



Planning Delivery Zone 6
Work Package 4
Trenches PDZ6.07a
PDZ6.07b
PDZ6.08

Planning Delivery Zone 10
Trench PDZ10.1

London
E15

London Borough of Newham

Evaluation Report

July 2008



MUSEUM OF LONDON

Archaeology
Service

PRE-CONSTRUCT ARCHAEOLOGY

**Planning Delivery Zone 6
Work Package 4
Trenches PDZ6.07a
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PDZ6.08**

**Planning Delivery Zone 10
Trench PDZ10.1**

**London
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Evaluation Report

Site Code: OL-07907 and OL-08107
National Grid Reference: 537920 185220 and 538050 185310

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Summary (non-technical)

This report presents the results of an archaeological evaluation carried out by the Museum of London Archaeology Service and Pre-Construct Archaeology (MoLAS-PCA) within the Olympic, Paralympic and Legacy Transformations Planning Applications: Planning Delivery Zone 6 (work package 4) and Planning Delivery Zone 10, London Borough of Newham, London E15. The report was commissioned from MoLAS-PCA by Capita Symonds Limited on behalf of the client the Olympic Delivery Authority (ODA).

Following the recommendations of the previous Detailed Desk-Based Assessment compiled for the Planning Delivery Zone, and subsequent consultation with the Greater London Archaeology Advisory Service, three evaluation trenches (PDZ6.07a, PDZ6.07b and PDZ6.08) were excavated in PDZ6, Works Package 4, and one evaluation trench was excavated in PDZ10 (PDZ10.1) and the results have helped to refine the initial assessment of its archaeological potential. The four trenches were excavated as part of the same programme of works, and as such the findings of both are presented in a combined report. The trenches were excavated to the level of the natural gravels, which in one trench were cut by an undated ditch. These were overlain by alluvial sequences, and then by field soil. In the western two trenches ridges and agricultural furrows were recorded in the field soil. These deposits were subsequently sealed in all trenches by 19th–20th century made ground.

The observed archaeological horizons, features, and palaeoenvironmental evidence suggests that the sites have a low archaeological significance and a moderate geoarchaeological significance in understanding the natural and cultural formation and change of the lower Lea Valley.

In the light of revised understanding of the archaeological potential of the site the report concludes that further archaeo-environmental work on the samples already taken from the site would provide adequate mitigation of the archaeological resource.

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1 Introduction

1.1 Site background

The evaluations took place to the east of the former Eastway cycle track, on the site of the former Clays Lane residential area in the southern, central area of Planning Delivery Zone 6 (PDZ6) and also Planning Delivery Zone 10 (PDZ10) of the Olympic, Paralympic and Legacy Transformations Planning Applications, in the London Borough of Newham, designated as work package 4 in PDZ6 and also PDZ10, hereafter called 'the site' (Fig 1).

PDZ6 work package 4 was bounded to the north by Clays Lane, to the south by cold stores, to the west by the Eastway Cycle Circuit, and to the east by properties fronting Clays Lane and Clays Lane Close. The National Grid Reference (NGR) for the centre of PDZ6, work package 4 is 537920 185220. The footprint of work package 4 was defined by local property boundaries, and the limits of areas within which access was possible to excavate the evaluation trenches. Effectively, the footprint of work package 4 was delimited as a tool for defining the location and potential maximum extent of the group of trenches (Fig 1). The site code allocated to PDZ6 Work package 4 is OL-07907.

PDZ10 is bounded to the north by Clays Lane, to the south and east by Temple Mills Lane and to the west by properties fronting Trafford Lane; Clays Lane and Clays Lane Close (Fig 1). The centre of PDZ10, Trench PDZ10.1 is 538050 185310. The site code for PDZ10 is OL-08107

Ground level across both areas varies from approximately 6.84m OD in the east to 5.86m OD in the north-west.

Desk-based assessments were undertaken for the whole of PDZ6 (MoLAS-PCA 2007a) and PDZ 10 (MoLAS-PCA 2007b), and should be referred to for information on the natural geology, archaeological and historic background of the site, and the initial interpretation of its archaeological potential.

Method Statements were prepared for PDZ6 (MoLAS-PCA 2007c) and PDZ10 (MoLAS-PCA 2007d), describing and justifying the original evaluation locations and forming the project designs for the evaluations.

1.2 Planning and legislative framework

The legislative and planning framework in which the archaeological exercise took place was summarised in the *Desk Based Assessments* and *Method Statements* which formed the project designs for the evaluations (MoLAS-PCA 2007a–d).

1.3 Planning background

In accordance with local and national policies, archaeological evaluation and survey of the areas of PDZ6, work package 4 and PDZ10 to be impacted upon in advance of

its redevelopment was required as part of the planning process. Evaluation is intended to define the archaeological potential and significance of any deposits present on the site, so that the Local Planning Authority can formulate responses appropriate to any identified archaeological resource.

The evaluation of the subject site, PDZ6, work package 4 and PDZ10, was undertaken in support of a condition applied by the Olympic Delivery Agency Planning Decisions Team and attached to Planning Application Number 07/90011/FUMODA. The condition (SP.0.38) states:

The site Preparation Development shall not be commenced until a Written Scheme of Investigation for Archaeological Works has been submitted to and approved by the Local Planning Authority. This shall be in accordance with the Generic Written Statement for Archaeology, the Written Scheme of Investigation for Archaeological Field Evaluation and the relevant Detailed Desk-Based Assessment. The archaeological work shall be undertaken in accordance with the approved Written Scheme of Investigation. If significant archaeological finds are encountered, further archaeological works or design measures may be required to mitigate the impact of development on those remains. This condition may be discharged on a Planning Delivery Zone Basis.

Reason: To ensure that archaeological remains are properly investigated and recorded.

1.4 Origin and scope of the report

This report was commissioned by Capita Symonds Ltd on behalf of the Olympic Delivery Authority and produced by the Museum of London Archaeology Service and Pre-Construct Archaeology Ltd (MoLAS-PCA). The report has been prepared within the terms of the relevant Standard specified by the Institute of Field Archaeologists (IFA, 2001).

Field evaluation, and the *Evaluation report* which comments on the results of that exercise, are defined in the most recent English Heritage guidelines (English Heritage, 1998) as intended to provide information about the archaeological resource in order to contribute to the:

- formulation of a strategy for the preservation or management of those remains; and/or
- formulation of an appropriate response or mitigation strategy to planning applications or other proposals which may adversely affect such archaeological remains, or enhance them; and/or
- formulation of a proposal for further archaeological investigations within a programme of research

1.5 Aims and objectives

The following research aims and objectives for PDZ6 and PDZ10 were established in the *Method Statements* for the evaluations (MoLAS-PCA 2007c and d) and are intended to address the research priorities established in the Museum of London's *A*

research framework for London Archaeology (2002). They are set out below for each Planning Delivery Zone.

1.5.1 *Planning Delivery Zone 6*

- Do Kempton Park Gravels exist in the extreme eastern part of the zone? What is the potential for past environment reconstruction from these deposits?
- Do deposits pre-dating the Last Glacial Maximum, which might correspond with the Arctic Beds, exist within or below non-reworked gravels in the eastern parts of the zone (Landscape Zone 1)? What is the potential for past environment reconstruction and/or Late Upper Palaeolithic activity in these deposits?
- What is the potential for dating (e.g. OSL or radiocarbon dating) the sandy clay /clayey sand deposit that lies above the gravels of the Low Terrace in the eastern part of the zone (Landscape Zone 1)? Can the depositional environment of these deposits be interpreted?
- Do Late Glacial deposits exist within re-worked gravels in the southwest part of the zone (Landscape Zone 3)? What is the potential for past environment reconstruction and/or Late Upper Palaeolithic activity in these deposits?
- Do slope deposits of Pleistocene and/or Holocene origin overlie Pleistocene gravel in the eastern part of the zone? What direct or indirect evidence of past human activity is associated with the colluvium?
- Did the Leyton River cross the zone in the Pleistocene or Holocene and is there evidence for human activity associated with the river?
- Can channels of the River Lea be distinguished from its tributaries in the south-western part of the zone? Does evidence for human activity, similar to that found in the Stratford Box, associated with the river, survive?
- What environmental evidence suitable for past landscape reconstruction exists within deposits associated with ancient channels of the River Lea and its tributaries?
- Can episodes of channel activity and abandonment and wetland expansion across previously dry land surfaces on the zone be dated?
- Does evidence of prehistoric and historic occupation survive on the low terrace (Landscape Zone 1)?
- How extensive is modern truncation across the zone? Do made ground deposits bury or truncate the post-medieval / modern land surface?
- What was the pre-modern / pre-Victorian topography of the zone?
- Is there any evidence of a Roman road and/or occupation activity within the area of the zone? If so, how does it relate to what is known of the settlement pattern further north in the Leyton area during the Roman period?
- Can surviving remains of the medieval and post-medieval mills at Temple Mills provide information on the nature of industrial activity in the Lea valley?

- Is there any evidence of medieval and post-medieval agricultural activity present on the zone? Is this associated with Chobham manor or Ruckholt manor and their later landholdings?
- Is there evidence for past water management, i.e. drainage ditches, mill remains, sluices and revetments associated with earlier courses of the Channelsea River/Henniker's Ditch and River Lea?

1.5.2 Planning Delivery Zone 10

- What is the potential for dating (e.g. OSL or radiocarbon dating) the sandy clay/clayey sand deposit that lies above the gravels of the Low Terrace? Can the depositional environment of these deposits be interpreted?
- Do deposits pre-dating the Last Glacial Maximum, which might correspond with the Arctic Beds, exist within or below non-reworked gravels? What is the potential for past environment reconstruction and/or Late Upper Palaeolithic activity in these deposits?
- Do slope deposits of Pleistocene and/or Holocene origin overlie Pleistocene gravel in the eastern part of the zone? What direct or indirect evidence of past human activity is associated with the colluvium?
- Did the Leyton River cross the zone in the Pleistocene or Holocene and is there evidence for human activity associated with the river?
- Is alluvium present within the zone and is there potential for past landscape reconstruction from environmental remains preserved in the alluvium.
- Can channels of earlier watercourses be traced within the zone and does evidence for human activity, associated with the river, survive?
- Does evidence of prehistoric and historic occupation survive on the low terrace?
- What was the pre-modern/pre-Victorian topography of the zone?
- Is any prehistoric activity present within the zone?
- Is any Roman activity present within the zone?
- Is there any evidence of medieval and post-medieval agricultural activity present on the zone? Is this associated with Chobham manor or Ruckholt manor and their later landholdings?
- Is there evidence for past water management, i.e. drainage ditches, mill remains, sluices and revetments associated with earlier courses of the Channelsea River/Henniker's Ditch?
- Is there evidence of late 19th century brick quarrying and manufacture, in the southern half of the zone?
- How extensive is modern truncation across the zone? Do made ground deposits bury or truncate the post-medieval/modern land surface?

2 Topographical and historical background

The following summary of the geological and archaeological background to the site is based upon the desk-based assessment for PDZ6 and PDZ10 (MoLAS-PCA 2007a, (MoLAS-PCA 2007b).

2.1 Modern topography and drainage

The site is located towards the eastern edge of the valley of the River Lea, c 3km to the north of its confluence with the River Thames. The Channelsea River/Henniker's Ditch passes directly to the north of the site. The extent to which these rivers are man made or were originally natural is not yet known. The straight course of Henniker's Ditch suggests that, if formerly a natural watercourse, it has been severely altered. The Channelsea River is reputed to have been constructed by King Alfred. Owing to extensive ground raising in the area of the Eastway Cycle Circuit, both rivers currently lie at the base of deep, artificial canyons, and their flow is controlled by sluices.

Modern ground level varies greatly across the vicinity of the site, as a result of modern ground raising. In the area to the west where the Eastway Cycle Circuit and the former allotments lay it rises to over 16m OD, whereas adjacent to the rivers and where little ground raising has taken place, the modern land surface lies at around 5m OD.

2.2 Natural topography and past landscape setting

The majority of the site lies on alluvium, which represents a range of different wetland and dryland environments existing on the valley floor (floodplain) of the Lea from the Mesolithic period onwards. Archaeological remains of the prehistoric and earlier historic periods are likely to lie within the alluvium. The eastern part of the site follows to the edge of the **Taplow** and **Kempton Park Gravel** terraces, which denote the eastern valley side.

The alluvium is underlain by the **Lea Valley Gravels**, deposited following the scouring-out of the valley floor during the Palaeolithic period (the Pleistocene). The gravels are the most recent in a series of Pleistocene river terrace deposits, which today form an irregular flight of steps in the valley side. The **Kempton Park** Gravels and older **Taplow** Gravels form the lowest of these river terraces, at the edge of the valley. Tertiary bedrock, which in this area is variably London Clay and Woolwich and Reading Beds, underlies the gravels. The bedrock pre-dates the period of human evolution and thus its surface acts as the bottom line for deposits of archaeological interest.

The landscape of the site today bears little resemblance to its topography and environment in prehistoric and historic times. The characteristics of this ancient landscape will have influenced its use by people in the past and, subsequently, the preservation of archaeological remains. By reconstructing the past landscape that lies

buried below made ground and alluvium, inferences can be made about the likelihood of finding archaeology within the site and the types of archaeological evidence that may exist. A summary of the buried landscape characteristics of the site and the archaeological implications are given here:

- The upper stratigraphy of the site is characterised by a thin layer of alluvium beneath modern made ground. This part of the valley floor was not scoured away by **Late Glacial** meltwaters and consequently the gravels have the potential to contain palaeoenvironmental deposits of considerable significance, possibly comparable with the *Lea Valley Arctic Beds*. It is possible that minor watercourses once crossed this area, although their location is not known.
- Evidence for extremely rare *in situ* Late Upper Palaeolithic activity, not previously found in the Lower Lea but similar to that known from the Colne Valley, might exist in the fine-grained deposits that overlie the gravel.

As the site would have provided dry and fertile land in the prehistoric and later periods, it has potential for settlement and other activity but probably low palaeoenvironmental potential.

2.3 Prehistoric

In 1913, a prehistoric worked bone fragment was found at the fringe of the site, within low-level gravel at 15ft (4.65m) OD, possibly during quarrying. The exact location of the find is uncertain, and both Palaeolithic and Neolithic material is listed in the GLSMR description. Two Palaeolithic hand axes were found in low-lying gravel at a depth of approximately 20ft (6.1m) OD *c* 30m to the north of the site.

In the late Mesolithic (6,500–4000 BC) and early Neolithic (4,000–3300 BC), rising water levels is thought to have resulted in the abandonment of the low-lying areas of the river valleys and a shift further upstream or onto the valley sides (Lewis *et al.*, 1992, 244). The late Neolithic, Bronze Age (2000–600 BC) and Iron Age (600 BC–AD 43) periods were characterised by forest clearance, permanent settlement and farming, with increasing population throughout each period. The gravel terraces beside the River Lea and the Low Terrace within the modern floodplain, would have been attractive for early settlers, the gravels producing light, fertile and well-drained soils, with close access to the rivers for food resources and transport.

During the Bronze Age and Iron Age the Lea Valley was well populated and the wetland areas were utilised as well as the river terraces. The Upper Lea Valley has evidence for Bronze Age/Iron Age settlement in the form of crannogs; dwellings set on piles driven into marginal and wetlands. Although no such finds are as yet known from the vicinity of the site, the possibility of similar structures having been present cannot be discounted, as areas of higher ground within the Lower Lea Valley would have presented an environment favourable to settlement.

2.4 Roman

The Lea is likely to have been an important route in the Roman period. It was probably used to supply the London area both with agricultural produce and, in the late period, with pottery from Much Hadham, via the River Stort. Archaeological

investigations have established that Roman settlement existed on both sides of the Lea Valley, at Old Ford and in the areas of Stratford and Leyton.

Newspaper reports of 1783 refer to the discovery of a stone sarcophagus containing a sword, a helmet crest fragment, a spur, a padlock, and three coins found at a depth of four to five feet below the surface of the marsh in 1783. The GLSMR entry states that a description of the stone coffin, which was left *in situ*, suggests however that it may have been of medieval date. A burial vault containing several urns was also found during the removal of old foundations at Temple Mills, one of which contained Roman coins dating from Caesar to Constantine the Great together with several medals. The vault was reportedly on the edge of the River Lea on the site occupied by the East London Waterworks Company. All of the above discoveries are attributed to the same find spot, but there is some uncertainty as to the precise location, which is shown in two places on the GLSMR, one of which lies *c* 300m to the north-west of the site.

As with the prehistoric period, in the vicinity of the site, islands of higher ground would have provided dry and fertile land suitable for settlement throughout this period, whilst areas of marsh would probably have been exploited for varied and predictable resources.

2.5 Saxon

The site lay within the ancient parish of West Ham, which probably formed out of the manors (estates) of Ham (meaning ‘low-lying pasture’) and possibly part of Leyton (‘settlement on the Lea’) mentioned in Domesday Book (AD1086).

Evidence of Saxon activity in the area is limited to the River Lea and its channels (the Stratford Back Rivers). The river will have remained a useful resource and by the late Saxon period mills may have been located along the river. Domesday Book mentions a number of mills along the Lea and its tributaries although the location of these mills is uncertain. It is possible that the medieval Temple Mills was built on the site of a Domesday mill.

Saxon activity has been recorded *c* 500m to the south of the site during archaeological investigations at Stratford Box for works for Stratford International Station although no early medieval material has been located within the area of the site itself. Throughout this period much of the site was located within marshland and was probably used for pasture and/or meadow.

2.6 Medieval

As with earlier periods, the higher ground of the gravel terrace to the east of the site would have been the first choice for settlement, providing dry and fertile land with good access to the rivers and marsh. The low terrace identified in the vicinity of the site and islands in the marsh may also have been suitable for secondary settlement. Within the vicinity of the site, documentary sources indicate the presence of a mill to the north-west and two manor houses, to the south-east and north which would have probably have involved some attempt to drain the marsh. It is likely that most of the marshland within the Lea Valley was reclaimed in the later medieval period (possibly earlier). This was carried out primarily for economic reasons, in providing improved

pasture for livestock and fertile land for crops. Trackways or drove ways ('manor ways'), often following the line of river embankments, would have provided access across the marsh from the settlements on the higher ground. Temple Mill Lane, which forms the eastern border of PDZ10 was probably originally one such trackway.

Between 1185 and 1278, the Knights Templar, using land granted to them by William of Hastings, steward to Henry II, built a water mill at Temple Mills. The mill is believed to be located to the north-west of the site, north of the extant Channelsea watercourse. There has been substantial land raising on the site of the mill, although it is possible that its remains are preserved beneath the made ground. A bridge was also constructed near Temple Mills in the 14th century by the Knights, possibly a precursor to that shown on Rocque's map of 1746. The line of Eastway is also marked on Rocque's map and may have its origins in the medieval period.

Approximately 300m to the south-east of the site was the location of the medieval manor house of Chobhams, later owned by Lord Henniker, which survived at least into the 1860s. The manor of Chobhams was formed in 1329–31 by John de Preston. This passed eventually to Thomas de Chobham in 1343. Chobham only owned the manor until 1356 when it was bought by Adam Fraunceys, a merchant who also bought Ruckholt to the north. However it is Chobhams name which stuck to the manor.

Approximately 450m to the north-east was the moated site of Ruckholt Manor, which documentary evidence suggests was in existence by 1066. It was forfeited to the crown in 1345, after which it was variously inherited and sold. A later manor house was built on the same site in 1592.

No later medieval material has been found within PDZ10 and its immediate surroundings but it is probable that the site was used for agriculture during this period.

2.7 Post-medieval

According to the GLSMR, there is documentary evidence for a number of mills in the vicinity of the medieval Temple Mill. These comprise a leather mill, which may have medieval origins, and subsequent logwood, gunpowder and a cutter's mills. Another mill is recorded here in the 1630s, used for working brass, tin and lead sheets, which may also have been an experimental foundry used by Prince Rupert for the production of toughened bronze. Prior to the detailed mapping of the area available in the 19th century, the area of PDZ10 was most probably agricultural in nature and features associated with agricultural boundaries, possible diversions of the Channelsea Rivers/Henniker's Ditch and late 19th century land use could exist within the site. Later post-medieval development consists of 19th century industrial development located in the west of PDZ10 and is shown on historic mapping from the late 19th century. A manure works was established at the west of the site and brick field at the south.

3 The evaluation

3.1 Methodology

All archaeological excavation and monitoring during the evaluation was carried out by a joint MoLAS-PCA team in accordance with the preceding *Method Statements* (MoLAS-PCA 2007c, MoLAS-PCA 2007d) and the *MoLAS Archaeological Site Manual* (MoLAS, 1994).

Three evaluation trenches, all oriented north-south, were excavated to assess the archaeological potential of PDZ6, work package 4: PDZ6.07a, PDZ6.07b, PDZ6.08. Trench PDZ6.07b was located along the boundary of PDZ6 and PDZ 10: its footprint extended into PDZ10. One evaluation trench, also oriented north-south, was excavated to assess the archaeological potential of PDZ10: PDZ10.1 (Fig 2).

All trenches were excavated to the base of the archaeological sequence. A mechanical excavator using a flat-bladed ditching bucket undertook the bulk excavation, monitored by an archaeologist and a banksman at all times. In cases where archaeological features were encountered within the sequence, machining of trenches was done in stages. MoLAS-PCA geoarchaeologists visited the trench during excavation to examine and interpret the deposits in plan and section and to take samples as appropriate.

Work on Trench PDZ6.07a began in the week ending 15 November 2007 and was completed in the week ending 26 November. Trench PDZ6.07b began in the week ending 21 November and was completed in the week ending 3 December. Trench PDZ6.08 began in the week ending 11 December and was completed in the week ending 13 January 2008. Trench PDZ10.1 began in the week ending 3 December 2007 and was completed in the week ending 13 December.

The locations of the evaluation trenches were recorded by the MoLAS-PCA surveyor using an EDM. This information was electronically collated and plotted onto the OS grid. Levels were calculated from benchmarks established by Morrison's engineers, imported onto the site.

A written and drawn record of all archaeological deposits encountered was made in accordance with the principles set out in the MoLAS site recording manual (MoLAS, 1994).

PDZ6, work package 4 has produced: 3 trench plans at a scale of 1:20, 112 context records, and 7 sections at a scale of 1:10. The PDZ6, work package 4 site records will be deposited under the site code OL-07907.

Trench PDZ10.01 has produced: 1 trench plan at a scale of 1:20, 13 context records, and 2 sections at a scale of 1:10. The PDZ10 site records will be deposited under the site code OL-08107.

The site records and finds will be deposited in the LAARC, of the Museum of London.

3.2 Results of the evaluation

(See Fig 2 for trench locations).

3.2.1 OL-07907: evaluation Trench PDZ6.07a

Location	Parallel with Trafford Close; immediately to the east of the Eastway Cycle Circuit southern section embankment
Dimensions	31.3m x 3.3m at base; 4.84m depth
Modern ground level	6.51m–6.61m OD
Base of modern fill	2.38m OD
Depth of archaeological deposits seen (alluvium)	0.6m
Level of base of deposits observed and/or base of trench	1.77m OD
Natural observed	1.87m OD

Table 1 Trench PDZ6.07a deposit summary

See Fig 3 and Fig 4.

Trench PDZ6.07a measured 31.3m by 3.3m at its base and was machine excavated to a depth of 4.84m below present ground level of 6.61m OD, stepping in 1.50m on all sides at intervals of 1m in depth to provide safe, stable trench edges.

At the base of the trench, loose, yellowish-grey sandy-gravels [27] were encountered at a height of 1.87m OD. This deposit continued across the whole of the trench at very similar levels and represents natural sand and gravel deposits (which may be of a Pleistocene or Holocene date).

Soft, mid yellowish-grey, alluvial clay [13] and a soft, light greyish-yellow alluvial clay [14] (equivalent to [16] and [50]) overlies the gravel [27]. This deposit was encountered at around 2.30m OD, with an approximate thickness of 0.40m. However, this could be deeper for [50] as it continued below the trench base. This represents probable seasonal flooding deposits associated with rising river levels possibly linked to RSL rise and then later weathering. The relationship of this flooding and drying out to the fall in sea level in the Roman Period and the fluctuations from then to the historic period and to the embankment and management of river channels is as yet uncertain. The blue grey colouring indicates poor drainage and anaerobic conditions (gleying) as river level rises and is in contrast to the orange mottling, iron staining. The iron staining suggests exposure to the surface and drier conditions as river level, perhaps linked to RSL, fall. However, increasing distance from the active river in comparison to the gleyed deposit, as a result of natural channel migration or channel manipulation, would have the same effect. The alluvial clay probably built up imperceptibly through historic times and represents an accretionary floodplain soil. It may have been used for grazing or cultivation.

Topsoils overlay the alluvium. A lens of relict topsoil [12] overlay alluvium [13] and [14] in the southern end of the trench (Fig 4). This measured *c* 0.44m thick and was composed of moderately loose, mid greyish-brown clayey-silt, with a very occasional organic component, and was present at 2.58m OD. This was overlain by soft, light greyish-yellow clay [10] at 2.33m OD with a thickness of 0.41m, and by soft, light yellowish-whitish-grey gravelly-clay [11] encountered at 2.57m OD with a thickness

of 0.19m. Deposits of loose, mid greyish-brown clayey-silt [09]/[15] overlay part of the alluvium [10]/[16]. These were encountered at 2.59m OD, thickness 0.52m, and 2.41m OD, thickness 0.47m, respectively and appeared to be relict topsoil forming ridges.

The topsoils were cut by plough furrows. A series of east-west linear furrows [17]; [18]; [19]; [20]; [21]; [22]; [23]; [24]; [25]; [26]; [49] were observed across the width of the trench (Fig 3). All were shallow, with gentle sloping sides, with slightly concave bases. The furrow depths varied from 0.20m to 0.55m, and were encountered at heights ranging from 2.24m OD to 2.60m, with widths ranging from 1.0m to 1.86m. Their upper levels were truncation levels.

The furrows were backfilled and sealed by a 3.70m thick made ground layer composed of loose, dark brownish-black silty-sand [4], which was present across the whole trench (Fig 4). This contained pottery, glass, metal, CBM, bone, wood and leather dating from the early 19th century onwards, and was encountered at 5.87m OD.

Modern sub-circular piles [7]/[8] associated with loose, light yellowish-grey pebbles [5]/[6] cut made ground [4] (Fig 3). The remainder of the trench sequence comprised modern made ground deposits composed of loose, light greyish-brown, silty-sand [3] at 6.02m OD; a loose, dark reddish-brown silty-sand [2] encountered at 6.57m OD with a thickness of 0.57m, then a colluvial layer of loose, mid brownish-yellow sand [1] encountered at 6.61m OD with a thickness of 0.08m representing the present day surface.

3.2.2 OL-07907: evaluation Trench PDZ6.07b

Location	Parallel with the eastern side of Trafford Close, to the north of the depot area.
Dimensions	28.9m x 3.2m at base; 4.23m depth
Modern ground level	6.36m–6.32m OD
Base of modern fill	3.38m OD
Depth of archaeological deposits seen (including alluvium)	1.25
Level of base of deposits observed and/or base of trench	2.13m OD
Natural observed	3.04m OD

Table 2 Trench PDZ6.07b deposit summary

See Fig 5 and Fig 6.

Trench PDZ6.07b measured a total of 28.9m by 3.2m at base, and was machine excavated to a depth of 4.23m below present ground level of 6.36m OD, stepping in 1.50m on all sides at intervals of 1m in depth to provide safe, stable trench edges.

The lowest deposit in the trench was a layer of loose, dark orangey-brown sandy gravel [48], which was present at 2.14m OD at the base of the slot excavated within feature [65]. Apart from this the lowest deposit visible across the trench as a whole was a loose, light yellowish-grey sands [44], which were encountered at 2.61m OD. A light orange compact sandy clay with frequent angular to rounded gravel [39] overlay the sands [44] at 3.04m OD. These deposits continued across the whole of the

trench at very similar levels and represents natural sand and gravel deposits (which may be of a Pleistocene or Holocene date).

The gravels were overlain by alluvium.

An alluvium-filled shallow depression [65] existed in the gravels [48] in the northern end of the trench at 2.56m OD (Fig 5). The depression measured 0.43m in depth, with gentle sloping sides breaking to a concave base. The depression extends beyond the limits of the trench but appeared too ephemeral to be the remnants of a palaeochannel: supported by the samples from the site as a whole which revealed virtually no wetland species in the plant remains.

Three lenses of soft alluvial clay [47]; [46] and [45] filled the depression [65]. They were light brownish-grey, light bluish-grey, and light orangey-brown, and encountered at 2.39/2.53/2.58m OD, with thicknesses of 0.25m, 0.24m, and 0.15m respectively. As with Trench PDZ6.07a, this represents probable seasonal flooding deposits associated with rising river levels possibly linked to RSL rise and then later weathering. The relationship of this flooding and drying out to the fall in sea level in the Roman Period and the fluctuations from then to the historic period and to the embankment and management of river channels is as yet uncertain. The blue grey colouring indicates poor drainage and anaerobic conditions (gleying) as river level rises and is in contrast to the orange mottling, iron staining. The iron staining suggests exposure to the surface and drier conditions as river level, perhaps linked to RSL, fall. However, increasing distance from the active river in comparison to the gleyed deposit, as a result of natural channel migration or channel manipulation, would have the same effect. The alluvial clay probably built up imperceptibly through historic times and represents an accretionary floodplain soil. It may have been used for grazing or cultivation.

Elsewhere in the trench, soft, light orangey-grey alluvial clay with gravels [38] overlay gravel layer [39], at 3.10m OD, with a thickness of 0.24m. A layer of soft, dark bluish-brownish-grey loamy clay [37] seals [38] and [45], and was encountered at a height of 3.38m OD, with a thickness of 0.24m and forms part of a soil profile with context [36]. Abundant root remains were found within most of the samples from the site but were particularly prevalent in the processed samples of context [36].

Post-dating the deposition of the alluviums were a pair of field drains [40]/[42] truncated the alluvium in a northwest-southeast direction that continued beyond the trench limits. The cut for the drains had near vertical sides, flat bases; widths of 0.45m/0.38m, and depths of 0.23m/0.27m. They were filled by loose, dark brownish-black silty-clay [41]/[43] which contained ceramic drain pipes. The drains were encountered at 3.18m OD and 3.24m OD respectively.

Relict soil layer [36], 0.19m thick, overlay the drains to a height of 3.43m OD (Fig 6). This comprised soft, mid brown clayey-silt, which contained occasional pottery, CBM, and wood fragments. This represents the likely original ground surface prior to the process of ground raising that took place in or after the 19th century. The samples show frequent wood and root remains within this deposit with almost all of the identifiable fruits and seeds being from plants of disturbed (including cultivated) ground with no evidence of wetland species.

A series of 19th century and later ground raising deposits sealed the earlier land surface, composed of loose, dark brownish-black silt-sand [35] encountered at 5.20mOD; soft, mid greyish-brown clay [34] encountered at 5.41m OD; soft light

yellowish-grey clay [33] encountered at 5.51m OD; loose, dark reddish-brown silty-sand [32] encountered at 5.73m OD; loose, mid reddish-brown silt-sand [31] encountered at 5.88m OD and loose, dark reddish brown silt-sand [30], encountered at 6.19m OD with a thickness of 0.67m. Deposits [35]; [32]; [31] and [30] contained inclusions such as pottery, glass, clay tobacco pipe, animal bone, CBM and metal.

Modern piles [52]; [54]; [56]; [58]; [60]; [62] and [64] cut through the made ground (Fig 5). They were sub-rectangular to sub-circular in shape, and were encountered during the opening of the trench directly below the modern foundation deposits, c 6.09m OD, but recorded at various levels within the trench. modern hardcore of loose, mid greyish-yellow sands with gravels [29], 0.11m thick, sealed the piles. Loose, light bluish-grey sands with gravels [28] 0.12m thick capped the trench from 6.36m OD

3.2.3 OL-07907: evaluation Trench PDZ6.08

Location	The northern area between Trafford Close and the Eastway Cycle Circuit; north of Trench PDZ6.07a
Dimensions	30.2m x 4.0m at base; 4.43m depth
Modern ground level	6.14m–5.86m OD
Base of modern fill	3.09m OD
Depth of archaeological deposits seen (including alluvium)	1.38m
Level of base of deposits observed and/or base of trench	1.71m OD
Natural observed	1.95m OD

Table 3 Trench PDZ6.08 deposit summary

See Fig 7 and Fig 8.

Trench PDZ6.08 was machine excavated using a toothless grading bucket to a depth of 4.43m, stepping in 1.50m on all sides at intervals of 1m in depth to provide safe, stable trench edges, and measured a total of 30.2m by 4.0m at its base.

The lowest deposits in the trench comprised loose, greyish-yellow sandy-gravels [95] and [96]. These were present at 1.77m OD and 1.95m OD respectively and continued in depth below the trench base (Fig 8). These deposits continued across the whole of the trench at very similar levels and represents natural sand and gravel deposits (which may be of a Pleistocene or Holocene date).

Like the previous two trenches, alluvium overlay the gravels. An isolated soft, mid greyish-yellow silty-clay deposit [92] was observed in the southern end of the trench at a height of 2.32m OD. This isolated patch of alluvium is the highest and thickest alluvial deposit surviving and may represent the natural alluvium as it was prior to the cultivation and ploughing evident across the rest of the trench. Additional areas such as a 0.46m thick layer of soft, light yellowish-green sandy-clay [98], which contained wood, overlay the gravels [95] in the centre of the trench at 2.30m OD, giving evidence for dry land formation, may also survive but deposit [92] appears the most extensive. Deposit [98] was overlain in turn by a layer (context [93]) of soft, mid greyish-orange sandy-clay; 0.14m thick and encountered at 2.41m OD.

In the northern end of the trench sealing the gravels [95] is a soft, light orange-grey sandy-clay [101], 0.30m thick and at 2.43m OD. This was succeeded by a 0.17m thick layer of soft, light-mid brownish-orange sandy-clay [100] encountered at 2.53m OD. This was then overlain in turn by a 0.29m thick layer of soft mid yellowish-orange sandy-clay [94] at 2.34m OD. The final deposit in the sequence was a soft, light orangey-brown clay [99], c 0.45m thick at 3.09m OD.

These deposits represent probable seasonal flooding deposits associated with rising river levels possibly linked to RSL rise and then later weathering. The relationship of this flooding and drying out to the fall in sea level in the Roman Period and the fluctuations from then to the historic period and to the embankment and management of river channels is as yet uncertain. The lighter colouring of the thicker deposit of alluvial material to the south ([92]) indicates poorer drainage and anaerobic conditions (gleying) and is in contrast to the orange mottling, iron staining, of the sandier alluvial clay across the rest of the trench. The iron staining suggests exposure to the surface and drier conditions as river level, perhaps linked to RSL, lowers (similar to the evidence from the ridge and furrow higher in the profile) as a result of cultivation, drainage and channel manipulation.

Three large, shallow pit-type features [104]; [105] and [112] cut through alluvium [94], and extended beyond the east and west trench limits (Fig 7). Pit [104] was exposed in the section in the centre of the trench, showing straight sides, a flat base, and having a rectangular shape in plan. This had measurable dimensions of 3.10m east–west by 2.70m north–south, 0.30m depth, and was encountered at 2.20m OD. Rectangular pit [105] was observed in plan, measuring 8.00m north–south by 3.30m east–west, and was encountered at 2.34m OD. Pit [112] had only its western edge exposed in the trench, producing a linear shape measuring 9.90m north–south by 0.50m east–west at 2.41m OD. It is probable that these were excavated as gravel extraction pits: quarry pits. They had been truncated and did not survive to the level from which they were originally excavated

Each of the pits was backfilled with a soft, mid greyish-brown silty-clay [86]; [88] and [91] respectively. Similar deposits [85]; [102] and [103] were encountered in other areas of the trench at 2.61m; 2.90m and 3.10m OD. These deposits appear to represent cultivation soils that were worked after the quarrying phase.

Like Trench PDZ6.07b, a series of linear furrows cut into the cultivation soils. These were all oriented east–west with the eastern termini evident (Fig 7); had generally gentle sloping, slightly convex sides, and concave bases. All were truncated at their upper levels. The dimensions of the furrows are listed below:

- [79] had a width of 3.29m, a depth of 0.54m and was encountered at 2.46m OD.
- [80] had a width of 1.90m, a depth of 0.55m, and was encountered at 2.54m OD.
- [81] had a width of 1.45m, a depth of 0.36m, and was encountered at 2.34m OD.
- [82] had a width of 1.82m, a depth of 0.30m, and was encountered at 2.36m OD.

- [83] had a width of 2.46m, a depth of 0.35m, and was encountered at 2.34m OD.

Two further linear features [84] and [87] cut the soil horizon. Both were only partially exposed in the trench. Linear cut [84] was present at 2.60m OD in the east side of the trench and measured 1.11m east–west to the limit of excavation, by 7.94m north–south, by 0.49m depth. Feature [87] lay in the western side of the trench at 2.56m OD and measured 1.28m north–south, 0.52m east–west into the limit of excavation, by 0.13m depth. It is probable that these also represent furrows, however due to the limits of the excavation a degree of uncertainty remains.

A series of made ground deposits [78], [77] and [72] dating no earlier than the mid 19th century overlay the furrows (Fig 8). These layers were composed of a 1.09m thick layer of loose dark reddish-brown sandy-silt [78] at 3.22m OD; soft light-mid brownish-grey clay [77], 0.76m thick, and encountered at 3.92m OD and soft, light orange-brown clay [72], 1.17m thick, and encountered at 5.08m OD. Layer [78] contained pottery, glass, clay tobacco pipe, CBM, and leather that dated from 1840–1940.

Feature [71] cut layer [72] in section only at 4.91m OD. It had even, near vertical sides, a flat base that sloped gently to the north; measured 0.81m north–south, by 0.62m depth. No function can presently be attributed to the feature. A 1.2m thick layer of loose, dark reddish-brown sandy-silt [68] sealed feature [71] at 5.52m OD.

A series of modern piles [70]/[74]/[76]/[107]/[109]/[111] cut through the made ground layers. These were circular to sub-circular in shape. The piles were encountered during the opening of the trench, directly below the modern foundation material, at c 5.52m OD, but recorded at various levels within the trench. A concrete strip foundation [67] sealed the piles. This was composed of indurated light bluish-yellowish-grey concrete, 0.62m thick, at 5.83m OD. A modern red brick wall [66] was set onto the concrete strip. It faced east–west, and was constructed with bricks measuring 0.21m by 0.10m by 0.06m, laid in English Garden Wall coursing, bonded with mortar, with a 0.09m cavity between two courses. This masonry was 0.30m thick, and encountered at 6.13m OD. The brick wall represents the final deposit within the trench.

3.2.4 OL-08107: evaluation Trench PDZ10.01

This trench was recorded in PDZ10 and as such has a unique set of record numbers and phasing sequence to the trenches in PDZ6 discussed above.

Location	Adjacent to the western boundary of PDZ10
Dimensions	29.5m x 3.2m at base; 4.35m deep
Modern ground level	6.77m–6.84m OD
Base of modern fill	3.35m OD
Depth of archaeological deposits seen (including alluvium)	0.95m
Level of base of deposits observed and/or base of trench	2.49m OD
Natural observed	2.7m–2.98m OD

Table 4 Trench PDZ10.01 deposit summary

See Fig 9 and Fig 10.

Trench PDZ10.01 was machine excavated using a toothless grading bucket to a depth of 4.35m, stepping in 1.50m on all sides at intervals of 1m in depth to provide safe, stable trench edges, and measured a total of 29.5m by 3.2m at its base.

Possible terrace gravels [13] were seen in the trench base. These comprised loose, light yellowish-grey gravels with sand, present at 2.70m OD. The gravels were overlain in the north-western corner of the trench by a 0.25m thick layer of loose reddish-orange gravels [11], which appear to have been subjected to oxidation, and were encountered at 2.78m OD. These were overlain in turn by a final 0.40m thick layer of loose, mid grey gravels [10] at 2.98m OD (Fig 10). These gravels may be of Pleistocene or Holocene date.

Ditch [1] cut through the gravels [10] in the southern end of the trench from 2.88m OD (Fig 9). It ran in an east–west orientation with visible length of 3.20m by a width of 1.10m, and a depth of 0.31m. The sides were slightly steep and the base was concave. The primary fill was composed of soft brownish-grey clay [3] with a maximum thickness of 0.20m. The secondary ditch fill was a soft bluish-grey clay [2].

A layer of soft, light orangey-grey clay alluvium [9], c 0.45m thick, overlay the ditch at 3.22m OD. The orange mottling suggests oxidation and possible land surface development. A second 0.32m thick layer of alluvium [8], composed of soft light grey clay, overlies [9] at a surface of 3.35m OD and shows less signs of oxidation. Above this was a relict topsoil layer [7] sealing the alluvial clay [8]. This comprised soft, mid greyish-brown silty-clay, approximately 0.20m thick from 3.44m OD (Fig 10).

The blue grey colouring indicates poor drainage and anaerobic conditions (gleying) as river level rises and is in contrast to the orange mottling, iron staining. The iron staining suggests exposure to the surface and drier conditions as river level, perhaps linked to RSL

These deposits represent probable seasonal flooding deposits associated with rising river levels possibly linked to RSL rise and then later weathering. The relationship of this flooding and drying out to the fall in sea level in the Roman Period and the fluctuations from then to the historic period and to the embankment and management of river channels is as yet uncertain. The lighter colouring of alluvial material [2] and [8] indicates poorer drainage and anaerobic conditions (gleying) and is in contrast to the orange mottling, iron staining, of the other deposits of alluvial clay across the trench. The iron staining suggests exposure to the surface and drier conditions as river level, perhaps linked to RSL, fall. However, increasing distance from the active river in comparison to the gleyed deposit, as a result of natural channel migration or channel manipulation, would have the same effect. The alluvial clay probably built up imperceptibly through historic times and represents an accretionary floodplain soil. It may have been used for grazing or cultivation. Potential evidence of nearby cultivation is provided by the presence of the grape (*Vitis vinifera*) seeds found in the processed samples from context [7], although these may be contamination from the made ground above.

The final phase of activity within the trench was a sequence of Victorian to modern made ground deposits overlying the topsoil [7]. The earliest was composed of loose, light reddish-greyish-brown clay [12] containing CBM, pottery, glass, metal, leather and wood. This had a thickness of 1.30m, and was encountered at 5.69m OD. Above

this at 2.61m OD was a layer of loose grey sand [6], measuring 0.24m thick. This was overlain in turn by a 3.17m thick layer of soft, light red-grey-brown clay [5], with inclusions of CBM, pottery, glass, metal, leather and wood. The artefacts recovered from the layer indicate a date of 1850-1930. A layer of loose, mid- greyish brown sandy-silt [4] sealed the trench. This had a thickness of 0.30m, was encountered at 6.84m OD, and contained inclusions of CBM, pottery, metal, glass, and wood.

3.3 Stratigraphic interpretation of the sites

3.3.1 Phase 1: Pleistocene deposits

The surface of natural gravel, which in many places contained sandy deposits lay at 1.77m OD in the north-west corner of the site in Trench PDZ6.08, rising continually to 2.98m OD in Trench PDZ10.01 to the south-east. This is in line with the pre-Holocene landscape surface model proposed in the DBAs (MoLAS-PCA, 2007a; MoLAS-PCA, 2007b), and places the location of the trenches on the Low Terrace area. However, inadequate observation was made of the gravels at this depth or higher to be confident about their date or environment of deposition.

3.3.2 Phase 2: Undated pre alluvial features

The small ditch [1] in PDZ10.01 represents the only definite example of cultural activity within the site prior to formation of the first alluvial deposits. The ditch cut through the gravel sequence, and was filled with clay deposits of an alluvial nature, subsequently sealed by further alluvial layers.

A shallow depression [65] in Trench PDZ6.07b was also attributed to this phase. As with the ditch above, this truncated the basal gravels, and contained alluvial fills but no definite evidence of channel activity or wetland environments. Neither of the features contained any dateable evidence.

3.3.3 Phase 3: Alluvium

Shallow alluvial sequences were present in all of the trenches. These ranged in thickness from 0.6m in PDZ6.07a to 1.38m in PDZ6.08 and comprised gleyed and weathered clay. This may be attributed to the site's location upon what was a floodplain, possibly of the historic Leyton River, in which case it would reflect likely periods of low energy flooding of a grassy meadowland but might represent mudflats or salt marsh. The uppermost alluvium recorded in the trench was weathered and likely to have accumulated as a result of episodic flooding of an otherwise dry land surface. However, the date and environment of deposition of the alluvial clay deposit are not fully understood.

3.3.4 Phase 4: Relict soil horizons and associated features

The layer of silty-clay, which likely represents a relict topsoil or field soil, was observed within all of the trenches. In Trenches PDZ6.07a and PDZ6.08 this layer formed the ridges associated with agricultural furrows. In Trench PDZ6.08 it backfilled the truncated quarry pits, potentially originally excavated through the topsoil.

It is currently conjectured that organic material may have originally been introduced to this topsoil deposit to improve the soil for agricultural purposes, giving these deposits a distinct appearance and texture. It is hoped that the geoarchaeological sampling of the deposits may further elaborate and confirm the conjectured land use, and possibly identify what crops may have been grown at this time. Initial results

from the environmental samples shows a predominance of weed species associated with disturbed or cultivated land. Context [7] contains grape seeds but further work is needed before these are suggested as a possible crop especially as it could be from manuring the fields.

In Trench PDZ6.08 the furrow terminals were recorded, and the furrow pattern seems to end towards the northern end of the trench, possibly indicating a field boundary, which historic maps show to have been located to the north of the site. Geoarchaeological monoliths were taken beyond the furrows and may be useful in reconstructing the pre-cultivated landscape and for comparison with the samples from within the area of ridge and furrows.

Historic maps place the area of the site within the land held by Chobham Manor, thus it is likely that the above evidence of land use is associated with this. The soil horizons and attendant furrows/features predate the mid 19th century and later land raising event that was present across the site.

3.3.5 Phase 5: 19th–20th century made ground

All of the trenches were sealed by a considerable depth of made ground/ground raising deposits that was consistent across the site. This included re-deposited clays, and deposits derived from historic landfill. Surfacing associated with the most recent use and disuse of the site covered these made ground layers.

3.3.6 Modern activity

Modern piles were observed in all three of the trenches within PDZ6, work package 4, although not within Trench PDZ10. These represent the method used to stabilise the underlying ground to make it suitable for the construction of the modern residential developments that took place, the remains of which were also observed across the site in the form of surviving hardcore, concrete, and masonry.

3.4 Evaluation of environmental evidence

3.4.1 Introduction

Several visits were made by a MoLAS-PCA geoarchaeologist to examine, record and sample the natural sequence exposed within the evaluation trenches. The geoarchaeologist's description and interpretation of the deposits form part of the trench results and stratigraphic interpretation in sections 3.2 and 3.3 above.

The stratigraphy recorded in a representative profile of the trench sequence, as drawn and described by the geoarchaeologist, should be entered into the MoLAS-PCA geoarchaeological stratigraphic database of the Lower Lea as part of the assessment. This database will be used in post excavation stages of the project, to reconstruct the evolving past environment of the Olympics site and to target samples and locations for analysis.

3.4.2 Sediment characteristics

Multiple sequences of monolith tins (6 tins, samples {1}, {5} and {8}) was taken throughout the three PDZ6 trenches and a series of bulk samples {2}, {4}, {6}, {7},

{9}, {10}, {11}, {12}, and {13} were also taken adjacent to the monolith tins. Bulk samples {1}, {2}, {3}, {4}, and {5} were taken from PDZ10.01.

Half of each bulk sample has been processed and evaluated and the results are summarised in this report. The unprocessed half of each bulk sample and the monolith tins will be held in the MoLAS-PCA Olympics store until a decision has been made on whether they are required for assessment and/or analysis.

The tins provide an undisturbed column of sediment through the alluvial deposits, for off-site examination. The location selected for sampling was considered to be a representative profile of the alluvial deposits exposed in each trench. The monoliths are suitable for sub-sampling for microfossils and sedimentary techniques, intended to gain a better understanding of the changing environments represented by the Holocene alluvial deposits across the site as a whole.

Sedimentary techniques such as loss on ignition, magnetic susceptibility and soil micromorphology might tell us more about the depositional and post depositional environment of the alluvial clay, which with subtle lateral and vertical variation comprised the alluvium in all three trenches. In particular, these techniques might help determine whether a dry land surface formerly existed at the base of the alluvial sequence, prior to the build-up of alluvium, as a result of rising river levels. Microfossil examination might also be able to provide information about the river characteristics and surrounding vegetation.

The monoliths will be retained until environmental assessment is undertaken, when sub-samples for pollen and diatoms will be examined to determine their potential for past environment reconstruction (see below). Further retention until the analysis stage of the project is likely to subsequently be required, as this is when more detailed sedimentary techniques will be carried out.

3.4.3 Microfossils

The alluvial clay deposits recorded as contexts [2], [3], [8], [9], [10], [13], [14], [38], [39], [45], [46], [47], [92], [94], [98], [99] and [101] in PDZ6 and on the whole accumulated as a result of episodic flooding of a relatively dry land surface and might preserve microfossils, such as pollen and diatoms, as well as cladocera, chironomids and other microscopic remains. Such evidence can provide valuable information about the evolving past environment. In particular information about the past vegetation, water characteristics, and indirect evidence for human activity, such as landscape clearance, cultivation and other disturbance might be gleaned. Such evidence is likely to be complimentary to the information obtained from macro-remains from the bulk samples.

Preservation in the more oxidised of the alluvial clay ([9], [13], [14], [38], [39] and [101]) may be poor, as a result of weathering, however. This is only a guide - without assessment of the microfossil inclusions their survival and potential cannot be reliably evaluated and the preservation of microfossils in the deposits needs to be assessed as a further stage of work.

3.4.4 Bulk sample processing

During excavations at Site OL-07907 and OL-08107, environmental bulk soil samples were collected for the potential recovery of macro-biological remains, for information on the character of the local environment and possible evidence of human activities in the area. Any such information could compliment the potential ecological data from micro-biological material contained within monoliths sampled through sedimentary sequences at the site and establish possible spatial and temporal changes in the character of the environment on both a local and regional scale. The aim of the evaluation was simply to establish the presence and/or absence of biological remains and whether a full assessment of any such materials should be carried out.

Fifteen samples were selected and processed for the evaluation, ten samples from OL-07907 and five samples from OL-08107.

The samples were collected in association with monolith tins from a sequence of deposits through gravels, alluvium, topsoil (with evidence of ridge and furrow activity) and made-up ground; these deposits have yet to be dated.

The samples were ten litres in size with five litre sub-samples from each deposit being processed for the evaluation. The five litres from each sample was floated onto a 0.25mm sieve with the residue from this fraction wet-sieved through a 0.5mm mesh. Five litres of soil from each sample was retained from OL-07907 although no soil remains from any of the samples from OL-08107. The flots were stored wet to prevent possible deterioration of any fragile organic material while the wet-sieved fractions were dried and sorted for any biological and artefactual materials.

A visual examination of the flots was carried out to establish the potential for the survival of different forms of biological evidence. All the samples from OL-0707 and three of the five samples from OL-08107 produced flots; the other two samples from OL-08107, from [4] (sample 3) and [11] (sample 5), were sterile in terms of biological remains. The wet flots were divided into fractions by washing through a stack of sieves and scanned using a binocular microscope. Several of the residues produced other finds; from OL-07907, occasional fragmented CBM, glass and clinker in [86] (sample 6) and very fragmented clinker in [36] (sample 2) and [98] (sample 7), while there were also small amounts of clinker in the three productive samples from OL-08107; from [7] (sample 1), [8] (sample 2), and [10] (sample 4). A few small bone fragments were also sorted from the residue from [86] (sample 6) (OL-07907). A summary of the results from OL-07907 and OL-08107 is presented in Table 5.

3.4.5 Radiocarbon dating

Although some idea of the date of the deposits excavated has been inferred from their characteristics and level, no reliable date has yet been obtained for the sequence. Environmental evidence, unlike artefacts, is not intrinsically dateable and the information about the past landscape preserved in the deposit sequence means little unless it is tied in to an archaeological timeframe.

In general, few artefacts suitable for spot dating were recovered from the alluvial sequence (excepting the uppermost part of the alluvial clay). However, the deposits excavated contained twigs and other plant remains, from which radiocarbon dates might be obtained. Although no some samples specifically for radiocarbon dating were taken, the sequence of bulk samples (and the monoliths if necessary) should

provide sufficient material for the extraction of single entity organic remains suitable for radiocarbon dating by AMS (Accelerator Mass Spectrometry).

3.4.6 Molluscs and ostracods

Very occasional shells, described as marine/terrestrial molluscs, were noted in three samples from OL-07907, from [86] (sample 6), [93] (sample 9), and [94] (sample 11).

3.4.7 Plant remains

All 13 productive flots produced organic plant remains containing variable amounts of material with flot size ranging from less than 1ml to 70ml. Much of this material consisted of various amounts of very fragmented wood in nine samples, which dominated the flots in [101] (sample 13) and [98] (sample 7) (both OL-07907). Evidence of root action was present in every sample with rootlets particularly prevalent in [100] (sample 12) and [36] (sample 2) (also both from OL-07907). There were moderate amounts of very fragmented charcoal in three flots, in the bulk sample from PDZ:6.07B (OL-07907) and in [7] (sample 1) and [8] (sample 2) from OL-08107.

Identifiable fruits and seeds were present in 12 samples with large seed numbers and moderate species diversity in six samples; in four flots from OL-07907 ([36] (sample 2), PDZ:6.07B (bulk), [86] (sample 6), [99] (sample 10)), and in two flots from OL-08107 (from [7] (sample 1) and [8] (sample 2)). There were moderate numbers of seeds in two samples from [94] (sample 11) (OL-07907) and [10] (sample 4) (OL-08107) and occasional seeds in the other four samples all from OL-07907 - [11] (sample 5), [93] (sample 9), [100] (sample 12) and [101] (sample 13).

Virtually all of the identifiable fruits and seeds were from plants of disturbed (including cultivated) ground and waste places, with seeds of *Polygonum* species (including knotgrass (*Polygonum aviculare*), and black bindweed (*Fallopia convolvulus*), oraches (*Atriplex* spp.), and goosefoots (*Chenopodium* spp.), being particularly prolific. Other common weeds were chickweeds (*Stellaria media* gp) and docks (*Rumex* spp.). Plants that grow in both disturbed ground and grassland habitats included buttercups (*Ranunculus* spp.), great plantain (*Plantago major*) and thistles (*Carduus/Cirsium* spp.). Virtually no wetland plants were noted in the flots except for water pepper (*Polygonum hydropiper/mite*) while the only woodland/hedgerow/scrub species recorded in the evaluation was brambles (*Rubus* spp.), a potential wild plant food. An interesting find in the samples was the presence of the grape (*Vitis vinifera*) seeds in [7] (sample 1) from OL-08107.

3.4.8 Insect remains

Five samples produced insect (beetle) remains albeit in generally low amounts, with moderate numbers of beetle fragments in three contexts, [7] (sample 1) (OL-08107) and [36] (sample 2), and [86] (sample 6) (both OL-07907), plus occasional remains in context [8] (sample 2) (OL-08107), and PDZ:6.07B (bulk) (OL-07907).

context	Sample	soil processed (l)	soil retained (l)	Vol washed material (ml)	Wood/roots	Seeds/fruits	insects	molluscs	bone	finds	comments	Potential
PDZ 6.07A 9	2	5	5	40	Wood fgs (small) +++ Roots+++	+++ (steme,a/c,pol,ran,polav,plama)	++			Sm clinker fgs++	Mainly roots;mod seeds;mod spp div; dist gd;mod beetles	Mod good – seeds, insects
PDZ.6.07B 36	BULK	5	5	15	Wood fgs (small) ++ Roots+++ Charcoal++	+++ (steme,a/c,pol,c/c,polav,monfo,rub)	+			Sm clinker fgs++	>seeds;low/mod spp div – dist gd plants – pll,a/c	Mod good – seeds
PDZ:10.01 , 11	5	5	5	2	Roots+++	+ (steme)					Mainly roots	Poor
PDZ:6.08, 86	6	5	5	30	Wood fgs(small)++ Roots+++	+++ (rum,polav,steme,a/c,c/ran)	++	+ (?marine)	+	Occ CBM, slag/clinker, glass,	>seeds,mod spp div (dist/waste gd); ;mod insects;	good – seeds, insects
PDZ:6.08, 98	7	5	5	60 (50% scan)	Wood fgs (small) +++ Roots+++					Occ clinker frags	Virtually all frag wood	Poor
PDZ:6.08, 93	9	5	5	10	Roots+++	+ (steme)		+ (?marine)			Virtually all roots	Poor
PDZ-6.08, 99	10	5	5	5	Roots+++	+++ (a/c,polav,rum,steme)					Few dist gd weeds	Poor/moderate
PDZ-6.08, 94	11	5	5	<1	Roots+++	++ (steme,atr)		+ (?fw)			Roots,few seeds	Poor
PDZ-6.08 100	12	5	5	30	Wood fgs(small)++ Roots+++	+ (rum)					Mainly roots	Poor
PDZ:6.08, 101	13	5	5	70 (50% scan)	Wood fgs(small)+++ Roots++	+ (steme)					Virtually all v frag wood/roots	Poor
PDZ10.01, 7	1	5	-	20	Small wood frags++;roots++ Charcoal++	+++ (vitvi,atr,polav,steme,polhymi,che,falco,pol)	++			finds	comments	Potential
PDZ10.01, 8	2	5	-	5	Small wood frags++;roots++ Charcoal+	+++ (che,atr,polav,falco,steme)	+			Small clinker fgs++	>seeds;mod spp div; mainly dist gd plants esp pol,a/c; mod beetles	Good botanical potential; possibly beetles
PDZ10.01, 4	3	5	-	No flot						Small clinker fgs++	Mod nos seeds;low-mod spp div;pol++	Moderate potential for botanical remains
PDZ10.01, 10	4	5	-	3	Small wood frags++;roots++	++ (steme,atr,pol)					Gravel	-

Table 5 Evaluation of environmental evidence

3.5 Assessment of the evaluation

GLAAS guidelines (English Heritage, 1998) require an assessment of the success of the evaluation ‘in order to illustrate what level of confidence can be placed on the information which will provide the basis of the mitigation strategy’.

In the case of this site, the evaluation trenches exposed Pleistocene sandy-gravels, which were truncated in PDZ10 (OL-08107) by an undated ditch, overlain by alluvial sequences. The alluvium was overlain in turn by a probable relict topsoil/cultivation horizon (associated with furrows along the western edge of OL-07907), sealed by 19th–20th century made ground, that was cut by modern construction features.

The sandy-gravel layers represent a horizon beneath which no deposits of archaeological significance are likely to be found. Further clarification of the evaluation results, involving work on the samples and dating, in particular, is needed to be confident in the interpretations presented. In order to understand the archaeological significance of the deposits it will also be necessary to place the results in the context of the stratigraphic sequence recorded in nearby trenches and boreholes.

However, the stratigraphic sequence and deposit characteristics as discussed above are internally consistent, as the deposit sequence observed in the south west test pit appears to correlate with that recorded in more detail in the northern part of the trench and the results presented in this report are considered to be an accurate record of the deposits existing on the site.

The trenches were undertaken so as to gain an understanding of the archaeological potential of the area, and positioned where possible to gain even coverage, limited in cases by which areas that could be accessed at the time of work. Construction works, as currently specified, will not impact upon the archaeological horizons. The evaluation thus satisfies the original requirements of the evaluations for both PDZ6, work package 4 and for PDZ10, as stated in the Written Scheme of Investigations (MoLAS-PCA, 2007c; MoLAS-PCA, 2007d).

4 Archaeological potential

4.1 Realisation of original research aims

The extent to which the evaluation has been able to address the individual research objectives established in the Method Statements for each evaluation is discussed separately for the specific Planning Delivery Zones covered by the site:

4.1.1 OL-07907: PDZ6 work package 4

Do Kempton Park Gravels exist in the extreme eastern part of the zone? What is the potential for past environment reconstruction from these deposits?

PDZ6 work package 4 does not fall within this area

Do deposits pre-dating the Last Glacial Maximum, which might correspond with the Arctic Beds, exist within or below non-reworked gravels in the eastern parts of the zone (Landscape Zone 1)? What is the potential for past environment reconstruction and/or Late Upper Palaeolithic activity in these deposits?

No such deposits were observed within any of the trenches as the Pleistocene gravels and sands were not excavated. As such the potential for past environmental reconstruction remains unknown.

What is the potential for dating (e.g. OSL or radiocarbon dating) the sandy clay/clayey sand deposit that lies above the gravels of the Low Terrace in the eastern part of the zone (Landscape Zone 1)? Can the depositional environment of these deposits be interpreted?

The alluvial clays observed in trenches PDZ6.07a and PDZ6.08 provide some potential for radiocarbon dating, as there was a degree of good organic preservation (including wood fragments and plant roots).

In PDZ6.07b there was a lack of material that could be utilised for the likes of OSL or radiocarbon dating. However bulk and monolith geoarchaeological samples have been collected from deposits across all three trenches, and there is the potential for processing of these to yield evidence not apparent on site, for example evidence of buried soil formation from soil micromorphology.

These deposits are likely to have been the result of seasonal, episodic flooding from the prior waterways in the vicinity.

Do Late Glacial deposits exist within re-worked gravels in the southwest part of the zone (Landscape Zone 3)? What is the potential for past environment reconstruction and/or Late Upper Palaeolithic activity in these deposits?

PDZ6 work package 4 does not fall within this area.

Do slope deposits of Pleistocene and/or Holocene origin overlie Pleistocene gravel in the eastern part of the zone? What direct or indirect evidence of past human activity is associated with the colluvium?

The deposits that overlay the Pleistocene gravels observed in the trenches were of an alluvial nature, and no evidence of slope deposits was apparent. In regards to human activity associated with what in this case was alluvium a small ditch was observed underlying the alluvium in Trench PDZ6.08. In all three trenches in PDZ6 work package 4, a field/topsoil was observed overlying the alluvial sequences. No evidence of human activity was observed within the alluvium.

Did the Leyton River cross the zone in the Pleistocene or Holocene and is there evidence for human activity associated with the river?

There was no evidence of the Leyton River crossing the area evaluated as PDZ6, work package 4. Additionally no evidence of human activity associated with a river was observed. However, the alluviums may have been deposited by flood events associated with the Leyton River.

Can channels of the River Lea be distinguished from its tributaries in the south-western part of the zone? Does evidence for human activity, similar to that found in the Stratford Box, associated with the river, survive?

PDZ6 work package 4 does not fall within this area.

What environmental evidence suitable for past landscape reconstruction exists within deposits associated with ancient channels of the River Lea and its tributaries?

Whilst there was no evidence for ancient channels of the River Lea and its tributaries, a thin alluvial sequence was present in all trenches. A series of bulk and monolith samples were taken from all trenches with the intent of aiding in landscape reconstruction. Additionally, the information gained regarding the presence, depths, and nature of the alluvial deposits will also add to the capacity for landscape reconstruction.

Can episodes of channel activity and abandonment and wetland expansion across previously dry land surfaces on the zone be dated?

There was no datable evidence of channel activity and abandonment or wetland expansion (beyond the flooding noted above) within the site. In Trench PDZ6.0b part of an alluvium-filled depression was exposed in the north-west corner of the trench, however no datable evidence was located.

Does evidence of prehistoric and historic occupation survive on the low terrace (Landscape Zone 1)?

There was no evidence of prehistoric or historic occupation observed within the trenches of PDZ6, work package 4. However, evidence of possible (pre?)Victorian cultivation was observed in all three trenches, with furrows present within trenches PDZ6.07a and PDZ6.08.

Is there any evidence of a Roman road and/or occupation activity within the area of the zone? If so, how does it relate to what is known of the settlement pattern further north in the Leyton area during the Roman period?

There was no evidence indicating Roman activity within the site.

Can surviving remains of the medieval and post-medieval mills at Temple Mills provide information on the nature of industrial activity in the Lea valley?

The evaluation at PDZ6, work package 4 falls outside the area of Temple Mills, thus the research aim cannot be answered. There was also no evidence that may be associated with the mills.

Is there any evidence of medieval and post-medieval agricultural activity present on the zone? Is this associated with Chobham manor or Ruckholt manor and their later landholdings?

All three trenches contained a layer of apparent cultivation soil. In trenches PDZ6.07a and PDZ6.08 this layer formed the ridges that were associated with a series of east–west oriented furrows. Environmental samples have produced abundant plant remains associated with disturbed or cultivated land and remains of grape seeds have been found in one sample (context [7])

Map regression (as expressed in the DBA: see MoLAS-PCA, 2007a; figs. 14–20) indicates that the area of the site area fell within the land associated with Chobham Manor. The burial of the features by early 19th to 20th century dumped deposits shows that this is the period in which they went out of use. This also reflects the cartographic evidence which shows the area being associated with an artificial manure works by 1938 (MoLAS-PCA, 2007a).

What was the pre-modern/pre-Victorian topography of the zone?

The pre-modern/pre-Victorian topography of the site was notably lower than the current ground level. The surface of the alluvial deposits indicate that the ground level was higher to the east at 3.38m OD in trench PDZ6.07b, sloping downwards to the south-west to 2.38m OD in PDZ6.07a and 3.09m OD in PDZ6.08. This may relate to a slope towards the Channelsea River to the west, but it cannot be stated conclusively.

How extensive is modern truncation across the zone? Do made ground deposits bury or truncate the post-medieval/modern land surface?

Extensive depths of made ground buried the post-medieval/modern land surface. Piles were evident in all three trenches, representing the only event of modern truncation within the site.

Is there evidence for past water management, i.e. drainage ditches, mill remains, sluices and revetments associated with earlier courses of the Channelsea River/Henniker's Ditch and River Lea?

A solitary ditch was present in trench PDZ6.08. However, it is unknown what it's original function was, or if it was associated with the earlier courses of the waterways in the region.

4.1.2 OL-08107: PDZ10

What is the potential for dating (e.g. OSL or radiocarbon dating) the sandy clay/clayey sand deposit that lies above the gravels of the Low Terrace? Can the depositional environment of these deposits be interpreted?

The clay deposits observed in Trench PDZ10.01 provide limited potential for dating, as there was a lack of material preserved within the layers that could be tested for OSL or radiocarbon dating. However, bulk geoarchaeological samples have been collected from these deposits and processing of these has the potential to yield evidence not apparent on site. The deposits are likely to represent episodic seasonal flooding from the former waterways in the vicinity.

Do deposits pre-dating the Last Glacial Maximum, which might correspond with the Arctic Beds, exist within or below non-reworked gravels? What is the potential for past environment reconstruction and/or Late Upper Palaeolithic activity in these deposits?

No deposits believed to pre-date the Last Glacial Maximum were observed in trench PDZ10.01.

Do slope deposits of Pleistocene and/or Holocene origin overlie Pleistocene gravel in the eastern part of the zone? What direct or indirect evidence of past human activity is associated with the colluvium?

No trenches were excavated within the eastern part of PDZ10 due to access restrictions, therefore no assessment can be made for the potential slope deposits in that area.

The only evidence of possible human activity associated with the alluvium (replacing the suggested colluvial sequence in the site) was the ditch [01], which was underlying it in the southern end of Trench PDZ10.01.

Did the Leyton River cross the zone in the Pleistocene or Holocene and is there evidence for human activity associated with the river?

No evidence relating to the Leyton River was observed within Trench PDZ10.01 or the site as a whole. Consequently no evidence for human activity associated with the river was seen. However, the alluvium may have been deposited by flood events associated with the Leyton River.

Is alluvium present within the zone and is there potential for past landscape reconstruction from environmental remains preserved in the alluvium?

A thin alluvial sequence was present within the deposits of the site. A series of bulk samples were taken from all of the natural deposits, including the two alluvial layers with the intent of aiding landscape reconstruction. This will be supplemented by the information gained regarding the presence, depths, and nature of the alluvial deposits.

Can channels of earlier watercourses be traced within the zone and does evidence for human activity, associated with the river, survive?

There was no evidence associated with earlier watercourses within the site. There was also no observable evidence of human activity associated with such watercourses.

Does evidence of prehistoric and historic occupation survive on the low terrace?

A ditch [01] cut through the upper gravels at the base of the alluvial sequence. No dating evidence was recovered from the ditch fills, although a *terminus post quem* may be derived from analysis of the alluvial deposits.

What was the pre-modern/pre-Victorian topography of the zone?

The pre-modern/pre-Victorian topography recorded in the site indicated a relatively flat landscape lying at a maximum of 3.44m OD prior to the deposition of Victorian made ground. It is likely that the area was subject to episodes of flooding leading to formation of alluvial sediment, lending to the idea of presence of nearby waterways.

Is any prehistoric activity present within the zone?

No evidence of prehistoric activity was observed within the trench.

Is any Roman activity present within the zone?

No evidence of Roman activity was observed within the trench.

Is there any evidence of medieval and post-medieval agricultural activity present on the zone? Is this associated with Chobham manor or Ruckholt manor and their later landholdings?

There was no obvious evidence of agricultural activity from any period present within the part of the site that covers PDZ10. However, a layer of possible topsoil was observed, comparable to that discussed above in the trenches for PDZ6, work package 4. Therefore it is possible that the preserved topsoil was associated with the open land adjacent to an area that had been utilised for agricultural purposes. This can be dated to the mid 19th century, at latest, based on the layer of made ground/landfill that lay directly above.

The map regression in the DBA for PDZ10 (MoLAS-PCA, 2007b) shows that the site lay within the area of the Chobham manor landholdings during the phase to which it likely dates.

Is there evidence for past water management, i.e. drainage ditches, mill remains, sluices and revetments associated with earlier courses of the Channelsea River/Henniker's Ditch?

The only evidence that may possibly relate to past water management is the small ditch [01] that was in the southern end of the trench. However, this is most likely to have served as drainage or a boundary, as opposed to water management associated with watercourses.

Is there evidence of late 19th century brick quarrying and manufacture, in the southern half of the zone?

The trench yielded no evidence relating to evidence of late 19th century brick quarrying or manufacture.

How extensive is modern truncation across the zone? Do made ground deposits bury or truncate the post-medieval/modern land surface?

There were no observed modern truncations within the excavated trench. However, it is unknown as to what extent this applies across the remainder of PDZ10. The deposits of made ground buried the post-medieval land surface.

4.2 General discussion of potential

The evaluation has shown that in the areas evaluated for PDZ6, work package 4 and PDZ10 a sequence of alluvial deposits of archaeological interest survives below about 2.3m OD to 3.3m OD and sealed beneath made ground. These comprise layers of relict topsoil, which in areas forms ridges associated with furrows, and overly alluvial sequences. The alluvium lay above Pleistocene gravels.

No cultural material was evident in any of these deposits prior to 19th century or later land raising deposits. The only feature associated with pre-Victorian human activity, the ditch in PDZ10.01, lacked dating evidence.

The Detailed Desk-Based Assessments (MoLAS-PCA, 2007a; MoLAS-PCA, 2007b) for PDZ 6 and PDZ 10 suggested that the low terrace area upon which the sites were

situated would have been dry land throughout the prehistoric and much of the historic period. It was also suggested that for prehistoric remains in PDZ6 there was a moderate to low potential, and for PDZ10 a high potential. For Roman remains PDZ6 was of low potential, and PDZ10 was of uncertain low to moderate potential. For Saxon remains PDZ6 was of low potential, and not specified in the DBA for PDZ10. For medieval remains PDZ6 was of high potential, whilst PDZ10 was of uncertain low to moderate potential. For post-medieval remains PDZ6 was considered of high potential, whilst PDZ10 was of moderate to high potential.

As noted above, the only archaeological evidence for pre-19th century land raise human activity was the undated ditch, which suggests that, for all the trenches, the true potential the prehistoric to medieval periods is low.

The geoarchaeological information from the site supports the earlier models for it having been an episodically flooded dry land surface that lay above the wetland parts of the floodplain the past. Such areas have relatively low potential for preservation of environmental remains. However, the evaluation has shown that around 50% of the samples taken have moderate to good seed and insect preservation and potential for past environmental reconstruction.

When the stratigraphic information from the site has been tied in to the information recovered from the surrounding area (by inputting the data into the MoLAS-PCA geoarchaeological database for the Olympic Project), linked to historic map evidence and dated it will have potential to contribute to our understanding of the evolving river regime of the Lower Lea.

Depending on the results of dating, it might also provide useful information about vegetation change and the changing environment and land use of the Olympics Site during the historic period. Such information would be of real value, as environmental evidence is poorly preserved within the (typically weathered) alluvial clay that in general accumulated across the floodplain in historic time.

4.3 Significance

The evaluation of PDZ6, work package 4 and of PDZ10 has added limited information to the archaeological understanding of the area. The presence of the ditch is indicative of human activity in the vicinity; however the lack of dating evidence restricts the value of this information. The observed ridge and furrow systems in PDZ6.07a and PDZ6.08 is indicative of the area's history as open fields associated with the post-medieval Chobham Manor, and can provide limited information in regards to the type of exploitation that occurred prior to Victorian and later ground raising.

The findings indicate that the site was open land throughout the majority of the prehistoric to post-medieval periods, occasionally influenced by flooding. It remained as such until the area was utilised for agricultural purposes.

Analysis of samples taken from the ridge and furrow system observed in Trenches PDZ6.07a and PDZ6.08 will yield information relating to the past agricultural usage of the land, which will also be of local significance in the understanding of the activities of the local manorial landholdings.

The geoarchaeological evidence seen across both sites has been able to provide information that will aid in the overall understanding of the evolving environment of the Lea Valley. This information is able to contribute to our understanding of the past environment of the site and its surrounds, and will assist in landscape reconstruction models being developed for the lower Lea, which, *when combined with the data from the other Olympic sites*, will be of regional significance.

5 Assessment by EH criteria

The recommendations of the GLAAS 1998 guidelines on *Evaluation reports* suggest that

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

A set of guide lines was published by the Department of the Environment with criteria by which to measure the importance of individual monuments for possible Scheduling. These criteria are as follows: *Period*; *Rarity*; *Documentation*; *Survival/Condition*; *Fragility/Vulnerability*; *Diversity*; and *Potential*. The guide lines stresses that ‘these criteria should not...be regarded as definitive; rather they are indicators which contribute to a wider judgement based on the individual circumstances of a case’.¹

In the following passages the potential archaeological survival described in the initial Assessment document and Section 3.2 above will be assessed against these criteria.

Criterion 1: period

Taken as a whole, archaeology of the site is not characteristic of any particular period. The Evaluation indicates a multi period site.

Criterion 2: rarity

There is nothing to suggest that any of the likely archaeological deposits are rare either in a national or regional context.

Criterion 3: documentation

Whilst there may be considerable contemporary documentation for the later medieval period from *c* 1300 onwards, it is unlikely that any of this will be specific enough to relate to individual features.

Criterion 4: group value

The landscape features relate to and are part of the wider pattern seen within the Olympic Park and elsewhere in the Lea Valley. Full interpretation is only possible in that context. The post-medieval survival is remnants of part of the spread eastwards from the City of London and the industrialisation of the site area, combined with the management of the water courses within the Lea Valley.

Criterion 5: survival/condition

The evaluation results have demonstrated that geoarchaeological and archaeological remains were preserved beneath modern made ground, although within areas of development will have been truncated to dramatically different levels.

Criterion 6: fragility

Experience from other sites has shown that isolated and exposed blocks of stratigraphy can be vulnerable to damage during construction work.

¹ Annex 4, DOE, Planning and Policy Guidance 16, (1990). For detailed definition of the criteria see that document. Reference has also been made to Darvill, Saunders & Startin, (1987); and McGill, (1995)

Criterion 7: diversity

Clearly, taken as a whole, the deposits at the site do not represent a diverse and heterogeneous group of archaeological remains of all types and periods. However, this diversity is in itself the product of a random process of vertical and horizontal truncation and separation. There is no reason to suggest that the diversity *per se* has any particular value which ought to be protected.

Criterion 8: potential

(the term Potential in this context appears to mean that though the nature of the site, usually below-ground resources, cannot be specified precisely, it is possible to document reasons predicting its existence and importance)

The only archaeological evidence for pre-Victorian, pre-agricultural activity was the un-dated ditch, which suggests that the potential vicinity of trench PDZ10.01 is low for the prehistoric to medieval periods in both the area of PDZ6, work package 4 and PDZ10.

The presence and survival of post-medieval agricultural evidence, notably the furrows in PDZ6.07a, and PDZ6.08, suggests that the potential for remains from this period is high within PDZ6, work package 4 and PDZ10. An important consideration is that the single trench in PDZ10 was positioned on the western boundary of the zone, thus these results cannot be used to alter the potential of the entirety of PDZ10.

Analysis of the geoarchaeological samples taken from the trench deposit sequences associated with the agricultural evidence has potential to contribute and further present understanding of the Lea Valley landscape, settlement and exploitation from early prehistory to present day.

6 Proposed development impact and recommendations

Proposed developments for work package 4 of PDZ 6 involve landscaping and areas of open common domain. Within PDZ10 it is proposed to construct part of the Olympic and Paralympic Village, with a residential usage during the Legacy phase. The construction methods for these works as currently advised and assessed will not disturb or destroy the archaeological deposits within their footprints (MoLAS-PCA, 2007c; MoLAS-PCA, 2007d).

The assessment above (Section 5) does not suggest that preservation *in situ* would be an appropriate mitigation strategy. The evaluation has shown that deposits survive beneath late 19th century made ground, alluvial (possible floodplain) deposition and worked agricultural soils. MoLAS considers that the majority of the deposits have local importance for archaeological finds and features. The observed archaeological deposits are of local significance, with the evaluations being a sufficient record of their existence. As no impacts are anticipated from the development of the sites as currently planned no further field work is recommended in either of the evaluated locations.

However, it is recommended that further work be undertaken on the samples already taken from the sequence to gain a better understanding of the local river regime and evolving past landscape.

Initial evaluation of the samples collected suggests they have good palaeoenvironmental potential, when drawn from the features associated with the agricultural evidence and the underlying alluvium. In particular, for these features, 50% of the bulk samples are rich in seeds and plant remains and if dated to the historic period both bulk and monolith samples might preserve useful information about vegetation change and the changing environment of the Lea Valley at a time when environmental evidence is typically poorly preserved and if from a later date may shed light on post-medieval agricultural activity potentially associated with Chobham Manor.

In order to clarify the potential of the samples taken in association with the alluvium and agricultural evidence and to refine the research aims they might be able to address, it is recommended that:

- Five litres of the unprocessed samples [1], [2], and [6] be processed by paraffin flotation for the assessment of insect remains (3 samples);
- Five litres of the unprocessed samples [6], [9], and [11] be wet sieved and together with the wet-sieved fractions of the parts of samples already processed, examined to assess the potential of the snail and ostracod assemblages preserved (3 samples);
- Five litres of two samples from OL-08107 from contexts [7] (sample 1) and [8] (sample 2); and of four samples from OL-07907 – from contexts [36] (sample 2), PDZ:6.07B (bulk), [86] (sample 6); and [99] (sample 10), the unprocessed samples be floted and the flots (together with those already processed) assessed for plant remains (6 flots);

- Three radiocarbon dates are obtained by AMS on identified twigs, seeds or other plant material from the gravels ([10]), the sandy clay deposit [98]; and/or the sandy clay [101] that seal the gravels in PDZ6.08;
- Pollen and diatom assessment of the stratigraphic sequence is undertaken (12 sub-samples for each to be cut from the monolith tins)
- The stratigraphic, dating and sample assessment data is entered into the MoLAS-PCA geoarchaeological stratigraphic database and used to update the current GIS models of the past topography and environment, to contribute to the environmental assessment of PDZ6 and PDZ10;
- Research aims that might realistically be addressed by the samples are identified and a report prepared by a geoarchaeologist or environmental archaeologist, summarising the environmental assessment results and the potential of the samples collected from the site.

It is also recommended that the results of this evaluation and of the proposed environmental mitigation are assimilated into a site-wide assessment of all archaeological interventions to assign contextual significance and further refine the importance of the archaeological survival, and thereafter assimilated into any publication discussing/disseminating the results.

The decision on the appropriate archaeological response to the deposits revealed within the evaluation rests with the Local Planning Authority and their designated archaeological advisor (GLAAS).

7 Acknowledgements

MoLAS-PCA would like to thank Capita Symonds Ltd for commissioning this report on behalf of the Olympic Delivery Authority (ODA), and David Divers (English Heritage GLAAS) for monitoring the project on behalf of the London Borough of Newham.

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ODA, 2007a Olympic, Paralympic and Legacy Transformation Planning Applications

ODA, 2007b Olympic, Paralympic and Legacy Transformation Planning Applications
Environmental Statement

ODA, 2007c Olympic, Paralympic and Legacy Transformation Planning Applications
Supplementary Information: Environmental Statement Regulation 19 Further
Information and Supplement (OLY/GLB/ACC/DOC/ENV/SUP/01A)

ODA, 2007d Olympic, Paralympic and Legacy Transformation Planning Applications
Annexure Code of Construction Practice, Vol 15 (OLY/GLB/ACC/DOC/CCP/01)

9 Appendix 1: NMR OASIS archaeological report form

9.1 OL-07907

OASIS ID: preconst1-37755	
Project name	Olympics PDZ6, Works Package 4
Short description of the project	Three evaluation trenches were excavated on the site designated PDZ6, Works Package 4 as part of the London 2012 Olympics development. The trenches were excavated to the level of the natural gravels, which in one trench were cut by a natural channel. These were overlain by alluvial sequences, and then by possible relict landsurfaces of field soil, which in the western two trenches formed ridges associated with agricultural furrows. These deposits were then overlain by 19th-20th century made ground deposits, which also sealed the trenches.
Project dates	Start: 31-10-2007 End: 16-01-2008
Previous/future work	No / No
Any project codes associated with reference codes	OL-07907 - Sitecode
Type of project	Field evaluation
Site status	Local Authority Designated Archaeological Area
Current Land use	Residential 1 - General Residential
Monument type	NARROW RIDGE AND FURROWS Post Medieval
Significant Finds	POTTERY Post Medieval
Significant Finds	GLASS Post Medieval
Methods & techniques	'Environmental Sampling','Sample Trenches'
Development type	Not recorded
Development type	London 2012 Olympic Park
Prompt	Direction from Local Planning Authority - PPG16
Position in the planning process	After full determination (eg. As a condition)
Status	Incomplete
Site location	GREATER LONDON NEWHAM NEWHAM Olympics PDZ6, Works Package 4
Postcode	E15
Study area	13230.00 Square metres
Site coordinates	NGR-TQ37928522 LL-51.5484962311-0.010650451780(decimal)

		LL-513254N0000038W(degrees) Point
Height OD		Min: 1.83m Max: 3.38m
Status		Incomplete
Name Organisation	of	MoLAS-PCA
Project originator	brief	MoLAS-PCA
Project originator	design	MoLAS-PCA
Project director/manager		Gary Brown
Project supervisor		Sarah Barrowman
Type sponsor/funding body	of	Olympic Delivery Authority
Name sponsor/funding body	of	Olympic Delivery Authority
Status		Incomplete
Physical recipient	Archive	LAARC
Physical Archive ID		OL-07907
Physical Contents		'Ceramics','Glass','Wood','other'
Digital recipient	Archive	LAARC
Digital Archive ID		OL-07907
Digital Contents		'none'
Digital available	Media	'Images raster / digital photography'
Status		Incomplete
Missing Fields		Paper Archive recipient, Paper Contents
Status		Incomplete
Missing Fields		Title, Author(s)/Editor(s), Date, Issuer or publisher, Place of issue or publication

9.2 OL-08107

OASIS ID: preconst1-37767		
Project name		Olympics PDZ10
Short description of the project	of	One evaluation trench was excavated on the site designated PDZ10 as part of the London 2012 Olympic Development. The trench was excavated to the level of the natural gravels, which were cut by a small updatable ditch. This was

overlain by alluvial sequences, and then by possible relict landsurfaces of field soil. These deposits were then overlain by 19th-20th century made ground deposits, which also sealed the trench.

Project dates	Start: 03-12-2007 End: 13-12-2007
Previous/future work	No / No
Any associated project reference codes	OL-08107 - Sitecode
Type of project	Field evaluation
Site status	Local Authority Designated Archaeological Area
Current Land use	Residential 1 - General Residential
Monument type	Ditch Uncertain
Significant Finds	Pottery Post Medieval
Significant Finds	Glass Post Medieval
Methods techniques	& 'Environmental Sampling','Sample Trenches'
Development type	Not recorded
Development type (other)	London 2012 Olympic Park
Prompt	Direction from Local Planning Authority - PPG16
Position in the planning process	After full determination (eg. As a condition)
Status	Incomplete
Site location	GREATER LONDON NEWHAM NEWHAM Olympics PDZ10
Postcode	E15
Study area	37683 Square metres
Site coordinates	NGR - TQ 38050 85310 LL - 51.5492731933 -0.00874123317251 (decimal) LL - 51 32 57 N 000 00 31 W (degrees) Point
Height OD	Min: 3.17m Max: 3.35m
Status	Incomplete
Name of Organisation	MoLAS-PCA
Project originator brief	MoLAS-PCA
Project originator design	MoLAS-PCA
Project director/manager	Gary Brown
Project supervisor	Sarah Barrowman

Type of Olympic Delivery Authority
sponsor/funding
body

Name of Olympic Delivery Authority
sponsor/funding
body

Status Incomplete

Physical Archive LAARC
recipient

Physical Archive ID OL-08107

Physical Contents 'Ceramics','Glass'

Digital Archive LAARC
recipient

Digital Archive ID OL-08107

Digital Contents 'none'

Digital Media 'Images raster / digital photography'
available

Status Incomplete

Missing Fields Paper Archive recipient, Paper Contents

Status Incomplete

10 Appendix 2: Glossary

Alluvium. Sediment laid down by a river, and usually well-sorted. Can range from sands and gravels deposited by fast flowing water and clays that settle out of suspension during overbank flooding. Other deposits found on a valley floor are usually included in the term alluvium. Peat develops when there is little mineral sediment deposition and impeded drainage, which limits biological decay; and tufa accumulates when springs rich in calcium carbonate discharge in damp well-vegetated situations.

Arctic Beds. Cold climate deposits, pre-dating the Last Glacial Maximum and sometimes found within the gravels of the Lower Lea. They may survive within parts of the floodplain not reworked by the river during the Late Glacial.

Ecotone. A zone that lies between areas of contrasting environment, such as on the wetland/dryland margins.

Holocene. The most recent epoch (part) of the Quaternary, covering the past 10,000 years during which time a warm interglacial climate has existed. Also referred to as the 'Postglacial' and (in Britain) as the 'Flandrian'.

Knickpoint. A fall in base level (such as the low sea level at the end of the Pleistocene) gives rise to a discontinuity in the longitudinal profile of a river ie: steepening of the downstream channel gradient. The river tends to adjust to such a change by increased flow, which leads to increased erosion in the steepened section of the river and this results in the steepened section (knickpoint) cutting back in an upstream direction.

Last Glacial Maximum. The height of the glaciation that took place at the end of the last cold stage, around 18,000 years ago.

Late Glacial. The period following the Last Glacial Maximum and lasting until the climatic warming at the start of the Holocene. In Britain this period is subdivided into a warm 'interstadial' episode the Windermere Interstadial, followed by a renewed cold ('stadial') episode, in which local ice advances occurred (the Loch Lomond Stadial).

Pleistocene. Used in this report to refer to the earliest part of the Quaternary, the period of time until the start of the Holocene, about 10,000 years ago. However, since the present Holocene epoch is almost certainly only a warm interglacial episode within the oscillating climate of the Quaternary, it is often seen as being part of the Pleistocene epoch, in which case the terms Pleistocene and Quaternary are interchangeable. As it is necessary, in this report, to differentiate between the events that took place at various times during the last cold stage and earlier in the Quaternary and those that took place during the Holocene, the Pleistocene is used to refer to the parts of the Quaternary pre-dating the climatic amelioration that took place at the start of the Holocene.

Quaternary. The most recent major sub-division (period) of the geological record, extending from around 2 million years ago to the present day and characterised by climatic oscillations from full glacial to warm episodes, when the temperate was as warm as if not warmer than today. To a large extent human evolution has taken place within the Quaternary period.

11 Appendix 3: OL-08107 finds assessment

11.1 The pottery

Chris Jarrett

Trench	Context	Spot date	Sherd Count	Comments
PDZ6.07b	30	1840+	5	X1 ENGS BRST: JAR CYL, FLUT (jam/marmalade) x1 YELL: BOWL FLAR X1 REFW CHROM X1 TPW: SAUC, FLOR - late 19th C. x1 tpw: cup tea with uncertain entwined letters.
PDZ6.07b	35	1825+	9	X1 complete ENGS BRST: BOT BL, STAMPED 'DOULTON, LAMBETH', uncertain letter/number above stamp x1 complete ENGS BRST: JAR RND, with oval black transfer 'THE IDEAL FOOD' around a Virol badge, 'VIROL APREPARATION OF BONE MARROW. AN IDEAL FAT FOOD FOR CHILDREN AND INVALIDS' X1 TPW 3: JAR SCYL, black transfer 'J SAINSBURY'S POTTED MEAT, SUPERIOR HOMEMADE'. S logo with 'SAINS', TRADEMARK' on the base stamped 'B48'. x1 TPW3: JAR SCYL, squat, 'J. SAINSBURY FRESHLY MADE BLOATER PASTE' 'S' logo with 'ains' and 'TRADEMARK' X1 LONS: FLASP: FIGU, HEAD MISSING, in the shape of Queen Charlotte or Victoria with a parchment 'My hope is in my people', at her feet is stamped 'EDMOMNDS, WINE AND SPIRIT MERCHANT, 45 STRUTTON GROUND, WESTMINSTER'. on the base 'LAMBETH POTTERY, DOULTONS ?WA HIGH SN ?OLT LAMBETH. X1 complete ENGS BRST: JAR SHL, squat with a cordon on the neck x1 ENKS BRS: BOT INK, SPOUTED X1 TPW4: JAR SCYL, HARRIS'S ORIGINAL PURE CLOTTED CREAM FROM DEVONSHIRE X1 FTGW: BOT MUSTARD. MOUTARDE DE MAILLE VINAIGRIER - DISTILLATEUR, FOURNISSEUR des premieres de l'Europe paris.
PDZ6.07b	36	1800-1900	3	x1 PMR: FLP X1 REFW: BOWL RND X1 PMR.
PDZ6.07a	4	1830+	4	X1 ENGS: BOT BL, X1 ENGS BRST: JAR SHL, marked 'TRADE T N & P' 'TAYLORS PREPARED MUSTARD, NEWPORT PAGNELL', stamped 'DOULTON 40 LAMBETH' with cork stopper. X1 REFW door knob with metal casing, x1 REFW: JAR SHL, mustard jar?
PDZ6.07a	4	1825+	7	X1 REFW: OINT/JAR SCYL, BEARS GREASE TYPE POT, X1 ENPO HP/CONP EGG, X3 gilded lines on rim. X1 TPW4: LID DOM, GREEN FLORAL DESIGN, X1 CONP: CUP COFF, SQUAT, with leaves and flower on pink band in gilded lettering 'a present from springborn'. On base red transfer mark in circle 'T' with 'MADE IN GERMANY' surrounding it, x1 ENPO HP/CONP TPOT TOY, OVAL IN PLAN, X1 ENPO HP/CONP: FIGU, small girl holding on to a green stockings foot, on the base 'o756', x1 ENPO HP/CONP: FIGU, female figure? 18th c dress, '1412' on base and four point stamp.
PDZ6.08	78	1860-1940	1	X1 ROCK: TPOT, barrel-shaped teapot, nearly complete except for spout, swags around the shoulder, x1 complete ENGS BRST: JAR CYL stamped 'E & T PINK LONDON', x1 complete ENGS BRST: BOT SSSL, stamped '4 DOULTON LAMBETH' wide mouth bottles for furniture cream etc, X1 ENGS BRST: JAR SHLD, squat with air tight lid rim and beaded shoulder, stamped 'SKEY TAMWORTH', George Skey, 1860/4-1939. x1 REFW: JUGSCYL: SGRF, SMALL CYLINDRICAL JUG WITH BROWN SLIP AND SGRAFFITO DECORATION of three vertical lines and three short diagonal lines.

Table 6: Pottery index with spot dates for site OL-07907

Trench	Context	Sherd count	Spot date
PDZ10.01	5	4	1850-1930

Table 7: Pottery index with spot dates for site OL-08107

The pottery is generally in a good condition with complete profiles of vessels present and indicates it was mostly deposited soon after breakage, but being from the landfill probably represents local authority rubbish dumping. Standard Museum of London pottery codes were used to classify the pottery and the assemblage was recorded in an Access database.

11.1.1 Significance, potential and recommendations for further work

These industrial period ceramics are probably mostly derived from a source off of the site and their presence is largely the result of refuse dumping. The significance of the pottery is at a local level and demonstrates what types of activity was happening in the areas from where the landfill was derived. The ceramic profile of the site largely follows that for what would be expected locally and comparable ceramic assemblages can be found on other excavations in North East London have.

However, an unusual ceramic item in OL-08107 is a c 1870 Doulton stoneware water filter (still containing charcoal) and occurs with its lid, both with white-slip vine decoration. There is also from OL-08107 an 1850 onwards-dated blue-green majolica figurine of a monkey clutching a probable gourd, besides a mundane refined whiteware small cylindrical jar.

The main potential of the pottery assemblage is as a dating tool for the contexts it occurs in and a number of vessels merit illustration or photographing.

Recommendations for further work should be that this assemblage is included in a publication report combining all the late 19th/20th century ceramics from the Olympic site excavations discussing the types of pottery and the reasons for their presence on the site. Photographs of the more unusual items will help to illustrate the text and enhance the publication.

11.2 The glass

Chris Jarrett

The assemblage contains intact items and therefore the material was probably discarded soon after breakage or disuse, but almost certainly under tertiary deposition conditions. Again, like the pottery, the assemblage is probably derived from dumping of refuse on the site, probably by organisation of a local civil authority. The glass forms (bottles as containers for coffee essence, ink, mineral water and sauce) could be recognised and dates from the late 19th century onwards. The information was entered on to an Access database.

Trench	Context	Spot date	Sherd Count	Comments
PDZ6.07b	35	1870+	3	X1 CLEAR, SMALL CYLINDRICAL BOTTLE, EMBOSSED 'CHEESEBOROUGH MFC CO VASELINE', 1870+ X1 LIGHT GREEN GLASS SMALL CYLINDRICAL BOTTLE, EMBOSSED HOLBROOK & CO, CORKED, SAUCE BOTTLE. X1 CLEAR, FLAT GLASS SAUCE BOTTLE WITH CORK AND LIQUID,
PDZ6.07b	35	1870+	6	X1 LIGHT GREEN SLIGHTLY OVAL IN PLAN CYLINDRICAL BOTTLE- SAUCE. X1 FLAT light green bottle, 'A J WHITE LIMITED' embossed on one side x1 light green small sauce bottle with cork x1 clear glass, square ink bottle x1 brown glass shouldered/flared bottle, with embossed badge and 'ARMOUR & CO. BEEF JUICE CHICAGO, USA' X1 COMPLETE BROWN GLASS, MEDIUM SIZED BOVRIL BOTTLE
PDZ6.07a	4	1870+	9	x1 complete brown flat Bovril bottle, embossed 'BOVRIL LTD' on the side, '242 222 L' on the base. X1 complete light green wine bottle, kicked base with pontil, French 1850+. X1 complete flat bottle, wide rim. embossed 'J. DAVIS', 'LONDON SE' on side. X1 bright green stopper, x1 complete light green flat bottle with on the front 'lung tonic on side' 'OWBRIDGES', 'HULL' on the sides, 1880's+. x1 blue, flat/octagonal bottle, machine made, ribbed/fluted. vertically embossed down the front of the bottle 'NOT TO BE TAKEN' and '402' on the base. x1 complete light green/clear cylindrical bottle, two part mould, '11' on the base, x1 clear/lead glass, faceted, small bowl with embossed flower on the base exterior. x1 dolls glass eye.
PDZ6.07a	4		1	x1 dolls glass eye.
PDZ6.08	78	1870+	7	X1 complete light green, panelled flat bottle with int. cork. x1 complete brown flat bottle with embossed on the base 'J' within a shield, x2 complete olive green flat bottles with 'JEYES FLUID' embossed on each side, 1877+, x1 complete light bluish green case bottle, embossed 'LIPTON LONDON AND CEYLON', '179/0' on the base, 1870+. x1 complete, light green/clear ink bottle, x1 complete brown, medium sized Bovril bottle, embossed 'BOVRIL LTD' on one side and 'BOVRIL RD. 100 846' on the other side, '1015 RD./2' on the base, 1870+.

Table 8 Glass index with spot dates for site OL-07907

Trench	Context	Fragment Count	Spot date
PDZ10.01	5	6	1870+

Table 9: Glass index with spot dates for site OL-08107 Significance, potential and recommendations for further work

The glass has some significance at a local level and represents household items, the containers for products from businesses and a reflection of 19th-century consumerism. The main potential of the glass is to date the contexts it was found in.

In OL-08107, items include a Hamilton soda bottle with its cork and a brown, triangular glass bottle embossed 'CAFÉ VERGE' and an uncertain registration mark on its base. However, the source for the majority of the glass was probably derived from off site activity. The most datable item, from OL-08107, is a square bottle embossed 'E. MANWARING', 'PECKHAM' and this refers to a pickle and sauce manufacturer recorded in trade directories for 1878 and 1906, but this company may have been operating earlier and later than these dates.

Recommendations for further work should be that a publication of all the glass assemblages from the different Olympic excavations be compiled and this should be supplemented with photographs of interesting, complete examples.

11.3 The clay tobacco pipe

Chris Jarrett

Clay tobacco pipe was recovered from each of the three trenches in OL-07907.

The main potential of the minimal amount of tobacco pipe is to date the contexts it was found in, which were all landfill deposits, probably deposited from dumping of refuse on the site.

Trench	Context	Spot date	SC	Comments
PDZ6.07a	4		1	X1 COMPLETE WOODEN TOBACCO PIPE WITH A ?MELANINE MOUTH PIECE.
PDZ6.07b	35	1840-1910	1	X1 AO33, IRISH TYPE, BUT OF THE BRIAR TYPE.
PDZ6.08	78	1840-1910	1	X1 AO33, MILLING ON THE RIM, VICTORIA ON THE RIGHT SIDE, EDWARD VII ON THE LEFT SIDE.

Table 10: CTP index with spot dates for site OL-07907

12 Appendix 4: context index

12.1 OL-07907

Site Code	Context No.	Plan	Section / Elevation	Type	Description	Date	Phase	Drawings	Photos No.
OL-07907	1	PDZ6.07a	1	Layer	Colluvium	Modern		-	-
OL-07907	2	PDZ6.07a	1	Layer	Made Ground	Modern		-	-
OL-07907	3	PDZ6.07a	1	Layer	Made Ground	Modern		-	-
OL-07907	4	PDZ6.07a	1	Layer	Made Ground	Modern		-	-
OL-07907	5	-	1	Fill	Fill of [07]	Modern		-	-
OL-07907	6	-	1	Fill	Fill of [08]	Modern		-	-
OL-07907	7	-	1	Cut	Vibro Pile	Modern		-	-
OL-07907	8	-	1	Cut	Vibro Pile	Modern		-	-
OL-07907	9	-	1	Layer	Ridge Topsoil	Victorian		-	-
OL-07907	10	-	1	Layer	Natural - Alluvium	Victorian		-	-
OL-07907	11	-	1	Layer	Clay in Field System	Victorian		-	-
OL-07907	12	-	1	Layer	Relict Topsoil	Victorian		-	-
OL-07907	13	-	1	Layer	Clay in Field System	-		-	-
OL-07907	14	-	1	Layer	Natural - Alluvium	-		-	-
OL-07907	15	-	1	Layer	Relict Topsoil	Victorian		-	-
OL-07907	16	-	1	Layer	Natural - Alluvium	-		-	-
OL-07907	17	-	1	Cut	Furrow	Victorian		-	-
OL-07907	18	-	1	Cut	Furrow	Victorian		-	-
OL-07907	19	-	1	Cut	Furrow	Victorian		-	-
OL-07907	20	-	1	Cut	Furrow	Victorian		-	-
OL-07907	21	-	1	Cut	Furrow	Victorian		-	-
OL-07907	22	-	1	Cut	Furrow	Victorian		-	-
OL-07907	23	-	1	Cut	Furrow	Victorian		-	-
OL-07907	24	-	1	Cut	Furrow	Victorian		-	-
OL-07907	25	-	1	Cut	Furrow	Victorian		-	-
OL-07907	26	PDZ6.07a	1	Cut	Furrow	Victorian		-	1 (7-8) 2 (7-8)
OL-07907	27	PDZ6.07a	1	Layer	Natural - Gravels	Pleistocene		-	-
OL-07907	28	-	2	Layer	Made Ground	Modern		-	-
OL-07907	29	-	2	Layer	Made Ground	Modern		-	-

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OL-07907	30	-	2	Layer	Made Ground	Victorian-Modern		-	-
OL-07907	31	-	2	Layer	Made Ground	Victorian-Modern		-	-
OL-07907	32	-	2	Layer	Made Ground	Victorian-Modern		-	-
OL-07907	33	-	2	Layer	Made Ground	Victorian-Modern		-	-
OL-07907	34	-	2	Layer	Made Ground	Victorian-Modern		-	-
OL-07907	35	-	2	Layer	Made Ground	Victorian-Modern		-	-
OL-07907	36	-	2	Layer	Relict Topsoil	Victorian		-	-
OL-07907	37	-	2	Layer	Natural - Alluvium	-		-	-
OL-07907	38	-	2	Layer	Natural - Alluvium	-		-	-
OL-07907	39	-	2	Layer	Natural - Gravels	-		-	-
OL-07907	40	-	2	Cut	Field Drain	Victorian		-	-
OL-07907	41	-	2	Fill	Fill of [40]	Victorian		-	-
OL-07907	42	-	2	Cut	Field Drain	Victorian		-	-
OL-07907	43	-	2	Fill	Fill of [42]	Victorian		-	-
OL-07907	44	PDZ6.07b	2	Layer	Natural - Sand	-		-	-
OL-07907	45	PDZ6.07b	3	Fill	Tertiary Fill of [65]	-		-	-
OL-07907	46	-	3	Fill	Secondary Fill of [65]	-		-	-
OL-07907	47	-	3	Fill	Primary Fill of [65]	-		-	-
OL-07907	48	-	3	Layer	Natural - Gravels	Pleistocene		-	-
OL-07907	49	PDZ6.07a	1	Cut	Furrow	Victorian		-	-
OL-07907	50	PDZ6.07a	1	Fill	Natural - Alluvium	-		-	-
OL-07907	51	PDZ6.07b	-	Fill	Fill of [52]	Modern		-	-
OL-07907	52	PDZ6.07b	-	Cut	Vibro Pile	Modern		-	-
OL-07907	53	PDZ6.07b	-	Fill	Fill of [54]	Modern		-	-
OL-07907	54	PDZ6.07b	-	Cut	Vibro Pile	Modern		-	-
OL-07907	55	PDZ6.07b	-	Fill	Fill of [56]	Modern		-	-
OL-07907	56	PDZ6.07b	-	Cut	Vibro Pile	Modern		-	-
OL-07907	57	PDZ6.07b	-	Fill	Fill of [58]	Modern		-	-
OL-07907	58	PDZ6.07b	-	Cut	Vibro Pile	Modern		-	-
OL-07907	59	PDZ6.07b	-	Fill	Fill of [60]	Modern		-	-
OL-07907	60	PDZ6.07b	-	Cut	Vibro Pile	Modern		-	-
OL-07907	61	-	2	Fill	Fill of [62]	Modern		-	-
OL-07907	62	-	2	Cut	Vibro Pile	Modern		-	-
OL-07907	63	-	2	Fill	Fill of [64]	Modern		-	-
OL-07907	64	-	2	Cut	Vibro Pile	Modern		-	-
OL-07907	65	PDZ6.07b	3	Cut	Natural - Channel	-		-	-
OL-07907	66	-	4	Masonry	Brick Wall	Modern		-	-

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OL-07907	67	-	4	Layer	Concrete Strip Foundation	Modern		-	-
OL-07907	68	-	4	Layer	Made Ground	Modern		-	-
OL-07907	69	-	4	Fill	Fill of [70]	Modern		-	-
OL-07907	70	-	4	Cut	Vibro Pile	Modern		-	-
OL-07907	71	-	4	Cut	Cut of unclear function into redeposited clay	-		-	-
OL-07907	72	-	4	Layer	Redeposited Clay	-		-	-
OL-07907	73	-	4	Fill	Fill of [74]	Modern		-	-
OL-07907	74	-	4	Cut	Vibro Pile	Modern		-	-
OL-07907	75	-	4	Fill	Fill of [76]	Modern		-	-
OL-07907	76	-	4	Cut	Vibro Pile	Modern		-	-
OL-07907	77	-	4	Layer	Redeposited Clay	Victorian-Modern		-	-
OL-07907	78	PDZ6.08	4	Layer	Made Ground	Victorian		-	-
OL-07907	79	PDZ6.08	4 6	Cut	Furrow	Victorian		-	3 (12-14) 4 (12-14)
OL-07907	80	PDZ6.08	4	Cut	Furrow	Victorian		-	
OL-07907	81	PDZ6.08	4 5	Cut	Furrow	Victorian		-	1 (33-35) 2 (33-35) 3 (18-20) 4 (18-20) Digi 13 Digi 19
OL-07907	82	PDZ6.08	4 5	Cut	Furrow	Victorian		-	1 (36) 2 (36) 3 (1-2) 3 (18-20) 4 (18-20) Digi 14 Digi 19
OL-07907	83	PDZ6.08	4 5	Cut	Furrow	Victorian		-	3 (3-5) 3 (18-20) 4 (3-5) 4 (18-20) Digi 15 Digi 19
OL-07907	84	PDZ6.08	7	Cut	Furrow	Victorian		-	3 (9-11) 4 (9-11) Digi 17
OL-07907	85	PDZ6.08	4	Layer	Field Soil	Victorian		-	-
OL-07907	86	PDZ6.08	4	Layer	Field Soil	Victorian		-	-
OL-07907	87	PDZ6.08	4	Cut	Furrow?	Victorian		-	-
OL-07907	88			Layer	Field Soil	Victorian			

OL-07907 & OL-08107 Evaluation Report © MoLAS-PCA

OL-07907	89	VOID							
OL-07907	90	VOID							
OL-07907	91			Layer	Field Soil	Victorian			
OL-07907	92			Layer	Natural - Clay				
OL-07907	93			Layer	Natural - Clay				
OL-07907	94			Layer	Natural - Clay				
OL-07907	95			Layer	Natural - Gravels	Pleistocene			
OL-07907	96			Layer	Natural - Gravels	Pleistocene			
OL-07907	97	VOID							
OL-07907	98			Layer	Natural - Alluvium				
OL-07907	99			Layer	Natural				
OL-07907	100			Layer	Natural				
OL-07907	101			Layer	Natural				
OL-07907	102			Layer	Field Soil				
OL-07907	103			Layer					
OL-07907	104			Cut	For Field Soil [86]				
OL-07907	105			Cut	For Field Soil [88]				
OL-07907	106			Fill	Fill of [109]	Modern			
OL-07907	107			Cut	Vibro Pile	Modern			
OL-07907	108			Fill	Fill of [109]	Modern			
OL-07907	109			Cut	Vibro Pile	Modern			
OL-07907	110			Fill	Fill of [111]	Modern			
OL-07907	111			Cut	Vibro Pile	Modern			
OL-07907	112			Cut	For Field Soil [91]				

12.2 OL-08107

Site Code	Context No.	Plan	Section / Elevation	Type	Description	Date	Phase	Drawings	Photos No.
OL-08107	1	PDZ10.01	S2	Cut	Ditch/Drain	?	2	-	
OL-08107	2	PDZ10.01	S2	Fill	Secondary Fill of [1]	?	2	-	
OL-08107	3	PDZ10.01	S2	Fill	Primary Fill of [1]	?	2	-	
OL-08107	4	-	S1	Layer	Made Ground	Modern	5	-	
OL-08107	5	-	S1	Layer	Re-deposited Clay	Victorian-Modern	5	-	
OL-08107	6	-	S1	Layer	Made Ground	Victorian-Modern	5	-	
OL-08107	7	-	S1	Layer	Silty Clay - Poss. Relict Topsoil	?	4	-	
OL-08107	8	-	S1	Layer	Natural Alluvial Clay	?	3	-	
OL-08107	9	-	S1	Layer	Natural Alluvial Clay	?	3	-	
OL-08107	10	-	S1	Layer	Natural Gravels	?	1	-	
OL-08107	11	-	S1	Layer	Natural Gravels	?	1	-	
OL-08107	12	-	S1	Layer	Re-deposited Clay	Victorian-Modern	5	-	
OL-08107	13	PDZ10.01	-	Layer	Natural Gravels	Pleistocene	1	-	

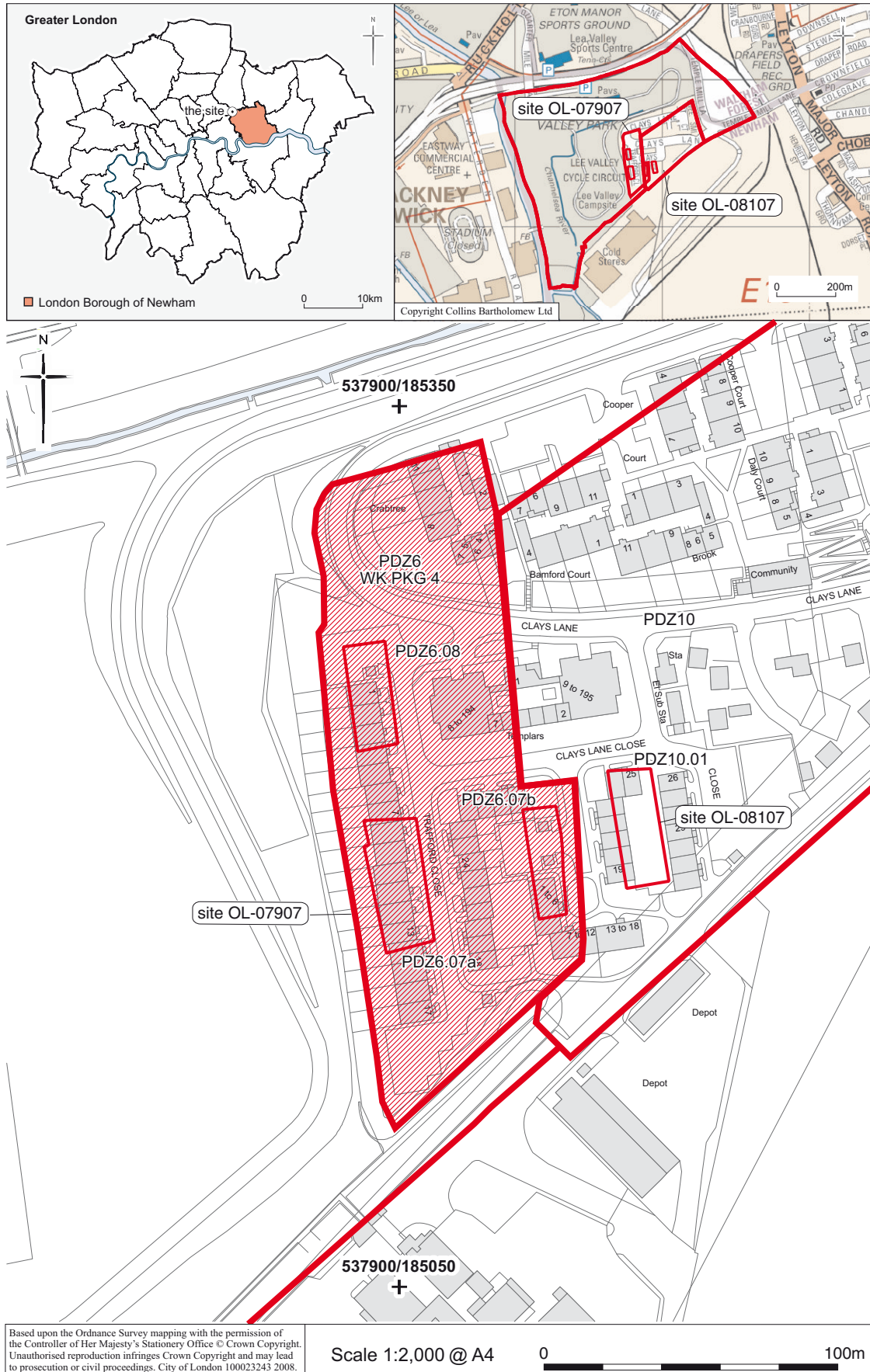


Fig 1 Location map



Fig 2 Trench locations

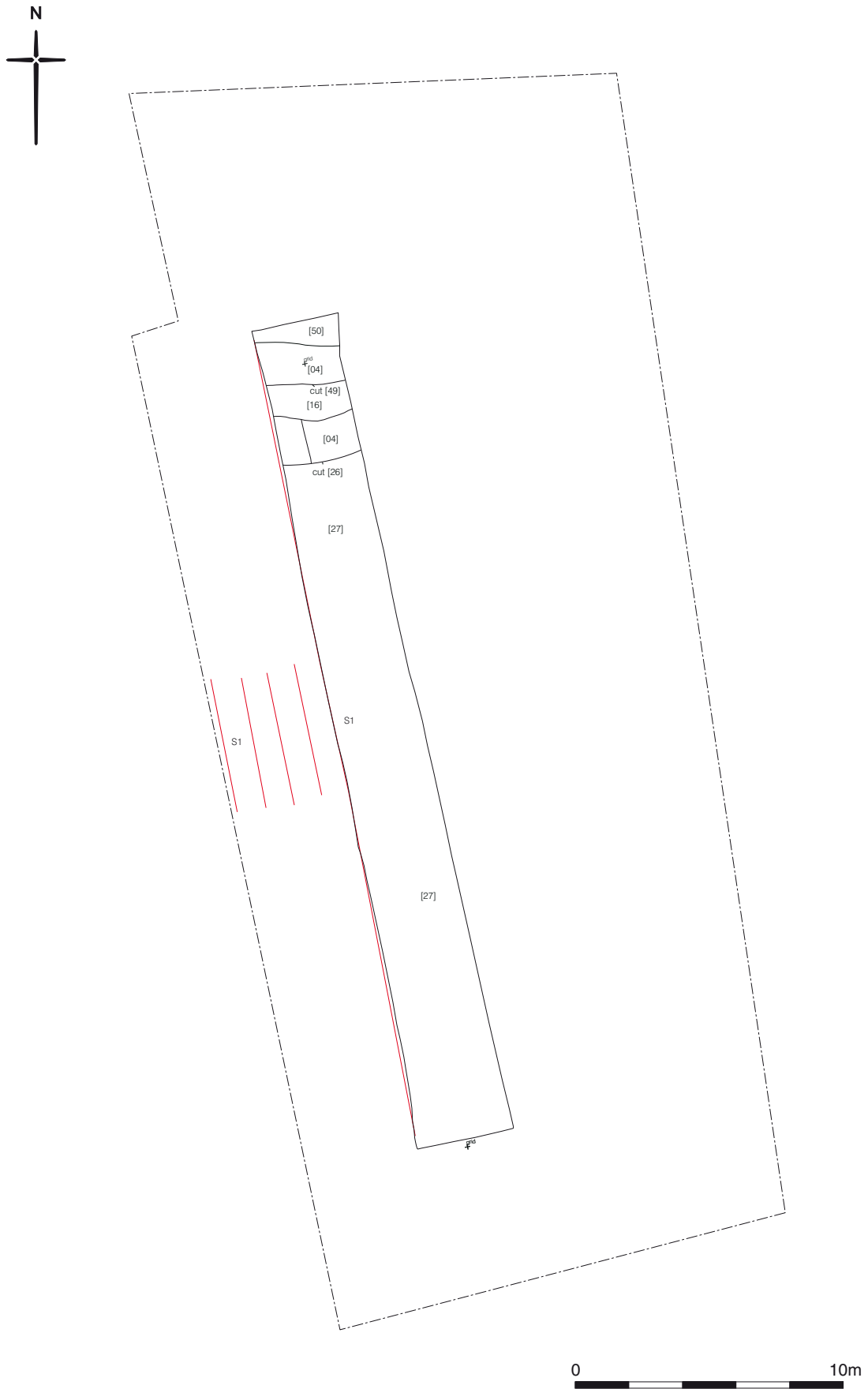


Fig 3 Plan of Trench PDZ6.07a

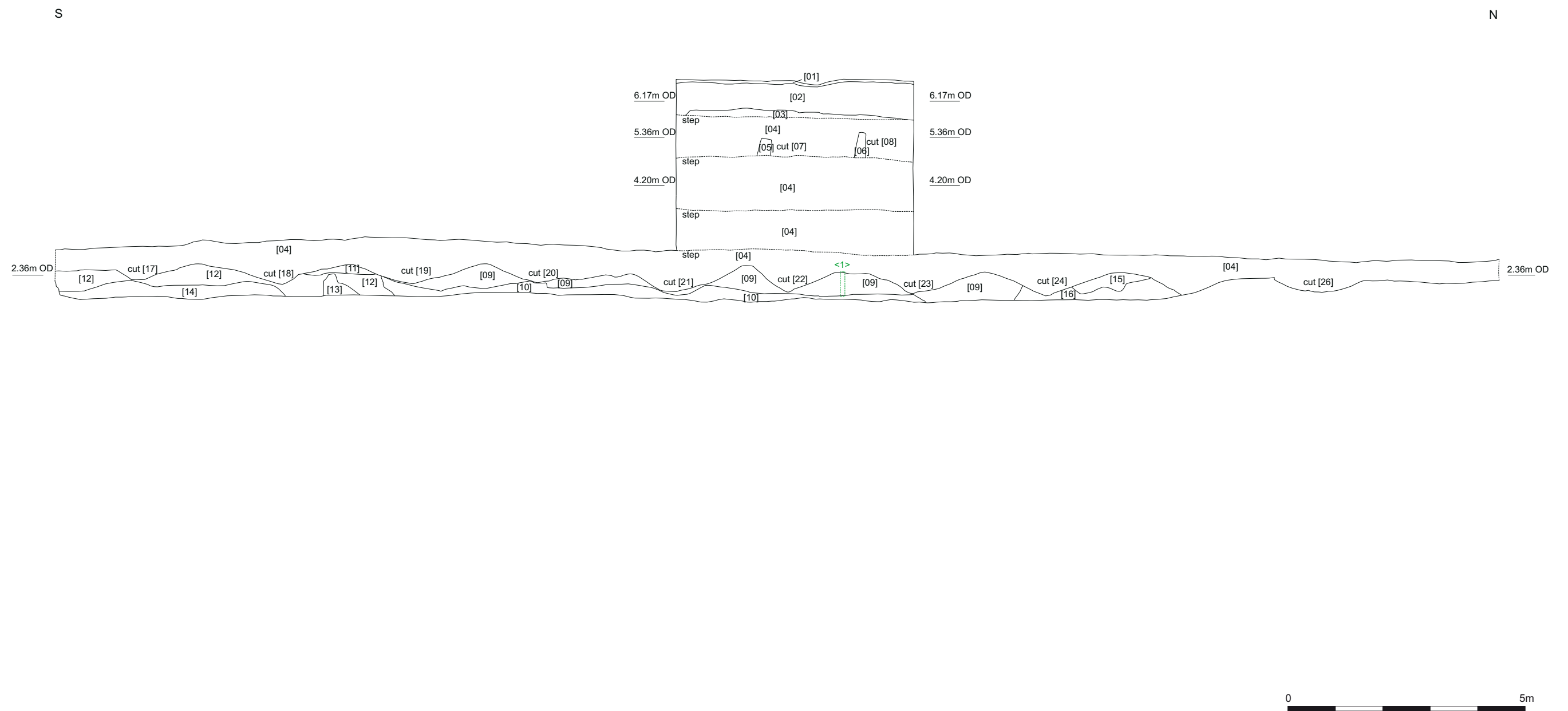


Fig 4 East facing Section 1 of Trench PDZ6.07a

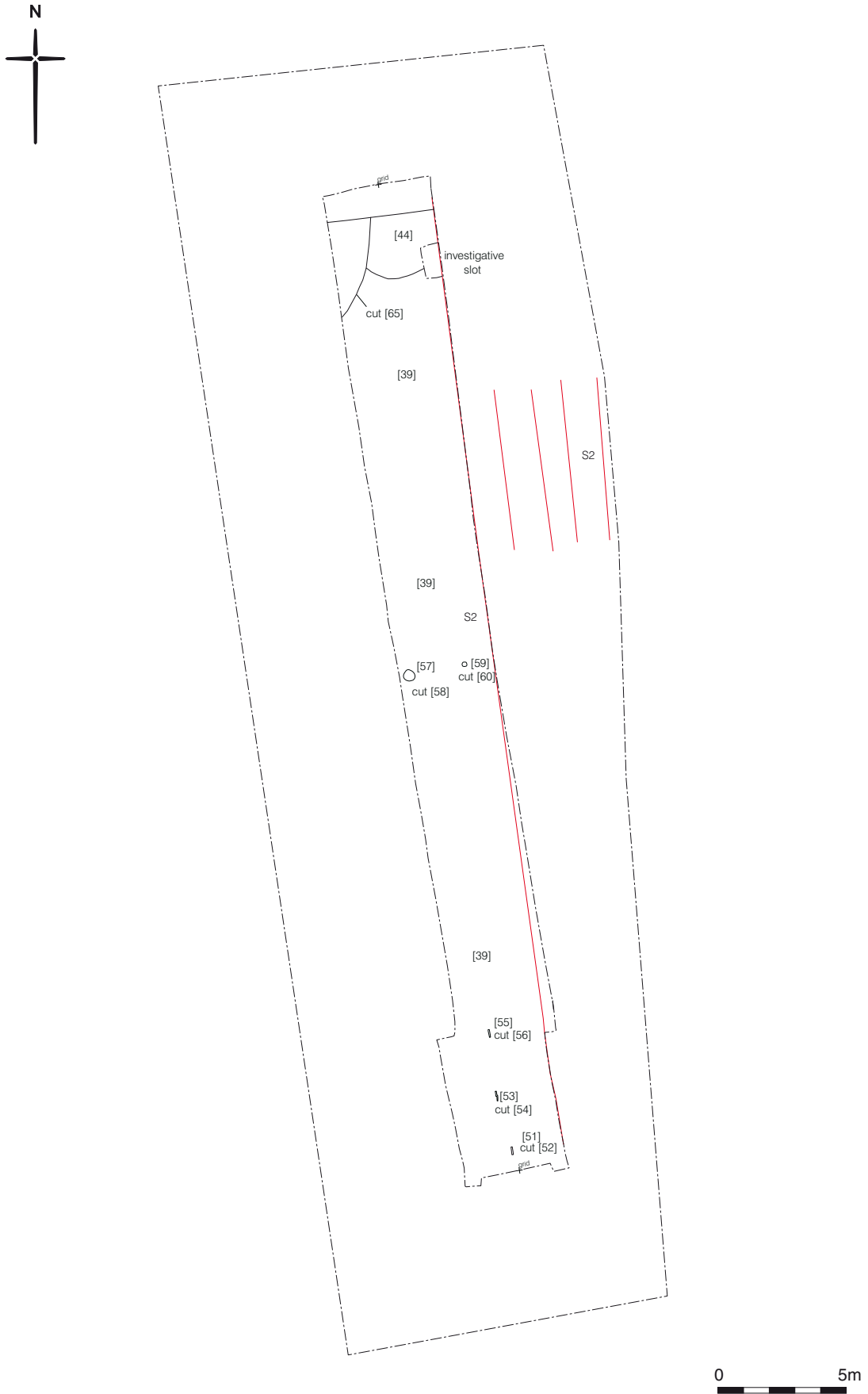


Fig 5 Plan of Trench PDZ6.07b

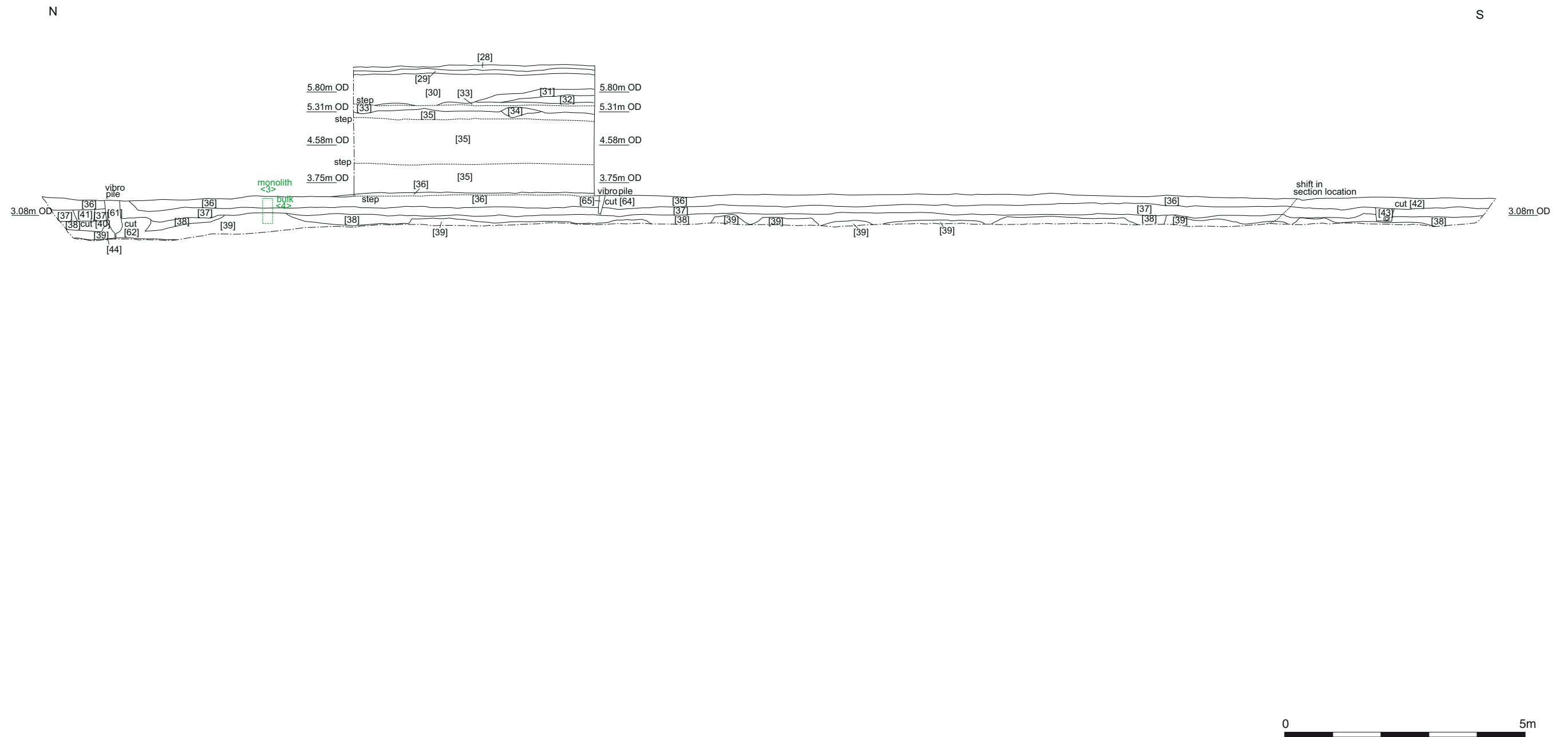


Fig 6 West facing Section 2 of Trench PDZ6.07b

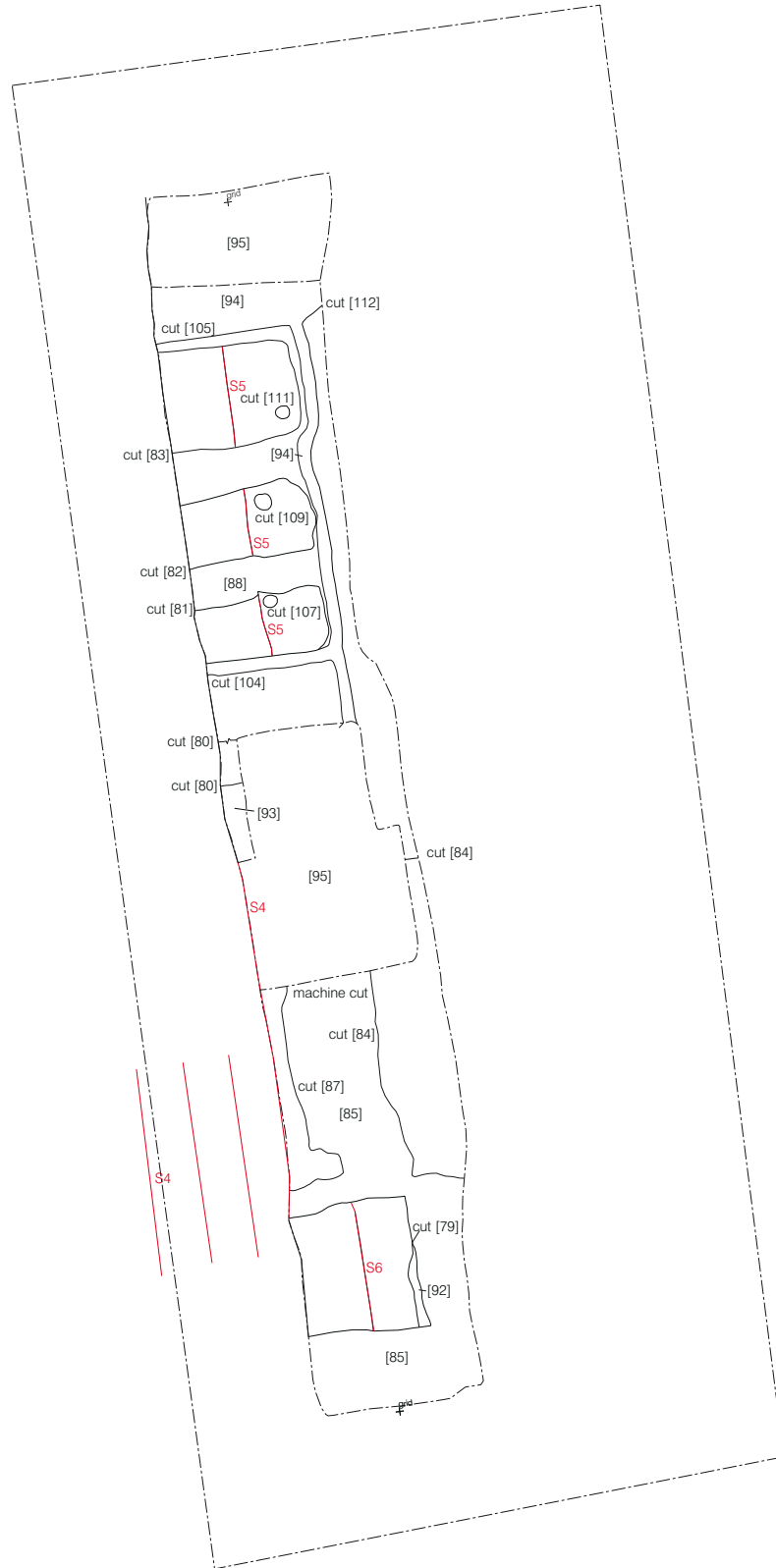


Fig 7 Plan of Trench PDZ6.08

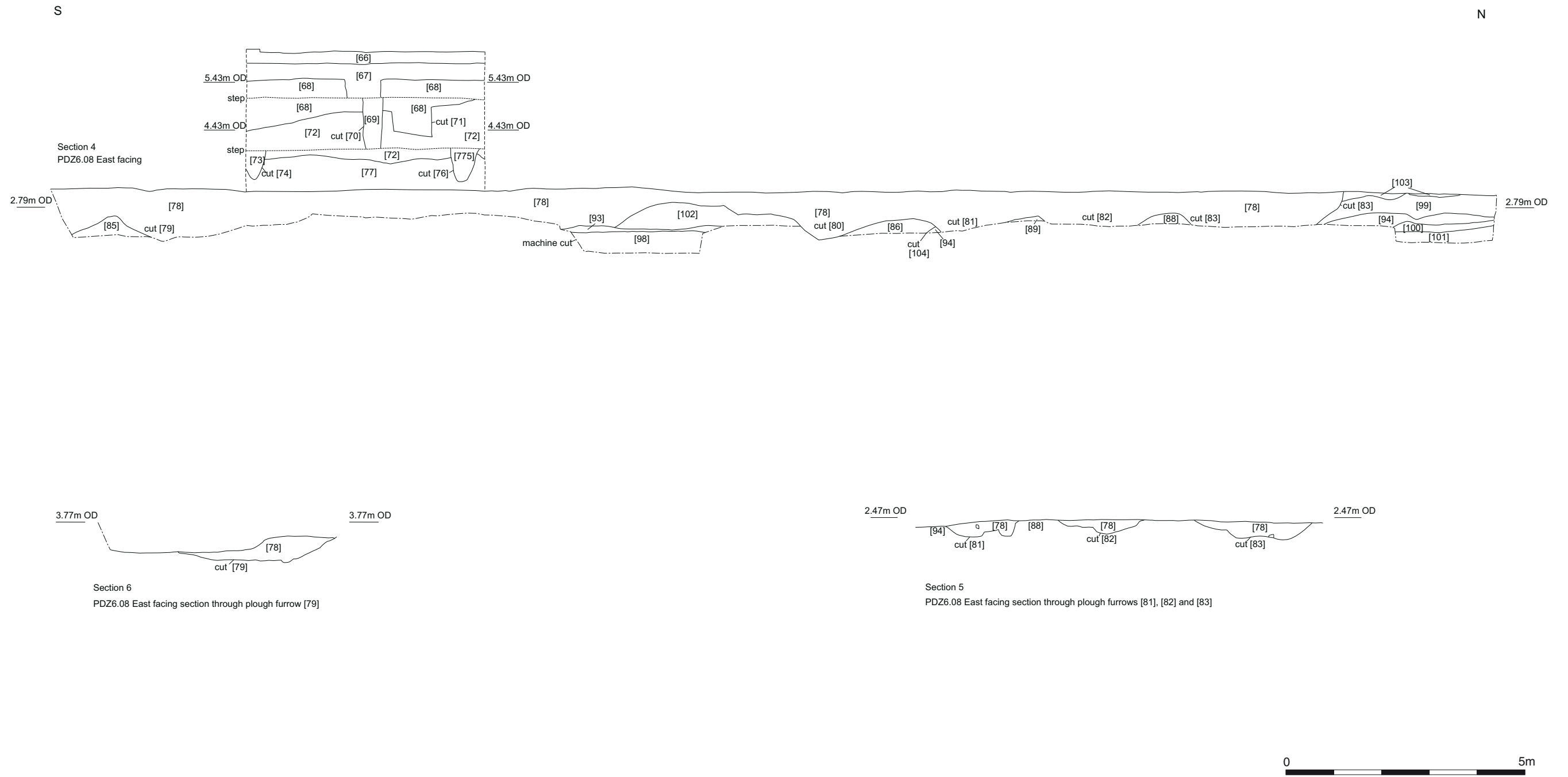


Fig 8 East facing Sections 4, 5 and 6 of Trench PDZ6.08

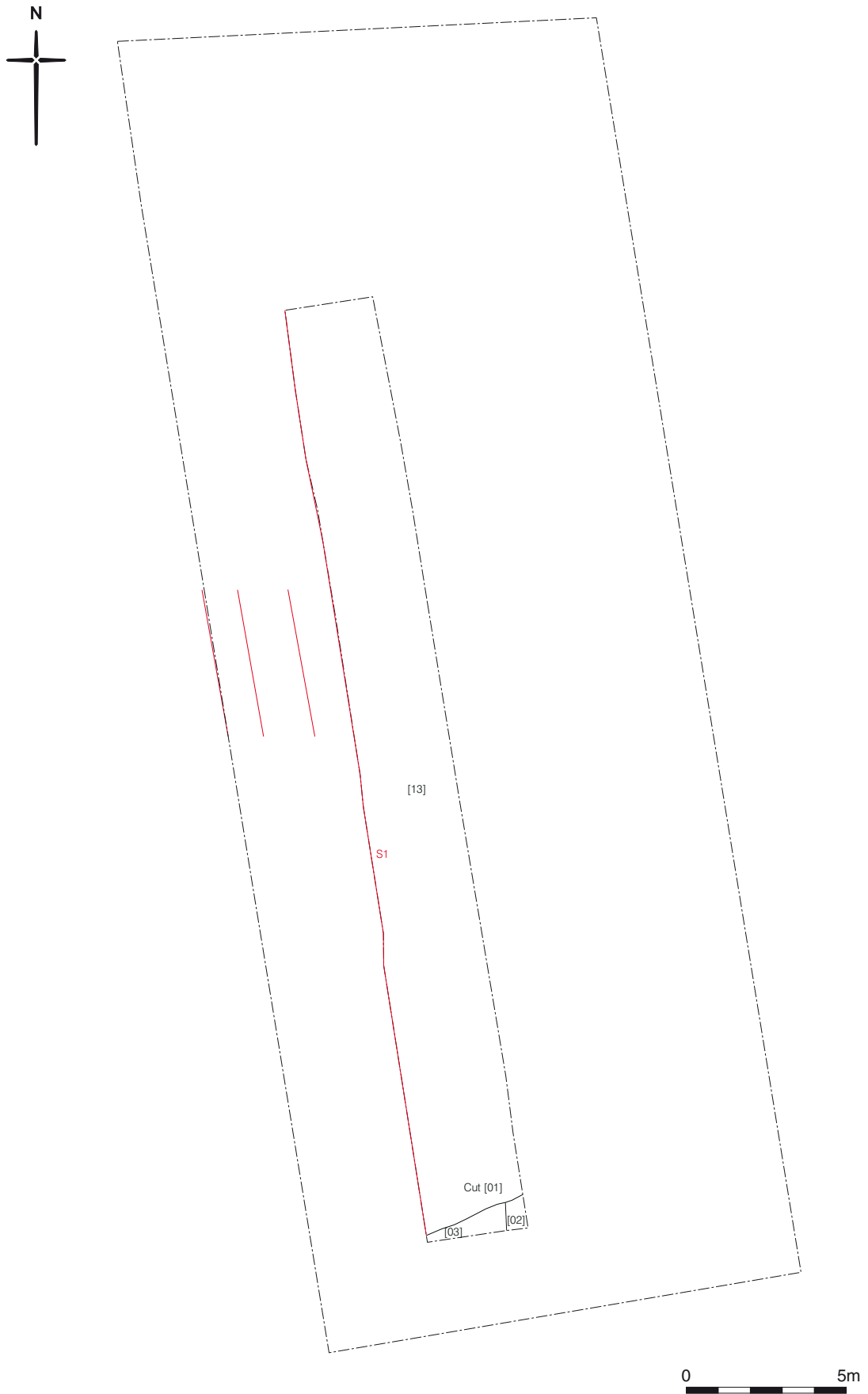


Fig 9 Plan of Trench PDZ10.01

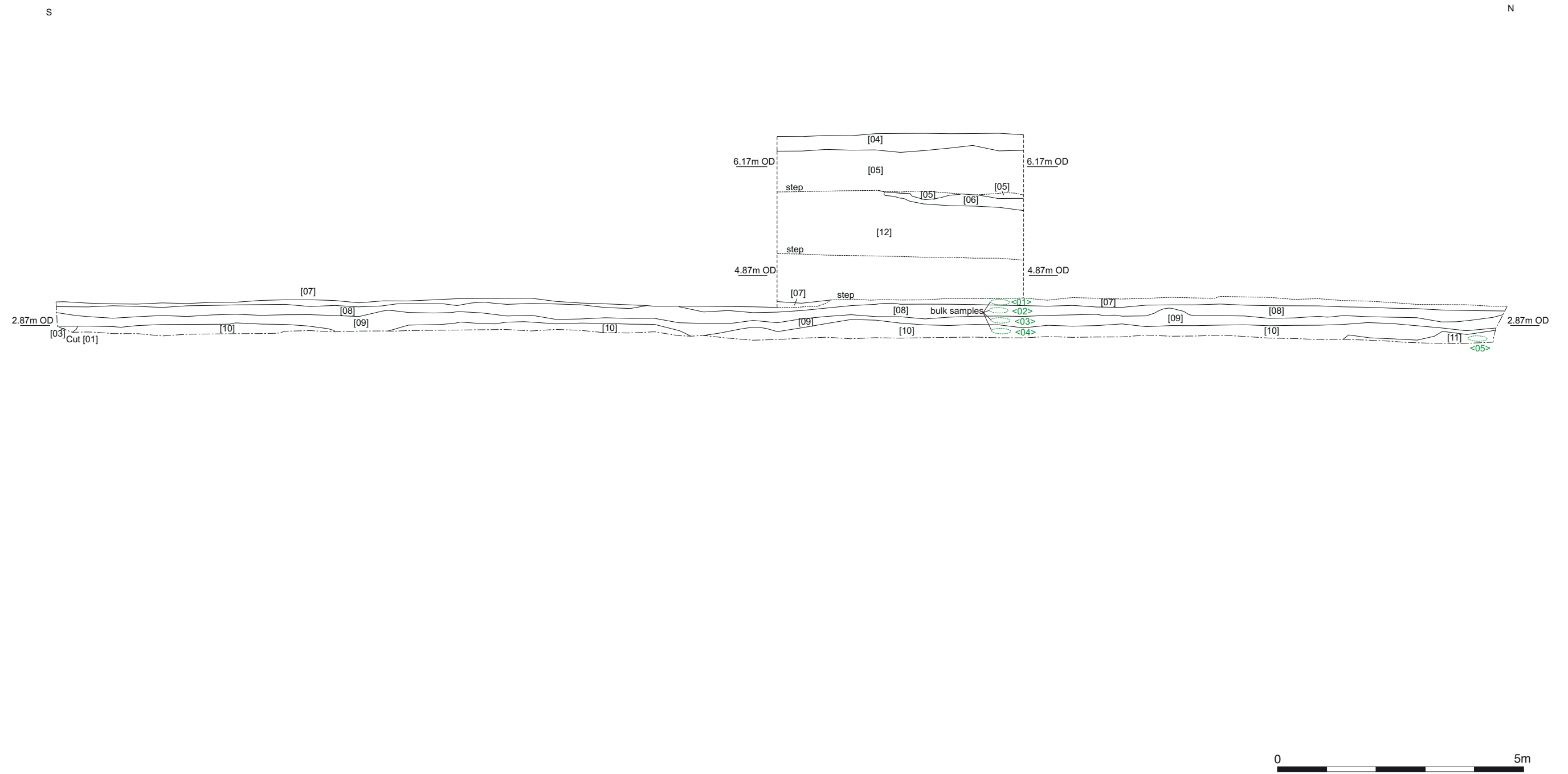


Fig 10 East facing Section 1 of Trench PDZ10.01