

**ELLEN WILKINSON SCHOOL,  
TOLLGATE ROAD,  
BECKTON,  
LONDON BOROUGH OF NEWHAM**

**AN ARCHAEOLOGICAL EVALUATION REPORT**

**TQ 4205 8167**

**OCTOBER 2006**

**National Grid Reference:** TQ 4205 8167

**Site Code:** TLG 06

**On behalf of:** Property and Design Consultancy  
City Gate House  
246-250 Romford Road  
Forest Gate  
E7 9HZ

**Prepared by:** Andy Leonard

**Evaluation by:** Andy Leonard

**Illustrations by:** Jon Moller

**Project Manager:** Ron Humphrey

**Timing:** Evaluation Fieldwork: 29<sup>th</sup> & 30<sup>th</sup> June 2006

Post-excavation and report production: July 2006

## CONTENTS

	Page
<b>1 Abstract</b>	1
<b>2 Site Location</b>	2
<b>3 Geology and Topography</b>	2
<b>4 Planning Background</b>	2
<b>5 Archaeological and Historical Background</b>	2
<b>6 Aims and Objectives</b>	3
<b>7 Methodology</b>	4
<b>8 Results</b>	6
<b>9 Finds</b>	7
<b>10 Conclusions and Recommendations</b>	8
<b>11 Bibliography</b>	9
<b>Figures:</b>	
<b>1 – Site Location Plan</b>	10
<b>2 – Trench Location Plan</b>	11
<b>3 – West facing section, Trench 1</b>	12
<b>Appendices:</b>	
<b>A – Context Register</b>	13
<b>B – Environmental Archaeological Assessment</b>	14
<b>C - Oasis form</b>	20

## 1 ABSTRACT

*An archaeological evaluation was undertaken by AOC Archaeology Group on 29<sup>th</sup> and 30<sup>th</sup> June 2006 at Ellen Wilkinson School, Tollgate Road, Beckton, London Borough of Newham, on behalf of Property and Design Consultancy. The aim of the evaluation was to assess the impact of the proposed development on any surviving archaeological remains.*

*The evaluation comprised the excavation of one machine excavated trench measuring 3m x 3m at base. Flood plain gravels were identified 3m below ground surface. These were overlain by approximately 1m of peat which was sealed by alluvial deposits of blue and brown silty clay. Radiocarbon dating carried out on the peat deposits indicate that it formed between approximately 2470 – 2270 BC and 1690 – 1510 BC when the wetland vegetation cover was dominated by alder carr woodland. The onset of alluvial sedimentation sometime after 1690 – 1510 BC is broadly consistent with other records from the area e.g. Golfers Site, Beckton. These deposits were overlain by approximately 0.5m of made ground which was in turn sealed by a topsoil deposit.*

*No archaeological features or deposits were identified in the trench.*

## **2 SITE LOCATION**

- 2.1 The site is located in Beckton, London Borough of Newham, towards the west end of Tollgate Road. The proposed development is centred on National Grid Reference (NGR) TQ 4205 8167 (Figure 1).
- 2.2 The site is roughly rectangular in shape and is bounded by Tollgate Road to the north, existing school buildings to the east, Mitchell Walk to the south and Beckton District Park to the west. The area affected by the development covers a total area of approximately 0.5 hectares.

## **3 GEOLOGY AND TOPOGRAPHY**

- 3.1 The British Geological Survey map (BGS Sheet 257), indicates that the site is underlain by Recent Alluvium associated with the River Thames and Flood Plain Gravel deposits resting on deposits of the Lambeth Group (Woolwich and Reading Beds).
- 3.2 Geotechnical investigations were conducted on site by Site Analytical Services (2005). Three shell and augur boreholes and four continuous flight augur boreholes were carried out. These indicated that below approximately 0.80m of made ground a brown alluvial clay sealed a 0.90m thick deposit of peat, which in turn sealed a 0.50m thick deposit of grey alluvial clay, overlying the natural gravels.

## **4 PLANNING BACKGROUND**

- 4.1 The local planning authority is the London Borough of Newham. Archaeological advice to the Borough is provided by the Greater London Archaeological Advisory Service (GLAAS).
- 4.2 The proposed development (Application No.: 05/1124) of the site comprises the construction of a new school building.
- 4.3 This document reports on the results of an archaeological evaluation undertaken to identify any archaeological remains that might be threatened by the proposed development. A full report will be issued once the results of carbon-dating have been established.

## **5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND**

- 5.1 The following information is drawn from the Written Scheme of Investigation (AOC 2006).
- 5.2 A number of archaeological investigations have been undertaken in the area, and there are numerous entries within the Greater London Sites and Monuments Record (GLSMR) for archaeological features or chance finds.

- 5.3 It is only relatively recently that the importance of this area has been recognised. Bronze Age trackways and platforms of brushwood and timber piling have been found extensively to the south of the A13 road. Excavations at Newham Way overpass revealed late Mesolithic/Neolithic flintwork overlain by alluvial clays. These were in turn overlain by a sequence of peat deposits containing timber trackways dating to the Bronze Age. Sealing the peat deposits were further alluvial clays containing dumps of Roman material.
- 5.4 This sequence has been observed in several investigations in and around the area. Prehistoric timbers were also found in the peat deposits at Prince Regent's Lane, again sandwiched between alluvial clays.
- 5.5 Geotechnical investigations undertaken on the site (Site Analytical Services Ltd, 2005) revealed that this sequence is present on the site. Below approximately 0.80m of made ground, a brown silty alluvial clay sealed a 0.90m thick deposit of peat, which in turn sealed the natural gravels. These deposits were present in 5 of the boreholes recorded.

## **6 AIMS AND OBJECTIVES**

- 6.1 The aims of the Evaluation were:
- To establish the presence/absence of archaeological remains within the site.
  - To determine the extent, condition, nature, character, quality and date of any archaeological remains encountered.
  - To record and sample excavate any archaeological remains encountered (including evidence of past environments).
  - To assess the ecofactual and environmental potential of any archaeological features and deposits.
  - To determine the nature and extent of existing truncations of the archaeological deposits.
  - To enable the Archaeology Advisor to make an informed decision on the status of the condition on the planning permission, and any possible requirement for further work in order to satisfy that condition.
  - To make available to interested parties the results of the investigation in order to inform the mitigation strategy as part of the planning process.
- 6.2 The specific objectives of the Evaluation were to:
- Determine the presence of any evidence for buried surfaces that may survive beneath the alluvial clays.
  - Establish whether there is any evidence for Mesolithic and Neolithic occupation or exploitation of the area.
  - Establish the presence/absence of evidence for exploitation of the area in the middle and later Bronze Age.

- Establish the presence/absence of marshland management such as drainage ditches, sluices or similar features.
- 6.3 The final aim is to make public the results of the investigation, subject to any confidentiality restrictions.

## 7 METHODOLOGY

- 7.1 The evaluation consisted of one trench measuring 3m x 3m at base. The trench was targeted using an Electronic Distance Measurer (EDM) to investigate the area where the geotechnical results indicated that the peat deposits were at their thickest but the gravels were at their highest (Figure 2).
- 7.2 All overburden was to be removed down to the top of the first recognizable archaeological horizon or the natural deposit in the event that no archaeological horizons were present (in this case the latter), using a 13 ton tracked excavator with a 1.8m wide toothless ditching bucket.
- 7.4 All machining was carried out under direct control of an experienced archaeologist.
- 7.5 Excavated material was examined in order to retrieve artefacts to assist in the analysis of the spatial distribution of artefacts.
- 7.6 On completion of machine excavation, all faces of trenches that required examination or recording were cleaned using appropriate hand tools. Column and bulk samples were taken by Archaeoscape for AOC Archaeology in order to establish the potential of the deposits for reconstructing the environmental history of the site and its environs.. The column samples were located on the section drawing. Separate levels were also taken at the base and top of each of the column samples.
- 7.7 The trench was excavated to the underlying natural Flood Plain Gravels. Due to the depth of the trench, it was 'stepped' in by 1 metre for every vertical metre excavated. A 1m<sup>2</sup> sondage was had-excavated into the gravels to establish the presence of any struck flint. Although no archaeological remains were identified, the full stratigraphic sequence was recorded.
- 7.8 All excavation was undertaken with a view to avoiding damage to any archaeological features or deposits which appeared to be demonstrably worthy of preservation *in situ*.
- 7.9 After recording, the trench was backfilled with excavated material.
- 7.10 A Temporary Bench Mark (TBM) was set up on site, transferred from a Bench Mark on the roundabout on Tollgate Road just to the east of the site.

7.13 The evaluation work was undertaken by the Andy Leonard, Project Supervisor, under the overall project management of Ron Humphrey, Project Manager.



## 8 RESULTS

### 8.1 Table of results

1.53 to 1.28mOD	(1/001). Moderately to firmly compacted light brown topsoil and grass. 20 <sup>th</sup> century playing field.
1.28 to 0.68mOD	(1/002). Firmly compacted light brown clayey silt. Occasional hessian, plastic and building material inclusions. 20 <sup>th</sup> century made ground.
0.68 to -0.42mOD	(1/003). Firmly compacted mid to light brown silty clay. Occasional flecks of white silty clay. Naturally silted alluvium.
-0.42 to -0.52mOD	(1/004). Moderately to firmly compacted light blue silty clay. Naturally silted alluvium.
-0.52 to -1.41mOD	(1/005). Moderately compacted dark brown peat with frequent pieces of wood.
-1.41 to -1.56mOD	(1/006). Firmly compacted light grey sandy gravels. Naturally formed Flood Plain Gravels.

8.2 The Trench was located to the northwest of the site (Figure 2) and measured 7m by 7m at the top and 3m by 3m at base, with three steps excavated to provide a safe working environment.

8.3 Natural Flood Plain Gravels (1/006) were observed at -1.41mOD. No archaeological remains were present overlying or cutting this deposit. A 1m<sup>2</sup> sondage was hand-excavated to a depth of 0.10m to establish the presence of any residual struck flint. No finds were retrieved from this. Assessment of these gravels (Appendix B) indicates that these are Shepperton Gravels, representing deposition under cold climate conditions at the end of the Devensian cold stage.

8.4 Sealing the gravels was a 0.90m thick deposit of dark brown peat (1/005). This contained frequent pieces of wood deposited naturally as opposed to being *in situ*. This represents Holocene alluvium and resembles other sequences recorded in the vicinity. No archaeological remains were observed in or overlying this deposit. The peat formation was radiocarbon dated to between approximately 2470 – 2270 BC and 1690 – 1510 BC.

8.5 The peat was sealed by two distinct deposits of alluvium, (1/004) and (1/003). Neither of these contained any finds or features. The brown alluvial deposit (1/003) contained occasional white silty clay fleck inclusions. The earlier alluvium (1/004) represents a late Holocene alluvial accumulation while the latter (1/003), containing fine-grained sediments, represents deposition on the margins of a slow moving water body, such as a channel, probably during intermittent flooding of the ground surface. The onset of alluvial sedimentation sometime after 1690 – 1510 BC is broadly consistent with other records from the area e.g.

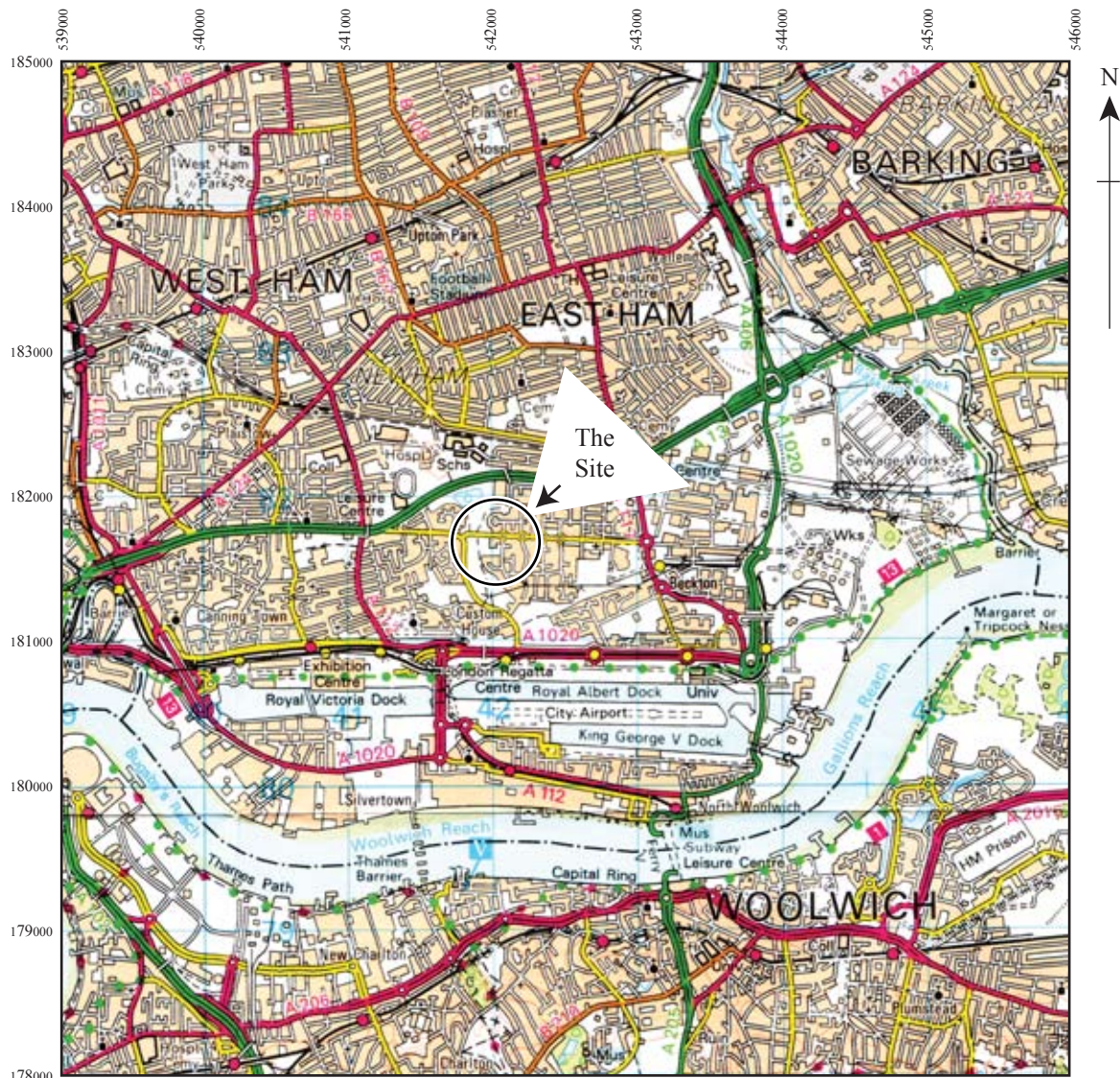
- Golfers Site, Beckton, although there is no evidence at present for the marked environmental deterioration noted prior to this event, and within the peat sequence, at the Golfers Site.
- 8.6 Overlying the alluvial deposits was a 0.60m thick deposit of made ground (1/002) containing plastic and building material inclusions. This was in turn sealed by the light brown topsoil and grass (1/001) of the playing field.
- 8.7 Assessment of the pollen stratigraphy demonstrates that throughout the period of sediment deposition pollen grains and spores are well-preserved and indicate that the vegetation was locally dominated by alder carr woodland. The absence of lime in the upper part of the sequence may indicate the onset of the pan European 'lime decline', which occurred from the Bronze age onwards, and may be associated with human interference in the natural vegetation succession.
- 8.8 No archaeological finds or features were identified in the trench.
- 9 FINDS**
- 9.1 No finds were retrieved from the site. Dating of the sequence recorded will be established through carbon-dating (report pending).

## 10 CONCLUSIONS AND RECOMMENDATIONS

- 10.1 No evidence for any archaeological activity was identified on the site.
- 10.2 The sequence of deposition recorded in the trench largely reflects that recorded in the geotechnical report. Given that the boreholes containing this sequence were spread across the site, the potential for archaeological remains to have survived must be considered high. However, the dearth of any such remains within the trench would suggest that archaeological activity in the area was minimal or non-existent.
- 10.3 The geoarchaeological assessment demonstrates the sequence of deposition is characteristic for the area. Further pollen analysis may prove beneficial to the environmental record, given the high concentration of pollen grains and spores and the dearth of direct pollen stratigraphic indicators of human activity. Any such work could be conducted without the necessity for further fieldwork given the bulk samples already retrieved are sufficient for these objectives.
- 10.4 The evaluation met its primary objective: to establish the presence/absence of any archaeological remains. It is therefore recommended that no further archaeological fieldwork is required to satisfy the archaeological planning condition on this site. However, the final decision regarding any further work will rest with the London Borough of Newham and its archaeology advisor, David Divers (GLAAS).
- 10.4 Publication of the results will be through the ADS OASIS form (Appendix C) with a short summary submitted to the London Archaeologist fieldwork round-up.

## 11 BIBLIOGRAPHY

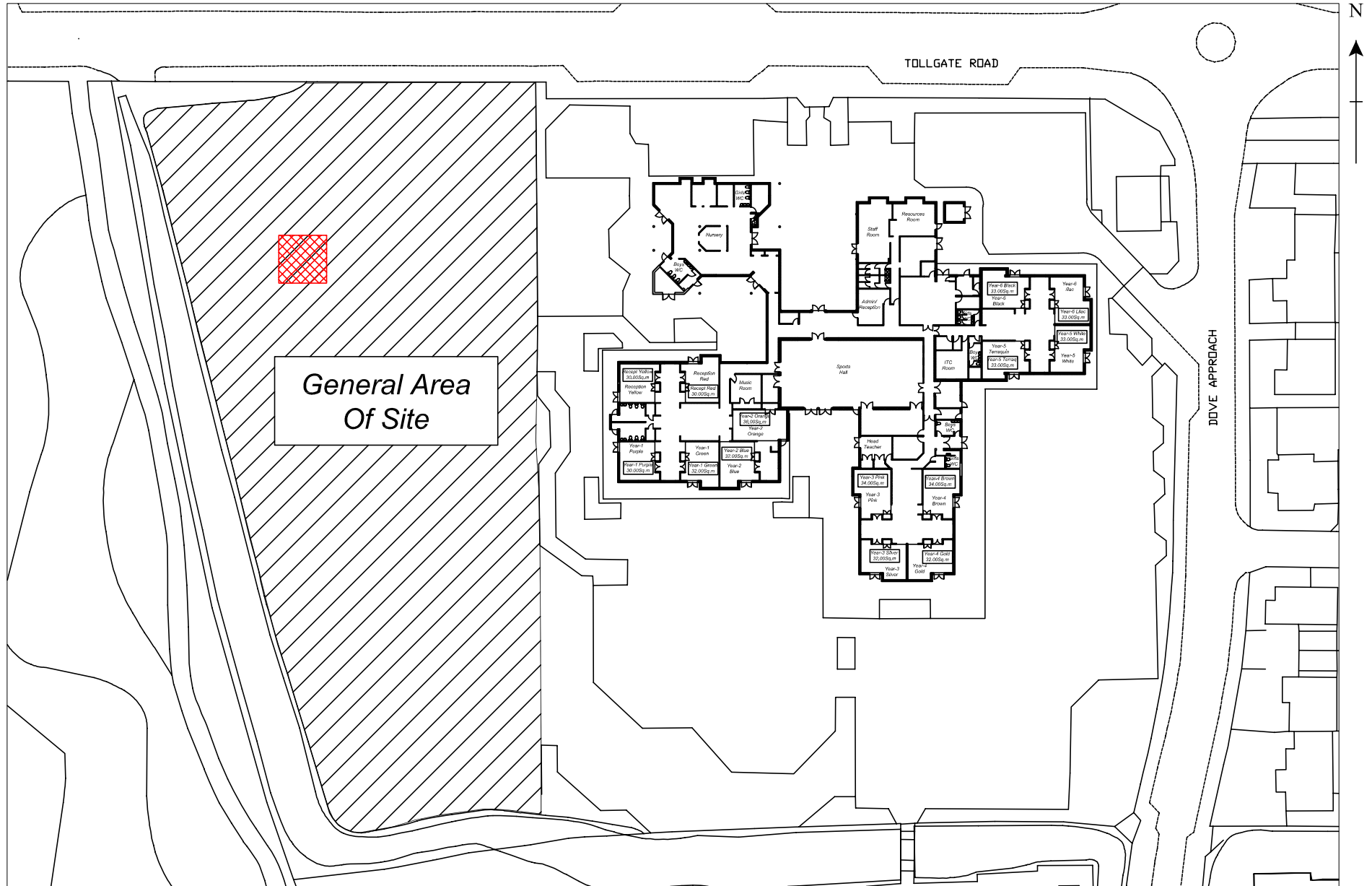
- AOC Archaeology Group (2006). *Ellen Wilkinson School, Tollgate Road, Beckton, London Borough of Newham: A Written Scheme of Investigation for an Archaeological Evaluation*. June 2006.
- Archaeoscape (2006). *Ellen Wilkinson School, Tollgate Road, Beckton, London Borough of Newham: Interim Environmental Archaeological Assessment*
- English Heritage (1991). *Management of Archaeological Projects*.
- English Heritage London Region (1992). *Archaeological Assessment and Evaluation Reports (Guidelines) Archaeological Guidance Paper: 5*.
- English Heritage (1998a). *Archaeological Guidance Paper 3: Standards and Practices in Archaeological Fieldwork*. (English Heritage London Region).
- English Heritage (1998b). *Archaeological Guidance Paper 4: Standards and Practices in Archaeological Reports*. (English Heritage London Region).
- English Heritage (2002). *Environmental Archaeology: A guide to the theory and practice of methods, from sampling and recovery to post-excavation*.
- Institute of Field Archaeology (1992). *Standards and Guidance and Guidelines for Finds Work*.
- Institute of Field Archaeologists (1994, revised 2001). *Standard and Guidance for Archaeological Field Evaluation*.
- Institute of Field Archaeologists (1997). *Code of Conduct*.
- Museum of London (1994). *Archaeological Site Manual (3<sup>rd</sup> ed)*.
- Site Analytical Services Ltd. (2005). *Ellen Wilkinson Primary School, Tollgate Road, Beckton, London E6 – Report on a Ground Investigation*.
- United Kingdom Institute for Conservation (1983). *Conservation Guidelines No 2*.
- United Kingdom Institute for Conservation (1990). *Guidance for Archaeological Conservation Practice*.
- English Heritage (1998): *English Heritage London Region Archaeological Guidance Paper 2*



Based on the Ordnance Survey's 1:50 000 Landranger map of 2004 with the permission of the Controller of Her Majesty's Stationery Office, © Crown Copyright. Licence No. AL 1000 16114




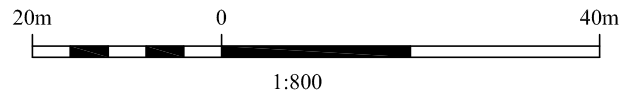
**Figure 1:** Site location



Based on the Plans Provided by the Client

**Figure 2:** Detailed Site Location

 Evaluation Trench



© AOC ARCHAEOLOGY GROUP - OCTOBER 2006

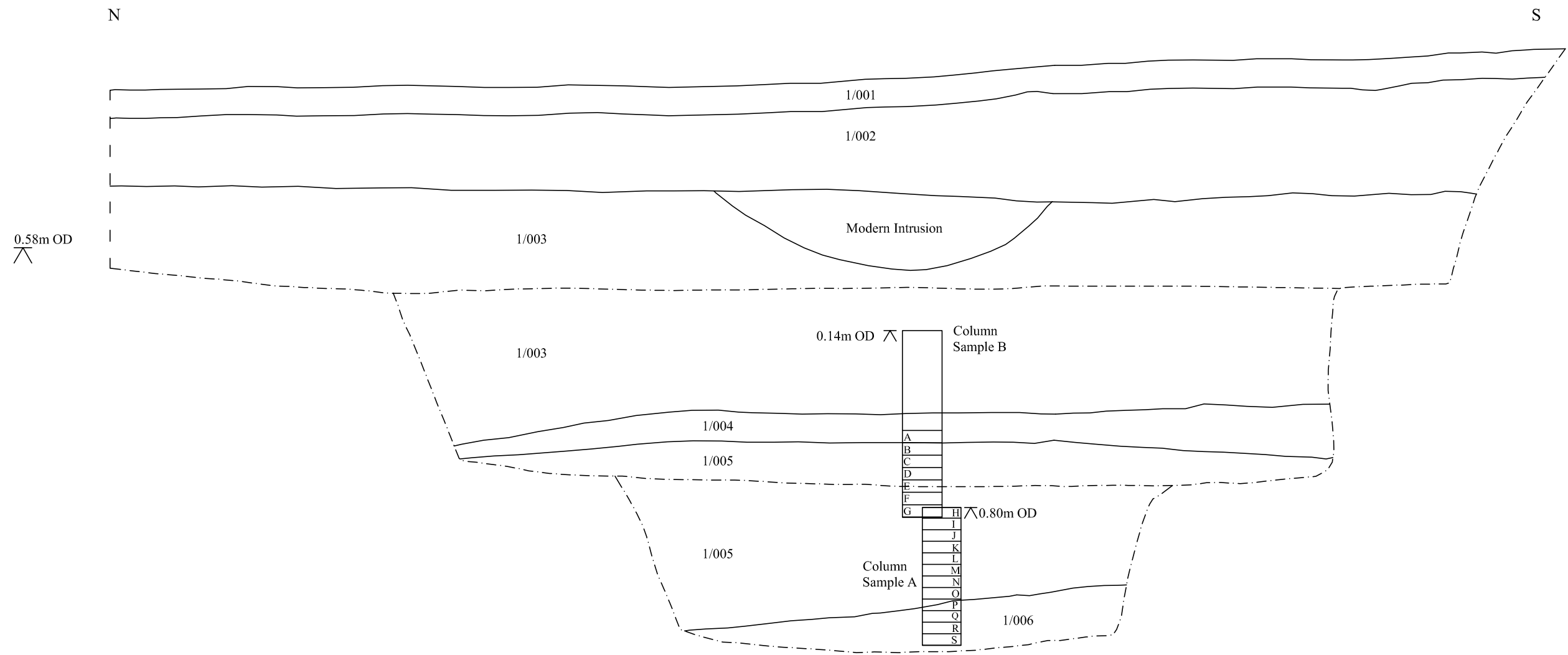
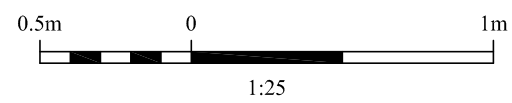


Figure 3: Section 1



## APPENDIX A – CONTEXT REGISTER

<b>Context No.</b>	<b>Context Description</b>	<b>Length</b>	<b>Width</b>	<b>Depth</b>
1/001	Grass and topsoil	8.00m	7.00m	0.20m
1/002	Modern made ground	8.00m	7.00m	0.65m
1/003	Light brown alluvium	7.00m	7.00m	1.08m
1/004	Light blue alluvium	5.00m	5.00m	0.30m
1/005	Peat	5.00m	4.00m	0.70m
1/006	Natural gravels	3.00m	3.00m	0.25m



## APPENDIX B

### ELLEN WILKINSON SCHOOL, TOLLGATE ROAD, BECKTON, LONDON BOROUGH OF NEWHAM (SITE CODE: TLG06): ENVIRONMENTAL ARCHAEOLOGICAL ASSESSMENT

*N.P. Branch, C.P. Green and P. Morgan*

*ArchaeoScape, Department of Geography, Royal Holloway University of London, Egham Hill, Egham, Surrey, TW20 OEX, UK*

## INTRODUCTION

This report summarises the findings arising out of the environmental archaeological assessment undertaken by *ArchaeoScape* at the Ellen Wilkinson School, Tollgate Road, Beckton, London Borough of Newham (Site Code: TLG06; National Grid Reference: TQ 4205 8167). During the archaeological evaluation, in conjunction with AOC Archaeology, the excavation of one deep trench (Trench 1) permitted systematic recording of a natural sedimentary sequence comprising fine and coarse grained mineral sediments and peat. Based upon previous archaeological and environmental archaeological investigations in the Beckton area, the peat sequence was thought to be Neolithic (*ca.* 4300 - 2100 BC) to Bronze Age (*ca.* 2100 - 800 BC) in date (e.g. Sidell *et al.*, 2000; Branch *et al.*, in prep). *ArchaeoScape* implemented a targeted sampling strategy, which enabled the collection of column and bulk samples suitable for environmental archaeological analysis. The overarching aim of the environmental archaeological assessment was to establish the potential of the deposits for reconstructing the environmental history of the site and its environs, and in particular for addressing the following research issues:

1. Previous work in the London area has recorded the presence of Bronze Age trackways and platforms on the former floodplain of the River Thames, and settlement on adjacent higher, drier ground. The environmental archaeological records from peat sequences proximal and distal to these sites indicate a period of intensive human activity, with unequivocal evidence for woodland clearance and sometimes cultivation (Branch *et al.*, in prep; Carew *et al.*, in prep). Further records from the Beckton area would significantly enhance our knowledge and understanding of the timing, duration, nature and environmental impact of these activities.
2. Environmental archaeological records from peat sequences proximal to these Bronze Age trackways and platforms also indicate that their abandonment coincided with a significant increase in bog surface wetness. From the study at the nearby Golfers Site, Woolwich Manor Way, Beckton, by *ArchaeoScape*, this has been attributed to worsening environmental conditions from approximately 1500 BC onwards, which culminated in the renewal of alluvial sedimentation across the site at approximately 1000 BC (Carew *et al.*, in prep). Further records from the Beckton area would test this hypothesis.

3. Environmental archaeological records from peat sequences proximal and distal to the trackways and platforms indicate that prior to their construction the peat surface was colonised by Yew (*Taxus baccata*) woodland. There is no modern analogue for the presence of Yew in wetland ecosystems, and therefore records for its presence in the Lower Thames valley during prehistory provide a valuable contribution to our understanding of British vegetation history. The reason for Yew colonisation of the peat surface remains unclear, and whether its decline was a response to natural changes in the environment or human impact is uncertain e.g. Yew wood was used in the trackway construction at the nearby Golfers Site, Woolwich Manor Way, Beckton (Carew *et al.*, in prep). Further records from the Beckton area would significantly enhance our knowledge and understanding of this event.

The environmental archaeological assessment at the Ellen Wilkinson School consisted of:

1. Recovering column samples (<A> and <B>) and bulk samples (<S> to <A>) from Trench 1 for reconstructing changes in the sedimentary history, former vegetation cover and palaeohydrology using sub-fossil pollen, insects and plant macroremains. The column samples were recovered for the purposes of lithostratigraphic description, pollen analysis and organic matter determination. The bulk samples were recovered for insect and plant macrofossil analysis. Organic matter determinations, and insect and plant macrofossil analyses, were not included in this assessment, but the samples obtained will be analysed as part of a separate longer-term research project by Royal Holloway Department of Geography into the middle to late Holocene environmental history of the lower Thames valley.
2. Recording the lithostratigraphy (all column samples) to provide a preliminary reconstruction of the site formation processes.
3. Assessment of the preservation and concentration of pollen grains and spores (all column samples) to provide a preliminary reconstruction of the vegetation history, and to detect evidence for human activities e.g. woodland clearance and cultivation.
4. Radiocarbon dating of peat extracted from the top and the base of this unit to provide a provisional geochronological framework for the site.

## **GEOLOGICAL CONTEXT**

The site is on the floodplain of the Lower Thames where the Woolwich Reach of the river forms a broad southward bend. The whole of the area enclosed by the bend is shown by the British Geological Survey (BGS) to be underlain by Alluvium (1:50,000 Sheet 257 Romford 1996). Beneath the Alluvium, sand and gravel was recorded during the excavation of the Royal Victoria Dock (Blandford 1854) and the Royal Albert Dock (Whitaker 1889) and has been assigned by Gibbard (1994) to the Shepperton Gravel of Late Devensian age. The alluvial sequence has been investigated to the south of the present site, in the Silvertown area, by Sidell *et al.* (1996, 2000), Wilkinson *et al.* (2000) and Green *et al.* (2006).

## METHODS

### Field investigations

Two column samples (<A> and <B>) and nineteen continuous bulk samples (<A> and <B>; between -1.53m to -0.39m OD), each 5cm in thickness, were recovered from the organic sediments within Trench 1 (Table 1).

### Lithostratigraphic descriptions

The lithostratigraphy of the column samples was described in the laboratory using standard procedures for recording unconsolidated sediment and peat, noting the physical properties (colour), composition (gravel, sand, clay, silt and peat), unit boundaries and inclusions (e.g. artefacts). The results of the lithostratigraphic descriptions are provided in Tables 2 and 3.

### Radiocarbon dating

Sub-samples were taken from the base (-1.29 to -1.30m OD; column sample <A>) and the top (-0.62m to -0.63m OD; column sample <B>) of the peat unit (Table 4). The sub-samples have been submitted for radiocarbon dating to the Scottish Universities Environmental Research Centre (SUERC), East Kilbride, Scotland. The radiocarbon dates were calibrated following procedures outlined in Bronk-Ramsey (1995, 2001), and Stuiver *et al.* (1998).

## POLLEN ASSESSMENT

Sixteen sub-samples were extracted from Trench 1 from column samples <A> and <B> (between -1.32m and -0.31m OD) for assessment of the pollen content. The pollen was extracted as follows:

1. Sampling a standard volume of sediment (1ml)
2. Deflocculation of the sample in 1% Sodium pyrophosphate
3. Sieving of the sample to remove the fine and coarse mineral and organic fractions (<10µm and >125µm)
4. Removal of finer mineral fraction using Sodium polytungstate (specific gravity of 2.0g/cm<sup>3</sup>)
5. Acetolysis using Sulphuric acid, Acetic anhydride and Glacial Acetic acid to remove unwanted organic matter
6. Mounting of the sample in glycerol jelly.

Each stage of the procedure was preceded and followed by thorough sample cleaning in filtered distilled water. Quality control is maintained by periodic checking of residues, and assembling sample batches from various depths to test for systematic laboratory effects. Pollen grains and spores were identified using the Royal Holloway (University of London) pollen type collection and the following sources of keys and photographs:

Moore *et al* (1991); Reille (1992). Plant nomenclature follows the Flora Europaea as summarised in Stace (1997). The assessment procedure consisted of scanning the prepared slides at 2mm intervals along the whole length of the coverslip using a high-power transmitted light microscope with phase and interference contrast, and recording the concentration and state of preservation of pollen grains and spores, and the principal pollen taxa (Table 5).

## **RESULTS AND INTERPRETATION OF THE LITHOSTRATIGRAPHIC DESCRIPTIONS**

At the base of the sequence recorded in column sample <A>, the sandy gravel (between -1.58m and -1.32m OD) can be interpreted as the Shepperton Gravel. Almost everywhere in the Middle and Lower Thames valley this unit underlies the floodplain alluvium. It represents deposition under cold climate conditions at the end of the Devensian cold stage. The peat horizon (context (1/005); between -1.32m and -0.50m OD) overlying the gravels and fine-grained mineral sediments (context (1/006)) resembles sequences recorded nearby e.g. Golfers Site, Woolwich Manor Way, although the peat unit at the Ellen Wilkinson School is only *ca.* 83cm in thickness, compared to *ca.* 3m at the Golfers Site. This may be attributed to a combination of factors, namely proximity to the floodplain margin and underlying topography. The dark grey silty clay (context (1/004); between -0.50 to -0.26m OD) penetrated by modern roots and incorporating small pieces of charcoal is separated by a sharp contact from the underlying organic sediments and is a late Holocene alluvial accumulation (within the last 3000 years; see below). Overlying this unit was greyish brown silty clay (context (1/003); between -0.26 to 0.14m OD), also penetrated by modern roots and incorporating small pieces of gravel and charcoal, and was overlain by approximately 1.5m of Made Ground. The fine-grained mineral sediments undoubtedly represent deposition on the margins of a slow moving ('low energy') water body, such as a channel, probably during intermittent flooding of the ground surface. The increased organic matter content reflects the progressively terrestrial nature of the local environment, due to either the lateral migration of the nearby channel away from the site, or rapid sedimentation to a level above the zone of regular flooding. Wood peat formation indicates the formation a semi-terrestrial environment, which was colonised by woodland adapted to the waterlogged conditions.

## **RESULTS AND INTERPRETATION OF THE RADIOCARBON DATING**

The results indicate that sedimentation probably commenced at the Ellen Wilkinson School sometime during the middle Holocene (context (1/006)). Peat formation started shortly before 2470-2270 BC, and continued until sometime after 1690-1510 BC (context (1/005)). The peat sequence may be broadly equated therefore with the Late Neolithic to Middle Bronze Age cultural period. The uppermost radiocarbon date also suggests that contexts (1/004) and (1/003) were deposited during the late Holocene (last 3000 years). The  $\delta^{13}\text{C}$  (‰) values are consistent with those expected for wood, and suggest that the results provide a robust chronological framework for the litho- and bio-stratigraphic data.

## RESULTS AND INTERPRETATION OF THE POLLEN ASSESSMENT

The pollen-stratigraphic assessment indicates that throughout the period of sediment deposition pollen grains and spores are well preserved, and in suitably high concentration for a full pollen analysis. The range of pollen taxa represented suggests that the local vegetation cover was dominated by alder Carr woodland, probably with an understorey comprising grasses, rushes and sedges. Areas of open water are suggested by the presence of milfoil and pondweed. On nearby dryland, the vegetation cover consisted of mixed deciduous woodland, possibly dominated by lime with an understorey of hazel. The absence of lime woodland in the upper part of the sequence is especially interesting, and may indicate the pan-European 'lime decline', which occurred from the Bronze Age onwards, and may be associated with human interference in natural vegetation succession e.g. clearance. However, there are currently no direct pollen-stratigraphic indicators of human activity e.g. cereal pollen in the record to support this interpretation. The absence of yew pollen is disappointing and rather surprising given the results of the radiocarbon dating. Although yew had probably almost disappeared from the wetlands of the Lower Thames valley by 2000 BC (according to radiocarbon dates obtained from both the Golfers Site, Beckton (Carew *et al.*, in prep), and Hornchurch Marshes, Dagenham (Branch *et al.*, in prep)), we would have expected the end of this phase to be represented at the Ellen Wilkinson School site. It is possible, therefore, that yew woodland was not present at the site, and was perhaps concentrated to the east of this area.

## CONCLUSIONS

The radiocarbon-dated lithostratigraphic record from the Ellen Wilkinson School, Beckton, indicates the presence of a tripartite sequence of sedimentary deposits: alluvium-peat-alluvium. The alluvium was deposited during periods of low energy, fluvial inundation, whilst the peat formation represents semi-terrestrial conditions and a more stable wetland landsurface. During the period of peat formation, between approximately 2470 – 2270 BC and 1690 – 1510 BC, the wetland vegetation cover was dominated by alder Carr woodland. On nearby dryland, lime woodland was initially dominant but was succeeded by more open conditions. This transition may be equated with the pan-European 'lime decline' during the Bronze Age, although the precise reason for its decline at the Ellen Wilkinson School remains unclear due to the absence of direct evidence for human activity. The onset of alluvial sedimentation sometime after 1690 – 1510 BC is broadly consistent with other records from the area e.g. Golfers Site, Beckton, although there is no evidence at present for the marked environmental deterioration noted prior to this event, and within the peat sequence, at the Golfers Site. The absence of evidence for yew woodland is somewhat surprising, but may be due to the distribution of yew being confined to the east of the site. Further long-term research on the sequence from the Ellen Wilkinson School, in particular analysis of the sub-fossil pollen, insect and plant macro-remains will enable these issues to be fully addressed.

## REFERENCES

British Geological Survey 1996, 1:50,000 Sheet 257 Romford

Blandford, W.T. 1854 On a section lately exposed in some excavations at the West India Docks. *Quarterly Journal of the Geological Society of London*, 10, 433-435.

Branch, N.P., Batchelor, C.R., Cameron, N.G., Coope, R., Densem, R., Gale, G., Green, C.P. And Williams, A.N. In Prep Middle Holocene Environmental Changes at Hornchurch Marshes, Dagenham, and their implications for our understanding of the History Of *Taxus* (L.) Woodland In The Lower Thames Valley, London, Uk.

Bronk Ramsey, C. 1995 Radiocarbon Calibration and Analysis of Stratigraphy: The OxCal Program, *Radiocarbon*, 37 (2), 425-430.

Bronk Ramsey, C. 2001 Development of the Radiocarbon Program OxCal, *Radiocarbon*, 43 (2a), 355-363.

Carew, T., Meddens, F.M., Batchelor, C.R., Branch, N.P., Elias, S., Goodburn, D., Webster, L. and Yeomans, L. in prep *Bronze Age responses to environmental change: timber constructions at the Golfer's Driving Range, Beckton, East London, UK*.

Gibbard, P.L 1994 *Pleistocene History of the Lower Thames Valley*. Cambridge University Press, Cambridge.

Green, C.P., Branch, N.P. and Swindle, G.E. 2006 *Barrier Park East, Silvertown, London Borough of Newham, Preliminary environmental archaeological assessment*. Archaeoscape unpublished report.

Moore, P.D., Webb, J.A. and Collinson, M.E. 1991 *Pollen Analysis* (2<sup>nd</sup> Ed.), Blackwell: Oxford.

Reille, M. 1992 *Pollen et Spores d'Europe et d'Afrique du Nord*, Laboratoire de Botanique Historique et Palynologie: Marseille.

Sidell, E.J., Wilkinson, K.N., Scaife, R.G., Giorgi, J.A. and Cameron, N. 1996 *West Silvertown Urban Village, Royal Victoria Dock, London E16, London Borough of Newham: A Geoarchaeological Evaluation*. Museum of London Archaeology Service. Unpublished Report.

Sidell, J., Wilkinson, K., Scaife, R. and Cameron, N. 2000 *The Holocene Evolution of the London Thames*. Museum of London Archaeological Service (MoLAS) Monograph 5.

Stace, C. 1997 *New Flora of the British Isles* (2<sup>nd</sup> ed.), Cambridge University Press: Cambridge.

Stuiver M., P.J. Reimer, E. Bard, J.W. Beck, G.S. Burr, K.A. Hughen, B. Kromer, G. McCormac, J. van der Plicht and M. Spurk 1998 INTCAL98 Radiocarbon Age Calibration, 24000-0 cal BP, *Radiocarbon*, 40(3), 1041-1083.

Wilkinson, K.N., Scaife, R.G. and Sidell, E.J. 2000 Environmental and sea level changes in London from 10,500 BP to the present: a case study from Silvertown. *Proceedings of the Geologists' Association*, 111, 41-54.

Whitaker, W. 1889 *The Geology of London and parts of the Thames Valley*. Memoir of the Geological Survey of Great Britain. HMSO.

## APPENDIX C

### 1 OASIS DATA COLLECTION FORM: ENGLAND

[List of Projects](#) | [Search Projects](#) | [New project](#) | [Change your details](#) | [HER coverage](#) | [Change country](#) | [Log out](#)

#### 1.1.1 Printable version

1.2 OASIS ID: aocarcha1-16407

##### Project details

Project name Ellen Wilkinson School, London Borough of Newham: An Archaeological Evaluation Report

Short description of the project An archaeological evaluation was undertaken by AOC Archaeology Group on 29th and 30th June 2006 at Ellen Wilkinson School, Tollgate Road, Beckton, London Borough of Newham, on behalf of Property and Design Consultancy. The aim of the evaluation was to assess the impact of the proposed development on any surviving archaeological remains. The evaluation comprised one machine excavated trench measuring 3m x 3m at base. Overlying the flood plain gravel beds approximately 1m of peat was sealed by alluvial deposits of blue and brown silty clay. The formation of the peat was radiocarbon dated to 2470 - 2270 BC to 1690 - 1510 BC. No archaeological features or deposits were identified in the trench.

Project dates Start: 29-06-2006 End: 30-06-2006

Previous/future work No / No

Any associated project reference codes TLG 06 - Sitecode

Type of project Field evaluation

Site status (other) Archaeological Priority Area



Current Land use	Grassland Heathland 2 - Undisturbed Grassland
Methods & techniques	'Targeted Trenches'
Development type	Large/ medium scale extensions to existing structures (e.g. church, school, hospitals, law courts, etc.)
Prompt	Direction from Local Planning Authority - PPG16
Position in the planning process	After full determination (eg. As a condition)
Project location	
Country	England
Site location	GREATER LONDON NEWHAM NEWHAM Ellen Wilkinson School, Tollgate Road, Beckton, London Borough of Newham
Postcode	E6 5UX
Study area	0.50 Hectares
Height OD	Min: -1.27m Max: -1.45m
Project creators	
Name of Organisation	AOC Archaeology Group
Project brief originator	English Heritage
Project design originator	AOC Archaeology Group
Project director/manager	Ron Humphrey
Project supervisor	Andy Leonard

Type of sponsor/funding body	Developer
Project archives	
Physical Archive Exists?	No
Digital Archive recipient	Museum of London
Digital Archive ID	TLG 06
Digital Contents	'Stratigraphic','Survey'
Digital Media available	'Survey','Text'
Digital Archive notes	Archive to be kept at AOC until ready for deposition with the Museum of London
Paper Archive recipient	Museum of London
Paper Archive ID	TLG 06
Paper Contents	'Environmental','Stratigraphic'
Paper Media available	'Context sheet','Manuscript','Photograph','Plan','Report','Section','Unpublished Text'
Paper Archive notes	Archive to be kept at AOC until ready for deposition with the Museum of London
Project bibliography 1	

Publication type Grey literature (unpublished document/manuscript)  
Title ELLEN WILKINSON SCHOOL, TOLLGATE ROAD,  
BECKTON, LONDON BOROUGH OF NEWHAM: A WRITTEN  
SCHEME OF INVESTIGATION FOR AN ARCHAEOLOGICAL  
EVALUATION

Author(s)/Editor(s) Leonard, A.

Date 2006

Issuer or publisher AOC Archaeology Group

Place of issue or publication AOC Archaeology Group

Description A4 bound document

Project  
bibliography 2

Publication type Grey literature (unpublished document/manuscript)  
Title ELLEN WILKINSON SCHOOL, TOLLGATE ROAD,  
BECKTON, LONDON BOROUGH OF NEWHAM: AN  
ARCHAEOLOGICAL EVALUATION REPORT

Author(s)/Editor(s) Leonard, A.

Date 2006

Issuer or publisher AOC Archaeology

Place of issue or publication AOC Archaeology

Description A4 bound document

Project

bibliography 3

Publication type Grey literature (unpublished document/manuscript)  
Title Brief for an Archaeological Evaluation at Ellen Wilkinson School,  
Tolgate Lane, Beckton, London Borough of Newham  
Author(s)/Editor(s) Divers, D.  
Date 2006  
Issuer or publisher English Heritage, Greater London Archaeology Advisory Service  
Place of issue or publication English Heritage, Greater London Archaeology Advisory Service  
Description A4 loose document  
Entered by fitz (fitz@aocarchaeology.co.uk)  
Entered on 26 October 2006

**2 OASIS:**

Please e-mail [English Heritage](#) for OASIS help and advice  
© ADS 1996-2006 Created by [Jo Gilham and Jen Mitcham, email](#) Last modified Friday 3 February 2006  
Cite only: <http://ads.ahds.ac.uk/oasis/print.cfm> for this page