67-77 MARLBOROUGH GROVE, LONDON SE1

AN ARCHAEOLOGICAL EVALUATION & ENVIRONMENTAL ASSESSMENT

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67-77 MARLBOROUGH GROVE, LONDON SE1

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SUMMARY

During June 2003, Hertfordshire Archaeological Trust (now AS) carried out an archaeological evaluation at 67-77 Marlborough Grove, London, SE1 (centred on NGR TQ 3422 7825), in advance of proposed redevelopment of the site. The site currently comprises the vacant Marlborough Arms Public House and garden/car park, and a vacant light industrial unit to the south. The open areas consisted of dense vegetation, with evidence of fly-tipping, dumped vehicles and extensive vandalism of the vacant buildings.

The evaluation revealed no archaeological features, though deep alluvial deposits of the former prehistoric marshland of this area were uncovered below substantial recent overburden in the northern part of the site. These included peat deposits up to 1.6m thick, extending to the level of the underlying gravels at -2.11m AOD. No archaeological finds were made in association with the peat deposits. A programme of palaeoenvironmental sampling was undertaken on the site.

A second trial trench was required in the southern part of the site, which was inaccessible due to the presence of a standing print works building during the June 2003 evaluation. This final trench was excavated by AS in February 2004, following demolition of the building. The trench revealed the peat and alluvium deposits to thin out on the rising gravels to the south of the site, though the same sequence was revealed. The underlying gravels in the southern part of the site rise to -1.27m AOD. No archaeological features or finds were present.

1 INTRODUCTION

1.1 During June 2003, Hertfordshire Archaeological Trust (HAT) (now Archaeological Solutions Limited – AS) carried out an archaeological evaluation of land at 67-77 Marlborough Grove, London, SE1 (London Borough of Southwark) (centred on NGR TQ 3422 7825) (Figs. 1 - 3). A further trench was excavated by AS in February 2004, when buildings on the southern part of the site were demolished, concluding the evaluation. The evaluation was commissioned by Pelling Limited on behalf of Horizon Housing Association, in advance of proposed redevelopment of the site. It complied with a planning condition required by the London Borough of Southwark (based on advice from the Southwark Council Senior Archaeology Officer – CSAO) (Planning ref.TP/2358-67, Reg. 9901940). It is proposed to construct 4, 5 & 6 storey residential blocks with associated amenity space/car parking on the site.

1.2 The archaeological evaluation was conducted in accordance with a brief prepared by the CSAO (dated 02/03), and a specification compiled by HAT (now AS) (dated 31/03/03). It also complied with English Heritage, London Region, *Archaeological Guidance Papers (AGP) 2, 3, 5 & 6* (revised 1998) (in particular AGP 5: *Evaluations*), and

the Institute of Field Archaeologists' *Standard and Guidance for Archaeological Field Evaluation* (revised 1999).

1.3 The principal aims of the evaluation were to determine, as far as reasonably possible, the location, extent, date, character, condition, significance and quality of any surviving archaeological remains liable to be threatened by the proposed redevelopment (section 3.3 of the brief). In addition, the specific aims of the project (as defined in section 1.2 of the brief) were to address (as far as possible):

- The presence, date and nature of any prehistoric activity and how it relates to that already known in the area
- The presence of any Roman activity, in particular any evidence of the road system, buildings, agricultural activity, further evidence of burials and the relationship to the main settlement area to the north-west at Southwark and other contemporary settlements
- To assess the date of the peat deposits that are known to be present on the site and the circumstances of their deposition. In particular to understand whether they relate to the large, post-glacial lake known to be present in the vicinity or other marshland / palaeochannels
- The depositional circumstances of the alluvial clay formation on the site, and the chronology of the deposition
- Previous land-use and human utilisation of the immediate area of the site, by reference to the pollen record in the peat and alluvium
- The topographic and environmental profile of the site, to further refine the predictive models for the area
- The presence of any medieval or post-medieval activity on the site

2 DESCRIPTION OF THE SITE (Figs. 1 - 3)

2.1 The site is currently occupied by the vacant Marlborough Arms Public House and garden/car park, with a vacant light industrial unit (former printing works) to the south. The latter was standing in June 2003, but was demolished by February 2004. There was dense vegetation in the open areas and evidence of fly-tipping, discarded vehicles and extensive vandalism of the vacant buildings. A geotechnical report by Soil Mechanics (December 2001) indicated the presence of made ground above extensive alluvial clay/peat deposits, above Thanet Sand and a chalk bedrock.

2.2 The site lies close to the south-east of the Bricklayers Arms, on the northern side of the A2 Old Kent Road. The site fronts Marlborough Grove to the east, Penry Place (with a barred access) to the north and Longland Court to the west. The site is generally surrounded by low-rise and high-rise local authority blocks. Access is obtained from Penry Place via a gated hoarding.

2.3 The principal archaeological significance of the area lies in the potential for remains of the prehistoric period and Roman ribbon development along Dover Street / Old Kent Road (Watling Street). In addition, the area has a lower potential to reveal remains of medieval / post-medieval occupation associated with the course of the Old Kent Road.

Historic cartographic sources suggest that the area was developed after 1822, when the line of Marlborough Grove was set out (see below).

2.4 The site lies within an area of former marshland, to the north of the line of higher ground occupied by the former course of Roman Watling Street (now the A2 Old Kent Road). Marine transgressions over the last 10,000 years have resulted in the deposition of peats and clays above the fluvial gravels and sands of the area. Archaeological investigation at the Bricklayers Arms Railway Goods Depot to the north-west has revealed evidence of the late Neolithic / early Bronze Age exploitation of the margins of the Bermondsey eyot and surrounding marshland, with the presence of a Hoxnian lake. It is possible that this post-glacial lake extends into the area of the current site. Peat deposits associated with the former marshland in the area have revealed evidence of a brushwood platform of late Bronze Age date (Merriman 1992) (GLSMR 091173). Investigations at Mawbey School on Rolls Road close by to the north-west revealed wooden stake lines driven into the peat and sealed by 19th century dump deposits. Excavations to the south of the site at 21-35 Marlborough Grove revealed prehistoric activity on the higher ground closer to the ridge along which runs the Old Kent Road, in the form of a significant Mesolithic and Neolithic flint-working site.

2.5 At the Mawbey School, Rolls Road, natural gravels were found at –1.01m AOD sloping down to –2.34m AOD southwards, with the upper surfaces of peat deposits following the same slope down from +0.07m AOD to –1.40m AOD. At 21-35 Marlborough Grove, natural sand deposits lay between +0.94 to 1.07m AOD. The current site lies at around 1.30m AOD. The brief notes that the geotechnical report records the upper level of the sands on the site as being between 4.9-2.6m below the current ground level (Soil Mechanics 2001). Substantial peat and alluvial deposits are present above the sands, with peat a maximum 2.6m thick. Made ground of more recent date overlies the peat / alluvium up to 2.4m below the current surface.

3 ARCHAEOLOGICAL BACKGROUND

Palaeolithic/Mesolithic

3.1 Evidence associated with this period consists largely of casual finds of tool and debitage scatters from sites such as Nunhead cemetery, Rotherhithe, Old Kent Road (B&Q site) and Marlbourgh Grove (MOLAS 2000: 42 & 61; GLSMR 090715; 091092; 091361; 091587 respectively). The former shoreline of a large lake which existed further north in Bermondsey in the earlier Mesolithic period is thought to lie close by (MoLAS 2000, 52).

Neolithic

3.2 Wetland marshes dominate the local landscape during much of the Neolithic and Bronze Age, characterised by the deposition of further alluvial clays and the beginning of the build up of peat layers, accompanied by a general rise in the evidence for human activity in this area. Locally there is little evidence for actual occupation though the increase in finds of lithic tools / assemblages would seem to indicate an increased human presence. The general lack of evidence for occupation around the Thames and its estuaries

in this period is likely a result of the masking of sites by alluvial re-deposition during the following rise in sea level associated with the following wetter periods.

Bronze Age

3.3 Evidence of Bronze Age occupation is more obvious locally, often found in association with peat layers. A number of isolated finds including a flint dagger, discovered at London Bridge, a spearhead from Southwark Park and a socketed axe found at a site on Old Kent Road (GLSMR 090709; 090906; 090194 respectively) date to this period.

3.4 A ring ditch at Fennings Wharf (GLSMR 090686) is known, dating to the early Bronze Age. Other occupation sites include a 16m long enclosure associated with Bronze Age pottery at Platform Wharf. There are a few other settlement sites known locally for this period.

3.5 A series of trackways at Bramcote Green dating to *c.*3570-3630 B.C. +/- 70 (Thomas & Rackham 1996) and another at the Bricklayers Arms, have been found to project from the southerly margin of the Bermondsey Eyot (GLSMR 091173; MOLAS 2000: 89; Drummond-Murray *et al* 1994). These trackways are all within, and sealed by, peat deposits and represent 'paths' built by resident Bronze Age communities in order to cross the local flooded peat marshes in order to connect the more elevated, and so more inhabitable, gravel islands (eyots).

Iron Age

3.6 Increased use of previously marginal land is characteristic of Iron Age London (MOLAS 2000: 102), though locally the Iron Age is quite poorly represented. Evidence comprises a pit and some associated pottery at Grange Road, St Thomas' Street and a number of postholes and potsherds from Southwark Street (GLSMR 091284; 090999; 090827). Other, more substantial evidence for Iron Age occupation is provided by a ditch (possibly part of an Iron age enclosure / field boundary) associated with a roundhouse structure at the Courage Brewery site (GLSMR 091376; 091159).

Roman

3.7 A suburb flourished south of the river and *Londinium.* It was generally confined to the main island at the southern end of the bridge and the nearest eyots. Settlement was dictated by the complex foreshore topography of the time. Roman occupation is known at the Bermondsey and Horsleydown eyots, though there is as yet no conclusive evidence for contemporary land surfaces in the Roman period. While no clearly recognisable patterns of land use have been distinguished for this area, the common occurrence of ditches suggests at least some form of managed rural landscape.

3.8 Ten local cremation sites and 15 inhumation sites are recorded in the MoLAS assessment document (MoLAS 2000). Much of the funerary activity in this area can be seen to be concentrated along Long Lane, Grange Road and the old and new Kent Roads (forming the A2). The former of these thoroughfares is known to have been important from the earliest medieval periods, following the highest ground along a small ridge across the Bermondsey Eyot. The concentration of burials along these roads here could indicate that

the line of these roads is of considerable antiquity, suggesting a possible Roman access road, as yet not characterised. The line of the modern A2 is more firmly known to have a Roman ancestry, combined with Dover Street it shadows the course of Roman Watling Street.

3.9 The Roman settlement south of the river has produced much evidence for industrial activity, notably from the site of Courage's Brewery where workshops, 70 or so hearths, slag, coal and charcoal have been found. Iron smithies also lay along the approach to the bridge across the Thames at London Bridge Station (Drummond-Murray *et al* 1998). Copper-alloy working has also been recorded at 106-114 and 201-211 Borough High Street (MoLAS 2000). Evidence for other structures throughout Southwark tend to be concentrated along the northerly approaches to the bridge. These include tessellated pavements and buildings at King's Head Yard (GLMSR 090219) and St. Thomas' Street (BLSMR 090222); tessellated pavements / mosaics at Park Street (GLSMR 090229; 090230), Southwark Street (GLSMR 090234), Borough High Street (GLSMR 090331), Southwark Cathedral (GLSMR 090555), and London Bridge (GLSMR 090552; 090557) (MoLAS 2000). Evidence for Roman buildings and industry on the Bermondsey Eyot itself is sparse. However, sites on the western edge of the Eyot have produced quantities of discarded building materials found in ditches and pits (Heard 1996).

3.10 The archaeological potential for the site in the Roman period is generally for roadside occupation or burials. The road probably lay to the south of the present line of the Old Kent Road, but a Roman cremation was discovered in the early 1980s at the Marlborough Grove / Old Kent Road junction.

Saxon

3.11 Southwark is mentioned in the 10th century Burghal Hideage, which refers to the area as *Suthringa geworche*, (the fortification of the men of Surrey). At the end of the 11th century the 'south work' is mentioned, distinguishing Southwark from the main City's defences (Wooldridge 2001). Although the name Bermondsey is of Saxon derivation (Beormund's eye [island]) and the land may have belonged to a Saxon lord of that name, the earliest known occupation site of this period was at Bermondsey Abbey in the Middle Saxon period. This is attested to by the discovery of a ditch pre-dating the Abbey, containing sherds of Ipswich ware, chaff-tempered pottery and *sceattas* dating to the 8th century (Abbey Buildings, Abbey Street, GLSMR 090690). The earliest documentary evidence associated with the Abbey is a letter from Pope Constantine (AD 708-715), addressed to Hedda, 'Abbot of Bermondsey and Woking' (Heard 1996).

Medieval and Post-medieval

3.12 Whilst there is substantial evidence for activity in the medieval period to the north of the site (particularly in Bermondsey) (Gardner 2001), the assessment site appears to have remained out of use and undeveloped for many years. In the mid-1870's it was part of a row of Victorian houses with adjoining gardens (fronting the then Little Marlborough Place), though a public house is shown on the site since at least the 1890s (and probably the 1870s) (Fig. 4). Housing occupied much of the area to the north and east, however the land appeared undeveloped to the west, occupied before the end of the 19th century by Avondale Square. The site remains generally unchanged until after the Second World War, when it

seems that the area has been divided into two sections, the Marlborough Arms PH in the north-east, and a large building with three small outbuildings to the south-west (the former printing factory). The area suffered extensive bomb-damage during WWII (cartographic sources indicate a number of ruined structures in the area in the early 1950s – see Fig. 5). Penry Place was formerly Little Marlborough Place until the area was redeveloped after the 1960s.

3.13 The public house has the external stylistic appearance of 1930s date, likely rebuilt from that shown on the Victorian maps (see Plate).

4 ARCHAEOLOGICAL METHODOLOGY (Figs. 6 - 8)

4.1 Two trial trenches (each 2m x 3m at base) were proposed in locations agreed with the client and CSAO (Fig. 2). Trench 2 was not accessible prior to demolition of the industrial buildings, and was excavated at a later date by AS (by agreement with the client and CSAO). Trench 1 was excavated in its proposed location within the former car park of the public house. It was stepped to allow safe access for personnel. Trench 2 was excavated in the area of the former print works, following its demolition in February 2004.

4.2 All excavation and recording complied with EH, London Region, *Archaeological Guidance Papers (AGP) 2,3,5 & 6* (revised 1998) (in particular AGP 5: *Evaluations*), and the Institute of Field Archaeologists' *Standard and Guidance for Archaeological Field Evaluation* (revised 1999*)*.

4.3 Trenches 1 & 2 were excavated using a 180^{o} wheeled mechanical excavator (JCB). Hard surfaces and overburden was removed mechanically, thereafter any further excavation was to be undertaken by hand. The surface of the peat was cleaned by hand and closely examined for the presence of artefacts/archaeological features/timber structures. In addition, all excavated spoil was screened on the surface for the presence of archaeological and ecofactual artefacts.

4.4 The deposits revealed were recorded using *pro-forma* recording sheets, drawn to scale and photographed as necessary.

4.5 Environmental deposits were recorded and sampled by Dr Rob Scaife during two site visits (19/06/03 & 25/2/04).

5 DESCRIPTION OF RESULTS

The individual trench descriptions are listed below.

5.1 Trial Trench 1 (Figs. 6 & 7)

Sample section (0.00 = 1.31m AOD):

0.00m – 0.06m	Concrete Slab.
0.06m – 1.20m	L1000. Modern Overburden. Loose yellow stock brick/concrete rubble etc.
0.00 – 1.80m	L1002. Overburden. Dark grey sandy loam with frequent red brick rubble and concrete/glass fragments.
1.80 – 2.40m	L1003. Alluvial Clay. Light brown gleyed clay with a pale grey silt. Partially oxidised.
2.40 – 4.00m	L1004. Peat. Dark brown fibrous peat with occasional detrital wood fragments. Highly oxidised, becoming black in the central part of the deposit. 'Fen type' peat.
4.00 – 4.10m	L1005. Alluvium. Light grey marl.
4.10 – 4.20	L1006. Alluvium. Light to mid grey sandy silt with fine gravel. Interface layer between the basal gravels and alluvium.
4.20m+	L1001. Basal Gravels.

Description: No archaeological features or finds were identified within the trench. The peat and alluvium deposits were extensively sampled for palaeoenvironmental remains.

5.2 Trial Trench 2 (Figs. 6 & 8)

Sample section (0.00 = 0.75m AOD):

0.00 – 0.55m	L1000. Modern Overburden. Loose yellow stock brick/concrete rubble etc.
0.55 – 0.93m	L1002. Overburden. Dark grey sandy loam with frequent red brick rubble and concrete/glass fragments.
0.93 – 1.05m	L1003. Alluvial Clay. Light brown gleyed clay with a pale grey silt. Partially oxidised.
1.05 – 1.58m	L1004. Peat. Dark brown fibrous peat with occasional detrital wood fragments. Highly oxidised, becoming black in the central part of the deposit. 'Fen type' peat.
1.58 – 1.88m	L1005. Alluvium. Light grey marl.
1.88 – 2.02m	L1006. Alluvium. Light to mid grey sandy silt with fine gravel. Interface layer between the basal gravels and alluvium.
2.02m+	L1001. Basal Gravels.

Description: No archaeological features or finds were identified within the trench. The peat and alluvium deposits were extensively sampled for palaeoenvironmental remains.

6 CONFIDENCE RATING

6.1 It is not felt that any factors hindered the recognition of archaeological / palaeoenvironmental evidence. The trenches allowed characterisation of the stratigraphic layout of the site to be fully ascertained. Environmental samples were taken in order to date and characterise the alluvial/peat deposits.

7 DEPOSIT MODEL (Fig. 7 & 8)

7.1 In Trench 1, twentieth century overburden (in the form of brick rubble and dark grey sandy loam) directly overlay alluvial marsh clays at some 1.8m below existing. These deposits (some 0.6m thick) overlay a substantial, 'fen-type' peat deposit (some 1.6m thick and extending to 4m below the existing ground surface). Two thin layers of marly silt and gravel below this formed the interface with the natural gravels. The surface of the natural gravel in the northern part of the site is at -2.89m AOD.

7.2 The same sequence was repeated in Trench 2 to the south, though the deposits were much shallower with basal gravels rising away from the former marsh. Basal gravels were encountered at some 2.02m below existing (-1.27m AOD).

8 DISCUSSION

8.1 The evaluation characterised the deep peat/alluvium deposits which underly much of this area of former marshland. The area is still low-lying (around 1.3m above sea level), and the natural gravel deposits occur well below sea level. The gravel deposits were found to rise markedly towards the south of the site.

8.2 No archaeological features or finds were identified on the site in association with the alluvium or peat deposits. Studies locally indicate that the alluvial clays generally date to the Iron Age/Roman period, and the peats date to the Bronze Age or earlier.

8.3 No evidence for the presence of a large, post-glacial lake in this area was identified, and the peat deposits are indicative of general, fen-type marshland. No evidence for the prehistoric activity recorded on the higher ground to the south at 21-35 Marlborough Grove was identified, the area clearly being too marginal at this time for sustained occupation.

8.4 No early buried soils or land surfaces survive above the alluvial layers. Overburden of relatively recent date, associated with development and rebuilding on the site since the 19th century, has truncated any such deposits.

8.5 No Roman finds were made, even in residual contexts, and no evidence of mediaeval activity was identified.

8.6 A full programme of environmental assessment of the peat and alluvial deposits on the site is being undertaken, and will form a separate report.

9 DEPOSITION OF ARCHIVE

9.1 The archive will be deposited with the Museum of London Archive Facility at Eagle Wharf.

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APPENDIX 1
Marlborough Grove, Bermondsey, London (MGV 03): An Environmental Assessment of the Sediments

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1.) Introduction

Geotechnical work prior to the re-development of the Marlborough Arms public house on Marlborough Grove revealed that there was a substantial deposit of peat present on the site. This unit become thinner across the site and possibly represents the extreme margins of the River Thames floodplain. The peats are underlain by gravel of Devensian (last glacial) age and overlain by alluvial silts and clays. It is suggested that the whole sequence may have been influenced by changing local base levels caused by more regional eustatic changes, that is, changes in relative sea level which affected the local hydrology. Clearly the site offered potential for palaeo-environmental examination and the possibility of preserved archaeological remains such as prehistoric trackway's (none were found). During the course of re-development of the site, visits were made to examine the stratigraphy and to obtain samples for analysis including pollen, diatoms, plant macrofossils and radiocarbon dating. This report presents the results of this preliminary examination.

2.) Stratigraphy

Two profiles (sections 1 and 2) were examined. Sediments were characterised according to texture and colour using a standard Munsell colour chart. Context numbers are based on the gross stratigraphical divisions noted on-site. Both sections comprise basal gravels overlain by peat which is in turn capped by alluvial sediments and modern overburden. Section 1 has a thicker sequence of very highly humified peats which are also overlain by grey alluvial sediments and modern debris. Section 2 may represent the absolute margins of the floodplain

2.a.) Section 1

Surface at +1.31m OD. This profile is the deeper of two machine excavated trenches and contains a thicker sequence of peat. Radiocarbon dates from the upper peat/sediment contact and the basal horizon have been submitted. The principal contexts and stratigraphy of the profile was recorded in section (Figure 7). The monolith profile sampled for pollen and diatoms was described as follows.

Depth cm	
	Rubble overburden (1000)
0 – 9	Grey (10YR 6/1)-brown (10YR5/6 to 10YR6/6); silty clay (1003).
9 – 19	*Dark brown/black organic detritus containing reworked pellets (5-6mm) of the overlying silty clay. Transition between (1004) and (1003).*

19 – 135	*Black (10YR 2/1) highly humified, compacted detrital peat with little structure apart from occasional monocot. remains and twigs (*Alnus*) at 37-38cm, 46-47cm and 57-58cm. (1004).*
	Light grey marl (1005).
	Light grey silt (1006)
-2.11m.OD.	Basal gravel (1001)

2.b.) Section 2

This profile comes from the margins of the peat sequence and is substantially thinner and even more humified than in section 1. The overall stratigraphy was described in the field and recorded in section (Figure 8) The stratigraphy of sample monoliths examined for pollen is as follows.

Depth cm	
	Made ground containing brick rubble.(1000) (1002).
0 –11	Pale brown and light grey alluvial silts (fine) and clay (1003).
11 – 25	Detrital peat and silty clay with pea sized granules of reworked/disturbed organic silt.
25 – 60	Very dark brown to black, highly humified detrital peat (1004). No structure. Containing sand grains and occasional rounded and sub-angular flints and patches of red-brown staining (oxidation).
60 – 72	Dark grey, medium and coarse sand with occasional lenses of 'clean' white sand (?riverine) especially at the interface with the peat (1005)
72 – 82	Coarser yellow sand with pebbles grading down into lower gravels. NB. greyer matter towards the top of the unit as transition into above.
82 – 92	Coarse basal gravel (to 3cm) in sandy yellow matrix (1000)

3.) Pollen Analysis

Monolith profiles taken from both sections were sub-sampled for pollen analysis. A pollen assessment has been carried out with the aims of establishing

(i.) whether sub-fossil pollen and spores are preserved in these sediments

(ii.) to provide a preliminary view of the palaeo-vegetation and environmental change especially in relation to human activity and possible eustatic changes.

(iii.) to give some initial indication of the age of the material based on comparisons with known patterns of vegetation development.

Samples examined from both section contained sufficient pollen to enable preliminary pollen counts and a standard pollen diagram to be constructed. The results of this analysis are given below.

3.a.) Pollen method

Overlapping monolith profiles were taken directly from the excavated sections of excavation 2. In the case of section 1 this was not possible because of the depth of the

excavation and limited ability to step the trench profile. Sub-sampling of the monoliths for pollen and diatom analysis and stratigraphical description of the profiles (section 1 above) was carried out in the laboratory. Standard techniques were used on samples of 1-2ml volume (Moore and Webb 1978; Moore *et al.* 1992). Pollen was identified and counted using an Olympus biological research microscope fitted with Leitz optics. The pollen sum counted for each level was variable depending on the state of preservation and the absolute pollen frequencies present. A total pollen sum of 100 to 150 grains per level was counted where preservation made this possible. Preliminary pollen diagrams have been constructed for both sections and plotted using Tilia and Tilia Graph (figure 1). Percentages have been calculated as follows:

Sum =	% total dry land pollen (tdlp)
Marsh/aquatic =	% tdlp+sum of marsh/aquatics
Spores =	% tdlp+sum of spores
Misc. =	% tdlp+sum of misc. taxa.

Taxonomy in general follows that of Moore and Webb (1978) modified according to Bennett *et al.* (1994) for pollen types and Stace (1992) for plant descriptions. These procedures were carried out in the Palaeoecology Laboratory of the School of Geography, University of Southampton.

3.b.) The Pollen Data

Two separate sections have been examined (Figs.7-8). The pollen data obtained from the analyses of these are detailed below.

3.b.i.) Section 1

The peat sequence of this section comprises highly humified, detrital peat in which, as a result, pollen is sparse with absolute pollen frequencies declining markedly down the profile. However, three pollen preliminary pollen assemblage zones have been recognised in the upper peat and its transition into overlying alluvium. These local pollen assemblage zones are characterised as follows.

Zone M1:A 60cm to 55cm. Quercus-Tilia-Alnus. Trees and shrubs are dominated by *Alnus* (alder) dominant (64%) with *Quercus* (Oak), *Tilia* (10%) and *Corylus avellana* type (most probably hazel but possibly also sweet gale). There are few herbs with only occasional marsh taxa present. Spores of ferns comprise largely *Dryopteris* type (Typical ferns; 27%) and a small number of *Sphagnum* spores.

Zone M1:B. 55cm to 25cm Quercus-Salix-Poaceae-Cyperaceae. Tree and shrub pollen decrease and herb pollen assemblages be come more important (to 55% of total pollen). *Alnus, Corylus avellana* type and *Tilia* of zone 1 decline while relative values of *Quercus* (38%) and *Salix* (willow; 18%) expand. Poaceae (Grasses) expands to dominance (to 52%). Herbaceous diversity also increases in the upper levels of this zone with increases of Chenopodiaceae (goosefoots and oraches), *Rumex* (dock) and *Plantago lanceolata* (ribwort plantain). Marsh taxa become more important with a sharp expansion of Cyperaceae. Spores of ferns include *Dryopteris* type and *Pteridium aquilinum* (bracken). *Thelypteris palustris* (marsh fern)is present in the base of these zone.

Zone M1:3 Tree and shrub percentages decline further whilst herbs become important with increased diversity. *Quercus* (5%) and *Alnus* (to 10%) remain the most important trees with *Salix* the dominant shrub (declining 18% to 5%). Marsh taxa remain dominated by Cyperaceae (which attain highest values in this profile (to 60%) along with an increase in *Typha angustifolia* type (bur reed and reed-mace; 4%). Spores remain dominated by *Dryopteris* type 50%) whilst *Pteridium aquilinum* is absent in this zone after previously high values.

Section 1: The past vegetation and environment

As noted above, the peat of this section is very humified, detrital fen peat with little structure. This is in part due to the present dryness of the site but also reflects the depositional environment. Pollen zone M1:1 has high values of alder (*Alnus*) and it is likely that alder carr woodland was growing on-site along the margins of the flood-plain fringing the dry-land. This is also corroborated by occasional alder twigs which were noted in the section. The habitat, although peat forming, was probably relatively dry, especially during summer months when micro-biological activity would also have been great. This environment was detrimental to pollen preservation and has been observed at other London sites.

Adjacent to the floodplain alder carr, there is evidence of oak (*Quercus*) and lime/linden (*Tilia*) woodland. Pollen values of these taxa are suppressed since alder has been calculated within the pollen sum for the purposes of this assessment. However, the values of *Tilia*, which is poorly represented in pollen assemblages, suggest that it was a component of the local woodland on drier and better drained soils This has also been evidenced particularly in section 2 (below) and it is likely that the lower part of this pollen sequence correlates with the second section/profile.

The decline in *Tilia* percentages from zone M1:1 to M1:2 is the diagnostic 'lime decline' and attributed to the middle to late Bronze Age. This period, saw major environmental changes and an apparently substantial reduction of woodland in the London region (Greig 1992). As important as the earlier, Neolithic, decline in elm at *c.* 5,500-5,000 BP., was the removal or reduction of lime from the environment. Many sites in London (Scaife 2000; Scaife in Crockett *et al.* 2003) and Southern England as a whole show such significant diminution of lime woodland after its earlier dominance (Greig 1982). Although not a synchronous event, the lime decline does provide some evidence for the age of the peat/pollen sequence. That is, in general attributed to the late Bronze Age. This will be confirmed by radiocarbon dating of the upper peat/sediment contact. Also associated with the lime decline is an expansion of herbs including *Plantago lanceolata* and cereal type pollen. This substantiates the view that lime woodland was cleared for agriculture.

As with section 2 below, there is a change in the depositional environment from peat to alluvial sediments with evidence erosion and reworking at the peat sediment interface. Increased water-logging caused by regional eustatic change caused an environmental shift to wet fen over the Thames floodplain. Initially, *Salix* (willow)

replaced alder and subsequently expansion of grasses (Poaceae), sedges (Cyperaceae) and other fen taxa occurred. This was a retrogressive hydrosere which culminated in deposition of alluvial sediments across the floodplain.

In pollen zone M1:2 (top) and M1:3, there is some evidence of saline incursion with Chenopodiaceae (goosefoots and oraches) and *Armeria* type (thrift and sea lavender). This may indicate tidal/brackish water conditions. Diatoms which would confirm this are unfortunately not preserved in these sediments.

3.b.ii.) Section 2

This shorter profile of 65cm of peat and organic rich sediments has been divided into two local pollen assemblage zones. These are characterised as follows.

Zone M2:1. 65cm to 40cm. Quercus-Tilia-Alnus. *Tilia* (Lime/linden) is dominant (to 50%) although pollen preservation (poor pollen preservation). Other trees also present are *Quercus* (11%), *Alnus* (43%), and *Corylus avellana* type with insignificant, sporadic occurrences of *Betula* and *Pinus*. There are few herbs with only small numbers of Poaceae (peak to 10%) and *Plantago lanceolata* (3%). Spores are important with substantial values of *Dryopteris* type (45%) which decline in value upwards. There is a peak of *Pteridium aquilinum* at 55cm which corresponds with the peaks of Poaceae and *Plantago lanceolata* noted. *Polypodium* vulgare is present throughout (to 5%).

Zone M2:2. 40cm to 25cm Poaceae-Cyperaceae. High tree and shrub pollen percentage of zone M2:1 decline to small values. This is especially the case with *Tilia* which declines to absence. In contrast, herbs become important with Poaceae expanding to high values (to 82%) at the top of the profile. There is also a substantial increase in taxonomic diversity with a range of weed types and wetland/marsh plants. The latter include Cyperaceae (sedges; 11%) with *Iris, Typha angustifolia* type and *T. latifolia* (greater reed-mace). There is a substantial reduction in the numbers of spores from the preceding zone.

Section 2: The past vegetation and environment.

This profile reflects the fen edge habitat and its close proximity to drier land. Pollen in pollen zone M2:1 is dominated by *Tilia* (lime) which attains exceptionally high values for this generally poorly represented tree (Andersen 1970, 1973). This is due to its entomophily producing fewer pollen grains than many other woodland taxa flowering during the summer months when other trees are in full leaf. Thus, values recorded here clearly show on, and near site dominance. However, it should also be noted that the pollen is rather poorly preserved and there may also be a degree of over-representation of this robust pollen type. This importance is, however, in accord with the possibility that there is reworked soil within these organic mineral sediments.

The value of alder (*Alnus*) during this zone, although showing some local growth, are not high and suggest that it was probably not locally dominant. There may have been some occasional growth along the margins of the floodplain or on drier areas of the marsh.

At 50cm there are peaks of *Plantago lanceolata* (ribwort plantain), Poaceae (grasses) and *Pteridium aquilinum.* This is possible evidence for some human activity in the near region.

Pollen zone M2:2 shows a marked change in the depositional environment from peat to alluvial sediments with a phase of sediment erosion and reworking. Here, increased water-logging caused a change to wet fen or floodplain dominated by grasses (Poaceae), sedges (Cyperaceae), with other fen taxa including *Iris,* greater (*Typha latifolia*) and lesser reed-mace (*Typha angustifolia* type). This stratigraphical change is typical of Thames floodplain stratigraphy and is seen at many sites (Sidell *et al.* 2000; Wilkinson *et al.* 2000). This relates to regional eustatic changes (see below) and specifically to the late prehistoric and early historic period which saw large areas of alder carr, floodplain woodland changing to wet fen culminating in deposition of alluvial sediments.

4.) Sediment age

Although pollen is not a dating technique, comparison of these data with other local sites suggests that the profile is of late prehistoric age and probably Bronze Age. This is based on the high values of *Tilia* which are typical of the region and seen at many London sites (Greig 1982, 1992; Scaife 2000), and the small values of *Ulmus* (Elm), the latter suggesting a post Neolithic elm decline age. In section 1, *Tilia* has greater importance (Zone M1:1) declining into zone 2. However, the lime decline is also seen in the deeper section 1 and is similarly associated with evidence of human disturbance and agriculture. This decline is similarly diagnostic of pollen profiles from peat sequence of late prehistoric age in southern and eastern England as whole and in London where a now substantial number of sites show this phenomenon. The decline also appears to be associated with some expansion of herbs including *Plantago lanceolata* and cereal type pollen (large Poaceae). Once thought to have been due to changing climatic it is now generally accepted that human activities (woodland clearance for agriculture) was largely responsible. In London this event has been examined at a number of sites which have been radiocarbon dated showing that a predominantly middle to late Bronze Age date with occasional late Neolithic dates (Scaife in Sidell *et al.* 2000).

5.) Eustatic change

In Section 2, pollen zone 2 and section 3 zone 3 there is a diagnostic change to alluvial sediments. At this site these upper alluvial units are largely oxidised due to their closeness to the surface. At the interface of the peat and overlying sediment there is a horizon of re-worked organic silts in the form of pea sized colloids. This indicates that there was a phase of erosion associated with the change to wetter, fluviatile conditions. Such change to wetter fen conditions and deposition of alluvial sediments is similarly seen in many Thames floodplain sites. If the suggestion here that these peats are of Bronze Age date, it is likely that this major environmental shift was a consequence of broader, regional eustatic changes which saw brackish water/tidal conditions and ponding back effects on the Thames and its tributaries. These allogenic factors caused a retrogressive hydrosere and resulted in the creation of salt marshes and wetter grass-sedge fen where alder carr floodplain woodland had

previously existed. Devoy's, model (Devoy 1979, 1980, 1982, 2000) of Thames eustatic and sedimentary changes whilst applicable in the broadest sense, does not take into account the asynchroneity of such changes and local topographical and fluvial regimes. Thus, more recent examination of the development of the Thames and its palaeo-geography have been undertaken for the Central London region (Wilkinson *et al.* 2000; Sidell *et al.* 2000). Radiocarbon dating of the upper peat/sediment contact at this site may provide a useful sea level index point if evidence of saline conditions is found through analysis of the diatoms. However, should the changes be related to freshwater floodplain alone, radio-carbon dates will also provide useful data on the extent of asynchronous changes in the river system.

6.) Summary and Conclusions

The following principal aspects have been ascertained from this preliminary environmental study.

* Two sections of peat and overlying mineral sediments have been described, sampled and analysed for pollen and diatoms. An assessment of plant macrofossils (seeds) is also being undertaken.

* Pollen has been recovered from the two sections analysed. However, absolute pollen frequencies are small because of the highly humified/detrital nature of the peat. In spite of this, sufficient pollen has been identified and counted to allow construction of pollen diagrams and some useful data to be obtained from these sections.

* Both profiles are considered to be of late-prehistoric age (middle to late Bronze Age) based on the presence of lime and its decline.

* Lime woodland (*Tilia cordata*) was clearly the dominant woodland on the adjacent dry land. This is comparable with many late-prehistoric sequences analysed in London. Other woodland elements included oak and hazel while areas of the floodplain supported alder carr woodland.

* With removal of lime woodland, there is evidence human activity with small increases in herbs of waste ground and agriculture and also small numbers of cereal pollen grains.

* Both profile have evidence for increasing wetness in the upper peat levels. This was probably caused by regionally rising relative sea levels which affected the fluvial system. This initiated a retrogressive hydrosere with the development of wet grass-sedge fen/reed swamp. In section 1, *Salix* (willow) became important replacing alder.

* This phase of increasing wetness culminated in deposition of alluvial sediments over the peat and is associated with a phase of sediment reworking.

* There is tentative evidence for saline conditions with halophytic pollen/plant taxa present in the upper sediments of the deeper section 1. Diatoms were not present to confirm this.

* *Additional Analysis:* For publication of this site, increased pollen counts would be required. Normally this would require normal counts of 500 grains per sample for statistical validity. However, absolute pollen numbers are small in these detrital peats and such counts may not be easily achieved. In addition to samples examined for this assessment, a some additional levels are required to give greater stratigraphical resolution.

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Diatom Analysis

Rob Scaife

The 6 samples taken from the silty clays overlying the peat deposits have been examined for presence or absence of diatoms. If present, diatoms might be expected to provide a useful indication of the saline or freshwater status of the environments in which the sediments were deposited. Pollen analysis has tentatively suggested that there may have been saline incursions during this phase of mineral sedimentation.

Preparation used digestion of humic/organic material using Hydrogen Peroxide. Samples were dried on microscope cover-slips and mounted on microscope slide using Naphrax mounting medium. Examination was carried out at high power x400 and x1000 using a biological microscope with phase contrast.

Unfortunately, diatoms have not been preserved in these oxidised sediments.

GLSMR/RCHME NMR ARCHAEOLOGICAL REPORT FORM

1) TYPE OF RECORDING

Evaluation	Excavation	Watching Brief
Building Recording	Survey	Geoarchaeological Evaluation
Fieldwalking	Other (please specify) Desk-Based Assessment	

2) LOCATION

Borough: *Southwark*

Site address: *67-77 Marlborough Grove SE1*

Site name: *As above* Site Code: *MGV.03*

Nat. Grid Refs: **centre of site:** *TQ 3422 7825*

limits of site a) b)

c) d)

3) ORGANISATION

Name of archaeological unit/company/society: *Hertfordshire Archaeological Trust*

Address: *The Seed Warehouse, Maidenhead Yard, The Wash, Hertford SG14 1PX*

Site director/supervisor: *Jon Murray /Josh Williams* Project Manager: *Jon Murray*

Funded by: *Horizon Housing Association*

4) DURATION

Date fieldwork started: *19/6/03* Date finished: *25/2/04*
Fieldwork previously notified? YES/NO
Fieldwork will continue? YES/NO/NOT KNOWN

5) PERIODS REPRESENTED

Palaeolithic	Roman
Mesolithic	?Saxon (pre AD 1066)
Neolithic	Mediaeval (AD 1066-1485)
Bronze Age	Post-Mediaeval
Iron Age	Unknown

6) PERIOD SUMMARIES Use headings for each period (ROMAN: MEDIAEVAL: etc.) and additional sheets if necessary.

No archaeological features were revealed on the site, though deep deposits of made ground and alluvial clay were encountered in the northern part of the site , in addition to substantial, deep peat deposits (to a depth of over 4m below existing). Natural gravels were encountered at -2.89m AOD.

The southern part of the site revealed the same, though shallower, stratigraphy. Natural gravels were encountered at around -1.27m AOD in this part of the site.

A programme of environmental sampling was carried out to date and characterise the prehistoric peat deposits.

No evidence of prehistoric activity or Roman activity was encountered. The natural deposits confirm the former marshland extending southwards towards the higher ground of the Old Kent Road.

7) NATURAL (state if not observed; please DO NOT LEAVE BLANK)

Type: *Gravel*
Height above Ordnance Datum: -*2.89m AOD (north part of site), 1.27m AOD (south part of site)*

8) LOCATION OF ARCHIVES

a) Please provide an estimate of the quantity of material in your possession for the following categories:

NOtes *1 x A4 file*	PLans 1 *x A3 plan* *1 x A3 Section*	PHotos *c.2 b/w*	NGatives
SLides *c.2 col*	COrrespondence	MScripts (unpub reports, etc)	
BUlk finds	SMall finds	SOil samples Bulk, Macro, monolith, C14 etc	

OTher (please specify)

b) The archive has been prepared and stored in accordance with MGC standards and has been stored in the following location: *HAT Offices, The Seed Warehouse, Maidenhead Yard, The Wash, Hertford SG14 1PX*
(pending deposition with Museum of London Archive)

c) Has a security copy of the archive been made? YES/NO

Have you arranged for RCHME microfilming? YES/NO

9) BIBLIOGRAPHY

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SIGNED: **DATE: 26/2/04**

NAME (Block capitals):
JON MURRAY

Please return the completed form to:

English Heritage, Greater London Sites and Monuments Record,
Room 214, 23 Savile Row, London W1S 2ET
Direct tel: 0207-973-3731/3779. Direct fax: 0207-973-3742/3792.

Colour Plates

View of site, looking west

View of Trench 1

Archaeological Solutions (Contracts) Ltd
Fig. 1 Site Location
Scale: 1:20000

Archaeological Solutions (Contracts) Ltd

Fig. 2 Detailed Site Location Plan

Scale: 1:2500

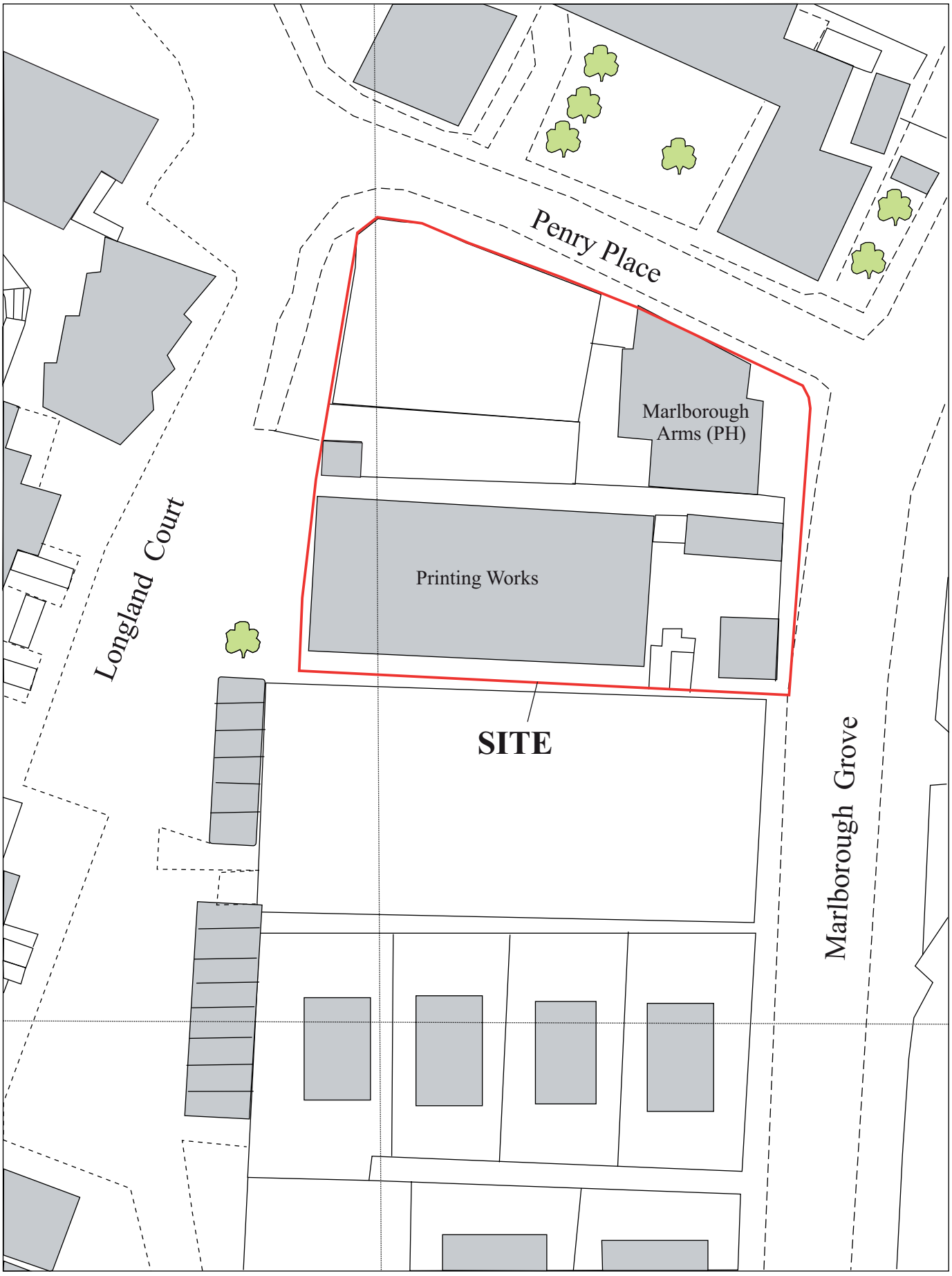

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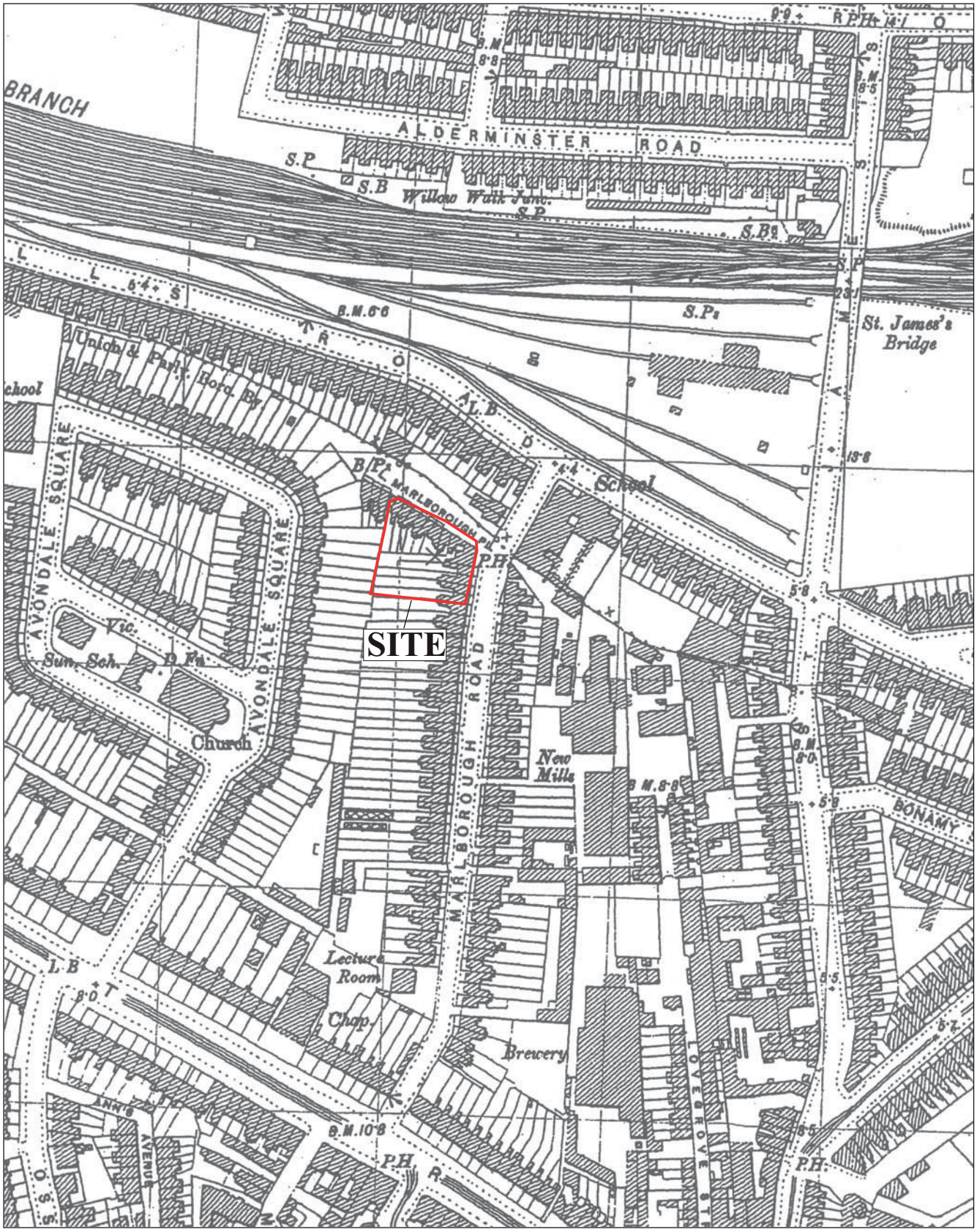
Fig. 3 Site Plan

Scale: 1:500



Archaeological Solutions (Contracts) Ltd
Fig. 4 Reproduced from the 1896 OS Map
Scale: 1:2500

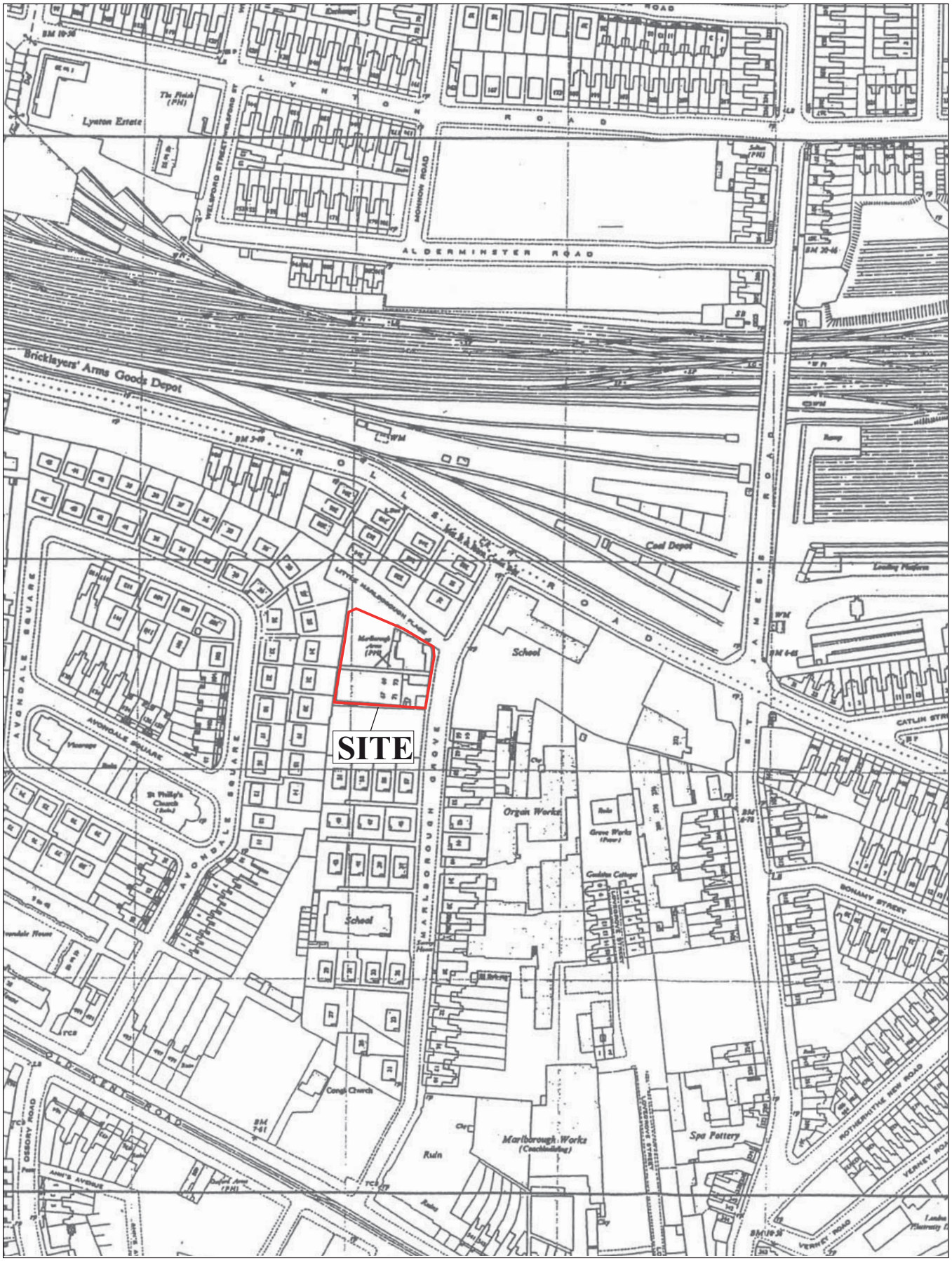


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Fig. 5 Reproduced from the 1950 OS Map
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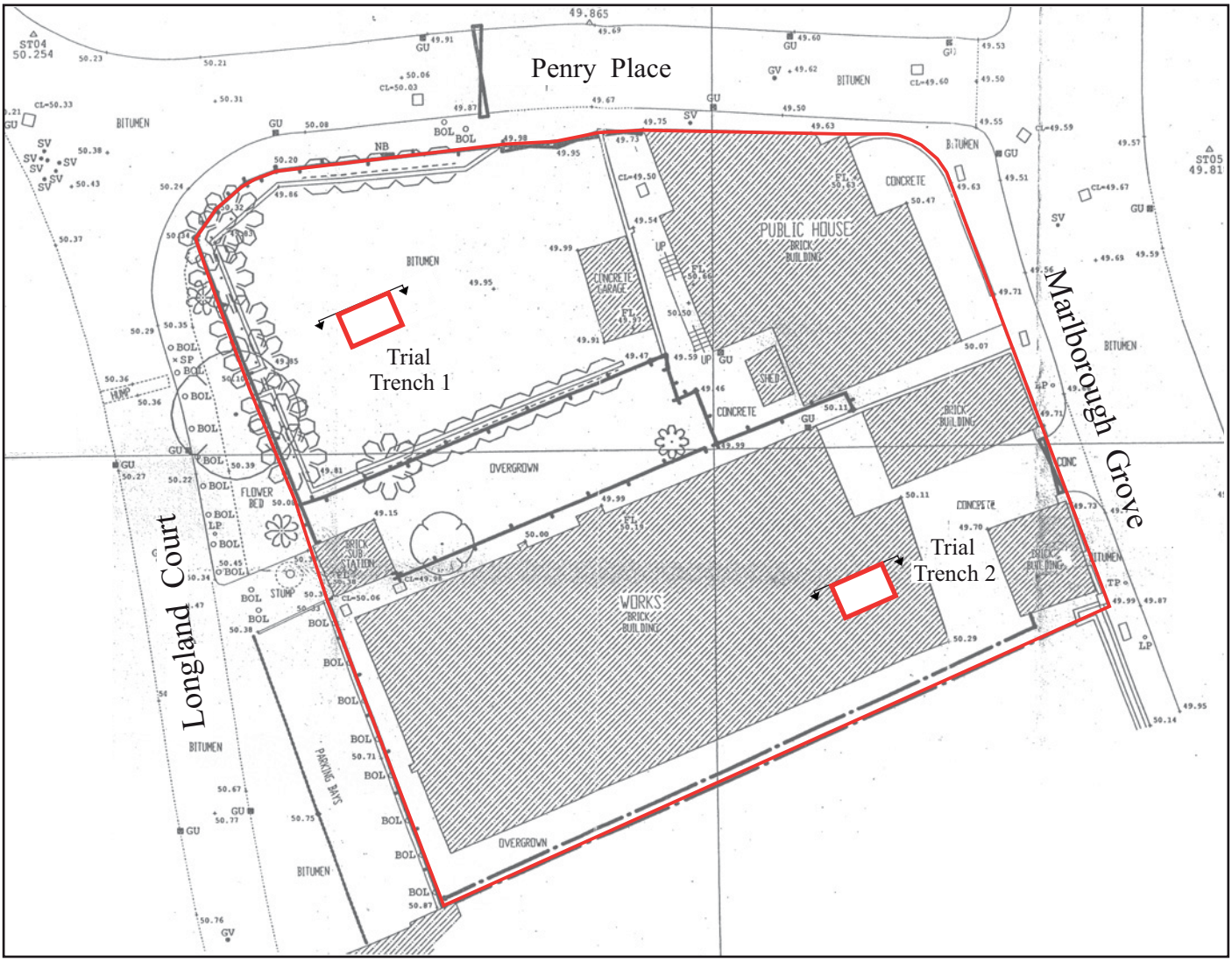

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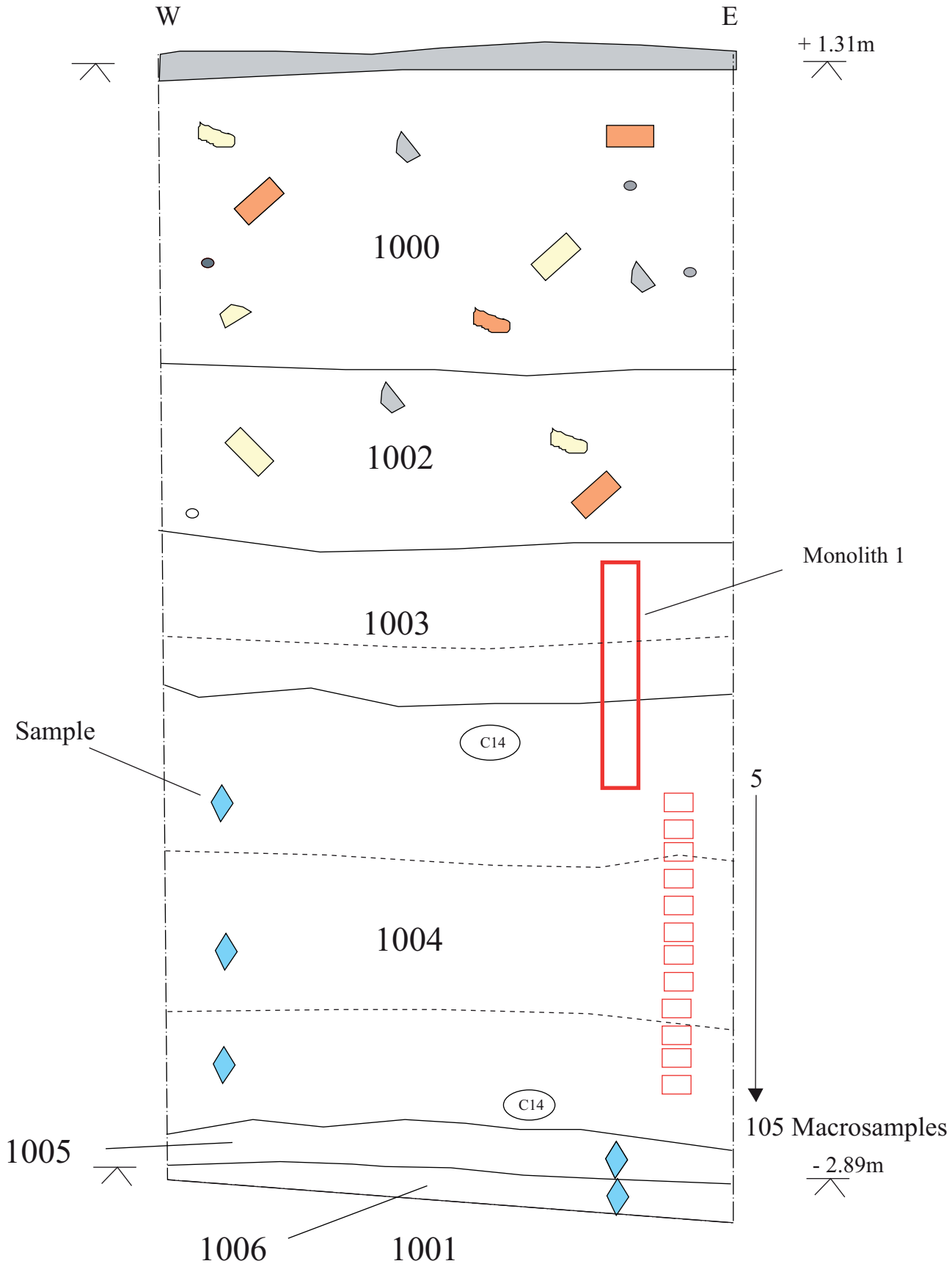
Fig. 6 Trench Location Plan
Scale: 1:400



Key

Building Rubble

Sample

Concrete

C14 Sample

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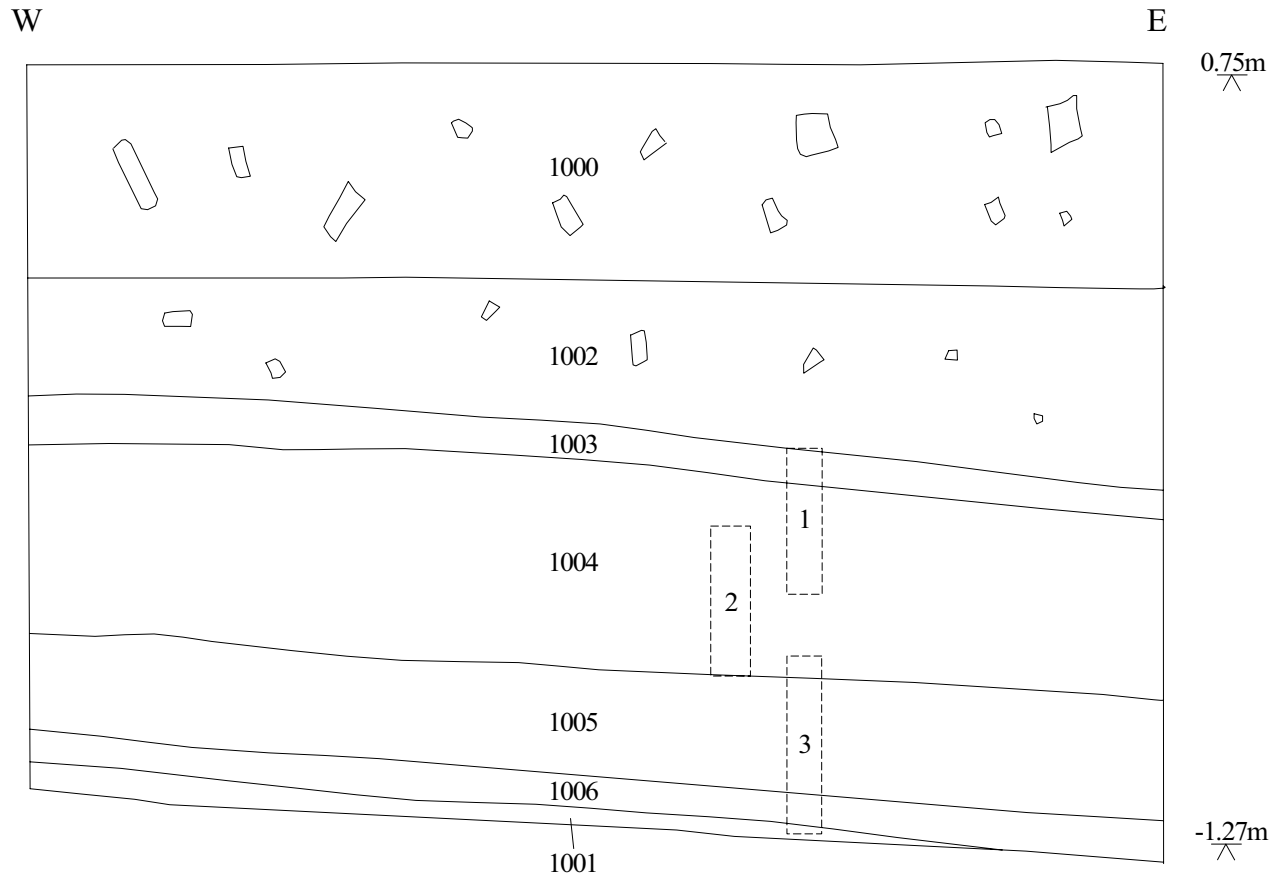
Fig. 7 Trench 1 - Section

Scale: 1:20 at A4



0 1m

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Fig. 8 Trench 2 - Section
Scale: 1:20 at A4