231-241 BLACKFRIARS ROAD

LONDON SE1

LONDON BOROUGH OF SOUTHWARK

ASSESSMENT OF AN

ARCHAEOLOGICAL EXCAVATION

BFX 08

OCTOBER 2008

DOCUMENT VERIFICATION

231-241 BLACKFRIARS ROAD
LONDON SE1
LONDON BOROUGH OF SOUTHWARK

ARCHAEOLOGICAL EXCAVATION

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Pre-Construct Archaeology Limited			K1727
	Name & Title	Signature	Date
Text Prepared by:	Ireneo Grosso		October 2008
Graphics Prepared by:	Josephine Brown		October 2008
Graphics Checked by:	Josephine Brown		October 2008
Project Manager Sign-off:	Jon Butler		October 2008

Revision No.	Date	Checked	Approved

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

Assessment of an Archaeological Excavation at 231-241 Blackfriars Road, London SE1, London Borough of Southwark

Site Code: BFX 08

National Grid Reference: TQ 5317 1803

Written and Researched by Ireneo Grosso

Pre-Construct Archaeology Ltd, October 2008

Project Manager: Peter Moore

Post-Excavation Manager: Jonathan Butler

Commissioning Client: Great Portland Estates

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

Tel: 020 7732 3925
Fax: 020 7732 7896

Email: pmoore@pre-construct.com
Website: www.pre-construct.com

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1 ABSTRACT

1.1 This report details the results and working methods of an archaeological evaluation and excavation on land at 231-241 Blackfriars Road, Southwark (Fig. 1), undertaken by Pre-Construct Archaeology in advance of a residential development by Great Portland Estates, undertaken between February and April 2008. The redevelopment site was centred around National Grid Reference TQ 5317 1803.

1.2 Natural sand was found across the excavation area in trench 1 and in evaluation trenches 2 to 5. The level of the natural sand was found to be sloping substantially downwards to the south where an E-W stream channel was observed in excavation trench 1 and in evaluation trench 2.

1.3 The stream channel was recorded as been formed during two different periods. The earlier phase of the channel was associated with late Iron Age artefacts to the south and the later phase was associated with Roman artefacts located to the north. A fairly shallow bank of natural sand separated these two streams.

1.4 17th century activity consisted of pitting whilst 18th century activity consisted of building activity. Two parallel E-W post-medieval wall foundations were observed in the southern area of the site in excavation trench 1 and extending to east in evaluation trench 2. In addition a post-medieval well/soak away was also recorded to the south in trench 1. In the northern area, the post-medieval activity on the site was represented by a considerable number of intercutting pits, wells and soaks away (evaluation trenches 3 and 4) and by an E-W basement foundation in trench 5.

1.5 Twentieth-century demolition rubble associated with the destruction and subsequent clearance of the site after the Second World War overlaid the post-medieval occupation and was in turn sealed by reinforced concrete.

2 INTRODUCTION

2.1 An archaeological field evaluation and subsequent excavation were undertaken by Pre-Construct Archaeology Ltd at 231-241 Blackfriars Road, London Borough of Southwark (Fig. 1) between March and April 2008. They revealed evidence of an E-W stream channel and a possible sand bank all located towards the southern half of the study site and truncated by post-medieval wall foundations.

2.2 The natural sand located north of the site and sloping substantially downwards to the south, was proven at the evaluation stage to be truncated by post-medieval basements and foundations walls of buildings fronting the eastern side of Blackfriars Road and dating between the first half of the 19th and the second half of the 20th century.

2.3 The evaluation of the site demonstrated archaeological preservation in Trench 1 (Fig. 2) and consequentially a mitigation strategy was agreed with Chris Constable, Archaeological Monitor for Southwark Council, that both the stream channel fills and sand deposits within the trench should be fully excavated by hand. This mitigation work was able to proceed immediately from the evaluation without the requirement for a break on site or an evaluation report.

2.4 The work was commissioned by Gardiner and Theobald on behalf of Great Portland Estates. Pre-Construct Archaeology Ltd undertook the fieldwork under the supervision of Ireneo Grosso, the project management of Peter Moore and post-excavation management of Jonathan Butler.

2.5 The site is situated on the eastern side of Blackfriars Road *c* 245m to the south of the River Thames. The site is bounded by Burrell Street to the south, Southwark Street to the north, Blackfriars Road to the west and a strip of land along with the railway to the east.

2.6 The completed archive comprising written, drawn and photographic records and artefactual material will be deposited at the London Archaeological Archive and Research Centre (LAARC) at Eagle Wharf Road under the site code BFX 08.

Figure 1
Site Loction
1:20,0000 at A4

3 PLANNING BACKGROUND

3.1 The Southwark Plan (or Unitary Development Plan) sets out the framework for future development and land use in Southwark. The policies in the Southwark Plan are used by development control to make decisions on individual planning applications in Southwark. The Southwark Plan was adopted in July 2007 and, along with the London Plan, it makes up the current Development Plan for Southwark. The following archaeological concerns are addressed:

Policy 3.19 Archaeology

313 Planning applications affecting sites within Archaeological Priority Zones (APZs), as identified in Appendix 8, shall be accompanied by an archaeological assessment and evaluation of the site, including the impact of the proposed development. There is a presumption in favor of preservation in situ, to protect and safeguard archaeological remains of national importance, including scheduled monuments and their settings. The in situ preservation of archaeological remains of local importance will also be sought, unless the importance of the development outweighs the local value of the remains. If planning permission is granted to develop any site where there are archaeological remains or there is good reason to believe that such remains exist, conditions will be attached to secure the excavation and recording or preservation in whole or in part, if justified, before development begins.

Reasons

314 Southwark has an immensely important archaeological resource. Increasing evidence of those peoples living in Southwark before the Roman and medieval period is being found in the north of the borough. The suburb of the Roman provincial capital (Londinium) was located around the southern bridgehead of the only river crossing over the Thames at the time and remains of Roman buildings, industry, roads and cemeteries have been discovered over the last 30 years. The importance of the area during the medieval period is equally well attested both archaeologically and historically. Elsewhere in Southwark, the routes of Roman roads (along the Old Kent Road and Kennington Road) and the historic village cores of Peckham, Camberwell, Walworth and Dulwich also have the potential for the survival of archaeological remains.

315 PPG16 requires the council to include policies for the protection, enhancement and preservation of sites of archaeological interest and of their settings

3.2 Archaeological fieldwork was a condition for the granting of full planning permission for the development. PCA undertook an archaeological evaluation at the site between 24th February and 15th April 2008, which revealed *in situ* archaeology in Trench 1, consisting of an E-W aligned stream channel and possible bank, partially truncated by two E-W post-medieval wall foundations.

3.3 As a result of the evaluation Chris Constable, Senior Archaeological Officer for Southwark, requested that both the stream channel fills and sand deposits within trench 1 should be fully excavated by hand.

4 GEOLOGY AND TOPOGRAPHY

4.1 The geology and topography of this site has been laid out in full in the Desk Based Assessment[1]. The following is a summary of the geology and topography represented in that document.

4.2 Geology

4.2.1 The site lies on the alluvial floodplain of the River Thames. The result of archaeological excavation and borehole surveys in north Southwark show that from prehistoric times through to the medieval period the surrounding landscape would have comprised low gravel islands (eyots) surrounded by fen crossed by braided channels of the river Thames.

4.3 Topography

4.3.1 The site lies on fairly flat ground, with ground level to the west of the site recorded at 4.47m OD. The site lies 200m to the south of the river Thames.

4.3.2 Current topographical data suggest that the site probably lies on an eyot between two palaeochannels (former watercourse]), located *c* 100m to the north and to the south of the site.

4.3.3 Generally the eyots in north Southwark rose to heights of *c* 1.0-2.0m Ordnance Datum (OD), which made them less vulnerable to inundation and therefore suitable for early settlement and faming.

4.3.4 At the Hopton Street site, *c* 180m to the northeast of the site and located on the same eyot, natural sands and gravels were recorded at a height of between 0.10m OD to 0.42m OD. Boreholes to the east, west and south of the site revealed that alluvial sandy gravels, forming the surface of the eyot, lie at 0.6m, 2.1m, and 1.8m above OD respectively.

[1] Chandler and Knight, 2006.

5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

5.1 The archaeological and historical background of this site has been laid out in full in the Desk Based Assessment[2]. The following is a summary of the archaeological and historical background represented in that document.

5.2 Prehistoric

5.2.1 The floodplain, and consequentially the area concerning the study site, would have been dry until the early Mesolithic period (up to 7,750 BP) and probably covered by dense vegetation and consequentially is very likely that it would have been favoured for occupation. Moreover in the 19th century, implements dating to the Mesolithic period were recovered at the Hopton Street, *c* 180m to the north-east of the site.

5.2.2 At the end of the early prehistoric period permanent occupation would have been difficult due to the marine transgression and the consequent inundation of the lower areas of the floodplain except for area of higher, drier, ground, known as 'eyots' and the higher gravel terraces. The site was probably located on an 'eyot'. In 1994-7, excavations at Hopton Street, *c* 180m to the northeast of the site, revealed evidence of late Neolithic/early Bronze Age occupation in the form of ard (plough) mark, postholes, pits, flints artefacts and pottery. Another excavation at 245 Blackfriars Road in 1987, north of the site, also revealed part of the eyot, along with a buried agricultural soil containing burnt flints of Iron Age pottery.

5.2.3 Activities such as grazing, fishing, fowling, salt making, exploitation of sources of craft materials [willows, reeds and rushes] and pottery manufacture would have been important in the low-lying intertidal marshland around the eyots and recent investigations within the study area have revealed evidence of former channels and terrestrial environments dated to the prehistoric, including buried peat.

5.3 Roman period (AD43-410)

5.3.1 During the Roman period, *Londinium*, on the north side of the river, developed as an urban centre and later the provincial capital. The Romans established a bridgehead on the southern bank of the Thames opposite *Londinium*, not long after the foundation of the city in *c* AD 50. At this time the river level was sufficiently low to permit the establishment of a small but important settlement along the bridgehead road, *c* 1.25km to the northeast of the site. Mid to late 1st and early 2nd century

[2] Chandler and Knight, 2006.

embankments have been identified along the main river frontage, although there is no evidence for massive timber quays like those on the north bank. Investigations have revealed, in addition to settlement, extensive evidence of industrial activity. When the settlement was at its full extent its western edge lay *c* 600m east of the site.

5.3.2 The water level gradually felt during the Roman period. During this time the site was probably located on eyot in the marsh. There is evidence to suggest that there was some activity on the drier, fertile eyots in the marshes on the south side of the river. In 1987, an excavation *c* 75m north of the site at 245 Blackfriars Road revealed part of the eyot upon which the site is located, along with the agricultural soil containing fragments of pottery. Roman pottery has been found by chance *c* 160m to the southeast of the site. The exact significance of these finds is uncertain but indicates a low level of activity in the Roman period.

5.4 Early medieval period (AD410-1066)

5.4.1 Following the departure of the Roman army in AD 410, *Londinium* was abandoned, and Early and Middle Saxon settlements grew up to the west of the Roman town in the area of the Strand and Covent Garden. The Roman bridge across the Thames, *c* 1.2km to the northeast of the site, would have required maintenance and may have fallen out of use in this period. Between the early 5th and late 9th century there appears to have been sporadic human activities within the area of Southwark beside the bridgehead eyot, perhaps connected with a ferry.

5.4.2 In the mid to late 9th century London formed part of a nationwide system of fortified settlements known as burhs, which developed in response to the increasing number of devastating raids. The defended settlements of *Lundenburh* formed the basis of the later medieval city. The Burghal Hideage, a document listing all burths dated to AD 910-920, indicates that Southwark was also the site of a burth. This is the first mention of Southwark (*Suthringa Geweor*). It is likely that the burth was constructed in order to defend the southern bridgehead following the resettlement of the Roman city and re-establishment of the bridge crossing, and may have been built by King Alfred himself.

5.4.3 There are no sites or finds dated to the early medieval period within the site or study area. Throughout this period, the site was located within an extensive marsh on the south of the River Thames, owned by the Bishop of Winchester. The area would have been prone to flooding, and the Late Saxon marine transgression resulted in severe inundation of the lower-laying areas in Southwark.

5.5 Later medieval period (AD1066-1485)

5.5.1 During the later medieval period the site lay within the open fields in the southern part of Parish Garden Manor. The manor house lay *c* 300m to the northeast and the lands attached to the manor consisted of 100 acres of marshy riverside land that was prone to flooding. Throughout this period the area was known as *Wideflete* or *The Wiles* meaning willows. The manor originally belonged to Bermondsey Abbey and in AD1166 it was granted to the Knights Templar, who held it until the time of their suppression in the early 14th century, after which it was passed to the Knights Hospitallers. By 1420 the name changed to Parish Garden and later to Paris Garden.

5.5.2 The first attempt to drain and reclaim the marshland date to the 14th century when drainage channels dug around parcels of land is likely to have taken place in stages following the construction of sea walls built successively further out of the edge of the higher ground. As a result of successful sea defence and reclamation, the riverside rapidly developed, resulting in the establishment of settlements long the south bank and industry, shipyards and docks further east at Rotherhithe. The characteristic irregular shape of the main roads in the area suggest that the roads ran along the original flood defence embankments. Drainage ditches formed part of a system of water management, which included mills, and the remains of a medieval tidal millpond and ditches, suggesting the presence of a nearby mill (Widflete Mill), were recorded *c* 175m north-west of the site.

5.6 Post-medieval period (AD1485-present)

5.6.1 For a time, Henry VIII's wife Jane Seymour owned Paris Garden Manor, and it subsequentially passed to William Baseley, Bailiff of Southwark, who opened the manor house and its grounds to the public for bowling and gambling.

5.6.2 In 1671, Christ Church was constructed to the west of the site and in 1756 the Mayor, Aldermen Commons of the City of London, obtained authority by Act of Parliament to build a bridge at Blackfriars, the third bridge to be erected across the Thames in the London area. A further act in 1768 was obtained to form a road from Blackfriars Bridge to the 'Dog and Duck' at Newington Butts. Blackfriars Road was laid out between 1770 and 1800 and was known as Great Surrey Street until 1829 when the name was changed to Blackfriars Road.

5.6.3 From the late 18th century, the area rapidly developed, principally with the construction of commercial premises and tenements. By the mid 19th century the whole area between Waterloo and Blackfriars Bridges was built up.

5.6.4 The 1871 census shows that by that time 231 Blackfriars Road was occupied by John Nathan, a furniture and picture dealer, his wife Sarah and their six children. Other domestic dwellings are indicated on the Ordnance Survey of 1873. This map shows the southern and central parts of the site as terraced houses, probably the same houses that occupied the site in the 1840s. The plan of this houses shows a stairs on the street frontage possibly leading to a basement level, which would indicate that this houses were built in the *piano mobile* style with the accommodation arranged over several storeys. However the Goad Insurance map of June 1889 reveals commercial properties along the street front, with no indication of basements and with smaller building to the rear.

5.6.5 By 1916 the site was unchanged. However by this stage the buildings on the site were used for industrial or commercial premises.

5.6.6 The London County Council's bomb damage map drawn up during World War II shows the site damaged behind repair with part of the Blackfriars Road frontage being totally destroyed. After the Second World War the site was cleared.

5.6.7 Finally the 1982 Ordnance Survey map shows the site as it appears today, occupied by warehouses and office buildings.

6 ARCHAEOLOGICAL METHODOLOGY

6.1 The initial evaluation of the site consisted of five evaluation trenches across the site (Fig. 2). The methodology for evaluating the site was laid out in the Written Scheme of Investigation[3]. The evaluation trenches revealed an E-W stream channel located towards the southern area of the site and post-medieval activity above the natural sand in the northern area of the site.

6.2 With the exception of evaluation trench 1 no further work was required. In evaluation trench 1 a mitigation strategy was agreed with Chris Constable, Archaeological Monitor for Southwark Council, that both the stream channel fills and sand deposits within the trench should be fully excavated by hand.

6.3 The positions of all services were checked before locating the trenches on the ground and trenches were CAT scanned before work commenced. Where necessary the extent, axis and location of the trenches were changed to avoid live services and physical obstructions.

6.4 The removal of modern overburden and later post-medieval layers was undertaken using a mechanical excavator fitted with a flat bladed ditching bucket under archaeological supervision. Mechanical excavation continued through undifferentiated deposits in spits of no greater then 100mm until either significant archaeological, or natural, undisturbed deposits were encountered.

6.5 Following machine clearance, all faces of the excavation areas that required examination were cleaned using appropriate hand tools. All investigation of archaeological deposits was by hand, with cleaning, examination and recording both in plan and section.

6.6 Areas of excavation were fenced off during the excavation to protect the archaeology and the public and were all backfilled at the end of the excavation.

6.7 Recording was undertaken using the single context recording system as specified in the Museum of London Site Manual. Plans were drawn at a scale of 1:20, and full or representative sections at a scale of 1:10. Contexts were numbered sequentially and recorded on *pro-forma* context sheets.

[3] Moore, 2008.

6.8 A temporary benchmark (TBM 4.47m OD) was transferred from the Ordnance Survey Bench Mark located to the southwest of the site at the junction between Colombo Street and Blackfriars Road (BM 4.24m OD).

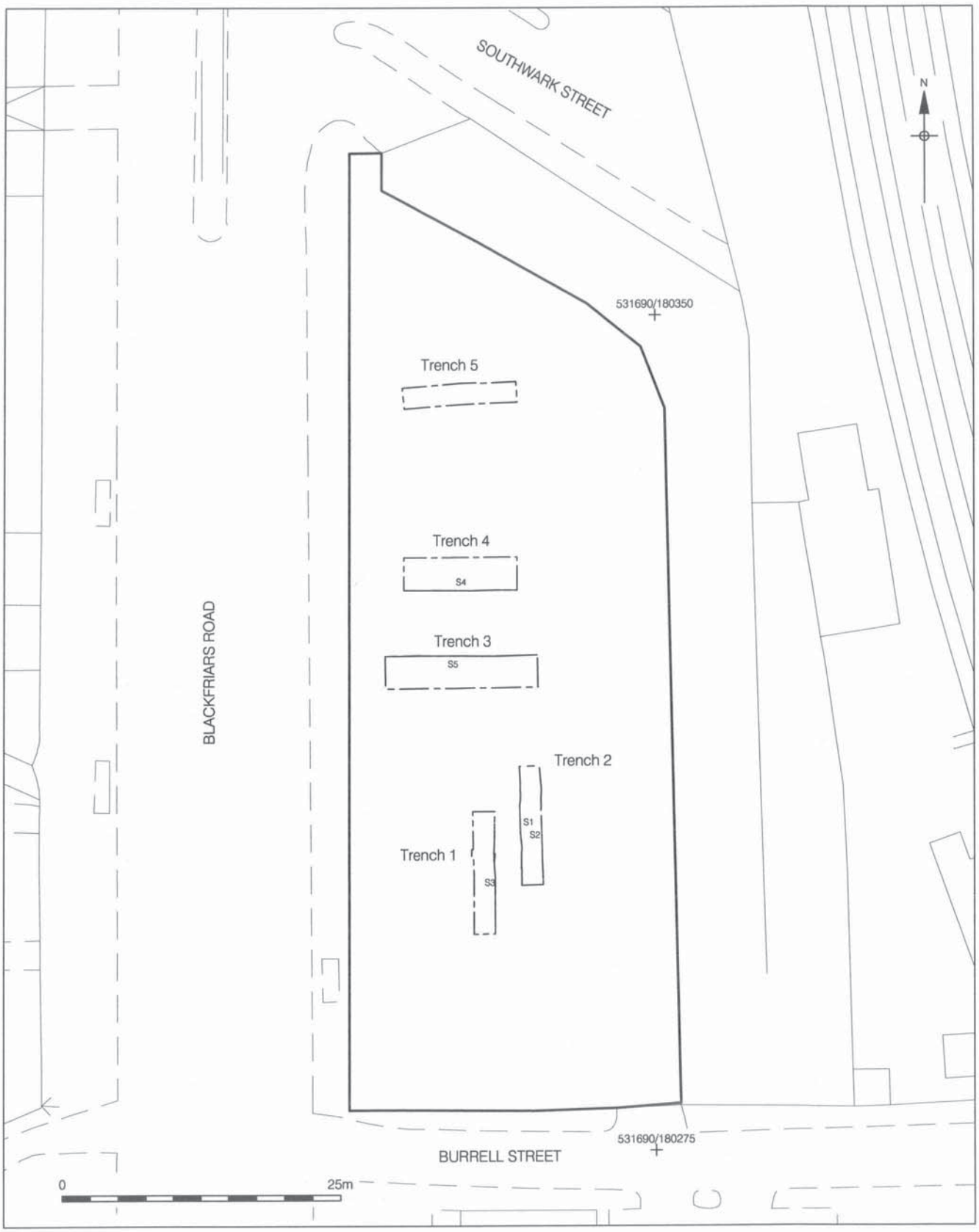

Figure 2
Trench Location
1:500 at A4

7 THE ARCHAEOLOGICAL SEQUENCE

7.1 Introduction

7.1.1 The following describes the main characteristics of each context and its position in the phased stratigraphic matrix. Ordnance Datum levels and physical dimensions are referenced when relevant to an understanding of the archaeological sequence and when not cited can be found referenced in Appendix 1.

7.2 Phase 1: Natural (Figs. 8 & 9)

7.2.1 The earliest deposit encountered during the excavation of trench 1 was naturally formed and waterlogged sandy gravel, recorded as [255] in excavation trench 1 at –0.06m OD. This natural layer was observed at the base of channel [184]. To the south of trench 1 the natural phase was represented by loose mid to light yellow waterlogged sand [208] found at 0.30m OD under early channel [194]. Overlying [255] was light brownish yellow gravelly sand [201] found at 0.71m OD and located in the southern area of excavation trench 1. This naturally formed deposit represent a bank separating the earlier channel [194] to the south and later channel [184] to the north (see below). To the north in trench 1 the natural was represented by loose mid greyish yellow sand [190] found at 0.92m OD and also representing the northern bank of later channel [184].

7.2.2 To the east of trench 1, in trench 2, the earliest deposit encountered was natural sand recorded as [5] at 1.14m OD. The same natural sand was recorded to the north as [264] in trench 3 at 2.67m OD, as [158] in trench 4 at 1.25m OD and finally as [206] in trench 5 at 0.72m OD.

7.2.3 Evaluation trenches 2 to 5 show a substantial sloping of the natural sand downwards to the south of the study site. In addition a natural E-W stream channel [194] was observed in the southern part of trench 1 which is discussed below.

7.3 Phase 2: Prehistoric (Fig. 3, 8 & 9)

7.3.1 Evidence for possible prehistoric activity in the vicinity of the study site was suggested by the artefacts found within the fills of the earlier phase of an E-W channel represented by cut [194] found in the southern area of excavation trench 1. The fills of this stream channel were found at a height of 1.20m OD with the cut at a height of 0.71m OD and sloping downwards to the south to a lowest level of 0.28m OD, it was approximately 1.00m long (E-W) by 2.70m wide (N-S) and 0.96m deep. It

was truncated to the west by a later construction cut for a post-medieval well/soak away and extended behind the eastern and the southern limit of excavation. Loose dark brown silty coarse sand with organic material [200] represented the primary fill of [194] which was found at 0.38m OD and in turn was sealed by soft mid brown silty clay [176] to the south at 0.32m OD and by loose dark yellow sand [177] at 0.48m OD to the north. None of these lower fills produce dating material for the earlier channel, but moderately compact mid to light greyish brown silty sand [171], found at 0.82m OD and overlying fills [176] and [177], produced sherds of pottery possibly of Iron Age date. Fill [171] was in turn sealed by firm light to mid grey silty sandy clay [175] with moderate to frequent burnt flints at 0.84m OD. A series of clayey fills represented by [174], [173] and [172] found at 0.88m OD, 0.98m OD and 1.20m OD respectively completed the sequence of alluvial events associated with the early phase of the natural E-W stream channel represented by [194]. Finally mid grey brown silty clay [15], sealing fill [172] at 1.50m OD was interpreted as a layer. However, its composition and colour were very similar to fill [172] and consequentially it is possible that it represents the upper fill of channel [194] instead.

7.3.2 To the north of trench 1 and sealing the natural deposit, [255], was a loose mid yellowish red alluvial sand [192] which was recorded at 0.61m OD. Late Iron Age/Early Romano-British pottery and a struck flint were found in this context that was recorded as a layer. This layer was in turn sealed by very loose light greenish yellow sand [188] at 0.66m OD with occasional medium to small fragments of burnt flints. These deposits may represent late prehistoric deposits but are more likely to be the earliest fills E-W stream channel [184] (see below).

7.4 Phase 3: Roman (Figs. 4, 8 & 9)

7.4.1 Stream channel [184] occupied most of the area of excavation in trench 1, with the exception of the south where the earlier stream channel [194] was located, and was 6.03m wide (N-S), 2.00m long (E-W) and 1.26m deep. The cut was recorded at a highest level of 0.70m OD and at a lowest level of –0.11m OD with the top of the fills seen at a level of 1.16m OD. The southern side of the channel [184] was filled with firm mid to dark grey silty clay [198], with occasional flecks of shell and a single sherd of pottery dating between AD 50 and 400, at 0.79m OD and was recorded as the primary fill. At 0.28m OD soft dark greyish brown sandy clay fill [250] sealed [198] and was in turn overlaid by loose mid greyish brown sand fill [187] with occasional fragments of pottery dating between 270 and 400 AD. Fill [187] was overlaid to the north by mid yellow brown clay sand fill [145] at 0.94m OD and to the south by dark greenish brown sandy silt fill [199] which in turn was sealed by mid to dark blueish grey silty sand fill [122] from which was recovered a single sherd of pottery dating

between AD 50 and 500. Fills [199] and [122] were found at 0.43m OD and 0.55m OD respectively. Dark grey silty clay fill [130] overlaid [122] and [145] to the south and to the north respectively and was found at 0.93m OD and in turn sealed by mid to dark grey silty clay fill [121] at 0.79 OD. Dark grey to dark reddish silty sand fill [197] sealed [121] at 0.87m OD and was in turn overlaid by mid dark grey silty clay fill [207] at 0.87m OD. In the southern area of channel [184] dark grey silty sand fill [131] sealed [207] at 1.01m OD. In the central area of channel [184] dark greyish blue silty clay fill [113] overlaid [207] at 1.06m OD. In the northern area of the same channel silty greyish black silty clay [146] sealed [113] at 1.15m OD and was in turn overlaid by light greyish silty clay [140] at 1.21m OD. Finally greyish brown silty clay [139] and mid brown clay [193] complete the sequence of fills associated with channel [184] at approximately 1.19m OD.

7.4.2 Following the same E-W alignment of channel [184] was found channel [30] observed in trench 2 to the east at 0.93m OD and 0.58m OD, highest and lowest level respectively. This channel measured 1.90m long (E-W) by 1.34m wide (N-S), and 0.46m deep and failed to produce any artefacts from its fills. However, because of its position and alignment it was interpreted as being the same as channel [184] observed and recorded in trench 1 to the west. It was filled by bluish grey clay [32], found at 0.87m OD, which in turn was overlaid by light reddish brown sandy clay [29] at 1.02m OD. Light brown sandy clay [46] sealed [29] at 0.98m OD and finally dark grey clay [43] overlaid [46] at 1.16m OD.

7.4.3 To the south of stream channel [30] another E-W stream channel was recorded as [25]. Despite being recorded as later than [30] it is possible that channels [25] and [30] belong to the same phase with the E-W channel [184] already observed and recorded in trench 1. Stream channel [25] was 3.97m wide (N-S) by 1.92m long (E-W), 0.84m deep and was found between 1.09m OD and 0.20m OD. It was filled by brownish yellow sand [47] and [48] found at 0.88m OD and 0.67m OD respectively and interpreted as slumping of natural sand on both the south and north sides of channel [25]. Pottery and CBM dating between AD 50 and 420 were found within fill [47]. Loose mid grey clayey sand fill [35] was found at 0.39m OD overlying fills [47] and [48] and contained one sherd of pottery dating between AD 50 and 160. The sequence was completed by dark grey silty clay fill [24], found at 1.35m OD and sealing [35].

7.4.4 To the south of trench 1 a possible E-W aligned Roman ditch [77] was observed between 1.41m and 0.64m OD, measuring 2.15m long (E-W) by 2.28m wide (N-S) by 0.77m deep and was truncated to the north by a post-medieval ditch [75]. The northern side of ditch [77] was recorded as [257] in section. Ditch [77] was filled to the south by firm dark greyish sandy clay [76] at 1.41m OD with occasional burnt flints,

charcoal flecks and one sherd of pottery dating between AD 270 and 400. In addition a possible residual flint knife/scraper was found within fill [76].

7.4.5 Excavation trench 1 and evaluation trench 2, in conclusion, revealed an E-W natural stream channel with at least two different archaeological phases recorded as [194] and [184]/[30] which represented the earlier prehistoric and the Roman phases respectively of a channel, which was in turn truncated by an E-W possible Roman ditch represented by context [77]

7.5 Phase 4: Post-medieval (17th Century) (Figs. 5 & 9 Sections 3 & 5)

7.5.1 In trench 1 overlying upper fill [113] of stream channel [184] at 1.27m OD was firm dark blackish brown silty clay [92]. One sherd of pottery dating between 1630 and 1680 was found within layer [92], which was interpreted as post-medieval alluvial clay. A possible E-W post-medieval running ditch [91], truncating [92], was found across the southern area of excavation trench 1 at between 1.08m and 0.60m OD and measured 1.10m wide (N-S) by 10.1m long (E-W) and 0.48m deep. Ditch [91] was filled by mid greyish brown silty clay [90] with occasional charcoal flecks at 1.08m OD which was in turn truncated to the south, at 1.26m OD, by a possible post-medieval E-W drainage ditch [75] measuring 1.10m wide (N-S), 1.96m long (E-W) and 0.40m deep with its base observed at 0.84m OD. Firm light yellowish brown clay [72] filled [75] at 1.32m OD. Finally firm mid grey sandy silty clay layer [50], with occasional redeposited burnt flints and very occasional pottery dating to 1660-1680, was found at 1.38m OD and overlaid the fill of post-medieval E-W drainage ditch [75].

7.5.2 E-W 17th century ditches [91] and [75] in trench 1, possibly represent drainage ditches on the same alignment and in the same general location as stream channels [194], [184]/[30] and [77] suggesting that the southern area of the study site contained a natural watercourse which was by the post-medieval period was managed as a drainage and boundary ditch as depicted on the Faithorne and Newcourt map of 1658.

7.5.3 Seventeenth-century occupation was also observed in evaluation trenches 3 and 4 towards the northern area of the study site where the level of the natural sand was substantially higher than in the south.

7.5.4 In the western part of trench 3 were found several pits. Pit [133] with a top height of 1.34m OD and a basal height of 0.54m OD was revealed backfilled by a sequence of silty sands represented by [120], [119], [118] and [117]. To the north was a large cut [247], interpreted as a possible quarry pit, filled by [148], [136], [135] and [134]. Pottery and clay tobacco pipe recovered from the fills were dated to the late 17th

century. Also located in the western part of the trench was another possible quarry pit, [116], filled by greyish brown silty sand [115] at 1.31m OD also dated by pottery to the century. Towards the middle of the trench, rubbish pit [236] was filled by [238] and [107], the former dated by pottery to 1580-1700, at heights of 1.24m OD and 1.53m OD respectively. Circular pit [249] found at 1.15m OD was filled by soft mid brown silty sand [248] and was truncated to the south-west by sub-circular pit [246] at 1.42m OD. Mid grey brown silty sand [245], found at 1.42m OD filled [246] and was in turn sealed by post-medieval layer [111] (same as [244]) at 1.55m OD. Pit [240] was filled by dark blackish grey silty sand [239] at 1.49m OD which contained no datable artefacts. In the northeastern part of trench 3 at 1.43m OD and 1.08m OD (highest and lowest level) was found quarry pit [242] filled by [243] and [241]. Upper fill [241] produced pottery and clay tobacco pipe dating to 1630-1700 and 1640-60 respectively. In the eastern area of the trench at 1.41m OD and 1.35m OD (highest and lowest levels) was observed linear cut [221] filled by primary fill [232] and by upper fill [220]. Pottery sherds and clay tobacco pipe fragments dating 1550-1700 and 1660-80 were recovered from [220]. In the eastern area of evaluation trench 3 a small pit [223] filled by mid to dark grey brown sandy silt [222] at 1.71m OD produced tobacco clay pipe fragments dating between 1660-1680. Another small pit [219] located in the same area was filled by dark grey brown sandy silt [218] at 1.68m OD with clay tobacco pipes dating to 1660-1680. A heavily truncated pit [217] was filled with similar material [216]. In the northeast corner of the trench linear cut [164] was truncated to the west by a later construction cut for a well/soak away, extended behind the eastern and northern limit of excavation and was filled by mid greyish brown silty sand [163] at 1.86m OD. In the southeast corner of the trench semi-circular pit [166] was observed. It was truncated to the south and extended behind the eastern limit of excavation and was filled by [167] and [160] at 1.77m OD and 1.94m OD respectively. Upper fill [160] produced artefacts dating 1580-1700 and one sherd of residual Roman pottery. In the southeast corner of the trench was observed sub-rectangular cut [142] filled by [165] and [141] at 1.78m OD and 2.00m OD respectively. The primary fill, [165], produced finds dating to 1660-1680. Finally, two small pits, [144] and [162], truncated the upper fill [141] of pit [142]. These two small pits were filled by mid to dark greyish brown sandy silt, recorded as [143] and [161] at 1.99m OD and 1.86m OD respectively, and produced artefacts dating to 1580-1700.

7.5.5 The 17th century activity observed in trench 4 was restricted to intercutting pits [260] and [215] located in the south-west corner of the trench and pits [186] and [196] in the central and eastern parts of the area respectively. The former pits were filled by mid to dark blackish brown silty sand [259] and [214] at 1.15m OD and 1.30m OD respectively. Fill [214] produced 17th century pottery. Pits [186] and [196] were filled

by [185] and [195] at 1.32m OD and 1.30m OD and were dated to the second half of the 17th century.

7.6 Phase 5: Post-Medieval (18th Century) (Figs. 6, 7, 8 & 9 Section 5))

7.6.1 The 18th century occupation of the site was characterised by more pitting with the first evidence of structural features such as buildings and associated wells.

7.6.2 In trench 1 a number of pits truncated the upper fills of the E-W stream channel. In the southeast corner of the trench pit [7] was revealed filled by soft dark brownish grey silty clay [6] at 1.51m OD which produced sherds of pottery and tobacco clay pipe dating to the 18th century. A possible E-W ditch [89], 1.05m wide (N-S) and 0.35m deep, and filled by soft mid reddish brown silty clay [88] at 1.38m OD was observed in section only. No finds were recovered from the fill. Pit [138], located in the central part of the trench, measured 0.53m N-S by 0.80m E-W by 0.94m deep, was filled by dark bluish greyish brown silty clayey sand [137] with very frequent brick rubble, mortar flecks and occasional fragments of 18th century pottery.

7.6.3 In trench 3 several possible rubbish and quarry pits dating to the 18th century were revealed. Pit [231], located in the central area of this trench, measured 0.94m N-S by 2.40m E-W by 0.45m deep and was backfilled by mid greyish black sandy silt [230] with occasional charcoal flecks, animal bones and fragments of clay tobacco pipes dating to 1700-1740. This cut was interpreted as an early 18th century rubbish pit. Pit [229], located in the eastern part of the trench, measured 1.98m N-S by 1.06m E-W by 0.48m deep and was truncated to the north by a later construction cut for a well/soak away. Cut [129] extended behind the southern limit of excavation and was backfilled by dark grey brown sandy silt [128] with occasional late 17th century sherds of pottery and early 18th century clay tobacco pipes. It was interpreted as a possible N-S drainage ditch. Towards the middle of evaluation trench 3 was observed another quarry pit recorded as [235], measuring 1.39m E-W by 0.79m N-S by 0.27m deep, and filled by [233] and [237] at 1.39m OD and 1.49m OD respectively. To the north another quarry pit, [229], was observed filled by [234] and [228] at 1.43m OD and 1.56m OD respectively which contained residual 17th century finds. This was sealed by a moderately compact dark grey brown sandy silt layer [108] found at heights between 1.95m OD and 1.66m OD. This layer produced fragments of pottery and clay tobacco pipes dating between the 1720 and 1740. This layer was truncated to the east by E-W robber cut [126], which was filled by primary fill [127] and by upper fill [125] at 1.62m OD and 1.89m OD. Robber cut [126] extended to the west as cut [159] after being truncated by later cut [124] and a construction cut for a well. Robber cut [159] was truncated to the west, by construction cut [105] for a N-S brick drain

[104] which was filled by fills [180] and [106] that were interpreted as being the same as contexts [127] and [125] to the east. The upper fill, [106], produced sherds of residual pottery dating to the middle of the 17th century. The overall dimension of the robber cut, represented by [159] and [126], was 3.12m E-W by 0.70m wide and 0.32m deep. In the western part of the trench cuts [116] and [252] were observed filled by mid grey brownish silty sand [115] and [251] at 1.31m OD and 1.44m OD and in turn were sealed by compact dark brown grey silty brown clay [114] found at 1.57m OD and 1.30m OD (highest and lowest levels). Two brick well/soakaways were located in the eastern area of the trench. Well [97] was observed to the north of the trench whilst well [100] was located extending beyond the southern limit of excavation.

7.6.4 In trenches 1 and 2 a number of structural elements of a building were observed. In the southwest corner of trench 1 a brick well/soak away [9] measuring 2.25m N-S by 1.00m E-W by 0.65m deep as exposed, was observed at 1.48m OD. Soft mid brownish grey sandy clay [40] was recorded as forming the upper fill of the well's construction cut [41], which was dated by clay tobacco pipe fragments to the 18th century. To the south of the trench construction cut [263] contained postholes [57], [59], [61] and [63] for an E-W wall foundation represented by masonry [51], [13], and [52]. The masonry was found at heights of between 1.38m OD and 1.27m OD. This wall (structure [265]) was parallel to structure [266] located approximately 2.30m to the north in trench 1. This structure consisted of three timber piles, [78], [79] and [80] with the horizontal timber [85] sitting above them and functioning as a foundation for E-W brick wall [14] which was found at 2.23m OD. The wall was set within construction cut [84] which was backfilled with [83] which contained residual 17th century pottery and clay tobacco pipes fragments dating to 1740-1800. These two walls were contemporary and part of the same building. To the south of the trench was observed a N-S construction cut [65] (recorded as [74] to the north of structure [265]) for wall [66], the backfill of which was dated to 1760-1835. In the south-west corner of trench 1 and build against the eastern side of N-S wall [66], was observed masonry [8]. This masonry measured 0.80m E-W and 0.40m N-S, was found at 1.47m OD and originally covered most of well/soak away [9]. It is possible that [9] was originally a well. Later on [9] was backfilled and basement wall [66] was build across it. Masonry [8] was build abutting the western side of [66] and directly above [9] creating the conditions for the original well [9] to be reused as a soak away.

7.6.5 In trench 2 the building activity was represented by E-W structure [267] formed by three timber piles [19], [20] and [21] and two postholes [27] and [28] found at levels of between 0.96m OD and 0.67m OD. This was a continuation of the northern E-W wall in trench 1 to the west. To the south in trench 2 brick wall [4] was acontinuation oof

the southern wall in trench 1. Other features in trench 2 consisted of a shallow E-W ditch/gully [45], seen in section only, and filled by soft reddish brown clay [44] at 1.18m OD was observed in the central part of the trench. Ttowards the east of the central part of the trench barrel well [36] lying within construction cut [33] was observed at 1.05m OD. It was filled by primary fill [31] and by upper fill [16] and contained clay tobacco pipe fragments within its backfill dating to 1780-1830.

7.6.6 In trench 4 a number of intercutting pits and two well/soakaways were observed. In the southwest corner of the trench a post-medieval pit [227] was filled by mid blackish brown silty sand [226] at 1.32m OD. Pottery dating to 1630-1750 was found within fill [226] of the pit, which measured 0.72m N-S by 3.04m E-W and 0.67m deep. It was truncated to the west by pit [213] and to the northeast by pit [211] at 1.32m OD and at 1.35m OD respectively and in turn filled by dark grey silty sand [212] and [210]. A layer of moderately compact dark blackish brown silty sand [209] sealed fills [210] and [212] and produced finds dating to the first half of the 18th century. Layer [209] was truncated to the south by pit [225] which was filled by firm greyish mortar rubble [224]. This pit was truncated by the construction cut, [155], of a well/soak away, [154], which was dated by the fill [170] of its construction cut to the 18th century. In the central part of the trench was revealed an oval/sub-rounded rubbish pit [183] filled by firm dark blackish silty sand [182] at 1.27m OD which contained pottery and clay tobacco pipes dating to the first half of the 18th century. Another well/soakaway, [151], of early 18th century date was observed in the northeast corner of the trench at 1.09m OD, and was truncated to the south by an E-W modern service trench that occupied most of the north of the trench. Finally cut [157] was observed in the southeast corner of the trench filled by firm greyish black silty sand [156] at 1.21m OD and was interpreted as a late post-medieval rubbish pit.

7.7 Phase 6: Post-medieval (late 19th-20th century)

7.7.1 In trench 1 well [9] went out of use during the late 19th century when it was backfilled by deposit [10] that contained clay tobacco pipe stems and pottery fragments dating to 1835-1900.

7.7.2 In evaluation trench 5 the 19th to 20th century occupation was represented by a substantial E-W cellar concrete wall foundation [202], which occupied most of the area covered by the trench. This foundation was found between 0.92m OD and 0.78m OD, extended 1.8m N-S and 8.70m E-W and was sealed by a substantial deposit of modern demolition rubble which was in turn sealed by modern reinforced concrete which was present in all the trenches.

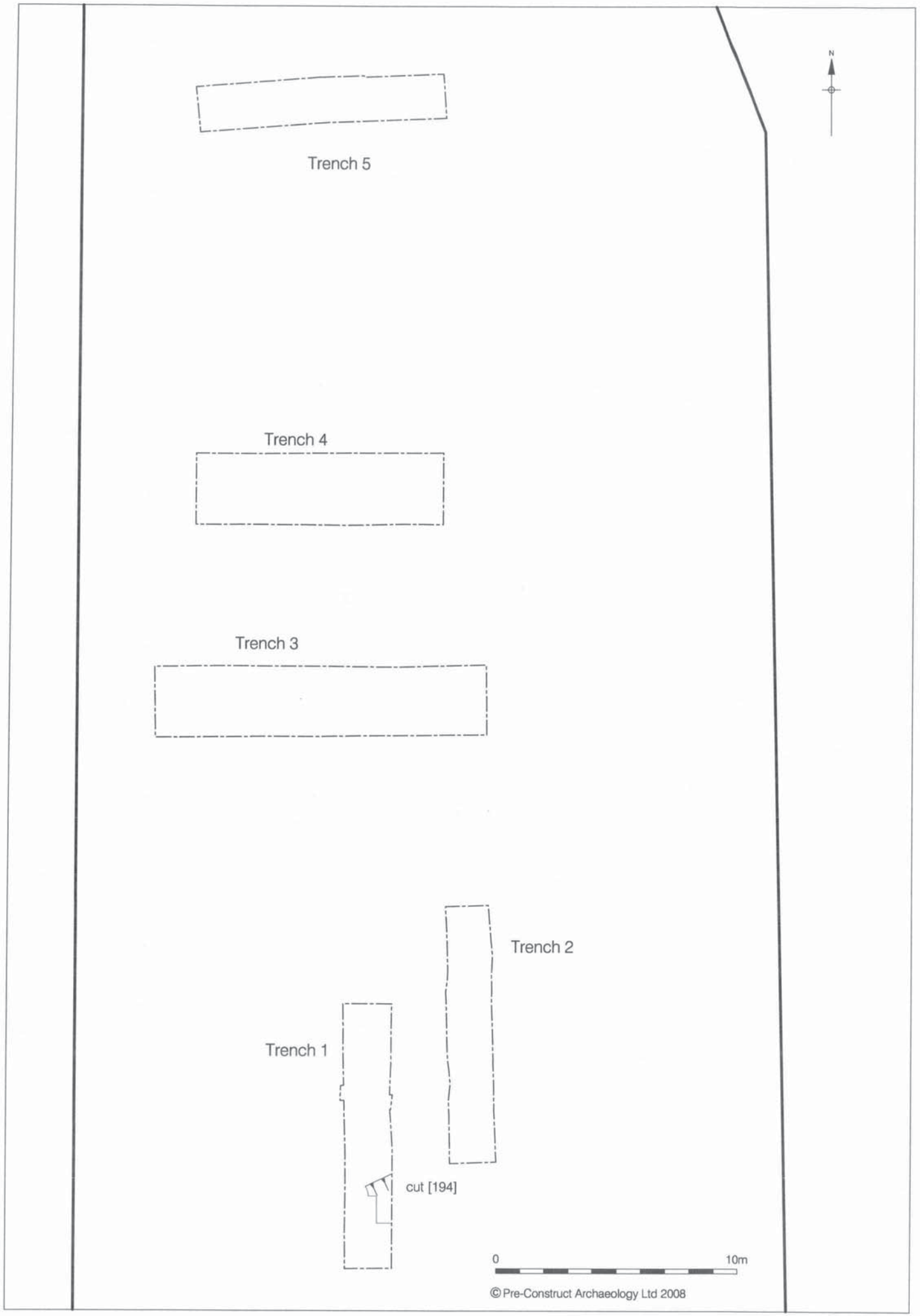

Figure 3
Phase 2: Prehistoric
1:200 at A4

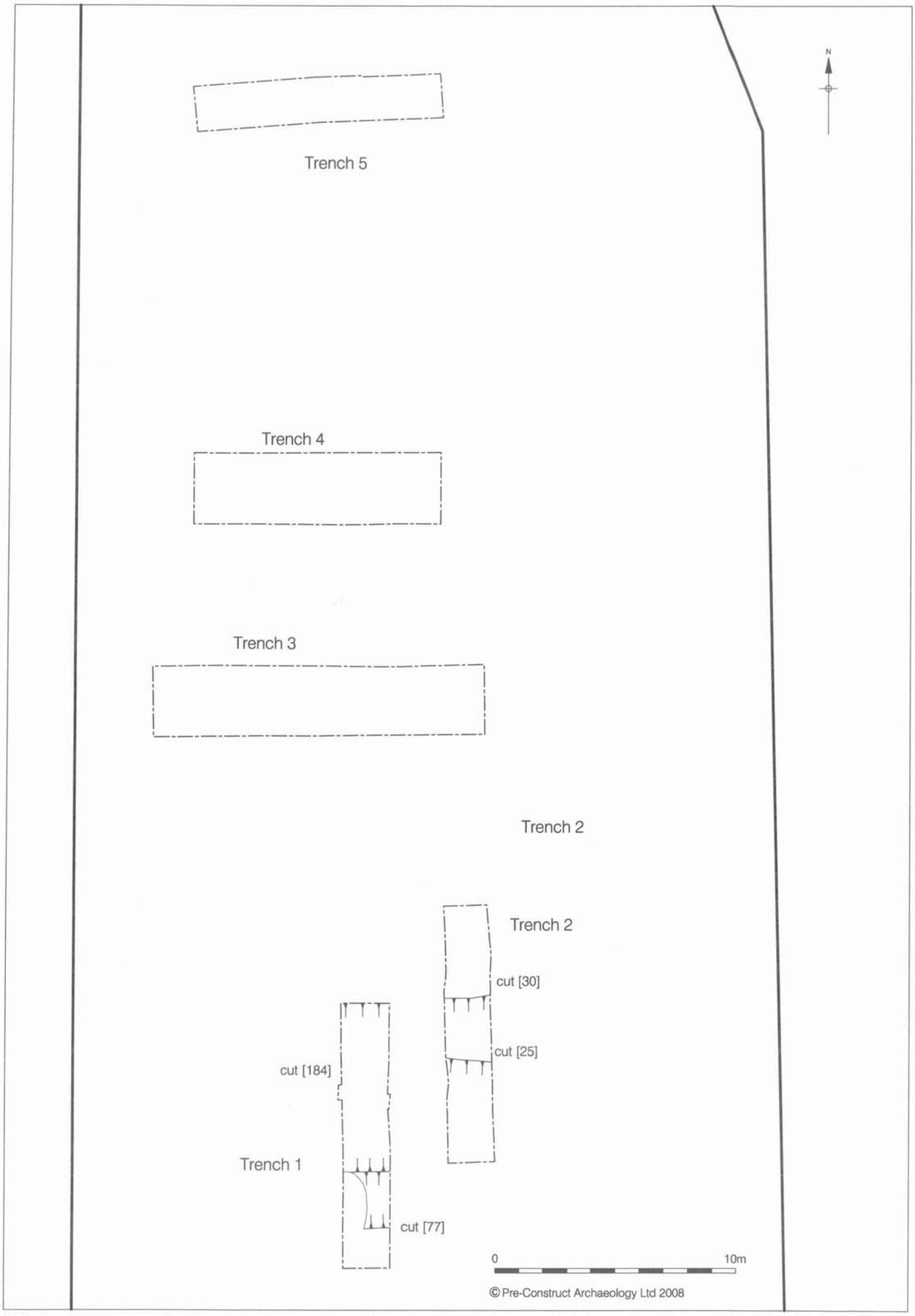

Figure 4
Phase 3: Roman
1:200 at A4

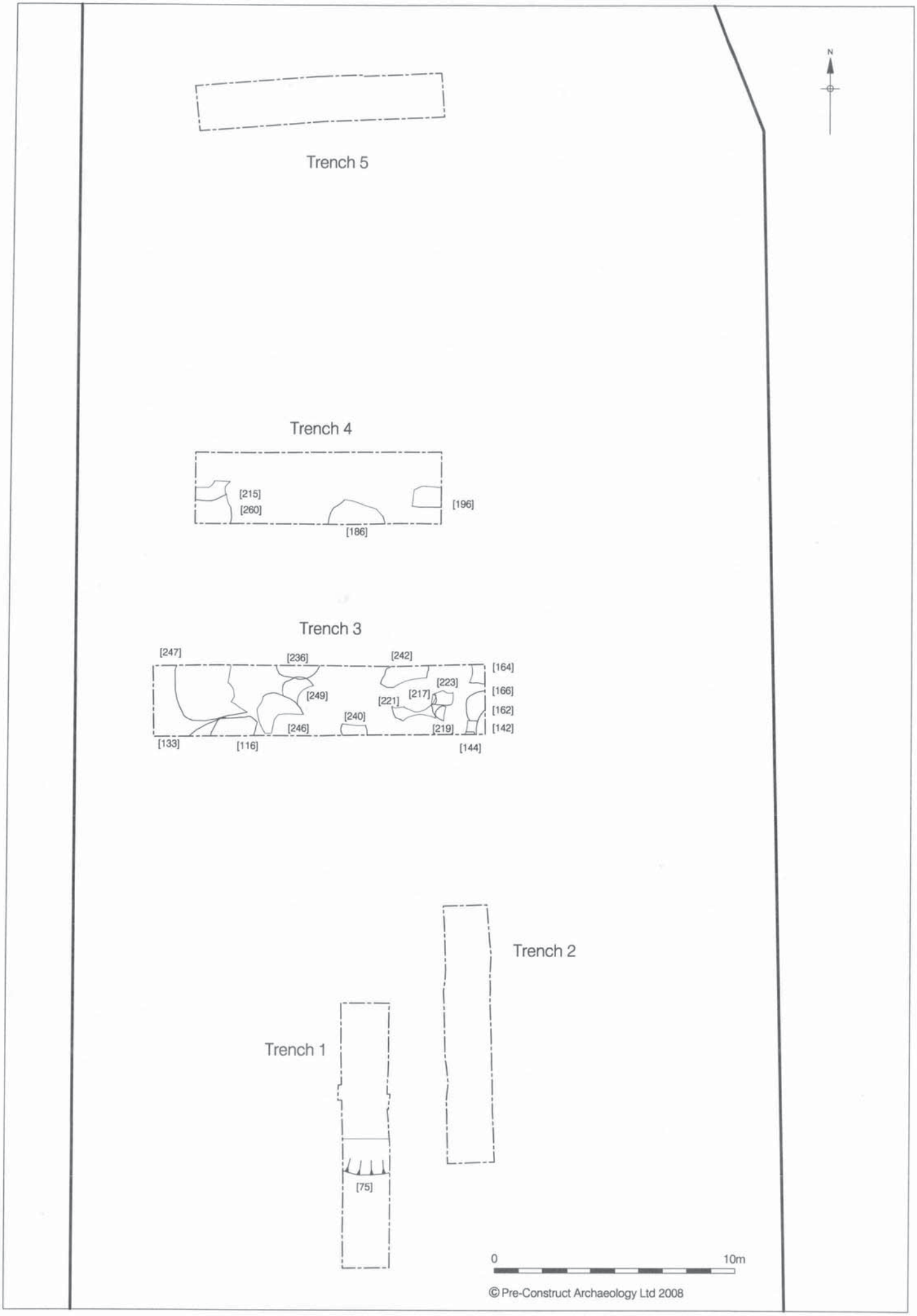

Figure 5
Phase 4:17th century
1:200 at A4

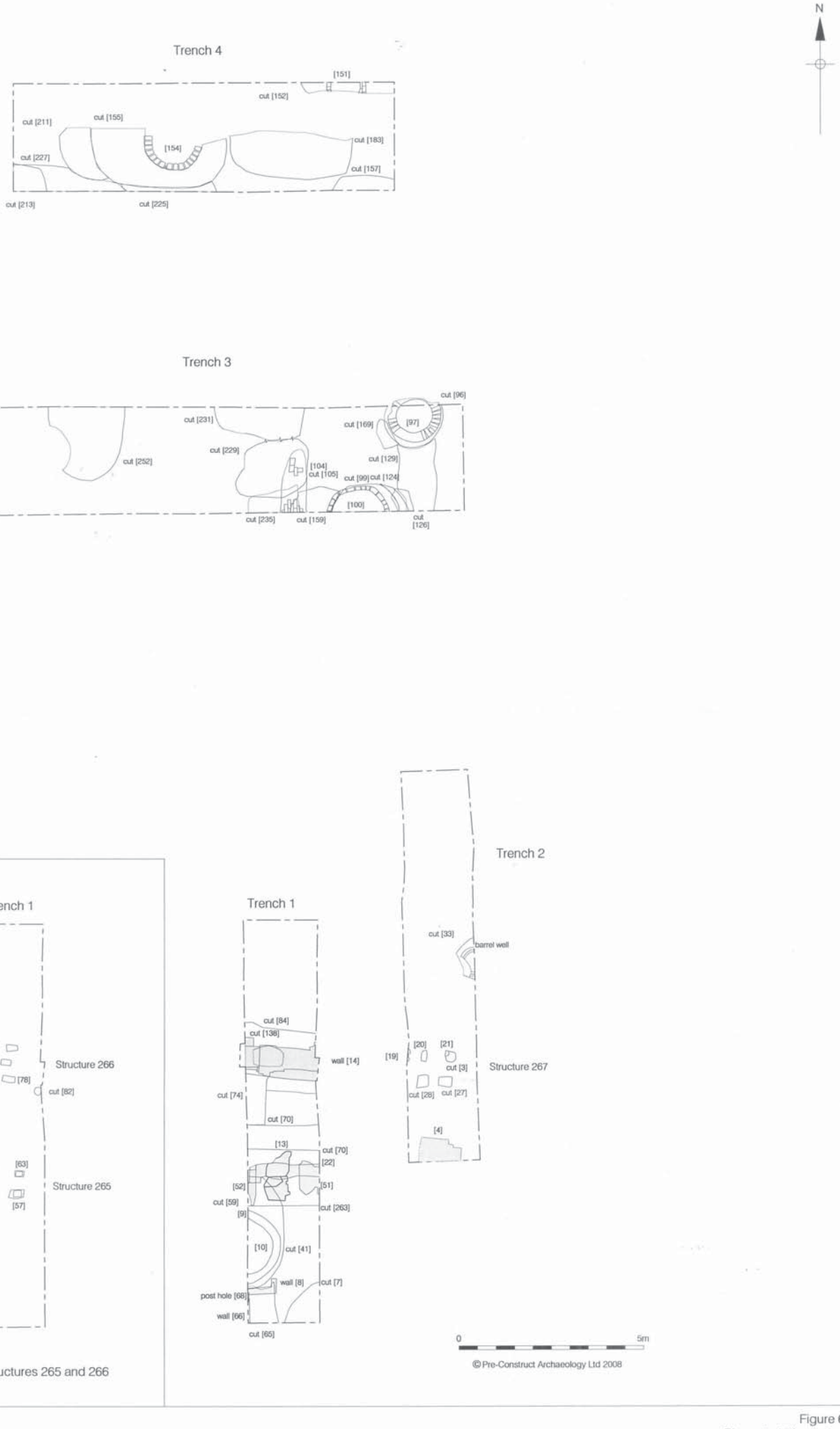

Figure 6
Phase 5: 18th century
1:200 at A4

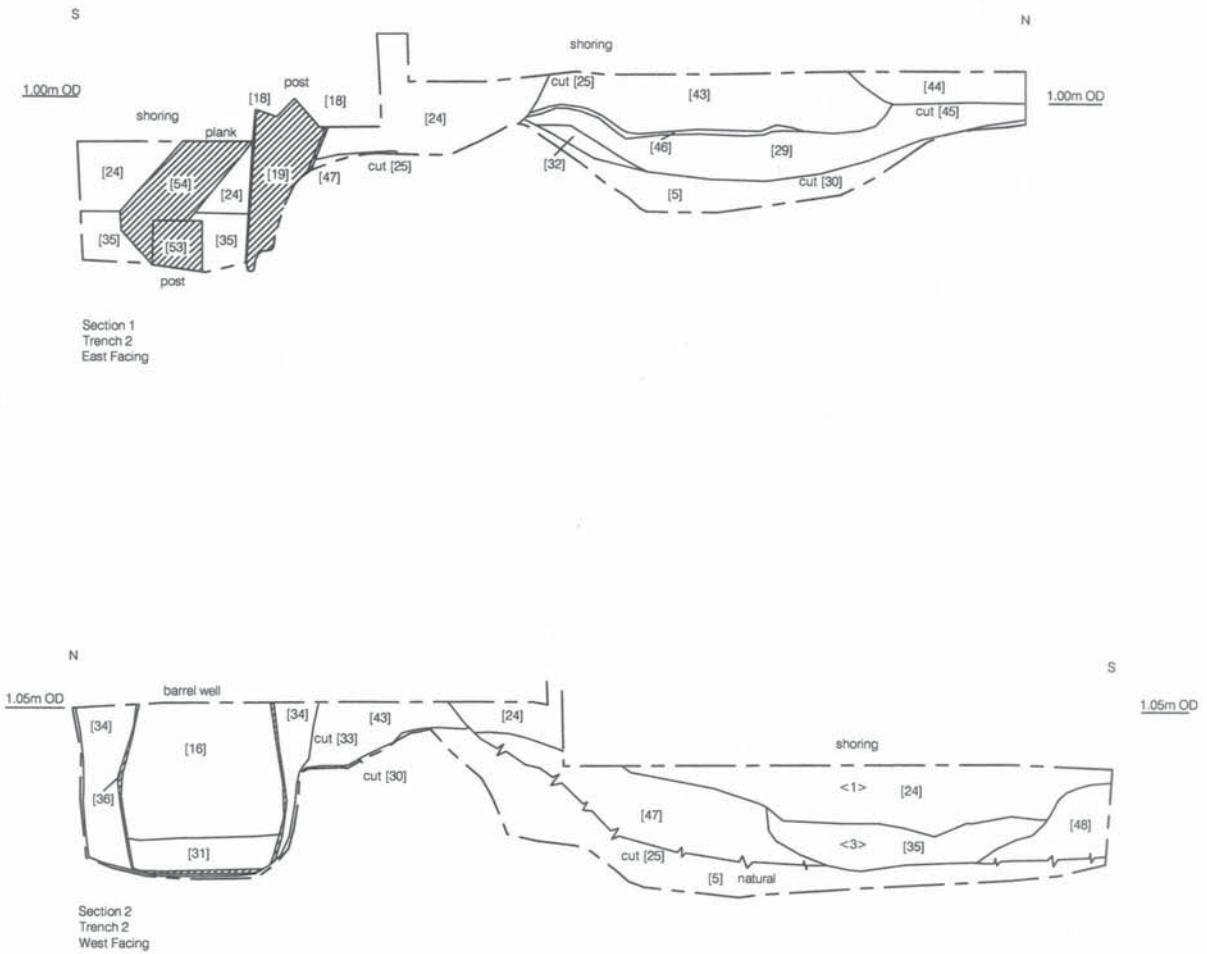

Figure 7
Sample Sections 1 & 2
1:40 at A4

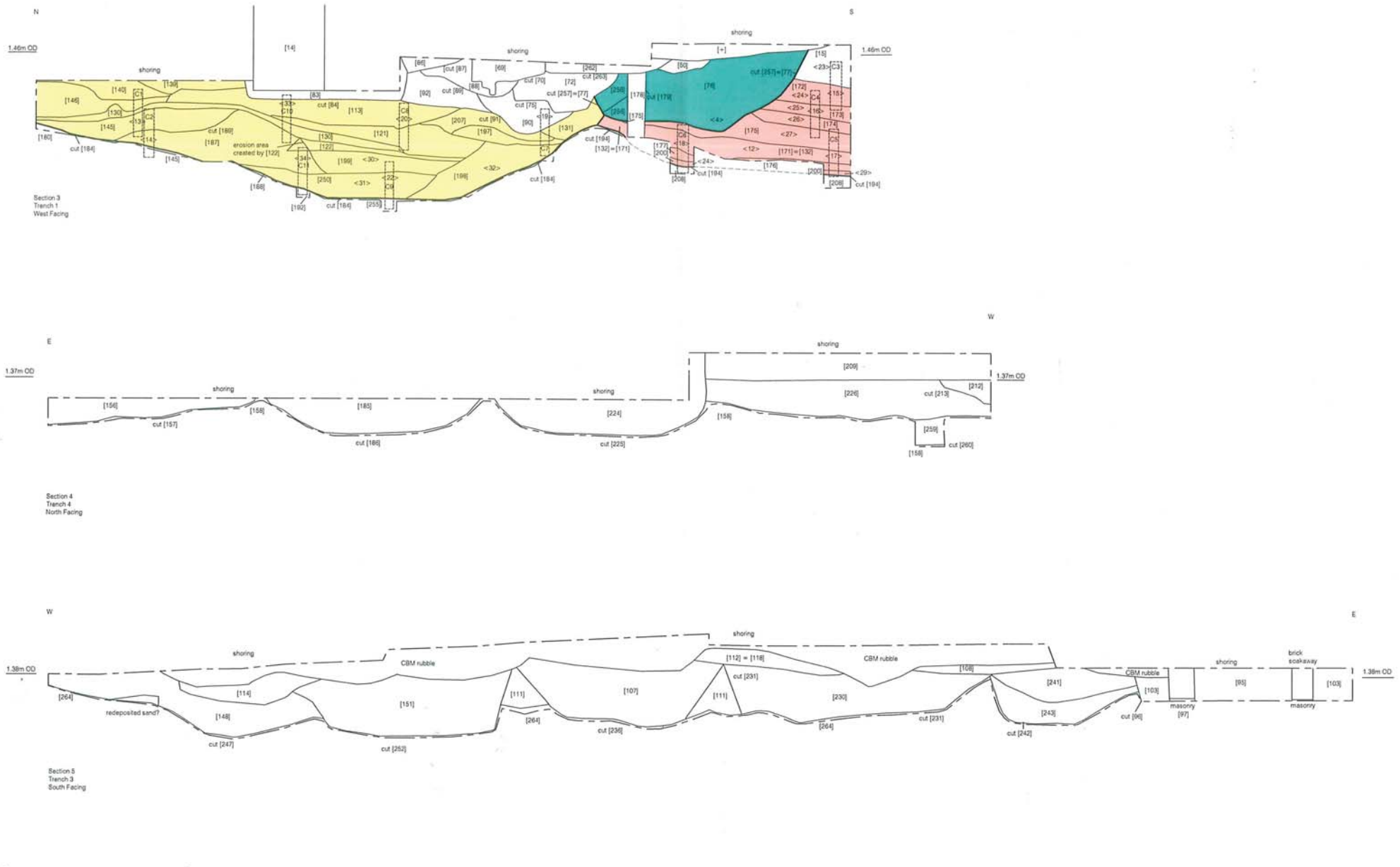

Figure 8
Sample Sections 3 - 5
1:40 at A4

8 RESEARCH OBJECTIVES

The following research questions were posed by the original evaluation method statement[4] and were addressed by the archaeological investigation.

8.1 Is there any Mesolithic activity on the site and how does it relate to the evidence of contemporary evidence elsewhere on the eyot?

8.1.1 The only evidence of Mesolithic activity observed on site was a residual flint blade dated to the Mesolithic or Neolithic period which was recovered from context [76], recorded as fill of an E-W Roman ditch. This blade suggests the presence of Mesolithic activity in the vicinity of the site such as that observed during the excavation at Hopton Street, located *c* 180m to the north-east of the site.

8.2 Is there any Neolithic activity on the site and how does it relate to the evidence of contemporary evidence elsewhere on the eyot?

8.2.1 The only evidence of Neolithic activity found on site were two flints which could have been dated to the Neolithic period which were found residually within later contexts (see Appendix 5).

8.3 Is there any Bronze Age Activity on the site and how does it relate to the evidence of contemporary evidence elsewhere on the eyot?

8.3.1 The only evidence of Bronze Age activity observed on site were some flints found residually within later deposits which may have been of Bronze Age date.

8.4 What is the nature, i.e. domestic and industrial, of post-medieval activity on the site and did it change over time?

8.4.1 The post-medieval activity observed on site consisted of two main phases of activity. In the 17th century (Phase 4) numerous pits which may have originally been quarry pits were observed to the north of the site. These were later backfilled with domestic rubbish. To the south of the site an E-W aligned ditch was probably the remains of a boundary or field ditch. The earlier cartographic evidence up to the Rocque map of 1746 shows the site as being laid out to fields or possible

[4] Moore 2008

gardens with the Faithorne & Newcourt map of 1858 apparently showing a possibly water filled ditch along the southern part of the site. The post-medieval ditch was probably the later managed version of the natural water channel which had existed from at least the late prehistoric period.

8.4.2 During the latter part of the 18th century the first evidence of buildings on the site were revealed with the remains of a structure to the south and associated wells/soakaways to the north in the yard/garden areas. Such activity would have been part of the urbanisation of the area which occurred after the construction of Blackfriars Bridge in 1760-69 and Blackfriars Road from 1770-1800[5] and is represented on the Horwood map of 1799 which shows the site and the immediate neighbourhood completely covered by buildings. Most of the finds recovered from suite would point to domestic activity rather than industrial.

8.5 Can the topographic and environmental profile of the site further refine the predictive models for the area?

8.5.1 The level of the natural sand to the north of the site and the presence of an E-W channel to the south suggest that the northern area of the site occupied an area of high ground which is more that likely to represent the eyot on which it was predicted lie. The highest level of the natural sand reciorded on site was 0.92m OD which compares well with levels of between 0.94m & 1.12m OD recorded at Hopton Street to the north[6]. The E-W channel south of the site was only partially excavated making it difficult to speculate on any additional information such as full dimensions of the channel and earlier phases, however it is probable that this represents a palaeochannel that crossed the eyot or that the eyot may have been divided into two or more land masses.

8.6 Revised research questions

The following new research questions were formulated following the new archaeological evidences observed on site after the initial evaluation and subsequent excavation.

8.7 Is there any Iron Age/Late Iron Age Activity on the site and how it relates to evidence of contemporary evidence elsewhere in the eyot?

[5] Weinreb & Hibbert 1983, 70-71

8.7.1 Twenty-two sherds of possible Iron Age pottery were recovered from one of the fills of the earliest stream channel [194] found on site. This together with further sherds found in the sand at the base of a later Roman channel and residually within its fill suggest Late Iron Age occupation in the vicinity of the site, previously shown during the excavation at 245 Blackfriars Road, *c* 75m north of the site, which revealed part of the eyot, along with a buried agricultural soil containing flints and fragments of Iron Age pottery.

8.8 Is there any Roman Activity on the site and how it relates to evidence of contemporary evidence elsewhere in the eyot?

8.8.1 A small group of pottery spanning the entire Roman period was recovered from a large stream channel and a ditch which crossed the southern part of the site which are indicative of Roman activity in the vicinity.

8.8.2 There is evidence for occupation during the Roman times in the area located to the south of the River Thames and more specifically *c* 75m north of the site. An excavation at 245 Blackfriars Road in 1987, revealed part of the eyot upon which the site is located, overlain by an agricultural soil containing Roman pottery and in addition Roman pottery was found by chance *c* 160m to the southeast of the site. However together with the finds from the present site they might suggest only a low level of activity on one of the islands within a marshy environment.

[6] Chandler & Knight 2006

9 CONTENTS OF THE ARCHIVE

9.1 PAPER RECORDS

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9.2 THE FINDS

Pottery	6 boxes
Animal Bone	8 boxes
Ceramic Building Material	7 boxes
Clay Tobacco Pipe	1 box
Glass	1 box
Lithics	1 box
Registered Small Finds	3 objects

9.3 SAMPLES

Environmental Bulk Samples	23
Environmental Column Samples	11

9.4 PHOTOGRAPHS

Black and White Prints	3 films
Colour Slides	3 films
Digital shots	8 shots

10 IMPORTANCE OF THE RESULTS AND PUBLICATION OUTLINE

10.1 Importance of the results

10.1.1 The archaeological investigations have provided evidence to help refine the model of the topography and landscape during the prehistoric and Roman periods. The remains of a large palaeochannel was present on the site in the Iron Age. The channel was still in use in the Roman period and was subject to at least one recutting during that period. Environmental evidence recovered from the channels suggest a relatively open floodplain meadow-type environment with still and running freshwater swamp conditions, damp leaf litter and some woodland.

10.1.2 The post-medieval evidence has shown that the earliest activity in this period occurred during the 17th century with possible quarrying of the natural resources and the disposal of rubbish in pits. The first buildings and associated activity are recorded in the 18th century and probably followed the construction of Blackfriars Bridge in the 1760s.

10.2 Further work

10.2.1 Prehistoric and Roman pottery

A short note on the assemblage and its significance will be produced.

10.2.2 Post-medieval pottery

A short publication report will be produced stating the types of pottery present supplemented by four illustrations.

10.2.3 Clay tobacco pipes

A short report will be prepared detailing the types of pipes present and how they define the local industry. Approximately six bowls require illustration.

10.2.4 Lithics

A brief description of the lithics will be included in the publication report.

10.2.5 Glass

Further analysis of the possible large storage jars or lids will be undertaken and they will be compared to others found on other sites. 3-4 illustrations will be required.

10.2.6 Small finds

The Nuremberg jeton and bone scale will be included in the publication.

10.2.7 Animal bone

The Horse and cattle carcasses from the Roman deposits will be discussed and the post-medieval assemblage will be compared to other similar Southwark sites.

10.2.8 Environmental

An report on the late Prehistoric and Roman environment will be produced.

10.3 Publication outline

10.3.1 It is proposed that the site is of sufficient merit to be published as an article in either Surrey Archaeological Collections or London Archaeologist. This will concentrate on two parts of the evidence; the late prehistoric and Roman palaeochannel and environments; and the post-medieval activity in the 17th and 18th centuries.

11 ACKNOWLEDGMENTS

11.1 Pre-Construct Archaeology Limited would like to thank Great Portland Estates, especially Jonathan Walker, for funding the archaeological project, Robert Kirkwood of Gardiner and Theobald for his project management and Jeremy Evershed of Montagu Evans, for his planning support. We would like to thank the Laing O'Rourke site management team of Jeff Norris and Eamonn Taylor, but especially Conor Earls and Patrick O'Connor for all their help and support, and the Senior Archaeological Officer for Southwark, Christopher Constable, for his monitoring and advice.

11.2 The author would like to thank Iain Bright, Paw Jorgensen, Glen Farley, Matt Harrison, Katie Nicholas, Graeme MacArthur, Sophie White, Paul Morrison, Jim Heathcote, Nerely Johnston, Alexander Pullen, Alex Croft and David Hodson for all their assistance during the evaluation and excavation. The author would also like to thank Jeremy Rogers for the surveying, Jenny Simonson and Josephine Brown for the illustrations, Chris Jarrett, Kevin Hayward, Sarah Carter, Kevin Rielly, Märit Gaimster, Barry Bishop and ArchaeoScape for their respective reports. Furthermore, the author would like to thank Peter Moore for his project management and Jon Butler for his post-excavation management and the editing of this report.

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APPENDIX 1: CONTEXT INDEX

Context No.	Trench	Section / Elevation	Type	Description	Highest Level	Lowest Level	Phase
1	TR1		Deposit	Modern deposit			
2	TR2		Cut	Void created by removal of timber	0.69m OD	0.20m OD	5
3	TR2		Cut	Void created by removal of timber	0.67m OD	0.49m OD	5
4	TR2		Masonry	E/W post-medieval wall foundation	0.79m OD	0.76m OD	5
5	TR2	2	Deposit	Natural sand deposit	1.14m OD	0.06m OD	1
6	TR1		Fill	Fill of pit [7]	1.51m OD	1.51m OD	5
7	TR1		Cut	Post-medieval pit filled by [6]	1.52m OD	1.33m OD	5
8	TR1		Masonry	Post-medieval masonry associated with well [9]	1.47m OD	1.47m OD	5
9	TR1		Masonry	Post-medieval well/soak away	1.37m OD	1.37m OD	5
10	TR1		Fill	Fill of well/soak away [9]	1.37m OD	1.37m OD	6
11	TR1		Cut	Post hole filled by [12]	1.26m OD	0.86m OD	5
12	TR1		Fill	Fill of post hole [11]	1.26m OD	1.26m OD	5
13	TR1		Masonry	E/W post-medieval foundation wall	1.38m OD	1.27m OD	5
14	TR1	3	Masonry	E/W post-medieval foundation wall	2.23m OD	1.22m OD	5
15	TR1	3	Layer	Grey clay layer	1.50m OD	0.87m OD	2
16	TR2	2	Fill	Upper fill of barrel well [17]	1.08m OD	0.94m OD	5
17	TR2		Cut	Construction cut for E/W post-medieval foundation [4]	0.81m OD	0.81m OD	5
18	TR2	1	Cut	Cut for timber post [19]	0.85m OD	0.08m OD	5
19	TR2	1	Timber	Post-medieval timber post	0.89m OD	0.89m OD	5
20	TR2		Timber	Post-medieval timber post	0.96m OD	0.96m OD	5
21	TR2		Timber	Decayed post-medieval timber post	0.82m OD	0.82m OD	5
22	TR1		Masonry	E/W post-medieval wall foundation	1.38m OD	1.38m OD	5
23	TR2		Cut	Cut for timber post [20]. Not fully excavated	0.96m OD	0.31m OD	5
24	TR2	1, 2	Fill	Clay ditch fill of [25]	1.35m OD	0.67m OD	3
25	TR2	1, 2	Cut	Cut filled by [24], [35], [47] and [48]	1.09m OD	0.20m OD	3
26	TR2		Fill	Fill of post hole [27]	0.67m OD	0.67m OD	5
27	TR2		Cut	Post hole filled by [26]	0.67m OD	0.00m OD	5
28	TR2		Cut	Post hole filled by [49]	0.76m OD	0.00m OD	5
29	TR2	1	Fill	Secondary fill of ditch [30]	1.02m OD	0.80m OD	3
30	TR2	1, 2	Cut	E/W ditch/channel filled by [43], [46], [29] and [32]	0.93m OD	0.58m OD	3
31	TR2	2	Fill	Primary fill of barrel well [36]	0.42m OD	0.42m OD	5

32	TR2	1	Fill	Primary fill of ditch/channel [32]	0.87m OD	0.63m OD	3
33	TR2	2	Cut	Construction cut for barrel well [36]	1.05m OD	0.16m OD	5
34	TR2	2	Fill	Construction cut backfill of barrel well [36]	1.08m OD	0.93m OD	5
35	TR2	1	Fill	Fill of ditch [25]	0.39m OD	032m OD	3
36	TR2	2	Timber	Post-medieval barrel well filling construction cut [33]	1.08m OD	0.19m OD	5
37	TR1		Fill	Primary fill of post hole [57]	1.25m OD	1.25m OD	5
38	TR1		Cut	Post hole void	1.39m OD	0.60m OD	5
39	TR1		Cut	Post hole void	1.37m OD	0.52m OD	5
40	TR1		Fill	Back fill of construction cut for well [9]	1.48m OD	1.04m OD	5
41	TR1		Cut	Construction cut for post-medieval well [9]	1.48m OD	1.04m OD	5
42	TR1		Cut	Construction cut for post med masonry [8]	1.47m OD	1.37m OD	5
43	TR2	1, 2	Layer/Fill	Upper fill of ditch/channel [30]	1.16m OD	1.12m OD	3
44	TR2	1	Fill	Fill of cut [45]	1.18m OD	1.16m OD	5
45	TR2	1	Cut	Possible linear cut only seen in section and filled by [44]	1.16m OD	1.00m OD	5
46	TR2	1	Fill	Fill of ditch/channel [30]	0.98m OD	0.83m OD	3
47	TR2	1, 2	Fill	Slumped natural fill of [25] [North]	0.88m OD	0.22m OD	3
48	TR2	2	Fill	Slumped natural fill of [25] [South]	0.67m OD	0.25m OD	3
49	TR2		Fill	Fill of post hole [28]	0.76m OD	0.76m OD	5
50	TR1	3	Layer	Mid grey sandy silty clay layer	1.38m OD	1.30m OD	4
51	TR1		Masonry	E/W post med foundation associated with [13], [22] and [52]	1.33m OD	1.33m OD	5
52	TR1		Masonry	E/W post med foundation associated with [13], [22] and [51]	1.27m OD	1.23m OD	5
53	TR2	1	Timber	Post-medieval timber post	0.35m OD	0.35m OD	5
54	TR2	1	Timber	Post-medieval timber plank	0.77m OD	0.77m OD	5
55	TR1		Deposit	Degraded wooden plank	1.28m OD	1.28m OD	5
56	TR1		Fill	Back fill of post hole [57]	1.25m OD	1.25m OD	5
57	TR1		Cut	Post hole filled by [56]	1.25m OD	0.73m OD	5
58	TR1		Fill	Back fill of post hole [59]	1.22m OD	1.22m OD	5
59	TR1		Cut	Post hole filled by [58]	1.22m OD	0.96m OD	5
60	TR1		Fill	Back fill of post hole [61]	1.39m OD	1.34m OD	5
61	TR1		Cut	Post hole filled by [60]	1.39m OD	0.60m OD	5
62	TR1		Fill	Back fill of post hole [63]	1.37m OD	1.28m OD	5

63	TR1		Cut	Post hole filled by [62]	1.37m OD	0.52m OD	5
64	TR1		Fill	Back fill of construction cut for post med wall [66]	1.52m OD	1.48m OD	5
65	TR1		Cut	Construction cut for wall [66] and same as [74]	1.50m OD	0.94m OD	5
66	TR1		Masonry	Post-medieval wall foundation	1.30m OD	1.30m OD	5
67	TR1		Fill	Fill of post hole [68]	1.13m OD	1.13m OD	5
68	TR1		Cut	Post hole filled by [67]	1.13m OD	0.53m OD	5
69	TR1	3	Fill	Fill of drainage pipe cut [70]	1.42m OD	1.19m OD	5
70	TR1	3	Cut	Cut of drainage pipe filled by [69]	1.42m OD	1.11m OD	5
71	TR1		Fill	Back fill of construction cut [41] for soak away [9]	1.48m OD	1.48m OD	5
72	TR1	3	Fill	Brown clay fill of [75]	1.32m OD	1.10m OD	4
73	TR1		Fill	Fill of cut [74] and same as [64]	1.33m OD	1.33m OD	5
74	TR1		Cut	Construction cut for post-medieval wall [66]	1.33m OD	1.07m OD	5
75	TR1	3	Cut	E/W post-medieval ditch filled by [72]	1.26m OD	0.84m OD	4
76	TR1	3	Fill	Fill of E/W ditch [77]	1.41m OD	1.41m OD	3
77	TR1	3	Cut	Possible E/W Roman ditch filled by [76]	1.41m OD	0.64m OD	3
78	TR1		Timber	Post-medieval post pile for E/W wall foundation [14]	1.14m OD	1.14m OD	5
79	TR1		Timber	Post-medieval post pile for E/W wall foundation [14]	1.14m OD	1.14m OD	5
80	TR1		Timber	Post-medieval post pile for E/W wall foundation [14]	1.14m OD	1.14m OD	5
81	TR1		Fill	Fill of post hole [82]	1.32m OD	1.32m OD	5
82	TR1		Cut	Post hole filled by [81]	1.32m OD	1.21m OD	5
83	TR1	3	Fill	Back fill of construction cut for post med wall [14]	1.32m OD	1.18m OD	5
84	TR1	3	Cut	Construction cut for post med wall foundation [14]	1.32m OD	0.93m OD	5
85	TR1		Timber	Post-medieval post pile for E/W wall foundation [14]	1.29m OD	1.29m OD	5
86	TR1	3	Fill	Fill of undated ditch [87]	1.40m OD	1.38m OD	5
87	TR1	3	Cut	E/W ditch filled by [86]	1.40m OD	1.25m OD	5
88	TR1	3	Fill	Clay fill of undated ditch [89]	1.38m OD	1.38m OD	5
89	TR1	3	Cut	E/W undated ditch filled by [88]	1.38m OD	1.00m OD	5
90	TR1	3	Fill	Clay fill of undated ditch [91]	1.08m OD	1.00m OD	4
91	TR1	3	Cut	E/W Undated ditch filled by [90]	1.08m OD	0.60m OD	4

92	TR1	3	Layer	Undated clay layer	1.27m OD	1.00m OD	4
93	TR1		Fill	Clay fill of possible E/W linear cut [94] [Undated]			5
94	TR1		Cut	Possible linear E/W ditch filled by [93]			5
95	TR3	5	Fill	Fill of post-medieval soak away/well [97]	1.62m OD	1.92m OD	6
96	TR3	5	Cut	Construction cut for post-medieval soak away/well [97]	1.98m OD	1.98m OD	5
97	TR3	5	Masonry	Post-medieval soak away/well	1.92m OD	1.73m OD	5
98	TR3		Fill	Upper fill of post-medieval soak away/well [100]	1.95m OD	1.95m OD	5
99	TR3		Cut	Construction cut for post-medieval soak away/well [100]	1.91m OD	1.40m OD	5
100	TR3		Masonry	Post-medieval soak away/well	1.95m OD	1.65m OD	5
101	TR3		Fill	Primary [?] fill of post-medieval soak away/well [100]	1.21m OD	1.21m OD	5
102	TR3		Fill	Construction cut for post-medieval soak away/well [100]	1.91m OD	1.91m OD	5
103	TR3	5	Fill	Back fill of construction cut for soak away/well [97]	1.99m OD	1.99m OD	5
104	TR3		Masonry	Post-medieval brick drain	1.76m OD	1.66m OD	5
105	TR3		Cut	Construction cut for post-medieval brick drain [104]	1.67m OD	1.59m OD	5
106	TR3		Deposit	Post-medieval mortar rubble deposit	1.62m OD	1.51m OD	4
107	TR3		Fill	Upper fill of post-medieval pit [236]	1.53m OD	1.38m OD	4
108	TR3	5	Layer	Dark grey brown layer	1.95m OD	1.66m OD	5
109	TR3		Layer	Mid grey brown layer [not planned]			?
110	TR3		Fill	Light grey brown fill same as [160]	1.94m OD	1.54m OD	4
111	TR3	5	Layer	Mid brown medieval sandy layer same as [244]	1.55m OD	1.28m OD	4
112	TR3	5	Layer	Black grey post-medieval layer same as [108]	1.70m OD	1.48m OD	5
113	TR1	3	Fill	Upper fill of E/W channel [184]	1.06m OD	0.77m OD	3
114	TR3	5	Layer	Post-medieval dark grey layer	1.57m OD	1.30m OD	5
115	TR3		Fill	Fill of cut [116]	1.31m OD	1.28m OD	4
116	TR3		Cut	Post-medieval pit filled by [115]	1.28m OD	1.13m OD	4
117	TR3		Fill	Upper fill of post-medieval pit [133]	1.38m OD	1.26m OD	4
118	TR3		Fill	Tertiary fill of post-medieval pit [133]	1.34m OD	1.34m OD	4
119	TR3		Fill	Secondary fill of post-medieval pit [133]	1.33m OD	1.09m OD	4

120	TR3		Fill	Primary fill post-medieval pit [133]	1.17m OD	0.79m OD	4
121	TR1	3	Fill	Fill of E/W channel [184]	0.79m OD	0.53m OD	3
122	TR1	3	Fill	Fill of E/W channel [184]	0.55m OD	0.35m OD	3
123	TR3		Fill	Fill of possible robber cut [124]	1.96m OD	1.96m OD	5
124	TR3		Cut	Possible robber cut filled by [123]	1.96m OD	1.83m OD	5
125	TR3		Fill	Upper fill of post-medieval cut [126]	1.89m OD	1.51m OD	4
126	TR3		Cut	Post-medieval cut filled by [125] and [127]	1.89m OD	1.25m OD	4
127	TR3		Fill	Primary mortar fill of post-medieval cut [126]	1.62m OD	1.25m OD	4
128	TR3		Fill	Fill of post-medieval cut [129]	1.93m OD	1.84m OD	5
129	TR3		Cut	Post-medieval cut filled by [128]	1.93m OD	1.36m OD	5
130	TR1	3	Fill	Fill of E/W channel [184]	0.93m OD	0.41m OD	3
131	TR1	3	Fill	Upper fill of E/W channel [184]	1.01m OD	0.63m OD	3
132	TR1		Fill	Fill of E/W channel [194] and same as [171]	0.82m OD	0.76m OD	2
133	TR3		Cut	Post-medieval sand pit filled by [117], [118], [119] and [120]	1.34m OD	0.54m OD	4
134	TR3		Fill	Upper fill of post-medieval sand pit [247]	1.47m OD	1.23m OD	5
135	TR3		Fill	Tertiary fill of of post-medieval sand pit [247]	1.29m OD	1.06m OD	5
136	TR3		Fill	Secondary fill of post-medieval sand pit [247]	1.21m OD	1.04m OD	5
137	TR1		Fill	Fill of post-medieval rubbish pit [138]	1.00m OD	1.00m OD	5
138	TR1		Cut	Post-medieval rubbish pit filled by [137]	1.00m OD	0.45m OD	5
139	TR1	3	Fill	Upper fill of E/W channel [184]	1.19m OD	1.18m OD	3
140	TR1	3	Fill	Fill of E/W channel [184]	1.21m OD	1.20m OD	3
141	TR3		Fill	Upper fill of post-medieval pit [142]	1.78m OD	1.78m OD	4
142	TR3		Cut	Post-medieval pit filled by [141] and [165]	1.78m OD	1.45m OD	4
143	TR3		Fill	Fill of small post-medieval pit [144]	1.84m OD	1.51m OD	4
144	TR3		Cut	Small post-medieval pit filled by [143]	1.84m OD	1.51m OD	4
145	TR1	3	Fill	Sandy clay fill of E/W channel [184]	0.94m OD	0.94m OD	3
146	TR1	3	Fill	Upper fill of E/W channel [184]	1.15m OD	0.95m OD	3
147	Void						
148	TR3	5	Fill	Primary fill of post-medieval pit [247]	1.48m OD	1.18m OD	5
149	TR4		Fill	Fill of post-medieval soak away [151]	1.47m OD	1.47m OD	5

150	TR4		Fill	Fill of construction cut [152] for post-medieval soak away [151]	1.09m OD	1.09mOD	5
151	TR4		Masonry	Post-medieval soak away filled by [149]	1.44m OD	1.44m OD	5
152	TR4		Cut	Construction cut for post-medieval soak away [151]	1.09m OD	0.80m OD	5
153	TR4		Fill	Fill of post-medieval soak away [154]	0.83m OD	0.83m OD	5
154	TR4		Masonry	Post-medieval soak away filled by [153]	0.85m OD	0.78m OD	5
155	TR4		Cut	Construction cut for post-medieval soak away [154]	1.58m OD	0.36m OD	5
156	TR4	4	Fill	Fill of post-medieval pit [157]	1.21m OD	1.12m OD	5
157	TR4	4	Cut	Post-medieval pit filled by [156]	1.21m OD	1.02m OD	5
158	TR4		Deposit	Natural sand deposit/layer	1.25m OD	0.56m OD	1
159	TR3		Cut	Post-medieval sand pit filled by [106] and [180]	1.62m OD	1.30m OD	4
160	TR3		Fill	Upper fill of post-medieval pit [166] and same as [110]	1.94m OD	1.54m OD	5
161	TR3		Fill	Fill of post-medieval pit [162]	1.99m OD	1.99m OD	4
162	TR3		Cut	Post-medieval pit filled by [161]	1.99m OD	1.71m OD	4
163	TR3		Fill	Fill of post-medieval [linear?] cut [164]	1.86m OD	1.81m OD	4
164	TR3		Cut	Post-medieval [linear?] cut filled by [163]	1.86m OD	1.55m OD	4
165	TR3		Fill	Primary fill of post-medieval pit [142]	1.78m OD	1.78m OD	5
166	TR3		Cut	Small post-medieval pit filled by [160] and [167]	1.84m OD	1.15m OD	4
167	TR3		Fill	Primary fill of small post-medieval pit [166]	1.77m OD	1.45m OD	4
168	TR3		Fill	Fill of post-medieval pit [169]	1.62m OD	1.62m OD	5
169	TR3		Cut	Post-medieval pit filled by [168]	1.62m OD	1.19m OD	5
170	TR4		Fill	Back fill of construction cut for soak away [154]	1.58m OD	1.58m OD	5
171	TR1	3	Fill	Fill of early E/W channel [194] and same as [132]	0.82m OD	0.76m OD	5
172	TR1	3	Fill	Upper fill of early E/W channel [194]	1.20m OD	1.11m OD	5
173	TR1	3	Fill	Fill of early E/W channel [194]	0.98m OD	0.91m OD	2
174	TR1	3	Fill	Fill of early E/W channel [194]	0.88m OD	0.74m OD	2
175	TR1	3	Fill	Fill of early E/W channel [194]	0.84m OD	0.63m OD	2
176	TR1	3	Fill	Fill of early E/W channel [194]	0.32m OD	0.31m OD	2
177	TR1	3	Layer	Fill of early E/W channel [194]	0.48m OD	0.39m OD	2
178	TR1	3	Fill	Decayed post-medieval timber post	1.27m OD	1.26m OD	5

179	TR1	3	Cut	Post hole for post-medieval fill [178]	1.27m OD	0.58m OD	5
180	TR3		Fill	Primary fill of post-medieval cut [159]	1.47m OD	1.47m OD	4
181	TR3		Fill	Fill of drain cut [105] for masonry [104]	1.67m OD	1.59m OD	5
182	TR4		Fill	Fill of post-medieval pit [183]	1.27m OD	1.17m OD	5
183	TR4		Cut	Post-medieval pit filled by [182]	1.27m OD	0.61m OD	5
184	TR1	3	Cut	E/W channel filled by [139], [140], [146], [131], [113], [207], [197], [121], [130], [122], [199], [145], [187], [250] and same as [189]	0.70m OD	-0.11m OD	3
185	TR4	4	Fill	Fill of post-medieval pit [186]	1.32m OD	1.26m OD	4
186	TR4	4	Cut	Post-medieval pit filled by [185]	1.32m OD	0.86m OD	4
187	TR1	3	Fill	Fill of E/W channel [184]	0.85m OD	0.18m OD	3
188	TR1	3	Layer	Redeposited natural sand same as [201], [208] and [190]	0.66m OD	0.31m OD	2
189	TR1	3	Cut	E/W channel filled by [139], [140], [146], [131], [113], [207], [197], [121], [130], [122], [199], [145], [187], [250], and same as [184]	0.82m OD	-0.09m OD	3
190	TR1	3	Fill	Redeposited natural sand same as [201], [208] and [189]	0.92m OD	0.67m OD	2
191	Void						
192	TR1	3	Layer	Redeposited natural sand?	0.61m OD	0.28m OD	2
193	TR1		Deposit	Possible upper fill of E/W channel [184]. Not planned, not in section			3
194	TR1	3	Cut	Early E/W channel filled by [172], [173], [174], [175], [171], [177], [176] and [200]	0.71m OD	0.28m OD	2
195	TR4		Fill	Fill of post-medieval cut [196]	1.30m OD	1.17m OD	5
196	TR4		Cut	Post-medieval cut filled by [195] a probably same as [152]	1.30m OD	0.79m OD	5
197	TR1	3	Fill	Fill of E/W channel [184]	0.87m OD	0.54m OD	3
198	TR1	3	Fill	Fill of E/W channel [184]	0.79m OD	0.53m OD	3
199	TR1	3	Fill	Fill of E/W channel [184]	0.43m OD	0.32m OD	3
200	TR1	3	Fill	Primary fill of early channel [194]	0.38m OD	0.24m OD	2
201	TR1	3	Layer	Redeposited natural sand same as [188], [208] and [190]	0.71m OD	-0.06m OD	2
202	TR5		Masonry	19th century E/W foundation	0.92m OD	0.78m OD	6
203	TR5		Fill	Fill of possible timber lined drain	0.59m OD	0.54m OD	5
204	TR5		Timber	Decayed wood possibly part of timber	0.59m OD	0.59m OD	5

				lined drain			
205	TR5		Cut	Construction cut for possible timber lined drain	0.58m OD	0.51m OD	5
206	TR5		Layer	Natural sand	0.72m OD	0.54m OD	1
207	TR1	3	Fill	Fill of E/W channel [184]	0.87m OD	0.62m OD	3
208	TR1	3	Fill	Redeposited natural sand [?] Same as [201], [188] and [190]	0.30m OD	0.28m OD	2
209	TR4		Layer	Dark blackish brown post-medieval layer	1.69m OD	1.53m OD	5
210	TR4		Fill	Fill of post-medieval pit [211]	1.35m OD	1.29m OD	5
211	TR4	5	Cut	Post-medieval pit filled by [210]	1.35m OD	0.61m OD	5
212	TR4	4	Fill	Fill of post-medieval pit [213]	1.32m OD	1.29m OD	5
213	TR4	4	Cut	Post-medieval pit filled by [212]	1.32m OD	1.09m OD	5
214	TR4		Fill	Fill of post-medieval pit [215]	1.30m OD	1.30m OD	4
215	TR4		Cut	Post-medieval pit filled by [214]	1.30m OD	0.58m OD	4
216	TR3		Fill	Fill of post-medieval cut [217]	1.71m OD	1.66m OD	5
217	TR3		Cut	Post-medieval cut filled by [216]	1.71m OD	1.41m OD	5
218	TR3		Fill	Fill of post-medieval pit/ditch	1.68m OD	1.68m OD	4
219	TR3		Cut	Post-medieval pit/ditch filled by [218]	1.68m OD	1.57m OD	4
220	TR3		Fill	Upper fill of post-medieval pit/ditch [221]	1.71m OD	1.61m OD	4
221	TR3		Cut	Post-medieval pit/ditch filled by [220]	1.41m OD	1.33m OD	4
222	TR3		Fill	Fill of post-medieval pit/ditch [223]	1.71m OD	1.71m OD	4
223	TR3		Cut	Post-medieval pit/ditch filled by [222]	1.71m OD	1.14m OD	4
224	TR4	4	Fill	Fill of post-medieval ditch [225]	1.72m OD	1.72m OD	5
225	TR4	4	Cut	Post-medieval ditch filled by[224]	1.72m OD	0.85m OD	5
226	TR4	4	Fill	Fill of post-medieval pit [227]	1.32m OD	1.29m OD	5
227	TR4	4	Cut	Post-medieval pit filled by [226]	1.34m OD	0.67m OD	5
228	TR3		Fill	Upper fill of post-medieval cut [229]	1.56m OD	1.45m OD	4
229	TR3		Cut	Post-medieval cut filled by [228] and [234]	1.58m OD	1.12m OD	4
230	TR3	5	Fill	Fill of post-medieval pit [231]	1.65m OD	1.39m OD	5
231	TR3	5	Cut	Post-medieval pit filled by [230]	1.56m OD	1.05m OD	5
232	TR3	3	Fill	Primary fill of post-medieval cut [221]	1.61m OD	0.94m OD	4
233	TR3		Cut	Primary fill of irregular post-medieval cut [235]	1.39m OD	1.19m OD	5
234	TR3		Fill	Primary fill of post-medieval cut [229]	1.43m OD	1.37m OD	4
235	TR3		Cut	Post-medieval irregular cut filled by	1.37m OD	1.09m OD	4

				[237] and [233]			
236	TR3		Cut	Post-medieval rubbish pit filled by [107] and [238]	1.53m OD	1.04m OD	4
237	TR3		Fill	Upper fill of post-medieval pit [235]	1.49m OD	1.27m OD	5
238	TR3		Fill	Primary fill of post-medieval rubbish pit [236]	1.24m OD	1.24m OD	5
239	TR3		Fill	Fill of post-medieval shallow pit [240]	1.49m OD	1.39m OD	5
240	TR3		Cut	Post-medieval shallow pit filled by [239]	1.49m OD	1.27m OD	5
241	TR3	5	Fill	Upper fill of post-medieval ditch [242]	1.58m OD	1.54m OD	4
242	TR3	5	Cut	Post-medieval ditch filled by [241] and [243]	1.43m OD	1.08m OD	4
243	TR3	5	Fill	Primary fill of post-medieval ditch [242]	1.59m OD	1.24m OD	4
244	TR3		Layer	Firm mid grey brown post-medieval layer same as [111]	1.55m OD	1.28m OD	4
245	TR3		Fill	Fill of post-medieval pit [247]	1.42m OD	1.42m OD	4
246	TR3		Cut	Post-medieval pit filled by [246]	1.42m OD	1.10m OD	4
247	TR3	5	Cut	Large post-medieval pit filled by [134], [135], [136] and [148]	2.40m OD	1.88m OD	4
248	TR3		Fill	Fill of possible post-medieval pit [249]	1.15m OD	1.15m OD	4
249	TR3		Cut	Possible post-medieval pit filled by [248]	1.15m OD	0.81m OD	4
250	TR1	3	Fill	Lower fill of E/W channel [184]	0.28m OD	0.17m OD	3
251	TR3	5	Fill	Fill of post-medieval pit [252]	2.42m OD	2.41m OD	5
252	TR3	5	Cut	Post-medieval pit filled by [251]	2.42m OD	1.91m OD	5
253	TR1		Fill	Modern backfill of construction cut [254] for concrete pile	1.20m OD	1.20m OD	5
254	TR1		Cut	Construction cut for modern backfill [253] and concrete pile	1.20m OD	1.20m OD	5
255	TR1	3	Layer	Natural sandy gravel	-0.06m OD	-0.06m OD	1
256	TR1	3	Fill	Primary fill of undated cut [257]	1.02m OD	0.84m OD	3
257	TR1	3	Cut	Undated cut filled by [256] and [258]	1.01m OD	0.76m OD	3
258	TR1	3	Fill	Upper fill of undated cut [257]	1.26m OD	1.01m OD	3
259	TR4	4	Fill	Fill of sub-rectangular post-medieval pit [260]	1.15m OD	0.98m OD	4
260	TR4	4	Cut	Sub-rectangular post-medieval pit filled by [259]	0.99m OD	0.67m OD	4
261	TR1		Fill	Fill of construction cut [65] for post-med basement wall [66]	1.56m OD	1.56m OD	5
262	TR1	3	Fill	Back fill of construction cut [263]	1.41m OD	1.36m OD	5

263	TR1	3	Cut	Construction cut for post-medieval wall [22]	1.45m OD	1.26mOD	5
264	TR3	5	Layer	Natural sand	2.67m OD	1.57m OD	1

APPENDIX 2: PREHISTORIC AND ROMAN POTTERY

Louise Rayner

A small, mixed assemblage of 57 sherds (605g) was recorded and characterised. Pottery was recovered from 17 contexts and each context produced only small groups; only one context produced more than 10 sherds and 12 contained only one or two sherds.

The assemblage ranges in date from prehistoric (probably Iron Age) through to Late Roman. Despite the small assemblage size a range of pottery types are present and a more limited number of forms can be identified.

Prehistoric fabrics and forms

The largest group within this assemblage from recovered from [132] (fill of E/W channel [194]) which produced 22 sherds of prehistoric, possibly Iron Age date. Two vessels, in two different fabrics are present both of which are quartz-and-flint-tempered. Both sets of sherds are likely to derive from jars although diagnostic pieces are present for only one vessel, with lower wall and base sherds identified. A further small fragment from this vessel was found in [187] (fill of channel [184]) residual alongside Roman pottery. These sherds both display sand-rich concretions on surfaces and edges which is typical of material recovered from the surface of the sand eyots that survive as relict islands.

A second context, [192] (redeposited sand) produced further prehistoric sherds. One of these was similar to those from [132] with a quartz-and-flint-tempered fabric. The other eight sherds are all from one vessel, probably a jar, with a grog-tempered fabric that it Late Iron Age/early Romano-British in date.

Significance

Although a small and poorly characterised group, these sherds are an additional find spot for this period and add to the growing body of evidence for activity of this period in the central London area. At 245 Blackfriars Road (245BR87) burnt flint and Iron Age pottery was recovered (Sidell et al 2002, 59, GAZ 52), demonstrating that these finds, though limited, are unlikely to represent isolated activity.

Roman fabrics and forms

The Roman assemblage comprised a range of fabrics and forms including amphorae, mortaria, colour-coated fine wares and oxidised and reduced coarsewares; these are all typical of London assemblages. Several of the sherds appear water-worn and the slip of the colour-coated wares does not survive, also indicative of harsh or acidic depositional conditions.

Of note amongst this group is the presence of Late Roman Oxfordshire red colour-coated wares including a large section of rim from a necked bowl with stamped decoration and other open vessels. The necked bowl is dated from AD325, indicative of 4th century activity in the area.

Provenance of Roman Pottery

The majority of the sherds were recovered from the fills of E/W channel [184], the later of the two channels identified, with pottery from fills: [122], [140], [145], [187] and [198]. The pottery from this feature is not closely dated but 3rd-4th century pottery was present in [187] suggesting the channel was infilling by, or after this date.

The remainder of the Roman assemblage was recovered residually in post-medieval features.

Significance

The Roman pottery is in poor condition and was recovered in small groups, much of it residual in later features. Most of the fabrics and forms can be paralleled to much larger, stratified groups from Southwark and the City and the unsourced sherds are unlikely to resolved through further analysis given the context, condition and small assemblage size. The assemblage is of limited significance and potential beyond providing a broad chronology for the Roman activity.

Further work

If taken through to publication, a short note on the pottery should be included but can be drawn largely from this assessment report. There are no sherds that warrant illustration.

Context	Period	Date	Comment
76	ROM	270-400+	
108	ROM	325-400+	Oxford bowl type dates from AD 325
114	ROM	50-400	Single shd; unsourced fabric type
122	ROM	50-500	Single shd; unsourced fabric type
132	PREH	?IA	Shds from 2 vessels in 2 fabrics; 1 prob IA, 1 unk Preh; sand concretions on surfaces
134	ROM	50-160	
137	ROM	50-160	
140	ROM	50-160	
145	ROM	250-400	If AHFA then later Roman, AD250+
160	ROM	50-400	Single shd; unsourced fabric type
181	ROM	50-400	Unsourced fabric types
187	ROM	270-400+	All OXRC slip removed; post-depositional; with IA residual
192	PREH	LIA-ERB	One shd poss earlier preh residual; Grog = LIA/ERB
198	ROM	50-400	Single shd; unsourced fabric type
210	ROM	50-160	Single shd
234	ROM	50-400	Odd shd
72	UNK		Prob not vessel

Table 1: Spot-dates by Context

APPENDIX 3: POTTERY ASSESSMENT

By Chris Jarrett

Post-Roman pottery spot dating index (BFX06)

Context	Spot date
[6]	18th c
[10]	1835-1900
[40]	1580-1700
[50]	1660-1700
[51]	1580-1910
[64]	1760-1830
[83]	1630-1700
[92]	1630-1680
[95]	1840-1900
[106]	1630-50
[108]	1720-1740
[114]	?18th century
[115]	1580-1700
[123]	1580-1846
[128]	?1660-1700
[134]	1680-1700
[136]	Late 17th century
[137]	1680-1800
[143]	1580-1700
[148]	Late 17th century

Context	Spot date
[150]	Late 17th century
[158]	1580-1700
[160]	1580-1700
[168]	1550-1700
[170]	1710-1720
[181]	1580-1900
[182]	1700-1720
[185]	1630-1700
[192]	1580-1900
[195]	Late 17th century
[209]	1710-1720
[212]	1690-1730
[214]	1550-1600
[220]	1550-1700
[226]	1630-1750
[228]	1600-1700

[228] 1600-1700

[234] 1630-1650

[238] 1580-1700

[241] 1630-1700

General comments, significance of the collection, potential, and recommendations for further work.

A small assemblage of Post-Roman pottery was recovered from the site (4 boxes). The pottery was classified according to the standard Museum of London coding system. The condition of the pottery is not abraded, largely fragmentary but some vessels survive with complete profiles. The pottery types date from the 16th-19th centuries, but are mostly of a 17th and 18th-century date. Of note are a small number of pottery production sherds: tin-glazed biscuit earthenware and a London stoneware saggar (for protecting vessels during firing), but there are no local pothouses on this side of the Thames, but they are located on the opposite side of the river in Southwark. The local post-medieval redwares are noted for containing a small number of industrial wares, including sugar cone moulds, while the occurrence of flowerpots indicates that horticulture was a notable activity on or close to the site. Of note is a blue and white delftware small rounded jug from context [182], spot dated *c*.1700-20. Surprisingly for an archaeological excavation close to the Thames there are few imported wares and those that are present consist mostly of German stonewares from Frechen and the Westerwald, besides a small sherd of possible Spanish tin-glazed earthenware.

The significance of the pottery is only at a local level for demonstrating the types of activities happening on the site. The ceramic profile of the site fits that of London. The main potential of the post-Roman pottery is to date the contexts it occurs in and a small number of items require illustration. Should a publication of the site be required then a short publication report is essential stating the types of pottery present and up to four illustrations would supplement this text.

APPENDIX 4: CLAY TOBACCO PIPE ASSESSMENT [BFX08]

Chris Jarrett

Context	Spot date
[6]	1730-1800
[10]	1580-1910
[31]	1780-1830
[34]	1580-1910
[40]	18th century
[50]	1660-1680
[64]	1580-1910
[83]	1740-1800
[95]	1820-1860
[107]	1580-1910
[108]	1730-1740
[114]	1680-1710
[115]	1580-1910
[123]	1580-1910
[128]	1700-1710
[134]	1660-1680
[137]	1740-1800
[148]	1580-1910
[150]	1700-1740
[152] ?	Mid 17th c
[160]	1640-1660
[161]	1660-1680
[165]	1660-1680
[168]	1580-1910
[170]	1730-1780
[181]	1700-1740
[182]	1700-1740
[185]	1580-1910
[195]	1580-1910
[209]	1700-1740
[210]	1580-1910
[212]	1700-1740

Context	Spot date
[218]	1660-1680
[220]	1660-1680
[222]	1660-1680
[226]	1580-1910
[228]	1580-1910
[230]	1700-1740
[234]	1640-1660
[237]	1580-1910
[241]	1640-1660

General comments, significance of the collection, potential, and recommendations for further work.

The clay tobacco pipes from site BFX06 are a small assemblage (1 box) and were classified according to Atkinson and Oswald (1969) and prefixed AO, whilst 18th-century bowl types were categorised using Oswald's (1975) typology. The clay tobacco pipes are generally in a good condition and the bowls could be easily classified to type except for a small number of non-local bowls. The bowl types date to between 1610 and 1860, but are mostly of mid 17th and 18th century shapes. Only the 18th and 19th-century bowls are marked with the makers initials. Of note is an unstratified bowl fragment with an unusual coat of arms, while the non-local types probably from the West Country. 18th-century maker marked OS10/AO25 bowls have the initials A A, W A and A S, whilst the 18th-century spurred AO26 examples have the initials W C, I G, ?T G and M S. There is an 1870-1830 AO27 bowl with an incuse circular stamp bearing the name 'SAVELL' and a 1820-60 dated AO 28 with the initials ?J O.

The clay tobacco pipes are of significance at a local level for demonstrating the neighbouring clay tobacco pipe industry or what was marketed to the area. The clay tobacco pipes fit well with the typology for London, with variants present and the presence of non-local bowls fits well with a Thames side location. The main potential of the clay tobacco pipes are as a dating tool for the stratigraphy they occur in and a number of bowls merit illustration. Further recommendations for work are that should a publication of the site be required then a short report is prepared detailing the types of pipes present and how do they define the local industry. Approximately six bowls require illustration.

Bibliography

Atkinson, D. and Oswald. A., 1969 London clay tobacco pipes. *Journal of British Archaeology Association*, 3rd series, Vol. 32, 171-227.

Oswald, A., 1975 *Clay pipes for the Archaeologist*, British Archaeological Reports, British series, No.14.

APPENDIX 5: LITHIC ASSESSMENT

Barry Bishop

Introduction

Archaeological excavations at the above site resulted in the recovery of ten struck flints and just over 0.5kg of burnt flint fragments. This report quantifies and describes the material, assesses its significance and recommends any further work required.

Context	Type	Decortication Flake	Flake	Flake Fragment	Core	Retouched	Burnt Flint [no.]	Burnt Flint [wt:g]
032				1				
047							1	23
050							4	37
076							5	31
076 SF1						1		
115				1			1	40
132							4	68
160							3	48
175					1	1	6	270
185							1	8
187					1			
188		1						
192			1			1		
230		1						

Table 1: Quantification of Lithic Material by Context

Burnt Flint

Twenty five pieces of burnt flint weighing a total of 525g were recovered from eight different contexts. All of the pieces had been burnt to the extent that they had changed colour and become 'fire-crazed', consistent with burning in a hearth.

The burnt flint is indicative of hearth use at the site although by itself is undateable. The largest quantity, representing over half of all of the burnt flint from the site, was recovered from context [175] and would be suggestive of activities that included hearth use occurring adjacent to the channel. The remaining burnt flint was recovered in smaller quantities and may represent residual 'background' waste, although it probably derived from similar activities.

Struck Flint

This assemblage comprised eight struck flakes, three of which were retouched, and two cores. The raw materials consisted of flint of a variety of colours, and cortex, where present, mostly consisted of

weathered, battered or smooth rolled kinds. The only exception to this was a decortication flake from context [230] that had a thin but relatively unweathered chalky cortex. The raw materials used for the majority of the pieces were most likely to have been obtained form the local gravel terrace deposits, whilst the flake from context [230] may represent flint that had been imported from sources closer to the parent chalk.

All three of the retouched pieces probably represent various forms of scrapers. They included a blade-like flake from context [76] with fine steep convex retouch around its distal end; a thick squat flake from context [192] with medium to fine steep convex retouch around its distal end, and a burnt flake from context [175] that had medium, shallow to steep semi-invasive retouch around most of its perimeter. The cores included a small thermal spall weighing 12g from context [187], which had a few small flakes removed from around its perimeter and it also exhibited a number of undeveloped Hertzian cones (points of percussion) from failed attempts at removing further flakes, and an angular chunk weighing 41g from context [175] that had a few flakes removed from random points around its perimeter. The remainder of the assemblage consisted of a variety of undiagnostic flakes, the presence of decortication flakes complementing the cores and indicating that flint reduction did occur at the site.

The assemblage would appear to have been manufactured over a long period. The retouched piece from context [76] can be dated to the Mesolithic or Neolithic period, the presence of micro-blade scars on its dorsal surface suggesting that the former period may be most likely. The scraper from context [192] was chronologically undiagnostic but the burnt example from context [175] was circular and perhaps most reminiscent of thumbnail types, which are characteristically of Later Neolithic or Early Bronze Age date. Both cores were very opportunistically reduced and represent little more than ‘bashed lumps’. Such expedient reduction strategies are perhaps most typical of Bronze Age industries, particularly those of the later second or early first millennia BC.

Significance

The struck flint was recovered in small quantities from a number of features. No *in situ* scatters were identified and it was perhaps most likely to have also been residually deposited. It does, however, indicate human activity, which included core reduction and tool use, occurring over a long period of time at the site. This accords well with other investigations in north Southwark that have revealed extensive activity focussing on the eyots from the Mesolithic through to the historic periods.

Recommendations

Due to the small size of the assemblage and its evident chronological mixing, no further analytical work is warranted. It does contribute to the wider understanding of prehistoric occupation in north Southwark and a brief description, based on the information contained within this report, should be included in any published account of the archaeological investigations.

APPENDIX 6: GLASS

Sarah Carter

Number of fragments: 62
Number of boxes: 1
Number of contexts containing glass: 16

Introduction

The material was quantified for each context by colour, form and date.
The glass assemblage has been recorded in an Access database

Context	Sum Of No Frags	Colour	Form	Date
0	1	green	bottle	17th C
0	1	green	bottle	L18th - 19th C
0	1	green	linen smoother	16th - L18th C
6	1	green	bottle	E - Mid 18th C
6	3	green	bottle	17th - 18th C
6	1	green	bottle	Mid - L18th C
50	1	green	bottle	Mid - L 17th C
83	1	blue	vessel	17th C
83	1	green	vessel	E17th C
108	1	blue	cullet	
108	1	green	bottle	17th - 18th C
108	1	natural pale green	cullet	
114	1	green	bottle	17th - 18th C
134	1	colourless with a grey tint	wine glass	L 17th C
134	1	natural green-blue	phial	L17th - 18th C
161	1	blue	cullet	
170	2	colourless	vessel	
170	1	green	vessel	16th - 17th C
181	1	colourless	window	L19th - 20th C

Context	Sum Of No Frags	Colour	Form	Date
182	3	green	bowl	E17th C
182	5	green	bowl	17th C
182	8	natural pale green	window	18th C
195	1	green	bottle	17th - 18th C
195	1	green	bottle	L17th C
209	1	colourless	drinking glass	L16th - 17th C
209	1	green	bottle	17th - 18th C
209	2	green	vessel	E 17th C
210	1	natural blue-green	phial	18th C
212	3	natural blue-green	phial	18th C
228	2	green	bottle	17th C
234	3	green	vessel	E 17th C
234	9	green	vessel	17th C

Table1: distribution of glass

Discussion

The glass is mostly in good condition but fragmentary, there are no complete vessels. The assemblage dates from the 16th to the 19th century with the majority dating to the 17th century. Along with the usual wine bottle glass and window glass there are an unusual number of green glass fragments from large vessels with rolled rims. The diameters of the rims are in excess of 26cm. They could be either large storage jars, lids for large jars or perhaps dishes and may indicate that the site was occupied by a shop during the 17th century. It is possible that the green glass body fragments interpreted as wine bottle fragments may also be from these vessels. Such vessels are not well documented to date. Therefore, further recommendations for work should include a comparison of these rims with others from sites of similar date to enable a record to be made. They should all be illustrated along with the blue glass fragment and the pedestal from a possible beer glass.

References

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APPENDIX 7: SMALL FINDS

Märit Gaimster

Five metal objects and four pieces of slag were retrieved from the excavations; all were from post-medieval contexts (Table 1). With the exception of the copper-alloy jeton (sf <2>), the metal objects consist of nails and a piece of iron strap. The slag is all undiagnostic. The jeton represents a more unusual issue of the widespread Nuremberg products. It was struck by Lazarus Gottfried Lauffer for William and Mary (1689-94). The obverse shows the King's diademed bust right and the inscription 'WILLH.III.D.G.ANG.SCOT.FR.ET.HI.REX'; the reverse shows the Queen's bust right and the inscription 'MARIA.D.G.ANG.SO.FR.E.HI.REGINA' (cf. Mitchiner 1988, cat. no. 1802-1804). In addition, there is a rectangular bone mount (sf <3>) with finely chamfered edges; this may be from a cutlery handle or other implement, but will need further identification.

Recommendations

The Nuremberg jeton and the bone scale could be included in further publication of the site, and should be retained for the site archive; the other metal objects and the slag can all be discarded.

References

M. Mitchiner, 1988. *Jetons, medalets and tokens: the medieval period and Nuremberg*. Vol I., Seaby.

context	sf	description
10		slag; cindery runs; undiagnostic; post-medieval well [9]
64		iron nail; incomplete; backfill of construction cut for post-medieval wall [66]
83	2	copper-alloy jeton; William and Mary [1689-94; struck by Lazarus Gottlieb Lauffer, Nuremberg; complete but heavily worn; backfill of construction cut for post-medieval wall [14]
160	3	complete bone scale from cutlery or implement; chamfered edge and three holes for rivets; L 58mm W 13mm; upper fill of post-medieval pit [166] and same as [110]
182		iron nails; two complete; L 60 and 90mm; fill of post-medieval pit [183]
182		iron strap; incomplete; W 28mm
182		slag; undiagnostic with coal; fill of post-medieval pit [183]
210		slag; undiagnostic with coal; fill of post-medieval pit [211]
214		slag; undiagnostic; fill of post-medieval pit [215]

Table 1: metal and small finds from BFX08

APPENDIX 8: CERAMIC BUILDING MATERIAL

Kevin Hayward

Introduction and Aims

A sizeable assemblage[7] 27kg (32 contexts) of ceramic building material and one example of worked stone was retained from an excavation of a multi-period (Prehistoric to Late medieval/Early Post-Modern Site of 231-241 Blackfriars Road, Southwark, London BFX08. This material was assessed in order to:

- Identify (under binocular microscope) the main Roman building material fabrics and forms from the Phase 3 channel deposits.
- Date Roman building material on fabric and forms.
- Identify and date (under binocular microscope) the main medieval and post-medieval bricks and tile.
- Identify any unusual pieces or fabrics that warrant further analysis.
- Summary - distribution and potential of the site.

Methodology

The building materials were examined using the London system of classification with a fabric number allocated to each object. The application of a 1kg mason's hammer and sharp chisel to each example ensured that a fresh fabric surface was exposed. The fabric was examined at x20 magnification using a long arm stereomicroscope or hand lens (Gowland x10).

Ceramic Building Material Form and Fabric

27kg

An overview of the ceramic building material assemblage from 231-241 Blackfriars Road by fabric and form serves to quantify the common fabrics and highlight the presence of any unusual or interesting fabric types that may provide valuable dating evidence in the phase summary at the end of this review.

Roman Ceramic Building Material

4.2kg

Fabrics

2815 Group (*2452; 2459a; 3004; 3006*) (AD55-160)

Radlett Group (*3023*) (AD50-160)

Silty Group *3228* (AD71-100)

Eccles Fabric *3022* (AD50-80)

[7] Six shoe boxes

The entire assemblage is made of broken and abraded Roman tile and brick mainly from the stream channels that cross trenches 1 and 2. All of the material consists of the early Roman fabric types with the notable absence of later calcareous (Mid 2nd-Mid 3rd century) and iron oxide fabrics (*3023b and 3060b*). This would suggest these abraded building materials derived from earlier (mid/late first – early/mid second century) buildings. As expected the sandy fabric group is dominant *2815* (AD55-160) with the common Radlett fabrics *3023* (AD50-120) present too in tegulae, imbrex and brick. One tile of coarse Eccles (50-80AD) [250] and an example of a late first century silty fabric *3238* (AD71-100) are exceptions. The overall impression from the assemblage is that it derived from the demolition and subsequent stream channel deposition of an early-second century structure in the vicinity. Dumps of early ceramic building materials are prevalent throughout Southwark e.g. including Great Dover Street (GDV96) (Pringle 2000) and Tabard Square (Hayward 2008).

Other than one circular signature mark [47] no other impressions or marks were noted.

Medieval/ Post-Medieval Ceramic Building Material

22.9kg

As well as eight complete brick samples retained from the Phase 5 post-medieval soakaway [9] and early post-medieval foundation wall [14]; [52] from Trench 1 and another post-medieval soakaway [97]; [100] from Trench 3 the remainder of the assemblage consists of an admixture of broken medieval and post-medieval peg tile, pan tile and brick.

Medieval/Post-Medieval Brick

3032 1650-1900

3032nr 3033; 1664-1725

3033; 1450-1700

3034 1650-1900

3036 1600-1800

The range of whole and fragmentary brick fabrics and forms are typical of the early 18th to the 19th century and are all found in either structural features such as wells and the soakaways [9]; [97]; [100] and the late foundation wall [14]; [52] or the infill of post-medieval pits [182]; [212]; [226]; [228] of Period 6. All are stock moulded which would suggest a pre 1850 date and the few with frogs have either shallow scoops a feature of early 18th century bricks onward [9]; [14] or at best a frog with moulded sand face up [100] which would date it between 1750 and 1850.

Medieval Roof Tile

2271 1180-1800

3204 1200-1800

A scattering of fragmentary glazed roof tile with a coarse sandy fabric *2271* and reduced core typical of medieval peg tile (1150-1450) and an early silty fabric *3204* are found dumped in post-medieval pits [113] [210] [212] [226].

Post-Medieval Roof Tile

Peg Fabrics *2276* 1180-1900
2586 1200-1800
Pan Fabrics 2279 1630-1840
3090 1630-1840

Relatively fresh, broken, common London post-medieval peg and pan roofing tile fabrics are found throughout the site but especially in post-medieval phase 4 and phase 5 pits. Some are intrusive into the Roman Channels [113]; [193]. Their presence is consistent with the later post-medieval activity at the site (Phase 4-6).

Stone

3120 25g One small example of 'carrstone' a local name for an iron rich Tertiary sandstone e.g. Reading Beds that outcrop along the Thames Estuary.

Daub and Plaster

Small quantities of abraded Daub from the channel fill Roman phase 3 [113] probably relate to Roman clay and timber buildings in the vicinity. The Plaster from [+] and [108] is modern and moulded.

Summary and Recommendations

The variety of Roman, medieval and post-medieval building materials at 231-241 Blackfriars Road reflects the multi-period activity at this site. The early abraded Roman fabrics (50-160AD) which concentrate in the channels are present as building debris throughout Southwark. Medieval and post-medieval brick and tile fragments are intermixed with the Roman material in some of the phase 5 pits. Finally, the whole brick samples which lined the soakaways and walls are early 18th to mid 19th century in age as all are stock moulded and few are frogs. Fragments of Dutch Paving brick (1600-1800) are found broken up in post-medieval pits [226] [228] and would evidently have been used nearby.

No further analysis is required on any other individual piece of building material.

DATING TABLE

Context	Size	Date range of material		Latest dated material	
9	2	1450	1900	1666	1900
10	1	1180	1800	1180	1800
14	2	1450	1700	1450	1700
15	1	50	160	50	160
24	4	50	160	55	160

Context	Size	Date range of material		Latest dated material	
34	2	55	1850	1630	1850
40	1	1480	1900	1480	1900
47	4	50	160	50	160
52	2	1666	1900	1666	1900
83	2	1180	1850	1630	1850
97	2	1666	1900	1666	1900
100	1	1666	1900	1666	1900
108	3	50	1900	50	1900
113	3	50BC	1900	1480	1900
119	1	1630	1850	1630	1850
122	1	50	160	50	160
134	3	1180	1850	1630	1850
139	1	50	160	50	160
140	1	50	160	50	160
146	5	50	160	55	160
150	1	1480	1900	1480	1900
160	2	50	1900	1480	1900
182	4	1180	1850	1630	1850
187	1	50	1950	50	1950
193	1	1480	1900	1480	1900
209	2	1480	1900	1480	1900
210	2	55	1800	1180	1800
212	8	1200	1900	1480	1900
214	3	1480	1900	1480	1900
226	8	1180	1850	1630	1850
228	1	1600	1800	1600	1800

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APPENDIX 9: ANIMAL BONE

Kevin Rielly

Introduction

The site was situated to the south of Blackfriars Bridge and features prehistoric through to modern stratigraphy, with a major hiatus between the Roman and early post-medieval eras. The earliest features were a series of natural E-W channels, including two parallel examples, the earlier one with prehistoric/early Roman fills and the later with Roman fills, the latter in turn superseded by a Roman ditch. Overlying these early features were a series of ditches and pits dating to the 17th century, with further pitting as well as wells/soakaways dating to the 18th and early 19th centuries, culminating in a substantial concrete E-W cellar wall, 20th century demolition rubble and modern reinforced concrete.

All of the bones from the evaluation and subsequent mitigation trenches were recovered by hand and amounted to a grand total of 153 fragments. The great majority of these were found in the assorted collection of pitfills dating to the early post-medieval period. The bones from these deposits are all well preserved and only minimally fragmented.

Methodology

The bone was recorded to species/taxonomic category where possible and to size class in the case of unidentifiable bones such as ribs, fragments of longbone shaft and the majority of vertebra fragments. Recording follows the established techniques whereby details of the element, species, bone portion, state of fusion, wear of the dentition, anatomical measurements and taphonomic including natural and anthropogenic modifications to the bone were registered.

Description of faunal assemblage by phase

Counts of bone fragments and the number of identified specimens are shown in Table 1. The great majority of the bones were clearly taken from the post medieval levels, phases 4 and 6, with most from the latest occupation levels. While these represent a general mix of species and skeletal parts, the Roman assemblage (phase 3) is almost entirely composed of the partial remains of an adult horse. The latter phase appears to be rather poorly dated and probably covers the entire Roman era, while the post-medieval phases date to the 17th and 18th/early 19th centuries respectively.

Phase 3

10 bones were taken from three fills within natural channel [184] (the early channel described above), the assemblage comprising a mixture of cattle, sheep, pig and goose bone fragments. The remainder dating to this phase were taken from channel [25] this running parallel to channel [30], which has been interpreted as an extension of [184]. This produced an unusual assemblage featuring a partial skeleton of an adult female horse (the sex interpreted from the shape of the pelves, after Sisson and Grossman 1955, 111) with a shoulder height of 1235mm (calculated from the femur following von den

Driesch and Boessneck 1974) and several cattle bones, presumably from the same adult individual. The horse bones are largely limited to the axial part of the skeleton (head, vertebrae, ribs and pelves), with the exception of a femur and a 1st phalange. In addition, there are butchery marks on the pelvis, including an attempt to split the pelves through the right pubic shaft and another superficial chop to the ilial shaft, all from a ventral direction. Various skinning marks are relatively common on horse pelves. However, the direction (from the underside of the carcass) and the severity of the chop marks, suggest they may relate more to carcass division than skinning. While none of the other bones showed butchery marks and it is very clear that the vertebrae and ribs were probably in articulation when this carcass was buried/dumped, it is notable that the majority of the limb bones are absent. It is conceivable that these may have been deliberately removed, perhaps for their meat and/or bone. Conversely, gnawing marks at the extremities of the pelves and the femur suggest that dismemberment may have resulted from scavenger activity. As is invariably the case in archaeology, the facts will inevitably get in the way of a good story.

Species/Animal size class	**3**	**4**	**5**
Cattle (Bos taurus)	8	7	33
Horse (Equus caballus)	58		1
Cattle-size	3	8	34
Sheep/Goat (Ovis aries/Capra hircus)		5	40
Sheep (Ovis aries)	1		9
Pig (Sus scrofa)	2		7
Sheep-size	1	10	27
Roe deer (Capreolus capreolus)			1
Cat (Felis sp)			8
Rabbit (Oryctolagus cuniculus)		1	2
Domestic goose (Anser anser)	2		1
?curlew (Numenius arquata)			2
Grand Total	**75**	**31**	**165**

Table 1: Counts of hand collected animal bone in each occupation phase.

The cattle bones include a selection of limb bones (scapula, humerus, radius and femur) and two fragments of skull. None have butchery marks and the size of the radius and femur show they are from an animal measuring about 1110mm at the shoulder. There are signs of dog gnawing, again indicating the means of dismemberment. It can perhaps be assumed, due to the very different skeletal

composition of the cattle and horse assemblages that the former are likely to represent redeposited and the later in situ remains. There is insufficient evidence to suggest whether any use was made of this cattle carcass, but it is certainly clear that it was not used for its meat (at least in the parts represented in this collection).

Phase 4

A small scatter of bones was recovered from a few cut features in trenches 3 and 4 and from a silty/clay deposit [50] in trench 1. The best represented feature, ditch [242] provided 10 bones, while each of the remainder produced no more than 5 fragments. Just 13 were identifiable to species, these including cattle, sheep/goat and rabbit. Of interest was the recovery of a cattle pelvis and a cattle-size thoracic vertebra from pit [215], both of which are probably from a veal calf. The former bone had been split along the central axis.

Phase 5

This phase provided by far the largest collection, the 165 bones including a total of 104 identified fragments. The great majority were found in trench 4 (116 bones) with the remainder in trenches 1 (15 bones) and 3 (34 bones). Relatively large collections were provided by trench 4 pits [183] and [213] with 57 and 36 fragments respectively, while moderate amounts were derived from layer [108] in trench 3 (16 bones) and layer [209] in trench 4 (11 bones). These late assemblages were generally composed of cattle and sheep/goat bones, with minor quantities of pig (see table 1). Both cattle and sheep are represented by relatively large individuals, which are typical of the improved breeds dating to the late 18th century onwards. Another late innovation is the use of the saw as a butchery tool. Saw marks were noticed on a few bones, including a juvenile cattle pelvis and a cattle-size cervical vertebra. The age distributions of the two major species (table 2) are relatively similar. Both species are dominated by adults (older than 2 years), with a large proportion of young adults i.e. prime beef and mutton. In addition, there is a minor component of juveniles, pointing to the presence of lambs and veal calves.

	Juvenile <6mo-1yr	Subadult or older >1yr	Subadult 1-2yrs	Adult >2yrs	Young adult 2-3yrs	Old adult >3yrs
Cattle	6	4	1	6	2	6
Sheep	2	15	3	13	5	10

Table 2. Age distribution of cattle and sheep in phase 5, using epiphysis fusion (ages following Schmid 1972, 75).

Other food species include roe deer, rabbit, goose and a large wader (possibly curlew). The game may represent waste from a high status household or perhaps the occasional expensive food item from a lesser status community. Finally, there was the partial skeleton of a sub adult cat from pit [183].

Conclusion and recommendations for further work

There are two major components to the site assemblage, a poorly dated Roman collection featuring two partial skeletons and relatively little household waste; and a well dated post-medieval collection, almost entirely composed of household waste with some potential for a phased comparative analysis. Both collections suffer from a lack of sieved bones, which undoubtedly has a greater bearing on the later deposits, where the absence of fish, in particular, is a major upset towards understanding the meat demand and usage of the local post-medieval community.

It is hoped that a thorough review of the dating and stratigraphic evidence may reveal a greater level of detail concerning the Roman levels and the deposit containing the partial skeletons in particular. It is understood that the earlier horizons will provide the mainstay of any further analysis and it will be necessary to review the current literature concerning the deposition of horse and cattle carcasses in Roman London. There are in fact a number of well known deposits of partial or complete horse skeletons (see Barber and Bowsher 2000), as befitting a species which was generally deemed unfit for human consumption. The dumping of cattle carcasses is far less common. Possible reasons for the deposition of so valuable a carcass may include disease or ritual.

The post-medieval collections can be used to assess the possible status of the local developed areas in this part of Southwark, as well as providing evidence for the improvements in animal husbandry in response to the increase in population occurring in London throughout the 18th into the 20th centuries. Sites in this area with suitably sized bone collections are rather sparse, with two of the better examples being the 18th century levels at the Rose Theatre (Rielly forthcoming) and 18th/19th century deposits at Lavington Street/Great Suffolk Street (Rielly 2007).

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APPENDIX 10: ENVIRONMENTAL

C.P. Green, C.R. Batchelor, N.P. Branch, D. Young, S. Elias, P. Austin and N. Cameron
ArchaeoScape, Department of Geography, Royal Holloway University of London

INTRODUCTION

This report summarises the findings arising out of the environmental archaeological assessment undertaken by *ArchaeoScape*^{TM} in connection with the proposed development at 231 to 241 Blackfriars Road, London Borough of Southwark (Site Code: BFX08; National Grid Reference: TQ 3169 8034;). Five Trenches (Trench 1 to 5) were excavated during recent archaeological investigations at the site undertaken by Pre-Construct Archaeology Limited (PCA Ltd). Channels with a broadly east-west alignment were recognised towards the southern edge of the site (Grosso 2008) containing Iron Age (Phase 2) and Roman pottery (Phase 3). Eleven column samples (Trench 1) and twenty-three bulk samples (Trench 1 and 2) were obtained by PCA Ltd through the channel deposits for environmental archaeological assessment, and possible future analysis (Table 1).

The overarching aim of the environmental archaeological assessment was to evaluate the potential of the sedimentary sequences for reconstructing the environmental history of the site and its environs. In order to achieve this aim, the environmental archaeological assessment consisted of:

1. Recording the lithostratigraphy of the column samples (<13>, <14>, <15>, <16>, <17>, <18>, <19>, <20>, <22>, <23> and <24>) and quantifying the organic matter content (all column samples) to provide a preliminary reconstruction of the sedimentary history
2. Assessment of the preservation and concentration of pollen grains and spores (all the column samples) to provide a preliminary reconstruction of the vegetation history, and to detect evidence for human activities
3. Assessment of the preservation and concentration of diatom frustules (all column samples) to provide a preliminary reconstruction of the hydrological history e.g. water quality and depth
4. Assessment of the preservation and concentration of macroscopic plant remains (waterlogged and charred seeds and wood) and insect remains (from selected bulk samples) to provide a preliminary reconstruction of the vegetation history and general environmental context of the site.

GEOLOGICAL CONTEXT

The site lies *c*. 0.25km to the south of the River Thames on the floodplain of the river. During the Holocene the Southwark shore of the Thames was occupied by a complex of islands (aits or eyots) and distributary channels. These islands represent the remnants of upstanding gravel bars formed during the deposition of the Shepperton Gravel on the braided floodplain of the Thames immediately prior to the Holocene at the end of the last (Devensian) glacial period. Holocene sedimentation has largely infilled the channels between and around these gravel islands and they are now almost completely enveloped in fine-grained Holocene alluvium. The British Geological Survey (1:50,000

Sheet 256 North London 1994) shows Alluvium beneath the Blackfriars Road site overlying London Clay. In fact a substantial thickness of sand and gravel separates the alluvium from the bedrock. Gibbard (1995) includes a section (Figure 40), based on BGS and GLC boreholes, from Blackfriars south towards Camberwell in which, close to the Thames, up to 10m of Shepperton Gravel is recorded at levels between 0.00m and -10.0m OD. Detailed investigations to north and south of 231-241 Blackfriars Road, together with the results of the present investigation suggest that the site is located on the southern slope of what is probably quite a narrow gravel island. During the excavation of the present site, channels with a broadly west-east alignment were recognised towards the southern edge of the site, cut unto sand and gravel which was recorded at about 0.00m OD. Across the site the gravel surface was seen to be rising northward and was recorded at a maximum level of 2.67m OD in Trench 3 in the middle of the site, to the north of Trenches 1 and 2 and to the south of Trench 4. About 80m to the north of the present site at 245 Blackfriars Road, just north of Stamford Street, excavations revealed the northern edge of a gravel island "overlain by an agricultural soil containing burnt flints and Iron Age and Roman pottery" (Thompson *et al* 1998). Some 200m to the south at Joan Street, Sidell *et al* (2000) recorded Holocene sedimentation, including peat accumulation, in a channel overlying Shepperton Gravel, with a contact at a level of -2.9m OD, some 2.5m below the level of the surface of the sand and gravel underlying the fine-grained alluvial deposits at 231-241 Blackfriars Road. The date for the initiation of peat accumulation at the Southwark sites investigated by Sidell et al (2000) is probably slightly before 5,000BP and therefore, as would be expected, substantially earlier than any alluvial sedimentation taking place at the higher levels recorded at 231-241 Blackfriars Road where the earliest archaeological finds associated with the alluvial sediments date from the Iron Age.

METHODS

Field investigations

Column samples (<13>, <14>, <15>, <16>, <17>, <18>, <19>, <20>, <22>, <23> and <24>) were recovered from Trench 1 through channel deposits by Pre-Construct Archaeology Ltd. Twenty bulk samples from Trench 1 and three bulk samples from Trench 2 were also taken from selected archaeological contexts by Pre-Construct Archaeology Ltd (Table 1).

TABLE 1: DETAILS OF SAMPLES TAKEN AT 231 TO 241 BLACKFRIARS ROAD, LONDON (SITE CODE: BFX08)

Sample number	Context number	Phase number	Sample type	Description	Trench number	Highest level (m OD)	Lowest level (m OD)	Sample processed (litres)	Sample remaining (litres)
<23>	[113][121 [130][187]	3	Column	Fills of E/W channel [184]	Trench 1	1.01	0.51	NA	NA
<20>	[113][121]	3	Column	Fills of E/W channel [184]	Trench 1	0.93	0.43	NA	NA
<13>	[140][146] [130][145] [187]	3	Column	Fills of E/W channel [184]	Trench 1	1.07	0.57	NA	NA
<14>	[145][187] [188]	3,2	Column	Fills of E/W channel [184]	Trench 1	0.86	0.36	NA	NA
<19>	[90][131] [207][197]	4,3	Column	Clay fill of undated ditch [91] and fills of E/W channel [184]	Trench 1	0.88	0.38	NA	NA
<24>	[122][187] [250][192]	3,2	Column	Fills of E/W channel [184]	Trench 1	0.46	-0.04	NA	NA
<22>	[199][250] [255]	3,1	Column	Fills of E/W channel [184]	Trench 1	0.31	-0.19	NA	NA
<15>	[15][172]	2	Column	Fills of early E/W channel [194]	Trench 1	1.39	0.89	NA	NA

	[173]								
<16>	[172][173] [174][175]	2	Column	Fills of early E/W channel [194]	Trench 1	1.09	0.59	NA	NA
<17>	[174][175] [171][176] [200][208]	2	Column	Fills of early E/W channel [194]	Trench 1	0.68	0.18	NA	NA
<18>	[175][171] [177][200] [201]	2, 1	Column	Fills of early E/W channel [194]	Trench 1	0.72	0.22	NA	NA
<5>	[93]	5	Bulk	Clay fill of possible E/W linear cut [94] (Undated)	Trench 1	?	?	20	0
<6>	[92]	4	Bulk	Clay layer	Trench 1	1.27	1.00	20	0
<4>	[76]	3	Bulk	Fill of E/W ditch [77]	Trench 1	1.41	1.41	20	0
<7>	[139]	3	Bulk	Upper fill of E/W channel [184]	Trench 1	1.19	1.18	20	20
<8>	[140]	3	Bulk	Fill of E/W channel [184]	Trench 1	1.21	1.20	20	20
<11>	[146]	3	Bulk	Upper fill of E/W channel [184]	Trench 1	1.15	0.95		
<9>	[113]	3	Bulk	Upper fill of E/W channel [184]	Trench 1	1.06	0.77	20	20
<10>	[145]	3	Bulk	Sandy clay fill of E/W channel [184]	Trench 1	0.94	0.94		
<21>	[187]	3	Bulk	Fill of E/W channel [184]	Trench 1	0.85	0.18		
<30>	[199]	3	Bulk	Fill of E/W channel [184]	Trench 1	0.43	0.32	20	20

<31>	[250]	3	Bulk	Lower fill of E/W channel [184]	Trench 1	0.28	0.17	20	20
<32>	[198]	3	Bulk	Fill of E/W channel [184]	Trench 1	0.79	0.53	20	20
<23>	[15]	2	Bulk	Grey clay layer	Trench 1	1.50	0.87	20	20
<24>	[172]	2	Bulk	Upper fill of early E/W channel [194]	Trench 1	1.20	1.11	20	20
<25>	[173]	2	Bulk	Fill of early E/W channel [194]	Trench 1	0.98	0.91	20	20
<26>	[174]	2	Bulk	Fill of early E/W channel [194]	Trench 1	0.88	0.74	20	20
<27>	[175]	2	Bulk	Fill of early E/W channel [194]	Trench 1	0.84	0.63	20	20
<12>	[171]	2	Bulk	Fill of early E/W channel [194] and same as [132]	Trench 1	0.82	0.76		
<28>	[176]	2	Bulk	Fill of early E/W channel [194]	Trench 1	0.32	0.31	20	20
<29>	[200]	2	Bulk	Primary fill of early channel [194]	Trench 1	0.38	0.24	20	20
<1>	[24]	3	Bulk	Clay fill of ditch/channel [25]	Trench 2	1.35	0.67	20	0
<3>	[35]	3	Bulk	Fill of ditch/channel [25]	Trench 2	0.39	0.32	20	0
<2>	[29]	3	Bulk	Secondary fill of ditch/channel [30]	Trench 2	1.02	0.80	20	0

Lithostratigraphic descriptions

The lithostratigraphy of all column samples (Tables 2 to 12; Figure 1) was described in the laboratory using standard procedures for recording unconsolidated sediment and peat, noting the physical properties (colour), composition (gravel, sand, clay, silt and organic matter) and inclusions (e.g. artefacts). The procedure involved: (1) cleaning the samples with a spatula or scalpel blade and distilled water to remove surface contaminants; (2) recording the physical properties, most notably colour using a Munsell Soil Colour Chart; (3) recording the composition; gravel, fine sand, silt and clay; (4) recording the degree of peat humification and (5) recording the unit boundaries e.g. sharp or diffuse.

Organic matter determinations

Thirty-three sub-samples were taken from the column sample sequences for determination of the organic matter content (Table 13; Figure 1). These records were important for two reasons: (1) they identified lithostratigraphic units with a higher organic matter content that may be suitable for radiocarbon dating, and (2) they identified increases in organic matter possibly associated with more terrestrial conditions. The organic matter content was determined by standard procedures involving: (1) drying the sub-sample at 110°C for 12 hours to remove excess moisture; (2) placing the sub-sample in a muffle furnace at 550°C for 2 hours to remove organic matter (thermal oxidation), and (2) re-weighing the sub-sample obtain the 'loss-on-ignition' value (see Bengtsson and Enell 1986).

Pollen assessment

Thirty-four sub-samples were extracted from the column sample sequence for assessment of the pollen content. The pollen was extracted as follows: (1) sampling a standard volume of sediment (1ml); (2) deflocculation of the sample in 1% Sodium pyrophosphate; (3) sieving of the sample to remove coarse mineral and organic fractions (>125µ); (4) acetolysis; (5) removal of finer minerogenic fraction using Sodium polytungstate (specific gravity of 2.0g/cm^3); (6) mounting of the sample in glycerol jelly. Each stage of the procedure was preceded and followed by thorough sample cleaning in filtered distilled water. Quality control is maintained by periodic checking of residues, and assembling sample batches from various depths to test for systematic laboratory effects. Pollen grains and spores were identified using the Royal Holloway (University of London) pollen type collection and the following sources of keys and photographs: Moore *et al* (1991); Reille (1992). Plant nomenclature follows the Flora Europaea as summarised in Stace (1997). The assessment procedure consisted of scanning the prepared slides at 2mm intervals along the whole length of the coverslip and recording the concentration and state of preservation of pollen grains and spores, and the principal pollen taxa (Table 14).

Diatom assessment

Twenty-five sub-samples were extracted from the column sample sequence for assessment of diatoms. The diatom extraction involved the following procedures (Battarbee *et al* 2001):

1. Treatment of the sub-sample (0.2g) with Hydrogen peroxide (30%) to remove organic material and Hydrochloric acid (50%) to remove remaining carbonates

2. Centrifuging the sub-sample at 1200 for 5 minutes and washing with distilled water (4 washes)
3. Removal of clay from the sub-samples in the last wash by adding a few drops of Ammonia (1%)
4. Two slides prepared, each of a different concentration of the cleaned solution, were fixed in mounting medium of suitable refractive index for diatoms (Naphrax)

The assessment procedure consisted of scanning the prepared slides at 2mm intervals along the whole length of the coverslip and recording the concentration and state of preservation of diatoms, and the principal diatom taxa (Tables 15 and 16).

Diatom identification and low sum counting was carried out to characterise the diatom assemblages. Diatom floras and taxonomic publications were consulted to assist with diatom identification; these include Hartley *et al.* (1996) and Krammer & Lange-Bertalot (1986-1991). Diatom species' salinity preferences are discussed using the halobian groups of Hustedt (1953; 1957, 199), these salinity groups are summarised as follows:

1. Mesohalobian: 0.2-30 g l-1
2. Oligohalobian - Halophilous: optimum in slightly brackish water
3. Oligohalobian - Indifferent: optimum in freshwater but tolerant of slightly brackish water
4. Halophobous: exclusively freshwater
5. Unknown: taxa of unknown salinity preference.

Plant macrofossil assessment

Twenty bulk samples from Trench 1 and three bulk samples from Trench 2 were assessed for waterlogged and charred plant macrofossils (seeds and wood). For the waterlogged material one litre sub-samples were wet-sieved using 300 micron and 1mm mesh sizes. The residues were scanned using a low power zoom-stereo microscope (Table 17). Plant nomenclature follows Stace (1997). For the charred material, the bulk samples, 10 litres in volume, were processed by flotation by Pre-Construct Archaeology using a 300-micron mesh sieve. The dried residues were sorted ‘by eye’. The flots and residues were viewed under a zoom stereo microscope at x7-45 magnification and the quantities and preservation of the waterlogged charred remains in each sample were recorded. The results are displayed in Tables 18 and 19.

Insect assessment

Seventeen bulk samples recovered from Trench 1 were processed for the insect assessment. Samples were processed by paraffin flotation following the methodology of Atkinson *et al.* (1987).

1. Wash bulk peat samples through a 5mm mesh using hot water to remove larger wood fragments
2. Wash remaining fraction onto a 300 micron mesh
3. Wash twice with hot water to remove the fine fraction, and two cold water washes to remove the possibility of a thermal gradient forming during the subsequent flotation
4. Drain well and mix with paraffin in a large bowl for 5 minutes
5. Decant excess paraffin back into the stock bottle through an 80 micron mesh

6. Add cold water to the organic fraction, mixing thoroughly
7. Leave to stand for 15 minutes
8. Decant the oil overlying the bulk material onto a 300 micron mesh and wash gently with detergent and hot water
9. Rinse with distilled water, dehydrate in 95% ethanol, and transfer to a sealed container for storage in 95% ethanol
10. Save remaining bulk material for further extraction of other fossil material.

Flots were scanned briefly using a low power binocular microscope (x10) to record the insect material, and to note principal beetle (Coleoptera) and bug (Hemiptera) taxa (Table 20).

RESULTS AND INTERPRETATION OF THE LITHOLOGICAL ASSESSMENT

The lithological assessment of the Blackfriars site is based on the examination of 11 column samples collected from the east face of Trench 1 where two channel-like depressions were exposed in cross-section cutting down into natural sand and gravel (Phase 1). Field evidence indicated that the southern channel [194] pre-dates the northern channel [184] which is deeper and truncates the fill of the southern channel at its northern end. At the lowest levels within these depressions sherds of Iron Age (Phase 2) pottery were recovered and in the sediments infilling the depressions, occasional archaeological finds indicate deposition in the Roman and early post-Roman period (Phase 3). Stratified post-medieval (Phase 4) deposits overlie and in places truncate these earlier deposits and the natural sands and gravels.

***Trench 1: Phase 2; s*outhern channel [194]**

The floor of the older, southern channel [194] slopes down to the south, probably indicating that the section exposes less than half of the original depression. The fill of the older channel was heavily truncated by a ditch [77], possibly of Roman age, but could be sampled at the base of the section <18> and at its southern end <17>, <16>, <15>.

Overlapping column samples <18>, <17>, <16> and <15> record a full sequence through the surviving channel fill. At the base of the sequence and recorded in column samples <18> Units 1 and 2 and <17> Unit 1, sandy deposits are present which are regarded as reworked natural sands (Phase 1; [201], [208]) and the primary fill of the channel (Phase 2; [200], [176] and [177]). In column sample <17> at the southern end of the exposure plant remains are present in the silty sand of Unit 1 (200), [176], but no plant remains were noted in the less silty sediment at the base of column sample <18> [200], [177].

Both these column samples record the lower part of the infill of the southern channel. In sample <17> these are clayey sands (Unit 2) passing up into clayey silt (Unit 3) and representing contexts [171], [175] and [174]. Scattered plant remains were recorded in Unit 2 and also a few small pieces of charcoal. In sample <18>, to the north of samples <17>, <16> and <15> and possibly nearer the

northern edge of the original channel, the infill, representing contexts [171] and [175] is sandier and slightly gravelly. No plant remains were recorded in this sediment but evidence of root penetration and scattered root remains are present. At the top of this sample (Unit 4) evidence of root penetration is more common and scattered plant remains are present, possibly indicating proximity to the base of the ditch [77] that truncates the earlier infill and perhaps representing the base of the infill of this ditch [76].

Column sample <16> overlaps sample <17> at the southern end of the exposure and represents contexts [175], [174], [173] and [172]. It was recorded as a single unit of slightly sandy, slightly gravelly, clayey silts. No plant remains or evidence of root penetration was recorded. Column sample <15> overlaps sample <16> and represents in its lower part contexts [173] and [172]. It was also recorded as a single unit of slightly sandy, slightly gravelly, clayey silts. In its upper part it represents context [15] described in the field as 'grey clay layer'. In the column sample it appears, in terms of colour, texture and structure, to be indistinguishable from the infill horizons recorded as contexts [171] to [175]. None of the sediments examined from the southern channel reacted with HCl.

***Trench 1: Phase 3; northern* channel [184]**

Seven column samples were collected from the later and deeper northern channel [184]. Sample <19> is from the southern edge of the channel; samples <22>/<20> and <24>/<23> provide two records of the sequence in the deepest part of the channel; and overlapping samples <13> and <14> are at the northern end of the depression.

At the base of the sequence, in sample <22> Unit 1 [255] and sample <24> Unit 1 [192], in the lowest part of the depression, light olive brown, well sorted medium to coarse sand with small (10mm) clasts of sub-angular flint, can be regarded as representing the top of the Shepperton Gravel, respectively at -0.15m and 0.00m OD. The field record indicates that some of this material is reworked and that the floor of the channel is veneered with a thin layer of reworked sandy gravel [188], [190], [192] and [201]. This is confirmed by the presence of an Iron Age pottery sherd in context [192] represented at the base of sample <24>. None of the undisturbed or reworked sand and gravel reacts with HCl.

The oldest element of the channel [184] infill appears to be a thick body of sand [198] on its southern flank. This is represented in Unit 1 of column sample <19> where it is indistinguishable from the undisturbed [255] and reworked [192] gravelly sands seen in samples <22> and <24> respectively and like them does not react with HCl. This body of sand has been cut through in the centre of the channel down to the underlying natural sand and gravel, where it has been completely removed and replaced by a later infill sequence.

The lowest part of this later infill is a slightly gravelly medium sand [250] seen in sample <22> Unit 2 and the lower part of sample <24>. The upper part of sample <24> represents context [187] but in the sample was indistinguishable from context [250] in terms of colour, texture or structure. Both react weakly with HCl. The sandy infill in the lower part of the northern channel is also present further north

in column samples <13> Unit 1 and <14> Unit 1 representing contexts [187], [145] and in addition context [130]. Here however these sediments do not react with HCl.

The upper part of sample <22> is quite different and represents contexts [199] and [122]. These appear to be localised lenses of distinctive sediment contemporary with, or possibly slightly later than, the clayey sands of context [187]. Unit 3 of sample <22> is a thin bed of rather pure silt with scattered plant remains. It was not distinguished in the field but probably represents the basal infill of a minor depression in which the material of context [199] accumulated. Unit 4 of sample <22> appears to represent the bulk of context [199]. It is a clayey sand with common plant remains including a piece of wood. The sediments of Units 2, 3 and 4 in sample <22> all react weakly with HCl. Unit 5 of sample <22> is a light olive brown well sorted slightly gravelly medium sand and as such appears to be a reworked lens of the sand and gravel into which the northern channel is cut and like them does not react with HCl.

The upper part of the infill of the northern channel is represented in column samples <13>, <14>, <19>, <20> and <23>. Across most of the width of the channel in its central and southern extent, the main element of the upper infill is a rather pure silt forming contexts [113], [121], [130] and [207]. The maximum development of this silt is seen in sample <20> which was recorded as a single unit of clayey silt with common plant remains including pieces of twig and common mollusc remains. This unit represents context [121] overlain by context [113]. Both plant and mollusc remains are more common in the upper part of the sample, probably equivalent to context [113], and the sediment reacts strongly throughout with HCl.

The upper part (Unit 3) of sample <23> represents the northward continuation of contexts [113] and [121], rich in plant and mollusc remains (14 % organic matter content). The lower part of this sample (Units 2 and 1) extends down through context [130] into context [187]. These are both sandy and no organic material was recorded from them.

The richly organic silt is also present in sample <19> where Unit 3 is a clayey silt with common plant and mollusc remains representing contexts [207] and [131]. This unit is underlain by a crudely bedded sandy clay with scattered plant remains including pieces of twig. The upper part of Unit 3 appears to grade upward into the overlying richly organic silt. Thin silt beds become increasingly common upward and mollusc remains are present in the uppermost few millimetres. This unit is probably equivalent to context [197] which in the drawing of the section appears as a lens of material overlying the sand of context [198] and fingering northward into the main body of richly organic silt [121][(207].

At the northern end of the section the richly organic silt is recognised in column samples <13> and <14>. In column sample <14>, Unit 2 is a rather pure silt with plant-rich partings and seams and scattered small pieces of mollusc shell. It probably represents context [146]. In sample <13>, Unit 2 is probably equivalent to context [146] and is overlain by Unit 3, probably equivalent to context [140] and

containing plant remains including pieces of twig and more common mollusc remains including whole and broken shells. Units 2 and 3 of sample <13> are more sandy than the rather pure silts seen in samples <20> and <23>, probably reflecting their position nearer to the northern margin of the channel.

Trench 1: Phase 4 Ditch [91]

The upper part of column sample <19> (Units 4 and 5) probably represents the infill [90] of an undated ditch [91] that cuts down into the richly organic silts of contexts [207] and [131]. Unit 4 is a sandy clay with scattered plant remains including a fairly large (30mm) piece of wood. Unit 5 is a rather pure clayey silt with evidence of root penetration and some root remains together with scattered plant and mollusc remains. It is also distinguished by the presence of autogenic crystals of gypsum, suggesting proximity to a source of pyrite decomposition - possibly associated with the decay of overlying anthropogenic rubbish. It may be significant that the position from which the sample was taken is within a ditch which appears to have been repeatedly recut during the historic period [75], [89] [70].

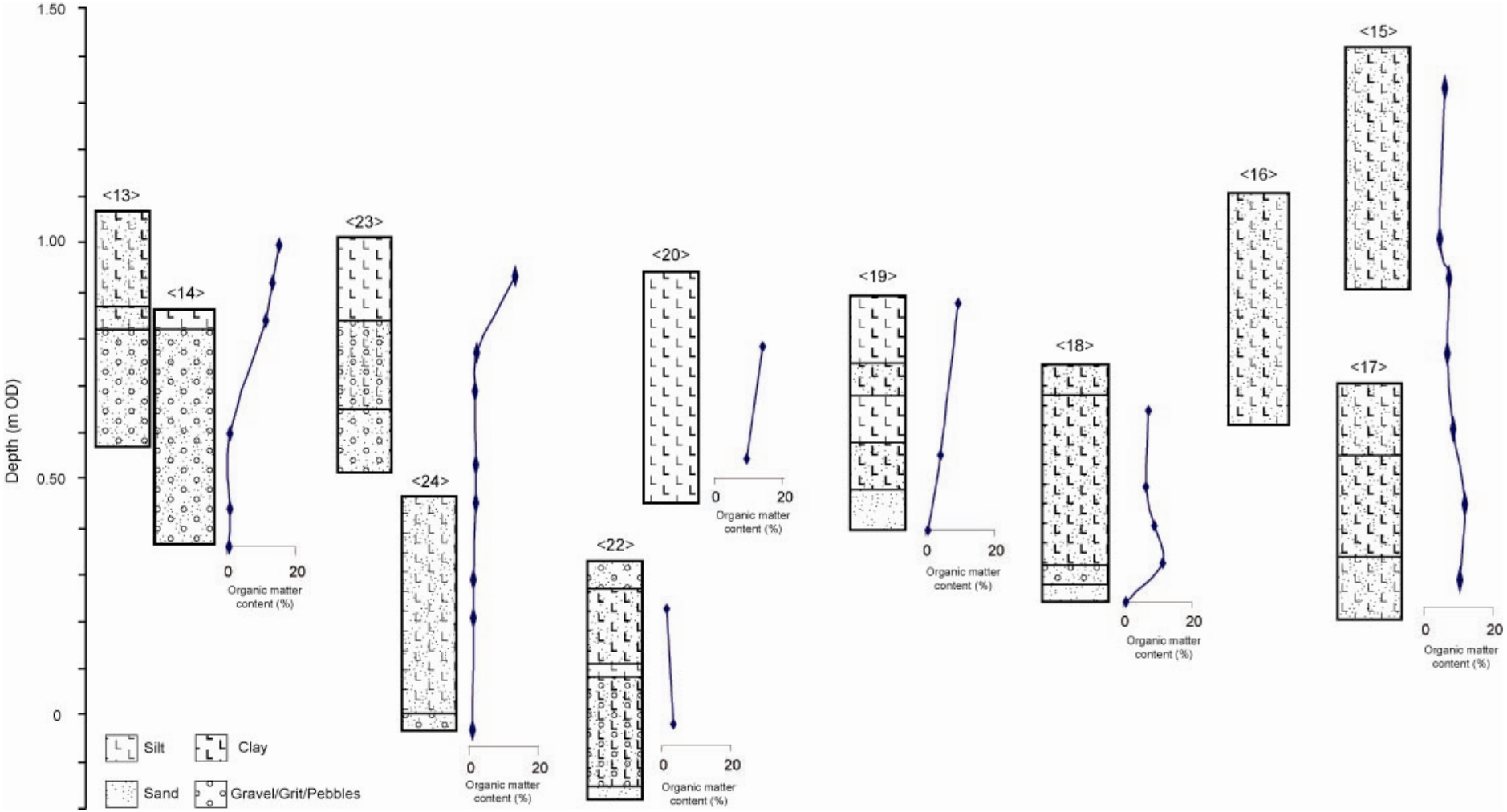

Figure 1: Lithostratigraphy and organic matter content from all Trench 1 column samples, 231 to 241 Blackfriars Road, London (Site Code: BFX08)

TABLE 2: LITHOSTRATIGRAPHIC DESCRIPTION OF COLUMN SAMPLE <23>, 231 TO 241 BLACKFRIARS ROAD (BFX08)

Depth (m OD)	**Context number**	**Phase number**	**Unit number**	**Description**
1.01 to 0.84	[113]	3	3	Black oxidising to 2.5Y 4/2 dark greyish brown; very well sorted clayey silt; massive; moderately common plant remains; common mollusc remains whole and broken; strong acid reaction; sharp contact with:
0.84 to 0.65	[113] [121]	3	2	2.5Y 4/2 dark greyish brown; well sorted silty fine to medium sand with sub-angular and [130] [187] well-rounded flint clasts; massive; weak acid reaction; well-marked transition to:
0.65 to 0.51	[187]	3	1	2.5Y 4/4 olive brown becoming darker downward and with near vertical zone of Fe-enrichment; moderately sorted medium to coarse sand with granules; massive; weak acid reaction.

TABLE 3: LITHOSTRATIGRAPHIC DESCRIPTION OF COLUMN SAMPLE <20>, 231 TO 241 BLACKFRIARS ROAD (BFX08)

Depth (m OD)	**Context number**	**Phase number**	**Unit number**	**Description**
0.93 to 0.43	[113] [121]	3	1	black oxidising to 2.5Y 4/2 dark greyish brown; very well sorted clayey silt; massive; common plant remains decreasing in abundance and size downward including pieces of twig; common mollusc remains decreasing in size and abundance downward; strong

				acid reaction.

TABLE 4: LITHOSTRATIGRAPHIC DESCRIPTION OF COLUMN SAMPLE <13>, 231 TO 241 BLACKFRIARS ROAD (BFX08)

Depth (m OD)	**Context number**	**Phase number**	**Unit number**	**Description**
1.07 to 0.87	[140]	3	3	5Y 3/2 dark olive grey; well-sorted slightly sandy clayey silt; massive; plant remains in [146] upper 100mm including piece of twig; whole and broken mollusc shells common; moderate acid reaction; sharp contact, rust stained and slightly concretionary, with:
0.87 to 0.82	[130]	3	2	10YR 4/3 brown; well-sorted slightly sandy silty clay; massive and more compact than Unit 3; scattered plant remains including piece of twig; moderate acid reaction; sharp contact with:
0.82 to 0.57	[145]	3	1	2.5Y 6/6 olive yellow; well-sorted medium sand with small (10mm) flint clasts in lowest [187] 100mm; crude slightly inclined bedding; no acid reaction.

TABLE 5: LITHOSTRATIGRAPHIC DESCRIPTION OF COLUMN SAMPLE <14>, 231 TO 241 BLACKFRIARS ROAD (BFX08)

Depth (m OD)	**Context number**	**Phase number**	**Unit number**	**Description**
0.86 to 0.82	[130]	3	2	2.5Y 4/4 olive brown; very well sorted clayey silt; massive with discontinuous near horizontal plant-rich partings and seams; scattered small pieces of mollusc

				shell; moderate acid reaction; very sharp contact with:
0.82 to 0.36	[145]	3	1	2.5Y 5/6 light olive brown and 2.5Y 4/2 dark greyish brown; moderately sorted fine to [187] coarse sand with granules and fine sub-angular flint gravel (up to 15mm) increasing downward; crudely bedded with bedding defined by variations of colour and texture; no acid reaction.

TABLE 6: LITHOSTRATIGRAPHIC DESCRIPTION OF COLUMN SAMPLE <19>, 231 TO 241 BLACKFRIARS ROAD (BFX08)

Depth (m OD)	**Context number**	**Phase number**	**Unit number**	**Description**
0.88 to 0.75	[90]	4	5	2.5Y 4/2 dark greyish brown; well sorted clayey silt with scattered gypsum crystals; massive; occasional root channels with scattered root remains; scattered plant remains; very scattered pieces of broken mollusc shell; moderate acid reaction; sharp contact with:
0.75 to 0.68	[90]	4	4	2.5Y 4/2 dark greyish brown with scattered rust staining; moderately sorted clayey sand/sandy clay; massive; scattered plant remains; piece of wood (30mm) at junction with overlying unit; moderate acid reaction; well-marked transition to:
0.68 to 0.58	[131]	3	3	2.5Y 4/2 dark greyish brown; well sorted clayey silt; massive; scattered root

				channels with scattered root remains; common plant remains; common mollusc remains - whole and broken gastropod and bivalve shells; moderate acid reaction; sharp contact with:
0.58 to 0.48	[197]	3	2	2.5Y 4/2 dark greyish brown tinged with rust; moderately sorted clayey sand/sandy clay with scattered sub-angular flint clasts (up to 15mm); crude bedding defined in upper part by thin drapes of silty clay; scattered plant remains including twig fragment; scattered mollusc remains in upper 10mm; moderate acid reaction; very sharp contact with:
0.48 to 0.38	[198]	3	1	2.5Y 5/6 light olive brown; well sorted fine to medium sand; massive.

TABLE 7: LITHOSTRATIGRAPHIC DESCRIPTION OF COLUMN SAMPLE <24> 231 TO 241 BLACKFRIARS ROAD (BFX08)

Depth (m OD)	**Context number**	**Phase number**	**Unit number**	**Description**
0.46 to 0.00	[122] [187]	3	2	2.5Y 5/4 light olive brown, 10YR3/3 dark brown and 5YR4/2 dark reddish grey; [250] moderately sorted slightly silty medium to coarse sand with granules and fine sub-angular flint gravel (up to 10mm); crudely bedded with bedding defined by variations of colour and texture including two concretionary horizons of iron enrichment; weak acid

				reaction; well-marked transition to:
0.00 to -0.04	[250]	3	1	2.5Y 5/4 light olive brown; well sorted medium to coarse sand with sub-angular flint clasts (up to 10mm); massive; no acid reaction.

TABLE 8: LITHOSTRATIGRAPHIC DESCRIPTION OF COLUMN SAMPLE <22>, 231 TO 241 BLACKFRIARS ROAD (BFX08)

Depth (m OD)	**Context number**	**Phase number**	**Unit number**	**Description**
0.31 to 0.27	[199]	3	5	2.5Y 5/4 light olive brown; well sorted slightly gravelly medium sand; no acid reaction. well-marked transition to
0.27 to 0.11	[199] [250]	3	4	2.5Y 4/2 dark greyish brown and 2.5Y 4/4 olive brown with some swirly rust stains; moderately sorted clayey medium sand; massive; common plant remains; wood fragment (7mm Ø); weak acid reaction; sharp contact with:
0.11 to 0.08	[250]	3	3	5Y 5/2 olive grey; very well sorted silt; massive; scattered plant remains; moderate acid reaction; sharp rusty contact with:
0.08 to -0.15	[250]	3	2	2.5Y 4/2 dark greyish brown and 2.5Y 4/4 olive brown; clayey medium sand with sub-angular flint clasts (up to 10mm); massive; weak acid reaction; very sharp contact with
-0.15 to -0.19	[255]	1	1	2.5Y 5/4 light olive brown; well sorted medium to coarse sand; massive; no acid reaction.

TABLE 9: LITHOSTRATIGRAPHIC DESCRIPTION OF COLUMN SAMPLE <15>, 231 TO 241 BLACKFRIARS ROAD (BFX08)

Depth (m OD)	**Context number**	**Phase number**	**Unit number**	**Description**
1.39 to 0.89	[15] [172]	2	1	well sorted slightly sandy clayey silt with sub-angular flint clasts (up to 15mm); massive; [173] no acid reaction.

TABLE 10: LITHOSTRATIGRAPHIC DESCRIPTION OF COLUMN SAMPLE <16>, 231 TO 241 BLACKFRIARS ROAD (BFX08)

Depth (m OD)	**Context number**	**Phase number**	**Unit number**	**Description**
1.09 to 0.59	[172] [173]	2	1	2.5Y 4/4 olive brown; well sorted slightly sandy clayey silt with sub-angular flint clasts [174] [175] (up to 10mm) and a piece of spicular Lower Greensand chert (20mm); massive; no acid reaction.

TABLE 11: LITHOSTRATIGRAPHIC DESCRIPTION OF COLUMN SAMPLE <17>, 231 TO 241 BLACKFRIARS ROAD (BFX08)

Depth (m OD)	**Context number**	**Phase number**	**Unit number**	**Description**
0.68 to 0.55	[174] [175]	2	3	10YR 3/4 dark yellowish brown (with patchy reddish brown fungal coatings ?post-sampling); moderately sorted sandy clayey silt; massive; scattered small charcoal particles; no acid reaction; gradual transition to:
0.55 to 0.34	[175] [171]	2	2	10YR 3/3 dark yellowish brown; moderately sorted clayey sand; massive; very scattered small pieces of plant debris; no acid

				reaction; gradual transition to:
0.34 to 0.18	[176] [200]	2	1	5YR 3/3 dark reddish brown and black (reduced); poorly sorted silty sand with granules; massive; common plant remains; no acid reaction.

TABLE 12: LITHOSTRATIGRAPHIC DESCRIPTION OF COLUMN SAMPLE <18>, 231 TO 241 BLACKFRIARS ROAD (BFX08)

Depth (m OD)	**Context number**	**Phase number**	**Unit number**	**Description**
0.72 to 0.68	[175]	2	4	2.5Y 3/2 very dark greyish brown; poorly sorted sandy clay/clayey sand; massive; root channels with Fe stained margins and scattered root remains; scattered plant remains; no acid reaction; gradual transition to:
0.68 to 0.32	[171] [177]	2	3	7.5YR 3/2 dark brown; well sorted slightly clayey fine to medium sand with sub-angular flint clasts (up to 15mm); massive; occasional root channels with Fe stained margins; no acid reaction; well-marked transition to:
0.32 to 0.28	[200]	2	2	5YR 2/2 dark reddish brown; well sorted fine to medium sand with granules; massive; common plant remains; no acid reaction; very sharp contact with:
0.28 to 0.22	[201]	1	1	2.5Y 5/4 light olive brown; well sorted medium sand; massive; no acid reaction.

Table 13: Organic matter determinations, 231 to 241 Blackfriars Road, London (Site Code: BFX08)

Depth (m OD)		Column number	Context number	Phase number	Organic matter (%)
To	From				
Ditch [91]					
0.86	0.87	<19>	[90]	4	9.35
***Northern* channel [184]**					
1.00	1.01	<13>	[140]	3	15.24
0.92	0.93	<13>	[146]	3	13.28
0.54	0.55	<19>	[207]	3	4.30
0.76	0.77	<23>	[121]	3	2.22
0.53	0.54	<20 >	[121]	3	9.37
0.77	0.78	<20>	[113]	3	14.18
0.92	0.93	<23>	[113]	3	13.41
0.44	0.45	<24>	[122]	3	2.06
0.68	0.69	<23>	[130]	3	1.76
0.84	0.85	<13>	[130]	3	11.50
0.6	0.61	<13>	[145]	3	1.06
0.44	0.45	<14>	[187]	3	0.94
0.28	0.29	<24>	[187]	3	1.20
0.52	0.53	<33>	[187]	3	2.05
0.21	0.22	<22>	[199]	3	3.45
0.20	0.21	<24>	[250]	3	1.18
-0.03	-0.02	<22>	[250]	3	1.51
0.36	0.37	<14>	[192]	3	0.79
0.38	0.39	<19>	[198]	3	0.65
Southern channel [194]					
1.30	1.31	<15>	[15]	2	7.36
0.98	0.99	<15>	[172]	2	4.55

0.90	0.91	<15>	[173]	2	6.16
0.74	0.75	<16>	[174]	2	6.74
0.58	0.59	<17>	[175]	2	8.58
0.62	0.63	<18>	[175]	2	7.21
0.42	0.43	<17>	[171]	2	11.95
0.46	0.47	<18>	[171]	2	6.44
0.26	0.27	<17>	[176]	2	10.51
0.38	0.39	<18>	[177]	2	8.90
0.30	0.31	<18>	[200]	2	11.42
-0.04	-0.03	<24>	[192]	2	1.06
0.22	0.23	<18>	[201]	1	0.82

RESULTS AND INTERPRETATION OF THE POLLEN ASSESSMENT

Thirty four sub-samples were extracted from the column sample sequence for assessment of the pollen content (Table 14). The results indicate generally poor pollen concentrations and preservation in the ditch, southern, northern channels. This can be attributed to the physical and/or chemical properties of the sediments at the time of deposition, and changes in these properties over time. These properties include coarse particle size (e.g. sand and gravel), which may cause physical destruction, and high pH due to calcium carbonate-rich groundwater, which may cause chemical deterioration.

***Trench 1: Phase 2; s*outhern channel [194]**

The results of the pollen assessment indicate poor to moderate concentration and preservation. The main taxa identified were herb-rich including Poaceae (grasses), Cyperaceae (sedges), *Chenopodium* (e.g. *C. album* – fat hen), *Ranunculus* type (e.g. *R. repens* – creeping buttercup) and Lactuceae (daisy family), with occasional trees and shrubs such as *Alnus* (alder), *Corylus* type (e.g. *C. avellana* – hazel) and *Hedera* (ivy). This assemblage indicates a relatively open floodplain meadow-type environment, most likely modified by human activity with the limited growth of trees and shrubs.

***Trench 1: Phase 3; northern* channel [184]**

The results of the assessment indicate poor pollen concentration and preservation, with many samples containing no pollen. The main taxa identified were herb-rich including Poaceae (grasses), *Chenopodium* (e.g. *C. album* – fat hen), *Plantago lanceolata* (ribwort plantain), *Centaurea nigra* (common knapweed) and Lactuceae (daisy family), with occasional trees and shrubs such as *Quercus* (oak), *Alnus* (alder) and *Pinus* (pine). This assemblage indicates a relatively open floodplain meadow-type environment, modified by human activity with the limited growth of trees and shrubs.

Trench 1: Phase 4 Ditch [91]

A single sample taken from context [90] indicated very poor pollen concentration and preservation. *Dryopteris* type (e.g. buckler fern) and *Plantago* type (e.g. *P. lanceolata* – ribwort plantain) were the only taxa preserved.

Table 14: Pollen-stratigraphic assessment, 231 to 241 Blackfriars Road, London (Site Code: BFX08)

Depth (m OD) From	To	Column number	Context number	Phase number	Main pollen taxa	Common name	Concentration 0 (none) to 4 (high)	Preservation 0 (none) to 4 (high)	Microscopic charred particles 0 (none) to 4 (high)
Ditch [91]									
0.86	0.87	<19>	[90]	4	cf *Plantago* type Dryopteris type	e.g. Ribwort plantain e.g. Buckler fern	1	1	0
Northern channel [184]									
1.00	1.01	<13>	[140]	3	*Quercus* cf *Ranunculus type* cf *Plantago lanceolata*	Oak e.g. creeping buttercup Ribwort plantain	1	1-2	1
0.92	0.93	<13>	[146]	3	cf *Quercus* *Sinapis type* *Poaceae* cf *Cyperaceae*	Oak e.g. Charlock Grass family Sedge family	1-2	2	1-2
0.54	0.55	<19>	[207]	3	*Pinus* Poaceae	Pine Grass family	1	1-2	1-2

0.76	0.77	<23>	[121]	3			0	0	1-2
0.53	0.54	<20 >	[121]	3	*Alnus* *Sinapis* type cf *Quercus* Lactuceae *Rumex* undif.	Alder e.g. Charlock Oak Daisy family Docks	2	2	1
0.77	0.78	<20>	[113]	3	cf *Centaurea nigra* Lactuceae	Common knapweed Daisy family	1	1	1-2
0.92	0.93	<23>	[113]	3	*Quercus* *Hedera* *Alnus* *Rumex*	Oak Ivy Alder Dock	1-2	2-3	1
0.44	0.45	<24>	[122]	3			0	0	0
0.84	0.85	<13>	[130]	3	*Quercus* *Aster type* *Pinus*	Oak e.g. Sea aster Pine	1	2	1
0.68	0.69	<23>	[130]	3			0	0	0
0.60	0.61	<13>	[145]	3			0	0	0

0.52	0.53	<23>	[187]	3	cf *Pinus*	Pine	1	1	1
0.44	0.45	<14>	[187]	3	cf Lactuceae	Daisy family	0	0	1-2
0.28	0.29	<24>	[187]	3			0	0	0
0.21	0.22	<22>	[199]	3	*Chenopodium* type	e.g. Fat hen	1	3	1
0.20	0.21	<24>	[250]	3			0	0	0
-0.03	-0.02	<22>	[250]	3	*Poaceae*	Grass family	1	1	0
0.36	0.37	<14>	[192]	3			0	0	0
0.38	0.39	<19>	[198]	3			0	0	0
-0.19	-0.18	<22>	[255]	1	*Poaceae* *Sinapis* type	Grass family e.g. Charlock	1	2	1-2
-0.04	-0.03	<24>	[192]	2			0	0	0
Southern channel [194]									
1.30	1.31	<15>	[15]	2	cf *Poaceae*	Grass family	1	1	1-2
0.98	0.99	<15>	[172]	2	cf *Sinapis* type cf *Pinus* cf *Chenopodium type*	e.g. Charlock Pine e.g. Fat hen	1-2	1-2	1-2
0.90	0.91	<15>	[173]	2	cf *Corylus* type *Alnus*	e.g. Hazel Alder	1	1-2	2
0.74	0.75	<16>	[174]	2	cf *Cirsium* type	e.g. Spear thistle	1	1	1-2

					cf *Plantago* type	e.g. Ribwort plantain			
0.62	0.63	<18>	[175]	2	cf Poaceae	Grass family	1	1	1
0.58	0.59	<17>	[175]	2	cf *Quercus* cf *Artemisia* cf Poaceae Lactuceae *Pteridium aquilinum* cf *Alnus*	Oak Mugwort Grass family Daisy family Bracken Alder	2	1-2	1
0.46	0.47	<18>	[171]	2	cf *Pteridium aquilinum*	Bracken	1	1	0
0.42	0.43	<17>	[171]	2	Lactuceae Cyperaceae cf Poaceae cf *Alnus*	Daisy family Sedge family Grass family Alder	2	2	1
0.38	0.39	<18>	[177]	2	*Chenopodium* type *Alnus* *Corylus* type	e.g. Fat hen Alder e.g. Hazel	2	2	0

0.3	0.31	<18>	[200]	2	Poaceae *Pteridium aquilinum* *Alnus* *Corylus* type	Grass family Bracken Alder e.g. Hazel	2	2-3	1
0.26	0.27	<17>	[176]	2	*Ranunculus* type *Hedera* Poaceae *Corylus* type	e.g. Creeping buttercup Ivy Grass family e.g. Hazel	3	2	0
0.22	0.23	<18>	[201]	1			0	0	0

RESULTS AND INTERPRETATION OF THE DIATOM ASSESSMENT

Twenty five sub-samples were taken from the column samples for assessment of the diatom content. The quality of diatom preservation is variable with the majority of the slides having no or very poor diatom preservation (Table 15 and Table 16). Diatom valve breakage and silica dissolution was common and may have altered the diatom assemblages significantly (see Flower 1993; Ryves *et al* 2001). All the contexts where diatoms are preserved ([121], [113], [199], [175], [171] and [176] contain estuarine diatoms indicating tidal environments in some form (whether fully tidal habitats or periodically flooded environments). In particular a typical mesohalobous planktonic diatom of the Thames Estuary, *Cyclotella striata* is present or common in all samples. However, there are a number of other brackish water benthic, attached and planktonic species present e.g. *Nitzschia punctata, Nitzschia navicularis, Navicula phyllepta, Melosira moniliformis, Diploneis interrupta*. In samples [175], [176], [113], [199], [250] polyhalobous and polyhalobous to mesohalobous species are present in addition to the mesohalobous taxa. These species are generally planktonic and are allochthonous, outer estuary, or coastal species e.g. *Paralia sulcata, Podosira stelligera, Triceratium favus, Rhaphoneis* spp., *Cymatosira belgica, Ardissonia crystallina*. Again these are indicators of tidal conditions.

As is common in many estuarine deposits, freshwater diatoms are mixed with the brackish water and allochthonous marine species. In some samples halophilous and oligohalobous indifferent taxa are amongst the most common components of the assemblage. These include the attached (often epiphytic) species Rhoicosphenia *curvata, Cocconeis placentula* and *Epithemia adnata*.

The presence of some oligohalobous indifferent *Fragilaria* species that are tolerant of relatively wide salinity ranges also reflects the variation in salinity e.g. *Fragilaria construens* var. *venter, Fragilaria brevistriata, Fragilaria pinnata*. Aerophilous diatoms such as *Hantzschia amphioxys, Pinnularia major* and *Navicula mutica* are present in relatively low numbers. Where the diatom assemblages are of adequate quality, percentage diatom counting of the sequences would clarify trends in palaeosalinity and changes in habitats, such as the development of macrophytes.

Table 15: Diatom assessment, 231 to 241 Blackfriars Road, London (Site Code: BFX08)

Depth (m OD)		Column number	Context number	Phase number	Concentration	Preservation	Weight (g)	Assemblage type
Ditch [91]								
0.86	0.87	<19>	[90]	4	0	0	0.89	
***Northern* channel [184]**								
1.00	1.01	<13>	[140]	3	0	0	0.58	
0.92	0.93	<13>	[146]	3	0	0	0.57	
0.54	0.55	<19>	[207]	3	0	0	0.93	
0.76	0.77	<23>	[121]	3	4	2-3	1.1	bk hpl fw
0.77	0.78	<20>	[113]	3	4	2-3	0.95	bk hpl fw
0.92	0.93	<23>	[113]	3	4	2-3	0.99	As [113] below
0.44	0.45	<24>	[122]	3	0	0	1.05	
0.84	0.85	<13>	[130]	3	0	0	1.06	
0.68	0.69	<23>	[130]	3	0	0	0.78	
0.60	0.61	<13>	[145]	3	0	0	0.71	
0.28	0.29	<24>	[187]	3	0	0	1.09	
0.21	0.22	<22>	[199]	3	1	1	0.91	bk mar
0.20	0.21	<24>	[250]	3	0	0	0.96	

-0.03	-0.02	<22>	[250]	3	1	1	1	bk fw mar
-0.04	-0.03	<24>	[192]	3	0	0	0.96	
Southern channel [194]								
1.30	1.31	<15>	[15]	2	0	0	0.92	
0.98	0.99	<15>	[172]	2	0	0	0.41	
0.74	0.75	<16 >	[174]	2	0	0	0.86	
0.62	0.63	<18 >	[175]	2	0	0	0.74	
0.58	0.59	<17>	[175]	2	1	1	0.9	bk and fw
0.42	0.43	<17>	[171]	2	2	1	0.76	fw dominate some bk & aero
0.26	0.27	<17 >	[176]	2	2	2	1.12	fw bk mar
0.30	0.31	<18>	[200]	2	0	0	0.54	
0.22	0.23	<18>	[201]	1	0	0	0.71	

Diatom concentration		**Diatom preservation**		**Assemblage type**	
1	Rare	1	Poor	bk	Brackish
2	Moderate	2	Moderate	hpl	Halophilous
3	Good	3	Good	fw	Freshwater
4	Abundant	4	Excellent	areo	Aerophilous

Table 16: Diatom ecological information, 231 to 241 Blackfriars Road, London (Site Code: BFX08)

Species and ecological group	[121]	[113]	[199]	[175]	[171]	[176]
Polyhalobous						
Cymatosira belgica						
Grammatophora sp.			+			
Paralia sulcata			+			+
Podosira stelligera		+	+			
Rhaphoneis surirella				+		
Rhaphoneis sp.			+			
Triceratium favus			+			
Polyhalobous to Mesohalobous						
Ardissonia crystallina			+			
Thalassiosira decipiens		+				
Mesohalobous						
Cyclotella striata	++	++	+	++	+	+
Diploneis interrupta				+	+	
Melosira moniliformis			+			
Navicula phyllepta	+					
Nitzschia granulata				+		
Nitzschia punctata	+		+			
Nitzschia navicularis			+			+
Synedra tabulata						+
Mesohalobous to Halophilous						
Actinocyclus normanii	+					
Nitzschia levidensis	+					
Mesohalobous to Indifferent						
Nitzschia brevissima			+			
Oligohalobous Halophilous						

Species and ecological group	**[121]**	**[113]**	**[199]**	**[175]**	**[171]**	**[176]**
Navicula mutica		+				
Navicula pusilla					+	
Halophilous to Indifferent						
Rhoicosphenia curvata	+	++				++
Surirella brebissonii	+					
Oligohalobous Indifferent						
Amphora inariensis	+					
Amphora libyca		+		+	+	
Amphora pediculus	+					
Cocconeis disculus		+				
Cocconeis placentula & var. *euglypta*	+	++		+		++
Cymbella minuta	+					
Diatoma vulgare	+	+				
Epithemia adnata		++				
Fragilaria brevistriata				+	+	
Fragilaria construens var. *venter*					+	++
Fragilaria lapponica				+		
Fragilaria pinnata			+	+	+	
Gomphonema acuminatum						+
Hantzschia amphioxys				+		+
Navicula tripunctata	+					
Neidium sp.					+	
Nitzschia amphibia		+				+
Opephora martyii				+	+	
Pinnularia major					+	
Synedra ulna	+			+		+
Unknown Salinity Group						
Diploneis sp.			+	+		

Species and ecological group	**[121]**	**[113]**	**[199]**	**[175]**	**[171]**	**[176]**
Gomphonema sp.				+		
Gyrosigma sp.					+	+
Navicula sp.	+	+			+	
Nitzschia sp.	+					
Surirella sp.		+	+	+		
Unknown Naviculaceae			+			+
Unknown diatom fragments						
chrysophyte stomatocysts				+	+	

Key: + present, ++ common

RESULTS AND INTERPRETATION OF THE PLANT MACROFOSSIL ASSESSMENT

***Trench 1: Phase 2;* southern channel [194]**

Waterlogged wood and waterlogged seeds were preserved in low quantities in one (<3>) and five (<1>, <2>, <3>, <27> and <29>) samples respectively. The waterlogged seeds identified included: *Ranunculus* subgenus *Batrachium*, Cyperaceae., Caryophyllaceae, Plantago type and *Zannichellia palustris*. The concentration of charred seeds was low and recorded in four samples (<1>, <2>, <27> and <29>). Charcoal was generally recorded in low concentrations in all samples. Mollusca were recorded in low to moderate concentrations in three samples (<1>, <3> and <25>). In conclusion, the results are consistent with the lithological evidence, indicating plants that are commonly found associated with water and on damp surfaces. The presence of charred seeds and charcoal confirms the local presence of human activity.

***Trench 1: Phase 3; northern* channel [184]**

Waterlogged wood and waterlogged seeds were preserved in low to moderate concentrations in six (<6>, <7>, <9>, <30>, <31> and <32>) and five (<6>, <7>, <9>, <21> and <31>). The waterlogged seeds identified included: *Ranunculus* subgenus *Batrachium*, *Carex* sp., Caryophyllaceae, *Chenopodium album* and *Juncus* sp. The concentration of charred seeds was low to moderate and recorded in five samples (<6>, <7>, <8> <11> and <31>). Charcoal was recorded in most samples in moderate concentrations. The taxa identified included *Quercus* (oak), *Ulmus* (elm) *Fagus sylvatica* (beech). Mollusca were recorded in moderate concentrations in seven samples (<6>, <7>, <8>, <9>, <11>, <30>, and <32>). In conclusion, the results are consistent with the lithological evidence, indicating plants that are commonly found associated with water and on damp surfaces. The presence of charred seeds and charcoal confirms the local presence of human activity.

Trench 1: Phase 4 Ditch [91]

The ditch was near void of all waterlogged and charred biological remains. A single piece of charcoal was recorded.

Trench 1: Phase 5 Linear Cut [94]

Waterlogged wood and seeds were recorded in moderate concentrations. *Ranunculus* subgenus *Batrachium* seeds were identified. Charred seeds were identified in low concentrations. Charcoal was recorded in moderated concentrations and included: *Fagus sylvatica, Picea*/*Larix*, *Salix*/*Populus* sp., and *Quercus* sp. Molluscs were recorded in moderate concentrations. The biological remains recorded indicate a marginal aquatic environment. The presence of charred seeds and charcoal confirms the local presence of human activity.

Table 17: Waterlogged plant macrofossil assessment, 231 to 241 Blackfriars Road, London (Site Code: BFX08)

Sample number	Context number	Phase number	Fraction	Waterlogged seeds		Charred		Mollusca	Monocots	Main taxa
				Wood	Seeds	Wood	Seeds			
Linear cut [94]										
<5>	[93]	5	>300µm	-	1	-	-	1	2	*Ranunculus* subgenus
			>1mm	3	2	2	1	3	-	*Batrachium*
Ditch [77]										
<4>	[76]	4	>300µm	-	-	-	-	-	-	
			>1mm	-	-	1	-	-	-	
Northern channel [184]										
<6>	[92]	3	>300µm	-	-	1	-	2	4	*Ranunculus* subgenus
			>1mm	1	2	3	2	3	2	*Batrachium*
<7>	[139]	3	>300µm	-	1	2	-	2	3	*Ranunculus* subgenus
			>1mm	3	2	-	1	-	-	*Batrachium* *Ranunculus acris*/*repens*
<8>	[140]	3	>300µm	-	-	-	-	1	3	*Ranunculus* subgenus
			>1mm	-	-	2	3	-	2	*Batrachium*
<11>	[146]	3	>300µm	-	-	-	-	1	3	

			>1mm	-	-	-	-	-	1	
<9>	[113]	3	>300µm	1	1	1	-	2	2	*Carex* sp
			>1mm	2	1	2	-	2	-	
<10>	[145]	3	>300µm	-	-	-	-	-	-	
			>1mm	-	-	-	-	-	-	
<21>	[187]	3	>300µm	-	1	-	-	-	-	cf. *Juncus* sp.
			>1mm	-	1	1	-	-	-	*Chenopodium* sp
<30>	[199]	3	>300µm	-	-	-	-	-	1	
			>1mm	1	-	2	-	-	-	
<31>	[250]	3	>300µm	-	-	-	-	-	4	Caryophyllaceae
			>1mm	1	2	-	2	-	2	*Carex* sp
<32>	[198]	3	>300µm	-	-	1	-	1	2	
			>1mm	3	-	2	-	-	2	
Southern channel [194]										
<23>	[15]	2	>300µm	-	-	1	-	-	1	
			>1mm	-	-	-	-	-	-	
<24>	[172]	2	>300µm	-	-	-	-	-	-	
			>1mm	-	-	-	-	-	-	
<25>	[173]	2	>300µm	-	-	-	-	1	-	

			>1mm	-	-	-	-	-	-	
<26>	[174]	2	>300µm	-	-	-	-	-	1	
			>1mm	-	-	-	-	-	-	
<27>	[175]	2	>300µm	-	-	-	-	-	-	cf. Cyperaceae
			>1mm	-	2	1	2	-	1	Unknown
<12>	[171]	2	>300µm	-	-	-	-	-	1	
			>1mm	-	-	2	-	-	-	
<28>	[176]	2	>300µm	-	1	1	-	-	2	
			>1mm	-	2	1	-	-	1	
<29>	[200]	2	>300µm	-	2	-	-	-	-	*Ranunculus* subgenus
			>1mm	-	1	-	1	-	-	*Batrachium*
<1>	[24]	3	>300µm	-	-	-	-	3	3	cf *Zannichellia palustris*
			>1mm	-	1	1	-	2	2	
<3>	[35]	3	>300µm	-	1	1	-	1	-	*Chenopodium album*
			>1mm	1	2	3	-	2	-	Caryophyllaceae cf *Plantago* sp
<2>	[29]	3	>300µm	-	-	1	-	-	3	Caryophyllaceae
			>1mm	-	-	1	1	-	-	

Key:

1 =	1 to 25	2 =	26 to 50	3 =	51 to 75	4 =	76 to 100

Table 18: Charred plant macrofossil assessment, 231 to 241 Blackfriars Road, London (Site Code: BFX08)

Sample number	Context number	Phase number	Volume processed (l)	Charcoal	Charred seeds	Other	Mollusca	Main taxa
Linear cut [94]								
<5>	[93]	5	10	3	2	Pot	4	
Ditch [77]								
<4>	[76]	3	10	-				
Northern channel [184]								
<6>	[92]	4	10	2	2		3	
<7>	[139]	3	10	5	1		4	
<8>	[140]	3	10	1	4		-	
<11>	[146]	3	10	2	1		1	
<9>	[113]	3	10	3			3	

<10>	[145]	3	10	1				
<21>	[187]	3	10	-				
<30>	[199]	3	10	2			2	
<31>	[250]	3	10	-				
<32>	[198]	3	10	2		Pot	4	
Southern channel [194]								
<24>	[172]	2	10	1				
<25>	[173]	2	10	1			1	
<26>	[174]	2	10	1				
<27>	[175]	2	10	1				
<12>	[171]	2	10	1				
<28>	[176]	2	10	1				
<29>	[200]	2	10	1				
<1>	[24]	3	10	2	1		3	
<3>	[35]	3	10	3			4	
<2>	[29]	3	10	2				

Key:

1 =	1 to 25	2 =	26 to 50	3 =	51 to 75	4 =	76 to 100

Table 19: Charcoal assessment, 231 to 241 Blackfriars Road, London (Site Code: BFX08)

Sample number	Context number	Phase number	Preservation		Main Taxa	14C potential
			Waterlogged	Charcoal		
Linear Cut [94]						
<5>	[93]	5	Poor	Good	*Fagus sylvatica* (1) *Picea*/*Larix* (1) *Salix*/*Populus* sp. (1) *Quercus* sp. (4) Indet. (2) NOTE: *Picea*/*Larix*: Non-native taxon.	N N Y N N
Northern channel [184]						
<6>	[92]	4	Poor	Poor	*Quercus* sp. (2) Indet. (inc. bark) (8)	Y *Quercus*=young shoot. N
<7>	[139]	3	Poor	Good	*Ulmus sp.* (2) Indet. (1)	Y *Ulmus* = Twig N
<8>	[140]	3	Poor	Good	*Ulmus* sp. (1)	N

					Salix/*Populus* sp. (3) Indet. (inc. bark) (6)	Y N
<11>	[146]	3	Poor	Poor	*Ulmus sp.* (2) Indet. (5)	N N
<10>	[145]	3	-	-		
<9>	[113]	3	Poor	Good	*c.f. Ulmus sp.* (5) *Quercus* sp. (1) Indet. (4)	Y *c.f. Ulmus* = Twig N N
<30>	[199]	3	Poor	Good	*Fagus sylvatica* (1) *Quercus* sp. (2) Indet. (inc. bark) (7)	N N N
<32>	[198]	3	Poor	Good	*Quercus* sp. (5) Indet. (inc. bark) (4)	N N
Southern channel [194]						
<23>	[15]	2	-	-	-	-
<24>	[172]	2	-	-	-	-
<25>	[173]	2	-	-	-	-
<26>	[174]	2	-	-	-	-
<27>	[175]	2	-	-	-	-

<12>	[171]	2	-	-	-	-
<28>	[176]	2	-	-	-	-
<29>	[200]	2	-	-	-	-
Trench 2						
<1>	[24]	3	Poor	Good	Maloideae (2) *Quercus* sp. (1) Indet. (inc. bark) (7)	Y N N
<3>	[35]	3	Poor	Good	*Corylus avellana* (1) *Quercus* sp. (4) Indet. (inc. bark) (5)	Y N N
<2>	[29]	3	Poor	Good	*Fagus sylvatica* (2) *Quercus* sp. (1) Indet. (7)	N N N

RESULTS AND INTERPRETATION OF THE INSECT ASSESSMENT

***Trench 1: Phase 2;* southern channel [194]**

Insect remains were recovered in low concentrations in all samples except samples <12> and <24>. Those present indicate the still and running freshwater swamp conditions, damp leaf litter, woodland and animals, probably large herbivores. These results are consistent with the general context of the site.

***Trench 1: Phase 3; northern* channel [184]**

Insect remains were recovered in moderate concentrations in all samples except sample <10>. Those present indicate the still and running freshwater swamp conditions, damp leaf litter, woodland and animals, probably large herbivores. These results are consistent with the general context of the site.

Trench 1: Phase 4 Ditch [91]

Insect remains were recorded in very low concentrations. One unidentifiable speciemen, and an weevil associated with aquatic vegetation were noted.

Table 20: Insect assessment, 231 to 241 Blackfriars Road, London (Site Code: BFX08)

Sample number	Context number	Phase number	Volume processed (l)	Beetle family	Genus and species	Number of individuals
Ditch [77]						
<4>	[76]	3	8	Staphylinidae (Rove Beetles)	Genus unidentified	2
				Curculionidae (Weevils)	*Notaris* sp. (Aquatic plant feeder, on reeds and rushes)	
***Northern* channel [184]**						
<6>	[92]	4	7	Carabidae (Ground Beetles)	*Elaphrus* sp. (Riparian predator) *Bembidion* sp. (Riparian predator) *Agonum* sp. (Predator in moist terrestrial habitats) *Pterostichus* sp. (Predator in dry to moist terrestrial habitats) *Elaphrus* sp. (Riparian predator) *Bembidion* sp. (Riparian predator) *Agonum* sp. (Predator in moist terrestrial habitats) *Pterostichus* sp. (Predator in dry to moist terrestrial habitats)	150

				Hydrophilidae (Water Scavenger Beetles)	*Cercyon* sp. (Lives in well-vegetated pools) *Coelostoma orbiculare* (Lives in well-vegetated pools) *Hydraena* (Lives in shallow woodland pools) *Ochthebius minimus* (In slow running and stagnant waters)	
				Staphylinidae (Rove Beetles)	*Lathrobium* sp. (Predator in leaf litter) *Oxytelus* sp. (Predators in damp leaf litter and dung) *Tachinus* sp. (Predator in leaf litter and fungi) *Stenus* sp. (Riparian predator)	
				Elmidae (Riffle Beetles)	*Esolus parallelepipedus* (under stones in streams and fast shallow rivers)	
				Nitidulidae (Sap Beetles)	*Epuraea* sp. (Feed on tree sap)	
				Scarabaeidae (Dung Beetles & Chafers)	*Aphodius* sp. (Dung beetles) *Prasocuris phellandrii* (On waterside vegetation)	
				Chrysomelidae (Leaf Beetles)	*Donacia* (Aquatic leaf beetles)	

				Curculionidae (Weevils)	*Apion* sp. (Terrestrial shrub & herb feeders)	
				TRICHOPTERA (Caddisflies)	Limnephilidae (Northern Caddisflies) Genus undetermined	
<7>	[139]	3	4.5	Chrysomelidae (Leaf Beetles)	*Donacia* (Aquatic leaf beetles)	20
				Hydrophilidae (Water Scavenger Beetles)	*Ochthebius minimus* (In slow running and stagnant waters)	
				Curculionidae (Weevils)	*Rhyncolus* (feeds on a variety of trees, including holly in the UK)	
				Elmidae (Riffle Beetles)	*Esolus parallelepipedus* (under stones in streams and fast shallow rivers)	
				Carabidae (Ground Beetles)	*Pterostichus* sp. (Predator in dry to moist terrestrial habitats) *Bembidion* sp. (Riparian predator)	

				Staphylinidae (Rove Beetles)	*Arpedium* sp. (Predator in leaf litter) *Stenus* sp. (Riparian predator) *Lathrobium* sp. (Predator in leaf litter) Tachyporus (Predator in damp to mesic habitats)	
				HYMENOPTERA (Ants, wasps, and bees)	*Myrmica* sp. (Black ants)	
<8>	[140]	3	6.5	Carabidae (Ground Beetles)	*Elaphrus* sp. (Riparian predator) *Pterostichus* sp. (Predator in dry to moist terrestrial habitats)	20
				Hydrophilidae (Water Scavenger Beetles)	*Ochthebius minimus* (In slow running and stagnant waters)	
				Staphylinidae (Rove Beetles)	*Stenus* sp. (Riparian predator)	
				Elmidae (Riffle Beetles)	*Esolus parallelepipedus* (under stones in streams and fast shallow rivers)	
				Curculionidae (Weevils)	*Apion* sp. (Terrestrial shrub & herb feeders) cf. *Phloeophagus* sp. (In rotting wood of deciduous trees)	

<11>	[146]	3	6	Haliplidae (Crawling Water Beetles)	*Haliplus* sp.	20
				Hydrophilidae (Water Scavenger Beetles)	*Ochthebius minimus* (In slow running and stagnant waters) *Hydraena* (Lives in shallow woodland pools)*Coelostoma orbiculare* (Lives in well-vegetated pools)	
				Staphylinidae (Rove Beetles)	*Lathrobium* sp. (Predator in leaf litter) *Arpedium* sp. (Predator in leaf litter)	
				Elmidae (Riffle Beetles)	*Esolus parallelepipedus* (under stones in streams and fast shallow rivers)	
				Chrysomelidae (Leaf Beetles)	*Prasocuris phellandrii* (On waterside vegetation)	
<9>	[113]	3	6	Curculionidae (Weevils)	*Otiorhychus* (Plants and shrubs)	
				Carabidae (Ground Beetles)	*Pterostichus* sp. (Predator in dry to moist terrestrial habitats)	

				Hydrophilidae (Water Scavenger Beetles)	*Cercyon* sp. (Lives in well-vegetated pools)	
				Staphylinidae (Rove Beetles)	*Arpedium* sp. (Predator in leaf litter)	
<10>	[145]	3	7	-	-	-
<21>	[187]	3	4	Curculionidae (Weevils)	*Apion* sp. (Terrestrial shrub & herb feeders) cf. *Phloeophagus* sp. (In rotting wood of deciduous trees)	1
<30>	[199]	3	4	Haliplidae (Crawling Water Beetles)	*Haliplus* sp.	10
				Dytiscidae (Predaceous Diving Beetles)	*Graphoderus* sp. (Predators in ponds and lakes)	
				Staphylinidae (Rove Beetles)	*Stenus* sp. (Riparian predator)	
				Elmidae (Riffle Beetles)	*Esolus parallelepipedus* (under stones in streams and fast shallow rivers)	

				HYMENOPTERA (Ants, wasps, and bees)	Formicidae (Ants) *Myrmica* sp. (Black ants)	
<31>	[250]	3	4.5	Hydrophilidae (Water Scavenger Beetles)	*Ochthebius minimus* (In slow running and stagnant waters)	2
				Curculionidae (Weevils)	Genus undetermined	
<32>	[198]	3	3.5	Curculionidae (Weevils)	Genus undetermined	1
***Southern* channel [194]**						
<24>	[172]	2	5	-	-	-
<26>	[174]	2	3.5	Elmidae (Riffle Beetles)	*Esolus parallelepipedus* (under stones in streams and fast shallow rivers)	1
<27>	[175]	2	4	Dytiscidae (Predaceous Diving Beetles)	*Colymbetes* sp. (Lives in standing water)	3

				Hydrophilidae (Water Scavenger Beetles)	*Anacaena* sp. (Lives in streams, marshes, pools)	
				Staphylinidae (Rove Beetles)	*Lathrobium* sp. (Predator in leaf litter)	
				Cerylonidae (Minute Fungus Beetles)	*Corylophus cassidioides* (Lives in wetlands, fens, swamps)	
<12>	[171]	2	6	-	-	-
<28>	[176]	2	4.5	Carabidae (Ground Beetles)	*Pterostichus* sp. (Predator in dry to moist terrestrial habitats)	5
				Dytiscidae (Predaceous Diving Beetles)	*Hydroporus* sp. (Aquatic predators)	
				Staphylinidae (Rove Beetles)	Omaliinae undetermined (predators in mesic to damp habitats)	
				Scarabaeidae (Dung Beetles & Chafers)	*Aphodius* sp. (Dung beetles)	

				Curculionidae (Weevils)	*Apion* sp. (Terrestrial shrub & herb feeders)	
<29>	[200]	2	3	Carabidae (Ground Beetles)	*Patrobus atrorufus* (Predator in damp woods) *Pterostichus* sp. (Predator in dry to moist terrestrial habitats)	10
				Hydrophilidae (Water Scavenger Beetles)	*Hydrobius fuscipes* (Lives in well-vegetated pools)	
				Staphylinidae (Rove Beetles)	*Olophrum* sp. (Predator in damp leaf litter and mosses) *Stenus* sp. (Riparian predator) *Lesteva* sp. (Predator in wet mosses and meadows)	
				Curculionidae (Weevils)	*Apion* sp. (Terrestrial shrub & herb feeders)	

CONCLUSIONS AND RECOMMENDATIONS

Excavations in Trench 1 revealed two channel-like depressions exposed in cross-section cutting down into natural sand and gravel. The basal sediments in both the channels are sparsely gravelly sands reworked from the underlying Shepperton Gravel which is recognised with an undisturbed upper surface at about 0.00m OD. In the older, northern channel the infilling sediments are rather uniform clayey sands in which organic material is preserved only in the lower part of the sequence at the northern end of the exposed section in Trench 1.

The infill of the later, southern channel is more varied. The lower part of the infill consists mainly of clayey sands from which organic material is absent. However a sandy lens [199] containing organic material was recognised in column sample <22> and was overlain by a thin and localised bed of gravelly sand [122] apparently reworked from the Shepperton Gravel in which the channel is cut. Overlying this mainly sandy lower infill is a sequence of organic silts, rich in plant and mollusc remains, and becoming sandy towards the northern end of the exposure. These silts are cut into near the southern edge of the channel by a ditch of which the fill is recognised in column sample <19>.

Archaeological finds indicate that both the channels are of late prehistoric age, with the infill of the later channel, both the lower sandy part and the upper silty part, dating from the Roman and early post-Roman period. Apart from the scattered finds recorded during the excavation of the sections, and small amounts of charcoal observed in sample <17> Unit 2, recognisable anthropogenic material is completely absent from the sediments recorded in the column samples.

This results of the pollen assessment indicated generally poor pollen concentrations and preservation in the ditch, southern, northern channels, which was the physical and/or chemical properties of the sediments at the time of deposition, and changes in these properties over time. The pollen assemblage in the two channels was herb-rich indicating a relatively open environment, most likely modified by human activity with the limited growth of trees and shrubs. Taxa from the southern channel indicated a relatively open floodplain meadow-type environment.

Diatoms are present in seven of the samples assessed from Blackfriars Road. Two samples have good potential for percentage diatom counting, three samples have diatom assemblages of adequate quality for percentage counting and two slides have little or no potential for further diatom analysis. Mesohalobous planktonic and benthic diatoms show that the depositional environments were tidal. The tidal nature of the habitats is also supported by the presence of allochthonous marine diatoms in five samples. Oligohalobous indifferent and halophilous non-planktonic diatoms reflect the wide salinity range of the depositional environment. Although oligohalobous indifferent diatoms have optimum growth in freshwater some of species present

here have wide salinity tolerances. Aerophilous diatoms are uncommon. Percentage diatom counting of the sequences would clarify changes in palaeosalinity and habitat.

The results of the waterlogged and charred plant macrofossil assessment are consistent with the lithological evidence, and pollen assemblages indicating plants that are commonly found associated with water and on damp surfaces in all features. In addition, the presence of charred seeds and charcoal confirms the local presence of human activity.

Insects were identified in low concentrations in the southern channel and ditch feature, and in moderate concentrations in the northern channel. Those present indicate the still and running freshwater swamp conditions, damp leaf litter, woodland and animals, probably large herbivores.

The following work is recommended for 231-241 Blackfriars Road:

1. No further lithostratigraphic analysis is recommended due to the detailied palaeoenvironmental reconstruction already gained during assessment.
2. No further biostratigraphic analysis is recommended due to the generally poor preservation and concentration of biological remains.
3. If further dating of the features is required, the following units maybe targeted: the base of the southern channel (Units 1 and 2 of sample <17>); the base of the northern channel (Units 3 and 4 of sample <22>); the upper infill of the southern channel (Unit 3 in sample <23>; Unit 2 in sample <14>); The infill [90] of ditch [91] in sample <19>. However, in the main the datable material is detrital and thus only an approximate date can be gained.
4. The palaeoenvironmental record contained in this assessment report may be usefully integrated into a publication on Middle and Late Holocene environmental changes in the Lower Thames Valley.

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APPENDIX 11: OASIS REPORT

OASIS ID: preconst1-45332

Project details

Project name	Excavation at 231-241 Blackfriars Road, London SE1, London Borough of Southwark
Short description of the project	An archaeological field evaluation and excavation was undertaken by Pre-Construct Archaeology Ltd at 231-241 Blackfriars Road. This revealed evidence of a late prehistoric E-W stream channel and a possible sand bank all located towards the southern half of the study site . The natural sand located north of the site and sloping substantially downwards to the south. The channel was cut by a simialr channel dating to the Roman period. 17th century activity consisted of pitting and quarrying, whilst 18th century activity consisted of buildings and associated well/soakaways, drain and pits.
Project dates	Start: 24-02-2008 End: 15-04-2008
Previous/future work	No / No
Any associated project reference codes	BFX08 - Sitecode
Type of project	Recording project
Site status	Local Authority Designated Archaeological Area
Current Land use	Vacant Land 1 - Vacant land previously developed
Monument type	CHANNEL Late Iron Age
Monument type	CHANNEL/DITCH Roman
Monument type	BUILDINGS Post Medieval
Monument type	WELLS Post Medieval
Monument type	PITS Post Medieval
Significant Finds	POTTERY Iron Age

Significant Finds	POTTERY Roman
Significant Finds	POTTERY Post Medieval
Significant Finds	LITHICS Mesolithic
Significant Finds	GLASS Post Medieval
Significant Finds	ANIMAL BONE Roman
Significant Finds	ANIMAL BONE Post Medieval
Significant Finds	CLAY TOBACCO PIPES Post Medieval
Investigation type	'Full excavation'
Prompt	Direction from Local Planning Authority - PPG16

Project location

Country	England
Site location	GREATER LONDON SOUTHWARK SOUTHWARK 231-241 Blackfriars Road, London Borough of Southwark
Postcode	SE1
Study area	1958.00 Square metres
Site coordinates	TQ 5317 1803 50.9407649591 0.180398494472 50 56 26 N 000 10 49 E Point
Height OD / Depth	Min: -0.06m Max: 0.92m

Project creators

Name of Organisation	Pre-Construct Archaeology Ltd
Project brief originator	Gary Brown
Project design originator	Gary Brown
Project director/manager	Peter Moore

Project supervisor	Ireneo Grosso
Type of sponsor/funding body	Developer
Name of sponsor/funding body	Great Portland Estates

Project archives

Physical Archive recipient	LAARC
Physical Contents	'Animal Bones','Ceramics','Environmental','Worked stone/lithics'
Digital Archive recipient	LAARC
Digital Contents	'Stratigraphic','Survey'
Digital Media available	'Database','Text'
Paper Archive recipient	LAARC
Paper Contents	'Stratigraphic'
Paper Media available	'Context sheet','Diary','Drawing','Matrices','Photograph','Plan','Report','Section'

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Assessment of an Archaeological Excavation at 231-241 Blackfriars Road, London SE1, London Borough of Southwark
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