

Archaeological Field Evaluation



**Former St John's Ambulance HQ
Mildenhall Road
Clapton Pond
Hackney
E5 0RU**

On behalf of

Project Planning London

October 2020

GENERAL ENQUIRIES

e: info@borderarchaeology.com **t:** 01568 610101 **w:** borderarchaeology.com

Administration

The Plaza, Owen Way, Leominster Enterprise Park, Leominster, HR6 0LA

Post-Ex Facility – Leominster

t: 01568 610101
e: postex@@borderarchaeology.com

Post-Ex Facility – Milton Keynes

t: 01908 533233
e: postexmk@borderarchaeology.com

REGIONAL OFFICES

Milton Keynes

Common Farm
Calverton Lane
Milton Keynes
MK19 6EU
t: 01908 533233

Leeds

No 1 Leeds
26 Whitehall Road
Leeds
LS12 1BE
t: 0113 8187959

Shoreditch

The Old Fire Station
140 Tabernacle Street
London
EC2A 4SD
t: 02033 015670

Newport

Merlin House
No1 Langstone Business Park
Newport
NP18 2HJ
t: 01633 415339

Bristol

First Floor,
Citibase Bristol Aztec West
Aztec Centre, Aztec West
Almondsbury
Bristol
BS32 4TD
t: 0117 9110767

Winchester

Basepoint Business Centre
Winnall Valley Road
Winchester
SO23 0LD
t: 01962 832777



COMPILATION

Amy Bunce BSc MA ACIfA

ARTWORK

Holly Litherland BA (Hons.)

FINAL EDIT & APPROVAL:

George Children MA MCIfA

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Cover: View northeast of Trench 1 post-excavation

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1 Non-Technical Summary

This report has been prepared by Border Archaeology on behalf of Project Planning London to detail the results of Archaeological Field Evaluation at the former St John's Ambulance HQ at Mildenhall Road Clapton Pond Hackney London E5 0RU (NGR TQ 35012 85910) in connection with the replacement of the existing building by a four-storey (with basement) building accommodating eight residential flats (Planning ref 2018/4011).

Three trenches were excavated (two by machine and one by hand) to evaluate the potential of the Site and, in particular, the potential for Palaeolithic evidence, as well as early medieval, medieval and post medieval settlement.

Trench 3 revealed only modern made ground while Trench 1 and Trench 2 showed Hackney gravels immediately overlain by a sealed 18th/19th Century buried A-horizon (topsoil), with subsequent 20th Century construction/demolition/reworking layers above.

While no archaeological features or findspots were located within the trenches, the evaluation confirmed the presence of undisturbed Hackney gravels.

2 Introduction

Border Archaeology (BA) was instructed by Project Planning London to carry out Archaeological Field Evaluation (AFE) in connection with replacement of the former St John's Ambulance HQ Mildenhall Road Clapton Pond Hackney London E5 0RU (NGR TQ 35012 85910) by a four-storey (with basement) building accommodating eight residential units (Planning Ref. 2018/4011) was identified as appropriate for identifying the potential of surviving archaeology and, in particular, archaeology of Palaeolithic, early medieval, medieval and post medieval origin. Planning related to

Three trenches equating to c.7% of the Site area were excavated, the confined space necessitating that one of these be hand-dug.

The Palaeolithic potential was highlighted as being of particular significance owing to the location of the Site within an area of known discovery and to the likelihood of encountering Hackney gravels, deposits that are of proven archaeological potential. Potential for the recovery of evidence pertaining to later periods was additionally identified based on the designation of this as a Tier 2 Archaeological Priority Area (APA 2.2 - Hackney settlements) thought likely to contain early medieval, medieval and post-medieval settlement remains.

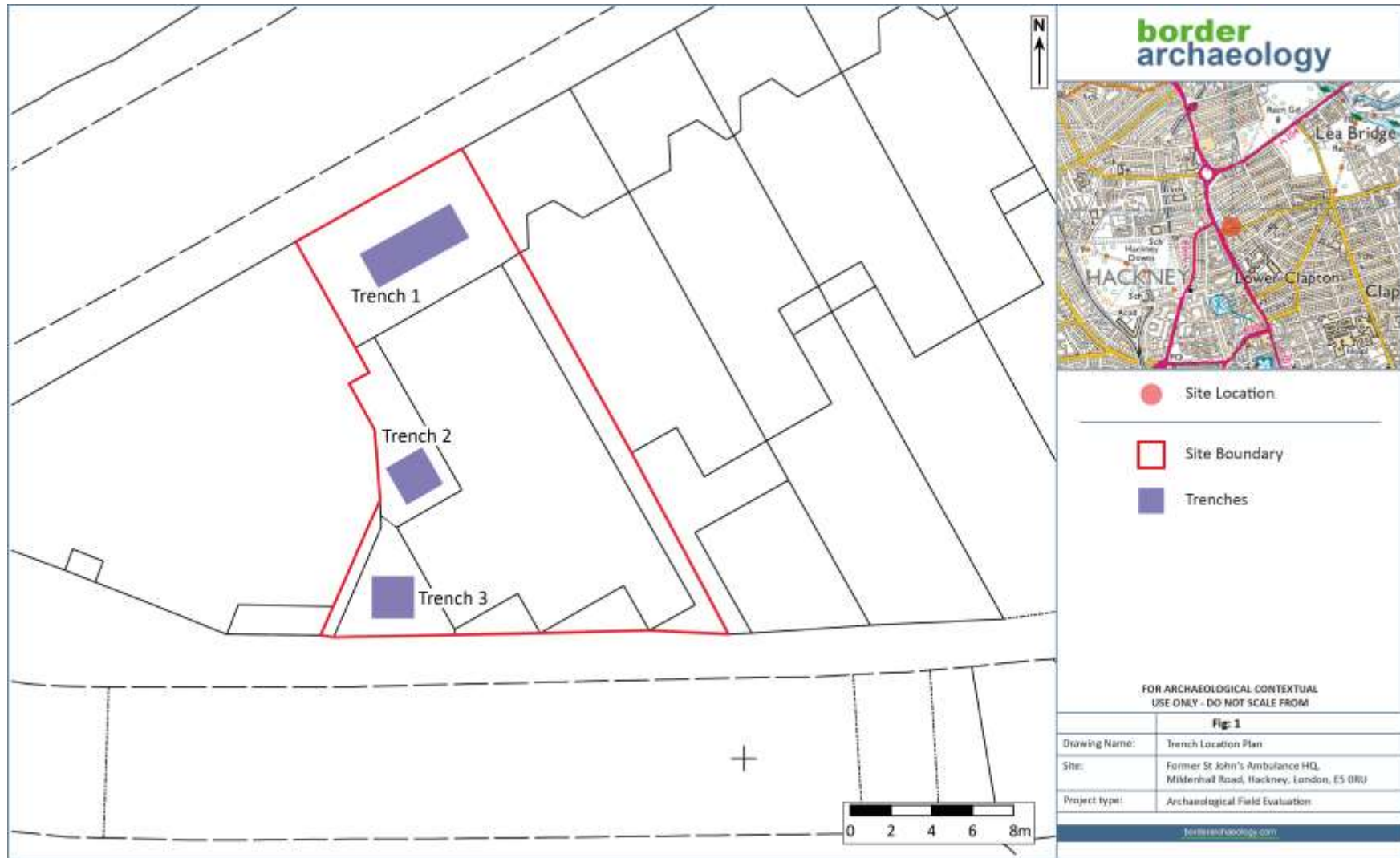
This report is for submission to Adam Single BA MA PCIfA, Archaeology Advisor Greater London Archaeology Advisory Service (GLAAS).

3 Site Description

The Site lies 20m from the junction of Mildenhall Road, Lower Clapton Road and Millfields Road, the corner of which has recently been redeveloped and now contains a four-storey residential building. The existing office building is a single-storey structure occupying most of this small site.

3.1 Soils & geology

The Site lies at an elevation of 19.8m AOD within an urban area classified as 'unsurveyed' on the Soil Survey of England and Wales (SSEW 1983). The British Geological Survey 1:50,000 online records describe the underlying geology as London Clay overlain by Quaternary sand and river terrace Hackney Gravel Member (BGS 2020).



4 Archaeological Background

An Archaeological Desk-Based Assessment (ADBA) (Stephenson 2017) identified potential for the survival of archaeological remains. Of particular interest was the potential for Palaeolithic archaeology and it was on this basis that Barry Bishop BA MA PhD, on behalf of Quaternary Scientific (University of Reading), attended Site to confirm the Hackney gravel terrace.

Additionally, the discovery of a probable buried A-horizon (topsoil) shows the usage of the Site for urban residential development.

The following summary provides a brief account of the Site and its surroundings in terms of its historical and archaeological context.

4.1 Prehistoric

The Site lies on the western edge of the Lea Valley Tier 3 Archaeological Priority Area (APA 3.1), which has been identified a focus for human activity since the prehistoric period, and the discovery of significant early finds within the vicinity of the Site reflects both its proximity to this rich area of islands, gravel terraces and wetlands along the W banks of the R. Lea and to the local geology consisting of river terrace gravels with a high potential to contain prehistoric remains.

Of those prehistoric discoveries recorded within the Hackney Settlements APA (2.2), the most significant due to its rarity comprises the considerable assemblage of finds thought to represent an *in-situ* Lower Palaeolithic 'kill site' located c.850m to the S of the present Site in the vicinity of Mare Street Lower Clapton (080077/00/00-MLO10654; 080088/00/00-MLO1669; 080088/01/00-MLO36409; 080077/01/00-MLO39795; 080115/00/00-MLO3717) (NGR: TQ 35000 85500). The assemblage included 159 hand-axes, 18 roughouts, four cores, 69 retouched and 210 unretouched flakes, together with the associated shoulder blade of a mammoth.

To the N of the former ambulance station in the vicinity of Newick Road, a further substantial assemblage of early prehistoric material has been recorded in two locations. The first of these (NGR: TQ 35000 86000) consisted of 12 hand-axes, two retouched and 12 unretouched flakes, together with five Mesolithic tranchet axes (080071/00/00-MLO10665; 080081/00/00-MLO9177) whilst the second (NGR: TQ 35000 86020) comprised two hand-axes, two flakes and a possible Neolithic polished flint axe (080004/00/00-MLO12924).

Outside the APA to the N in Upper Clapton Road near the railway station (NGR: TQ 34800 86550) (although a location to the S of Caroline Street, now Charnwood Street, is also given), six hand-axes were recovered from disturbed deposits in 1883.

4.2 Romano-British

Ermine Street (APA 2.8) (Margary 1973; Route 3) runs N roughly 1.3km to the W of the site, closely following the line of the modern A10 along Stoke Newington Road, Stoke Newington High Street, Stamford Hill and Kingsland Road. Homerton High Street follows the possible route of a minor Roman road, which is thought to have run E from Ermine Street to Leyton, while Mare Street is believed to represent the alignment of another route. The conjectured NE-SW route of the major route running from Clapton to Great Dunmow (APA 2.9) (MLO106811; DLO38405) (Margary 1973; Route 30) runs to the S of the site and Margary reports that 'a Roman sarcophagus was found beside this route where it reaches the streets of Clapton (Margary 1973, 250). While the site lies well outside the designated 'buffer zone' of 100m either side of the road thought potentially to contain evidence of roadside settlement activity, finds including coins and unstratified ceramics have been made in the immediate locality. These include a Roman Coin (MLO97877 ELO6696) found at Clapton Pond (NGR: TQ 34901 86001) in 2003 by the Clapton Pond Neighbourhood Action Group and a single body-sherd of Roman pottery in an unsourced micaceous grey ware with a slightly oxidised exterior surface recovered during a watching brief on the demolition of the former public conveniences adjoining the site to W (NGR: TQ 35004 85908). The sherd was not closely datable within the Roman period (Rugg 2016).

4.3 Anglo-Saxon

The place-name 'Hackney' derives either from the Old English *haca* (genitive *-n*) meaning 'hook-shaped ridge or tongue of land' or from the Old English personal name *Haca* (genitive *-n*) + *eg*, meaning 'island or dry ground in marsh of a man called Haca' whilst 'Clapton' derives from the Old English *clap* meaning, in this instance, 'hill', together with *tun* or 'farm', giving the meaning 'farmstead or estate on a hill' (Mills 2003, 116, 218).

A largely agricultural but heavily wooded landscape at this time would have been farmed by tenants of the bishops of London, who had held the extensive manor of Stepney, which incorporated Clapton and Hackney, since the early 7th Century.

No findspots of this period are recorded within the vicinity of the site.

4.4 Medieval

There is no reference to Hackney in Domesday Book, the area being assessed as a sub-manor of Stepney, which was said in 1294 to have been held by the bishops of London from time immemorial. During the medieval period, Hackney consisted of scattered small settlements or villages within a largely agricultural landscape forming part of the rural hinterland provisioning the City of London and according to the Domesday returns, a significant proportion of the land was wooded. The section of Ermine Street passing through Hackney remained in use as a major road throughout the period and Hackney was retained by the bishops of London until 1550, when it was granted to the Wentworth family and subsequently mortgaged by Thomas Wentworth, Earl of Cleveland, in 1632.

Clapton was first mentioned as 'Clopton' in 1378 and was so rendered until the 18th Century. The area grew up as a straggling hamlet along Clapton Lane which is recorded in 1378 and again as a high street in 1447 before later becoming Lower and Upper Clapton Road, with Clapton Pond situated roughly midway between Lower and Upper Clapton villages. It is noted that excavations at Upper Clapton Road (Nos 30-36) (ELO12413) revealed medieval roadside ditches overlain by a medieval ploughsoil. Millfields took its name from a water-powered mills documented in 1381 when hay and corn were being produced by the bishop's tenants to provision the city.

The area was beginning to attract wealthy individuals who occupied substantial properties in Hackney, an example being the Brooke House (also known as 'the King's Place'), which stood to the N of Clapton Pond and which in 1439 was sold to William Booth rector of Hackney and later Archbishop of York by Sir William Estfield, a London alderman. By 1531, the property was in the hands of Henry Percy, Earl of Northumberland, though through debt was ultimately surrendered to the Crown in 1535.

In terms of site-specific archaeological evidence of this period, a watching brief on ground reduction works at the site of Public Conveniences formerly occupying the adjacent site to the W recorded a pit of probable late medieval or early post-medieval date containing a posthole and truncated a possible second posthole (Rugg 2016).

4.5 Post-medieval

Hackney remained mostly pasture in the 18th Century, with market gardens being a distinct feature of the landscape. The villages of Lower and Upper Clapton lay on either side of a road that in 1745 was named 'Hackney Lane' and which later became Lower and Upper Clapton Road, with Clapton Pond situated roughly halfway between the two villages. Today, it comprises two small garden enclosures divided by Newick Road and the feature was used as a reservoir in the early 18th Century, when water was carried from a weir at Jeremy's Ferry through a system of wooden conduits and pipes. Wooden water pipes (080191/00/00-MLO327) possibly forming part of this system, though of unknown date, were found in Lower Clapton Road in 1909. Between 1760 and 1833, the pond appears to have been enlarged to form three separate ponds and in 1898, Hackney District Board acquired Clapton Pond for public gardens.

By the late 18th Century, Clapton had become increasingly urbanised, expanding to encompass most of NE Hackney and these developments were spurred by the turnpiking of the road from Hackney to Stamford Hill in 1738 and by the construction of Lea Bridge Road in 1758.

In 1831, detached houses are recorded extending past the entrance to Laura Place as far as Pond Lane, with denser housing including St. James's Terrace which appears to have extended into the SW part of the Site. N-S masonry wally recorded during the watching brief at the site of former Public Conveniences adjoining the St John Ambulance site to the W were seen as confirming the placement of St James's Terrace, as seen on the 1870-1873 and 1896 OS. A domed brick-lined soakaway was also uncovered which lies within St James Terrace as depicted on the 1870-1873 map but was possibly external to the building on the later edition. It was stated that the construction of the former Public Conveniences building in 1937 had destroyed any earlier remains once present in its footprint.

Listed Building in the vicinity of the site include Bishop Wood's Almshouses (List Entry Number: 1226891), Pond House (NGR: TQ 34984 85949) (List Entry Number: 1226931) at No. 162 Lower Clapton Road, a c.1800 villa with a Stable Building (List Entry Number: 1226890) to the N (NGR: TQ 34978 85958), and early 19th Century Nos. 158 & 160 Lower Clapton Road (NGR TQ 34983 85925) (List Entry Number: 1226889).

5 Research Aims & Objectives

Research aims (including those for the Palaeolithic and for the emergent urban settlement) were detailed in the Written Scheme of Investigation (BA 2020), the main aim of the work being to evaluate the site in terms of its potential to contain undisturbed archaeological and palaeoenvironmental deposits. A summary of the relevant national and regional research objectives is below:

5.1 National Research Objectives

The programme of work had potential to address specific themes and priorities set out in *Thematic Research Strategy for Prehistory* (TRSP) (Historic England 2010), *Research Strategy for the Roman Period Historic Environment* (Historic England 2012), *A Thematic Research Strategy for the Urban Historic Environment* (TRUE) (Historic England 2010) and Measures set out in the *National Heritage Protection Plan Framework* (NHPP) (Historic England 2012).

5.2 Regional Research Objectives

Regional Research Objectives were categorised as following:

5.2.1 Prehistory Research Priorities

- Early scavengers and hunters: The Lower Palaeolithic (c 500,000–38,000 BC): a putative 'kill site' identified within the vicinity contained associated megafaunal remains;
 - Later hunters: The Upper Palaeolithic and Mesolithic (c.38,000–4000 BC): the site lies on the W edge of the Lea Valley, which, in common with the floodplains of the Thames and other tributaries, is considered to be of considerable significance for early Mesolithic studies. Both Palaeolithic and Mesolithic tools have been discovered in the vicinity of the site;
 - Early farming communities: the Neolithic and early Bronze Age (c.4000–1500 BC): Mesolithic and Neolithic material has been recovered within a single assemblage at Newick Road (080004/00/00-MLO12924) (NGR: TQ 35000 86020) and may point to evidence of continuity from one period to the next, however, it is acknowledged that only a single Neolithic piece was present within the assemblage and its identification as such is uncertain.
-

5.2.2 Roman (AD 43-410) Research Priorities

There is a consistent need for a more coordinated approach to landscape studies in small-scale interventions, providing an opportunity to reach beneath the 'hard surfaces' of modern development into the buried landscape.

5.2.3 London after 1500 Research Priorities

The Site is located within an area of post-medieval development with masonry remains of former domestic housing recorded on the adjacent site to the W. In view of the Site's proximity to Clapton Pond which formed part of the area's historical water supply infrastructure, there was potential to uncover remains such as wooden water pipes or conduits.

Further framework objectives included Development (assessing changes in house design and construction during the period and considering what social and economic origins and effects these changes had on urban life), People/Society (analysing domestic assemblages in the context of their associated buildings for evidence of standards of living and variations between social groups), Agricultural production and the environment (focusing on further understanding the organisation, layout and the range of produce cultivated) and Distribution and consumption (relating to changes in diet, disease, pollution and the exploitation of resources and, therefore, to the social and economic forces and consequences of consumerism).

6 Methodology

AFE was carried out in accordance with *Standard and guidance for archaeological field evaluation* (ClfA 2020a), *Standard and guidance for the collection, documentation, conservation and research of archaeological materials* (ClfA 2014) and *Guidelines for Archaeological Projects in Greater London* (GLAAS April 2015). BA is cognizant of the *ClfA Code of Conduct* (2019) and *Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide* (Lee 2015).

6.1 Recording

This programme of works was recorded under the BA Site Code STJA20.

An Event Number has been requested from the Greater London Historic Environment Record and will be advised accordingly.

Full written, graphic and photographic records were made in accordance with BA's *Archaeological Field Recording Manual* (2017). The written record comprises a *pro-forma* context record for each stratigraphic unit.

Each context record included the following details as a minimum: character, contextual relationships, detailed description (dimensions & shape; soil components, colour, texture & consistency), associated finds, interpretation and phasing, and cross-referencing to drawn, photographic and finds registers.

The drawn record was produced on gridded, archive stable polyester film. Plans of each area excavated included: the extent of the area (tied into the Ordnance Survey National Grid & located on a 1:2500 plan), the extent of all stratigraphic units and appropriate detail within stratigraphic units. Plans of stratigraphic units were recorded at a scale of 1:20.

Sections were drawn (at a scale of 1:10 in areas of detailed excavation) of all significant cut features, wherever practicable and within established safety parameters. Temporary benchmarks (TBM) were established at appropriate locations relative to Ordnance Survey levelling data and plans, and elevations and sections contained relevant level information. All drawings were numbered and listed in a drawing register; these drawing numbers being cross-referenced to written site records.

A photographic record of all stratigraphic units was made using a high-resolution digital camera, comprising photographs of archaeological features and appropriate groups of features and structures.

The progress of the works was recorded and assessed using the BA's ISO9001 procedures.

6.2 Recovery, Processing & Curation of Artefactual Data

All associated artefacts recovered were retained, cleaned, labelled and stored according to *Standard and guidance for the collection, documentation, conservation and research of archaeological materials* (ClfA 2014) and *First Aid for Finds* (ClfA 2014; Watkinson & Neal 2001), the aim being to create a stable, ordered, well-documented, accessible material archive forming a resource for current and future research (ClfA 2014).

All artefacts were bagged and labelled with the Site Code and context number before being removed offsite. Unstratified finds were only collected where they contributed significantly to the project objectives or were of particular intrinsic interest.

6.3 Palaeoenvironmental/Palaeoeconomic Sampling

Palaeoenvironmental samples were taken of (1005); please refer to *Appendix 1* for full methodological details.

7 Results

7.1 Trench 001

Trench 001 occupied the front yard of the building and ran parallel to Mildenhall Road (*Plate 1; figs. 1 & 2*). It measured 5m × 2m to the depth of the sealed A-horizon (1005), at which point a smaller trench was excavated to the depth of the Hackney gravels (1006). Hackney gravels were observed at c.18.5m AOD. The trench was orientated NE-SW and located to avoid all services across the front of the building, although drainage was present in the upper levels.

Concrete (1001) dating to the construction of the ambulance station HQ overlay a modern levelling deposit (1002). Reworked and mixed topsoil (1003) underlay this and included a demolition lens (1004), with both contexts likely dating to the construction of the ambulance station.

Sealed by the modern layers, (1005) was interpreted as a buried A-horizon (topsoil) likely dating to the 18th or 19th Century, prior to or around the time of Victorian development of this area. (1005) was likely a garden soil with Victorian development likely accounting for the fragment of masonry wall that was encountered (see below). The presence of clay tobacco pipe (CTP) recovered from the environmental sample (*Appendix 1*) and the presence of charcoal exhibiting fusion confirms the dating of (1005).

The red brick wall fragment surviving within (1005) stood to a height of six courses and was bonded with a slightly lime-based mortar. The basal course consisted of broken and variably coloured brick laid header-out, with simple English or Flemish bond coursing above presenting a well-finished roadside face.

No further masonry remnants were encountered. Truncation had clearly occurred in the past, presumably during previous redevelopment, the instability of the surviving fragment suggesting another break at a point just beyond the trench edge. It is possible that the wall had been displaced but if so, it had clearly remained in an upright position.

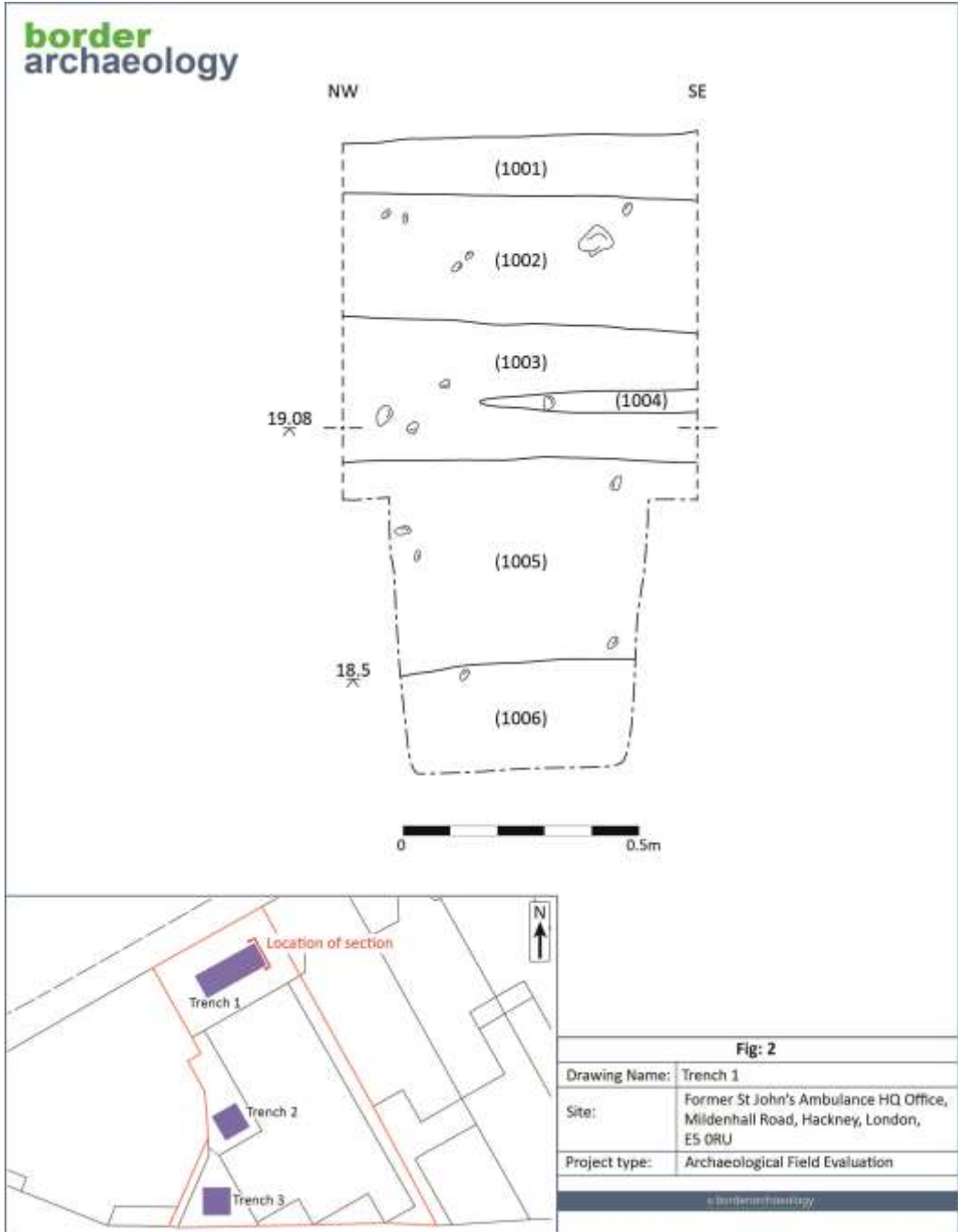
The absence of a foundation cut through (1005) - which appears to have accumulated up against it - suggests the remains most likely formed part of a garden boundary wall. Although substantial foundations were not generally a feature of 19th Century development, in this case, the wall sat only within a shallow slot, a single course deep, the remainder of the coursing being above ground.

The brickwork and construction methodology suggest the wall is likely to have been contemporary with properties to the E whilst its proximity to an inspection chamber suggests it may have been reutilised at some point as part of a drainage system, the quality of upper coursing showing clearly that this was never its primary intended function.

Immediately underlying (1005) was (1006), the natural sands and gravels making up the Hackney terrace.



Plate 1: View NE of Trench 001 (1m scale).



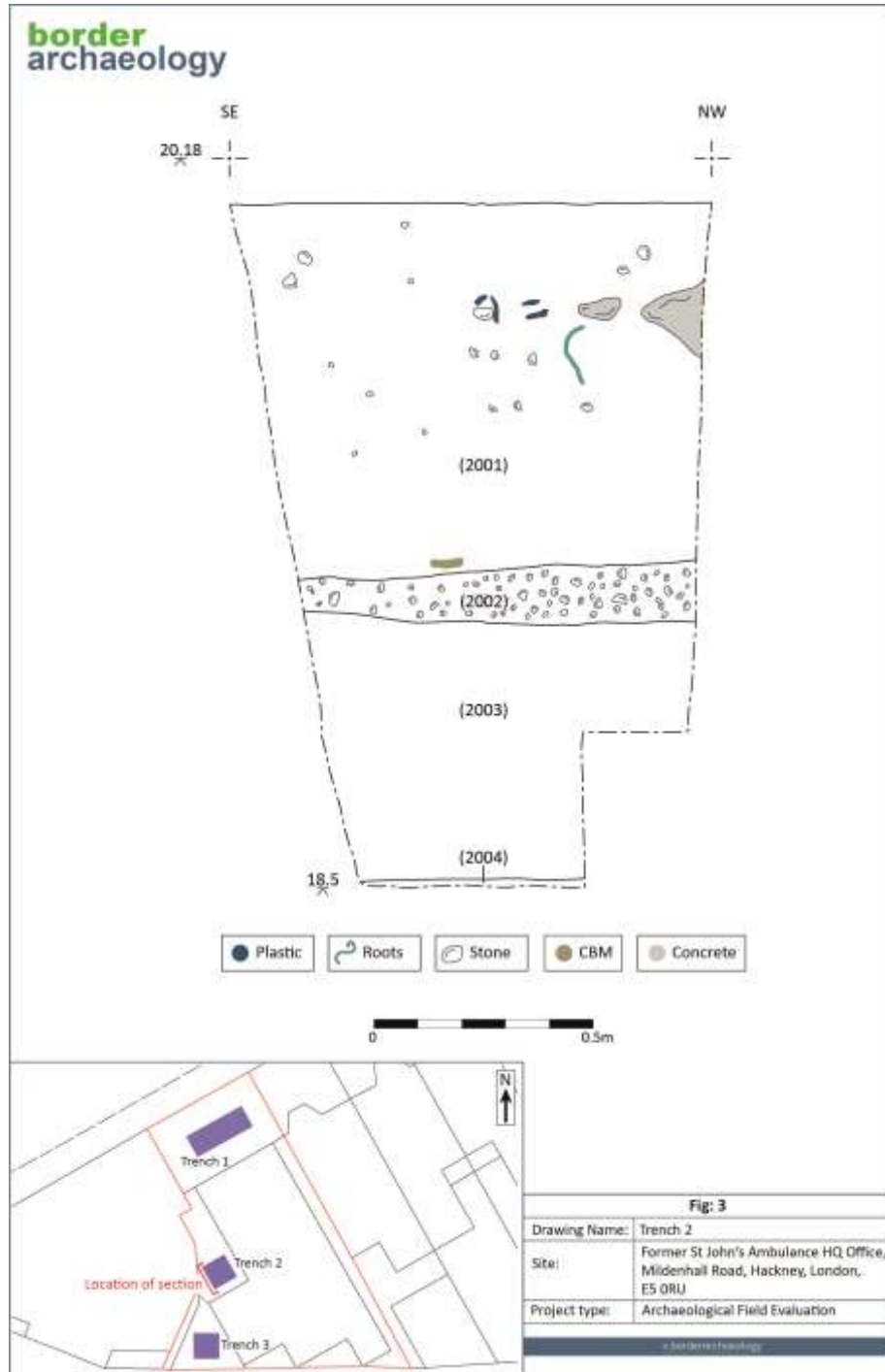
7.2 Trench 002

Trench 002 was located to the side of the building, adjacent to the new residential block, and measured 1m x 1m, the narrow confines of the Site at this point necessitating hand-excavation (*Plate 2; figs. 1 & 3*). The humic surface had likely built up recently which meant that the ground level in this location was slightly higher than that at Trench 001.

Mixed/reworked topsoil (2001) comprised the upper 0.85m of the trench and included layers of 20th Century material dating from construction of the ambulance station HQ and adjacent building. This was underlain by a band of gravels (2002) that likely dated to the construction of the ambulance station. These sealed buried A-horizon (2003), this being identical to (1005) in Trench 001. The natural gravels (2004) encountered at the base of the trench at a depth of c.18.5m AOD were identical to the Hackney gravels (1006) seen in Trench 001.



Plate 2: View SW of Trench 002



7.3 Trench 003

Trench 003 to the rear of the property, adjacent to Millfields Road, measured 2m x 1m N-S and exceeded 2m in depth in order to reach through made ground and/or disturbance to the underlying London or riverine clays, which

exhibited a hint of gravels (*Plate 3; fig. 1*). Trench 003 required immediate backfilling; however, it seems likely that the disturbance observed in Trench 003 is localised to the rear of the plot.



Plate 3: View E of Trench 003

8 Results Tabulation

8.1 Trench 001

Context	Type	Filled by	Fill of	Description	Interpretation	Finds	Samples	Provisional date
(1001)	Deposit	-	-	Concrete; 0.1m D; overlies (1002).	Concrete	-	-	C20
(1002)	Deposit	-	-	Loosely compacted yellow-brown silty sand (10% clay, 30% silt, 60% sand); frequent small rounded stones, moderate CBM inclusions; 0.25m-0.3m D; underlies (1001), overlies (1003).	Levelling deposit	CBM (not retained)	-	C20
(1003)	Deposit	-	-	Loosely compacted yellow-brown sandy silt (10% clay, 40% sand, 50% silt); moderate small rounded stone inclusions, occasional CBM inclusions; 0.25m-0.3m D; underlies (1002), overlies (1005), includes lens (1004).	Reworked topsoil	CBM (not retained)	-	C20
(1004)	Deposit	-	-	Mortar and CBM lens comprising crushed red brick and white lime mortar; 0.05m D; lens within (1003).	Demolition lens	CBM (not retained)	-	C20
(1005)	Deposit	-	-	Loosely compacted brown-grey silt (10% clay, 20% sand, 70% silt); occasional small sub-angular to rounded stones, occasional small charcoal frags; 0.45m D; underlies (1003), overlies (1006).	Buried A horizon	-	001	C18/C19
(1006)	Deposit	-	-	Loosely compacted orange-yellow sand and gravels; Fe staining; gravels are sub-angular to rounded of all sizes and comprise flints; underlies (1005).	Natural sand/gravels = Hackney gravels	-	-	Glacial

8.2 Trench 002

Context	Type	Filled by	Fill of	Description	Interpretation	Finds	Samples	Provisional date
(2001)	Deposit	-	-	Loosely compacted grey-brown sandy silt (20% clay, 30% sand, 50% silt); moderate stone inclusions of all sizes/shapes, occasional CBM, plastic, Fe, concrete, glass frags and one glass milk bottle; 0.85m D; overlies (2002).	Mixed topsoils	CBM, plastic, Fe, concrete, glass (not retained)	-	C20
(2002)	Deposit	-	-	Loosely to moderately compacted orange-grey silty sand and gravels (10% clay, 20% silt, 70% sand); moderate stone inclusions; 0.15m D; underlies (2001), overlies (2003).	Gravel layer	-	-	C20
(2003)	Deposit	-	-	Loosely compacted brown-grey silt (10% clay, 20% sand, 70% silt); occasional small sub-angular to rounded stones; 0.6m D; underlies (2002), overlies (2004), same as (1005).	Buried A horizon	-	-	C18t/C19
(2004)	Deposit	-	-	Loosely compacted orange-yellow sand and gravels; Fe staining; gravels are sub-angular to rounded of all sizes and comprise flints; underlies (2003), same as (1006).	Natural sand/gravels = Hackney gravels	-	-	Glacial

9 Conclusion

Trench 001 and Trench 002 revealed an undisturbed soil horizon overlying the Hackney gravels. Although Trench 003 revealed a substantial depth of made ground, this seems to have been a localised area of disturbance to the rear of the plot, the remainder of the Site likely exhibiting a sealed buried A-horizon above the gravels. No Palaeolithic material was observed within or at the surface of the Hackney gravel terrace (*Appendix 2*).

The buried A-horizon is of low archaeological value as it can be fairly conclusively dated to the 18th/19th Century based on the CTP stem found in the environmental sampling and other items commonly found in deposits of this period. Consequently, the archaeological value of it is that it seals the underlying gravels.

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12 Appendix 1 – Palaeoenvironmental Report

*Mark Villeneuve BSc
Border Archaeology*

12.1 Non-Technical Summary

This report has been prepared by the Palaeoenvironmental Department at Border Archaeology Ltd (BA) to facilitate and elucidate the palaeoenvironmental, palaeoeconomic and palaeodietary interpretations of a sequence of features discovered during Archaeological Evaluation at Former St John's Ambulance HQ Office Mildenhall Road Hackney London E5 0RU.

One sample, comprising 40ℓ of material, was processed by flotation having originated from an 18th/19th Century buried soil horizon.

The palaeoenvironmental remains recovered were of limited utility due to the small number of specimens recovered. Therefore, no further work is recommended.

12.2 Introduction

This report details the results derived from one sample, constituting a total of 40ℓ of soil, retrieved from a deposit interpreted as an 18th/19th Century buried soil horizon. The sample was processed by means of flotation and any potential archaeobotanical remains from both the floating element and the heavier residue/retent were sorted and visually identified.

In accordance with the WSI (BA 2020), at least 40ℓ-60ℓ or 100% of the deposits were sampled. This resulted in one sample comprising 40ℓ of material being received by the Palaeoenvironmental Department with the resultant archaeological and archaeobotanical material sorted and identified.

12.3 Site Description

The land comprising the evaluation was located in Clapton on the southern side of Mildenhall Road and was occupied by a late 20th Century office building previously used as the St John's Ambulance Service HQ and training facility. Nearby are new developments, a recently built residential block, and the Clapton Pond Conservation Area, which itself yielded Palaeolithic and Mesolithic remains.

12.3.1 Soils and geology

The surrounding geology represents an unsurveyed urban area of the Soil Survey of England and Wales (1983), though the British Geological Survey 1:50,000 online records describe the underlying geology as London Clay overlain by Quaternary sand and river terrace Hackney Gravel Member (BGS 2020).

From this some palaeoenvironmental remains can be predicted, including charcoal and other charred plant macrofossils, mineral replaced plant and insect remains, bones, molluscs, parasite eggs, pollen and spores (Campbell *et al.*, 2011).

12.4 Methodology

12.4.1 Objectives of analysis

The purpose of the palaeoenvironmental sampling strategy implemented during archaeological evaluations is the retrieval of non-specific palaeoenvironmental remains and the further characterisation of features that cannot be fully investigated due to the confines of the evaluation parameters. An additional purpose to palaeoenvironmental reporting in the case of archaeological evaluations is the recommendation of further, potentially specific, palaeoenvironmental sampling in further archaeological mitigation.

12.4.2 Sampling methodology

Sampling methodology followed the *Palaeoenvironmental Department Manual* (BA 2017) for environmental sampling and processing and with reference to Historic England guidance (Campbell *et al.*, 2011). On-site the samples were collected in sample buckets and identified by context and sample number. Following receipt into the Palaeoenvironmental Department, they were assigned bucket numbers for tracking purpose. The samples were not subject to sub-sampling and their entirety was processed by means of flotation.

Flotation was undertaken in Siraf-style tanks (Williams 1973) with a 500µm retent mesh and 250µm flot sieve. No refloating was required for these samples. Retents were initially scanned by magnet to retrieve any archaeometallurgical debris and a sieve bank was used to facilitate visual sorting with the smaller fractions sorted by means of magnifying lamp and/or illuminated stereo zoom microscopy ($\leq \times 10$). The flots were sorted entirely by means of illuminated stereo zoom microscopy ($\leq \times 10$). The results of this analysis are reported with the flot and retent data recombined due to limited to no variance in the species being reported.

12.4.3 Personnel

Flotation and primary analysis were undertaken by staff within BA's Palaeoenvironmental Department managed by Amy Bunce BSc MA ACIfA, Craig Lathwell BSc and Mark Villeneuve BSc.

External and internal specialists were consulted for all archaeological finds and faunal material recovered from palaeoenvironmental samples. Archaeological, archaeometallurgical and archaeozoological assemblages from the palaeoenvironmental material were recombined with the full site assemblages to ensure unbiased and broader specialist reporting on those materials.

12.5 Description of Results

12.5.1 Description and implications of materials recovered

Detailed below are the general implications of the discovery of certain materials within the palaeoenvironmental samples. Of particular note is the absence of any significant palaeoenvironmental material recovered by sampling.

Finds

Archaeological finds within palaeoenvironmental samples are fairly common and help confirm that the sampling of the material was not biased in any manner.

In this case, pottery was common, with occasional CBM, iron material and coal material present, together with a small quantity of copper material and glass, and a fragment of CTP (clay tobacco pipe).

Bone

Both burnt and unburnt bone may be present within palaeoenvironmental samples with taphonomic conditions occasionally proportionately affecting their preservation. Burnt bone is reasonably conclusively of anthropogenic origin, deriving from domestic activities as well as some industrial and funeral practices. Unburnt bone may additionally have become incorporated due to animal death in the vicinity of the context while it was forming and therefore cannot always be used as an indicator of human activity. Incidences of the inadvertent inclusion of unburnt bone from decomposed individuals, especially of small mammals and reptiles, can highlight specific ecological niches. However, it is by no means the case that all unburnt bone derives from such cases and unburnt bone from large mammals is a good indicator of nearby settlement and potential butchery.

Unburnt mammal bone was common while unburnt small animal bone, fish bone and burnt mammal bone was poorly represented.

Shell

Terrestrial shell comprises that from snails that may have been present in the area during deposition of the fills. Identification of the species represented highlights any ecological niches preferred by certain species in the environments they inhabited.

Archaeomalacological identification is undertaken in-house utilising reference texts (Cameron 2008; Evans 1972; Kerney & Cameron 1979; Welter-Schultes 2012). Environmental interpretations were based upon a combined autecological and synecological approach, as advised by Davies (Davies 2008), using ecological groups for terrestrial and freshwater species as designated by Evans (Evans 1972) and Sparks (Sparks 1961), respectively. The ecological preferences of each species were inferred by reference to Kerney and Cameron (Kerney & Cameron 1979) and the molluscs were identified on the basis of apical and other diagnostic fragments according to nomenclature by Welter-Schultes (Welter-Schultes 2012).

Interpretations of palaeoenvironments using mollusca are limited by taphonomic uncertainty, due to the effects of gravity, bioturbation and re-deposition by hydrological processes affecting the distribution of shells within sediments, processes which are understood only superficially (Lowe & Walker 1997). Additionally, only well-preserved shells are suitable for identification; therefore, the recovered fauna may not be representative of the true fauna. Limitations of autecology and synecology, relating to uniformitarianist assumptions, the poorly understood factors influencing the distribution of a particular species, the broad ranges of environments inhabited by many molluscan species (Davies 2008), unknown associations between past molluscan fauna (Bush 1988) and the lack of applicable modern analogues for past environments limits the extent with which palaeoenvironments can be reconstructed using this method.

The only archaeomalacological finds were occasional occurrences of marine shell from the retent.

Charcoal

Charcoal is ubiquitous in palaeoenvironmental samples as it is used in domestic, funerary and industrial settings or may be present as a result of accidental firings. Identification of the wood species making up the charcoal assemblage can add valuable data as to wood selection for the varying purposes.

While often relied upon for dating, in particular C^{14} , charcoal is not the best material to use. Charcoal is subject to the 'Old Wood problem', whereby wood is known to be frequently reused and charcoal redeposited. In addition, wood grows over many years and it is not possible to know precisely where within the tree a charcoal fragment has derived.

Anthracological analysis is undertaken in-house by Amy Bunce BSc MA ACIfA additionally utilising reference keys (Hather 2000; Schweingruber 1990; Schweingruber 1990). Anthracological analysis was generally undertaken at $\times 100$ magnification although higher magnifications to $\times 400$ were used where necessary. Lighting was by incident lighting with transmitted lighting where necessary. Charcoal was transversally sectioned with tangential or radial sectioning undertaken where required. Any waterlogged or otherwise preserved wood present would be presented in a separate Wood Identification and Technology report.

Growth ring curvature and diameter size was classified by reference to Ludemann-Nelle (L-N) templates (Ludemann 2002; Nelle 2002) whereby classes I, II, III, IV & V represented diameters $< 20\text{mm}$, $20\text{-}30\text{mm}$, $30\text{-}50\text{mm}$, $50\text{-}100\text{mm}$ and $> 100\text{mm}$ respectively. Growth ring curvature was additionally classified by reference to Marguerie-

Hunot (M-H) test cards (Marguerie & Hunot 2007) whereby weak, moderate and strong curvature were categorised 1, 2 and 3, respectively.

Indeterminate charcoal fragments from <2mm to >4mm were abundant in this sample, including material that had experienced high enough temperatures to undergo fusion of the cellular structure. Due to the high level of fusion exhibited, species ID was not undertaken. It is probable the presence of fusion represents efficient domestic stoves and confirms the later dating of the deposit.

Slag

Archaeometallurgical debris may be present in the form of unspecific slag fragments, diagnostic slag fragments, vitrified structures and, more commonly for environmental samples, as hammerscale of the spheroidal or flake variety. Slag may be retrieved from both the flot and retent; this apparent contradiction, in that slag would normally be too heavy to float, is due to vesicles containing air in the spheroidal hammerscale and the smaller fragments of slag. Droplets of slag become spheroidal if they cool while travelling through the air after having been propelled during iron working.

Both slag and fuel ash slag fragments were common in this sample.

Uncharred archaeobotanical material

In the vast majority of instances of uncharred archaeobotanical material in palaeoenvironmental samples, it must be disregarded as of potentially modern origin. However, waterlogged conditions and some other preservational conditions can allow uncharred archaeobotanical remains or certain archaeobotanical remains within the assemblage to be considered.

The uncharred archaeobotanical material recovered here included Fool's parsley seeds (*Aethusa cynapium*), Bristly ox-tongue seeds (*Picris echioides*) and one seed from the Dock genus (*Rumex* sp.).

Charred archaeobotanical material

Charred archaeobotanical material is generally the most illustrative palaeoeconomic remnant. Charring is generally accepted to be almost solely of anthropogenic origin and the material can therefore be used to directly reconstruct the past agricultural or consumer economy and diet. Caution must be taken by the intrinsic bias a charred assemblage presents over the uncharred plant remains of palaeoeconomic utility. However, such variance is built into the study of charred plant remains.

Archaeobotanical identification is undertaken in-house utilising reference texts that include the most valid to the British assemblages (Anderburg 1994; Berggren 1969; Berggren 1981; Groningen Institute of Archaeology 2006-present; Jacomet 2006; Martin & Barkley 2000; Renfrew 1973; Schoch *et al.*, 1988), with classification following Stace (Stace 2010).

The charred archaeobotanical material was represented by two charred grains, one Oat caryopsis (*Avena sativa*), and one Barley caryopsis (*Hordeum* sp.).

12.5.2 Description of palaeoenvironmental remains by context

Detailed below are the palaeoenvironmental remains from each context, an assessment of the localised palaeoenvironment reconstruction is attempted. Results for all contexts can be observed in the table below.

(1005)

(1005) represented an 18th/19th Century buried soil horizon. Archaeological finds included a common abundance of slag, fuel ash slag and pottery, an occasional abundance of CBM, iron material and coal material, and a poor abundance of copper material, glass, and a fragment of clay tobacco pipe (CTP).

The palaeoenvironmental finds were represented by abundant indeterminate charcoal fragments <2mm, 2-4mm and >4mm, including fragments that had undergone fusion under high temperatures. The presence of fusion indicates the high temperatures of later domestic stoves and likely confirms the 18th/19th Century dating, as well as the formation as a garden soil/topsoil.

There was one Oat grain (*Avena sativa*) and one Barley grain (*Hordeum* sp.), as well as 16 uncharred Fool's parsley seeds (*Aethusa cynapium*), four Bristly ox-tongue seeds (*Picris echioides*), and one Dock-genus seed (*Rumex* sp.).

Finally, there was a poor abundance of indeterminate marine shell. The indeterminate character and limited quantity of marine shell recovered limits its analytical utility, as it may be archaeologically relevant to the Site, or it may have been deposited by past river activity.

The rest of the archaeobotanical material recovered was present in too low a quantity to allow meaningful analysis. While Barley and Oat are typical agricultural crops, there was only one of each so there is no way to determine the origin of the grains or the circumstances surrounding their production.

Bristly ox-tongue (*P. echioides*) Fool's parsley (*A. cynapium*) and Dock (*Rumex* sp.) are often found on marginal, disturbed and rough wasteland (NIAB 2004; Stace 2010). However, they were uncharred, not waterlogged, and the Bristly ox-tongue (*P. echioides*) especially were in good enough condition that they were likely modern windborne contaminants into the samples rather than being representative of the sampling area proper.

12.6 Table of Results

The following table details the abundance results from both the archaeobotanical material and the archaeological finds. Weight and quantity records have been recorded but are not presented here due to the variation between materials.

Context no.			1005
Sample no.			001
Sample part			1/4 - 4/4
Bucket no.			26265-8
Sample vol. (mℓ)			8100
% sample analysed			100
Waterlogged?			No
Refloated?			No
Latin name	Common name	Plant part	
Carbonised cereal			
<i>Avena sativa</i>	Oat	caryopsis	1
<i>Hordeum</i> sp.	Barley	caryopsis	1
Uncarbonised wild taxa			
<i>Aethusa cynapium</i>	Fool's parsley	seed	16
<i>Picris echinoides</i>	Bristly ox-tongue	seed	4
<i>Rumex</i> sp.	Dock	seed	1
Charcoal			
Indeterminate <2mm	Indeterminate	fragments	XXXX
Indeterminate 2-4mm	Indeterminate	fragments	XXXX
Indeterminate >4mm	Indeterminate	fragments	XXXX
Archaeometallurgical			
Slag	-	-	XXX
Artefactual			
Ceramic/pottery	-	-	XXX
CBM	-	-	XX
Cu alloy	-	-	X
Fe	-	-	XX
Fuel Ash Slag	-	-	XXX
Glass	-	-	X
Coal/coke	-	-	XX
CTP	-	-	X
Faunal			
Mammal (unburnt)	Indeterminate	-	XXX
Small Animal (unburnt)	Indeterminate	-	X
Fish (unburnt)	Indeterminate	-	X
Mammal (burnt)	Indeterminate	-	X
Molluscan			
Marine	Indeterminate	-	X

Abundance key: + = rare; ++ = occasional; +++ = common; ++++ = abundant.

12.7 Conclusions and Recommendations

The intention of the non-specific palaeoenvironmental sampling was to attempt a reconstruction of the environment extant to the archaeological contexts evaluated. The sample was noteworthy because of the variety of archaeological material recovered, but the palaeoenvironmental material was unsuitable for significant analysis.

The palaeoenvironmental remains recovered offer tentative affirmation of the nature of the Site itself but nothing that could not also be inferred from its history and geology. This sample is therefore of limited analytical and interpretive value.

12.7.1 Recommendations

Due to the nature of the materials recovered and full analysis undertaken, no further work is recommended.

Retention of the materials detailed above as an incorporation of the site archive for deposition with the museum is not recommended.

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13 Appendix 2 – A Statement on the Pleistocene & Palaeolithic Field Investigations

Dr B. J. Bishop
Quaternary Scientific (University of Reading)

13.1 Introduction

13.1.1 Site context

This report summarises the findings arising out of the geoarchaeological field investigations undertaken by Quaternary Scientific (University of Reading) in connection with the proposed development of land at the Former St John's Ambulance HQ Office Mildenhall Road London Borough of Hackney (NGR TQ 3503 8590; *fig. 1*). Quaternary Scientific were commissioned by Border Archaeology to undertake the investigations. The Site is small (see *fig. 1*), with a standing building occupying the greater part of its footprint allowing only very limited access. Nevertheless, three trenches have been excavated at the Site by the archaeological contractors, one of which had been backfilled prior to the Site visit described here.

13.1.2 Palaeolithic and Pleistocene palaeoenvironmental context

The Site lies towards the eastern extent of a significant outcrop of Quaternary terrace geology mapped as part of the Wolstonian Hackney Gravel Member, a deposit recognised by the British Geological Survey (BGS) as lying between the Lynch Hill and Taplow Terraces in the Clapton, Stoke Newington and Shoreditch areas (Strange 1992; BGS 2007). At Shoreditch, these have been recorded as in excess of 9m thick (Gibbard 1994, 43). The Lynch Hill terrace equates with the Lower Thames Middle Pleistocene Corbets Tey Gravel Formation, generally thought to have been deposited during OIS 8, *ca.* 303,000 – 245,000BP (Bridgland 1994; Gibbard 1994). The Taplow terrace equates with the Lower Thames Mucking Gravel, generally thought to have been deposited during OIS 6, *ca.* 186,000 – 130,000BP (Gibbard 1994).

The Hackney Gravel Member has produced significant finds of Palaeolithic date, particularly to the N of the Site, in the vicinity of Stoke Newington. These include a large quantity of Palaeolithic flaked implements from numerous locations, as well as a potential Palaeolithic surface or 'floor' upon which *in-situ* cultural and organic remains were identified during the 19th Century. The 19th Century accounts record the frequent recovery of Palaeolithic material during the urban expansion of the area (Smith 1878; 1884a; 1884b; 1894; Greenhill 1884) and that in some areas an 'immense accumulation of Palaeolithic artefacts' was present (Smith 1894 204). These principally consisted of hand axes and associated debitage of Acheulian type, many of which were rolled but which also included some material that was in sharp condition and refittable and which appeared to have been recovered *in-situ* as a knapping scatter.

According to Gibbard (1994, 41), the area in which the majority of the finds had been made is localized and in fact comprises a complex sequence of sediments, possibly cutting through the Stamford Hill Gravels (Lea equivalent to the Thames Corbett Tey Gravel) (Gibbard 1994, *figs 16, 18, 27*). Gibbard (*ibid.*, 58) has suggested that these deposits represent a southward-flowing tributary, possibly originating as part of a substantial bend at the confluence of a palaeo-Hackney Brook and River Lea, roughly equivalent to the Thames Mucking Gravel Member.

Despite the quantity and quality of Palaeolithic material recovered during the 19th Century, the few attempts to relocate the floor during the 20th Century have failed and the location, extent and nature of the 'floor' and its geological context remains largely unknown, with some even questioning the 'floor's' existence (e.g. Gibbard 1994, 85, 170). Recently, Green *et al.* (2004) have suggested that the 'floor' may actually refer to a number of episodic occupation events occurring on a fluviially accumulating sediment body, the Stoke Newington Sands. These had been locally truncated during the Late Devensian/Holocene by the erosional actions of the Hackney Brook, resulting in the incorporation of Palaeolithic artefacts within the latter's alluvium. This may account for many of the 20th Century investigations, which characteristically recover derived Palaeolithic artefacts but fail to identify any *in-situ* working 'floor'.

13.2 Aims & objectives

On the basis of the Pleistocene and Palaeolithic significance and potential of the Site, a programme of geoarchaeological test-pitting, recording and onsite processing was carried out. The aims of the investigations were as follows:

1. To clarify the nature of the sub-surface stratigraphy across the Site;
2. To investigate whether the sequences contain any artefact or ecofact evidence for Palaeolithic human activity, and to evaluate the potential for lithic artefact evidence in these deposits;
3. To evaluate the palaeoenvironmental potential of the deposits;
4. To establish the likely impact of the proposed development on deposits of Palaeolithic and or palaeoenvironmental interest.

In order to address these aims, two of three archaeological trenches were examined in the field (see *fig. 1*).

13.3 Results of the field investigations

The sequence recorded in the trenches at the Site were as follows:

13.3.1 Trench 1

Machine-excavated; located towards the N of the Site.

OD Height	Description of Deposits
19.80-19.70m	Concrete slab
19.70-19.00m	Made ground / levelling comprising redeposited topsoil and brick rubble
19.00-18.70m	Topsoil comprising loose, dark brown silty sand with occasion rounded alluvial pebbles and small cobbles, ceramic building material fragments
18.70-18.50m	Sub-soil comprising loose, greyish brown silty sands and rounded alluvial pebbles and cobbles
18.50- 18.10m	Pleistocene gravel terrace deposits comprising unbedded alluvial pebbles and small cobbles <40mm maximum dimensions (20%) in a coarse sand matrix (80%). Pebbles and cobbles are overwhelmingly of flint with very occasional quartzite pebbles present. Interpreted as part of the Hackney Gravel Formation
18.10m	No further excavation due to depth of excavation and impracticability of access for any further machine excavation

13.3.2 Trench 2

Hand-excavated; located towards E central part of Site.

OD Height	Description of Deposits
19.90-18.80m	Made ground / levelling comprising redeposited topsoil and brick rubble
18.80-18.35m	Topsoil comprising loose, dark brown silty sand with occasion rounded alluvial pebbles and small cobbles, ceramic building material fragments
18.35-18.15m	Sub-soil comprising loose, greyish brown silty sands and rounded alluvial pebbles and cobbles
18.15m	No further excavation due to excessive depth of trench

13.3.3 Trench 3

Machine-excavated; located towards SE of Site:

This had been backfilled the prior to the work described here. The excavator reported it to be c.2.5m deep and revealed mostly made ground with some possible alluvial silts at the base.

13.4 Conclusions

Due to the depth of the two open trenches precluding further hand-excavation and the impossibility of getting a mechanical excavator onto the Site due to lack of access, no excavation through the Pleistocene terrace sequence was possible. The surface of undisturbed terrace gravels was encountered at 18.50m AOD in Trench 1 and these were trowelled by hand and the spoil previously removed also searched but no artefactual or environmental indicator materials were identified.

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