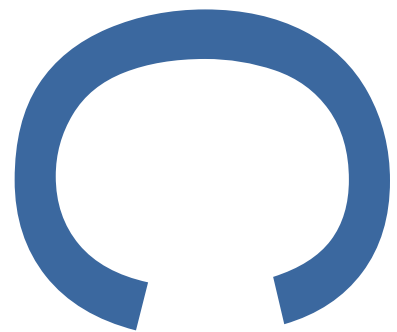


**AN ARCHAEOLOGICAL  
EVALUATION AT ROYAL WHARF,  
SILVERTOWN, LONDON BOROUGH  
OF NEWHAM E16 1TD**

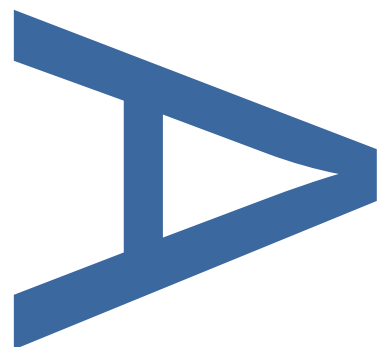


**LOCAL PLANNING AUTHORITY:  
LONDON BOROUGH OF NEWHAM**



**SITE CODE: RLW15**

**DECEMBER 2016 UPDATED  
JANUARY 2018**



**PRE-CONSTRUCT ARCHAEOLOGY**

# **An Archaeological Evaluation at Royal Wharf, Silvertown, London Borough of Newham E16 1TD**

**Site Code:** RLW 15  
**Central NGR:** TQ 4085 7990  
**Local Planning Authority:** London Borough of Newham

**Planning Reference:**

**Commissioning Client:** CgMs Consulting

**Written/Researched by:** Rebecca Haslam and Guy Seddon  
Pre-Construct Archaeology Limited

**Project Manager:** Helen Hawkins (MCIfA)

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

**Tel:** 020 7732 3925

**Fax:** 020 7732 7896

**E-mail:** [hhawkins@pre-construct.com](mailto:hhawkins@pre-construct.com)

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

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**December 2016**

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**DOCUMENT VERIFICATION**

**Site Name**

**Royal Wharf, Silvertown, London Borough of Newham E16 1TD**

**Type of project  
AN ARCHAEOLOGICAL EVALUATION**

Quality Control

Pre-Construct Archaeology Limited Project Code		K3818	
	Name & Title	Signature	Date
Text Prepared by:	G Seddon		29.01.2015
Graphics Prepared by:	H Baxter		29.01.2015
Graphics Checked by:	J Brown	<i>Josephine Brown</i>	30.01.2015
Project Manager Sign-off:	H Hawkins		30.01.2015

Revision No.	Date	Checked	Approved
1 updated with Trench 3	December 2016	HH	TB
2 GLAAS comments	January 2017	HH	TB
3 C14 dates	January 2018	HH	CM

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

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## **1 ABSTRACT**

- 1.1 This report details the results of an archaeological evaluation undertaken by Pre-Construct Archaeology Ltd on behalf of CgMs Consulting at Royal Wharf, Silvertown, London Borough of Newham E16 1TD (Figure 1). The archaeological investigation was conducted between 8<sup>th</sup>–15<sup>th</sup> January 2015 and 21<sup>st</sup>–25<sup>th</sup> November 2016 in accordance with the standards specified by the Chartered Institute of Archaeologists and following the guidelines issued by English Heritage/Historic England.
- 1.2 No archaeological finds or features were recorded during the evaluation, however Trenches 1 and 3 did help refine the geo-archaeological mapping of the natural gravels across the study area. A peat layer identified in Trench 3 was radiocarbon dated to the early to middle Bronze Age.

## **2 INTRODUCTION**

- 2.1 An archaeological investigation commissioned by CgMs Consulting was undertaken on land at Royal Wharf, Silvertown, E16 1TD in the London Borough of Newham, between 8<sup>th</sup> and 15<sup>th</sup> January 2015 and 21<sup>st</sup>–25<sup>th</sup> November 2016, centred at TQ 4085 7990.
- 2.2 The Written Scheme of Investigation (Hawkins 2014) detailed the methodology by which the archaeological investigation was undertaken. The WSI followed the Historic England guidelines (GLAAS 2014) and those of the Chartered Institute for Archaeologists (CIFA, 1993). The evaluation was supervised by Guy Seddon and Ireneo Grosso, project managed by Helen Hawkins for Pre-Construct Archaeology Ltd and monitored by Adam Single of Historic England on behalf of the London Borough of Newham.
- 2.3 The site of the proposed development is bounded by North Woolwich Road (A10020) to the north, the River Thames to the south, Deanston Wharf to the west and Barrier Point Road to the east. The Royal Wharf site is approximately 4 hectares in size.
- 2.4 The site was given the Museum of London site code RLW 15. The complete archive comprising written, drawn and photographic records will be deposited within the London Archaeological Archive and Research Centre (LAARC).

### 3 PLANNING BACKGROUND

#### 3.1 Planning Policy

3.1.1 The proposed 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 Newham which fully recognise the importance of the buried heritage for which they are the custodians.

#### 3.2 Local Policy

3.2.1 The study aims to satisfy the objectives of the London Borough of Newham, which fully recognises the importance of the buried heritage for which they are the custodians. These objectives are summarised in the Borough's draft "Unitary Development Plan", 2001 (<http://apps.newham.gov.uk/environment/udp/Chapters%20PDF/%203%20Environment%20Quality.pdf>), which states:

Archaeology: Investigation, Excavation and Protection

Para. 3.114

"Archaeological remains often provide the only evidence of the Borough's past. These are a finite and fragile resource very vulnerable to modern development and land use. The archaeology of the Borough is a community asset which should be preserved and the needs of the development balanced and assessed against this. Early considerations of and consultation on archaeological issues will maximise preservation in accordance with 'PPG 16 Archaeology and Planning'. The destruction of such remains should be avoided if possible and either left in situ if the remains are of national, or particular local interest, or excavated and recorded prior to development where remains are of lesser importance. Site layouts designed to retain archaeological features intact will be considered favourably by the Council."

Para. 3.115

"The Greater London Archaeological Advisory Service (GLAAS-part of Historic England) provides impartial advice to Newham Council. Sites of potential archaeological importance, to which this policy relates, can be defined as any site within an Archaeological Priority Area (APA). APAs are defined by GLAAS as areas having particular interest or value (please refer to Map EQ6), or as sites where it can be reasonably shown from existing sources of information (most notably the Greater London Sites and Monuments Record) that some remains of archaeological importance may survive. For further information please refer to the SPG Note No. 19 'Archaeological Code of Practice'. An archaeological assessment (either a desktop or a primary field investigation) will normally be required for any development involving a site more than 0.4 acres within an APA. The Greater London Archaeological Advisory Service (GLAAS-part of English Heritage) provides impartial advice to Newham Council. Sites of potential archaeological importance, to which this policy relates, can be defined as any site within an Archaeological Priority Area (APA). APAs are defined by GLAAS

as areas having particular interest or value (please refer to Map EQ6), or as sites where it can be reasonably shown from existing sources of information (most notably the Greater London Sites and Monuments Record) that some remains of archaeological importance may survive. For further information please refer to the SPG Note No. 19 'Archaeological Code of Practice'. An archaeological assessment (either a desktop or a primary field investigation) will normally be required for any development involving a site more than 0.4 acres within an APA. The Council will also require such an assessment for smaller sites within the APAs, and sites outside the APAs, where this is clearly justified by the archaeological sensitivity of the site. Developers should undertake early consultation with the Council, and recognised archaeological organisations, to avoid uncertainty and later delays."

POLICY EQ43:

THE COUNCIL WILL PROMOTE THE CONSERVATION, PROTECTION AND ENHANCEMENT OF THE ARCHAEOLOGICAL HERITAGE OF THE BOROUGH. DEVELOPERS OF SITES OF POTENTIAL ARCHAEOLOGICAL IMPORTANCE WILL BE REQUIRED TO PRODUCE A WRITTEN REPORT, AS PART OF THE APPLICATION FOR PLANNING PERMISSION, ON THE RESULTS OF AN ARCHAEOLOGICAL ASSESSMENT OR FIELD EVALUATION CARRIED OUT BY A SUITABLY QUALIFIED ARCHAEOLOGICAL CONTRACTOR; AND WHEN REMAINS OF IMPORTANCE ARE IDENTIFIED, THE COUNCIL WILL SEEK PRESERVATION OF THE REMAINS IN SITU. ON OTHER IMPORTANT SITES, WHERE THE BALANCE OF OTHER FACTORS IS IN FAVOUR OF GRANTING PLANNING PERMISSION BY MEANS OF THE IMPOSITION OF CONDITIONS ON THE GRANT OF PLANNING PERMISSION, AND POSSIBLY BY LEGAL AGREEMENTS, THE COUNCIL WILL ENSURE THAT ADEQUATE PROVISION IS MADE FOR THE PROTECTION, EXCAVATION AND RECORDING OF REMAINS, AND THE SUBSEQUENT PUBLICATION OF THE RECORDS OF EXCAVATION, PROVIDING A WRITTEN ACCOUNT OF THE ARCHAEOLOGICAL EXPLORATION, INCLUDING RECORDS OF FINDS.

Para. 3.116

The council will promote co-operation between land owners, developers and archaeological organisations in accordance with the British Archaeologists' and Developers' Liaison Group Code.

- 3.2.2 The site is located within an 'Archaeological Priority Area' as defined by the London Borough of Newham. There are no Scheduled Ancient Monuments within the development area.



## **4 GEOLOGY AND TOPOGRAPHY**

### 4.1 Introduction

4.1.1 Unless referenced otherwise, the geological and topographical background cited below was obtained from the WSI prepared by Pre-Construct Archaeology (Hawkins 2014).

### 4.2 Geological and Topographical Background

4.2.1 The Royal Wharf site is approximately 4 hectares in size, and lies on the floodplain of the Lower Thames where the Woolwich Reach of the river forms a broad southward bend. The ground across the area originally formed part of the natural floodplain of the Thames, and is underlain by Holocene alluvial deposits (British Geological Survey (BGS) 1:50,000 Sheets 257 Romford 1996), sand and gravel assigned to the Late Devensian Shepperton Gravel, and Lower Tertiary Lambeth Group bedrock.

4.2.2 Deposit modelling at the site (Batchelor *et al.*, 2014) demonstrated that the full sequence of sediments recorded in the boreholes comprises:

- Made Ground
- Upper Alluvium – widely present
- Peat – only locally present
- Lower Alluvium – only locally present, occasionally peaty
- Gravel (Shepperton Gravel)

## **5 PALAEO-ENVIRONMENTAL, ARCHAEOLOGICAL AND HISTORICAL BACKGROUND**

- 5.1 A full palaeo-environmental background is given in Batchelor *et al.*, 2014.
- 5.1.1 The terrace gravels and the overlying silts, clays and peats of the Rivers Thames and Lea represent a series of palaeoenvironments that possessed considerable biodiversity, capable of providing rich resources to past populations. Characterised by relatively dry gravel eyots interspersed with channels and marshes, this environment provided areas of dry land suitable for settlement in close proximity to the bountiful plant and animal life that could be found in the adjacent wet areas. The archaeological record suggests that environments of this nature were often exploited by man throughout prehistory and it is therefore not surprising that evidence of Bronze and Iron Age activity has been found near the site. Notable structures include several timber trackways, which were presumably constructed across the marshes for ease of access, perhaps to fishing and hunting grounds.
- 5.1.2 Excavations in east London, primarily by the former Newham Museum Service showed that there was Neolithic occupation in the vicinity of the study site including a trackway consisting of wooden planks anchored by vertical posts.
- 5.1.3 Throughout the medieval period the area would have lain within the large tracts of marshland which dominated the area at this time.
- 5.1.4 The site lay in open marshland until 1894 when Brunner, Mond and Co established their chemical works on the study area. Initially the plant was constructed to manufacture soda crystals and caustic soda but in 1915, under pressure from the government they began producing high-grade TNT. On the evening of 19<sup>th</sup> January 1917 a fire broke out and just before 7 p.m. a huge explosion, the largest ever in London, ripped through the works and the Silvertown area. More than 900 homes in the area were destroyed or badly damaged with a total of between 60,000 - 70,000 buildings damaged to some extent. Shockwaves could be felt in Essex and the blast was heard as far away as Southampton and Norwich.

## 6 ARCHAEOLOGICAL METHODOLOGY

- 6.1 The purpose of the archaeological investigation was to determine the presence or absence of surviving features at the site and, if present, to assist in formulating an appropriate archaeological mitigation strategy. All works were undertaken in accordance with the guidelines set out by English Heritage (now Historic England) and the Chartered Institute for Archaeologists.
- 6.2 The research design set out in the Written Scheme of Investigation (Hawkins 2014) aimed to address the following objectives:
- To determine the natural topography of the site and establish the palaeo-environmental potential;
  - To establish the presence or absence of prehistoric activity;
  - To establish the presence or absence of peat at the site and to sample the peat for C14 dating if present;
  - To establish the nature, date and survival of activity relating to any archaeological periods at the site.
  - To establish the extent of all past post-depositional impacts on the archaeological resource.
- 6.3 A total of three trenches were to be excavated upon the higher gravel terrace, the location of which was indicated by the geo-archaeological modelling exercise. Two were excavated between 8<sup>th</sup> and 15<sup>th</sup> January 2015 with five 1.2m high steps each in order to safely reach the top of the natural gravel. The tops of the trenches were to be c. 16m square in order to allow a size of 5m x 5m at base with an expected depth of up to 6m, based on the results of the geo-archaeological modelling exercise. Two of the trenches were excavated (Trenches 1 and 2), whilst the third (Trench 3) could not be excavated at this time due to the presence of standing buildings. The third trench, with three 1.2m deep steps and a fourth 2m deep step was excavated between 21<sup>st</sup>–25<sup>th</sup> November 2016, subsequent to the demolition of the buildings, which was c. 17m square at ground level and c.5m square at base with a similar expected depth (Trench 3).
- 6.4 The excavation of the trenches was undertaken using a 20 ton tracked mechanical excavator using a toothless ditching bucket to remove modern overburden under the constant supervision of an archaeologist. Spoil was mounded a safe distance from the edges of the trench.
- 6.5 Machine excavation continued in spits of 100mm at a time until either significant archaeological strata were found or natural ground exposed.
- 6.6 Following machine excavation, relevant faces of the trench that required examination or recording were cleaned using appropriate hand tools. The majority of the investigation of archaeological levels was carried out by hand, with cleaning, examination and recording both in plan and in section.

- 6.7 The strategy for sampling archaeological and environmental deposits and structures was developed by PCA as necessary, in consultation with our in-house specialists.
- 6.8 All archaeological features (stratigraphical layers, cuts, fills, structures) were evaluated by hand tools and recorded in plan at 1:20 or in section at 1:10 using standard single context recording methods.
- 6.9 The recording systems adopted during the investigations were fully compatible with those widely used elsewhere in London that is those developed out of the Department of Urban Archaeology Site Manual, now published by the Museum of London Archaeological Service (MoLAS 1994) and with the PCA Site Manual (Taylor and Brown, 2009). The site archive was organised to be compatible with the archaeological archives produced in the Local Authority area.
- 6.10 A full photographic record was made during the archaeological investigation consisting of a digital photographic archive that was maintained during the course of the archaeological investigation.
- 6.11 The complete archive produced during the evaluation and watching brief, comprising written, drawn and photographic records, will be deposited with the Museum of London site code RLW 15.
- 6.12 All survey was carried out by GPS.
- 6.13 Trench 2 was abandoned after excavation to a depth of c.1.50m below the current ground surface, due to the presence of intensive large wooden piles across the area. The piles were 0.50m square on the top and were spaced with 0.50m – 1.00m intervals between them. The locations of the piles and heights OD were recorded and the trench was backfilled. The locations of the piles throughout the site had been marked out by the ground remediation team, Cognition Land and Water, on site and the results of their survey are shown in Figure 2. The piles were of probable 19<sup>th</sup> century date, and Cognition confirmed that they were of such a size that they were immovable with a large machine.
- 6.14 Trench 1 was fully excavated down to the level of the natural gravels, at a final depth of 6.25m below the current ground surface. The unexpected depth of the gravels meant that the final step in the trench was three metres deep in itself and unsafe to enter. The deposits were recorded, a section was drawn and photos taken before backfilling.
- 6.15 Trench 3 was similarly fully excavated to a depth of 5.01m below the current ground surface. The deep nature of the final step coupled with excessive ground water caused by the proximity of the River Thames dictated that the lowest step be immediately infilled in order to prevent rapid flooding and trench collapse, however an approximate level upon the top of the terrace gravel was obtained. The rest of the trench was recorded using conventional methods as outlined in the preceding paragraphs. As it was likely that the trench would flood once the gravel was reached, column samples and recording of the section were carried out prior to the

final step being excavated (see plates below). The water level in both Trench 1 and Trench 3 was similar in nature once the gravel was reached; photographs of the trenches were taken at different points in the pumping out process.

6.15.1 Samples were taken in Trench 3 by Quest for palaeo-environmental information and radiocarbon dating. The results of this work are given at Appendix 4.

## 7 ARCHAEOLOGICAL SEQUENCE

### 7.1 Introduction

7.1.1 The following text is an overview of the archaeological sequence recorded during the evaluation. Full individual context description and Ordnance Datum levels are detailed in Appendix 1 and stratigraphic relationships are shown in Appendix 2. Figure 1 shows the site location; Figure 2 shows the locations of Trenches 1 to 3 and the pile locations across the site as encountered by Cognition Land and Water; Figure 3 shows Trench 1 in plan with a representative section (S-1); Figure 4 shows Trench 3, also with a representative section (S-10).

### 7.2 Phase 1: Pleistocene Natural Gravels

7.2.1 The earliest deposit encountered on site during the archaeological investigation was firmly compacted, dark grey small - medium sized rounded and sub-rounded stones in a sandy matrix, [3]/[14]. This layer was interpreted as the Shepperton Gravels, which were laid down during the Pleistocene period, c.0.5 million years ago by the River Thames. The top of the natural gravel was encountered at a depth of -3.25m OD in Trench 1 in the northeast corner of the site and c.-3.40m OD in Trench 3 in the northwest corner. This suggests that the lie of the gravel is approximately flat across the northern half of the site.

### 7.3 Phase 2: Holocene Alluvial Deposits

7.3.1 Sealing the Shepperton Gravels in Trench 1 was a 3.85m thick layer of compact mid-dark grey inorganic clayey alluvium, [2]/[4], the top of which was encountered at a level of 0.68m OD. Across the rest of the site a deposit resembling this layer could be split into Upper and Lower Alluvium, however as noted in the report produced by C. Batchelor for Quest (Quest 2014) the peat band that splits those units in other areas around the study area was not present in these instances.

7.3.2 In Trench 3, a c.2m thick layer of organic rich clay, [13], was encountered, the top of which was observed at a level of -1.16m OD. Characteristic of a low-energy aquatic environment, this deposit may equate to the Lower Alluvium that typifies this section of the Thames floodplain. It was sealed by a 0.62m thick layer of peat, [12], a deposit that forms in a wet, vegetated environment such as a marsh, suggesting that this area of the site became somewhat drier for a time. Radiocarbon date samples were taken from this layer, at the base and at the top of the layer. Full results are given in Appendix 4, the base of the peat was dated to 2140-1920 cal BC and the top of the peat was dated to 1610-1430 cal BC, indicating that the peat formed during the early to middle Bronze Age.

7.3.3 Layer [12] was sealed by [11], a layer of mid bluish grey clay and [10], a layer of silty clay, the top of which was encountered at a level of 1.18m OD. These deposits likely equate to the Upper Alluvium and signify a return to low-energy aquatic conditions caused by repeated flooding events.

#### 7.4 Phase 3: 20<sup>th</sup> Century

**7.4.1** Overlying the alluvium was a 0.39m thick layer of cinder [1], at 1.07m OD. It contained small, burnt fragments of cbm and slag and was probably related to the Silvertown explosion of 1917. This was in turn overlain by c.1.75m of modern made ground.

## **8 INTERPRETATION AND CONCLUSIONS**

### **8.1 Interpretation**

8.1.1 The Written Scheme of Investigation for an archaeological evaluation (Hawkins 2014) prepared before archaeological work commenced at Royal Wharf, Silvertown highlighted specific primary objectives to be addressed by the archaeological investigation.

8.2 To determine the natural topography of the site and establish the palaeo-environmental potential.

8.2.1 The results of the evaluation suggest that the natural Shepperton Gravels outcrop at a level of -3.25m OD in Trench 1 and c.-3.40m OD in Trench 3. This suggests that they are approximately flat across the northern half of the site.

8.3 To establish the presence or absence of prehistoric activity.

8.3.1 No prehistoric activity was observed during the evaluation.

8.4 To establish the presence or absence of peat at the site and to sample the peat for C14 dating if present.

8.4.1 A 0.62m thick layer of peat [12] was encountered in Trench 3 at a level of -1.16m OD. The radiocarbon dates indicate that the peat formed during the early to middle Bronze Age (see Appendix 4).

8.5 To establish the nature, date and survival of activity relating to any archaeological periods at the site.

8.5.1 No archaeological activity pre-dating the 20<sup>th</sup> century was observed during the evaluation.

8.6 To establish the extent of all past post-depositional impacts on the archaeological resource.

8.6.1 Within the footprint of Trenches 1 and 3, the depth of the archaeological horizon below the current ground surface had protected it from past post-depositional impacts. However it is most probable that the piles located across the area of Trench 2, (and elsewhere across the study site) have impacted severely on the archaeological resource. The density of the piles would make it virtually impossible to excavate to the archaeological horizon without their removal which would destroy it in the process.

8.7 Comparison of the results against the QUEST geoarchaeological model (Quest 2014).

8.7.1 The geoarchaeological model found the Shepperton Gravel was generally located at between -3m and -4m, however there were some deep depressions noted. The trenches were targeted on the higher gravel 'islands' shown in the report, and generally the gravel was identified at -3.25m OD in Trench 1 and -3.40m in Trench 3, which corresponded with the findings of the geoarchaeological model.

8.7.2 The geoarchaeological model suggested that in the north of the site, where Trenches 1 and 3 were located, there is a thick layer of peat interspersed with thinner layers of alluvium. This



model was supported by the results of Trench 3, which found a similar below ground sequence. The top of the lower alluvium was posited to be at c. -2.00m OD, and was found in Trench 3 at -1.16m OD. A layer of peat was noted sealing the lower alluvium, which was 0.62m thick and dated to the early to middle Bronze Age. The peat was sealed by the upper alluvium at a level of 0.54m OD, the top of the upper alluvium was at 1.18m OD.

- 8.7.3 In Trench1, the upper and lower alluvium could not be differentiated as no layer of peat was found. The alluvial sequence was therefore 3.85m thick, sealing the gravel.
- 8.7.4 Overall, Trench 3 mirrored the results of the geoarchaeological modelling as suggested by Quest. Trench 1 found no peat, suggesting it was located in a more riverine environment. However, both trenches found gravel at the projected depth, suggesting neither was located in a depression.

## **9 ACKNOWLEDGEMENTS**

- 9.1 Pre-Construct Archaeology Ltd would like to thank Duncan Hawkins of CgMs for commissioning the archaeological work. Thanks also to Robert Fox of Cognition Land and Water who provided us with the machines, survey data, water pumps and welfare during the evaluation.
- 9.2 Furthermore the authors would also like to thank: Helen Hawkins for project managing and editing this report; Hayley Baxter and Charlotte Faiers for the illustrations; Ireneo Grosso for supervising the excavation of Trench 3, Przemek Polakiewicz and James Webb for their work on site; Richard Archer for the surveying and Chris Cooper, John Joyce and Wayne Richards for the logistics. Thanks also to Quest for the column sampling and C14 dates.

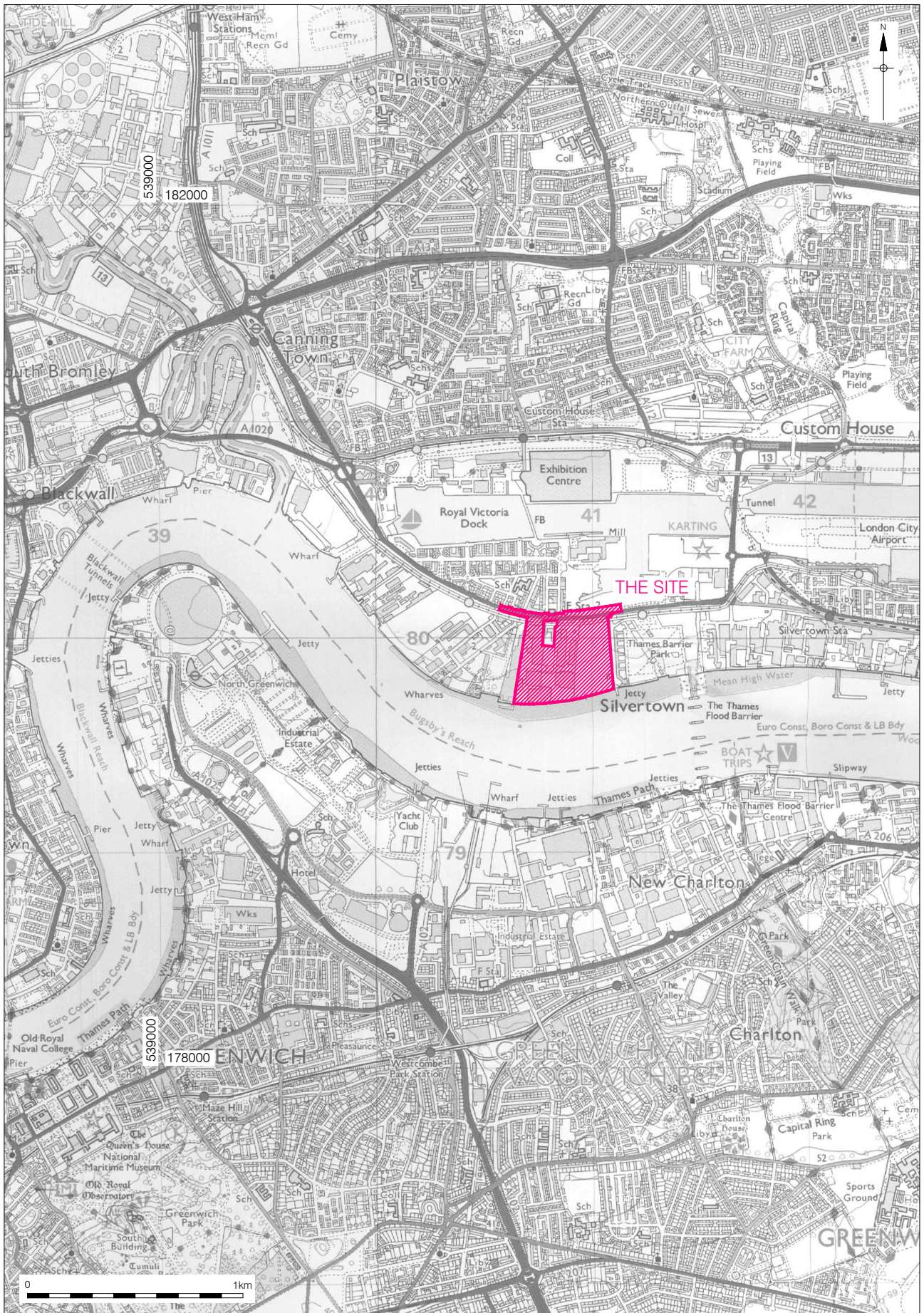
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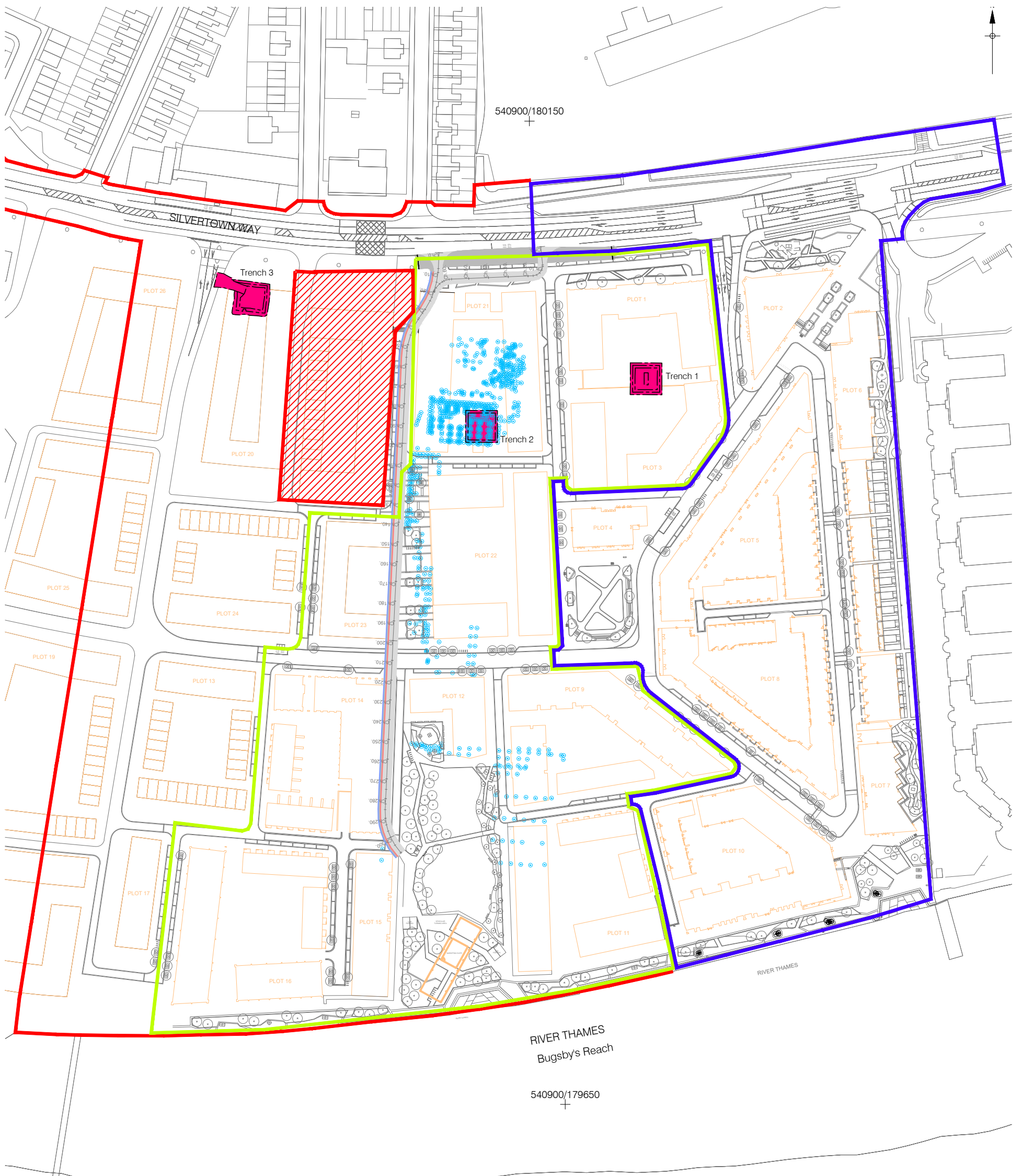


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CF 14/12/16

Figure 1  
Site Location  
1:25,000 at A4



- Overall Site Boundary
- //// Area not within Site Boundary
- Phase 1
- Phase 2
- Proposed Building
- Piling Layout
- Excavated Trench

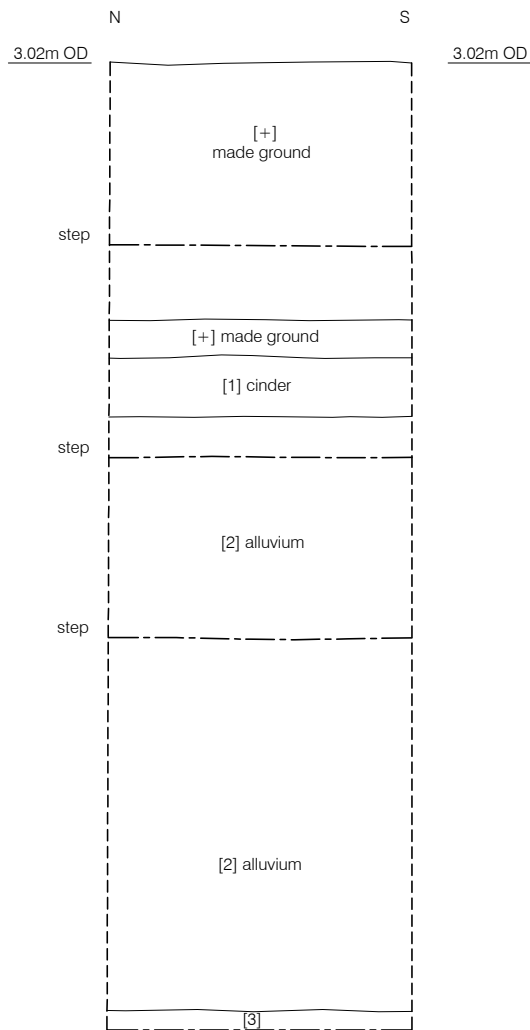
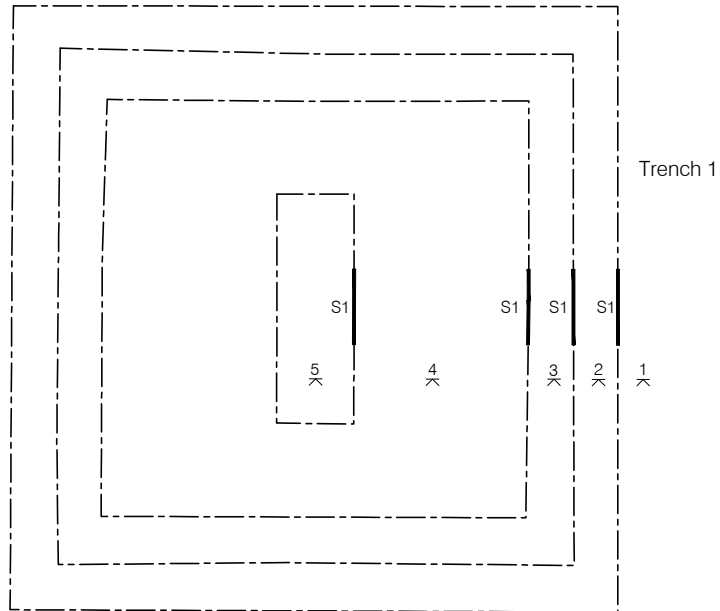
0 100m

Map data based on drawing supplied by OCSC Multi Disciplinary Consulting Engineers, October 2014  
 © Pre-Construct Archaeology Ltd 2016  
 14/12/16 CF (updated from original by HB)

Figure 2  
 Trench Location  
 1:2,000 at A3



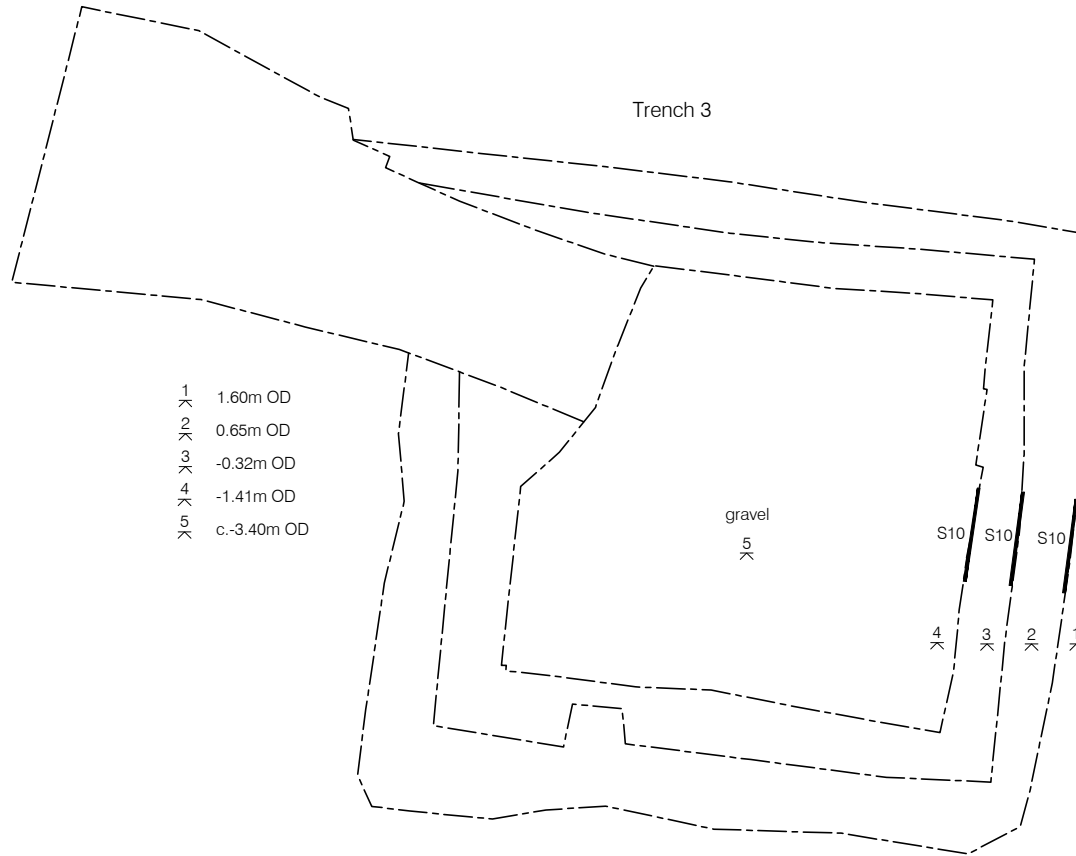
- 1 X 3.02m OD
- 2 X 1.82m OD
- 3 X 0.42m OD
- 4 X -0.78m OD
- 5 X -3.38m OD



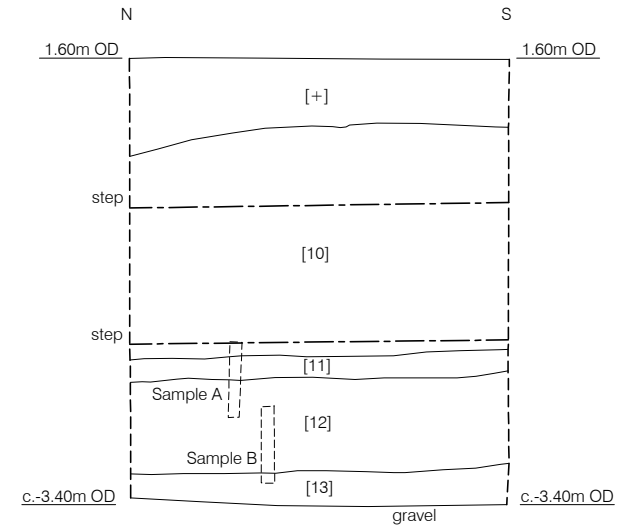
Section 1  
West facing  
Trench 1



Figure 3  
Plan of Trench 1 & Section 1  
Plan 1:200 & Section 1:50 at A4



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14/12/16 CF amended 02/02/17



Section 10  
West facing  
Trench 3



Figure 4  
Trench 3 and Section 10  
1:200 and 1:50 at A4

## PLATES



Plate 1: Trench 1 under excavation, looking south-east



Plate 2: Trench 1 down to natural gravels, looking north





Plate 3: Trench 2 looking south-east, tops of wooden piles visible throughout



Plate 4: Pile cluster in Trench 2

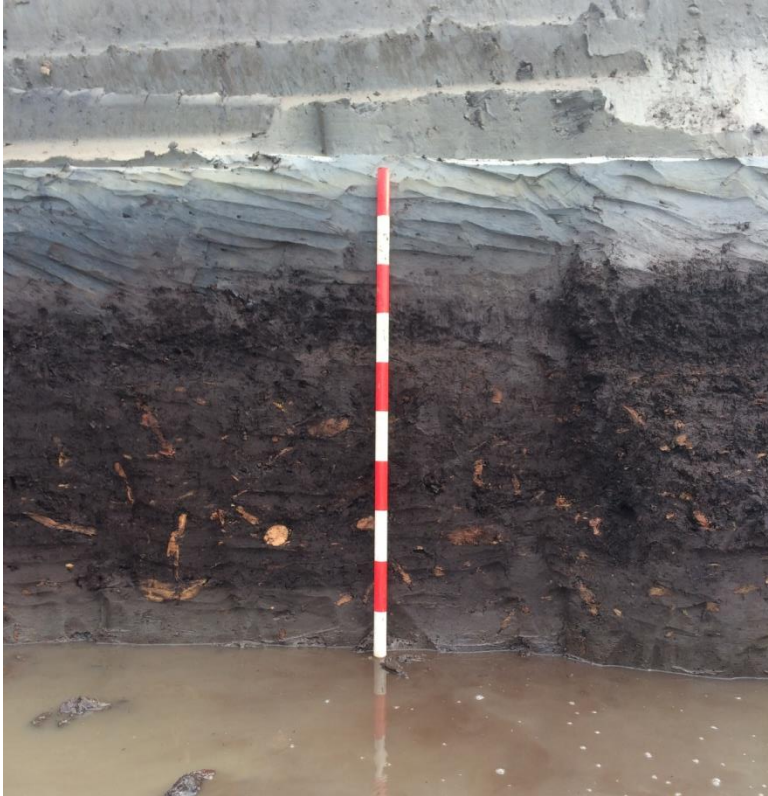


Plate 5: West Facing Section in Trench 3 showing (from bottom to top) alluvium [13], peat [12], alluvium [11] and alluvium [10]



Plate 6: Trench 3 after full excavation, photograph looks north northwest.



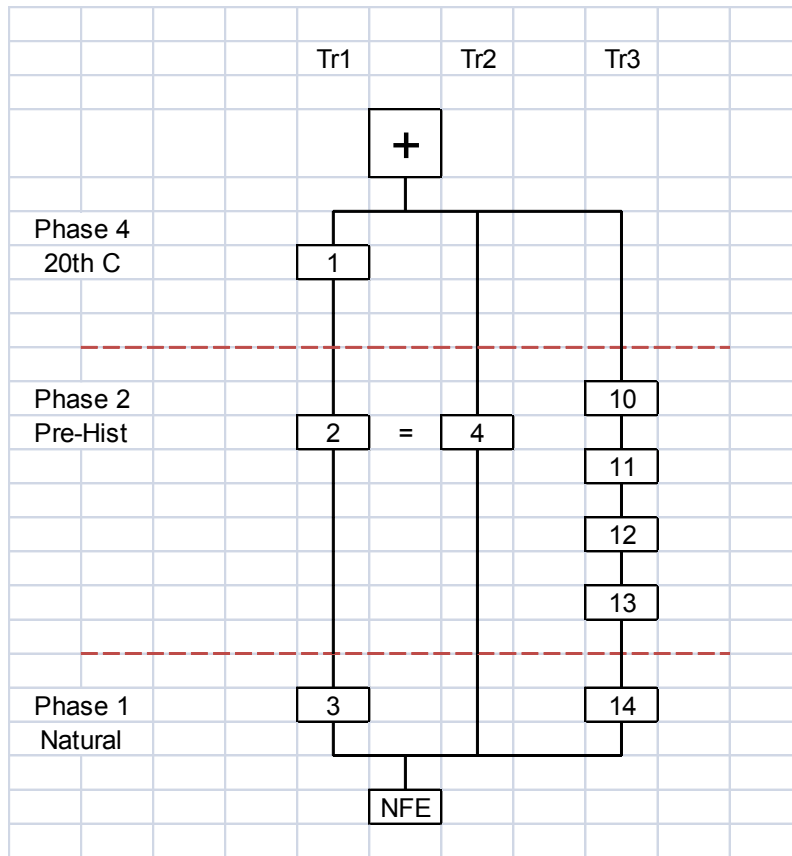
Plate 7: Trench 3 facing south-east, under excavation

E

**APPENDIX 1: CONTEXT INDEX**

<b>Site Code</b>	<b>Context No.</b>	<b>Trench</b>	<b>Plan</b>	<b>Section / Elevation</b>	<b>Type</b>	<b>Description</b>	<b>Date</b>	<b>Phase</b>
RLW15	1	1	TR1	1	Layer	Cinder	20th C	3
RLW15	2	1	TR1	1	Layer	Alluvium	Pre Hist	2
RLW15	3	1	TR1	1	Layer	Natural Gravels	Natural	1
RLW15	4	2	*	*	Layer	Alluvium	Pre Hist	2
RLW15	10	3	TR3	10	Layer	Alluvium	Pre Hist	2
RLW15	11	3	TR3	10	Layer	Alluvium	Pre Hist	2
RLW15	12	3	TR3	10	Layer	Peat	Pre Hist	2
RLW15	13	3	TR3	10	Layer	Alluvium	Pre Hist	2
RLW15	14	3	*	*	Layer	Natural Gravels	Natural	1

## APPENDIX 2: SITE MATRIX



## APPENDIX 3: OASIS FORM

**OASIS ID:**  
**preconst1-271514**

### Project details

Project name	An Archaeological Evaluation at Royal Wharf, Silvertown London borough of Newham E16 1TD
Short description of the project	An archaeological evaluation undertaken at Royal Wharf, Silvertown, London Borough of Newham E16 1TD. No Archaeological finds or features were recorded during the evaluation, however Trenches 1 and 3 did help refine the Geoarchaeological mapping of the natural gravels across the study area. The archaeological investigation was conducted between 8th-15th January 2015 and 21st-25th November 2016 in accordance with the standards specified by the Institute of Archaeologists and following the guidelines issued by English Heritage.
Project dates	Start: 08-01-2015 End: 25-11-2016
Previous/future work	Yes / Not known
Any associated project reference codes	202028 - OASIS form ID
Any associated project reference codes	RLW15 - Sitecode
Type of project	Field evaluation
Site status	None
Current Land use	Vacant Land 3 - Despoiled land (contaminated derelict and ?brownfield? sites)
Methods & techniques	"Environmental Sampling", "Targeted Trenches"
Development type	Urban residential (e.g. flats, houses, etc.)
Prompt	Planning condition
Position in the planning process	After full determination (eg. As a condition)

---

### Project location

Country	England
Site location	GREATER LONDON NEWHAM CANNING TOWN Royal Wharf
Postcode	E16 1TD

Study area	178718 Square metres
Site coordinates	TQ 4085 7990 51.499960945176 0.029456147108 51 29 59 N 000 01 46 E Point
Height OD / Depth	Min: -3.4m Max: -3.25m

---

### Project creators

Name of Organisation	Pre-Construct Archaeology Limited
Project brief originator	CgMs Consulting
Project design originator	Duncan Hawkins
Project director/manager	Helen Hawkins
Project supervisor	Guy Seddon and Ireneo Grosso
Type of sponsor/funding body	Developer
Name of sponsor/funding body	CgMs Consulting

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### Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	An Archaeological Evaluation at Royal Wharf, Silvertown, London Borough of Newham E16 1TD
Author(s)/Editor(s)	Seddon, G. and Haslam, R.
Date	2016
Issuer or publisher	Pre-Construct Archaeology Ltd
Place of issue or publication	Brockley, London
Description	A4 bound client report with blue cover

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Entered by	Rebecca Haslam (rhaslam@pre-construct.com)
Entered on	16 December 2016





## **APPENDIX 4: RADIOCARBON DATING REPORT**

# ROYAL WHARF SILVERTOWN LONDON BOROUGH OF NEWHAM

## Radiocarbon Dating Report

**NGR:** TQ 4085 7990

**Date:** 17<sup>th</sup> December 2018

**Written by:** C.R. Batchelor

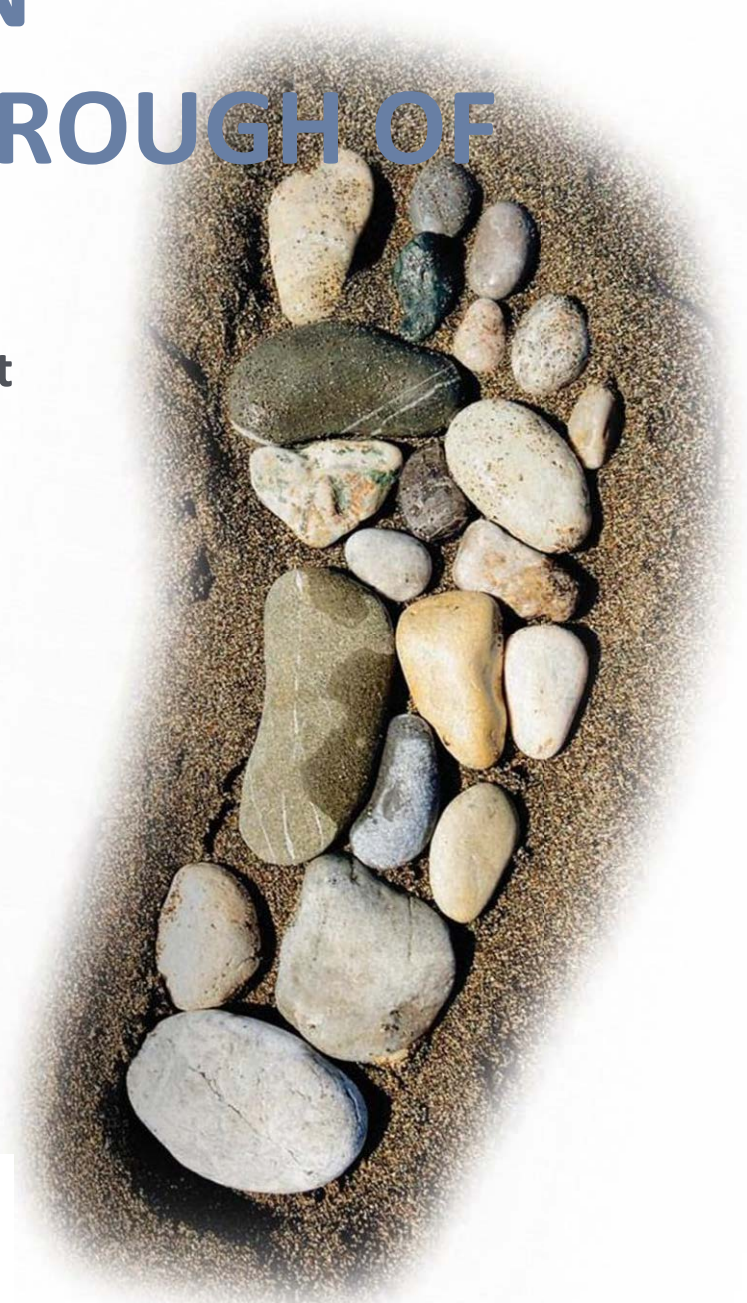
**QUEST**, School of Archaeology, Geography and  
Environmental Science, Whiteknights, University  
of Reading, RG6 6AB

**Tel:** 0118 378 7978 / 8941

**Email:** [c.r.batchelor@reading.ac.uk](mailto:c.r.batchelor@reading.ac.uk)

<http://www.reading.ac.uk/quest>

PCA 2018



## DOCUMENT HISTORY:

REVISION	DATE	PREPARED BY	SIGNED	APPROVED BY	SIGNED	REASON FOR ISSUE
v1	17/01/18	C.R. Batchelor		C.R. Batchelor		First edition

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## INTRODUCTION

This report summarises the findings arising out of radiocarbon dating program undertaken by Quaternary Scientific (University of Reading) in connection with the proposed development at Royal Wharf, Silvertown, London Borough of Newham (National Grid Reference centred on: TQ 4085 7990; site code RLW15; Figures 1-3). The Royal Wharf site is approximately 4 hectares in size, and lies on the floodplain of the Lower Thames where the Woolwich Reach of the river forms a broad southward bend. The ground across the area originally formed part of the natural floodplain of the Thames and is underlain by Holocene alluvial deposits (British Geological Survey (BGS) 1:50,000 Sheets 257 Romford 1996), which consist of fine-grained mineral-rich sediments and peat. Beneath the alluvium, sand and gravel is present and is assigned by Gibbard (1994) to the Late Devensian Shepperton Gravel. The bedrock beneath this is the Lower Tertiary Lambeth Group.

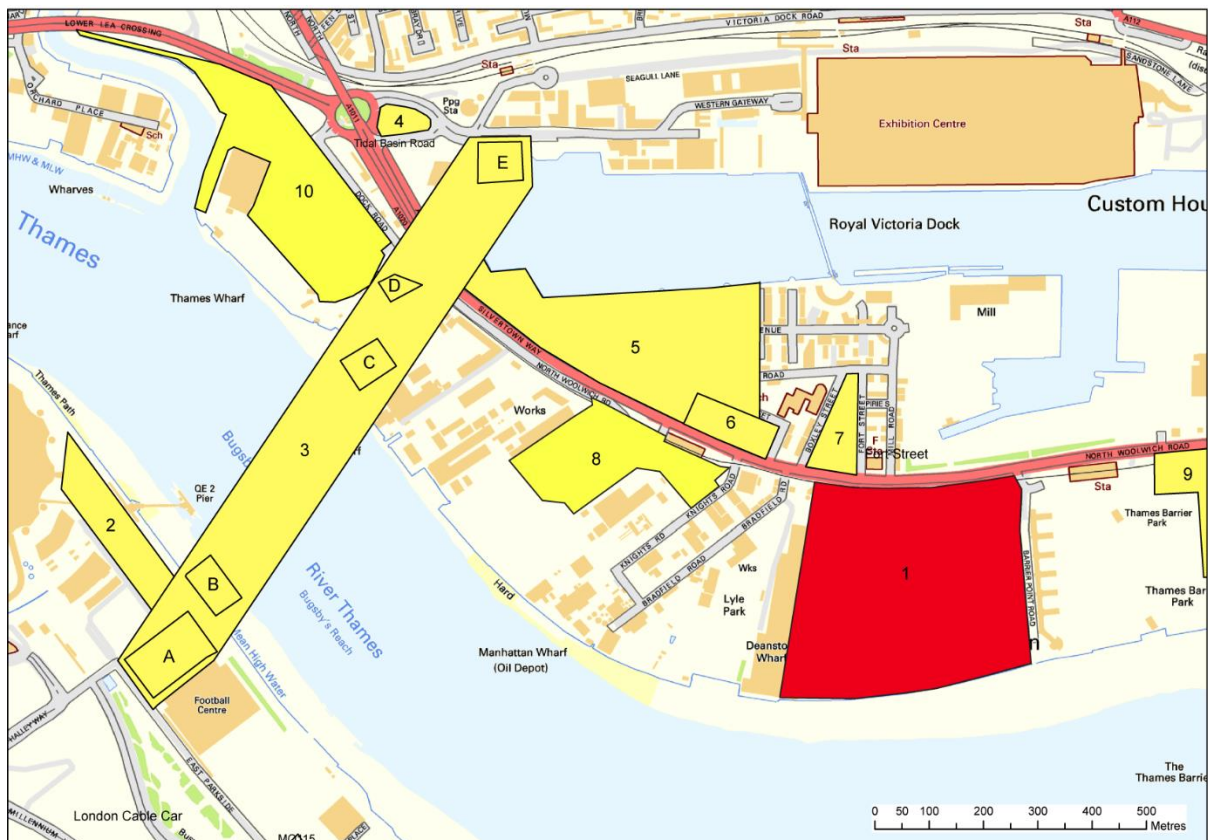
Previous geoarchaeological deposit modelling (Batchelor et al., 2014) of over 300 stratigraphic sequences demonstrated the presence of the following sedimentary sequence beneath the site:

- Made Ground
- Upper Alluvium – widely present
- Peat – only locally present
- Lower Alluvium – only locally present, occasionally peaty
- Gravel (Shepperton Gravel)

The spatial distribution of these sediments across the modelled area indicated the presence of two contrasting landscapes within the site throughout much of the Holocene. On the southern part of the Royal Wharf site the results suggest the deposition of mineral-rich alluvium reflecting the presence of active river channels, probably the main channel of the River Thames and short N-S aligned streams draining off the slightly more elevated area to the north. Peat formation here was restricted to the more elevated remnants of the gravel surface between the depressions in which fluvial deposition persisted for much of the Holocene. To the north of the Royal Wharf site there are no obvious deep depressions that might have been the site of Peat formation early in the Holocene. Moreover the pattern of Peat accumulation indicated by the modelling of Peat thickness shows very little relationship to the surface relief of the Shepperton Gravel/Lower Alluvium on which the Peat rests, in contrast with modelling exercises elsewhere along the River Thames (e.g. Green *et al.*, 2014).

Four geoarchaeological boreholes were put down as part of the same exercise to ground-truth the deposit model and recover peat for further assessment/analysis. However, despite targeting those areas with the greatest potential, no peat deposits were recorded during the exercise. More recently, an archaeological evaluation was carried out, consisting of three trenches put down on the northern part of the site. In north-western most Trench 3, a tripartite sequence of Upper Alluvium, Peat and Lower Alluvium was recorded. The following report aims to radiocarbon date the peat deposits to improve the chronological framework for deposition, thereby completing the aims and objectives of the Geoarchaeological Written Scheme of Investigation (Young, 2014). Further palaeoenvironmental

works are not anticipated due to the amount of work carried out on adjacent sites (e.g. the London Cable Car [Batchelor *et al.*, in press], Fort Street [Wessex Archaeology, 2000; Crockett *et al.*, 2003] and West Silvertown [Wilkinson *et al.*, 2000]).



**Figure 1: Location of (1) the Royal Wharf site (Batchelor *et al.*, 2014) and other nearby geoarchaeological/archaeological investigations: (2) Greenwich Peninsula Central East (Young & Batchelor, 2015); (3) the Cable Car route (CAB11; Batchelor *et al.*, 2015) (A) North Station; (B) North Intermediate Tower; (C) North Tower; (D) South Tower; (E) South Station); (4) Tidal Basin Road (Young & Batchelor, 2013); (5) West Silvertown (Wilkinson *et al.*, 2000); (6) Barnwood Court (Farid, 1997); (7) Fort Street (Wessex Archaeology, 2000; Crockett *et al.*, 2003); (8) Peruvian Wharf (Batchelor & Green, 2016) and (9) Thames Barrier Park East (Green *et al.*, 2006). Contains Ordnance Survey data © Crown copyright and database right [2017].**

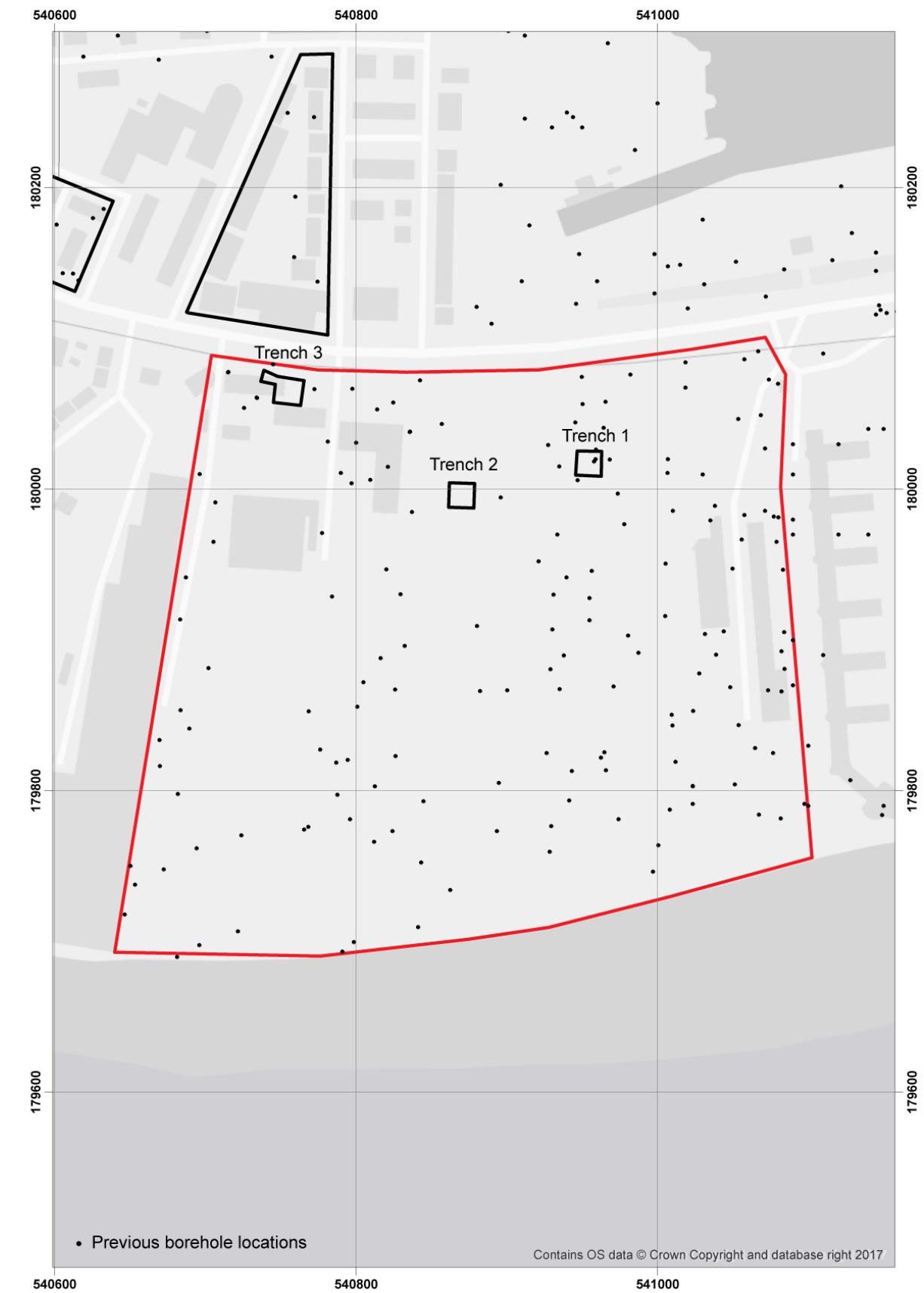


Figure 2: Trench and borehole locations across the Royal Wharf site

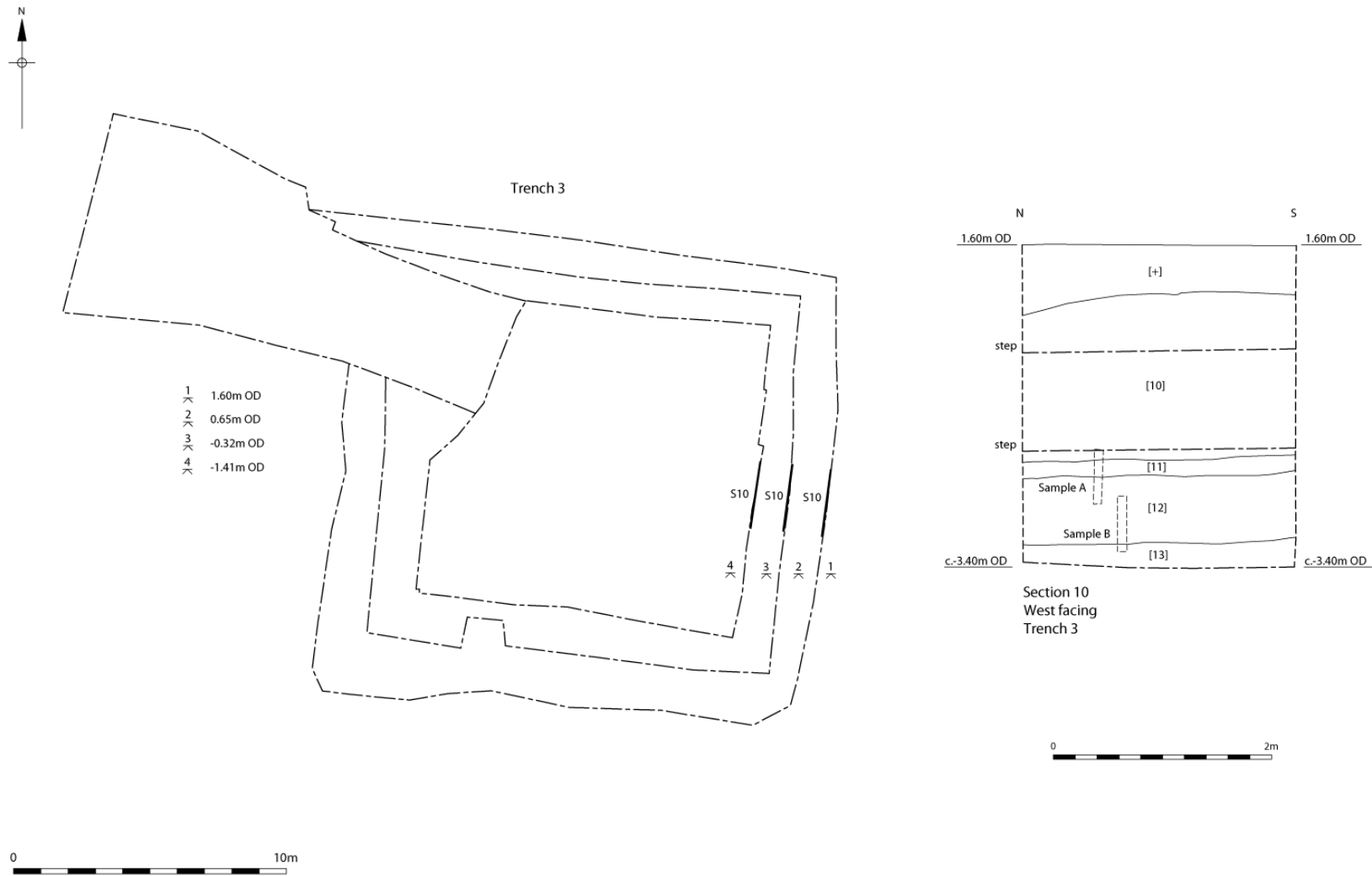


Figure 4  
 Trench 3 and Section 10  
 1:200 and 1:50 at A4

**Figure 3: Trench and section plan, displaying the location of Monolith samples A & B**



## METHODS

### 2.1 Laboratory-based descriptions

Laboratory-based lithostratigraphic descriptions of monolith samples was carried out using standard procedures for recording unconsolidated sediment and peat, noting the physical properties (colour), composition (gravel, sand, clay, silt and organic matter) and inclusions (e.g. artefacts). The procedure involved: (1) cleaning the samples with a spatula or scalpel blade and distilled water to remove surface contaminants; (2) recording the physical properties, most notably colour; (3) recording the composition e.g. gravel, fine sand, silt and clay; (4) recording the degree of peat humification, and (5) recording the unit boundaries e.g. sharp or diffuse (Troels-Smith, 1955). Wherever possible, notes were made on the quality of the samples and percentage recovery. The results are displayed in Tables 1-2 and Figure 4.

### 2.2 Radiocarbon dating

Two radiocarbon determinations were carried out on material from the top and base of the peat. Small bulk samples were extracted by wet-sieving, and suitable macrofossil remains were selected (twig wood). The samples were submitted for AMS radiocarbon dating to the BETA Analytic Radiocarbon Dating Facility, Miami, Florida. The results have been calibrated using OxCal v4.2 (Bronk Ramsey, 1995; 2001 and 2007) and the IntCal13 atmospheric curve (Reimer *et al.*, 2013). The results are displayed in Figure 4 and in Table 3.

## RESULTS AND INTERPRETATION OF THE LITHOSTRATIGRAPHIC DESCRIPTIONS & RADIOCARBON DATING

Lithostratigraphic description of the samples revealed a sequence of dark grey organic-rich silty clay (context [13]), overlain at -1.09m OD by a moderately humified wood and unidentified peat (context [12]), capped by silty clay (contexts [11] and [10]) from -0.58m OD (Table 1, Figure 4). These deposits represent the Lower Alluvium, Peat and Upper Alluvium respectively. Radiocarbon dating of the Peat indicates that it dates from 4090-3860 to 3560-3380 cal BP, thus equating to accumulation during the early to middle Bronze Age period (Table 2, Figure 4).

**Table 1: Lithostratigraphic description of Monoliths A, Section 10, Trench 3, Royal Wharf**

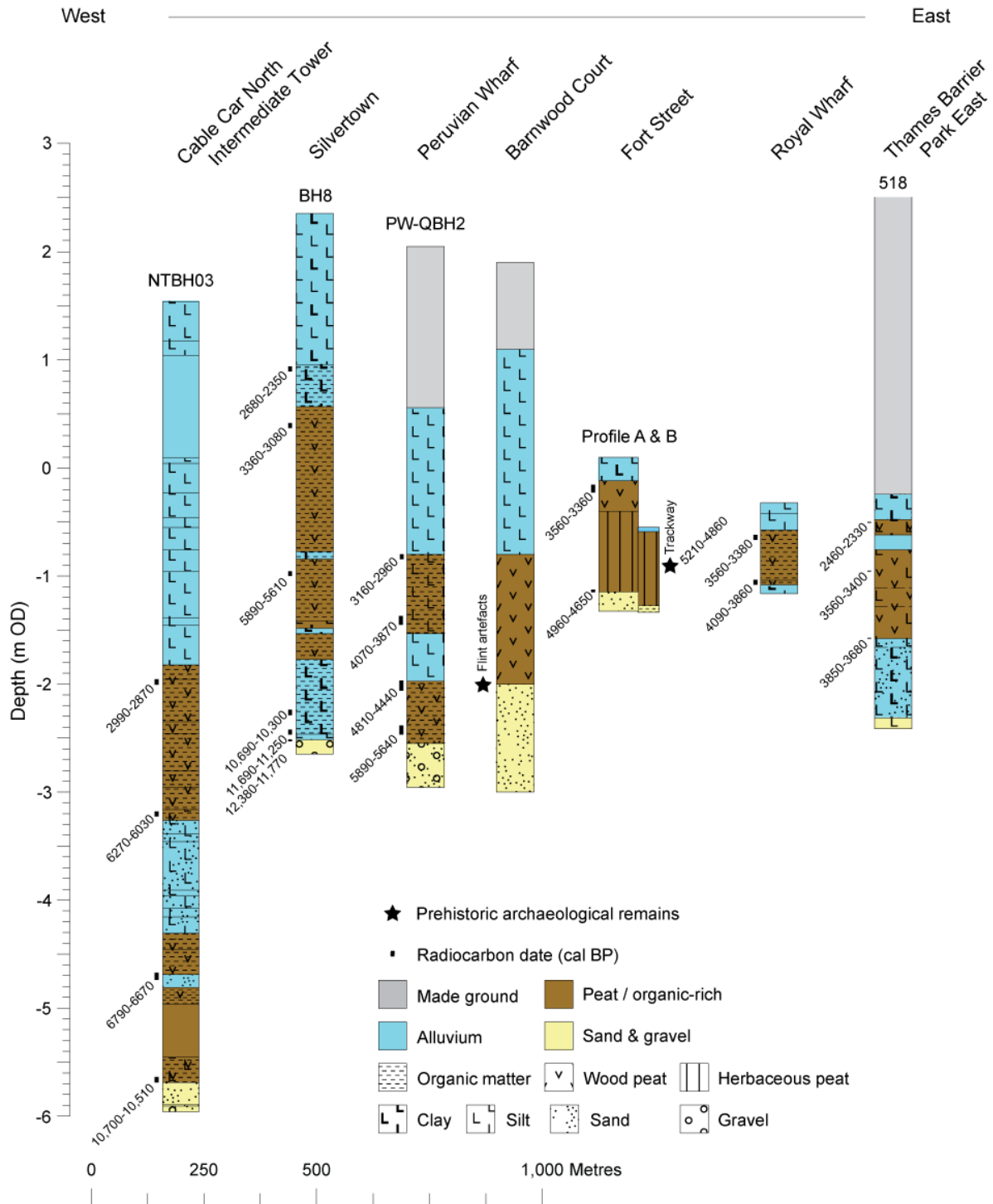
Depth (m OD)	Depth (m bgl)	Context	Lithostratigraphic description	Stratigraphic unit
-0.32 to -0.42	0 to 0.10	[10]	10YR 5/1; As3, Ag1; Grey silty clay; diffuse contact into:	UPPER ALLUVIUM
-0.42 to -0.58	0.10 to 0.26	[11]	10YR 4/1 to 10YR 3/1; As3, Ag1, Sh+ to As3, Sh1; Dark grey to very dark grey organic-rich silty clay, becoming increasingly organic-rich down profile; diffuse contact into:	
-0.58 to -0.82	0.26 to 0.50	[12]	10YR 2/1; Sh3, Tl <sup>3</sup> 1; Humo 3-4; Black well-humified unidentifiable and wood peat.	PEAT

**Table 2: Lithostratigraphic description of Monoliths B, Section 10, Trench 3, Royal Wharf**

Depth (m OD)	Depth (m bgl)	Context	Lithostratigraphic description	Stratigraphic unit
-0.67 to -1.04	0 to 0.37	[12]	10YR 2/1; Sh3, Tl <sup>3</sup> 1; Humo 3-4; Black well-humified unidentifiable and wood peat; diffuse contact into:	PEAT
-1.04 to -1.09	0.37 to 0.42	[12]	10YR 3/1; Sh3, Ag1; Humo 4; Very dark grey silty well-humified unidentifiable peat; diffuse contact into:	
-1.09 to -1.17	0.42 to 0.50	[13]	10YR 4/1; As3, Ag1; Dark grey organic-rich silty clay.	LOWER ALLUVIUM

**Table 3: Results of the radiocarbon dating, Monoliths A&B, Section 10, Trench 3, Royal Wharf**

Laboratory code / Method	Material and location	Depth (m OD)	Uncalibrated radiocarbon years before present (BP)	Calibrated age BC/AD (BP) (2-sigma, 95.4% probability)	δ <sup>13</sup> C (‰)
BETA-483610 AMS	Twig wood; top of peat	-0.64 to -0.66	3230 ± 30	1610-1430 cal BC (3560-3380 cal BP)	-28.7
BETA-483609 AMS	Twig wood; base of peat	-1.05 to -1.07	3640 ± 30	2140-1920 cal BC (4090-3860 cal BP)	-27.6



**Figure 4: West-east transect of radiocarbon dated stratigraphic sequences across nearby sites (incorporating the Royal Wharf)**

## DISCUSSION, CONCLUSION & RECOMMENDATIONS

The duration and elevation of Peat formation is clearly highly variable across this region of the Lower Thames Valley, as demonstrated by the various radiocarbon dated stratigraphic sequences in Figure 4. Sequences such as West Silvertown (Wilkinson et al., 2000) and the London Cable Car (Batchelor et al., 2014) have sequences spanning from the beginning of the Mesolithic through to the Iron Age, whilst at Peruvian Wharf (Batchelor and Green, 2016), Thames Barrier Park East (Green et al., 2006) and Royal Wharf, Peat accumulated during the Neolithic and/or Bronze Age. Peat formation during the 4000-3500 cal BP period recorded at Royal Wharf is thus relatively common across the area, and there are a number of palaeoenvironmental reconstructions. The closest of these is at Fort Street, little more than 50m to the north of Trench 3. .

No further palaeoenvironmental works are recommended due the brief period of Peat accumulation represented and the number of sequences in which such investigations have taken place in the nearby area. However, the sequence from Royal Wharf enhances the chronological framework for Peat accumulation across this area of the Lower Thames Valley, and should be integrated with other recent work in the local area for publication in an academic journal.

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# PCA

## **PCA CAMBRIDGE**

THE GRANARY, RECTORY FARM  
BREWERY ROAD, PAMPISFORD  
CAMBRIDGESHIRE CB22 3EN  
t: 01223 845 522  
e: [cambridge@pre-construct.com](mailto:cambridge@pre-construct.com)

## **PCA DURHAM**

UNIT 19A, TURSDALE BUSINESS PARK  
TURSDALE  
DURHAM DH6 5PG  
t: 0191 377 1111  
e: [durham@pre-construct.com](mailto:durham@pre-construct.com)

## **PCA LONDON**

UNIT 54, BROCKLEY CROSS BUSINESS CENTRE  
96 ENDWELL ROAD, BROCKLEY  
LONDON SE4 2PD  
t: 020 7732 3925  
e: [london@pre-construct.com](mailto:london@pre-construct.com)

## **PCA NEWARK**

OFFICE 8, ROEWOOD COURTYARD  
WINKBURN, NEWARK  
NOTTINGHAMSHIRE NG22 8PG  
t: 01636 370410  
e: [newark@pre-construct.com](mailto:newark@pre-construct.com)

## **PCA NORWICH**

QUARRY WORKS, DEREHAM ROAD  
HONINGHAM  
NORWICH NR9 5AP  
T: 01223 845522  
e: [cambridge@pre-construct.com](mailto:cambridge@pre-construct.com)

## **PCA WARWICK**

UNIT 9, THE MILL, MILL LANE  
LITTLE SHREWLEY, WARWICK  
WARWICKSHIRE CV35 7HN  
t: 01926 485490  
e: [warwick@pre-construct.com](mailto:warwick@pre-construct.com)

## **PCA WINCHESTER**

5 RED DEER COURT, ELM ROAD  
WINCHESTER  
HAMPSHIRE SO22 5LX  
t: 01962 849 549  
e: [winchester@pre-construct.com](mailto:winchester@pre-construct.com)

