



C257 ARCHAEOLOGY CENTRAL
Fieldwork Report
Archaeological Evaluation, Farringdon
Eastern Ticket Hall (XSF10)

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Non technical summary

This report presents the results of an archaeological field evaluation carried out by the Museum of London Archaeology (MOLA) on the site of Farringdon Eastern Ticket Hall, London EC1, in the City of London. The report was commissioned from MOLA by Crossrail Ltd. This work is being undertaken as part of a wider programme of assessment to quantify the archaeological implications of railway development proposals along the Crossrail route.

The worksite at Farringdon Eastern Ticket Hall (under Crossrail contract C257 Archaeology Central) consists of the footprint of the recently demolished buildings within the block fronting the eastern end of Smithfield Market. Seven evaluation trenches were excavated.

Natural geology across the site (a mixture of river terrace gravels and London Clay), varied in composition but was generally encountered at consistent levels beneath ground level. The earliest archaeological features survived in the deeper double basements backing onto Long Lane. Here natural gravels were recorded immediately beneath the basement slab, cut by a probable Roman quarry pit, implying a low level of activity in this extra-mural area at the time.

Later activity on site is concentrated around the basements of 8–9 Hayne Street, and 10 Hayne Street (with two additional intercutting refuse pits located in 3 Lindsay street), where deeper stratigraphic sequences survive due to the lower degree of truncation from the basements. A large cut feature or ditch located across Trenches 2 & 3 displayed evidence for a series of timber structures, probably a revetment or fence, along its southern edge. A potentially associated ditch sharing the same east–west alignment was recorded at a similar depth in Trench 1, approximately 5 metres to the north. These features are potentially associated with a deeply cut series of waterlain deposits found in Trench 2, within which a quantity of well-preserved medieval leather was recovered, consisting of a variety of every day items, including a belt, trousers and scabbard. Interpretation of these deposits is difficult from the limited areas seen in the trial trenches, but they appear to represent the channel of the medieval and later Faggesswell Brook, and/or an associated area of marshy ground and a pond. These features appear to have gone out of use by the mid 17th century.

Other remains relating to expansion of the city in the 16th to 17th-centuries include three rubbish pits, a brick soakaway, and land reclamation over the water features.

Later post-medieval remains include an 18th or 19th-century brick drain, a 19th-century wall, and also a basement and associated coal chute backfilled sometime during 1930s.

It is concluded that the site has a high potential for medieval/early post-medieval remains in the form of ditches and an associated watercourse channel (including environmental and geoarchaeological data). It also has a moderate potential for Roman pits and associated activity, and for post-medieval remains representing reclamation/ levelling for the subsequent construction, and urban development from the 17th to 20th centuries.

The results from Farringdon eastern Ticket Hall evaluation are assessed as being of moderate importance, and will be used by the Crossrail design archaeologist to revise and finalise the mitigation strategy for the site.



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1 Introduction

Crossrail is a new Cross-London Rail Link project which will provide transport routes across the south-east of England and London. The route will link Maidenhead and Heathrow in the west with Shenfield in the north-east and Abbey Wood in the south-east. In central London, from Royal Oak in the west to Pudding Mill Lane and Royal Victoria Dock in the east, Crossrail will consist of a tunnelled section with seven new stations linked to the existing transport network.

The new Crossrail Farringdon station will be constructed between Farringdon Road and Lindsey Street. Two new ticket halls will be constructed one at Farringdon Road, to the west (Western Ticket Hall, to be built by Thameslink), and one at Lindsey Street to the east (Eastern Ticket Hall, to be built by Crossrail). This report is concerned only with works which form part of the Eastern Ticket Hall.

The Crossrail mitigation response to archaeology is described in the Crossrail Generic WSI (Crossrail 2009) and the detailed desk based assessment (DDBA; Crossrail 2008), and can be summarised as follows:

- In the event that intact and important archaeological remains are identified at Crossrail worksites through this process, it may be preferable, where practicable, to preserve these where they are found (ie preservation in situ).
- However, because of the nature of major works projects such as Crossrail, experience of other similar projects suggests that preservation by record is usually the most appropriate method of dealing with archaeological finds.
- Following an extensive Environmental Impact Assessment (EIA) supporting the Crossrail Bill, and the production of site-specific DDBAs, appropriate mitigation measures were scoped and specified in detail in individual project designs (site-specific WSIs – Written Schemes of Investigation) which were prepared in accordance with the principles set out in the Generic WSI, and developed in consultation with the relevant statutory authorities.
- Archaeological information that is gained from fieldwork will be followed by analysis and publication of the results and will be transferred to an approved public receiving body.

This fieldwork report describes the results of an archaeological evaluation carried out at Crossrail Eastern Ticket Hall worksite by Museum of London Archaeology (MOLA) under Crossrail contract C257 Archaeology Central.

The Farringdon worksite is located to the south west of Barbican Underground station (Figure 1). The approximate centre of the evaluation site is at OS National Grid Reference 531950 181810.

The site is bordered by Hayne Street to the east, Long Lane to the south, Lindsey street to the west, and the Metropolitan line Underground platforms to the north.

All fieldwork was conducted, as instructed by Crossrail by Framework design consultant (FDC) notifications, between 21/07/11 and 13/09/11, supervised by Sam Pfizenmaier.

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.

Table 1 Site details



Task	Principal Contractor	Provisional Programme
<ul style="list-style-type: none">• Trial Trench Evaluation at 20–23 Long Lane, 2 Lindsey Street and 8–10 Hayne Street. Seven trenches (T1 to T7)	C430 Laing O'Rourke / Strabag jv	Started 21 July 2011, Completed 13 September 2011

The event code (sitecode) is XSF10.

2 Planning background

The legislative and planning framework in which all archaeological work took place was summarised in the Site Specific Written Scheme of Investigation and addendum – C138-MMD-T1-RST-C101-00001, which should be referred to for further detail. ; A brief summary is included here:

The overall framework within which archaeological work will be undertaken is set out in the Environmental Minimum Requirements (EMR) for Crossrail (<http://www.crossrail.co.uk/therailway/getting-approval/parliamentary-bill/environmental-minimum-requirements-includingcrossrail-construction-code>). The requirements being progressed follow the principles of Planning Policy Guidance Note 16 on archaeology and planning (1990). Accordingly the nominated undertaker or any contractors will be required to implement certain control measures in relation to archaeology before construction work begins.

Schedules 9, 10 and 15 of the Crossrail Bill (2005) concern matters relating to archaeology and the built heritage and allows the dis-application by Crossrail of various planning and legislative provisions including those related to listed building status, conservation areas and scheduled ancient monuments (Schedule 9). Schedule 10 allows certain rights of entry to English Heritage given that Schedule 9 effectively dis-applied their existing rights to the Cross Rail project, and Schedule 15 allows Cross Rail to bypass any ecclesiastical or other existing legislation relating to burial grounds.

Notwithstanding these disapplications, it is intended that agreements setting out the detail of the works and requiring relevant consultations and approvals of detail and of mitigation arrangements will be entered into by the nominated undertaker with the relevant local planning authorities and English Heritage in relation to listed buildings and with the Department of Culture, Media and Sport (DCMS) and English Heritage in relation to Scheduled Ancient Monuments (SAMs).

3 Origin and scope of the report

This report has been commissioned from Museum of London Archaeology (MOLA) by Crossrail Ltd. The report has been prepared within the terms of the relevant standard specified by the Institute for Archaeologists (IFA, 2001). It considers the



significance of the fieldwork results (in local, regional or national terms) and makes appropriate recommendations for any further action, commensurate with the results.

This report will be made available from The London Archaeological Archive and Research Centre (LAARC) in due course.

4 Previous work relevant to archaeology of site

The principal previous Crossrail studies are as follows:

- Crossrail, February 2005a *Environmental Statement*
- Crossrail, February 2005b *Assessment of Archaeology Impacts, Technical Report. Part 2 of 6, Central Route Section, 1E0318-C1E00-00001*, [Specialist Technical Report (STR)]
- Crossrail, 2008, MDC – Work Package 3, Archaeology Detailed Desk Based Assessment, Farringdon Station, Doc. No.: CR-SD-FAR-EN-SR-00001 (DDBA)
- Crossrail SS-WSI - *Farringdon Station, Site-specific Written Scheme of Investigation, Crossrail November 2009, Doc. No. CR-SD-FAR-EN-SY-0001 Version 6.0*
- An Addendum to the WSI: Package C136 – *Farringdon Station, Addendum to Written Scheme of Investigation: Trial Trench Evaluation, Watching Brief & Detailed Excavation – Eastern Ticket Hall (XSF10), Doc. No. C136-SWN-T1-XAP-M123_WS098-00001 Revision 1.0, 12.10.10*

The above cited reports are all available from the London Archaeological Archive and research Centre (LAARC).

5 Geology and topography of site

The drift geology consists of Pleistocene river terrace gravels (Hackney Sands and Gravels) shaped by erosion caused by glacial meltwater following the last ice age. The archaeological potential of the terrace Gravel deposits is considered to be very low. These overly London Clay, a grey sticky deposit found across London dating to around 50 million years before present.

The topography of the West Smithfield area is dominated by the former River Fleet, the main channel approximating to the line of Farringdon Street and Farringdon Road. The Fleet is the largest of London's lost rivers (Barton 1992), now confined to a sewer beneath Farringdon Street and New Bridge Street. The steep east bank of the Fleet is still in evidence today, falling from 16.50m OD (16.50m ATD) in West Smithfield to 7.90m OD (107.9m ATD) in Farringdon Street.

Tributaries flowing from east–west were also present in the area. The site roughly corresponds with the northern channel edge of one of these tributaries, lying on the margins of the Fleet Valley. It has been suggested that the Faggesswell Brook flowed east–west somewhere between Cowcross Street and Charterhouse Street. A reconstruction map of Roman London by MOLA (2011, *Londinium*) also suggests that this may have flowed across the evaluation site.

5.1 Archaeological and Historical Background

The following is a brief summary of the background to the site, see the DDBA (Crossrail 2008) for further detail.

The site is situated approximately 340m to the north of the line of the Roman and medieval city wall. The evaluation site appears to have been outside the nearest known Roman burial ground, which lay more than 100m to the south. The nature of Roman activities in this extra-mural area has not yet been determined, but would appear to have been at a low intensity.

A market for horses and other livestock is first mentioned in the Smithfield area in 1173. The field was also the site of the annual Bartholomew Fair from 1123–1855 and was used for tournaments.

It is possible that part of the outer cemetery of Charterhouse (a Carthusian monastery founded in 1370, and closed in 1537) extended as far south as the northern half of the evaluation site (Crossrail EIA BG207). It is understood that victims of the Black Death (1349–50) were buried in mass graves in the Charterhouse Square area, but the exact extent of these mass graves is uncertain. A single undated skeleton, assumed to be from this burial ground, was excavated by MoLAS within the gardens of Charterhouse Square in 1998 (sitecode CSQ98).

John Stow in c 1600 stated that more 150,000 victims of the Black Death were buried here. According to Stow, initially there was a burial ground here known as 'No Man's Land' which the Bishop of London Ralph Stratford had established in 1348, which was subsequently used to bury over 50,000 victims of the Black Death. This mass burial ground was served by a mortuary chapel built in 1481, which by Stow's time had been converted into a house.



On the Agas map of c 1570, the general vicinity of the site is shown as an area of suburban housing and gardens, flanked by Smithfield livestock market to the south and the remains of Charterhouse to the north. Historic mapping generally shows that the majority of the site was probably undeveloped until the 17th century.

Construction of the Metropolitan Line railway by 1873 dramatically altered the street layout and buildings between Long Lane and Charterhouse Lane (now Charterhouse Street) with Lindsey Street and Hayne Street both being created at that time. It is likely that all of the pre-19th-century buildings on the site were demolished at that time.

6 Research objectives and aims

6.1 Objectives of the fieldwork

The objectives of the archaeological investigations, as stated in the addendum to the WSI (Crossrail 2010), are set out below.

The overall objectives of the investigation are to establish the nature, extent and state of preservation of any surviving archaeological remains that will be impacted upon by the development.

The task-specific aims and objectives from the Addendum to the WSI (Doc. No. C136-SWN-T1-XAP-M123_WS098-00001, see section 1) are:

1. Trial Trench Evaluation will refine the extent and significance of the archaeological resource and inform further mitigation measures.
2. Mitigation in the form of archaeological excavation to excavate and record archaeological deposits for analysis and dissemination [excavation as mitigation does not form part of this method statement] .

Specifically, the archaeological investigations have the potential to recover:

- Remains of Roman extra-mural activity, potentially including field systems
- Burials from the Outer Cemetery of mediaeval Charterhouse, and other associated features
- Medieval occupation features, and possibly buildings, from the expansion of extra-mural settlement in the West Smithfield area following the establishment of the livestock market
- Post-medieval buildings and occupation features representing the creation and expansion of the extra-mural suburbs

6.2 Research Aims

The original aims and objectives were listed in the SS- WSI Farringdon Station (Doc. No. CR-SD-FAR-EN-SY-0001, and stated that 'Archaeological investigation and mitigation within the Crossrail worksites for Farringdon Station have the potential to contribute to the research themes set out below':

Evidence for burials and/or features associated with the Charterhouse burial ground may contribute to the following research aims:

- Understanding life expectancy, origins and belief, seen through studying health, diet and disease, and preparing models for future research;
- Considering the relationship between cemeteries and major or minor roads, in terms of symbolism, status, privacy and convenience; and
- Understanding the differences, if any, between burial practices in the city and outlying cemeteries.



Archaeological remains associated with post-medieval extra-mural development may contribute to the following aim:

- Contributing to our understanding of the creation of the London suburbs with direct contribution to today's aspirations for an urban regeneration.

7 Methodology of site-based and off-site work

All archaeological excavation and recording during the evaluation was carried out in accordance with:

- Crossrail WSI (Doc No. CR-SD-LIV-EN-SY-00001, 2009)
- Crossrail WSI Addendum (Doc No. C136-SWN-T1-XAP-M123_WS098-00001, 2010)
- MOLA *Method Statement for an Archaeological Evaluation at Farringdon* (Doc. no. C257-MLA-T1-GMS -CR0G02-00001, 2011), which was developed between MOLA and the principal contractors
- Museum of London *Archaeological Site Manual* (MoL 1994)
- Corporation of London Department of Planning and Transportation, 2004 *Planning Advice Note 3: Archaeology in the City of London, Archaeology Guidance*

The results of the archaeological evaluation will inform the mitigation design, and, if required, will comprise *preservation-by-record* (e.g. archaeological excavation and/or watching brief)

The site finds and records can be found under the site code XSF10 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.

7.1 Evaluation and Sampling Methodology

The C430 Principal Contractor broke out the concrete slab over each trial trench, removing any underlying modern overburden down to the first significant archaeological horizon, using a mechanical excavator fitted with a flat-bladed ditching horizon, the principle contractor installed the required shoring before MOLA staff entered each trench to assess, clean, investigate and record archaeological deposits and features. All trenches were excavated to the full depth archaeology (ie to river terrace gravels) in order to evaluate the full archaeological sequence.

Trenches 1–3 (Figure 1, Figure 2, Figure 3, Figure 4, Figure 5) were excavated below 1.2m beneath ground level, at which time trench boxes were installed which were supplied and installed by the Principal Contractor. Trenches 1, 3–7 (Figure 1) were excavated down to natural geology, in order to expose cut features. Trench 2 (Figure 2, Figure 3) which contained deeply stratified archaeology was, after initial recording graded down carefully by machine, under archaeological supervision. This was undertaken in individual spit depths of up to 300mm each, working along the length of the trench. When encountered further archaeological horizons and cut features were hand investigated, recorded and sampled (see 18.4) where necessary.

Sampling was targeted in accordance with the environmental archaeological potential of deposits. Selected Roman, medieval and post-medieval negative features were targeted (generally through standard bulk samples 40 litres in size), as well as more intensive sampling of the marsh-like deposits in Trench 2, where continuous monolith tins and bulk samples were recorded and sampled by a MOLA geoarchaeologist. The



sampling strategy was adapted in light of the preservation and the type of features encountered.

At the southern end of the trench extensive deeply truncating 19th-century brick and concrete foundations were progressively removed to expose archaeological deposits below, in order to more firmly establish the character of the archaeological sequence.

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).

The evaluation trenches were manually marked out on site by MOLA in relation to retained features included on OS mapping according to the locations specified by the Project Archaeologist on a suitable hardcopy site plan. The locations of the trenches were then recorded by MOLA Geomatics by optical survey. The survey utilised Crossrail London Survey Grid control stations, which were then tied into the OS.

8 Results and observations including stratigraphic report and quantitative report

See Figure 1 for trench locations

8.1 Trench 1



Photo 1 Trench 1 looking east. Ditch cut [57] truncating natural sandy gravels.

Trench 1	
Location	Farringdon Eastern ticket hall. Street level. South of Underground retaining wall
Dimensions	1.9m north to south and 3.1m east to west x 3.63m deep
LSG grid coordinates	82304 36535
OS National grid coordinates	531950 181823
Modern Ground Level/top of the slab	17.11m OD (117.11m ATD)
Modern subsurface deposits	Retaining wall backfill/construction cut truncates to 13.94m OD (13.94m ATD)
Level of base of archaeological deposits observed and/or base of trench	Ditch cut truncates to 13.46m OD (113.46m ATD)
Natural observed not truncated	Truncated natural terrace gravel observed at 13.87m OD (113.87m ATD).



Extent of modern truncation	A 19th-century construction cut had horizontally truncated to natural at 3m bGL
Archaeological remains	Dating Evidence, Finds, and Samples
Probable ditch: cuts [57]=[59] visible from 13.87m OD (113.87m ATD). Fills [56]=[58] Firm mid grey clay silt. Inclusions of Charcoal, Oyster/ bi-valve shells, animal bone and CBM (ceramic building material)	[58]: Peg roof tile 1480–1800. {8} Bulk 20l [56]: {9} Bulk 20l
Interpretation and summary	
<p>The majority of an east–west running ditch (or pit) had been accidentally removed during the groundworks contractor’s machine excavation of modern overburden, prior to archaeological recording. It survived as cut features [57] & [59]. This cut natural sandy gravels between 13.87m OD (113.87m ATD) and 13.57m OD (113.57m ATD). Running down the middle of the trench it sloped down gently from north to south, continuing beyond the southern limit of excavation, with a barely perceptible gradient. The fills [56] & [58] were fairly homogenous including many hairs/fibres, feather fragments and fly puparia as well as remains of wild plants. The majority of the latter appeared to be from waste land and other disturbed ground habitats.</p> <p>Nineteenth-century made ground associated with the Underground retaining wall to the north overlay the ditch and continued up to ground level.</p> <p>A robust wall aligned north–south was encountered immediately to west of the trench at c 1m bGL during initial machine stripping (this resulted in the trench being relocated 2m further to the east). It is most likely that this wall was an abutment to the Underground retaining wall.</p>	

8.2 Trench 2



Photo 2 Trench 2, Looking north. Semi-terrestrial marsh-like deposit [27] at 12.50m OD (112.50m ATD), with 19th-century concrete and brick intrusion [8].

Trench 2 (Figure 2 & Figure 3)	
Location	Farringdon Eastern ticket hall. Basement of 9 Hayne Street
Dimensions	4.40m north to south and 2.5m east to west x 1.2m deep. Trench Box inserted at 1.2m bGL .3.8m north to south and 2.0m east to west x 3.8m deep
LSG grid coordinates	82309 36525
OS National grid coordinates	531955 181814
Modern Ground Level/top of the slab	15.08m OD (115.08m ATD)
Modern subsurface deposits	Concrete basement footing max 0.5m thick
Level of base of archaeological deposits observed and/or base of trench	Base of trench: 11.24m OD (111.24m ATD)
Natural observed not truncated	Weathered brickearth [30] at 11.75m OD (111.75m ATD), over light yellow brickearth [31] at 11.55m OD (111.55m ATD). Samples – [30]: <3>monolith
Extent of modern truncation	19th-century footings truncate to 3.3m bGL.

Archaeological remains	Dating Evidence, Finds, and Samples
<p>Soft mottled greyish black silty clay [29] at 11.75m OD (111.75m ATD), with inclusions of oyster shell and large CBM fragments near top.</p> <p>Mixed boundary with brickearth [30] below, but sharp boundary with overlying [28].</p>	<p>[29]: Peg roof tile 1480–1800</p> <p><3> Monolith</p> <p>{5} Bulk 20l</p> <p><6> Radiocarbon</p>
<p>Brownish grey silty clay [28] at 112.10m ATD. Moderate inclusions of CBM, oyster shells, molluscs and animal bone. Wavy boundary with [27].</p>	<p>[28]: pot 1550–1650, Peg roof tile 1480–1900</p> <p><2> and <3> Monoliths</p> <p>{4} Bulk 20l</p>
<p>Soft plastic black organic silty clay [27] at 12.50m OD (112.50m ATD). With frequent plant remains (including roots and wood).</p>	<p>[27]: pot 1550–1650, leather - stylistically 16th-century, including a knife-sheath, a large piece of thick leather with stitch marks, part of a plain strap and a selection of shoe fragments. The most complete being a child's shoe with high strap-like extensions to the quarters which are sewn to the vamp throat in a distinctive 16th-century form of latchet fastening, floor tile 1480–1600</p> <p>{1} Bulk Sample 40l; <2> Monolith</p>
<p>Firm mid light brown silty clay [26] at 12.63m OD (112.63m ATD). Occasional charcoal, CBM, oyster shell and animal bone.</p>	<p>[26]: pot 1580–1610</p>
<p>Coarse mid grey brown sandy silt [25] at 12.90m OD (112.90m ATD). Moderate animal bone, oyster shell, CBM, brick fragments and charcoal</p>	<p>None</p>
<p>Firm blackish brown mixed sandy/silty clay [24] 13.52m OD (113.52m ATD).</p>	<p>[24]: pot 1580–1600</p>
<p>Moderate mid brown clay silt [20] at 14.21m OD (114.21m ATD) with inclusions of animal bone, oyster shell, pea gravel, tile and CBM.</p>	<p>[20]: pot 1580–1700</p>
<p>Construction cut [23] at 113.28m ATD for two phases of brick culvert running southwest–northeast. The earliest [22] appears to be 18th-century, with a later addition [21] inserted at the western end.</p>	<p>None</p>
<p>Brick structure [18] at 14.16m OD (114.16m ATD) with associated</p>	<p>[18]: bricks 1550–1666</p>



construction cut [19] and infill [17]	
Brick structure at 14.58m OD (114.58m ATD): wall and associated footing [7] and construction cut [8].	none
Interpretation and summary	
<p>Contexts [31] & [30] are naturally formed windblown brickearth deposits.</p> <p>Overlying these were a series of horizons becoming increasingly wet and less humic with depth, formed through episodic periods of flooding. Samples {4} and {5} from horizons [28] and [29] contained significant amounts of domestic waste in the form of fruit pips and stones, including grape, fig and apple, as well as cereal bran. Fishbone, eggshell, leather and textile remains were also found throughout the samples. In addition, sample {4} included seeds of pot marigold, rose and holly, all of which are potential garden plants. The artefacts present suggest deposition in the 16th or early 17th century, but such marshy conditions may well have originated earlier (dating evidence from the earliest deposit [29] was confined to the upper parts, and may have worked down from the overlying layer [28]).</p> <p>Context [27] represents a semi-terrestrial land surface 0.4m thick. Composed largely of reed stems, suggesting that a marsh had developed here. Apart from numerous seeds of celery-leaved crowfoot, little evidence was seen of wetland or aquatic plants, suggesting the environment was possibly unsuited to greater vegetative development. Within this horizon a variety of well-preserved distinctive leather items were recovered, dating deposition between 1550 and 1650.</p> <p>A small brick soakaway, constructed from reused bricks (dated 1550–1666) survived immediately below the slab at 114.16m ATD, which had been horizontally truncated by later 19th-century buildings [5].</p> <p>Culvert [22] of approximately 18th-century date, running along the northern edge of the trench, appears to have been repaired or extended during the 19th century.</p>	



Photo 3 Trench 2, looking north. Deposit [27] overlying a series of increasingly silty clay layers [28] & [29]. Weathered natural brickearth visible at base.

8.3 Trench 3



Photo 4 Trench 3 looking south. East–west aligned ditch cut [55] visible at 0.65m bGL, cutting natural gravels.



Trench 3 (Figure 4 & Figure 5)	
Location	Farringdon Eastern ticket hall. Basement of 8 Hayne Street
Dimensions	3.98m north to south and 2m east to west x 2m deep (northern end) to 1.2m deep (southern end).
LSG grid coordinates	82311 36514
OS National grid coordinates	531958 181803
Modern Ground Level/top of the slab	Northern end: 15.18m OD (115.18m ATD) Southern end: 14.39m OD (114.39m ATD)
Modern subsurface deposits	Concrete basement footing 0.5m thick.
Level of base of archaeological deposits observed and/or base of trench	Base of trench: 12.66m OD (112.66m ATD).
Natural observed truncated	Mixed sandy gravel and weathered London Clay: 13.17m OD (113.17m ATD). Horizontally truncated by Victorian and later concrete footings
Extent of modern truncation	Extensive truncation to north, east and west of trench
Archaeological remains	Dating Evidence, Finds, and Samples
Linear ditch cut [55] running east–west, sloping down from south to north. Constant shallow gradient continuing beyond northern limit of excavation. Cutting natural at 13.13m OD (113.13m ATD) at southern end. 12.66m OD (112.66m ATD) at deepest point at northernmost end of trench. Filled by [54] and [33], see below.	n/a
[54] Primary ditch fill at 13.13m OD (113.13m ATD). Mixed brownish grey course gravelly sand. Occasional animal bone, CBM flecks, oyster shell and iron-staining.	[54]: pot AD 50–100, roof tile 1180–1800 Strip of lead, approximately 8x3mm and 2mm thick (not datable)
[33] Secondary ditch fill. Firm mid greyish brown silty clay. Occasional bivalve & gastropod, sub angular pebbles, CBM flecks and animal bone.	[33]: pot 1550–1600, residual medieval 1270–1500 Roof tile 1480–1800
Postholes [49], [51] & [53]. Row of postholes aligned parallel with southern ditch edge.	n/a
Postholes [35], [37], [39], [41], [43], [45],	n/a



[47] Row of postholes aligned parallel with southern ditch edge.	
[32] Very soft brownish red clay silt. Organic deposit with occasional iron, weathered chalk, oyster shell, wood and plant remains, CBM & tile.	[32]: pot 1580–1650, textile 1580–1650. Bulk sample [32] {7}
Interpretation and summary	
<p>Mixed natural sandy gravels and weathered London Clay were visible across the southern end of the trench from 13.17m OD (113.17m ATD). Truncating this was a large ditch [55] running east–west, possibly excavated to aid drainage of the area during the medieval (or early post-medieval) period.</p> <p>The primary ditch fill [54] was fairly compact; it may have been open to the elements for a longer period. Roman pot found within it is assumed to be residual. This deposit is potentially medieval in date: it contained undiagnostic medieval or post-medieval tile (1180–1800), but the overlying fill contained medieval, as well as 16th-century, pottery.</p> <p>By volume, context [33] is the largest and most mixed of the ditch fills. It may represent an attempt at backfilling, in the late 16th century. Alternatively, its mixed composition may suggest that it was deposited over a longer period of time, rather than a single event.</p> <p>Two aligned sets of postholes may have cut through secondary fill [33], or alternatively one or both fills may have been deposited around earlier timbers. It is possible that the northernmost (consisting of three deeply driven quartered timbers) was the earliest, potentially forming part of a revetment, or a rudimentary fence preventing access to the ditch. A more substantial secondary phase of revetment or fence (seven timbers spaced approximately 200mm apart) may represent later construction, after an original structure had decayed and erosion had widened the ditch.</p> <p>The latest fill [32] may have been created during periods of inundation forming a organic semi-terrestrial waterlain deposit, within which roots and textiles were well preserved. Hair or fibres, feather fragments and fly puparia found within it, as well as the very numerous puparia suggest that organic material was dumped and left to rot in the ditch. The relatively tight dating of finds from within this deposit of between 1580 and 1650 suggests this section of the ditch was abandoned around the middle of the 17th century.</p>	



Photo 5 Trench 3 looking north. Ditch cut and two phases of timber revetment



Photo 6 Trench 3 looking west. East facing section of ditch [55].

8.4 Trench 4



Photo 7 Trench 4, Looking east. Half-sectioned intercutting pits [2] & [4], with circular cut feature [8] in background.

Trench 4 (Figure 6)	
Location	Farringdon Eastern ticket hall. Basement of 2 Lindsey Street.
Dimensions	2.56m north to south and 4.82m east to west x 1.19m deep
LSG grid coordinates	82301 36502
OS National grid coordinates	531947 181790
Modern Ground Level/top of the slab	13.91m OD (113.91m ATD)
Modern subsurface deposits	0.3m basement concrete makeup
Level of base of archaeological deposits observed and/or base of trench	Base of trench: 12.40m OD (112.40m ATD)
Natural observed not truncated	Orange sandy gravels at 12.90m OD (112.90m ATD)
Extent of modern truncation	Construction cut for wall footing truncated 0.7m from northern trench edge to a depth of 12.72m OD (112.72m ATD)

Archaeological remains	Dating Evidence, Finds, and Samples
Truncated rectangular pit cut to 112.40m ATD [4], measuring 2.4m east to west, and a minimum of 1.95m north to south with a maximum depth of 1.0m. Fill [3], occasional CBM and charcoal flecks shows evidence for tip lines. Truncated by [2]	[3]: pot 1270–1600, roof tile 1480–1800
Linear east–west pit cut to 12.85m OD (112.85m ATD) [2], with a maximum depth 0.65m. Circular eastern edge continues beyond southern and western limits of excavation. Fill [1] silty clay with inclusions of charcoal, CBM including tile, and chalk.	[1]: pot 1480–1600
Circular pit cut to 12.90m OD (112.90m ATD) [8], with a maximum depth of 0.37m. Filled with mid grey brown silty gravel [7].	[7]: pot 1550–1700, residual Roman 50–160
Interpretation and summary	
<p>The earliest phase of activity is represented by the rectilinear pit [4], which was probably excavated at the end of the 15th or in the 16th century. The fill of which has been deposited in distinctive tip lines, suggesting it was backfilled with refuse, possibly after initial gravel abstraction. This feature continues beyond the southern edge of the trench. However, it was not visible in Trench 5 approximately 3m to the south, giving it a theoretical length (north–south) of between 3 and 5m.</p> <p>A second pit (dated 1480–1600) truncated pit [4]. This linear cut [2] ran from the western limit of excavation terminating approximately 1.6m from the eastern edge. Filled with a selection of waste materials (eg animal bone, charcoal, pottery) this also appears to have been utilised for rubbish, truncating [3]. A separate semi-circular cut feature [8] extending beyond the eastern and southern limits of the trench, although its fill is considerably more compact and sterile, suggesting a different function.</p>	



Photo 8 Trench 4, looking east. Sectioned post-medieval pit cut [4], showing evidence of tip lines [3].

8.5 Trench 5



Photo 9 Trench 5, looking north. Modern concrete and brick intrusion, with late post medieval ditch/cut [16]. Trench 4 in the background.

Trench 5	
Location	Farringdon Eastern ticket hall: Basement of 2 Lindsey street



Dimensions	4.8m north to south and 2.82m east to west x 1.52m deep
LSG grid coordinates	82303 36495
OS National grid coordinates	531950 181783
Modern Ground Level/top of the slab	13.87m OD (113.87m ATD)
Modern subsurface deposits	Concrete and brick footing truncating to base of trench in southern area max depth 1.5m bGL.
Level of base of archaeological deposits observed and/or base of trench	Natural sandy orange gravels at 12.32m OD (112.32m ATD)
Natural observed truncated	Natural sandy orange gravels were visible at trench base. Highest point at 13.22m OD (113.22m ATD).
Extent of modern truncation	2.4m north to south and 2.0m east to west in centre of trench
Archaeological remains	Dating Evidence, Finds, and Samples
Ditch or pit cut to 12.54m OD (112.54m ATD) [16], with a maximum depth of 0.7m, running east–west along northern edge of trench, partially truncated by modern brick/concrete foundations	No finds
Interpretation and summary	
The majority of the trench footprint was truncated by footings associated with the previous building. Feature [16] appears of little archaeological importance as yellow stock bricks appeared imbedded in the surface. It is possible, however, that these were intrusive. If so, it is possible that this might form the southern edge of either pit [2] or [4] in Trench 4.	

8.6 Trench 6



Photo 10 Trench 6, looking north. Natural weathered London Clay (orange brown) overlying unweathered London Clay (in sondage, grey) at 11.90m OD (111.90m ATD).

Trench 6	
Location	Farringdon Eastern ticket hall. Basement of 22 Long Lane
Dimensions	4.6m north to south and 2.00m east to west x 2.06m deep (in sondage)
LSG grid coordinates	82310 36499
OS National grid coordinates	531956 181788
Modern Ground Level/top of the slab	13.96m OD (113.96m ATD)
Modern subsurface deposits	Truncate to 1.2m at southern end
Level of base of archaeological deposits observed and/or base of trench	Base of trench: 11.90m OD (111.90m ATD)
Natural observed not truncated	Probable remnant of Terrace Gravels [11] at 113.15m ATD, over: Weathered London Clay at 12.69m OD (112.69m ATD), overlying unweathered London Clay (in sondage) at 11.90m OD (111.90m ATD)
Extent of modern truncation	n/a
Archaeological remains	Dating Evidence, Finds, and Samples

Slightly sandy clay at 13.19m OD (113.19m ATD) [10]. Possibly evidence for alluvial silting on top of gravels.	No finds
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Interpretation and summary

Access was limited to his trench due the instability of the sections; however there was no evidence for archaeological cut features or stratigraphy.

8.7 Trench 7



Photo 11 Trench 7, looking south. 19/20th-century backfilled basement and associated coal chute, truncating natural gravels.

Trench 7 (Figure 7)	
Location	Farringdon Eastern ticket hall. Basement of 20 Long Lane
Dimensions	4.26m north to south and 2.5m east to west x 1.19m deep
LSG grid coordinates	82318 36504
OS National grid coordinates	531964 181793
Modern Ground Level/top of the slab	14.38m OD (114.38m ATD)
Modern subsurface deposits	Concrete foundation along southern edge of trench protruding 1.68m into trench to minimum of 1.5m bGL.
Level of base of archaeological deposits observed and/or base of trench	Cut feature base at 13.54m OD (113.54m ATD)

Natural observed truncated	Orange sandy gravels 13.87m OD (113.87m ATD) at 0.49m bGL.
Extent of modern truncation	Extensive. Across entire southern and western side of trench.
Archaeological remains	Dating Evidence, Finds, and Samples
Remnant of pit cut to 13.54m OD (113.54m ATD) [14], maximum depth of 0.33m. Orangey brown sandy silt fill [13].	[13]: pot - Roman AD 200–400
Interpretation and summary	
<p>Within this trench there is tentative evidence for the remains of a heavily truncated pit [14], only the steep eastern cut edge survives within the limit of the trench. The pit survives beyond the northern limit of excavation. A small amount of moderately abraded pot found within [13], dates this feature to the later Roman period, but could be residual. This may have been a quarry pit.</p> <p>Extensive 19th/20th-century truncations were present, the earliest a basement and associated coal chute, which appears to have been accessed from the eastern side (Hayne Street). Fragments of newspaper indicate this was in use (or was backfilled) sometime in the 1930s.</p>	



Photo 12 Trench 7, looking north. Roman Pit [14] cutting natural gravels to 13.54m OD (113.54m ATD).

9 Assessment of results against original expectations and review of evaluation strategy

GLAAS guidelines (English Heritage, 1998) require an assessment of the success of the evaluation 'in order to illustrate what level of confidence can be placed on the information which will provide the basis of the mitigation strategy'. The recommendations suggest that there should be:

Assessment of results against original expectations (using criteria for assessing national importance of period, relative completeness, condition, rarity and group value) (Guidance Paper V, 4 7)

Department of the Environment guidelines for assessing the importance of individual monuments for possible Scheduling include the following criteria: *Period; Rarity; Documentation; Survival/Condition; Fragility/Vulnerability; Diversity; and Potential*. The guidelines stress that 'these criteria should not be regarded as definitive; rather they are indicators which contribute to a wider judgement based on the individual circumstances of a case'.

Corporation of London guidelines (CoL 2004) also require an 'Assessment of results against original expectations (using criteria for assessing national importance of; period, relative completeness, condition, rarity, and group value) and review of evaluation strategy.'

9.1 Assessment criteria

Criterion 1: Period

The Remains fall into the following groups,

- No Prehistoric features.
- Roman Remains, including finds and pits.
- Potentially medieval channel and associated multi-phased revetment.
- Post-medieval waterlain marsh, and associated reclamation dumps, finds (including leather and ceramics) and rubbish pits.
- 19th-century structural remains, associated with domestic premises.

Criterion 2: Rarity

Roman Quarry and refuse pits are comparatively common in the extra-mural area around the city, and are considered of low importance.

Whilst the existence of a (potential) medieval water channel is not unexpected in this area formerly dominated by the river Fleet and its tributaries, little archaeological evidence has been as yet recovered in this area relating to this. Furthermore the multi-phased revetment [potentially similar in age to those excavated 100m to the south-west on Shoe lane (ATL89)] will help us to better understand the management of this water course overtime.

Post-medieval deposits relating to the marsh-like water channel are significant in that within them a greater variety of organic material survives. Sixteenth-century shoes and other leather items found within the backfilled reclamation dumps are comparatively rare finds in London.

Criterion 3: documentation

Medieval streams and natural springs were known to have flowed through this area from east-west down towards the Fleet river. One tributary of which, Faggesswell Brooke, is roughly documented to have flowed through this site (Barton 1992), and could be the channel identified in trench 2.

Criterion 4: Group Value

The evidence of Roman occupation (or the lack of it) has potential to contribute to the supporting documentation from other extra-mural archaeological remains and also by contrast with intra-mural remains.

The topographical and palaeo-environmental evidence regarding the Fleet and its tributaries, including its management and reclamation has potential to contribute to published priorities (eg Museum of London 2002, 79–80).

Generally, the site as a whole has limited group value, although the catalogued occupation enhances our understanding of the intensive post-medieval urbanisation of the area.

Criterion 5: Survival/condition

Post-medieval building activity is the major cause of truncation on site. A large lift shaft (measuring approximately 4m by 3m) in the basements of 8–9 Hayne Street truncated to natural geology. In particular 19th-century buildings, and their basements have truncated the southern area of the site to between 2.5 and 3m bGL. The consequences of this are that little stratigraphy survives beyond the lower deposits of negative features (Roman and medieval/post-medieval pits). However, where they do survive they are relatively well preserved.

The northern area of the site underwent considerable change in the 1870s with construction of the Metropolitan line, this resulting disturbance to archaeological horizons is significant, and like the southern area of the site survival appears to be limited to cut features.

Between these areas survival is at its greatest (although even here 19th-century building foundations truncate to natural, see Photo 2), along 8–9 Hayne Street. A full stratigraphic sequence survives with truncation limited to a small 18–19th century culvert. The condition of the surviving archaeology in this area is underlined by the excellent preservation of leather items within the waterlain marshy channel sequence.

Criterion 6: Fragility

Apart from the waterlain deposits, which due to their nature produce a greater variety of fragile finds (e.g. leather items that require careful handling and

excavation), the vulnerability of the majority of archaeological remains are similar to that seen in other sites across London.

Criterion 7: Diversity

Apart from prehistoric remains, the site characterises a reasonably diverse selection of features and periods. Roman feature(s) represent quarry pitting. The medieval and post-medieval periods are understandably more diverse, with the marshy channel sequence, its related ditches and revetment(s), the overlying reclamation deposits and later post-medieval construction representing a varied cross-section of activity.

Criterion 8: potential

Further excavation is unlikely to recover evidence relating to prehistoric activity given the rarity of *in situ* remains found in this area.

The potential for further Roman remains is moderate, and the site offers a limited opportunity to explore extra-mural Roman activity in the area. It is likely that there are the remnants of already exposed features (e.g. context [14], see Photo 12) in trench 7, and likewise in trench 4. Within the less truncated area in 8–9 Hayne Street, there is the potential for surviving Roman features beneath the marsh deposits.

Within this area (8-9 Hayne Street) lies the greatest potential for archaeological survival, due to the lack of 19th-century basement truncations.

9.2 Research aims

Information relating to the original research objectives was recovered, or evidence was absent, as follows:

- No remains of prehistoric occupation or activity
- Potential limited Roman activity (but no direct evidence of occupation) in the form of two possible quarry pits of probable Roman date.
- No evidence for burials from the Outer Cemetery of medieval Charterhouse, and other associated features.
- No evidence for medieval occupation. Although there is no conclusive evidence for a medieval date for the ditches/managed watercourse in Trenches 1 and 3, and the marshy/flooding deposits in Trench 2, it is quite possible that these features originated in the medieval period, and may represent the historically attested Faggesswell Brook, with accompanying geo-archaeological and palaeoenvironmental evidence.
- The later stages, at least, of these ditches/watercourse are of 16th and/or 17th-century date, as are the structure in Trench 2, and refuse pits in Trench 4, and potentially Trench 7. The latter represent the creation and expansion of the extra-mural suburbs.

10 Statement of potential archaeology

The evaluation has demonstrated that the site has the following potential:

- Moderate potential for Roman pits/quarries and/or ditches, for example the pit seen in Trench 7.
- High potential for late medieval/early post-medieval remains, in the form of a ditches/watercourse and associated marsh or flooding deposits, and overlying deposits relating to the reclamation and drainage of the surrounding area. One of the greatest potentials of further work on the site is to determine the actual nature of these features, so far seen only in separate trial trenches.
- Moderate potential for post-medieval remains representing reclamation/ levelling for the subsequent development of the area, and urban development from the 17th to 20th centuries.
- Future analysis of the plant, mollusc, and beetle remains from the bulk samples, and of the soil monoliths from the column samples, will contribute to characterising the marsh/flooding deposits, apparently within the ditches/watercourse, and its formation processes locally, also contributing to wider discussion as to its origins and formation processes.

10.1 Importance of Resources

10.1.1 Roman

The evidence for Roman pits, potentially quarrying, in this extra-mural area is of low importance, at these are fairly typical of the area, and the limited amount of finds retrieved imply a low level of occupation in the area..

10.2 Medieval or later

Medieval archaeological remains are provisionally assessed as being of moderate importance, as the waterlain channel deposits and (potentially) associated ditch(s) have not been previously recorded in the area, and may indicate that a tributary to the Fleet river (the Faggesswell Brooke) runs across the centre of site, or, alternatively a marshy area of overbank flooding and associated drainage ditches associated with such a brook in the vicinity.

In addition, they suggest that it is less likely that the burials from Charterhouse burial ground would have taken place this far south, and therefore that the southern boundary of the burial ground lay either across, or to the north of, the line of the Underground railway. This will need to be considered in the light of any further fieldwork on the site, and finds of human remains in the watching briefs in Charterhouse Street and Square.

10.3 Post-medieval

Dating from the 16th to 20th centuries, these remains are identified as of low importance. The reclamation dumps overlying and associated with the marsh deposit in Trench 2 are characteristic of the period, and offer little insight into the surrounding



environment. Likewise the rubbish pits identified in Trench 4 (Photo 7) contain typical refuse; butchery marks on animal bones are entirely expected given the vicinity of the Smithfield meat market. Later post-medieval structures (wall and footings, culvert and soakaway) are all well represented in the archaeological record from this period.

11 Conclusions

11.1 Geology

The drift geology consists of Pleistocene river terrace gravels (Hackney Sands and Gravels) overlying London Clay, which was only exposed in Trench 6 in the lower basement of 22 Long Lane at 11.90m OD (111.9m ATD). Overlying this and limited to the confines of this trench was a 0.8m thick layer of weathered London Clay at 12.70m OD (112.7m ATD). This horizon was not recorded in any other trench. Possible explanations being either the comparative depths excavated below ground level, (apart from Trench 2 where the channel truncated below to 11.20m OD (111.2 ATD), no other depth exceeded 12.30m OD (112.3 ATD) or localised variances in the natural banding.

Elsewhere, mixed terrace gravels and sands were encountered at consistent depths beneath ground level across the site. The highest was in Trenches 1 & 7 at 13.90m OD (113.9 ATD), and the lowest in Trench 4 where the truncation was slightly deeper at 113.0 in basement of 2 Lindsey Street.

The weathered brickearth (Langley Silt complex) recorded in the base of Trench 2 between 11.80–11.20m OD (111.8–111.2m ATD) is the deepest exposed and emphasises the variety in natural geology across the site. Brickearth is not mapped by the British Geological Survey as extending to the area of the site, the nearest being c 150m to the north-east. This may therefore have been a small patch that has survived truncation by both geological and human agencies.

11.2 Roman

A pit [14] mostly extending beyond the northern edge of Trench 7 truncated natural between 13.5 and 13.9m OD (113.50–113.90m ATD) contained small abraded 3rd-century sherds. These provide some evidence for Roman landuse at this time (possibly quarry pits), but could be residual. Residual pottery (dated AD 50–100), Tegula, and a fragment of lead, from ditch [55] provide further hints of Roman extra-mural activity.

11.3 Medieval or later

The primary fill of ditch [55] was only dated by undiagnostic roof tile from between 1180 and 1800, but the secondary fill contained residual pottery dated to 1270–1500, and well as pottery of 1550–1600. This feature, and the apparently associated ditch in Trench 1 and marsh/flooding deposits in Trench 2, may therefore have originated in the medieval period, and continued in use into at least the 16th century.

It is possible that the channel is the same as that mentioned by John Stow in his *A Survey of London* (1603, Reprinted 1908), a Brooke (Faggesswell) ‘*..near unto Smithfield by Charterhouse, lately dammed up.*’ This medieval stream, a tributary of the river Fleet, could explain the existence of a channel in the area. Furthermore Norman Moore’s *A History of Bartholomew’s Hospital* (Moore, N. 1918) describes a medieval stream ... ‘*rising in Faggesswell [that] crossed the south side of Smithfield and flowed through a piece of swampy ground surrounding a pond.*’ Again this could be interpreted as accurately describing the swampy marsh-like deposits found in

Trench 2. Due to the nature of channel deposition and erosion the earliest deposits would have been removed.

Evidence for the maintenance of the southern boundary edge of the ditch survives as a revetment or fence (consisting of three deeply driven quartered timbers) and a more substantial secondary phase (seven timbers spaced approximately 200mm apart) representing a later construction, after the original structure had decayed and erosion had widened the ditch. These postholes may have cut through the primary ditch fill, or alternatively been deposited around earlier timbers (this is possible as both sets of timbers were driven to between 0.5 and 0.7m bGL).

With this in mind, the date for construction of the ditch, the associated timbers and the primary fill may all date to 1180 or later.

The presence of these features strongly suggests that the Charterhouse outer burial ground did not extend this far south.

Residual medieval finds of pottery and tile were also identified within three post-medieval contexts, [3], [33] & 60, providing further evidence for activity in the area during this period.

11.4 Post-medieval

Post-medieval remains dating from the 16th to 20th centuries were identified across the site. The earliest deposits (contexts [26], [27] & [28], and potentially [54]) were found at the base of Trench 2 between 2.5 and 3.4m bGL, 12.60–11.70m OD (112.6–111.7m ATD) and Trench 3 between 13.10–12.70m OD (113.1 and 112.7m ATD) respectively. In Trench 2 ceramics and leather dated to 1550–1650 from within the marsh-like channel deposits. Corresponding ditch cuts to the north and south in Trenches 1 and 3 respectively, imply that these horizons are the basal layers of a larger ditch or channel. At this date there are no corresponding open channels depicted in this area on either the Agas map (1562) or Faithorne and Newcourt (1658). However, the former is not detailed, and finds from Trench 3 imply the ditch had been backfilled by 1650, prior to Faithorne and Newcourt's survey.

Other 16th to 17th-century remains occur across the site. Three typical rubbish pits located in Trench 4, and dating to the 16–17th centuries, were recorded immediately beneath basement level at 13.40m OD (113.4m ATD). Multiple phases of reclamation dump filled Trench 2 to basement level, from 12.40–14.10m OD (112.4–114.1m ATD), dating between 1550 and 1700. Within these deposits were multiple phases of brick drain constructed during the 18th to 19th centuries. A brick soakaway was located in Trench 2 between 0.6 and 0.8m below basement level 14.20–14.0m OD (114.2–114.0m ATD) and was constructed from reused bricks dated 1550–1666.

More recent structures in the form of a large Victorian wall [5] and associated construction cut [6] truncated to 11.70m OD (111.7m ATD) (natural) in Trench 2. These are what remained of the 19th-century buildings built following the construction of the Metropolitan line in 1873. Further south in 20–21 Long Lane, the basement of a late 19th-century building was visible, along with coal chute, all evidently backfilled sometime before the Second World War.

11.5 New Objectives for fieldwork

This section suggests additional objectives for any further fieldwork on the site (in addition to those in section 6), based on the results of this fieldwork.

- What is the character of the highly variable natural geology across the site, and can the cause(s) of these variations be deduced?
- Can the nature, character, date, and sequence of revetments of the channel/ditch and apparently associated marsh-like deposits be more fully determined, and do these correspond to the historic references to the Faggesswell Brooke, swampy ground and pond?
- How and when were these waterlain features reclaimed, and what was the chronology and date of the subsequent occupation. Can these be tied in to historic maps or documents?
- Further excavation has the potential to advance our understanding of the Roman occupation/land use in this extra-mural area.
- What is the significance (if any) of the leather items recovered from the marshy channel deposit?
- What is the character of surviving butchery evidence, particularly within medieval/post-medieval rubbish pits, following the establishment of the livestock market? Do they reveal any atypical; characteristics of animal husbandry in use during this period?

12 Recommendations for appropriate mitigation strategy

Approximately 7% of the site was evaluated (65m² out of a total of 900m²). A rough estimate of truncation levels as a whole, including known intrusions (eg the lift shaft and cut for the Metropolitan line retaining wall, and assuming consistent levels of truncation across the site) would be around 150m² or 17%. This suggests that there is a high potential for the survival of relatively untruncated stratigraphy beyond that observed, and that excavation of a targeted area would be of considerable benefit.

The site has shown potential for previously unexpected archaeological survival, particularly in and around the properties previously fronting on to Hayne Street. Further excavation concentrating on and around the channel deposits identified in Trench 2 that have yet to be fully exposed and understood, will help to define the nature, and hopefully date, of the features in this area. The exposure of a larger area would allow for more convincing identification of the water features, and sampling across the channel etc profiles. The overlying post-medieval reclamation deposits would benefit from more comprehensive excavation, generating (through the recovery of datable finds) a more concise chronology of the urbanisation of the area between the 16th and 18th-centuries.

In the southern area of the site high levels of horizontal truncation limited archaeological survival to negative features. Further excavation is likely to reveal Roman, post Roman to medieval and later pitting, particularly 17–18th-century refuse pits. Whilst those already recorded were of limited archaeological significance this area could still benefit from further archaeological investigation.

The Crossrail archaeologist will produce recommendations for further work to mitigate the impact of the Eastern Ticket hall and related construction activity.

13 Publication and dissemination proposals

The evaluation results will initially be disseminated via this report and the summary in the annual round up published in London Archaeologist and on the London Archaeological Archive and Research centre (LAARC) website.

The supporting site archive of finds and records (including digital data) will be incorporated into the wider predictive deposit modelling for the Crossrail scheme. Publication requirements will be considered by the Project Archaeologist with the results of later mitigation fieldwork on this site, and also the wider context of archaeological potential and results within the Crossrail scheme.

14 Archive deposition

The site archive containing original records and finds will be stored temporarily with MOLA pending a future decision over the longer-term archive deposition and public access process for the wider Crossrail project.



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16 Acknowledgements

The author would like to Christian Geiger (Laing O'Rourke), and Andy Scholes and Chris Sharples (Crossrail) and for their assistance with the fieldwork. The fieldwork was commissioned and managed for Crossrail by Mike Court and Jay Carver.

The evaluation was supervised by the author, with the assistance of Jason Stewart. Other MOLA staff involved in the evaluation included, Catherine Drew and Gideon Simons (geomatics), Ian M Betts (Building Material), Jacqui Pearce (pottery) and Maggie Cox (photography). The fieldwork was managed by MOLA Assistant Contracts Manager Nicholas Elsdon and Contracts Manager Elaine Eastbury.



17 NMR OASIS archaeological report form

OASIS ID: molas1-111626

Project name	Crossrail Farringdon Eastern Ticket hall
Short description of the project	Seven trenches were evaluated exposing one heavily truncated Roman pit dated 200-400 AD. No evidence of Saxon activity was identified. Potential medieval remains were limited to the primary fill of an east- west aligned channel. Subsequently filled with a marsh like deposit dated to the 16-17th centuries and later early post medieval backfill was identified, along with two phases of postholes potentially associated with the management of the channel and its environs. Extensive post-medieval remains were identified in the form of rubbish pits, soakaways, phases of culvert, and more recently the backfilled basements of 19th-century buildings.
Project dates	Start: 21-07-2011 End: 13-09-2011
Previous/future work	Yes / Yes
Any associated project reference codes	XSF10 - Sitecode
Type of project	Field evaluation
Site status	None
Current Land use	Transport and Utilities 2 - Other transport infrastructure
Monument type	PIT Roman
Monument type	PIT Medieval
Monument type	MARSH Post Medieval
Monument type	WATER CHANNEL Post Medieval
Monument type	DITCH Post Medieval
Monument type	POST BUILT STRUCTURE Post Medieval
Significant Finds	POT Roman
Significant Finds	POT Medieval
Significant Finds	POT Post Medieval
Significant Finds	LEATHER Post Medieval
Methods & techniques	'Targeted Trenches'
Development type	Rail links/railway-related infrastructure (including Channel Tunnel)
Prompt	Crossrail act 2008
Position in the planning process	After full determination (eg. As a condition)



Site location	GREATER LONDON CITY OF LONDON CITY OF LONDON Farringdon Eastern Ticket hall
Postcode	EC1
Study area	800.00 Square metres
Site coordinates	NGR - TQ 4561 8220 LL - 51.5194444444 0.09888888888890 (decimal) LL - 51 31 10 N 000 05 56 E (degrees) Point
Height OD / Depth	Min: 11.75m Max: 13.87m
Name of Organisation	MOLA
Project brief originator	Crossrail
Project design originator	Crossrail
Project director/manager	██████████
Project supervisor	██████████
Type of sponsor/funding body	Developer
Name of sponsor/funding body	Crossrail
Physical Archive recipient	LAARC
Physical Contents	'Animal Bones','Ceramics','Environmental','Leather'
Digital Archive recipient	LAARC
Digital Contents	'Leather'
Digital Media available	'Images raster / digital photography'
Paper Archive recipient	LAARC
Paper Contents	'Ceramics','Environmental','Leather'
Paper Media available	'Photograph','Plan','Report','Section'
Title	C257 Archaeology Central Fieldwork Report Archaeological Evaluation Farringdon Eastern Ticket Hall XSF10
Author(s)/Editor(s)	Pfizenmaier, S.
Date	2011



Issuer or publisher Museum of London
Place of issue or
publication London
Description A4 report

18 Appendices:

18.1 Building materials

Summary Note on Building Materials

A total of 36 fragments of building material were recovered from this phase of XSF10 (contexts [3], [18], [27], [29], [32], [33], [54], [56] and [58]). These comprise mainly pieces of peg roofing tile, but there are two brick samples from context [18] and a Low Countries floor tile from context [27]. Two pieces of Roman tile are also present.

The building material from XSF10 has been fully recorded and the information added to the Oracle database.

Listed below is a summary of the building material in each context:

Table 2 Building Materials

Context	Fabric	Type	Context date
[3]	2271, 2276	Peg roofing	1480–1800
	2271	Peg or ridge tile	
[18]	3039	Brick	1550–1666
[27]	2850 near 3063	Floor tile	1480–1600
[29]	2276	Peg roofing	1480–1800
[32]	2271, 2276, 2587	Peg roofing	1480–1800
[33]	2271, 2276	Peg roofing	1480–1800
[54]	2271, 2276	Peg roofing	1180–1800
	2815	Tegula roofing	
[56]	2586	Peg roofing	1180–1800
[58]	2271, 2276, 2587	Peg roofing	1480–1800

18.1.1 Roman

Two pieces of Roman date dating to AD 50–160 (fabric group 2815) were found with medieval or post-medieval peg roofing tile in context [54]. One is a tegula roofing tile, the other is very abraded, but appears to be either a brick or another tegula.

18.1.2 Medieval

London-made medieval peg roofing tile was found in contexts [32] and [58]. Glaze spots are present on each tile.

18.1.3 Post-medieval

Most of the building material from the site comprises London-made peg roofing tile. Definite post-medieval peg tile was recovered from contexts [3], [29], [32], [33] and [58]. The peg tile from [54] and [56] could be either medieval or post-medieval in date.

Context [27] produced a very worn fragment of Low Countries floor tile dating to around 1480–1600. This was almost certainly plain glazed, although glaze only survives on the tile edges. Floor tiles of this type were widely used in London during the 16th century.

Two brick samples were collected from context [18], both of which have sunken margins. These are London-made bricks measuring 226–229 x 106 x 59–63mm in size. They are probably of 1550–1666 date.

18.2 Leather

Six pieces of accessioned leather from XSF10 context [27] were examined while wet (pre-conservation). There are three shoes or shoe-parts (<1>, <2>, <6>), a knife-sheath (<4>), a large piece of thick leather with stitch marks (<5>) and part of a plain strap (<3>). The context is dated c 1550–1650 by ceramics.

The most complete shoe (a child's shoe) has high strap-like extensions to the quarters which are sewn to the vamp throat in a distinctive 16th-century form of latchet fastening (<1>). One of the shoe-parts, part of a vamp, has the same fastening method (<6>), while another (vamp and quarters) has a high straight-throated vamp joining the quarters at a butt seam (<2>). These are all typical mid 16th-century shoe-styles (Mould in Gardiner 2005, 66, Shoe Types 1 and 2.1; also late 16th century shoes from London's Rose and Globe theatres, Bowsher and Miller 2009, 195–9).

The knife sheath (<4>) does not appear to be decorated, which again is typical of 16th century sheaths and scabbards which are far plainer than their medieval equivalents. The large piece of leather (<5>) is difficult to examine while wet, but interesting, and possibly identifiable when conserved.

A second batch of bulk leather from XSF10 [27] has also been examined while wet. Like the first batch, also from [27], it consists of several mid 16th-century shoe parts, three of which (a high vamp, quarters and a sole) form part of one shoe (the tread sole is missing) and have been bagged for accessioning. A shoe-or clothing-strap decorated with oblique slashes has also been bagged for accessioning.

The shoe parts consist of three vamps, three quarters and two soles. A high straight-throated vamp, high slightly peaked quarters and a natural-shaped insole form one shoe (to be accessioned), comparable to Mould in Gardiner 2005, 66, Shoe Type 1, a shoe characterised by its straight-throated vamp without wings). Another vamp is similar, with a deep cut V-shaped notch in the centre, while the third vamp is lower (the rough cut may be secondary) and has low wings for attachment to (missing) quarters. One of the two quarters has a broken tab above its butt seam; the other is plain (with no tab) but incomplete. A complete sole has a very narrow waist; there are



also pieces of two others. The slash-decorated strap tapers to a rounded point and has edge/flesh stitching on two edges.

18.2.1 Potential for further work

Sixteenth-century shoes and other leather items are comparatively rare finds in London. With other leather of the same date from the Crossrail sites (eg XRV10) the leather from XSF10 should be catalogued, analysed and published

18.2.2 Bibliography

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18.3 Pottery

██████████ and ██████████

Introduction

Pottery has been recovered from this site in three phases of work. Most sherds are of reasonable size and in fresh condition but a few are more abraded. The sherds were examined macroscopically and using a binocular microscope (x 20), and recorded on paper and computer using standard Museum of London codes for fabrics, forms and decoration. The numerical data comprises sherd count, estimated number of vessels and weight. A few finds merit illustration. The data can be accessed on the Oracle database and also in an excel spreadsheet.

18.3.1 Roman pottery

Two small-sized groups of Roman were retrieved from contexts [7] and [13]. Context [13] provided the securely-dated Roman landuse with two small-sized and worn 3rd-century dated sherds recovered.

A further three sherds (3 ENV, 58g) of early Roman pottery were recovered from context [54], comprising part of a samian ware dish, a sherd of sand-tempered ware and part of a mortarium in a ware that appears to be from the Spanish province of Baetica (fabric code BAET), an unusual form for this fabric type. Taken together the sherds give a date of AD 50–100 for context [54].

18.3.2 The medieval wares

Seven sherds (7 ENV, 160g) of medieval pottery were found, all residual (contexts ([3], [33], [60])). The earliest is a single sherd of shelly sandy ware (SSW), dated to 1140–1220. The others comprise one sherd from a Kingston-type ware highly decorated jug (KING HD; 1240–1300) and five sherds of coarse Surrey-Hampshire border ware (CBW; dating 1270–1500).

18.3.3 The post-medieval wares

Post-medieval pottery was present in most contexts (122 sherds, 68 ENV, 3.676kg). Redwares from London area are the most common category, totalling 47 sherds (28 ENV), of which 21 sherds (14 ENV) are London-area early post-medieval redware (PMRE), dated to c 1480–1600 and 23 sherds (11 ENV) are of London-area early

post-medieval slipped redware (PMSR/G/Y, c 1480–1650). The former mainly comprise jars, but include sherds from a pipkin, a jug, the rose of a watering can ([24]) and the base of a flower pot ([1]). The latter mainly comprise sherds from large dishes, but include sherds from a handled bowl, a chafing dish ([24]), and a small shallow dish ([32]), an unusual form in this ware. There is also one sherd from a PMRE-type jar with painted slip decoration (PMSR). Other finds comprise sherds from two cauldrons/pipkins in post-medieval bichrome glazed ware (PMBR) and one sherd that appears to be post-medieval redware (PMR), a fabric that is most common after c 1580. Redwares from Essex are quite rare, with only one sherd of metropolitan slipware and 12 from a tankard, a mug and a possible chamber pot in post-medieval black-glazed ware (PMBL).

In second place are wares from Surrey (49 sherds, 24 ENV), of which all but two redware sherd (RBOR) are in the white fabric (BORDG/O/Y). The latter mainly comprise standard forms associated with the preparation and serving of food, such as tripod pipkins and dishes, but also include part of a condiment dish ([24]). Other forms comprise a small albarello ([24]), a money box ([33]), a saucer candlestick ([40]) and a chamber pot ([24]). Details of form types can be found in Pearce (1992; 2007).

Tin-glazed wares are limited to four sherds from [24], [60] and [68]; the former and one of the latter date to the late 16th or 17th century, while the third dates to the late 17th century. Imports are also rare, with only seven sherds, of which four are German stonewares from Raeren ([26], [33]), Cologne ([20]) and Frechen ([20]). The other finds comprise part of an Italian tin-glazed ware ring-handled vase ([24]; to draw) and part of the base of a green-glazed Beauvais ware jug ([33]). Also present is a rim sherd from a Chinese porcelain bowl with floral decoration in blue ([68]).

18.3.4 Discussion

A few sherds are of Roman and medieval date, but the main period of activity indicated by the pottery dates to the Tudor period; some contexts can only be broadly dated to c 1480–1600/50, but [31] and [61] date to after 1550, while [20], [24] and [32] date to after 1580. The latest deposits would appear to be [60], which contained tin-glazed pottery typical of the period 1670–90, and [68], which dates to after 1730 and probably to 1740–50. It is not possible at present to comment on the stratigraphic distribution of the finds, which are domestic in character. None of the context groups are large, and the highest number of sherds is from [24], which contained 24 sherds (393g).

18.3.5 Bibliography

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Pearce, J, 2007 Pots and potters in Tudor Hampshire, Guildford

18.4 Geoarchaeological Assessment of Trench 2

The East facing section of Trench 2 was cleaned and recorded by annotating the section 2 drawing and adding the precise locations of samples recorded. Photos were taken of the sections and monolith tins in situ.

Table 3 Geoarchaeological Results

Height in m ATD	Description	Samples
12.45 –12.05m OD (112.45–112.05m ATD)	<p>Context [27]: Soft, plastic Black organic silty clay with moderate reed and wood fragments also with moderate leather</p> <p><i>Marshy area, used as medieval dump, increased human impact from deposit below.</i></p>	<p><1> Bulk Sample 40l</p> <p><2> Monolith</p>
Wavy Boundary		
12.05–11.75m OD (112.05–111.75m ATD)	<p>Context [28]: Light brownish grey slightly sandy silty clay, with occasional roots (orientated horizontally and vertically so could be in situ as opposed to from above?) Medieval pot from this layer</p> <p><i>Damper, possible pooling and run off from surrounding area, evidence of dumping from surrounding environs</i></p>	<p><2> Monolith</p> <p><3> monolith</p> <p><4> Bulk 20l</p>
Sharp Boundary		
11.75–11.60m OD (111.75–111.60m ATD)	<p>Context [29]: Soft Dark greyish black mottled with brownish yellow slightly humic silty clay, slight suggestion of ephemeral quartz sand at base of deposit</p> <p><i>Very slow moving to still pools of standing water near 'channel' margins</i></p>	<p><3> Monolith</p> <p><5> Bulk 20l</p> <p><6> C14</p>



Mixed Boundary		
11.60–11.50m OD (111.60–111.50m ATD)	Context [30]: Soft brownish yellow slightly silty clay with occasional fine angular gravels <i>Weathered / reworked/ top of <31></i>	<3>monolith
Wavy/irregular boundary		
11.50–11.30m OD (111.50–111.30 m ATD)	Context 31: Stiff Light brownish yellow clay very clean / sterile, no evidence of anthropogenic input. No visible inclusions/bedding patterns. Very homogenous <i>Putative Natural, weathered London Clay</i>	

The sequence shows varying periods of damp pooling and marshy accumulation. It is likely that the sequence represents a hollow in the landscape (either due to natural river processes in the area or anthropogenic attempts to manage damp ground related to nearby channels) It is possible that the deposits uncovered here are related to a tributary of the Fleet alluded to by Barton (1992). The fact that these deposits are significantly deeper than those found in other trenches on site may indicate the presence of some form of former channel. The absence of any edges or delineation of the feature in Trench 2; as well as the flat nature and uniform nature of the base prevents any firm conclusions as to the function of the feature and the nature of the infilling. Further work carried out on site may shed more light on the nature of the feature.

The samples taken have the potential to reconstruct the depositional environment and the environment of the surrounding area. It is recommended that the monoliths are sub-sampled for pollen, diatoms and ostracods, in order in part to assess whether there is survival of paleoecological remains if further work is to be undertaken on them.

The deposits observed should be entered into the MOLA deposit model for the City as it would help elucidate the buried topography of the Fleet Valley and surrounding area.

References

Barton N, 1992 'Lost Rivers of London: A Study of Their Effects upon London and Londoners, and the Effects of London and Londoners on Them' Historical Publications, London

18.5 Plant Remains

Six environmental bulk samples were taken from Trenches 1, 2 and 3, during the field evaluation of the site. Samples [29]{5}, [28]{4} and [27]{1} (Tr 2) come from a series of waterlain horizons, thought to result from episodic flooding, sample [32]{7} (Tr 3) from the latest fill of ditch [55], and samples [58]{9} and [56]{8} from fills of an east-west ditch. All are thought to date from the late medieval or early post-medieval periods.

The samples were processed by flotation, and the flots (or sub-samples where large) assessed to determine the presence and nature of plant remains and any other biological material present. Very large, organic flots were generated from samples {1}, {4}, {5} and {7} and those from {8} and {9}, though very small, included quite large and diverse assemblage of waterlogged plant remains.

The two samples, {8} and {9} from Trench 1 contained similar assemblages, including many hairs/fibres, feather fragments and fly puparia as well as remains of wild plants. The majority of the latter appeared to be from waste land and other disturbed ground habitats.

Hair or fibres, feather fragments and fly puparia also dominated the much larger sample flot {7} from ditch [55], with the very numerous puparia suggesting that organic material was dumped and left to rot in the ditch. The majority of seeds from this sample came from wild plants of cultivated/disturbed ground and from grassland species.

Samples {4} and {5} from waterlain horizons [28] and [28] contained very different assemblages, with significant amounts of domestic waste in the form of fruit pips and stones, including grape (*Vitis vinifera*), fig (*Ficus carica*) and apple (*Malus domestica/sylvatica*), as well as cereal bran. Fishbone, eggshell, leather and textile remains were also each seen in one or both samples. In addition, sample {4} included seeds of pot marigold (*Calendula officinalis*), rose (*Rosa* sp.) and holly (*Ilex* sp.), all of which are potential garden plants. The flot from sample {1} from the overlying deposit [27] was composed largely of reed(?) stems, supporting the interpretation that a marsh had developed here. Apart from numerous seeds of celery-leaved crowfoot (*Ranunculus sceleratus*) little evidence was seen of wetland or aquatic plants, but this may be the result of the small sub-sample studied so far.

18.5.1 Potential

All the evaluated samples contain large and diverse plant assemblages worthy of further analysis, and will provide potentially useful information on several aspects of the site.

Analysis of the wild plants from all samples, in conjunction with the insect remains from samples [29]{5}, [28]{4}, [27]{1} and [32]{7}, will provide information about the changing environment and plant cover both in the marshy area of Trench 2 and in other parts of the site. Information on the diet and status of the site's inhabitants will also be produced from study of the food remains, particularly in [29]{5} and [28]{4}.



The large amount of hair/fibres, feather fragments and fly puparia in samples [32]{7}, [56]{8} and [58]{9} could be waste from Smithfield Market, or from activities taking place on or close to the site. Analysis of these remains by appropriate specialists would shed light on the nature of the material and hence the activities taking place.



Table 4 Summary of botanical assessment data

A: abundance, D: diversity (1 = occasional, 2 = moderate, 3 = abundant)

context	sample	BI	dating	proc vol(l)	flot vol(ml)	proc	chd grain	chd wood	wlg seed	wlg misc	Comments
							A D	A D	A D	A D	
27	1	NM	1550-1650	30	1400	F		1 1	3 3	3 3	WET.MOSTLY ?REEDS, DIVERSE SEEDS
						W				1 1	+1 BAG WLG ?REED MATERIAL
28	4	NM	1550-1650	10	200	F	1 1	1 1	3 3	3 3	WET. DIVERSE FOODS, ?GARDEN & WILD PLANTS
29	5	NM		10	400	F		1 1	3 3	3 3	WET. DIVERSE FOODS & WILD PLANTS
						W				1 1	WOOD
32	7	D		30	600	F			3 3	1 1	WET. HAIR/FIBRE(TXTL), PUPAE, WLD PLANTS
						W				1 1	
56	8	D	late med/e p-med	20	5	F		1 1	3 3	1 1	DRY. HAIR, FEATHER, SEEDS OF WILD PLANTS
58	9	D	late med/e p-med	20	10	F	1 1	2 1	3 2	2 1	DRY.HAIR, FEATHER. SEEDS OF WILD PLANTS



Fig 1 Farringdon ETH Evaluation
Location of Archaeological Trenches

- ▭ Site outline
- ▭ Trench edge
- Sections
- ▲ TBM
- ▲ 100 Crossrail derived control

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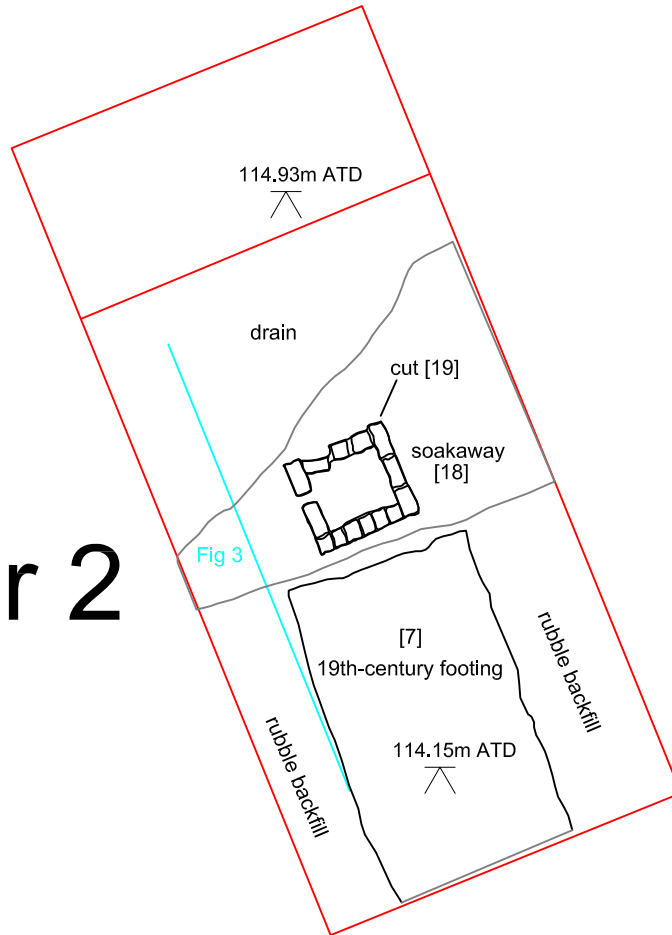
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


Tr 2




82310/36520



Fig 2 Plan of Trench 2

-  Trench edge
-  Archaeological features
-  Sections
-  Levels (m ATD)

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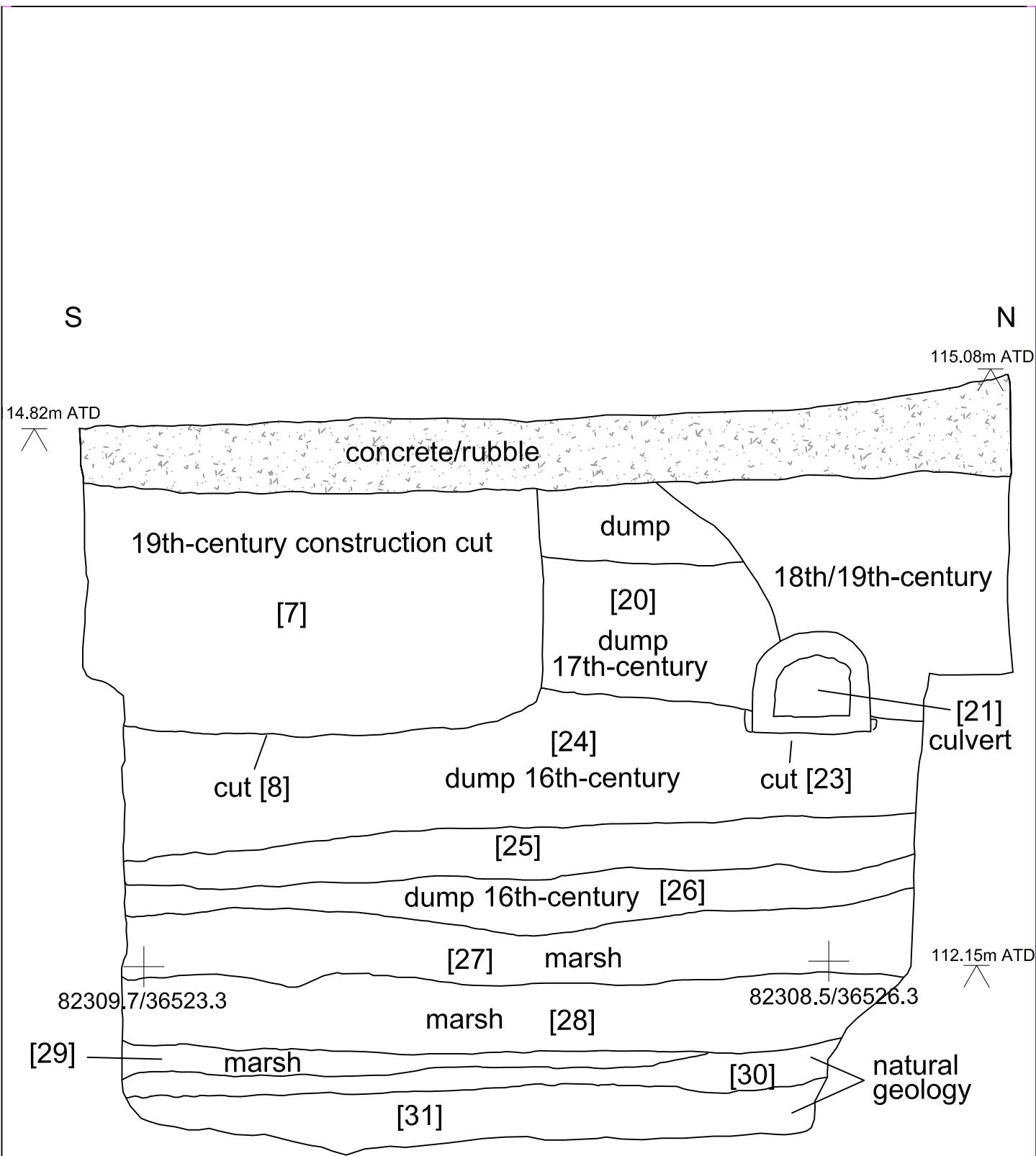


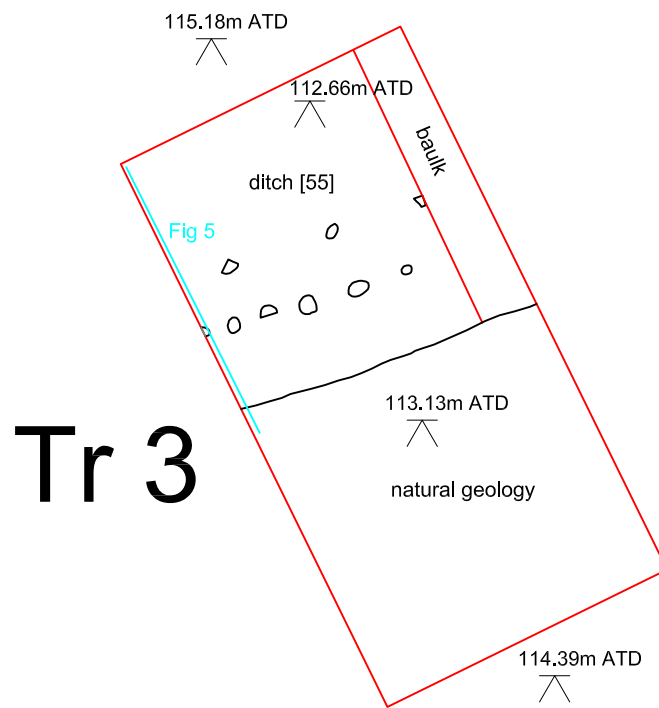
Fig 3 East facing section of Trench 2

- Trench edge
- Archaeological features
- 10.05 Levels (m ATD)

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82311/36518







Tr 3

82311/36511



Fig 4 Plan of Trench 3

-  Trench edge
-  Archaeological features
-  Sections
-  Levels (m ATD)

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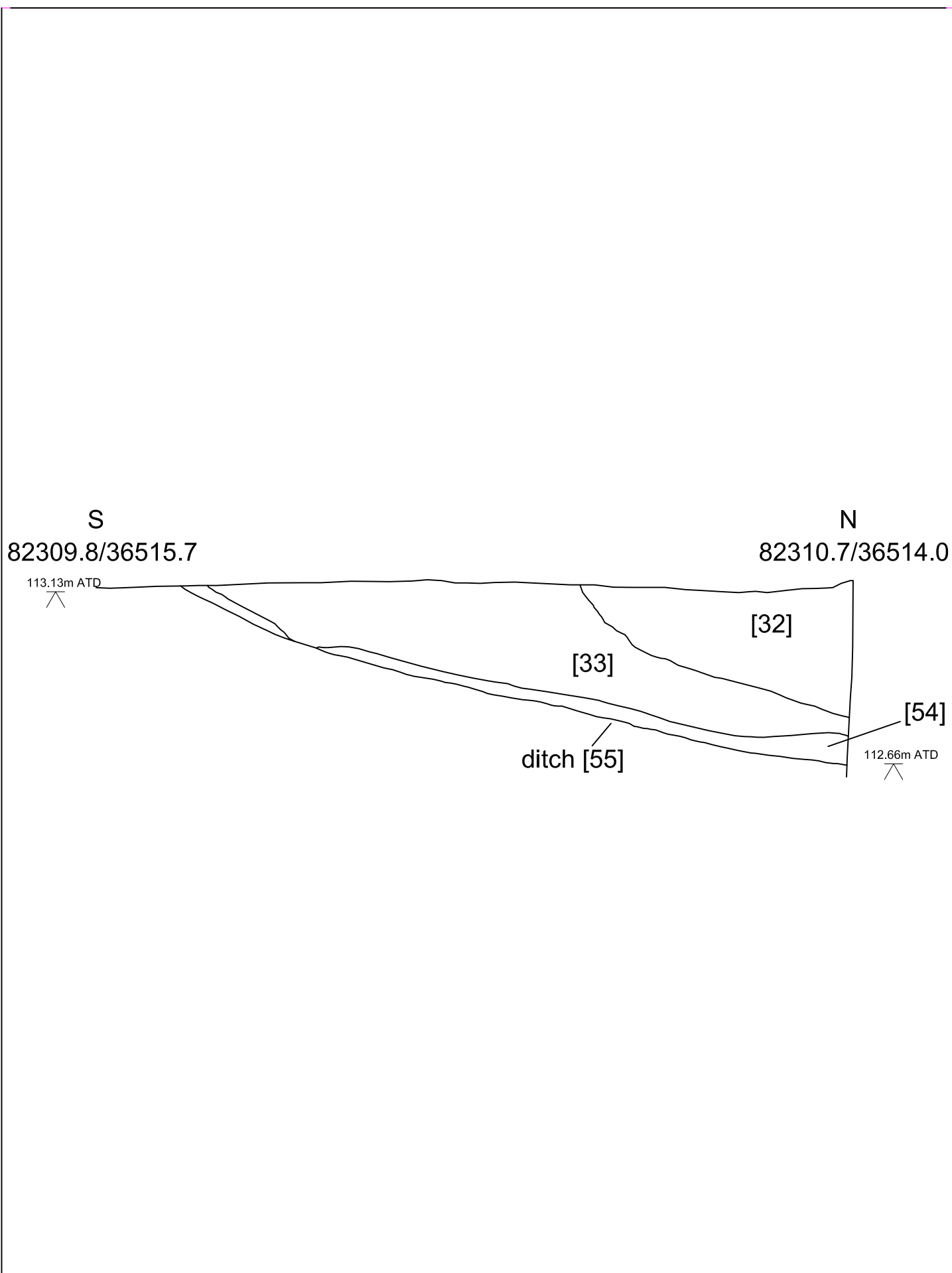





Fig 5 East facing section of Trench 3

-  Trench edge
-  Archaeological features
-  Levels (m ATD)

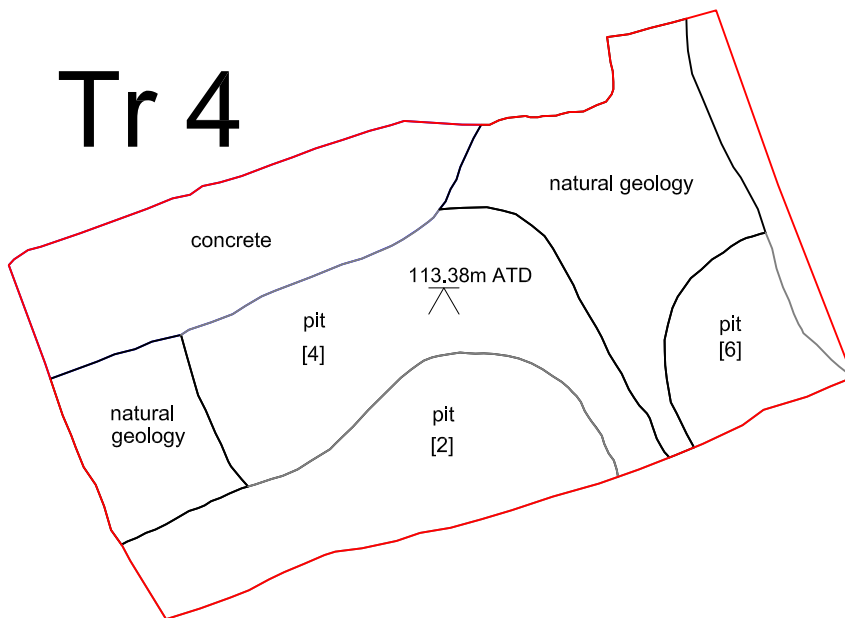
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82301/36518






Tr 4



82301/36499



Fig 6 Plan of Trench 4

-  Trench edge
-  Archaeological features
-  Levels (m ATD)

1:50 @ A4
0 2m

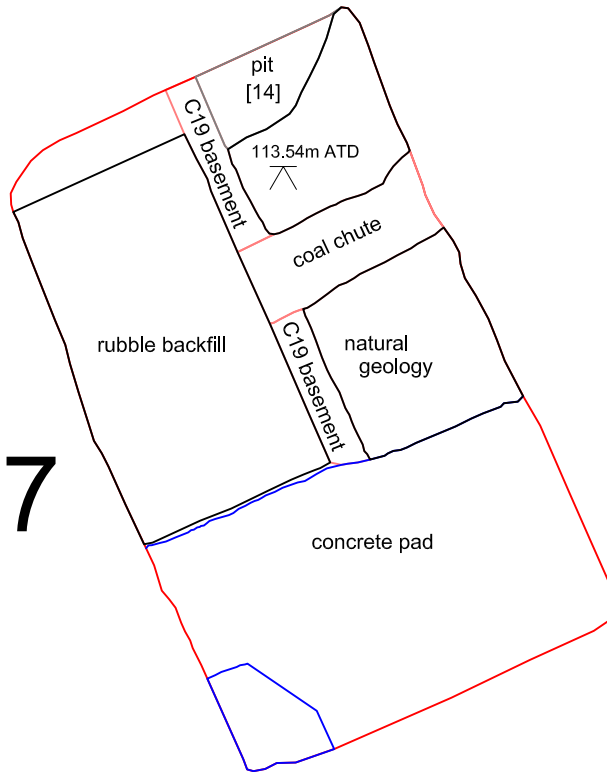
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82317/36508



Tr 7







114.38m ATD



82317/36501



Fig 7 Plan of Trench 7

-  Trench edge
-  Archaeological features
-  TBM (m ATD)
-  Levels (m ATD)

1:50 @ A4
0 2m

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