CENTRAL SECTION PROJECT

INTERIM STATEMENT
Archaeological Evaluation & Boreholes
91 to 109 Moorgate – XSP10

Document Number: C257-MLA-X-RGN-CRG02-50051

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1 Introduction

This document is an interim statement of the results of the second, and final, phase of an archaeological evaluation planned as test trenches and also a general watching brief on three boreholes through the basement of 91–109 Moorgate (post-demolition of the building). An initial evaluation of one test trench was conducted pre-demolition and an Interim Statement was issued on 16th December 2011, and finalised on 13th July 2011 (C257 Archaeology Central Interim Statement Archaeological Evaluation (C136 Moorgate Shaft) 91 to 109 Moorgate - XSP10, Document No. C257-MLA-X-RGN-CRG02-50028).

The archaeological works were carried out by C257 Museum of London Archaeology (MOLA). It was conducted between 23/08/11 and 09/09/11 and supervised by MOLA Senior Archaeologists Matthew Ginnever (Evaluation) and Sam Pfizenmaier (boreholes).

One of the three planned evaluation test trenches (Trench 1) was attempted in the northern sector of the site, but modern truncation and obstructions in this area were so extensive that this was abandoned.

The event code (sitecode) is XSP10.

The fieldwork was carried out in accordance with:

- A Crossrail **Site-specific Written Scheme of Investigation** (SS-WSI): *Liverpool Street Station Design Package 138,* Doc. No C138-MMD-T1-RST-C101-00001, Version 2, April 2010
- An **Addendum to the WSI**: Package C138 – *Liverpool Street Station*, *Addendum to Written Scheme of Investigation: Moorgate Shaft*, Doc. No: C138-MMD-T1-TCP-C101- 0001, Revision 2.0, July 2010.
- **An Archaeological Method Statement**: MOLA, C257 *Archaeology Central Method Statement Archaeological Evaluation and Watching Briefs (C138) Moorgate Shaft,* Doc. No: C257-MLA-T1-GMS-CR088-00003, Version 5, 30/08/11.

2 Aims and Objectives

These are defined in the SS-WSI and are reproduced below.

2.1 Research Aims

Evidence relating to the Walbrook, its tributaries and Moorfields Marsh deposits may provide data relevant to the following themes:

- Understanding London's hydrology, river systems and tributaries and the relationship between rivers and floodplains;
- Understanding how water supply and drainage provision were installed and managed;
- Refining our understanding of the chronology and function of the landward and riverside defences and extramural evidence of defensive or military structures in the Roman period;
- Understanding the relationships between urban settlements and royal villas or religious estates;
- Examining the proposal that there was an ideological polarity between town and anti-town systems: Roman towns did not so much fail as were discarded;

- The end of the Roman occupation: developing explanatory models to explain socio-political change and considering the influence of surviving Roman structures on Saxon development; and;
- Examining the use in any one period of materials from an earlier period (eg Saxon use of surviving Roman fabric) and the influence on craftsmanship, manufacture and building techniques.

2.2 Fieldwork Objectives

The overall objectives of the trial trench evaluation were to establish the nature, extent and state of preservation of any surviving archaeological remains that will be impacted upon by the development. Those of the various watching briefs are to preserve by record any surviving archaeological remains that will be impacted upon by the relevant works.

Specifically, the archaeological investigations had the potential to recover:

- Artefacts of prehistoric date re-deposited in later deposits.
- Remains of Roman extra-mural activity, potentially including burials.
- Waterlain deposits from the Roman to medieval Moorfields Marsh, with the potential for organic preservation and palaeoenvironmental evidence.
- Late medieval and post-medieval drainage ditches, rubbish dumps and remains associated with the reclamation of Moorfields Marsh.
- In areas not truncated by later activity: remains of mid 17th-century or earlier buildings on the western side of Moorfields, and late 17th/early 18th-century or later buildings across the whole site.

3 Provisional Results

See Fig 1 *for trench and borehole location*

3.1 Trench 4

Photo 1 Trench 4 looking north. Section showing gravelly brickearth natural overlain by marsh deposits.

Trench 4 (see Fig 1)	
Location	91 to 109 Moorgate (in the west of the basement)
Dimensions	3.50m north-west to south-east and 2.40m north-east to south-west x 1.20 to 1.60m deep
Centre of test trench: London Survey grid co-ordinates:	83057/ 36320
OS grid co-ordinates:	
Modern Ground Level/top of the slab	110.00m ATD (10.00m OD)
Modern subsurface deposits	None
Level of base of archaeological deposits observed and/or base of trench	Base of archaeological deposits: 108.83m ATD (8.83m OD,1.17m bGL) Base of trench: 108.60m ATD (8.60m

	OD, 1.40m bGL)
Natural observed	Gravelly brickearth [15] at 108.83m ATD (8.83m OD, 1.17m bGL), overlaying natural brickearth layer [16] at 108.60m ATD (8.60m OD, 1.40m bGL) Natural gravel not seen.
Extent of modern truncation	110.00m to 109.25m ATD
Archaeological remains	**Dating Evidence, Finds, and Samples**
Organic wetland clay layer [14] with very occasional anthropogenic material, including animal bone fragments and Mortar fragments. Highest surviving point at 109.05m ATD (9.05m OD, 0.95m bGL). Overlies natural brickearth and overlain by [13].	Undated. Assumed to be Roman in period from observation in other evaluation trenches (Trench 5 and 6). CBM fragments (Roman?) Monolith and bulk samples (20 litres) (Bulk sample No. {9} and Monolith {7}) from context [14] in the south-east section.
Dark brown organic silty clay layer [13]. Highest surviving point at 109.27m ATD (9.27m OD, 0.73m bGL).	Undated – no dating evidence, assumed to be late Roman or early medieval Monolith and bulk samples (20 litres) (Bulk sample No. {6} and Monolith {7}) from context [13] in the south-east section.
Cut of small trench [18] truncating layers [13] and [14] and natural layer [15]. Highest surviving point 109.25m ATD (9.25m OD, 0.75m bGL).	
Clay fill [17] of small trench [18]. Sealed by modern overburden.	Undated – no dating evidence, assumed to be medieval or post-medieval.
Interpretation and summary	
The gravely brickearth layer [15] could potentially be re-deposited given its position immediately below layer [14]. The absence of any man-made material does not support or disprove this. The cleaner brickearth layer [16] can confidently be identified as natural. Layer [14] is likely to be Roman in date, and is comparable with layer [10] from Trench 5 and layer [3] from Trench 6 (see C257 ARCHAEOLOGY CENTRAL Interim Statement Archaeological Evaluation (C136 Moorgate Shaft) 91 to 109 Moorgate - XSP10, Document No. C257-MLA-X-RGN-CRG02-50028) both of which produced Roman pottery. This layer can be interpreted as either a dumping or levelling layer, or as a proto-marsh deposit within which Roman finds accumulated. The geo-archaeological samples should help to refine this interpretation. Layer [13] is almost certainly representative of the formation of the marsh in this area and is, therefore, likely to be late Roman or medieval in date. The small pit [18] in the south-western corner is currently undated. It could be modern as it is immediately below the concrete in the sequence and cuts layers [13] and [14]. However no modern remains were found in the fill and as such it may also be of medieval or post-medieval date.	

3.2 Trench 5

Photo 2 Trench 5 looking west. Section showing natural gravelly brickearth overlain by clay and marsh deposits

Trench 5 (see Fig 1)	
Location	91 to 109 Moorgate (in the west of the basement)
Dimensions	2.80m north-west to south-east and 3.10m north-east to south-west x 1.20 to 1.60m deep
Centre of test trench: London Survey grid co-ordinates	83064/36317
OS grid co-ordinates:	
Modern Ground Level/top of the slab	110.00m ATD (10.00m OD)
Modern subsurface deposits	None
Level of base of archaeological deposits observed and/or base of trench	Base of archaeology: 108.83m ATD (8.83m OD,1.17m bGL) Base of trench: 108.45m ATD (8.45m OD)
Natural observed	Gravely brickearth [11] at 108.81m ATD (8.81m OD, 1.19m bGL), overlaying natural brickearth layer [12] at 108.45m ATD (8.45m OD, 1.55m bGL) Natural gravel not seen.
Extent of modern truncation	110.00m to 109.25m ATD
Archaeological remains	**Dating Evidence, Finds, and Samples**
Organic wetland clay layer [10] with very occasional anthropogenic material, including animal bone fragments and mortar fragments. Highest surviving point at 108.99m ATD (8.99m OD, 1.01m bGL). Overlaying natural [11] and overlain by [9].	3 sherds of pot – Provisionally dated to Roman CBM fragments (Roman?) Monolith and bulk samples (20 litres) (Bulk sample No. {10} and Monolith {8}) from context [10] in the eastern section.
Dark brown organic silty clay layer [9]. Highest surviving point at 109.35m ATD (9.35m OD, 0.65m bGL). Overlaying [10] and sealed by modern overburden.	Undated – no dating evidence, assumed to be late Roman or early medieval Monolith and bulk samples (20 litres) (Bulk sample No. {5} and Monolith {8}) from context [9] in the eastern section.
Interpretation and summary	

The gravelly brickearth layer [11] could potentially be re-deposited given its position immediately below layer [10]. However the absence of any man made material does not support or disprove this. The cleaner Brickearth layer [12] can confidently be identified as natural.

Layer [10] is likely to be Roman in date as it contained Roman pottery and other evidence of Roman activity such as CBM. This layer can be interpreted as either a dumping or levelling layer, or as a proto-marsh deposit within which Roman finds accumulated. The geo-archaeological samples may be able to refine this interpretation.

Layer [9] is almost certainly representative of the formation of the marsh in this area and is likely to be late Roman or Medieval in date.

3.3 Borehole results:

Borehole 01					
Location				Basement of 91-109 Moorgate	
Dimensions				Excavation monitored to 2.95m bGL	
OS National grid coordinates				532716/181622	
LSG grid coordinates				83065/ 36314	
Modern Ground Level/top of the slab				110.00m ATD (10.00m OD)	
Modern subsurface deposits				Excavated to 2.95m bGL	
Level of base of archaeological deposits observed				108.50m ATD (8.50m OD)	
Natural observed				Sandy gravel	
Truncated/not truncated?				Not truncated at 1.50m bGL (108.50m ATD (8.50m OD))	
Extent of modern truncation				Concrete slab 600mm thick (9.40m OD)	
Top (m bGL)	**Base (m bGL)**	**Top (m OD)**	**Base (m OD)**	**Description**	**Interpretation**
0.00	0.60	10.00	9.40	Reinforced concrete slab	Basement slab
0.60	1.05	9.40	8.95	Soft mid purplish grey silty clay	Marsh deposit
1.05	1.50	8.95	8.50	Dirty clay silt, occasional small CBM & charcoal fragments.	Redeposited brickearth
1.50	1.95	8.50	8.05	Mixed clayey gravel, small-mid sub-rounded pebbles. No anthropogenic signs or inclusions.	Natural brick earth
1.95	2.45	8.05	7.55	Sandy gravel	Natural terrace gravel
2.45	2.95	7.55	7.05	Coarse sandy gravel	Natural terrace gravel

Photo 3 Borehole 1. Looking east. During drilling

Borehole 02					
Location				91-109 Moorgate	
Dimensions				Borehole excavation monitored to 2.4m bGL	
OS National grid coordinates				532704/ 181622	
LSG grid coordinates				83053 / 36315	
Modern Ground Level/top of the slab				110.00m ATD (10.00m OD)	
Modern subsurface deposits				Truncated to 2.5m bGL	
Level of base of archaeological deposits observed				No archaeological remains observed	
Natural observed				Sandy gravel at 107.60m ATD (7.60m OD)	
Truncated/not truncated?				Truncated by void and modern made ground	
Extent of modern truncation				2.4m bGL into natural terrace gravels	
Top (m)	**Base (m)**	**Top (m OD)**	**Base (m OD)**	**Description**	**Interpretation**
0.00	2.40	10.00	7.60	Void approx 0.8m deep and 1.6m of rubble backfill	Void and made ground for lift shaft.
2.40	2.60	7.60	7.40	Sandy gravel	Natural terrace gravels

Borehole 03					
Location				91-109 Moorgate	
Dimensions				Borehole excavation monitored to 2.4m bGL	
OS National grid coordinates				532710/181639	
LSG grid coordinates				83060/36331	
Modern Ground Level/top of the slab				110.30m ATD (10.30m OD)	
Modern subsurface deposits				Concrete slab over modern made ground	
Level of base of archaeological deposits observed				108.50m ATD (8.50m OD)	
Natural observed				Natural brickearth at 108.30m ATD (8.30m OD) and Sandy gravel at 107.90m ATD (7.90m OD)	
Truncated/not truncated?				Not truncated at 2m bGL (108.30m ATD (8.30m OD))	
Extent of modern truncation				Concrete slab 600mm thick (9.40m OD)	
Top (m)	**Base (m)**	**Top (m OD)**	**Base (m OD)**	**Description**	**Interpretation**
0.00	1.40	10.30	8.90	Reinforced concrete slab.	Basement slab
1.4	2.00	8.90	8.30	Firm light brown very slightly sandy clay. Rare lenses of slightly greyer clay. Occasional small bi-valve, sub rounded pebbles, charcoal and CBM flecks.	Re-deposited brickearth
2.00	2.4	8.30	7.90	Slightly laminated firm greyish brown sandy clay. Sterile with moderate-frequent sub angular pebbles.	Natural brickearth
2.4	LOE	7.90	7.90	Sandy gravel. Occasional sub rounded pebbles.	Natural terrace gravel

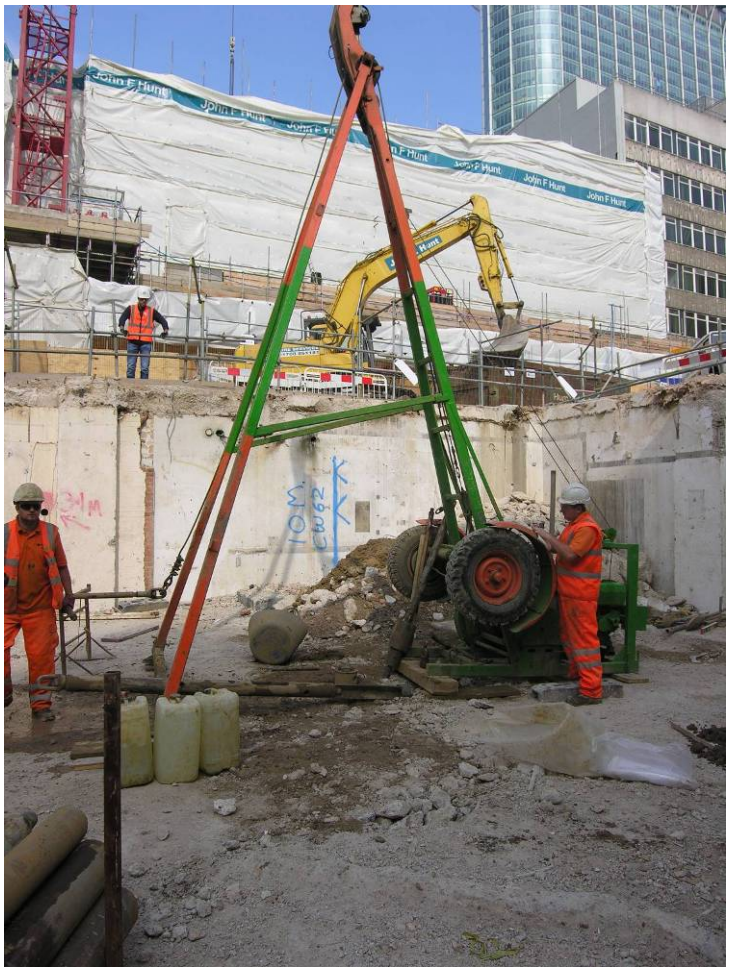


Photo 4 Looking north-west. Borehole 3 during drilling

4 Significance of Results (provisional)

4.1 Summary of Fieldwork Results

- Concrete basement slab was 0.6 to 0.8m thick (minimum/maximum)
- Modern truncation was a minimum of 0.6m deep from the floor level (110.00-110.30m ATD (10.00–10.30m OD) but in places extended into the natural (1.30–1.40m bGL). This was particularly true of the northern sector of the site where deep truncations were so numerous that the proposed Trench 1 could not be opened in this area.
- Natural Langley silt complex brickearth was exposed at 108.87m ATD in Trench 4 and 108.81m ATD in Trench 5.
- The trenches have shown that Roman and medieval deposits survive beneath the basement of 91 to 109 Moorgate.
- Archaeological remains overlaying the natural brickearth included a seasonally or permanently waterlogged clay layer which might represent a soil horizon prior to the establishment of the marsh. It is this wetland environment that the Romans would have tried to control, however, no evidence of Roman wetland management such as drainage ditches or consolidation dumps was found in either of the evaluation trenches, unlike in Trench 6 where some evidence of possible Roman period dumping was revealed.

- Above this layer, the dark brown heavily organic silty clay is almost certainly the late Roman and/or early medieval Moorfields Marsh.
- Monolith and bulk samples have been taken from four deposits ([14] and [13] from Trench 4 and [10] and [9] from Trench 5). Analysis of pollen, molluscs, diatoms and plant macro fossils within monolith and bulk samples taken from the probable marsh contexts will potentially provide further detail about the local environment and ground conditions.

4.2 Importance of Resources

The archaeological remains identified in the fieldwork are provisionally assessed as being of low importance. However, they suggest the potential survival of Roman and medieval deposits in localised parts of this basement area, between the deeper intrusions.

4.3 *Provisional* Assessment of Results against Aims and Objectives

There was little or no evidence in this limited area for assessing the Roman extra-mural activities in this area. The presence of a small number of Roman pottery sherds in the layers immediately above the natural brickearth are not necessarily indicative of any actual Roman activities in the immediate area.

Contexts [9] and [10], and [13] and [14] are most likely evidence of the medieval Moorfields Marsh as they appear to be highly organic water-lain deposits.

Late medieval and post-medieval drainage ditches, rubbish dumps and remains associated with the reclamation of Moorfields Marsh have presumably been truncated, if they were ever originally present. The trenches also confirm that no post-medieval deposits survive in this immediate area.

4.4 *Provisional* conclusions for future work

- A thickness of 0.44–0.9m of archaeology survived in 6 out of 7 areas investigated. An additional 0.12–0.45m of underlying brickearth deposits may be natural geology or possibly archaeological horizons.
- Comparison of natural brick earth levels from other sites in the area may reveal the extent of past truncation of the natural ground, thus contribute to mitigation designs.
- Future assessment of samples has potential to inform interpretation of the possible Marsh deposits and provide further detail about the local environment and ground conditions.
- No structures, burials, or other direct evidence of activity was found, but the archaeology does include Moorfields Marsh deposits.
- The Principal Contractor's work to open the trenches resulted in a further one trench location being abandoned due to truncation by deep concrete foundations.
- The evaluation has mostly confined to the south half of the basement, but survival appears to be better there than to the north.

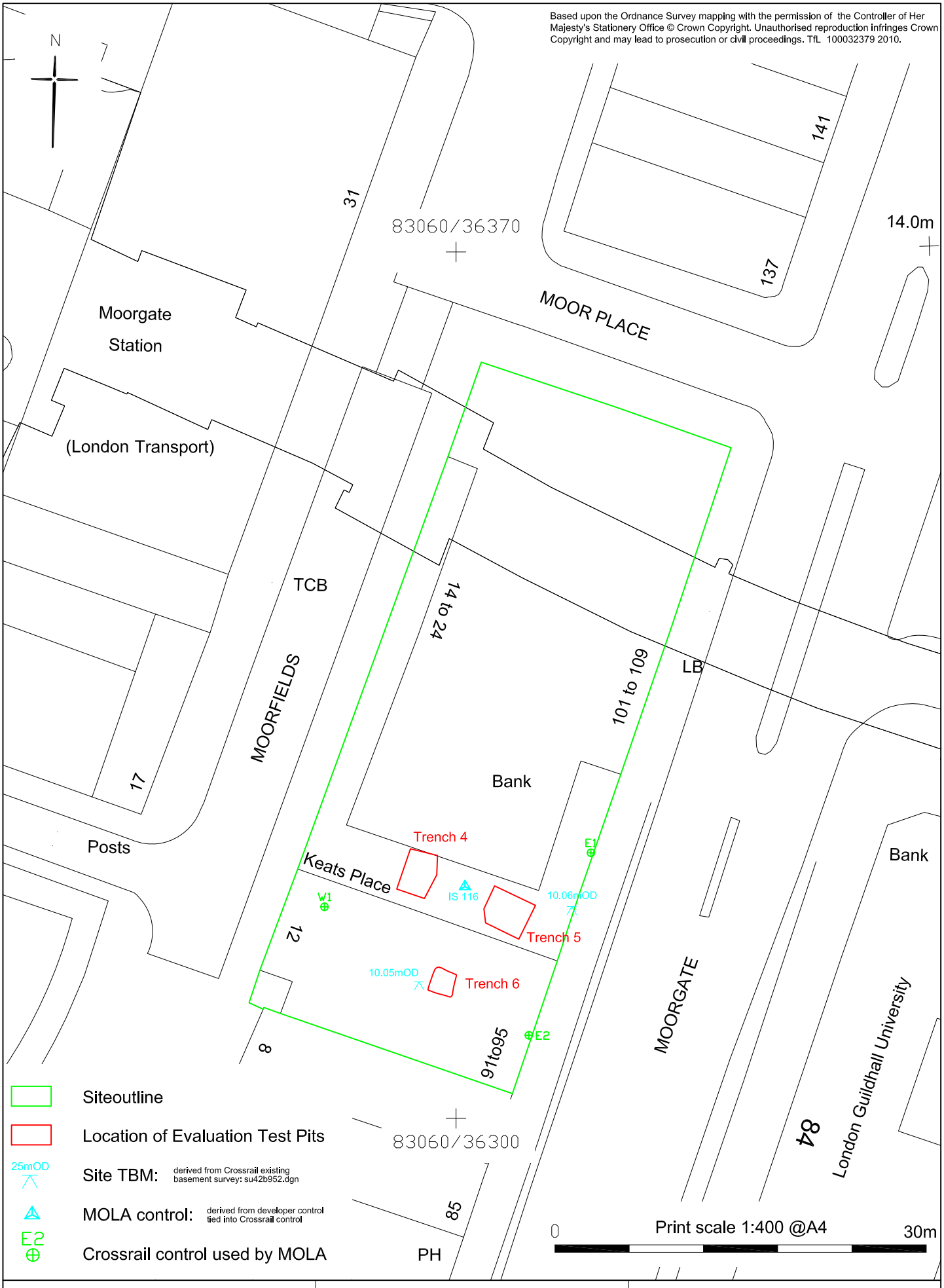
5 Future Deliverables

The remaining deliverables for the site, and their delivery dates as specified by *Crossrail, Archaeology, Specification for Evaluation & Mitigation (including Watching Brief, Doc. No. CR-PN-LWS-EN-SP-00001*, v. 0.3, 26.06.09), are:

- A further Survey Report, Fieldwork/Oasis Report, and Summary reports will be delivered.

6 Annex 1 – Trench Location Plan and Section

Fig 1 Location of Evaluation Test Trenches and Boreholes



Event code / Site code:	Site Address:	Type of fieldwork:
XSP10: FIG 1	Crossrail: Moorgate Shaft 91-109 Moorgate, London, EC2M 6SL	Evaluation Test Pits