



C152 – PUDDING MILL LANE PORTAL

Addendum to WSI: Trial Trench Evaluation Watching Brief & Detailed Excavation (XSK10)

Document Number: C152-SWN-C2-RSP-CR094_PT002-50001

Document Version:

Revision:	Date:	Prepared by:	Checked by:	Approved by:	Reason for Issue:
3.0	19-03-12	[REDACTED]	[REDACTED]	[REDACTED]	C305 Revised scope
		[REDACTED]	[REDACTED]	[REDACTED]	

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PDP Decal Template CRL-PDP-Z-TM-CRG03-00013-Rev 1.0



Document History :

Revision:	Date:	Prepared by:	Checked by:	Approved by:	Reason for Issue:
1.0	12 12 10	██████	██████	██████	For PDP review
2.0	12-08-11	██████	██████	██████	C350 Revised scope

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1 Introduction

- 1.1.1 This document provides details of the programme of archaeological investigation required to mitigate the impact of construction of the Pudding Mill Lane Portal on archaeological deposits. It sets out the location and recording activities required at Pudding Mill Lane during the main works.
- 1.1.2 This document is an addendum to the Written Scheme of Investigation (C152-SWN-C2-RSI-CR094_PT002-00001) and should be read in conjunction with that document.
- 1.1.3 This document outlines the requirements of the *Principal Contractors* (C350; C305) and the requirements of the *Archaeological Contractor* (C261).

2 Scope of Works

2.1 Scope of the investigations

- 2.1.1 The overall aim is to identify the extent and survival of archaeological deposits, in particular those relating to the palaeo-environmental development of the site, prehistoric settlement archaeology; and post-medieval industrial archaeology, all of which would be removed by construction works. This will be achieved through a programme of archaeological mitigation works, a summary of which is set out in Table 1 below.

Table 1 Summary of archaeological events at Pudding Mill Lane

Event Type	Event Code	Principal Contractor	Addendum Specific Requirements Section
Trial Trench Evaluation (5 trenches) DELETED	XSK10	C248	4.1
General Watching Brief (EDF 11kV cable diversion; worksite establishment at PML worksite; Barbers Road utilities diversions);		C248	Works completed Aug 2011
Targeted Watching Brief (Excavation of the NG 400kV cable trough and jointing pit) – Not required due to Contractor method change		C305	Works not required- cable to be protected in situ
Archaeological Targeted Watching Brief (within diaphragm walled and piled EIP/TBM; cut and cover tunnel and covered ramp)		C350	5.2-5.5 Works ongoing
Targeted Watching Brief; works within River Lea channel; and excavation of sheet pile grout shaft		C305	4.1 Works Required
Targeted Watching Brief (ground reduction in advance of piling at the DLR Station)		C350	5.1 Works Complete

2.2 Site Specific Objectives

- 2.2.1 The objectives of the archaeological TWB investigations are:.

1. To record evidence for post medieval industrial buildings and structures noted in the DDBA and in particular the remains of a large building with landscaped grounds recorded on the 1867AD OS edition (within Section 1 of the cut and cover tunnel).

2. To inspect, record and sample profiles in the geo-archaeological sequence of deposits present within the site to understand the site topography and date its phased development.
3. To analyse the palaeo-environmental evidence recovered from the works and contribute evidence to inform the Lea Valley Pleistocene and Holocene archaeological resource.
4. To inspect the sequence of post Pleistocene alluvial organic deposits and clay silt units for prehistoric, Roman and Medieval archaeological remains at channel edge and areas of higher ground (land and channel management, settlement and industry).
5. To identify record and if appropriate recover, any archaeological artefacts (vessels, structural remains and small finds) preserved in the deeper channel areas.

2.3 Archaeological Trial Trench Evaluation

- 2.3.1 The site specific WSI and previous issue of this addendum planned to undertake a trial trench evaluation at the PML site (see drawing: C152-SWN-C2-DDA-CR094_Z-95004). This has not been undertaken due to high levels of ground contamination and high ground water issues and associated DLR settlement and safety concerns.
- 2.3.2 The installation of the permanent diaphragm walls and dewatering of the site prior to excavation shall enable a dry, safer and better managed investigation of the potential archaeology of the site fully integrated with the main works mitigation works for contamination and control of ground water.

3 Requirements of Principal Contractors to support the works

3.1.1 In accordance with the relevant contract works information *Principal Contractors* must provide the following to facilitate archaeological investigations:

- Co-ordinate production of an agreed method of working, health and safety risk assessment, and programme with the Employers Archaeological Contractor C261.
- Provide a safe working environment for archaeologists.
- During Targeted Watching Briefs, the use of excavators or other plant within the area shall be undertaken in accordance with the agreed method statement and under the supervision of the C261 Archaeologist;
- Allow safe access for archaeologists into the site and provide any required temp works;
- Provide the following attendances to C261 (specifics to be defined in the C261 method statement):
 - Lighting on site if required;
 - Welfare and office facility (numbers to be confirmed in C261 method statement);
 - Small plant and tools as required;
 - Assistance with the removal from the excavation areas of excavated spoil, samples, and large artefacts;
 - Provide all plant and operatives required to complete the works;
 - Secure storage for tools, written records and samples
- Provide further technical advice to C261 as maybe required to safely complete the works.

4 Specific Requirements for C305 Tunnel Works Contractor

4.1 Archaeological Targeted Watching Brief – River Lea Works

- 4.1.1 Targeted Watching Brief is required during demolition and groundworks on the western side of the River Lea to record the remains of the historic wharf as they are exposed during the demolition process (Drawing: C152-SWN-C2-DDA-CR094_Z-95004 and see drawing C305-DSJ-T-DDA-CR094_WS111_Z-600021.).
- 4.1.2 Two sheet pile coffer dams shall be constructed within the River Lea to inspect river wall construction on the east and west banks of the channel. If required the river wall piles shall be trimmed to clear the tunnel crown level to allow the TBM to pass below the river bed and river walls. A targeted watching brief by C261 is required to observe and record the fabric and construction details of any historic wharves revealed during this work.
- 4.1.3 A sheet piled grout access shaft shall be constructed between the River Lea eastern river wall and the portal structure to allow access for grouting below the 400kV cable route and river bed. A targeted watching brief is required to observe and record the soil sequence and presence of any historic timber structures or other artefacts that may be preserved at this location overlying the river terrace gravels.

4.2 Archaeological Targeted Watching Brief Procedure

- 4.2.1 The Principal Contractor will allow for the archaeological contractor (C261) to record surviving elements of the River Lea wall and wharves on the western and eastern sides of the River Lea as they are exposed during demolition works, excavation of the coffer dams and excavation of the grout shaft see drawing C305-DSJ-T-DDA-CR094_WS111_Z-600021.
- 4.2.2 The method of excavation by C305 should allow for the archaeological observation and recording of deposits between ground level and the top of the river terrace gravels. The archaeologist may require access to the excavation to retain soil samples and /or carry out hand tool investigation and recording of historic features.

4.3 Programme

- 4.3.1 The above works within the River Lea and for the grout shaft shall commence excavation/dewatering on 7 May 2012 and be completed within 15 calendar days. Refer to C305 four week look ahead programme to confirm actual start date for TWB.

5 Specific Requirements for C350 Main Works Contractor

5.1 Targeted Watching Brief – Ground reduction at DLR Station

5.1.1 A Targeted Watching Brief is required during Main Works ground reduction in advance of piling the DLR Station, targeting the alluvial layers that survive between 102m ATD and c. 101m ATD. (Drawing: C152-SWN-C2-DDA-CR094_Z-95004)

Archaeological Targeted Watching Brief Procedure

5.1.2 Remove, under observation of C261 Archaeologist the modern made ground to expose the alluvial soils.

5.1.3 Excavate alluvial deposits with an excavator fitted with a flat blade ditching bucket in spits of 300mm to 500mm (or as directed by the Archaeological Contractor (C261). until the full sequence of archaeological deposits is recorded to the maximum depth of impact.

5.1.4 Provide temporary protection to support excavations where personnel access for the investigation is required and any required fall protection.

5.1.5 The TWB shall require 1 No. archaeological supervisor to be present on site during bulk excavation. Additional archaeologists up to 5 No. may be required to work on the site to record any remains found and take the necessary samples.

5.2 Targeted Watching Brief Cut and Cover Tunnel Section 1 (ch 14208-144270 West of DLR Embankment)

5.2.1 Programmed dates 16 September to 2 Nov 2011.

5.2.2 A Targeted Watching Brief is required during the bulk excavation below 1000mm. The investigation shall target the lower part of the modern made ground at 103mATD to identify and record potential remains of a large house and garden recorded on the 19th century map. Further investigation shall be undertaken between c.102mATD and the top of the river terrace gravel at c. 99.5mATD.

5.2.3 Follow procedure described above in 5.1.2, 5.1.3, and 5.1.4

5.2.4 The TWB shall require The TWB shall require 1 No. archaeological supervisor to be present with each machine during bulk excavation. Additional archaeologists up to 5 No. may be require to work on the site to record any remains found and take the necessary samples.

5.3 Targeted Watching Brief TBM reception chamber section

5.3.1 Programmed dates 3 November to 5 December 2011.

5.3.2 A Targeted Watching Brief is required during the bulk excavation of the TBM chamber section. The investigation shall target the alluvial sequence that exists between c. 103m ATD and 99.5m ATD (borehole record WS203ARCH).

5.3.3 Follow procedure described above in 5.1.2, 5.1.3, and 5.1.4

5.3.4 The TWB shall require The TWB shall require 1 No. archaeological supervisor to be present with each machine during bulk excavation. Additional archaeologists up to 5 No. may be require to work on the site to record any remains found and take the necessary samples.

5.4 Targeted Watching Brief Cut and Cover Tunnel Section 2 (ch 44270-14348 Under and east of DLR Embankment)

5.4.1 Programmed dates 18 January to 23 March 2012.

5.4.2 A Targeted Watching Brief is required during the bulk excavation below 1000mm. The investigation shall target the alluvial deposits overlying river gravels. Investigation shall be undertaken between c.102mATD and the top of the river terrace gravel at c. 100mATD.

5.4.3 Follow procedure described above in 5.1.2, 5.1.3, and 5.1.4

5.4.4 The TWB shall require The TWB shall require 1 No. archaeological supervisor to be present with each machine during bulk excavation. Additional archaeologists up to 5 No. may be require to work on the site to record any remains found and take the necessary samples.

5.5 Targeted Watching Brief Cut and Cover Tunnel Section 3 (ch 14348 – 14550 post DLR diversion)

5.5.1 Programmed dates for bulk excavation is 29 August 2013 to 10 February 2014.

5.5.2 A Targeted Watching Brief is required during the bulk excavation below 1000mm. The investigation shall target the alluvial deposits overlying river gravels. Investigation shall be undertaken between c.102mATD and the top of the river terrace gravel at c. 100mATD.

5.5.3 Follow procedure described above in 5.1.2, 5.1.3, and 5.1.4

5.5.4 The TWB shall require The TWB shall require 1 No. archaeological supervisor to be present with each machine during bulk excavation. Additional archaeologists up to 5 No. may be require to work on the site to record any remains found and take the necessary samples.

6 Instructions to Archaeological Contractor and Specification

6.1 Archaeological Targeted Watching Brief

6.1.1 C261 shall undertake the works for targeted watching brief described above. For chainage locations see Site Specific Written Scheme of Investigation, document reference number: C152-SWN-C2-RSI-CR094_PT002-00001 figures.

6.1.2 The specification for the works is as described in Site Specific Written Scheme of Investigation, document reference number: C152-SWN-C2-RSI-CR094_PT002-00001.

6.1.3 The *Archaeological Contractor* shall:

- Provide a team of suitably qualified archaeologists, experienced in archaeological mitigation on this type site. This must include a geo-archaeologist and environmental archaeologist. The Contractor shall allow for the full range of specialists to be available as required
- Produce method statements inclusive of all methods and strategy for archaeological science (agreed with English Heritage regional science advisor), an agreed programme, and health and safety risk assessment in liaison with C305 and C350. The method statements must be submitted to CRL for approval once each principal contractor has agreed them with C261.

6.2 Deliverables

6.2.1 An interim report shall be prepared for each section of the targeted watching briefs for C305 and C350.

6.2.2 A final fieldwork report shall be produced on completion of all works.

6.2.3 Procedures for post excavation assessment shall be notified to the contractor in due course.