss of designated heritage assets of the highest significance, notably scheduled monuments, protected wreck sites, battlefields, grade I and II listed buildings, grade I and II* registered parks and gardens, and World Heritage Sites, should be wholly exceptional.*

135. The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that affect directly or indirectly non designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.

139. *Non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets.*

141. *Local planning authorities should make information about the significance of the historic environment gathered as part of plan-making or development management publicly accessible. They should also require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible. However, the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted.*

- 5.3 The London Plan, published July 2011, includes the following policy regarding the historic environment in central London, which should be implemented through the Local Development Framework (LDF) being compiled at the Borough level:

POLICY 7.8 HERITAGE ASSETS AND ARCHAEOLOGY

Strategic

- A London's heritage assets and historic environment, including listed buildings, registered historic parks and gardens and other natural and historic landscapes, conservation areas, World Heritage Sites, registered battlefields, scheduled monuments, archaeological remains and memorials should be identified, so that the desirability of sustaining and enhancing their significance and of utilising their positive role in place shaping can be taken into account.
- B Development should incorporate measures that identify, record, interpret, protect and, where appropriate, present the site's archaeology.

Planning decisions

- C Development should identify, value, conserve, restore, re-use and incorporate heritage assets, where appropriate.
- D Development affecting heritage assets and their settings should conserve their significance, by being sympathetic to their form, scale, materials and architectural detail.
- E New development should make provision for the protection of archaeological resources, landscapes and significant memorials. The physical assets should, where possible, be made available to the public on-site. Where the archaeological asset or memorial cannot be preserved or managed on-site, provision must be made for the investigation, understanding, recording, dissemination and archiving of that asset.

LDF preparation

- F Boroughs should, in LDF policies, seek to maintain and enhance the contribution of built, landscaped and buried heritage to London's environmental quality, cultural identity and economy as part of managing London's ability to accommodate change and regeneration.

- 5.4 The local planning authority responsible for the study site is the London Borough of Tower Hamlets whose Unitary Development Plan (UDP) is currently being replaced with the Tower Hamlets Local Plan, which is influenced by policies set out in the NPPF. The Local Plan consists of the Core Strategy, adopted on the 15th September 2010 and the Management Development Document (MDD) adopted on the 17th April 2013.

5.5 There are no Scheduled Monuments or Statutorily Listed Buildings within the development site though the site does lie within the Narrow Street Area of Archaeological Importance and Narrow Street Conservation Area as defined by The London Borough of Tower Hamlets.

5.6 It is now proposed to redevelop the site for residential purposes, a planning application (PA/11/03183) having been submitted in October 2011 and approved with conditions by Tower Hamlets Borough Council in January 2012. This report on the archaeological monitoring of groundworks has been produced in order to satisfy a condition for archaeological works placed on the approval of planning consent. Condition 5 of the consent is as follows:

No further works shall continue on site until the applicant has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation which has been submitted by the applicant and approved by the Local Planning Authority. The development shall only take place in accordance with the detailed scheme pursuant of this condition. The archaeological works shall be carried out by a suitably qualified investigating body acceptable to the Local Planning Authority.

Reason: Important archaeological remains exist on this site. Accordingly the planning authority wishes to secure the provision of archaeological investigation and the subsequent recording of the remains in accordance with saved policy DEV45 Unitary Development Plan (1998) and Policy DM27 of the Managing Development DPD (2012).

5.7 Subsequent to the conditional approval, a written scheme of investigation (WSI) for archaeological works was submitted, as detailed in Condition 5, for approval to the Local Planning Authority. This submission formed a part of an additional application for the approval of details that was registered in May 2012 (Planning Ref. PA/12/01156). The application was approved in August 2012, the work was carried out according to the WSI between October 2013 and January 2014 and is described in this report.

6 Archaeological Methodology

- 6.1 The fieldwork comprised the archaeological monitoring of the excavation of underpinning pits and the basement and all aspects of the work followed national (IFA 2008) and local (GLAAS 1998) guidelines, and complied with PCA's own fieldwork manual (Taylor and Brown 2009). The fieldwork was carried out according to a written scheme of investigation (WSI) issued previously (Hoad 2010) and approved by Tower Hamlets Borough Council .
- 6.2 The first phase of work monitored was the excavation of a series of underpinning pits along the southern edge of the pre-existing river wall. These pits extended approximately 1.2m south of the wall and were excavated by 360° mechanical excavator using a flat-bladed bucket to approximately 4m below the surface of the modern foreshore. They were excavated so that the wall could be underpinned and concrete poured to form a new defensive structure to protect the new building. The work was monitored archaeologically with stratigraphic sequences recorded along with any extant archaeological features. This phase of work was carried out intermittently between the 9th and 28th October 2013, having been somewhat dictated by the time and level of high tides.
- 6.3 The second phase of work, carried out between the 20th November 2013 and 15th January 2014 involved the excavation of deposits north of the river wall to permit the construction of the basement for the new development (Plate 1). This excavation was also carried out using a 360° mechanical excavator with flat-bladed bucket under archaeological supervision. Deposits were excavated to a depth of 3.8m below current street level across the footprint of the new building (Plate 2). Again the stratigraphic sequence along with extant archaeological features was recorded.

7 Groundwork Excavations and Interpretation of Sequences

7.1 This section records the stratigraphic sequences in each of the excavated areas and offers some interpretation of the sequences revealed. Elevations for the tops of sequences are extrapolated from survey plans of the site.

7.2 Underpinning Trenches

7.2.1 The basal deposit recorded in the underpinning trenches south of the river wall was a firmly compacted, light bluish brown sandy gravel [4], which was in excess of 1m thick and recorded at an upper level of 1.55m AOD. This was probably Holocene alluvial gravel rather than a Pleistocene Terrace deposit. To the south of the eastern part of the river wall, a single timber post [9], which had been driven into the gravel, was recorded (Figure 3). This had a tapered base and the main shaft had been squared off, though its full length could not be measured as the upper part had been broken off. Stratigraphically it pre-dated the existing river wall and may have been the remnant of an earlier revetment structure. No associated dating evidence was recovered but it probably dated to the 17th or early 18th century.

7.2.2 The broken post and the underlying gravel were sealed by a 0.30m thick layer of soft, light greyish blue silty clay [3]. This contained no dateable artefacts but appears to have been an alluvial deposit probably laid down in the early 18th century. It was recorded at an upper elevation of 1.85m AOD. Driven into the alluvium along the southern edge of the river wall were four timber posts [5], [6], [7] and [8] (Figure 3). In common with earlier post [9] these were incomplete but each survived to a length of approximately 0.8m with a width and breadth of 200mm. These were interpreted as the remnants of a wooden structure built to protect the river wall and therefore likely to be of 18th-century date.

7.2.3 The broken timber posts were sealed by a layer of soft, black pitch and tar with silt [2] up to 0.6m thick. This was recorded at an upper elevation of 2.45m AOD and was interpreted as an industrial residue from boat building and repair likely to have been carried out on the site and probably dating to the 19th century. The stratigraphic sequence in the underpinning pits was completed by a substantial layer comprising modern foreshore deposits [1], up to 1.8m thick and recorded at an upper surface elevation of 4.25m AOD.

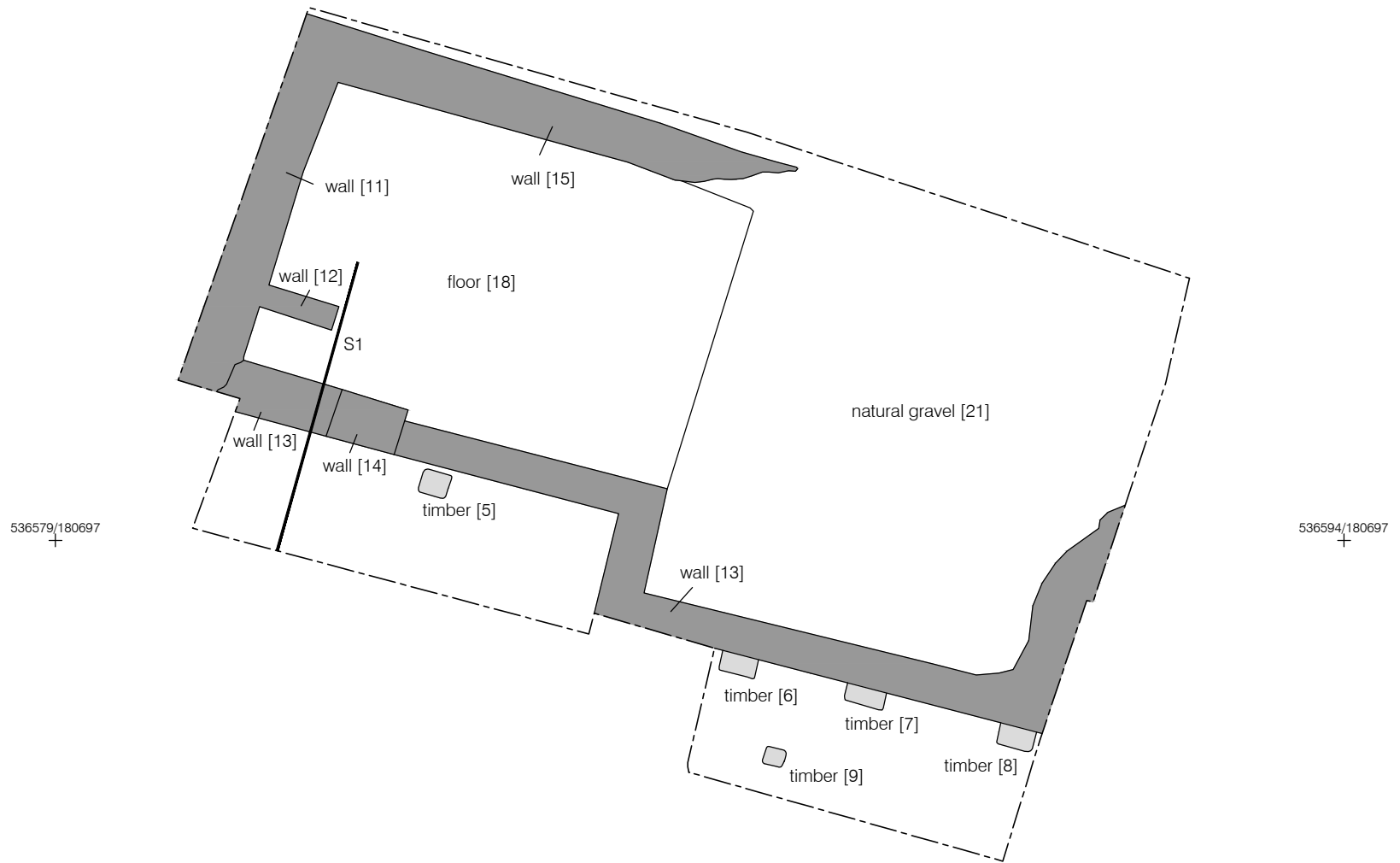
7.3 Basement Excavation

7.3.1 The basal deposit recorded in the basement excavation trench was a firmly compacted, dark greenish grey sandy gravel [21], at least 1.2m thick and recorded at an upper elevation of 2.01m AOD. Despite a slightly different description this is almost certainly the same alluvial deposit as [4] recorded at a slightly lower level south of the river wall. The gravel was overlain by up to 0.45m of firm, dark greenish

grey sandy silt [17], the surface of which, was recorded at 2.46m AOD. This again probably equates with alluvium [3] recorded south of the river wall.

- 7.3.2 Above the alluvium was a series of features that represented structural development north of the wall (Figure 3). Lying on the surface of the extant alluvium at the southern edge of the basement area were large, squared-off horizontal timber beams [20] up to 0.34m in length and breadth, whilst in the south-west corner of the excavation, immediately west of the beams, a series of upright timber posts and stakes [19] up to 1m in length and varying in width and breadth measurements had been driven into the alluvium (Plates 3 & 4). These timber elements appeared to have provided supporting foundations for masonry walls. Lying on the beams was east to west aligned wall [13], which comprised the north of the river wall and provided the southern edge of a rectangular structure that lay below the development area (Plate 5). Wall [13] was constructed from irregularly coursed, 18th-century unfrogged red bricks, bonded with hard, white lime mortar. The surviving east to west aligned segment of the wall was 0.6m wide and up to 2.7m high, the top being recorded at 5.30m AOD. It had been partly repaired as [14], which comprised irregularly coursed, whole and part yellow stock bricks bonded with a hard, mid reddish brown sandy mortar. Wall [13] continued east of the repair, turning to the north along the west side of Duke Shore Stairs before being truncated.
- 7.3.3 Posts and stakes [19] were overlain by the southern end of wall [11], which was 4.49m long, 0.5m wide and stood up to 1.84m high, the upper level being recorded at 4.30m AOD (Plate 5). It was constructed from 18th-century unfrogged red bricks, all laid as stretchers and bonded with dark yellowish brown sandy mortar. It was abutted by wall [13] to the south and wall [15] to the north, the three between them defining the edges of the masonry structure below the development area. Towards the northern end of wall [11] an area of bricks had been deliberately removed, forming a hole in the wall (Plate 5). This may have been evidence of a recent attempt to ascertain the nature and thickness of the wall. Wall [15] was of similar construction to [11] and survived to a similar height. It extended approximately half way along the northern site edge but beyond this had been truncated by later activity.
- 7.3.4 Lying above the alluvium within the area defined by walls [13], [15] and [11] was floor [18], which comprised two broad structural elements. The basal level comprised a single course of unmortared, very slightly frogged red bricks and was overlain by a series of limestone blocks bonded to the surrounding walls, their undersides exhibiting evidence of chamfering and other tooling; belying their re-use (Plate 6 and see Appendix 4). The floor was up to 0.14m thick and the surface was recorded at 2.60m AOD. It only occupied the western half of the site, not continuing east of a dog-leg in the southern wall.

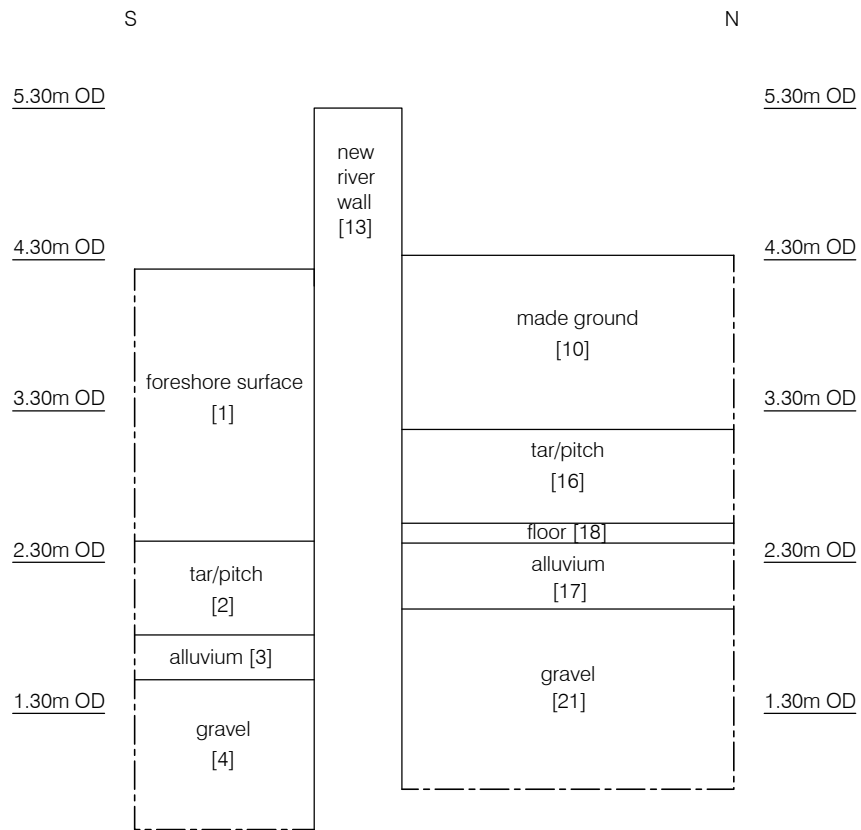
- 7.3.5 Lying above the floor, 0.6m to the north of wall [13] and abutting the east side of wall [11] was a 0.24m wide wall [12], constructed from unfrogged red bricks laid as all stretchers and bonded with hard, dark yellowish brown sandy mortar. This survived to the same height as wall [11] though only a 0.9m east to west aligned segment survived. This appears to have acted as a dividing wall within the structure defined by external walls [13], [11] and [15], though the southern area would have been very narrow. In common with a number of buildings and boat yards along Narrow Street, the structure probably dated to the 18th century, with some later modifications and repairs, such as wall [14] and the insertion of the floor.
- 7.3.6 The floor and internal faces of the walls were overlain by a deposit [16] up to 0.60m thick and recorded at an upper elevation of 3.20m AOD. This deposit comprised solid pitch and liquid tar (Plate 5) with various debris including ropes and wooden boat fittings contained within. This was similar to deposit [2] recorded to the south of the river wall at a slightly lower level (Figure 4) and was probably the remaining residue from a similar boat building/repair process. The location of the material suggests that the process was carried out within the masonry structure as well as possibly on the foreshore. The layer of pitch and tar was overlain by a mixed deposit [10] up to 1.70m thick and forming the site surface at 4.35m AOD prior to basement excavation. This was broadly a loose, dark greyish brown sandy silt, contained within which was various debris including metal, glass, plastics and demolition rubble, along with recent sweet wrappers. The material appeared to have been mostly deposited in the late 20th and early 21st centuries.



0 4m

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Figure 3
Trench Plan
1:75 at A4



Section 1
East Facing

0 2m

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Figure 4
Schematic Cross Section
1:50 at A4

8 Phased Archaeological Sequence

8.1 Phase 1: Natural Deposits

8.1.1 The earliest deposit recorded in both broad sequences was firmly compacted, naturally deposited gravel, which was not fully penetrated on either side of the river wall. It was unclear whether this was an upper element of the Pleistocene Terrace sequence or a Post-Glacial deposit laid down by a high-energy alluvial regime, though the latter is probably more likely.

8.2 Phase 2: 17th/Early 18th Century

8.2.1 The earliest human activity was represented by the single post driven into the gravel and subsequently sealed by alluvial deposition, south of the river wall. This may have been part of a timber structure that pre-dated the river wall, though no dating evidence was associated with the post so it could only be dated on stratigraphic grounds. It clearly pre-dated the river wall and the structure to the north and has therefore been tentatively dated to the 17th or early 18th century, though could feasibly have been earlier.

8.3 Phase 3: 18th Century

8.3.1 No dateable finds were recovered from the fine alluvium that sealed the early timber post and was recorded north and south of the river wall. This clearly pre-dated the main structural development recorded during the investigations and has tentatively been assigned to the early 18th century, though again, may have been earlier. The main structural development on the site came in the 18th century and involved the erection of the structure in the basement area, which incorporated the river wall along its southern edge. It was constructed on timber piles and beams and further driven timber posts immediately south of the river wall probably represented a contemporary timber structure built to protect the wall. It is likely that the brick structure and the foreshore area south of the river wall were utilised for processes associated with boat building and repair throughout the 18th century.

8.4 Phase 4: 19th Century

8.4.1 The site continued to operate as part of a boat yard into the 19th century, with some repairs to the brick structure and river wall taking place during this period, along with the construction of the brick and stone floor north of the river wall. Activities taking place apparently either side of the river wall included the use of pitch and tar, probably as a waterproofing agent in boat building and repair and deposition of this material in both areas probably represented the final boat yard activity on the site sometime in the first half of the 20th century.

8.5 Phase 5: Modern Deposits

- 8.5.1 Materials associated with early 20th-century and recent site development comprised foreshore deposits south of the river wall and mixed made ground within and over the structure to the north.

9 Discussion and Conclusions

- 9.1 The watching brief revealed a number of phases of deposition and activity on the site which started with the accumulation of natural deposits and ended with modern demolition and infilling activities.
- 9.2 Natural material was recorded in both sequences, though at slightly differing elevations, probably indicating the broad slope on the north side of the Thames. Earlier, coarse deposits were indicative of a high-energy alluvial regime though these were undated but were probably of Holocene origin. A post driven through these deposits was also undated but thought to be associated with post-medieval Thames-side development. High water levels in the late medieval/early post-medieval period probably prevented development on the site so the post is most likely associated with developments in the wider area from the 17th century, which followed extensive reclamation in the late 16th century.
- 9.3 More extensive evidence for development including masonry and timber structures most likely dates from the 18th century, when contemporary maps show some buildings on the site. These structures were most likely associated with boatyard activities and the adjacent Duke Shore Stairs are certainly recorded from the 18th century. Boat building and repair probably continued into the 19th century and the floor on the western side of the site was inserted after 1850. This may have been contemporary with the construction of the building that was demolished prior to commencement of the project and thought to date to the late 19th century. Artefactual dating evidence for the 19th-century activity is somewhat limited, the tar/pitch material being the only contemporary deposit, though materials within this, including timber and rope fragments do suggest boatyard activity.
- 9.4 It is unclear when boatyard activities ceased on the site as there was clearly some truncation of earlier deposits prior to the deposition of large volumes of mostly rubble material, which contained finds ranging from residual 19th-century ceramics to modern plastics. The site was probably still used for boatyard activities into the 20th century, the 1914 Ordnance Survey Map showing a building overlying the floored area to the west and more open yard to the west. Clearly more recently the site has been used for rubbish deposition, whilst the area south of the river wall has obviously experienced continual change through the action of the river.
- 9.5 Overall the watching brief has added some information to records concerning post-medieval exploitation of the northern Thames foreshore, west of the Isle of Dogs. The body of data, particularly artefactual evidence, is certainly not as large as that from more extensive sites in the area, but it is a useful, albeit limited addition to records of light, maritime-related industrial exploitation of this part of the Thames.

10 Acknowledgements

- 10.1 Pre-Construct Archaeology Ltd. would like to thank Richard Meager of CgMs Consulting for commissioning the work, and the staff of Billingford and their sub-contractors, particularly Martin Mulligan and Dermot Forkan, who managed and carried out the excavation work on the study site.
- 10.2 The author wishes to thank Tim Bradley for project management and editing this report, Iain Bright and Paw Jorgensen for monitoring the work on the foreshore, Kevin Hayward for commenting on the finds and Josephine Brown for preparing the illustrations.

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APPENDIX 1: PLATES



Plate 1: Northern Area Before Excavation, Looking West



Plate 2: Northern Area Excavated to Full Depth, Looking South-West



Plate 3: Timber Support Posts [19] *In Situ*, Looking South-West



Plate 4: Base of One of Timber Support Posts [19] after Removal. Scale = 0.5m



Plate 5: Removal of Overburden at West of Site, Looking South-West. South Wall [13] is shown at top left with Wall [11] to the right. Tar layer [16] can be seen overlying both walls and the recent truncation of wall [11] can be seen a short distance above Floor [18]

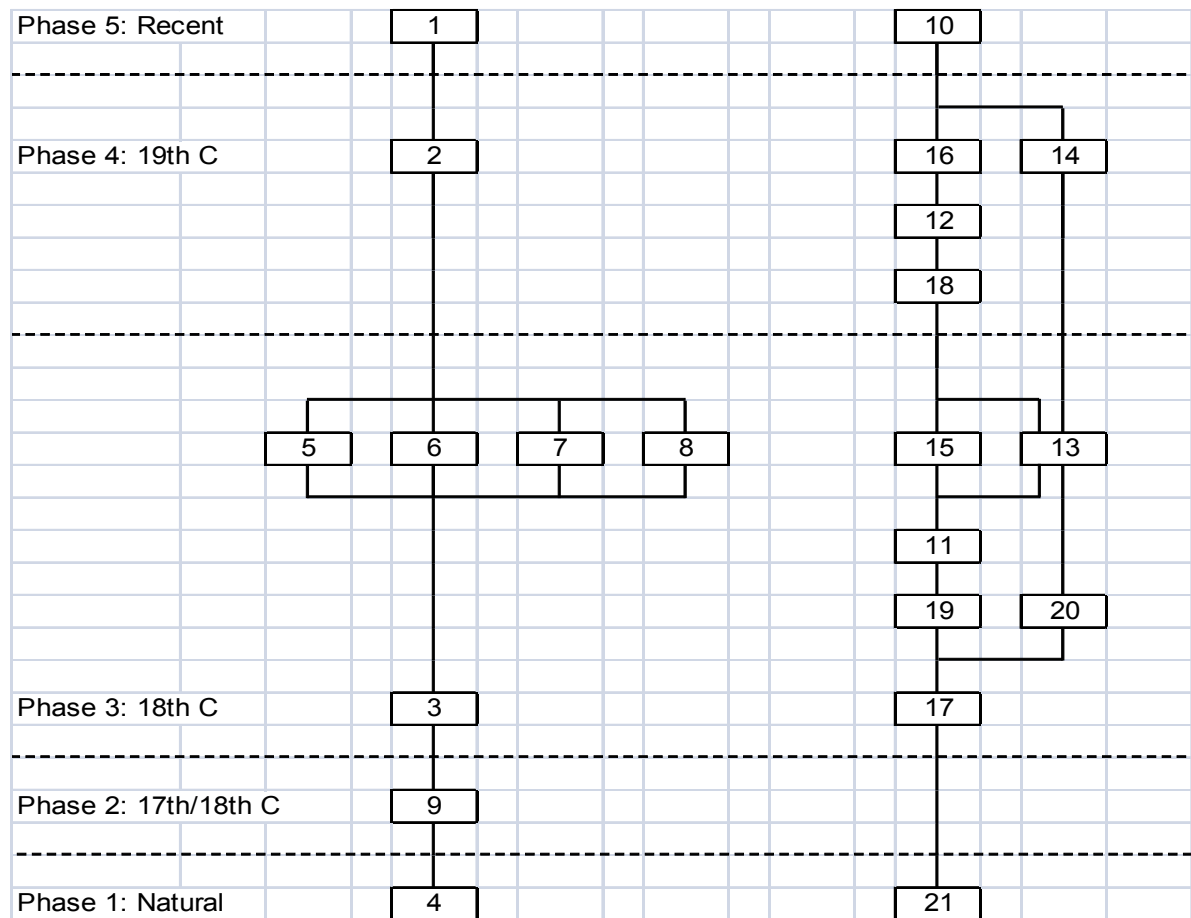


Plate 6: Base of Re-Used Stone in Floor [18], Scale = 0.2m

APPENDIX 2: CONTEXT INDEX

| Site Code | Context | Type | Trench | Description | Date | Phase |
|-----------|---------|---------|----------|-----------------------|-----------------------------|-------|
| NAR13 | 1 | Layer | 1-4 | Foreshore surface | Modern | 5 |
| NAR13 | 2 | Layer | 1-4 | Tar/pitch layer | 19 th century | 4 |
| NAR13 | 3 | Layer | 1-4 | Alluvium | Natural | 1 |
| NAR13 | 4 | Layer | 1-4 | Gravel | Natural | 1 |
| NAR13 | 5 | Timber | 1 | Upright post | 18 th century | 3 |
| NAR13 | 6 | Timber | 4 | Upright post | 18 th century | 3 |
| NAR13 | 7 | Timber | 4 | Upright post | 18 th century | 3 |
| NAR13 | 8 | Timber | 4 | Upright post | 18 th century | 3 |
| NAR13 | 9 | Timber | 4 | Timber pile | 17/18 th century | 2 |
| NAR13 | 10 | Layer | Basement | Made ground | Modern | 5 |
| NAR13 | 11 | Masonry | Basement | N-S western wall | 18 th century | 3 |
| NAR13 | 12 | Masonry | Basement | E-W internal wall | 19 th century | 4 |
| NAR13 | 13 | Masonry | Basement | E-W southern wall | 18 th century | 3 |
| NAR13 | 14 | Masonry | Basement | Repair to [13] | 19 th century | 4 |
| NAR13 | 15 | Masonry | Basement | E-W northern wall | 18 th century | 3 |
| NAR13 | 16 | Layer | Basement | Tar/pitch layer | 19 th century | 4 |
| NAR13 | 17 | Layer | Basement | Alluvium | Natural | 1 |
| NAR13 | 18 | Masonry | Basement | Stone and brick floor | 19 th century | 4 |
| NAR13 | 19 | Timber | Basement | Upright posts/piles | 18 th century | 3 |
| NAR13 | 20 | Timber | Basement | Horizontal beam | 18 th century | 3 |
| NAR13 | 21 | Layer | Basement | Gravel | Natural | 1 |

APPENDIX 3: SITE MATRIX



APPENDIX 4: BUILDING MATERIALS REVIEW

Kevin Hayward

| Context | Fabric | Material | Size | Date range of material | | Latest dated material | | Spot date | Spot date Mortar |
|---------|----------------------------|---|------|------------------------|------|-----------------------|------|-----------|------------------|
| 11 | 3032nr3033; 3101 | Large brick transitory or early post great fire brick 220mm x 110mm x 59mm brown grey clinker mortar | 1 | 1664 | 1725 | 1664 | 1725 | 1700-1775 | 1750-1850 |
| 13 | 3032nr3046 3046 3101 | Post Great Fire brick 62mm thick and Stuart/18 th century red brick clinker mortar | 3 | 1450 | 1900 | 1664 | 1900 | 1700-1775 | 1750-1850 |
| 18 | 3110PM; 3032; 3101 | Portland Whit Bed stone machine base (290mm x 185mm x 70mm) or associated object not decorative backed with a hard brown concrete mortar and post great fire brick wide | 2 | 1630 | 1950 | 1630 | 1950 | 1700-1900 | 1850-1950 |

Review

Six items of building material (c13kg) (brick and worked stone) were recorded from the Narrow Street, Limehouse (NAR13) watching brief. .

On the basis of fabric, form and mortar type, the material is all later post medieval in date (1650-1900).

The mortar from structures [11] and [13] are broadly contemporary in date, on the basis of their mortar, a grey-brown clinker recipe which was commonly used throughout London from the middle of the 18th century onwards. This mortar in [11] and [13] is used to bond earlier post great fire bricks whose width (110mm) would suggest manufacture before 1775 and fragments of earlier post medieval red bricks fabric 3046 (1450-1700)

It was after 1775 that brick size was reduced, following government legislation (brick tax) restricting and standardising brick dimensions. On the basis of brick only a date of 1750-1775 is proposed.

Finally the building material from [18] is indicative of a later Victorian date. The post great fire brick is in itself not particularly diagnostic but the stone (machine base?) in Portland Whit Bed

made from Upper Jurassic limestones from the Isle of Portland, Dorset and its associated mortar (a very hard fine dark grey recipe) would suggest that the structure post dates [11] and [13]. These hard, robust cement mortars only began to be patented after 1850 when the demand for strong bonding materials for engineering, industrial projects took off. The item of stone, a weathered sizeable block (8kg) with two 5cm wide holes, a runner and bevelled edge may have acted as some sort of machine base or sump associated with boat building.

Recommendations

The date of the brick and mortar assemblage from [11] and [13] is in keeping with the 18th-century structural development of the Thames-side wall and no further work needs to be conducted here. The rest of the assemblage has limited potential [18] and merely reflects the areas focus on boat building.

APPENDIX 5: OASIS FORM

OASIS ID: preconst1-167019

Project details

Project name 96 Narrow Street, Limehouse

Short description of the project The watching brief monitored the excavation of underpinning pits on the Thames foreshore at the south of the site and basement excavation in the main development area. The overall sequence recorded at the site comprised a number of phases, beginning with the deposition natural gravel seen in all areas. The earliest evidence of human activity was provided by a single post driven into the gravel, which may have dated as early as the 17th century. This and the gravel were sealed by an alluvial deposit which could also be seen sealing the gravel in the basement excavation area. Post dating the alluvial deposition was a brick structure supported on piles and beams in the basement area, which was protected to the south by a contemporary timber structure. This structural phase probably dated to the 18th century. Subsequent activity probably associated with boat building and repair and likely dating to the 19th century was evidenced by insertion of a floor within the brick structure and tar and pitch deposition north and south of the river wall, whilst the most recent deposits comprised foreshore material to the south and infilling/ground-raising material to the north.

Project dates Start: 09-10-2013 End: 15-01-2014

Previous/future work No / No

Any associated project reference codes NAR13 - Sitecode

Type of project Recording project

Site status None

Current Land use Vacant Land 1 - Vacant land previously developed

Monument type WALL Post Medieval

Monument type FLOOR Post Medieval

Monument type POST Post Medieval

Monument type BEAM Post Medieval

Significant Finds BRICK Post Medieval

Significant Finds WORKED STONE Post Medieval

Investigation type ""Watching Brief""

Prompt National Planning Policy Framework - NPPF

Project location

Country England

Site location GREATER LONDON TOWER HAMLETS POPLAR 96 Narrow Street

Postcode E14

Study area 65.00 Square metres

| | |
|-------------------------------|---|
| Site coordinates | TQ 36585 80698 51 0 51 30 29 N 000 01 53 W Point |
| Height OD / Depth | Min: 1.55m Max: 2.01m |
| Project creators | |
| Name of Organisation | Pre-Construct Archaeology Ltd. |
| Project brief originator | Adam Single |
| Project design originator | Tim Bradley |
| Project director/manager | Tim Bradley |
| Project supervisor | Peter Boyer |
| Project supervisor | Paw Jorgensen |
| Project supervisor | Iain Bright |
| Type of sponsor/funding body | Developer |
| Name of sponsor/funding body | CgMs Consulting |
| Project archives | |
| Physical Archive recipient | LAARC |
| Physical Contents | "Ceramics", "Worked stone/lithics" |
| Digital Archive recipient | LAARC |
| Digital Contents | "Ceramics", "Worked stone/lithics" |
| Digital Media available | "Images raster / digital photography", "Spreadsheets", "Text" |
| Paper Archive recipient | LAARC |
| Paper Contents | "Stratigraphic" |
| Paper Media available | "Context sheet", "Matrices", "Plan", "Report", "Section" |
| Project bibliography | |
| 1 | |
| Publication type | Grey literature (unpublished document/manuscript) |
| Title | AN ARCHAEOLOGICAL WATCHING BRIEF ON GROUNDWORKS AT 96 NARROW STREET, LIMESHOUSE, LONDON E14 |
| Author(s)/Editor(s) | Boyer, P |
| Date | 2014 |
| Issuer or publisher | Pre-Construct Archaeology Ltd. |
| Place of issue or publication | London |

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|-------------|--|
| Description | MAP2/MoRPHE Report |
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