

**CANARY WHARF RIVERSIDE SOUTH**

**CANARY WHARF**

**LONDON BOROUGH OF TOWER**

**HAMLETS**

**ARCHAEOLOGICAL WATCHING**

**BRIEF**

**WEF 01**

**APRIL 2009**

CANARY WHARF RIVERSIDE SOUTH  
CANARY WHARF  
LONDON BOROUGH OF TOWER HAMLETS  
  
ARCHAEOLOGICAL WATCHING BRIEF

Quality Control

Pre-Construct Archaeology Limited			K1333
	Name & Title	Signature	Date
Text Prepared by:	Paw Jorgensen & James Langthorne		April 2009
Graphics Prepared by:	Hayley Baxter		April 2009
Graphics Checked by:	Josephine Brown		April 2009
Project Manager Sign-off:	Jon Butler		April 2009

Revision No.	Date	Checked	Approved

Pre-Construct Archaeology Ltd  
Unit 54  
Brockley Cross Business Centre  
96 Endwell Road  
London  
SE4 2PD

**An Archaeological Watching Brief at Canary Wharf Riverside South,  
Canary Wharf, London Borough of Tower Hamlets**

**Site Code: WEF 01**

**Central National Grid Reference: TQ 3710 8025**

**Written and Researched By James Young Langthorne and Paw  
Jorgensen**

**Pre-Construct Archaeology Limited, April 2009**

**Project Manager: Chris Mayo**

**Commissioning Client: Canary Wharf Contractors Ltd.**

**Contractor: Pre-Construct Archaeology Limited  
Unit 54 Brockley Cross Business Centre  
96 Endwell Road  
Brockley  
London  
SE4 2PD**

**Tel: 020 7732 3925**

**Fax: 020 7639 9588**

**Email: [cmayo@pre-construct.com](mailto:cmayo@pre-construct.com)**

**Website: [www.pre-construct.com](http://www.pre-construct.com)**

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# 1 ABSTRACT

- 1.1 This report details the results of an archaeological watching brief undertaken at Canary Wharf Riverside South, Westferry Road, London Borough of Tower Hamlets. The project encompassed monitoring the excavation of large trenches for foundation pile testing. In addition to this, monitoring of ground reduction work across the entire site was also monitored. The site is centred at National Grid Reference TQ 3710 8025. The project was commissioned by Canary Wharf Contractors Ltd. The watching briefs were undertaken between 4<sup>th</sup> - 27<sup>th</sup> April 2007, 18<sup>th</sup> June - 11<sup>th</sup> July 2007, and September 2008 - January 2009.
- 1.2 The watching briefs identified natural gravel and foreshore deposits overlain by layers of redeposited alluvium, which had in several places been truncated by 19<sup>th</sup> and 20<sup>th</sup> century activity associated with the Union Docks.
- 1.3 A number of massive brick and concrete walls were identified as the remains of three of the docks (Upper, Middle and Lower) formerly occupying the site. Two phases of the Upper and Middle Dock were observed. In addition, a rectangular concrete structure, possibly the housing for a pumping mechanism, and the revetted wall of a slipway were recorded.
- 1.4 Due to the limited scope of the watching brief only the most substantial structural remains survived long enough to be recorded while more delicate features were removed by continuous and rapid ground reduction.

## 2 INTRODUCTION

- 2.1 An archaeological watching brief was conducted by Pre-Construct Archaeology Limited on land at Canary Wharf Riverside South, Westferry Road, London Borough of Tower Hamlets between 4<sup>th</sup> - 27<sup>th</sup> April 2007, 18<sup>th</sup> June - 11<sup>th</sup> July 2007, and September 2008 - January 2009. The work was commissioned by Canary Wharf Contractors Ltd. The site was project managed for Pre-Construct Archaeology by Chris Mayo and supervised by the authors.
- 2.2 The site is bounded by Westferry Circus to the north, Westferry Road to the east, West India south Dock to the south, and the River Thames to the west (Fig 1). The National Grid Reference of the site is TQ 3710 8025. The site has previously been the subject of an Archaeological Desk Based assessment<sup>1</sup>
- 2.3 The first stage of works, which were undertaken in April 2007, were centred on the northern part of the site (Fig 2). Three large intersecting trenches (Trenches 3-5) were excavated in order to create an area for foundation pile testing.
- 2.4 The second stage of works, undertaken in June to July of 2007, was located in the southern part of the site (Fig 2). One large trench (Trench 6) was opened to facilitate further foundation pile testing. An additional trench was excavated in the southeastern corner of the site (Trench 7).
- 2.5 In September of 2008 the final stage, which comprised ground reduction across the entire site, commenced. This stage was completed in January 2009. This report presents the findings of the work that was carried out on site from April 2007 to January 2009.
- 2.6 This watching brief complements previous monitoring undertaken on this site in 2001<sup>2</sup>, 2002<sup>3</sup>, and February 2007<sup>4</sup>. In addition to the reports associated with the previous monitoring exercises a buried obstructions report had been compiled by Arup in November of 2001<sup>5</sup>.

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<sup>1</sup> Brown 1999

<sup>2</sup> Stirk 2001

<sup>3</sup> Pooley and Mattinson 2002

<sup>4</sup> Pooley 2007

<sup>5</sup> Arup 2001

- 2.7 In addition to the field based work intensive desk-based research was undertaken in August of 2008 of two cast iron pipes uncovered in the southern end of the development site<sup>6</sup>.
- 2.8 The completed archive comprising written, drawn and photographic records will be stored by Pre-Construct Archaeology Ltd. until their eventual deposition in the London Archaeological Archive and Research Centre (LAARC).
- 2.9 The site was assigned the code WEF 01.

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<sup>6</sup> Thompson 2008

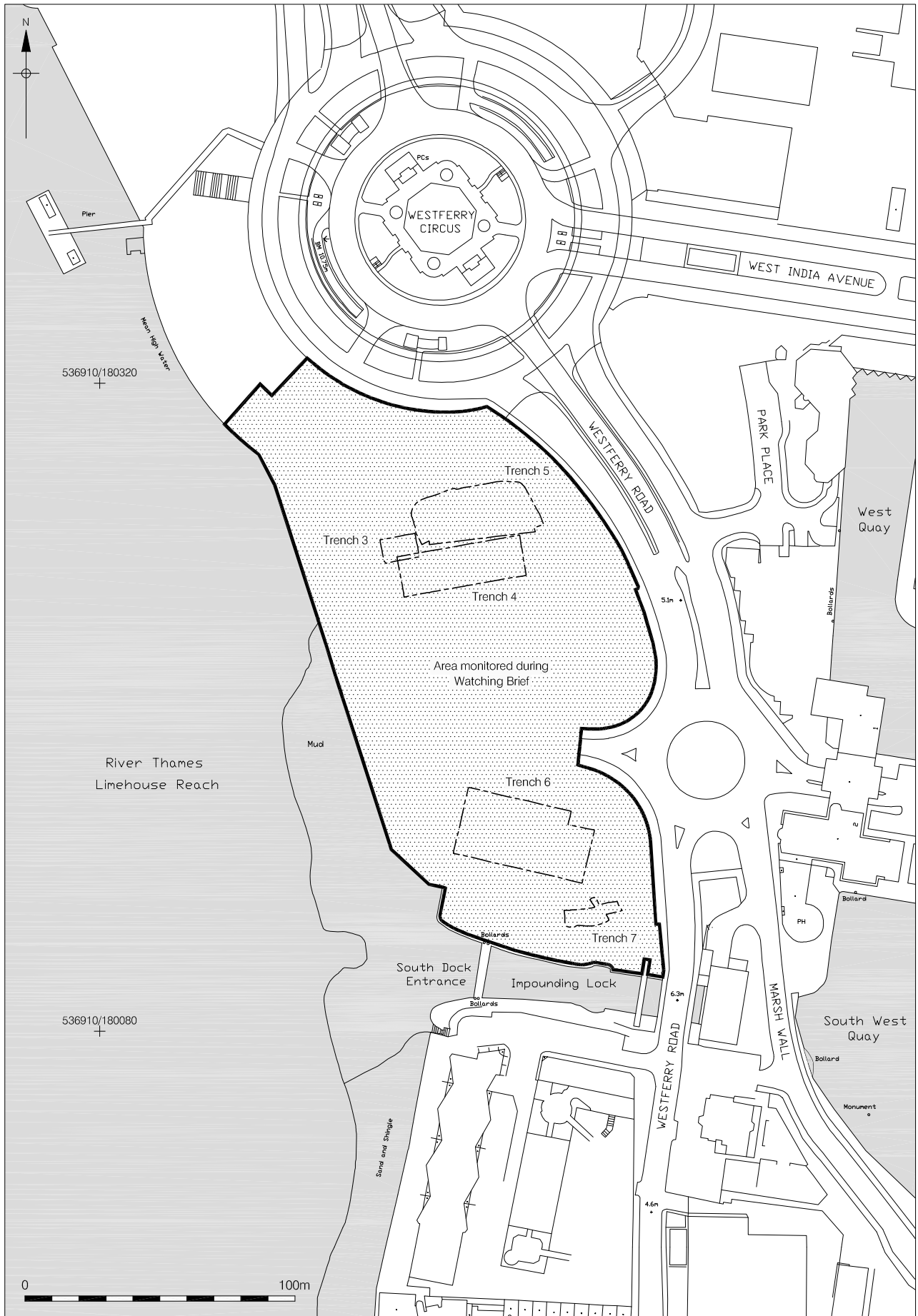


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Figure 1  
 Site Location  
 1:25,000 at A4





© Pre-Construct Archaeology Ltd 2009

Figure 2  
Trench Location  
1:2,000 at A4

### **3 PLANNING BACKGROUND**

- 3.1 The site is located within an area defined in the London Borough of Tower Hamlets' Unitary Development Plan as an Archaeological Priority Zone. English Heritage's Greater London Archaeological Advisory Service has recommended that proper provision be made for the archaeological implications of any proposed development of the site. These considerations follow policies set out in PPG 16 and the London Borough of Tower Hamlet's own archaeological planning policy.

#### **ARCHAEOLOGY AND ANCIENT MONUMENTS**

**DEV42 DEVELOPMENT WHICH ADVERSELY AFFECTS NATIONALLY IMPORTANT ARCHAEOLOGICAL REMAINS, INCLUDING SCHEDULED ANCIENT MONUMENTS, WILL NOT NORMALLY BE PERMITTED.**

**DEV43 DEVELOPMENT WHICH AFFECTS ANY LOCALLY IMPORTANT ARCHAEOLOGICAL SITE OR REMAINS, INCLUDING INDUSTRIAL ARCHAEOLOGY, MAY BE PERMITTED DEPENDING UPON :**

**1 THE IMPORTANCE OF THE ARCHAEOLOGICAL REMAINS;**

**2 THE NEED FOR THE DEVELOPMENT; AND**

**3 MEASURES PROPOSED FOR THE PROTECTION, ENHANCEMENT AND PRESERVATION OF THE SITE AND THE INTERPRETATION AND PRESENTATION OF THE REMAINS TO THE PUBLIC.**

**DEV44 THE PERMANENT PRESERVATION IN SITU OF NATIONALLY IMPORTANT REMAINS WILL NORMALLY BE REQUIRED. PRESERVATION OF OTHER REMAINS WILL BE A PREFERENCE, SUBJECT TO THE IMPORTANCE OF THE REMAINS AND THE NEED FOR DEVELOPMENT OF THE SITE. WHERE PRESERVATION IS NOT APPROPRIATE, EXCAVATION AND RECORDING MAY BE REQUIRED.**

**DEVELOPMENT OF ARCHAEOLOGICAL SITES SHOULD ADOPT SUITABLE DESIGN, LAND USE AND SITE MANAGEMENT TO ACHIEVE THESE ENDS.**

**DEV45 PROPOSALS INVOLVING GROUND WORKS IN AREAS OF ARCHAEOLOGICAL IMPORTANCE OR POTENTIAL, SHOWN ON THE PROPOSALS MAP, OR CONCERNING INDIVIDUAL SITES NOTIFIED TO THE COUNCIL BY ENGLISH HERITAGE OR THE MUSEUM OF LONDON WILL BE SUBJECT TO THE FOLLOWING**

#### **REQUIREMENTS:**

**1. WITHIN AREAS OF ARCHAEOLOGICAL IMPORTANCE APPLICANTS WILL NEED TO DEMONSTRATE THAT THE ARCHAEOLOGICAL IMPLICATIONS OF THE DEVELOPMENT HAVE BEEN PROPERLY ASSESSED. A WRITTEN ASSESSMENT (ARCHAEOLOGICAL STATEMENT) BASED ON THE PROFESSIONAL ADVICE OF AN APPROVED ARCHAEOLOGY CONSULTANT OR ORGANISATION SHOULD BE SUBMITTED AS PART OF THE DOCUMENTATION REQUIRED FOR A COMPLETE PLANNING APPLICATION.**

**2. WITHIN AREAS OF ARCHAEOLOGICAL IMPORTANCE, THE COUNCIL MAY REQUEST, WHERE DEVELOPMENT IS LIKELY TO AFFECT IMPORTANT ARCHAEOLOGICAL REMAINS, THAT AN ARCHAEOLOGICAL FIELD EVALUATION OF THE SITE IS CARRIED OUT BEFORE ANY DECISION IS MADE ON THE PLANNING APPLICATION.**

**3. WHERE THE PRESERVATION OF ARCHAEOLOGICAL REMAINS IN SITU IS NOT APPROPRIATE, THE COUNCIL WILL SEEK TO ENSURE THAT NO DEVELOPMENT TAKES PLACE ON THE SITE UNTIL ARCHAEOLOGICAL INVESTIGATION, EXCAVATION AND RECORDING HAS TAKEN PLACE BY AN APPROVED ARCHAEOLOGICAL ORGANISATION.**

**4 IN APPROPRIATE CASES THE COUNCIL WILL SEEK TO ENSURE THAT ADEQUATE OPPORTUNITIES ARE AFFORDED FOR THE ARCHAEOLOGICAL INVESTIGATION OF SITES, BEFORE AND DURING DEMOLITION AND DEVELOPMENT. SUITABLE PROVISION SHOULD BE MADE FOR IN SITU PRESERVATION OF REMAINS (DEV44) AND FINDS IN THE ORIGINAL LOCATION, OR FOR REMOVING THEM TO A SUITABLE PLACE OF SAFE KEEPING.**

5.62 Tower Hamlets has a long and rich history. Archeological remains are an important source of evidence of this history from Roman times to the recent industrial past. One of the principle sources of archaeological evidence is the development of sites, but this evidence is easily destroyed in the development process. The Council therefore wishes to ensure that development involving groundworks in areas which may contain archeological remains makes early and specified allowance for the investigation of the archaeological potential of the site before groundworks for the development is allowed to proceed. The Council's preference will be to seek and maintain any finds and remains in situ. The Council will seek the guidance of English Heritage and the Museum of London in determining the importance of archaeological remains.

5.63 The Council is concerned to see that sites which may be of interest are properly investigated and records made of any finds before development takes place. It is important the Borough's archaeological heritage is made accessible to the public as an educational, recreational and tourist resource. The Council will therefore support and promote measures which protect and conserve sites and which will allow the public access to sites with archaeological remains to the extent that this is compatible with the protection of the remains.

5.64 The Council will seek professional archaeological advice from English Heritage or a professionally qualified archaeological organisation or consultant as appropriate and expect applicants to do the same when proposing development which could affect archaeological remains. It is important that developers have properly assessed and planned for the implications of their proposals in terms of scheduling time and resources for investigations to be carried out of the site. Proposals for investigation should be built into the development programme at an early stage in the process. Supplementary Planning Guidance on Archaeology and Development, outlines the preferred procedure for investigation before development takes place. An archaeological assessment is normally a desktop evaluation of existing information on the development site, commissioned from a professional archaeological body or consultant. Sources may include historic maps, written sources, previous finds, archaeological fieldwork and geographical surveys. An archaeological evaluation is in contrast field based, but, as distinct from a full archaeological excavation, is normally a small scale and rapid operation, entailing ground survey and limited trial trenching. It should, nevertheless, be carried out by a professionally qualified archaeological organisation or individual. An evaluation of this kind helps to define the character and extent of surviving archaeological remains in the area of a proposed development, and thus to indicate the weight that ought to be attached to their preservation.

5.65 Archeologically important areas are found throughout the Borough as shown on the Proposals Map. There are also records of numerous finds which may indicate areas of potential. The Council will consult with English Heritage and the Museum of London in the designation of areas of archaeological importance and will consult them about any areas of potential. Proposals which fall within these areas will be subject to policy DEV 42 to 66.

## **4 GEOLOGY AND TOPOGRAPHY**

### **4.1 Geology**

- 4.1.1 A complete description of the geological and topographical conditions at the study site forms part of the Desk Based Assessment<sup>7</sup>. Below is a summary of its results.
- 4.1.2 The background geology in the redevelopment area is based on the British Geological Survey North and South London maps (Sheets 256 and 270 1:50000 respectively). The map indicates that in the vicinity of the site the upper sequence is composed of River Terrace Gravels, which have been sealed by more recent alluvium.
- 4.1.3 This sequence has been confirmed by the results of the archaeological investigations during Phases 1, 2, and 3 of The Canary Wharf Riverside South Development as well as boreholes at nearby Heron Quays<sup>8</sup>.

### **4.2 Topography**

- 4.2.1 The site is located upon a contour of the River Thames, which forms the eastern boundary of the site, at an approximate height of 5.00m OD.

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<sup>7</sup> Brown 1999

<sup>8</sup> Stirk 2001; Pooley and Mattinson 2002; Pooley 2007

## **5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND**

5.1 A detailed description of the archaeological and historical background to the study site can be found in the Desk Based Assessment for Canary Wharf Riverside South<sup>9</sup> with further supplementary material in the Arups' buried obstructions report<sup>10</sup> and the previous watching brief reports<sup>11</sup>. A summary of this material can be found below.

### **5.2 PREHISTORIC**

5.2.1 While it has been concluded that the area that the site lies in what was a low lying and marshy river environment during the prehistoric period it was not necessarily utterly inhospitable. Flint artefacts unearthed at two neighbouring sites have suggested at least some form of riverine exploitation during the prehistoric period<sup>12</sup>. Traces of this waterfront activity may well survive within peat formed during various marine regressions, particularly during the Bronze Age.

5.2.2 No traces of a prehistoric foreshore have yet been encountered on the site.

### **5.3 ROMAN**

5.3.1 No evidence for Roman activity has been extant on, or near to, the site.

### **5.4 ANGLO-SAXON AND MEDIEVAL**

5.4.1 Documentary evidence for maintenance of the Thames riverbank can be traced back as early as 1298, which indicates that the reclamation of this land from the river occurred at a much earlier point, possibly even originating during the Saxon period. There is, as yet, no physical evidence to confirm this hypothesis however.

### **5.5 POST-MEDIEVAL**

5.5.1 In 1660 a large area of the Isle of Dogs was flooded when a section of the river wall was breached. This led to new flood defences being constructed around a large floodwater incursion called the Great (or Poplar) Gut further inland.

5.5.2 The Breach effectively created a new foreshore, remains of which, dating to the 17<sup>th</sup> or 18<sup>th</sup> century, have been found still extant on site lying between and to the east of

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<sup>9</sup> Brown 1999

<sup>10</sup> Clarkeburn 2001

<sup>11</sup> Stirk 2001; Pooley & Mattinson 2002; Pooley 2007

<sup>12</sup> Brown 1999

the dock basins where truncation has not occurred. The foreshore traces appeared to slope westerly downwards towards the river<sup>13</sup>. This foreshore was used for laying up timber until 1707 when land was reclaimed for the Breach Dockyard. This shipbuilding yard comprised two timber-lined docks and two building slips. What remained of the Breach to the south was used as a mast and timber laying dock. A trial pit at the northern end of the site encountered a brick wall dating from the 18<sup>th</sup> century<sup>14</sup> and later excavation revealed demolition deposits that were taken as evidence for the potential survival of mid 18<sup>th</sup> century dockside buildings also at the north end of the site<sup>15</sup>. Furthermore several timber structures, posts and floor surfaces of uncertain date, were found which could be part of revetments or river walls from this period of the dockyard's development<sup>16</sup>.

- 5.5.3 In 1818 following the transfer of the dockyard lease a new phase of land reclamation and development began, culminating in the enlargement of the older docks and construction of new ones. The Union Docks, as the dockyard was renamed, continued to be used for over a century until its closure in 1925.
- 5.5.4 A site plan dating to 1774 (not reproduced here) show two docks within the northern portion of the site. These are labelled as the "Single Dock" (north) and the "Long Dock" (south). In addition to the docks two slipways are depicted to the south of Long Dock and various buildings are dispersed across the site.
- 5.5.5 The "Single Dock" purportedly measured 140ft (42.67m) x 38 ½ ft (11.73m) x 12 ½ ft (3.81m). In 1824-25 this dock was replaced by the Upper Dock, which measured 276ft (84.12m) long by 48ft (14.63m) wide. The final expansion of this dock occurred in 1879-80 when it was extended to 334ft (101.80m). At this time both the brick walls and concrete base were installed, but the original timber gates were retained<sup>17</sup>.
- 5.5.6 When constructed, the Long Dock (later known as the Middle Dock) was one of the longest private dry docks on the Thames. During the mid 18<sup>th</sup> century it allegedly measured 406ft (123.75m) by 40ft 8in (12.39m) by 14ft 2in (4.32m) deep. However, in 1864 the dimensions of the dock were recorded as 320ft (97.54m) by 37ft (11.28m) wide. In 1880 the dock underwent extensive improvements and was essentially rebuilt using brick and concrete. During this undertaking the dock was also extended

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<sup>13</sup> Pooley and Mattinson 2002; Pooley 2007

<sup>14</sup> Pooley and Mattinson 2002

<sup>15</sup> Pooley 2007

<sup>16</sup> Stirk 2001; Pooley and Mattinson 2002

<sup>17</sup> Hobhouse 1994

to 352ft (107.29m) by 44ft 3in (13.61m) by 15ft 10in (4.82m) deep and the timber gates were replaced with an iron caisson<sup>18</sup>.

- 5.5.7 In 1829-31 a third dock was constructed (the “Lower Dock” or “Steamboat Dock”) on the unembanked frontage in the southern part of the dockyard by sinking the hull of a decommissioned East Indiaman, the Canton, into a former mast pond and securing it with timber piles and fitting it with timber gates. Following this the ground level was raised around the hull to form an oak-lined dry dock 220ft long and 56ft wide. With the completion of the embankment in 1833 the Union Docks became one of the largest private yards on the Thames<sup>19</sup>.
- 5.5.8 The 1868 Ordnance Survey Map shows the three docks within the Union Docks site and also the presence of three slipways in the southern half of the site (Fig. 3). As with the 1774 site plan various dock side buildings appear dispersed across the site although it appears that only a few, if any, of these are the same structures.
- 5.5.9 In the late 1870s to the early 1880s the Union Docks site underwent a series of changes. These included the renovation and lengthening of the Upper and Middle Docks and the demolition of a saw mill which had been located between these two docks. A two story engineer’s shop was purportedly erected in its place<sup>20</sup>. The 1894 Ordnance Survey Map shows the gates of the Upper and Middle Docks closer to the river front than they had been in 1868. Other changes shown on the 1894 map include the construction of a large building in the northern portion of the site and the demolition of a few of the other structures within the development site (see Fig. 3).
- 5.5.10 During the final years of the 19<sup>th</sup> century (1897-9) the Lower Dock was completely redesigned and its alignment changed. This essentially meant that the old dock was demolished and then entirely rebuilt in concrete. Although this new dock maintained the name “Lower Dock” for a number of years following its construction in order to distinguish between the old and new phases of the dock the new dock will be referred to as “Union Dock” as it was named in the 1930s.
- 5.5.11 Contemporaneous with the construction of the Union Dock was the construction of the concrete housing for subterranean centrifugal pumping machinery just to the north of the dock basin. The pumps were powered by 340hp gas engines supplied by Crossley Brothers Ltd of Manchester. These pumps were connected to serve the

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<sup>18</sup> Hobhouse 1994

<sup>19</sup> Hobhouse 1994

<sup>20</sup> Hobhouse 1994

other two dry docks (Upper and Middle Docks)<sup>21</sup>. The pumping station is shown to the north of Lower / Union Dock on the 1914 Ordnance Survey Map (see Fig. 3).

- 5.5.12 During the 1930s all surviving dockyard structures were backfilled and only the Union Dock remained in service. The dry dock and its related slipways were requisitioned shortly after the start of the Second World War in 1940 until 1951. The Union Dry Dock was converted into a double slipway in 1955 for the construction of barges and tugs. A decade later in 1965 the dry dock finally went out of use and was backfilled after its acquisition by concrete and dredging companies.
- 5.5.13 The development of new technology and the industry wide shift in favour of container based shipping throughout the later part of the 1960s and early 1970s resulted in the inability of the Docklands to remain competitive. This further resulted in the closure of most of the docks by the early 1970s and the eventual closure of West India and Millwall Docks between 1978 and 1980.
- 5.5.14 It has been estimated that approximately 150,000 jobs were lost in the five London Docklands boroughs (nearly 20% of all jobs in the area) between 1966 and 1976 as a direct result of the dock closures. In order to prevent the complete financial devastation of the area the London Docklands Development Corporation was created by the local Government and Planning Act of 1980. It was the goal of the corporation to secure the regeneration of the area by bringing land and abandoned buildings into use by creating an attractive environment, which would encourage industry and commerce.
- 5.5.15 One of the key phases of the Docklands regeneration project was the development of the 83 acre Canary Wharf site undertaken by the company Olympia & York in the late 1980s. The Canary Wharf site occupied approximately 33% of the land formerly occupied by the West India Docks and was to feature the three tallest skyscrapers hitherto constructed in Britain.
- 5.5.16 The completion of phase one of the ambitious regeneration project coincided with the collapse of the property market in 1991. As a result of this collapse Olympia & York Canary Wharf Limited filed for bankruptcy in May of 1992, which threatened to bring on the demise of the project. However, in December of 1995 an international consortium backed by the former owners of Olympia & York bought the scheme. This led to the delayed initiation of phase two of the regeneration project, which commenced in 1997.

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<sup>21</sup> Hobhouse 1994



5.5.16 Various archaeological features have been encountered on the Canary Wharf development dating to the period of use between 1818 until 1965. These mainly consist of the original dock basins and later alterations to them or the various smaller docks, slipways, and maintenance yards that lay in close proximity to the four main docks. All three previous watching briefs have demonstrated that much of this material has probably not been demolished but rather buried beneath dumps of backfilled material.

## 5.6 Recent Archaeological Investigations on the Site

5.6.1 Previous archaeological work on site has identified a number of structures and deposits. In 2001 an archaeological watching brief was undertaken by Pre-Construct Archaeology in conjunction with site ground investigation works by Arup Geotechnics. During this project several archaeologically significant deposits were recorded. These mainly consisted of alluvial silt although several possible timber structures and masonry remains of the docks were also encountered<sup>22</sup>.

5.6.2 Another watching brief was carried out in August and September of 2001, also in conjunction with geotechnical work on the site. During this watching brief a buried foreshore, possibly dating to the 17<sup>th</sup> or 18<sup>th</sup> century was encountered. In addition, both brick and timber buildings possibly dating to the 18<sup>th</sup> and 19<sup>th</sup> centuries were identified<sup>23</sup>.

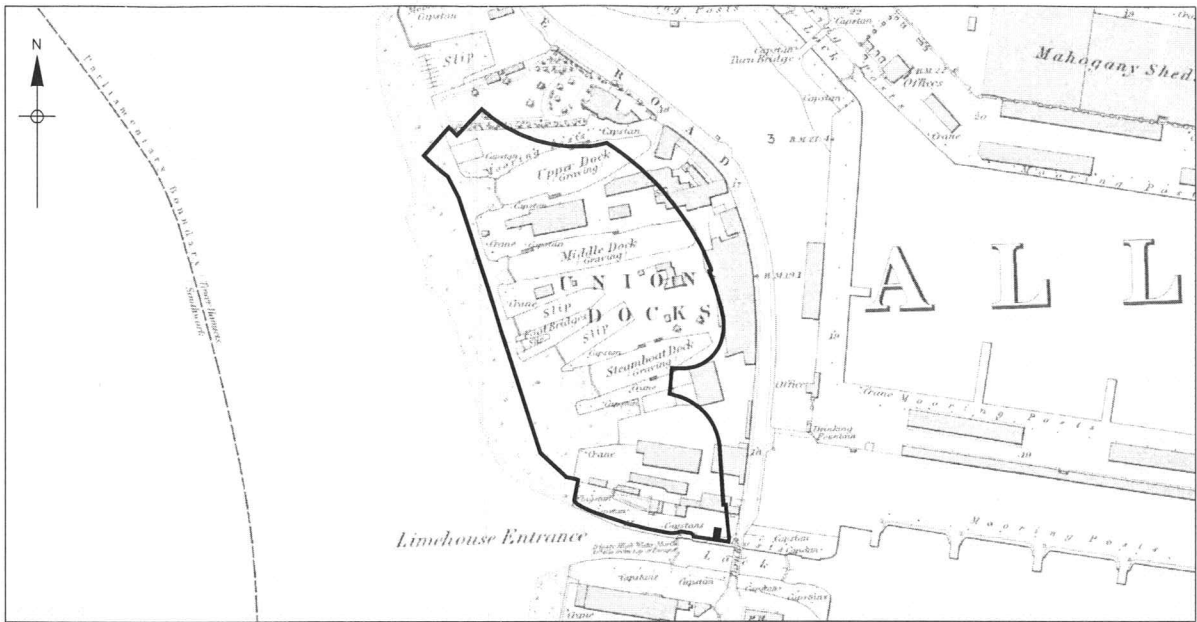
5.6.3 Further geotechnical work was conducted on the site between November of 2006 and January of 2007. An archaeological watching brief was carried out in conjunction with this work. The watching brief revealed alluvial and foreshore deposits, in addition to deposits relating to the remodeling and eventual reclamation of the docks in the 19<sup>th</sup> and 20<sup>th</sup> centuries, but no structures associated with the original 18<sup>th</sup> century docks were encountered<sup>24</sup>.

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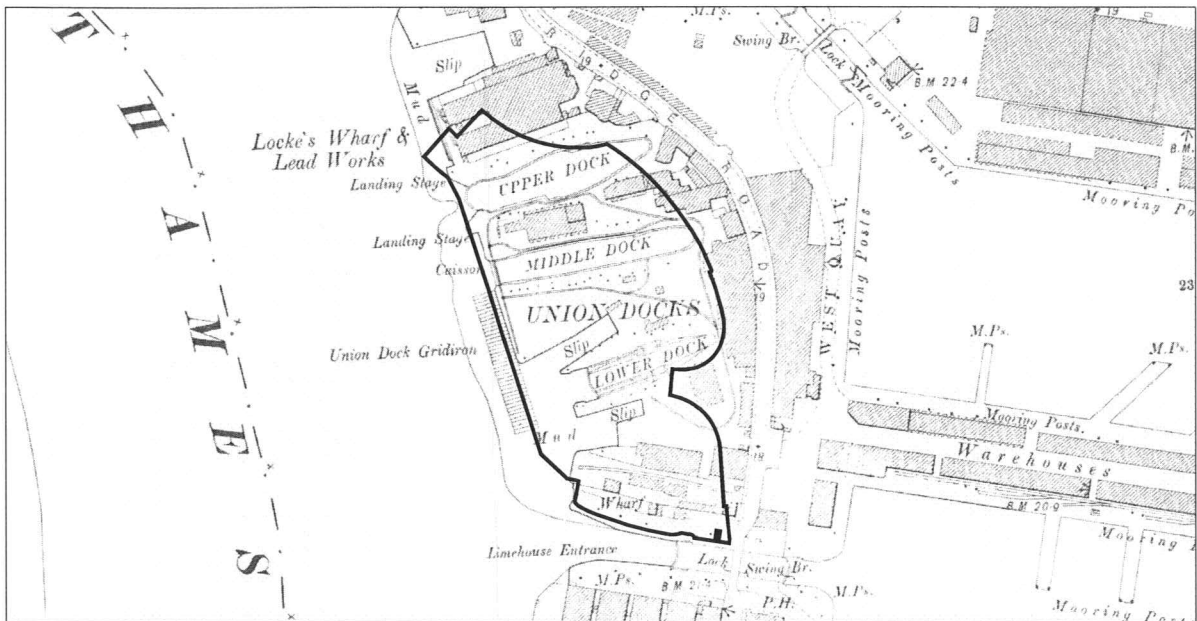
<sup>22</sup> Stirk 2001

<sup>23</sup> Pooley and Mattinson 2002

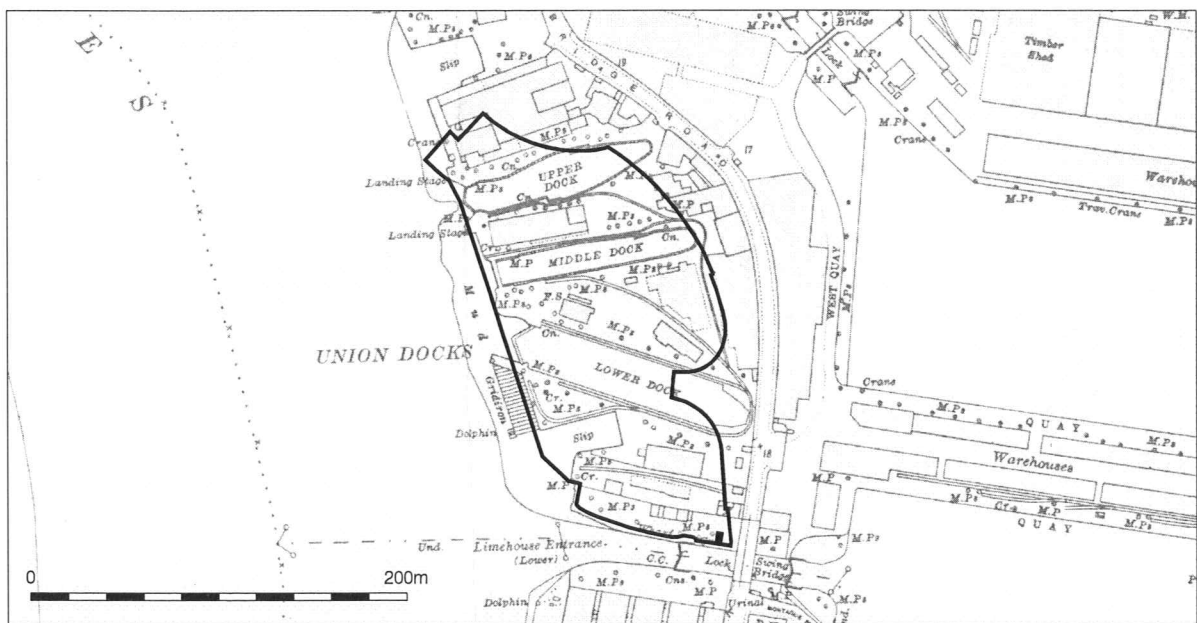
<sup>24</sup> Pooley 2007



1868 Ordnance Survey Map



1894 Ordnance Survey Map



1914 Ordnance Survey Map

## 6 ARCHAEOLOGICAL METHODOLOGY

- 6.1 The watching brief was conducted in accordance with the Archaeological Method Statement and Specifications<sup>25</sup> written by Chris Mayo of Pre-Construct Archaeology Ltd and approved by David Divers of the Greater London Archaeological Advisory Service, English Heritage, on the behalf of the London Borough of Tower Hamlets.
- 6.2 A number of archaeological watching briefs and evaluations have previously been conducted in association with various works on the development site (see para 2.6 above). This report specifically outlines the results of the ongoing archaeological work on site between April 2007 and January 2009.
- 6.3 This current phase of work was carried out in three stages. During the initial stage (4<sup>th</sup> - 27<sup>th</sup> April 2007) the excavation of three test piling trenches (Trenches 3-5) was monitored. In June and July of 2007 two more trenches were excavated in the southern portion of the site (Trenches 6 and 7). The final stage of this monitoring exercise commenced in September 2008 and continued until January of 2009. During the final stage of work a watching brief was undertaken to monitor the ground reduction of the remaining areas of the site.
- 6.4 The excavation of the trenches was carried out under constant archaeological supervision using a 20 tonne excavator fitted with a flat-bladed bucket. When archaeologically significant deposits were encountered these were recorded in plan and section.
- 6.5 During the final stage of the work the ground was reduced down to formation level. This work was carried out between September of 2008 and January of 2009. The ground reduction was carried out using between ten and twelve 20 tonne excavators fitted with flat-bladed buckets. Due to the restrictions of the scope of work the progress of the ground reduction was only monitored on a semi weekly basis. Because of this it is likely that several ephemeral archaeological features were not seen. During this phase of the works surviving archaeological features were recorded in plan and section as accurately as the conditions permitted.
- 6.6 The objective of the watching brief was to identify, record, and retrieve any archaeological remains uncovered during the development programme.
- 6.7 Individual descriptions of all archaeological strata and features excavated and/or exposed were entered onto pro-forma recording sheets. All plans and sections of

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<sup>25</sup> Mayo 2007

archaeological deposits were recorded on polyester based drawing film, the plans being drawn at a scale of 1:100, 1:50, and 1:20, as appropriate, and the sections were recorded at either 1:10 or 1:20. A single context recording system was used.

- 6.8 OD heights were in most cases obtained by measuring down from known points, either on the ground surface or within the excavation area, to the features encountered. On a few occasions a Leica SmartRover GPS/GPRS system was used to survey in extant dock walls and to obtain spot height data.

## **7 ARCHAEOLOGICAL SEQUENCE**

### **7.1 INTRODUCTION**

7.1.1 The majority of the contexts recorded during the watching brief dated to the 19<sup>th</sup> and 20<sup>th</sup> centuries and most were associated with the three docks that occupied the site at various points during this period. In order to facilitate discussion each dock was assigned a structure number and all wall fragments that could be identified as belonging to a specific dock are discussed under the structure number associated with that dock. Additionally, the most recent phase of the Lower Dock is discussed under the name Union Dock in order to distinguish between the earlier and later phase of this structure.

### **7.2 PHASE 1 – NATURAL**

7.2.1 The earliest deposit encountered across the site was [502], a layer of stiff thinly laminated light brownish grey and mid brown alluvial clay containing frequent lenses of yellowish grey coarse sandy gravel at a maximum height of -0.95m OD. This was overlain by a horizon of compact mid yellowish brown slightly peaty clay [482] first observed at +0.80m OD. The natural sequence continued with a layer of firm light greyish blue slightly silty alluvial clay [481] overlying [482]. This horizon was first seen at +1.90m OD and formed the top of the natural sequence in the southern portion of the site. Another layer of alluvial clay [466] displaying identical properties to [481] was observed in the northern portion of the site. It is likely that these two recorded deposits are part of the same horizon, which had been interrupted by the construction of the Union Dock. In the northern part of the site [466] was first observed at a height of +0.37m OD and measured approximately 1.10m in thickness.

### **7.3 PHASE 2 – 18<sup>th</sup> - 19<sup>th</sup> CENTURY (Fig. 4)**

#### **7.3.1 Upper Dock [501] (Constructed 1824-25)**

7.3.1.1 Two walls interpreted as being part of the 1824-25 rebuild of the Upper Dock were observed in the northern part of the site. The wall to the south, [485], which formed the southern wall of the dock was revealed over a 30m length. It was aligned roughly east-west with a dog-leg at the east where the dock widened. It was constructed with machine made red bricks bonded with mid-grey mortar. The highest part of the wall was encountered at +4.80m OD. A small fragment of the northern dock wall, [497], was observed c.16.5m to the north. This wall was similarly constructed of machine made bricks bonded with mid-grey mortar. The fragment of the northern wall had

been severely truncated and the concrete capping had been removed. The basal part of both the northern and southern walls was lined with concrete which was up to 0.90m thick towards the base thinning to 0.65m. The entire dock structure appeared to have been cut into the natural alluvium [466]. Although the base of the dock was not observed during this phase of the watching brief previous geotechnical testing has recorded the base as constructed from 0.30m thick timber planks overlying a 0.70m thickness of concrete, with the timbers recorded at a level of -2.0m OD<sup>26</sup>.

7.3.1.2 Both of these wall segments appear to follow the alignment and position of the walls of the dock as shown on the 1868 Ordnance Survey Map (Fig. 4).

### 7.3.2 Middle Dock [496]

7.3.2.1 Approximately 25m to the south of the Upper Dock was the Middle Dock. A 46m stretch of the southern wall of the Middle Dock was revealed. It was constructed apparently solely from concrete (or perhaps a concrete lining with brick interior) and measured 1.32m wide and was recorded to be at least 4.04m deep with a top height of +4.82m OD. The wall was vertical and offset at the top with a 0.30m by 0.28 protruding buffer along the interior side 1.56m below the top. This wall followed the exact location and alignment of the southern wall of the Middle Dock as depicted on the Ordnance Survey Map of 1868 (Fig. 4).

7.3.2.2 An element of the northern wall of the Middle Dock was observed at its eastern end. It was constructed from brick and concrete, which might suggest it was contemporary with the later build of the northern wall (see below). However, its position might suggest it was extant by 1868 as it located over the northern wall of the Middle Dock as depicted on the Ordnance Survey Map of that year.

### 7.3.3 Lower Dock

7.3.3.1 The ground reduction in the vicinity of the projected location of the Lower Dock, constructed in 1829-33 revealed no archaeological remains.

### 7.3.4 South Slipway [491]

7.3.4.1 To the south of the site a timber revetment consisting of seven upright timber posts, structure [491], measuring c. 0.50m by 0.25m in plan and at least 2.00m long were observed at a height of +3.64m OD. Horizontal timber planks, measuring 2.5m long by 0.30m wide and 75mm wide clad the north side of the upright posts. The structure which measured at least 18m in length appeared to have been cut into the layer of

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<sup>26</sup> Clarkeburn 2001

redeposited alluvium observed across the majority of the site [465] and had been backfilled with 20<sup>th</sup> century made ground. This revetment most probably forms the southern wall of a slipway constructed to the south of the Lower Dock in 1833.

### 7.3.5 Engineering and Fitting Shops [503]

7.3.5.1 A 14m long stretch of wall aligned east-west was observed between the Upper and Middle Docks. It was located in the position of the Engineering and Fitting Shops as shown on the 1868 Ordnance Survey map and most likely represents part of the northern wall of the building.

## 7.4 PHASE 3 – Late 19<sup>th</sup>-20<sup>TH</sup> CENTURY (Fig. 5)

### 7.4.1 Upper Dock

7.4.1.1 A fragment of wall constructed from red brick, [498], was observed in the northern part of the site. It was located in that area of the Upper Dock that was extended in 1879-80 and represents part of the enlarged northern wall of the dock.

### 7.4.2 Middle Dock

7.4.2.1 In Trench 5 the construction cut ([468]) for a segment of wall belonging to the northern wall of the Middle Dock was observed cutting into [466], a naturally deposited alluvial clay horizon, at a maximum height of +0.37m OD. The cut contained wall [456], which was first encountered at +3.42m OD. The wall was constructed from red and yellow stock bricks and was covered with a concrete cap measuring 0.22m in thickness. It was observed over a length of 38m and was 1.2m wide and at least 4.17m deep. The outer face had brick buttresses 0.95m wide by 0.60m thick located 3.0m apart. The top 1.15m of the wall had been constructed to form a 72° batter towards the interior of the dock. At the foot of the battering the wall dropped off vertically to the base of the excavation. The base of the dock was not observed during the watching brief. However, previous geotechnical investigations within the dock basin recorded a timber lined concrete base, which was observed between -0.55m and -1.63m OD<sup>27</sup>.

7.4.2.2 The exterior of the wall was abutted by [465], a layer of redeposited mid bluish grey silty alluvial clay, which rose to a height of +2.00m OD. This layer appeared similar in colour and composition to the fill of construction cut [468], but because the edge of

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<sup>27</sup> Clarkeburn 2001

the cut did not appear to extend into [465] it was assumed that this layer had been deposited against the exterior of the wall post-construction (Fig. 6).

7.4.2.3 To the west a further section of wall, [453], belonging to the Middle Dock survived. It was of similar construction consisting of red and yellow stock brick and a concrete capping and was observed to extend at least 13.80m east-west and be at least 4.48m deep at a top height of +4.0m OD.

7.4.2.4 Both these sections of the northern dock wall followed the location and alignment of the northern wall of the Middle Dock as shown on the Ordnance Survey Maps of 1894 and 1914 (Fig. 5) and suggest they are part of the 1880 rebuild.

#### 7.4.3 Lower Dock (Union Dock) [495]

7.4.3.1 The Union Dock replaced the Lower Dock during the final years of the 19th century. It was built on a different alignment (roughly northwest-southeast) to the earlier dock. The new dock was constructed entirely out of concrete and several large wall segments were observed during the monitoring exercise of the ground reduction. All of these appeared to cut into the horizon of redeposited alluvium stretching across the entire site [465].

7.4.3.2 Portions of the northern wall survived to a height of +3.4m OD ([493] and [494]) while the maximum height on the southern wall was recorded as +3.0m OD ([492]). The northern wall dropped 2.7m vertically from the top after which a 0.60m wide offset extended towards the south; below this step the wall was battered at roughly 85° towards the interior of the dock. As with the other docks the base was not observed, but had previously been determined to lie at a depth of -3.6m OD<sup>28</sup>. A section was recorded across the dock which determined that the maximum width of the dock was 26m (Fig. 6).

7.4.3.3 The southern wall segment comprised a 75m long section of battered reinforced concrete wall measuring 1m in width at the top then sloping into the dock basin to a width of 1.5m at a depth of 3m. Wall [492] had been truncated horizontally, presumably in association with the levelling of the site in preparation for the construction of the car park, which occupied the site prior to the current development work.

#### 7.4.4 Concrete Structure [488]

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<sup>28</sup> Clarkeburn 2001



7.4.4.1 Contemporaneous with the construction of the new Lower (Union) Dock was the construction of the concrete housing for subterranean centrifugal pumping machinery just to the north of the dock basin. It is likely that structure [488] represents the remains of this concrete housing. The pumps were purportedly powered by 340hp gas engines supplied by Crossley Brothers Ltd of Manchester. These pumps were connected to serve the other two dry docks (Upper and Middle Docks)<sup>29</sup>. The structure measured 10.00m north-south by 16.50m east-west with 1.5m thick walls and was first observed at +3.50m OD. It appeared to have been truncated at the top and survived to a depth of 2.50m. The structure contained a vertical placed hollow steel column measuring 1.5m in diameter.

#### 7.4.5 **Engineer's Shop**

7.4.5.1 To the north of the Middle Dock nine timber piles were observed ([450], [454], [457]-[463]). These piles appeared to have been overlain by a concrete slab and likely represent the piled foundation of the 20<sup>th</sup> century extension of a two storey Engineer's shop. The shop itself was rebuilt between the Upper Dock and the Middle Dock and covered much of the footprint of the earlier structure shown on a plan of 1881, but the timber piles appear to the east of the footprint of the 19<sup>th</sup> century building as it is shown on the 1894 and 1914 OS Maps (Fig. 3). The piles appeared to have been driven through 20<sup>th</sup> century made ground and into the redeposited alluvial horizon [465]. The top of the timber piles was observed at a maximum height of +2.20m OD and each pile measured approximately 0.30m by 0.25m by 2.20m in length.

#### 7.4.6 **Crane Base [500]**

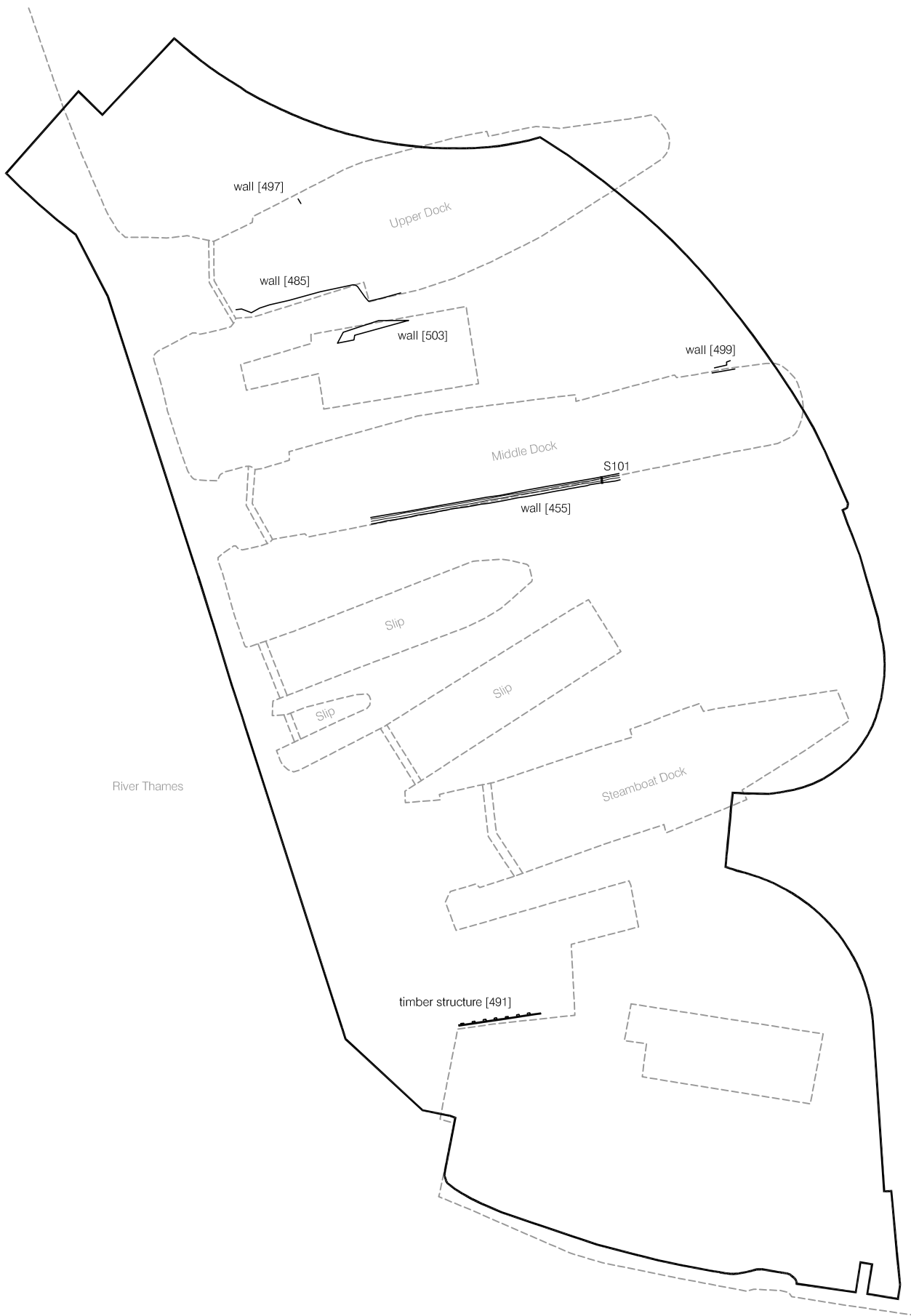
7.4.6.1 Structure [500] represents a possible concrete crane base to the south of Middle Dock. The walls of the crane base had been truncated leaving only the southwest corner of the structure intact. The crane base appeared to have cut into the redeposited alluvium [465] and was surrounded by 20<sup>th</sup> century made ground. It measured approximately 3.00m east-west by 5.00m north-south and was observed at a height of +2.40m OD.

#### 7.4.7 **Timber Structure [469]**

7.4.7.1 The remains of a possible timber lined drain were observed at the south of the site. It consisted of two timber planks lining an east-west aligned cut measuring 2.58m long by 1.78m wide with a timber post at the western end of the northern plank.

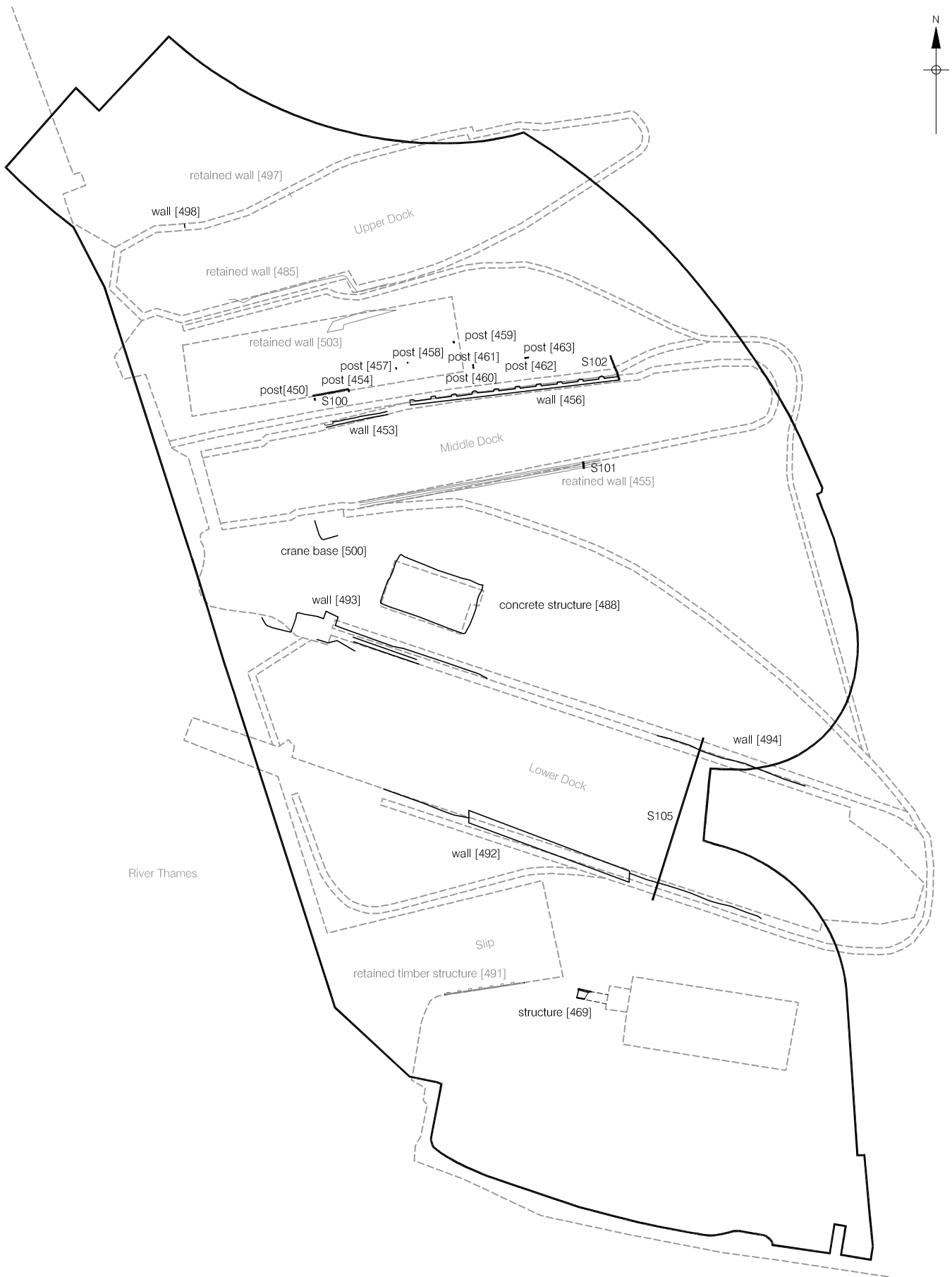
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<sup>29</sup> Hobhouse 1994



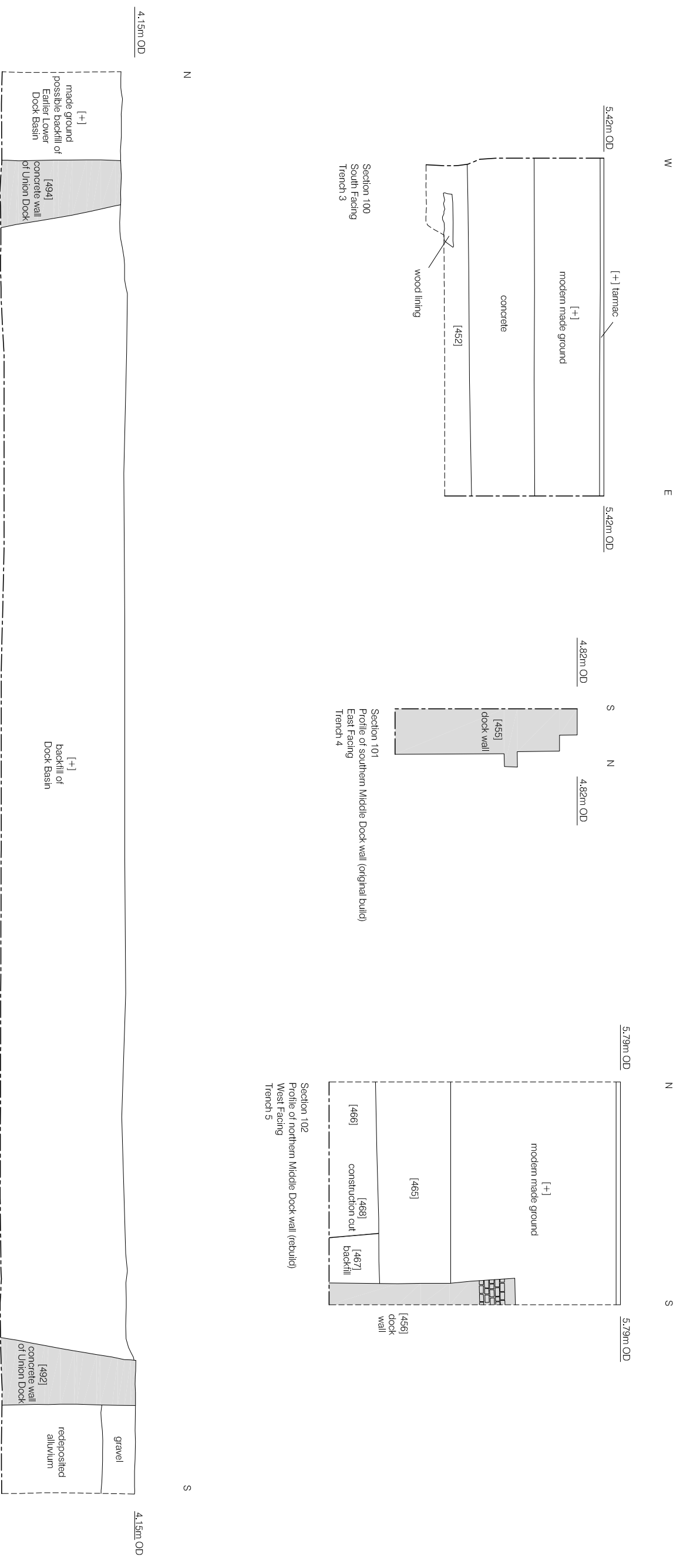
© Pre-Construct Archaeology Ltd 2009

Figure 4  
 Features shown in relation to the 1868 OS Map  
 1:1,000 at A4



© Pre-Construct Archaeology Ltd 2009

Figure 5  
 Features shown in relation to the 1914 OS Map  
 1:1,000 at A4



© Pre-Construct Archaeology Ltd 2009

Figure 6  
Sections 100-102 & 105  
1:100 at A4

## 8 INTERPRETATIONS AND CONCLUSIONS

8.1 The watching brief identified a number of structural remains of the docks and various auxiliary structures associated with the Union Docks, a dockyard operating on the Isle of Dogs during the 19<sup>th</sup> and 20<sup>th</sup> centuries. Although historic records indicated that at least two docks existed within the site in the 18<sup>th</sup> century, The Single Dock and Long Dock, this investigation found that no evidence of these docks survived. This can largely be attributed to the extensive redevelopment of the dockyard during the 19<sup>th</sup> century. Additionally, ground reduction in the area of the assumed location of the 19<sup>th</sup> century phase of the Lower Dock found no evidence of this dock. Historic records showed that this dock had been demolished in 1897-99 in order to create space for a larger dock (initially also named Lower Dock, but later renamed Union Dock).

### 8.2 Upper Dock

8.2.1 No evidence was found of the original timber dock built in this location in the 18<sup>th</sup> century known as the "Single Dock". Two elements of red brick wall were attributed to the Upper Dock which was rebuilt in 1824-25. The larger element consisted of much of the western part of the southern wall. It is probable that these walls survived the rebuilding of 1879-80 which consisted mainly of extending the dock to the west. Only one small part of this extension, wall [498], was observed.

### 8.3 Middle Dock

8.3.1 As with the Upper Dock, the Middle Dock is the successor of an earlier dock possibly predating 1742. The predecessor of the Middle Dock was in 1742 known as the "Long Dock", one of the longest private dry docks on the Thames. It is documented that the Middle Dock was reconstructed in brick and concrete in 1880, however it is not known what the original dock was constructed of. It is possible that the dock shown on the Ordnance Survey Map of 1868 may be the original dock but it is referred to as double dock measuring 406ft (123.7m) x 40ft 8in x 14ft 2in in 1742 and on the 1868 map is only c.100m in length to the dock gates or c.110m to the Thames. This might suggest that the dock may have been rebuilt or modified in the interim. The elements of southern wall [455] and northern wall [499] accord well with the dock as depicted on the 1868 map and it is possible that these elements of dock wall were in use sometime between 1742 and 1868. The southern wall would appear to be constructed from concrete which might suggest a later date, however it was not possible to inspect the interior fabric of the wall and the concrete may be nothing more than a render covering a brick wall. It is certain that the southern wall and apparently later northern walls [453] and [456] are of different construction which would suggest that they were built at different times. The northern walls [453] and [456] accord with the location of the northern dock wall on the 1914 Ordnance Survey Map which would suggest that they were constructed in the rebuilding of 1880.

Perhaps during that rebuilding the southern wall was retained but rendered with concrete.

#### 8.4 Lower Dock

8.4.1 No evidence of the original Lower (Steamboat) Dock was found during the archaeological investigation. This is perhaps unsurprising given that the original timber lined Lower Dock was constructed by sinking the hull of the "Canton" in the former mast pond. It is documented that this hull was removed in 1897 prior to the construction of the new Lower Dock and indeed there is photographic evidence showing the dismantling<sup>30</sup>. Long stretches of the northern and southern walls of the new Lower Dock (later named Union Dock) were recorded on site.

#### 8.5 Other Structures

8.5.1 The remains of other structures were also found on site which accord with buildings and slipways shown on the 19<sup>th</sup> century Ordnance Survey Maps. Such remains include the Engineering Shop between the Upper and Middle Dock, the Southern Slipway and a possible crane base and enigmatic concrete structure in the centre of the site. As the both the earlier and later Slipways and Engineering Shops depicted on the maps occupied much the same footprint it was not possible to determine with any degree of certainty to which phase the remains observed should be assigned. A series of piles with remnants of concrete foundation above to the north of the Middle Dock may be associated with the Engineering Shop but may be even later in date.

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<sup>30</sup> Clarkeburn 2001, Appendix A fig. 6

## **9 IMPORTANCE OF RESULTS AND FURTHER WORK**

- 9.1 During the 19<sup>th</sup> century the Union Docks site was one of the largest private dockyards along the Thames. The archaeological investigation has provided evidence of at least two phases of docks and has provided some information regarding the construction of the structures. None of the docks were observed in their entirety and full depths and dimensions of the structures were not recorded and could only be determined with reference to historic maps. Due to the constraints of a watching brief methodology on such a large site with so many machines operating at once, detailed recording of many of the structures was not possible.
- 9.2 It is not proposed that any further work is required and that this report will suffice to document the archaeological findings. The results will be published as part of the London Archaeologist Round-Up which is the minimum requirement of the Archaeological Method Statement.

## 10 PROJECT CRITIQUE

- 10.1 While it is felt that the watching brief successfully identified the relationship between the various major structures, their function and spatial distribution across the development site, it is felt that an even greater wealth of knowledge could have been obtained by undertaking a more detailed and methodical approach to the archaeological examination of the Canary Wharf, Riverside South site.
- 10.2 Because of the limited scope of the investigation it was not possible to adequately record the full stratigraphic and archaeological sequence across the entire site. Whilst a full excavation of the site might not have been practicable a more detailed evaluation of the key portions of the site would have ensured that more attention could have been paid to the archaeological features and thereby allowed for a more thorough examination of the spatial and functional relationships between the individual structures and their associated features and thereby providing a wider body of data for future research. More detailed recording of the structures encountered could have enhanced our understanding of the constructional techniques employed in the building of the docks and associated structures.
- 10.3 Although the historical record provides a detailed description of the distribution of the structures on site from the mid 19<sup>th</sup> century until the closure of the Union Docks site in the 1960s little information is known about the site pre 1830s and it is felt that a more thorough investigation could have provided some insight into the early history of the site.
- 10.4 It is further felt that a more extensive study of the development site would have provided additional and much needed information about the material culture of the site. Because of the scope of the work retrieval of finds was entirely impossible due to health and safety implications and as a result only a very small number of artifacts were recovered.



## **11 ACKNOWLEDGMENTS**

- 11.1 Pre-Construct Archaeology Limited would like to thank Rob Pritchit of Canary Wharf Contractors Limited for commissioning this work, David Divers of English Heritage for monitoring the project, and Long Ltd. for their help on site.
- 11.2 The author would like to thank Chris Mayo for project management of the site, Jon Butler for his guidance during the post-excavation write up and for editing this report, Jem Rogers for surveying the site, Lisa Lonsdale for logistical support, and Hayley Baxter for digitising the field drawings and preparing the illustrations.

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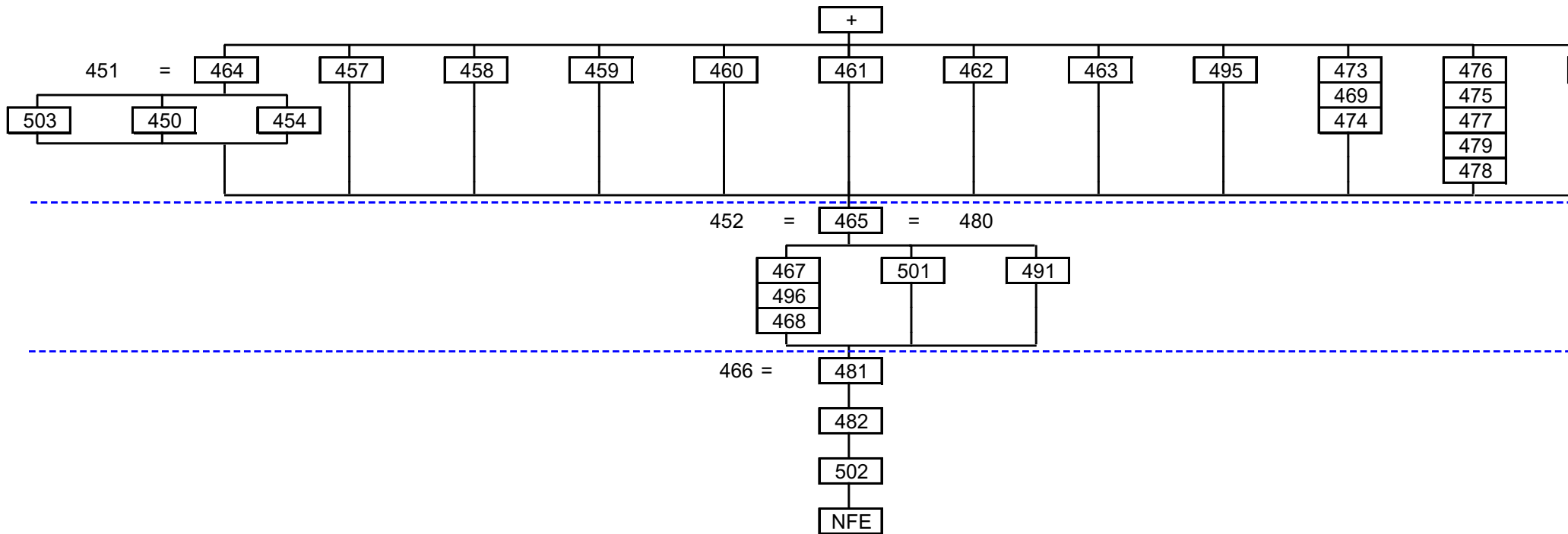
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## APPENDIX 1: CONTEXT INDEX

Site Code	Context No.	Plan	Section / Elevation	Type	Description	Date	Phase
WEF01	450	Tr. 3	N/A	Timber	Timber Upright	Post-Medieval	3
WEF01	451	Tr. 3	N/A	Layer	Made Ground	Post-Medieval	3
WEF01	452	Tr. 3	S100	Layer	Redeposited Alluvial Clay	Post-Medieval	2
WEF01	453	Tr. 3	N/A	Masonry	Mid-dock Wall - Northern extent	Post-Medieval	2
WEF01	454	Tr. 3	N/A	Timber	Timber Upright	Post-Medieval	3
WEF01	455	Tr. 4	S101	Masonry	Mid-dock Wall - Southern extent	Post-Medieval	2
WEF01	456	Tr. 5	S102	Masonry	Mid-dock Wall - Northern extent	Post-Medieval	2
WEF01	457	Tr. 5	N/A	Timber	Timber Upright	Post-Medieval	3
WEF01	458	Tr. 5	N/A	Timber	Timber Upright	Post-Medieval	3
WEF01	459	Tr. 5	N/A	Timber	Timber Upright	Post-Medieval	3
WEF01	460	Tr. 5	N/A	Timber	Timber Upright	Post-Medieval	3
WEF01	461	Tr. 5	N/A	Timber	Timber Upright	Post-Medieval	3
WEF01	462	Tr. 5	N/A	Timber	Timber Upright	Post-Medieval	3
WEF01	463	Tr. 5	N/A	Timber	Timber Upright	Post-Medieval	3
WEF01	464	Tr. 5	N/A	Layer	Made Ground	Post-Medieval	3
WEF01	465	N/A	S102	Layer	Redeposited Alluvial Clay	Post-Medieval	2
WEF01	466	Tr. 5	S102	Natural	Alluvial Clay	Natural	1
WEF01	467	Tr. 5	S102	Fill	Backfill into Cons. Cut [468]	Post-Medieval	2
WEF01	468	Tr. 5	S102	Cut	Construction cut for Mid-dock Wall	Post-Medieval	2
WEF01	469	469 & Tr.6	N/A	Structure	Timber lined drain	Post-Medieval	3
WEF01	470	469 & Tr.6	N/A	Timber	Timber Upright	Post-Medieval	3
WEF01	471	469 & Tr.6	N/A	Timber	Timber Plank	Post-Medieval	3
WEF01	472	469 & Tr.6	N/A	Timber	Timber Plank	Post-Medieval	3
WEF01	473	469	N/A	Fill	Backfill in timber lined drain	Post-Medieval	3
WEF01	474	469 & Tr.6	N/A	Cut	Construction cut for timber lined drain	Post-Medieval	3
WEF01	475	N/A	S104	Fill	Primary backfill into slipway (477)	Post-Medieval	3
WEF01	476	N/A	S104	Fill	Secondary backfill into slipway (477)	Post-Medieval	3

WEF01	477	477	S104	Structure	Slipway	Post-Medieval	3
WEF01	478	477	S104	Cut	Construction cut for slipway (477)	Post-Medieval	3
WEF01	479	477	S104	Fill	Remnants of wooden shoring/ backfill into Cons. Cut [478]	Post-Medieval	3
WEF01	480	N/A	S103 & S104	Layer	Redeposited Alluvial Clay	Post-Medieval	2
WEF01	481	N/A	S103 & S104	Natural	Alluvial Clay	Natural	1
WEF01	482	N/A	S103	Natural	Peaty Clay	Natural	1
WEF01	483			Masonry	Concrete Wall of Mid-dock	Post-Medieval	2
WEF01	484			Masonry	Brick Wall of Upper-dock	Post-Medieval	2
WEF01	485			Masonry	Brick Wall of Upper-dock	Post-Medieval	2
WEF01	486			Masonry	Concrete Wall of Union Dock	Post-Medieval	3
WEF01	487			Masonry	Concrete Wall of Union Dock	Post-Medieval	3
WEF01	488	488		Masonry	Rectangular Concrete Structure	Post-Medieval	3
WEF01	489			Structure	Cylindrical Steel Tank	Post-Medieval	3
WEF01	490			Fill	Backfill within Concrete Structure (488)	Post-Medieval	3
WEF01	491			Timber	Timber Dock Lining	Post-Medieval	2
WEF01	492			Masonry	Concrete Wall of Union Dock	Post-Medieval	3
WEF01	493	493		Masonry	Concrete Wall of Union Dock	Post-Medieval	3
WEF01	494			Masonry	Concrete Wall of Union Dock	Post-Medieval	3
WEF01	495			Structure	Structure Number for Union Dock	Post-Medieval	3
WEF01	496			Structure	Structure Number for Middle Dock	Post-Medieval	2
WEF01	497			Masonry	Northern wall of Upper Dock	Post-Medieval	2
WEF01	498			Masonry	Northern wall of Upper Dock	Post-Medieval	2
WEF01	499			Masonry	Northern wall of Middle Dock	Post-Medieval	2
WEF01	500			Masonry	Concrete crane base	Post-Medieval	3
WEF01	501			Structure	Structure Number for Upper Dock	Post-Medieval	2
WEF01	502			Natural	Natural alluvial clay	Natural	1

## APPENDIX 2: MATRIX



## **APPENDIX 3: POTTERY ASSESSMENT**

**By Chris Jarrett**

This assessment considers Post-Roman pottery from context [450] onwards. There is one sherd of stratified, unabraded pottery from context [473]. The sherd is black-transfer-printed whiteware (TPW 3), dated 1810-1900. It is in the probable form of a plate with a woodland scene depicted.

The pottery has no significance and its only potential is to date the contexts it was found in and there are no further recommendations of work.

## **APPENDIX 4: CBM ASSESSMENT**

**By Kevin Hayward**

### **Introduction and Aims**

Two shoe boxes of brick (four bags) were retained at excavation from the early post-modern site of Canary Riverside (WEF01), Westferry Road, Tower Hamlets TQ 3710 8025.

This material was assessed in order to:

- Identify (under binocular microscope) the fabric and form of the brick assemblage
- Date the brick assemblage by fabric and form

### **Methodology**

The building materials were examined using the London system of classification with a fabric number allocated to each object. The application of a 1kg mason's hammer and sharp chisel to each example ensured that a fresh fabric surface was exposed. The fabric was examined at x20 magnification using a long arm stereomicroscope or hand lens (Gowland x10).

### **Ceramic Building Material Form and Fabric**

An overview of the ceramic building material assemblage by fabric and form, both from retained examples and from descriptions on the context sheets serves to quantify the common fabrics and highlight the presence of any unusual or interesting fabric types that may provide valuable dating evidence in the phase summary at the end of this review.

### **Post-Medieval Ceramic Building Material – Brick and Mortar**

*3032; 3032 Modern; 3034nr 3035*

Four bricks (10kg) were retained from the middle dock wall (southern extent) [456] all were machined which dates them to post 1850+. Two examples had a deep frog, two were unfrogged. There were three fabric types identified.

First an example of an intermediate London stock brick fabric 3035nr3035, in an unfrogged relatively narrow brick 225mm x 100mm x 62mm (2.5kg). This dates to between 1850 and 1940 with a gravel cement mortar which dates it from the latter part of the 19<sup>th</sup> century (1860-1940).

The second fabric, the purple great-fire 3032 (1850-1900) was found in two examples. First, a very large thick (75mm) frogged brick bounded by grey cement with brick inclusions, which means it dates from between 1880-1900. The unfrogged example was thinner (62mm) but with a gravel cement (1860-1900).

Finally, a modern 3032 brick fabric (1900+) from an frogged example this was much thinner than the exemplar mentioned above (60mm) and lighter (2.3kg)

Similar red and yellow bricks are described from the context register from the southern extent of the middle dock wall [453] [455] alternating between header/header and stretcher/stretcher with gravel and brick cement mortar and would suggest a single build.

The upper dock wall [484; 485] is described as having well-made (machined) red brick, which may be modern 3032 used in the middle dock wall [486], with a similar gravelly grey mortar and therefore similar in date.

### Concrete

Waterproofed concrete was used to line the probable continuation of the middle dock wall [483] and is probably contemporary with the late 19<sup>th</sup> century – mid 20<sup>th</sup> century brick described above.

### Distribution

Context	Size	Date range of material		Latest dated material	
436	4	1850	1950	1900	1950

### Summary and recommendations

An assessment of the brickwork and associated mortar retained and recorded from the middle and upper dock wall at Canary Riverside show their fabric and form to post-date 1880 based on the following criteria.

- The frogged and unfrogged bricks are machined made this means they cannot pre-date 1850.
- The presence of a modern version of 3032 fabric in the brick from the southern extent of the mid-dock wall [486] would indicate that it may date from as late as 1900.
- Brick and gravel mortars in the brick from the southern extent of the mid-dock wall [486] only came into widespread use after 1880.
- The presence of the yellow London brick fabric 3035nr3034 may mean some of the bricks from the southern extent of the mid-dock wall could date to as late as 1940.
- Alternate header and stretcher bonded courses from [453] and [455] are essentially a late 19<sup>th</sup> century/20<sup>th</sup> century practice.

### Other features worthy of note include:

The absence of any poorly made (stock moulded) frogged bricks, especially common between 1750 and 1850 means that the dock walls do not contain any reuse of the original 18<sup>th</sup> century dock walls.

The similarity in the coursing and the simultaneous use of two brick fabrics (purple (red?)and



yellow in both the upper and middle dock wall would indicate that the middle and upper dock walls were constructed in one late 19<sup>th</sup>/early 20<sup>th</sup> century phase.

At the same time these walls were constructed it seems likely that concrete was also poured into the dock walling area to act as waterproofing.

### **Recommendations**

That a single example of brickwork is retained from the Late 19<sup>th</sup>/early 20<sup>th</sup> century dock wall [486] for reference.

There is no recommendation for further work.

## **APPENDIX 5: GLASS ASSESSMENT**

**By Sarah Carter**

Only one fragment of glass was recovered from the site. It is a green glass fragment (context [473]) from the shoulder of a wine bottle that can be dated from the 19<sup>th</sup> – 20<sup>th</sup> century.

There are no recommendations for future work.

## APPENDIX 6: OASIS FORM

### 12.1 OASIS ID: preconst1-57550

#### Project details

Project name	An Archaeological Watching Brief at Canary Wharf Riverside South, Canary Wharf, London Borough of Tower Hamlets
Short description of the project	In September 2008 an archaeological Watching Brief was undertaken to monitor ground reduction at the Canary Wharf Riverside South site (WEF-01). Previous watching briefs had been conducted in association with works on site since 2001. The monitoring exercise identified a number of dock walls associated with the Upper, Middle and Lower Docks and associated structures of the Union Docks dockyard, which operated on site in the 19th and 20th centuries.
Project dates	Start: 04-04-2007 End: 17-01-2009
Previous/future work	Yes / No
Any associated project reference codes	WEF01 - Sitecode
Any associated project reference codes	preconst1-35414 - OASIS form ID
Any associated project reference codes	preconst1-22775 - OASIS form ID
Type of project	Recording project
Site status	Area of Archaeological Importance (AAI)
Current Land use	Vacant Land 1 - Vacant land previously developed
Monument type	DOCKYARD Post Medieval
Investigation type	'Watching Brief'
Prompt	Planning condition

#### Project location

Country	England
Site location	GREATER LONDON TOWER HAMLETS POPLAR Canary Wharf Riverside South
Postcode	E14 1XX
Study area	13200.00 Square metres
Site coordinates	TQ 3710 8025 51.5040306837 -0.024405192103 51 30 14 N 000 01 27 W Point

### Project creators

Name of Organisation	Pre-Construct Archaeology Ltd
Project brief originator	Arup Associate
Project design originator	ARUP
Project director/manager	Chris Mayo
Project supervisor	James Langthorne
Project supervisor	Paw Jorgensen
Type of sponsor/funding body	Development Corporation
Name of sponsor/funding body	Canary Wharf Contractors Ltd

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### Project archives

Physical Archive recipient	LAARC
Physical Contents	'Ceramics','Glass'
Digital Archive recipient	LAARC
Digital Media available	'Database','Images raster / digital photography','Images vector','Spreadsheets','Survey','Text'
Paper Archive recipient	LAARC
Paper Media available	'Context sheet','Drawing','Matrices','Photograph','Plan','Report','Section','Survey','Unpublished Text'

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### Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	A Rapid Desk-Based Assessment of the Archaeological Potential of a Development Site at Canary Riverside (Phases 2 and 3), London Borough of Tower Hamlets
Author(s)/Editor(s)	Brown, G.
Date	1999
Issuer or publisher	Pre-Construct Archaeology

Place of issue or publication Brockley, London

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### **Project bibliography 2**

Publication type Grey literature (unpublished document/manuscript)

Title Method Statement for an Archaeological Watching Brief at Canary Wharf Riverside South, Westferry Road, London Borough of Tower Hamlets, E14 9SL

Author(s)/Editor(s) Mayo, C.

Date 2007

Issuer or publisher Pre-Construct Archaeology

Place of issue or publication Brockley, London

Description Method Statement

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### **Project bibliography 3**

Publication type Grey literature (unpublished document/manuscript)

Title Desk-Based Research of Two Buried Cast-Iron Pipes, Canary Wharf Riverside South, London Borough of Tower Hamlets

Author(s)/Editor(s) Thompson, G.

Date 2008

Issuer or publisher Pre-Construct Archaeology

Place of issue or publication Brockley, London

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### **Project bibliography 4**

Publication type Grey literature (unpublished document/manuscript)

Title An Archaeological Watching Brief at Canary Wharf Riverside South, Canary Wharf, London Borough of Tower Hamlets

Author(s)/Editor(s) Langthorne, J.

Author(s)/Editor(s) Jorgensen, P.

Date 2009

Issuer or publisher Pre-Construct Archaeology

Place of issue or publication Brockley, London

Description A4 bound report

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**Project bibliography 5**

Publication type Grey literature (unpublished document/manuscript)

Title An Archaeological Watching Brief of A geotechnical Investigation at Canary Wharf Riverside South, Canary Wharf, London Borough of Tower Hamlets

Author(s)/Editor(s) Langthorne, J.

Date 2007

Issuer or publisher Pre-Construct Archaeology Ltd

Place of issue or publication Brockley, London

Description A4 Bound report

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**Project bibliography 6**

Publication type Grey literature (unpublished document/manuscript)

Title An Archaeological Watching Brief at Canary Wharf Riverside (Phase 2), London Borough of Tower Hamlets

Author(s)/Editor(s) Pooley, A. and Mattinson, R.

Date 2002

Issuer or publisher Pre-Construct Archaeology Ltd

Place of issue or publication Brockley, London

Description A4 bound report

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Entered by jon butler (jbutler@pre-construct.com)

Entered on 16 April 2009