






CENTRAL SECTION PROJECT
Interim Statement
Archaeological Excavation
Broadgate Ticket Hall, Utilities Corridor Pile
Line, Pit 4 (XSM10)

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1 Introduction

This Interim Report covers archaeological investigations carried out at the location of the Broadgate Ticket Hall, Liverpool Street, by C257 Museum of London Archaeology (MOLA). It covers only Pit 4 of the utilities corridor northern pile line (which will also form the southern pile line of the future Crossrail ticket hall), and does not include the future evaluation of Trial Trench 14, the general watching brief on Trial Trench 15, nor the general watching brief on the utilities corridor northern pile line.

All fieldwork was conducted between 13/10/11 to 26/10/11 and supervised by Robert Hartle (MOLA Supervisor), and included:

- Limited excavation (to the base of the cemetery horizon) in Pit 4, along the utilities corridor northern pile line.

The excavation was filmed by Channel 4's *Time Team* on the 22nd October 2011 and will be included in a programme to be broadcast in 2012.

This document is an Interim Statement of the results of the completion of the above fieldwork at the Broadgate Ticket Hall site. More extensive background, results, and conclusions will be included the Fieldwork Report which will be submitted within six weeks of the final end of fieldwork, including Trenches 14 and 15 (Crossrail, *Archaeology, Specification for Evaluation & Mitigation (including Watching Brief, Doc No. CR-PN-LWS-EN-SP-00001, v. 0.3, 26.06.09)*).

The event code (sitecode) is XSM10.

All levels in this document are quoted in metres Above Tunnel Datum (m ATD). To convert Tunnel Datum to Ordnance Datum subtract 100m, ie 1m OD = 101m ATD.

The fieldwork was carried out in accordance with:

- A Crossrail **Site-specific Written Scheme of Investigation** (SS-WSI): Liverpool Street Station, Site-specific Written Scheme of Investigation, Doc. No. C138-MMD-T1-RST-C101-00001 Version 2, 29.04.10,
- The **addendum to the SS-WSI**, Doc. No. C138-MMD-T1-RST-C101-00004, Revision 1.0, August 2010.
- An **Archaeological Method Statement**: MOLA, *C257 Central Method Statement Archaeological Watching Brief, Evaluation, and Sample Excavation Broadgate Ticket Hall (XSM10)*, Doc No: C257-MLA-X-RGN-CRG02-50046, Revision 2, 16/09/11.

2 Site Methodology and fieldwork objectives

2.1 General Methodology

All archaeological excavation and recording during the sample excavation was carried out in accordance with the Crossrail WSI, the MOLA *Method Statement* (Revision 2 16/09/11) and the *Archaeological Site Manual* (MoL 1994). The site finds and records can be found under the site code XSM10 in the MOLA archive. They will be stored there pending a future decision over the longer-term archive deposition and public access process for the wider Crossrail scheme.

2.2 Excavation methodology

One pit was excavated between existing known utilities on the south pavement line in Liverpool Street. Modern overburden was removed by the Principal Contractor (groundworks subcontractor Galldris for C503 VCUK), using a combination of machine and hand excavation, down to first significant archaeological deposit under supervision of MOLA Senior Archaeologist Robert Hartle. All archaeology, including stratified *in situ* burials, was then hand excavated and recorded by MOLA. Archaeological excavation ceased at the base of the cemetery horizon, after which TCS took possession of the pit in order to remove any remaining disarticulated human bone from within the backfill of modern intrusions (services). Any disarticulated human bone recovered during excavation of Pit 4 was retained and passed to exhumation contractor (TCS) for removal and reburial.

A written, drawn and photographic record of all archaeological deposits encountered was made in accordance with the principles set out in the Museum of London site recording manual (MoL 1994) and will be represented in the Fieldwork Report.

The location of the pit was recorded by MOLA Geomatics by optical survey. The survey utilised Crossrail London Survey Grid control stations, which were then tied into the Ordnance Survey National Grid (See 2.2).

2.3 Fieldwork Objectives

The overall objectives of the investigation were to establish the nature, extent and state of preservation of any surviving archaeological remains that will be impacted upon by the development. These are defined in the SS-WSI and are reproduced below.

Objectives for Pit 4 were determined by the limited depth of investigation. Therefore, the specific general aims of this investigation at the Liverpool Street (Broadgate Ticket Hall) worksite were to identify and record:

- The surface of the consolidation and make up deposits representing reclamation of the former Moorgate marsh.
- Post-medieval burials, or cemetery features, within the known burial ground (BG208) that lies beneath the carriageway of Liverpool Street in the Broadgate Ticket Hall area;
- Post-medieval rubbish dumps and remains associated with the urbanisation of the area [including 18th/early 19th-century structures/buildings].

3 Provisional Results

See Figure 1 for trench location



Photo 1: Post-medieval brick wall [817] (right) cutting in situ burials (looking east).

Pit 4	
Location	On the south side of Liverpool Street, over the roadway and pavement, and immediately east of Trench 1.
Dimensions	2m wide (north to south) x 6m long (east to west) x 2.66m deep.
London Survey grid coordinates	83383 36287

OS National grid coordinates	533034 181602
Modern Ground Level	Road surface at 112.32m ATD
Modern subsurface deposits	Road surface 100mm thick, over concrete 500mm thick, above crushed concrete and other modern material 500mm thick.
Level of base of archaeological deposits observed and/or base of trench	Limit of excavation: 109.66m ATD
Natural observed	Not reached.
Extent of modern truncation/overburden	Approximately 1m to >3m deep
Archaeological remains	Dating Evidence, Finds, and Samples
[851] - Grey brown clay silt moderate charcoal flecks, occasional CBM fragments, small stones and oyster shell. 109.83m ATD	No finds
[833] - Light grey brown sandy silt, containing frequent building material fragments (brick and tile), chalk fragments, oyster shells, and mortar and charcoal flecks. 110.43m ATD	No finds
[733] - cemetery soil cut by burials. Contained significant amounts of residual disarticulated human bone. 110.88m ATD.	Pottery – residual Roman to post-medieval Peg tile, floor tile and glazed tile Glass Worked animal bone
Sixty articulated burials, mostly with coffins, were identified and recorded cut into layer [733]. Between 110.88 and 109.46m ATD.	No datable finds associated with any of the burials. Dated to within the use of the cemetery (1568 to c 1730).
[732] – Brown grey clay silt with occasional brick and tile fragments, and moderate disarticulated human bone. 111.14m ATD	Worked animal bone
[817] - Red brick wall. Truncated to a depth of 110.55m ATD. Construction cut [818] and backfill [850].	Post-medieval. Brick sample taken
Interpretation and summary	
<p>Layer [851] may represent a gradually accumulated marsh layer, approximately medieval to early post-medieval, or perhaps dumping. Layer [833] is probably part of a layer which seems to have been deliberately laid down across the whole site to create stable ground for the establishment of the cemetery (as seen in previous trenches). It is possible that [851] may also be part of this event.</p> <p>The cemetery horizon [733] contained 60 articulated burials. Unfortunately,</p>	

identifying individual grave cuts and fills was impossible until lower in the sequence, where they cut the pre-cemetery layers [833] and [851]. However, the basic sequence of burial was discernable, with burials arranged in parallel rows and in vertical stacks, albeit with frequent intercutting and re-positioning of burials (see Photo 1 (above) and Photo 2 (below)).

The cemetery was truncated by a brick wall [817] (see Photo 1). This wall is certainly post-cemetery, as it truncates the burials, but is itself heavily truncated by a modern utility trench. Thus, the date of this wall remains unclear, and it could date to as late as the 19th century. Analysis of brick samples may help with dating.



Photo 2: Truncated, intercutting and overlapping burials [801], [803] and [805] (looking north).

4 Summary and conclusions (*provisional*)

4.1 Summary of Fieldwork Results

As previously seen in evaluation trenches, earlier, lower deposits (beyond the limit of excavation at the base of the trench) were sealed by one final rapidly-deposited reclamation dump [833], which included large amounts of rubbish and building material waste. This layer was a deliberately laid down to create higher and stable ground surface for the establishment of the cemetery in 1568/69. However, it is possible that underlying layer [851] (excavated stopped at the surface of this layer) may also belong to this event. Alternatively, this layer could represent a gradually accumulated marsh layer, approximately medieval to early post-medieval, or perhaps unrelated dumping of the same period.

Within the burial ground, a total of 60 *in situ* post-medieval burials were excavated and recorded (see Photo 1 and Photo 2). The majority of burials appeared to have been in coffins, arranged in distinct rows and stacks, albeit with frequent intercutting. Coffin survival ranged from poor to moderate. The majority of coffins appear to have been of plain wood, and were the standard 'kite' shape (widest around the shoulder area and tapering to both head and feet). Several of the coffins had traces of coffin furniture, including coffin plates. While the remains were sufficient to acknowledge the presence of these features, nearly all were too badly corroded and fragmented to offer any further information. Unfortunately, all the coffin plate remains were too badly decayed and fragmented to distinguish any writing. Intercutting left many skeletons badly truncated, and excavation has shown that displaced bone and coffin fragments were reburied in the backfill of new graves.

The top of the cemetery appears to be a horizon of disturbance, perhaps from the time the cemetery was abandoned as a place of burial, overlain by a thin layer of re-deposited cemetery soil and/or dumping [732], which may represent levelling and consolidation to facilitate subsequent building. Beneath this layer, many of the highest burials have been truncated and the layer itself contained moderate amounts of disarticulated human bone.

This post-cemetery layer and the cemetery soil within grave fills also contained worked animal bone and ivory waste, as well as the glass slag waste. This indicates that the site had become a place for dumping rubbish even before the burial ground closed. The post-medieval bone-working waste is of particular interest and offers a rare chance to investigate post-medieval bone-working technology, as well as providing more general insights into the economy of the area in the 18th-century.

Finally, one red brick wall [817] cut the cemetery and truncated several burials. However, extensive modern truncation had left it badly fragmented and its position in the stratigraphic sequence unclear. For example, it was impossible to determine its relationship with the post-cemetery layer [732] as [817] had been truncated too deeply. This structure could correspond to several buildings seen on 17th to 19th-century maps and plans of the area. However, it is also possible that rather than being a truncated older post-medieval wall, it was a retaining structure associated with the utilities, therefore, within the utility trench and not cut by it. Hopefully, analysis of brick samples will allow more precise dating.

4.2 *Provisional conclusions for future work*

- This pit has clarified a line of significant deep modern truncation along and beneath the southern curb line of the Liverpool Street, which cuts to, and beyond, the base of the cemetery. Truncation by this modern trench accounted for 35 to 40% of the area within Pit 4 along the south side of the pit. Similar truncation may be expected along the entire northern pile line, as this modern trench appears to continue to run parallel east and west in the same position relative to the curb line.
- The excavation of Pit 4 adds to the data from the evaluation. This excavation and future excavation within the cemetery, followed by osteological analysis, will provide a valuable contribution to our knowledge of a population who lived at this time of great change. Early 16th to 18th-century burials such as these are a hitherto archaeologically underrepresented subject, and this investigation and further excavation will help further our knowledge and understanding of society and burial during a time when the City and population was greatly expanding. Valuable comparisons are likely to be drawn with contemporary assemblages in London and nationwide. The association with the Hospital of St Mary Bethlehem (Bedlam) also gives this site an unusual and much broader social significance. In addition, when combined with results from the evaluation phase, analysis of the burials within Pit 4 will contribute to our understanding of burial practices within this cemetery, for example the positioning of burials, zoning and general cemetery management. Lastly, while the preservation of coffins and coffin furniture within Pit 4 was generally poor, there were occasional examples of moderate preservation, which could also offer insights into the burial customs of the period.
- Worked animal bone waste, as well as the glass slag waste, was again found within the cemetery and the overlaying post-cemetery layer. This has increased an already unusually large and perhaps unique post-medieval finds assemblage. Further excavation would certainly allow additional important contributions.
- The Project Archaeologist will produce recommendations for further work and refine the mitigation strategy for Crossrail works at Liverpool Street.

5 Future Deliverables

Imminent deliverables for this 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:

- **Survey Report:** 2 weeks after completion of fieldwork

The delivery dates for the remaining deliverables for this site will be triggered by the completion of the remaining fieldwork, in particular Trenches 14 and 15, and include:






- **Fieldwork Report** (including OASIS Summary Sheet): 6 weeks after completion of fieldwork
- **Summary Report:** 8 weeks after completion of fieldwork



Annex 1: Figures



Figure 1 Location of archaeological investigations

-  site outline
-  Pit 4
-  previous evaluation trenches (Feb-July 2011)
-  TBMs
-  Crossrail derived control

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