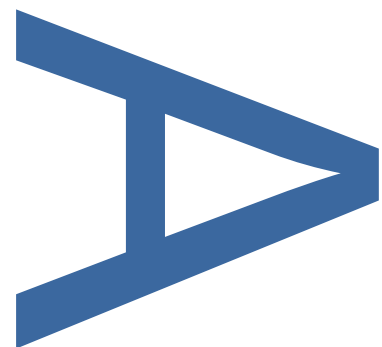
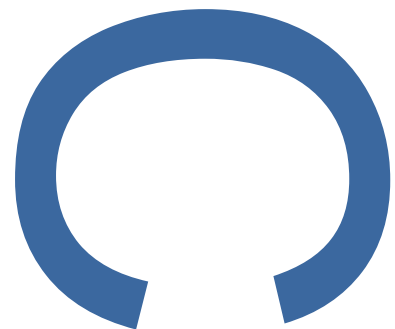


**KNOCKHALL ACADEMY,
EYNSFORD ROAD, KENT:
AN ARCHAEOLOGICAL
EVALUATION**

**LOCAL PLANNING AUTHORITY:
DARTFORD BOROUGH COUNCIL**

SITE CODE: KKAG19

MARCH 2019



PRE-CONSTRUCT ARCHAEOLOGY

DOCUMENT VERIFICATION
Knockhall Academy, Eynsford Road, Kent
Type of project

AN ARCHAEOLOGICAL EVALUATION
Quality Control

Pre-Construct Archaeology Limited Project Code		K5683	
		R13617	
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AN ARCHAEOLOGICAL EVALUATION

Site Code: KKAG19

Central NGR: TQ 59144 74699

Local Planning Authority: Dartford Borough Council

Planning Reference: DA/16/01698/FUL

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1 ABSTRACT

- 1.1 This report details the working methods and results of an archaeological evaluation conducted by Pre-Construct Archaeology Limited on land at Knockhall Academy, Eynsford Road, Greenhithe, Kent. The site was located within the area of Dartford Borough Council, centred at National Grid Reference TQ 59144 74699.
- 1.2 Following a Written Scheme of Investigation prepared by Pre-Construct Archaeology Ltd (Fairman, 2018), the fieldwork was carried out between 25th and 28th February 2019 and was completed in accordance with the standards specified by Chartered Institute of Archaeologists and following guidelines issued by Historic England.
- 1.3 Two evaluation trenches were excavated across the site. Following excavation to natural horizons geoarchaeological trial pits were excavated, two per trench, one at each end of the evaluation trenches. These were excavated under archaeological supervision by a Palaeolithic specialist.
- 1.4 The archaeological trenches identified natural gravel horizons overlain by subsoil and modern made ground associated with the construction of the school. No archaeological features or horizons were identified during the investigations.
- 1.5 The geo-archaeological evaluation at the site has produced valuable evidence relating to the location and composition of the Pleistocene deposits in the area. Boyn Hill Terrace deposits were identified in two of the test-pits, at a height of between 30.40m OD (GTP01) 31.20m OD (GTP03) and are 2.50m thick, overlying Thanet Sands. The composition and heights of the sandy gravels would suggest that they equate to the Upper or Lower Middle Gravel of the Barnfield Pit sequence (Conway et al. 1996). Despite being recognized as locally artefact-rich, no artefacts or environmental indicators were recovered during the present investigations. The other two test-pits revealed disturbed and contorted sands and gravels that continued below the reach of the machine to below at least 28.40m OD.

2 INTRODUCTION

- 2.1 An archaeological evaluation, commissioned by Surveyors of Education, was completed on land at Knockhall Academy, Eynsford Road, Kent between 25th and 28th February 2019. It was undertaken to further determine the archaeological potential and/or truncation within these areas of the site.
- 2.2 Planning permission has been granted by Dartford Borough Council for redevelopment of the site under reference DA/16/01698/FUL, and consent includes archaeological condition (number 3).
- 2.3 An approved Written Scheme of investigation prepared by Pre-Construct Archaeology Ltd (Fairman, 2018) detailed the methodology by which the evaluation was to be undertaken. The WSI followed Historic England (2015) and Chartered Institute for Archaeologists guidelines (2014) in addition to Kent County Council trial trenching requirements (Manual of Specifications Part B). The evaluation was supervised by Tanya Jones and project was managed by Amelia Fairman for Pre-Construct Archaeology Ltd. The project was monitored by Wendy Rodgers, Kent County Council, and conforms to the KCC trial trenching specifications.
- 2.4 The site was given a unique site code KKAG19. The complete archive comprising written, drawn and photographic records will be deposited with the appropriate local repository, to be confirmed.

3 PLANNING BACKGROUND

3.1 A full planning background is laid out in the site specific Written scheme of Investigation (WSI) (Fairman 2018), below are the salient points.

3.2 National Planning Policy Framework

3.2.1 In March 2012, the government published the National Planning Policy Framework (NPPF), which replaced existing national policy relating to heritage and archaeology (Planning Policy Statement 5: Planning for the Historic Environment (PPS5)). This document was subsequently revised in July 2018.

3.2.2 In summary, current national policy provides a framework which protects nationally important designated Heritage Assets and their settings, in appropriate circumstances seeks adequate information (from desk based assessment and field evaluation where necessary) to enable informed decisions regarding the historic environment and provides for the investigation by intrusive or non-intrusive means of sites not significant enough to merit *in-situ* preservation. Relevant paragraphs within the NPPF include the following:

3.3 Site Specific Planning Constraints

3.3.1 The proposed development site does not contain any Listed or Designated Heritage Assets. The proposed development site does not lie within or adjacent to a Conservation Area.

3.3.2 The proposed development received consent on 10 January 2017 under application number DA/16/01698/FUL. Approval was granted for the following:

“Demolition of existing 6 No. reception and year 1 classrooms and adjoining toilet block and erection of 6 No. reception and year 1 classrooms with toilets”

3.3.3 The planning consent included the following condition relating to archaeology:

03 Prior to the commencement of any development, including demolition and site preparation works, the applicant, or their agents or successors in title, will secure and implement:

i archaeological field evaluation works in accordance with a specification and written timetable which has been submitted to and approved by the Local Planning Authority; and

ii further archaeological investigation, recording and reporting, determined by the results of the evaluation, in accordance with a specification and timetable which has been submitted to and approved by the Local Planning Authority.

4 GEOLOGY AND TOPOGRAPHY

4.1 Geology

- 4.1.1 The British Geological Survey shows the study site to be underlain by the Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk Formation (undifferentiated). These chalk deposits formed approximately 72 to 94 million years ago in the Cretaceous Period. This is overlain by Boyn Hill Gravel Member, or sand and gravels formed up to 2 million years ago in the Quaternary Period.
- 4.1.2 An archaeological evaluation was carried out within the immediate vicinity of the academy (Blinkhorn, 2015). These investigations recorded made ground deposits of 0.30m to 0.70m in thickness. The Pleistocene sequence was identified from c.1m below ground level from 30.30m OD with gravel identified in one trial pit to a depth of 29.33m OD.
- 4.1.3 A borehole excavated to the immediate north of the site (BGS ID: 840614) was taken from a ground level of c.20m OD. This recorded drift geology to a depth of 16.37m OD, at which point the Seaford Chalk formation was identified. The casing prevented examination of the overburden/drift deposits in full.

4.2 Topography

- 4.2.1 The current topography of the site is likely a result of modern levelling associated with the construction of the extant school.
- 4.2.2 The south bank of the Thames passes c.605m north of the study site.

5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

5.1 A full archaeological and historical background is laid out in the site specific Written Scheme of Investigation, (Fairman 2018), below are the salient points.

5.2 Prehistoric

5.2.1 A review of the available data suggested that the site lies in an area of potential international significance for Palaeolithic archaeology and deposits that have proved to contain important artefactual and environmental remains are very likely to be present in the vicinity. Previous archaeological fieldwork at the school has demonstrated to survival of the Boyn Hill gravels at the site although in some places they have been seriously impacted by previous development. The work has also demonstrated the presence of quantities of Palaeolithic flintwork in good condition within the upper parts of the sequence, although its occurrence appears very localised

5.2.2 The presence of the of Boyn Hill gravels at approximately similar levels to the hominin finds at Barnfield Pit, along with many other significant Palaeolithic finds in the vicinity, increases the significance of the Pleistocene sequence present beneath the school ground. The importance of any potential remains can therefore be considered as Very High (Regional/National) and the likelihood that such remains are present may be regarded as Moderate to High.

5.3 Roman

5.3.1 The limited number of entries within a 500m radius of the site might suggest that activity of this date was focussed to the north of the site. The likelihood that such remains are present may therefore be regarded as low. If found the likely importance of such remains may be considered to be of local importance.

5.4 Early Medieval and Medieval

5.4.1 The limited number of entries within a 500m radius of the site might suggest that activity of this date was focussed to the north of the site, associated with the Abbey. The likelihood that such remains are present may therefore be regarded as low. If found the likely importance of such remains may be considered to be of local importance.

5.5 Post-Medieval

5.5.1 The larger number of entries for this period on the KHER suggests that activity and development increased substantially by comparison to earlier periods. However, a large proportion of those entries relate to the development of specific areas, such as in the vicinity of the Abbey. The likelihood that such remains are present may therefore be regarded as moderate. If found the likely importance of such remains may be considered to be of local importance.

6 ARCHAEOLOGICAL METHODOLOGY AND OBJECTIVES

- 6.1 The purpose of the archaeological investigation was to determine the presence or absence of surviving features at the site and, if present, to assist in formulating an appropriate archaeological mitigation strategy. All works were undertaken in accordance with the guidelines set out by Historic England and the Institute of Field Archaeology, in addition to trial trenching specifications as specified by Kent County Council (KCC Manual of Specifications Part B). The geoarchaeological test pitting methodology complied with the KCC Manual of Specifications Part B: Specification for preliminary evaluation of Quaternary deposits and Palaeolithic potential.
- 6.2 The site was subject to two evaluation trenches measuring 20m by 1.8m. Supplemented by four geoarchaeological test pits (two per trench, measuring 2m x 1.8m).
- 6.3 All excavation of the low-grade overlying deposits was undertaken using a tracked 360° mechanical excavator using a toothless ditching bucket, under the constant supervision of a qualified archaeologist.
- 6.4 Machine excavation continued in spits of 100mm at a time until the natural ground was exposed.
- 6.5 Following machine excavation, relevant faces of the trench that required examination or recording were cleaned using appropriate hand tools. The majority of the investigation of archaeological levels was by hand, with cleaning, examination and recording both in plan and in section.
- 6.6 All archaeological features (stratigraphical layers, cuts, fills, structures) were evaluated by hand tools and recorded in plan at 1:20 or in section at 1:10 using standard single context recording methods. Features were evaluated so as to characterise their form, function and date.
- 6.7 Following machine excavation to natural horizons, geoarchaeological trial pits were excavated at either end of each trench. These were excavated by machine using a ditching bucket under supervision of a Palaeolithic specialist. Sediment was removed in spits up to 100mm thick and each sedimentary unit numbered separately. Samples from each Pleistocene sedimentary unit were, where possible, shaken through a 10mm mesh to retrieve artefacts and coarse ecofacts.
- 6.8 The recording systems adopted during the investigations were fully compatible with those developed out of the Department of Urban Archaeology Site Manual, now published by the Museum of London Archaeological Service (MoLAS 1994) and with PCA Site Manual (Taylor and Brown, 2009). The site archive was organised to be compatible with the archaeological archives produced in the Local Authority area.

- 6.9 A full photographic record was made during the archaeological investigation consisting of a digital photographic archive that was maintained during the course of the archaeological investigation.
- 6.10 The complete archive produced during the evaluation and watching brief, comprising written, drawn and photographic records, will be deposited with the local receiving museum with site code KKAG19.

7 THE ARCHAEOLOGICAL RESULTS BY PHASE

7.1 Below represents the archaeological assessment by phase. A review of the geoarchaeology and Palaeolithic results can be found in Appendix 1.

7.2 Phase 1: Natural

- 7.2.1 The earliest deposit observed in each trench was a gravelly clay layer [4] and [6] which sloped from 31.29 in the south down to 31.51 in the north.
- 7.2.2 The gravelly clay [4] in Trench 1 was overlay by a natural sandy deposit [3] measuring approximately 0.20m thick.
- 7.2.3 Sealing the natural deposits [3] and [6] was mid greyish brown silty sand [2] and [5] with occasional small stones and rooting measuring between 0.30m and 0.55m thick, which appeared to be a subsoil.

7.3 Phase 2: Modern

- 7.3.1 Sealing the entire site was a dark blackish grey sandy silt [1] with frequent ceramic building material fragments and small stones measuring between 0.10m and 0.30m thick, which was likely the made ground for the demolished school building.
- 7.3.2 The made ground was sealed by a concrete slab [+] which would have been the foundation for the demolished school.

8 RESEARCH QUESTIONS AND CONCLUSIONS

8.1 Research Objectives

8.1.1 The Written Scheme of Investigation (Fairman 2018) highlighted a set of specific objectives to be addressed by the investigation:

- To record the nature, extent, date, character, quality, significance and state of preservation of any archaeological remains affected by the investigation.

No archaeological remains were identified during the investigations.

- To assess where appropriate the ecofactual and palaeo-environmental potential of archaeological deposits and features from within the site.

No artefacts or environmental indicators were recovered during the present investigations.

- To establish the extent to which previous development and/or other processes have affected archaeological deposits at the site

The lack of archaeological material, and lack of residual material, might suggest that the site has previously been subject to widespread horizontal truncation.

- To establish the likely impact on archaeological deposits of the proposed development.

Given the lack of archaeological features or horizons identified at the site, the proposed development is unlikely to have an impact on archaeological deposits.

- To report on the results of the investigation.

This document aims to satisfy the above objective and incorporate archaeological analysis with geoarchaeological assessment (see appendices 1 and 2)

8.1.2 In addition, the evaluation sought to address the following research questions:

- To set the site and its potential archaeological remains into the context of the wider landscape.

The geo-archaeological evaluation at the site has produced valuable evidence relating to the composition and location of the Pleistocene deposits in the area. However, despite being recognised as locally artefact rich, no artefacts or environmental indicators were recovered during the present investigations.

- To confirm the presence or absence of prehistoric remains;
- To confirm the presence or absence of Roman remains;
- To confirm the presence or absence of Saxon activity;
- To confirm the presence or absence of medieval activity;

No archaeological remains dating to any period were identified during the investigation.

8.1.3 The geoarchaeological test pitting sought to address the following objectives:

- To characterise the quaternary geological succession

The geological succession was characterised and reported in Appendix 1 with full logs provided in Appendix 2.

- To establish the extent to which previous development and/or processes have affected Quaternary deposits at the site

Disturbance by ploughing/cryoturbation/sollifluxion was evident within the sandy-silt brickearth across the subject site. These deposits were interpreted as disturbed and colluvial or alluvially reworked deposits of the late Pleistocene/early Holocene Langley Silt Complex. Two of the four test pits also revealed disturbed and contorted sands and gravels interpreted tentatively as a result of bedrock disturbance.

- To determine the presence and potential of lithic artefact evidence and faunal remains in the sediments encountered

No artefactual or faunal remains were encountered at the study site.

- To determine the presence and potential of paleoenvironmental evidence in the sediments encountered.

No environmental indicators were recovered during the present investigations.

- To determine the presence of, or potential for, undisturbed primary context Palaeolithic occupation surfaces in the sediments encountered

No indications of Palaeolithic occupation or exploitation were encountered at the study site.

- To interpret the depositional and post-depositional history of any artefactual or biological evidence found

No artefactual or faunal remains were encountered at the study site.

- To establish correlations of any Pleistocene deposits found with reference to adjacent and regional sequences and to national frameworks

Similar deposits to those identified at the study site were encountered during an archaeological evaluation to the south of the site. During the latter investigations disturbance was evident within the deposits indicative of reworking of terrace deposits, potentially due to local bedrock disturbance. These results would suggest that bedrock collapse is far more extensive than suggested by earlier investigation or other disturbances such as solution hollows are common in the area.

- To assess in local, regional and national terms, the archaeological and geological significance of any Pleistocene deposits encountered, and their potential to fulfil current research objectives

The investigation has produced useful information on the local character, composition and location of the Pleistocene deposits at the site, but as no artefactual material or environmental indicators were encountered, no further work is warranted.

- To establish whether there is a need for further, more-detailed, field evaluation to clarify the Palaeolithic potential, and if so to make recommendations on the methods and location of further intrusive or non-intrusive works

The investigations did identify anomalies in the sequence that were probably caused by bedrock collapse. Further work could clarify the nature and extent of this but this would be best achieved by conducted further investigations in the general vicinity of the site, rather than within the very limited extents of this particular site itself.

9 CONCLUSION

- 9.1.1 There were no archaeological features seen during the evaluation. No artefactual or environmental indicators were encountered during the geoarchaeological investigations. Widespread disturbance of the underlying deposits would appear to be indicative of ploughing or other mechanical disturbance, in addition to disturbance/collapse of the underlying bedrock.
- 9.1.2 The previous development of the site would appear to have very little impact any archaeological deposits that could have been on site.
- 9.1.3 Upon approval of this report and with confirmation that this project is complete the archive identified with the unique site code KKAG19, will be offered to a local repository.

10 ACKNOWLEDGEMENTS

Pre-Construct Archaeology Limited would like to thank Surveyors to Education for commissioning the archaeological work.

We also offer our thanks to Wendy Rodgers of Kent County Council for monitoring the site.

The author would also like to thank: Amelia Fairman for project managing and editing this report; Hayley Baxter for the illustrations, Amparo Valcarcel for her on-site assistance. Thanks are also due to Dr Barry Bishop, Kate Turner and Duncan Field for the geoarchaeological assessment.

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Figure 1
 Site Location
 1:2,000,000; 1:250,000; 1:25,000 at A4

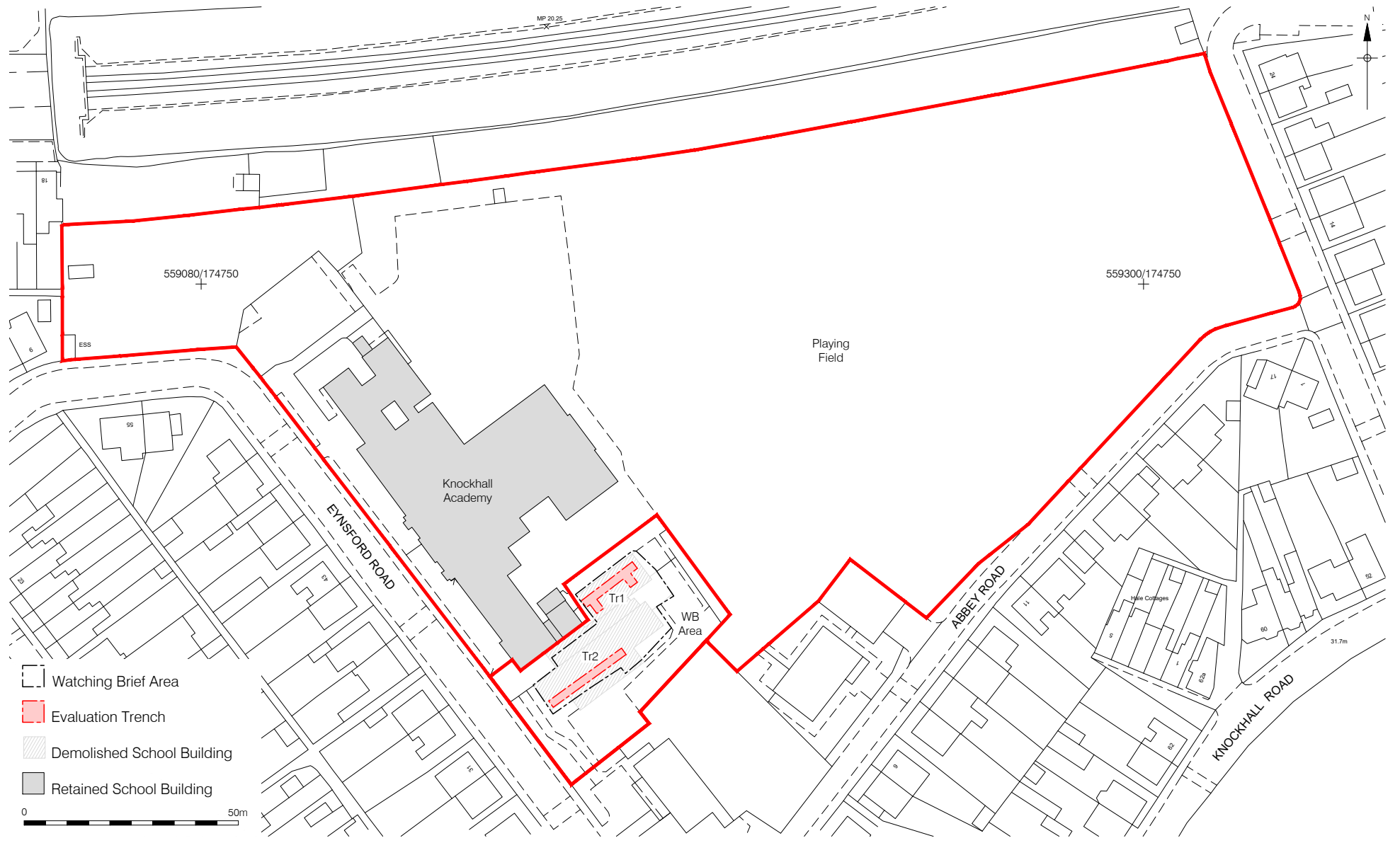


Figure 2
 Trench Locations
 1:1,250 at A4

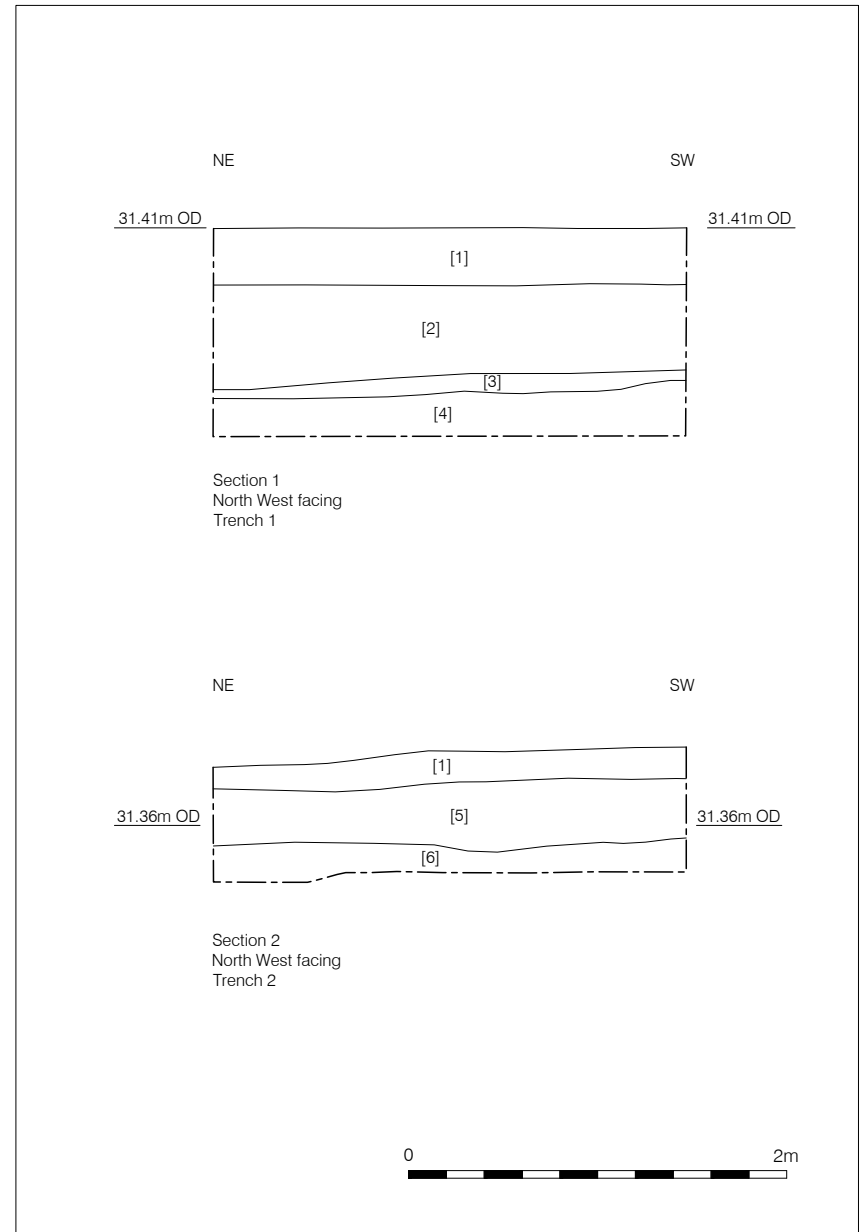


Figure 3
Plan of Interventions & Sections 1 & 2
Plan 1:250 & Sections 1:40 at A4

PLATES:



Plate 1: Trench 1, view to south, 1m scale



Plate 2: Trench 1, Geoarchaeological test pit 1, view to north-west



Plate 3: Trench 3, view to north, 1m scale



Plate 4: Trench 2, Geoarchaeological test pit 3, view to south

APPENDIX 1: GEOARCHAEOLOGICAL ASSESSMENT

Geo-archaeological Investigations of the Quaternary Deposits at Knockhall Academy, Eynsford Road, Greenhithe, Kent

Barry Bishop March 2019

Introduction

The report describes the geo-archaeological investigations undertaken at Knockhall School in Greenhithe, Kent (NGR 559150 / 174700), which were conducted in order to investigate the Palaeolithic potential of the Pleistocene deposits present at the site. A total of four dedicated geo-archaeological test-pits were excavated at each end of Archaeological Evaluation Trenches.

The Pleistocene deposits in the area consist of river terrace gravels ascribed to the Boyn Hill Gravel Member, the fifth terrace of the Thames sequence and dated to Marine Oxygen Isotope Stage (MIS) 11-10 (Bridgland 1994; Gibbard 1994). These gravels are locally known to be rich in artefacts and environmental indicators and, as part of the archaeological mitigation prompted by the proposed development of the site, a programme designed to characterize the Pleistocene deposits and assess their potential for preserving Palaeolithic artefactual and biogenic remains was formulated (Bishop 2018).

Background

Geology and topography of the site

The investigation site comprises a small area of c. 1000m² located within the southern part of the grounds of Knockhall Academy (NGR 559177 174666). The Academy lies on an elevated but relatively flat plateau around between the 31.00m OD and 33.00m OD contours. It sits wholly within an outcrop mapped as 'Boyn Hill Gravel Formation' (BGS sheet 271_Dartford); this extends c. 200m to the east and west of the school and c. 300m to the north and south, although immediately north of the site the gravels have been truncated by a deep cutting for the mainline railway. The geological mapping shows solid geology at the site to comprise Cretaceous Upper Chalk with Palaeogene Thanet Sands present to the south of the Academy, although recent investigations has shown Thanet Sands to extend further north than mapped (Wenban-Smith 2008, see below).

Archaeology

The Boyn Hill terrace forms an intermittent east-west aligned band of Pleistocene deposits located along the southern side of the River Thames. It is the highest and oldest terrace deposited by the palaeo-Thames river following its diversion into its current position during the Anglian glaciation. It equates with the lower Thames Middle Pleistocene Orsett Heath Gravel Formation, generally thought to have been deposited during late OIS 12 to early OIS 10, around 430,000 to 350,000BP (Bridgland 1994; Gibbard

1994). However, the upper parts of the sequence as recorded at the Barnfield Pit (Swanscombe Stage III) may indicate deposition continued until OIS 8, c. 303,000 – 245,000BP) (Conway *et al.* 1996, fig 8.7; 239). It has produced significant and, at some locations, internationally important artefactual and palaeo-environmental sequences and is perhaps best known for the discovery of hominin remains at the Barnfield Pit in Swanscombe, c. 700m southeast of the site. Numerous finds of stray Palaeolithic implements have been made in the Greenhithe area and significant discoveries have been made at several locations, notably at the Globe Pit, Dierden's Pit, Ingress Vale, Craylands Lane Pit, Swanscombe and the Swan Valley Community School, Swanscombe (Wymer 1964; 1968; 1999; Roe 1981; Wenban-Smith and Bridgland 2001).

Methodology

The fieldwork reported here follows the methodologies developed by the *Medway Palaeolithic Project* and the *Managing the Essex Pleistocene Project* (O'Connor 2015; Wenban-Smith *et al.* 2007) and is detailed in the Written Scheme of Investigation. Its aims are to assess the nature and significance of the Pleistocene deposits and Palaeolithic remains present at the site, establish their distribution and depth across the site and to assess the archaeological significance of any deposits.

To achieve these aims, four dedicated geo-archaeological test-pits (GTPs), located in each end of the two archaeological evaluation trenches, were excavated in order provide insights in the terrace deposits at the site (see Figure 2 and 3).

The test-pits measured approximately 2 x 2m and were excavated by a 360 degree mechanical excavator under the supervision of the Palaeolithic specialist, until either pre-Quaternary geology was encountered or to the maximum reach of the machine (3.60 – 3.80m below ground level). Sediment was removed by the mechanical excavator using a 1.8m wide ditching bucket in spits up to 100m thick, but followed the interfaces between sedimentary units wherever possible. Each sedimentary unit was numbered separately. Due to the presence of modern overburden and health and safety constraints, it was not possible to enter the test-pits and each was therefore photographed and drawn from the side. Samples (100 litres) from each significant geological unit was shaken through a 10mm mesh on site in order to retrieve artefacts and coarse ecofacts and 10 litre bulk samples were taken for off-site clast size and petrological analyses.

Results

Overview

See Appendix 2 for detailed sediment logs of the test-pits.

In all four test-pits, beneath modern made ground and concrete, was a fine sandy silt-clay containing occasional gravels and pebbles and pieces of charcoal and ceramic building material (Sediment Group III – see Appendix 2). It appears to have been mechanically disturbed, possibly by ploughing and cryoturbation / solifluxion; no bedding is visible. The base of this deposits varied between 30.40m OD

(GTP01) and 31.40 (GTP04). The deposits are interpreted as disturbed and colluvial or alluvially reworked deposits of the late Pleistocene / early Holocene Langley Silt Complex (Brickearth).

Beneath the brickearth, and despite the proximity of the test-pits, the Pleistocene deposits comprise two very different sequences. In GTP01 and GTP 03 these comprised weakly horizontally bedded sandy gravel composed of clast supported chalk flint and Tertiary flint gravels, pebbles and small cobbles in a coarse sand matrix with occasional thin beds of silt-clay and pure coarse sand (Sediment Group I). Occasional pans and diffuse patches of mineral staining (Mn and Fe) were present throughout. The larger clasts are predominantly rounded to sub-rounded and mostly less than 50mm and nearly all less than 120mm in maximum dimension. The basal c. 0.30m contains occasional larger nodular shaped cobbles of chalk flint up to 150mm in dimension. In GTP01, its base was recorded at 28.10m OD and appeared to have a slight slope downwards to the northwest to a maximum recorded depth of 27.90m OD but continuing below the reach of the machine. In GTP03 the base of the gravelly sands appeared horizontal and was encountered at 29.00m OD. Beneath the sandy gravels was a deposit of green tinged, greyish brown fine silty sand, interpreted as sands of the Thanet Sand Formation.

In GTP02 and GTP04, below the brickearth were deposits of highly distorted fine silty sands with pockets and beds of sandy gravels, the latter often forming horizontal to near vertical 'flames' (Sediment Group II). These continued below the reach of the machine, at 28.50m OD in GTP02 and 28.70m OD in GTP04. The interpretation of these is problematic. The sand constituent is macroscopically comparable to the *in-situ* Thanet sands and the gravel component is indistinguishable to the sandy gravels seen in GTP01 and GTP 03. The heavily contorted nature of the deposits suggests it has been subjected to severe disturbance. Very similar deposits were encountered during the archaeological valuation to the south of the site, where they were interpreted as "*reworking of terrace deposits, perhaps due to local bedrock disturbance*" (Wenban-Smith 2008, appendix 01). This certainly remains the most plausible explanation, although the results recorded here would suggest that either bedrock disturbances (such as solution hollows) are common in the area or that the bedrock collapse is far more extensive than suggested by the earlier investigation.

Archaeological evidence

Multiple samples from each sedimentary unit were sieved on-site through a 10mm mesh with a minimum of 100 litres per unit being processed. In total, c. 1,100 litres of sediment were sampled but no artefacts or environmental indicators were recovered.

Conclusion

The geo-archaeological evaluation at the site has produced valuable evidence relating to the location and composition of the Pleistocene deposits in the area. Boyn Hill Terrace deposits were identified in two of the test-pits, at a height of between 30.40m OD (GTP01) 31.20m OD (GTP03) and are 2.50m thick, overlying Thanet Sands. The composition and heights of the sandy gravels would suggest that they equate to the Upper or Lower Middle Gravel of the Barnfield Pit sequence (Conway *et al.* 1996). Despite being recognized as locally artefact-rich, no artefacts or environmental indicators were

recovered during the present investigations. The other two test-pits revealed disturbed and contorted sands and gravels that continued below the reach of the machine to below at least 28.40m OD.

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APPENDIX 2: TEST PIT SEDIMENT LOGS

GTP1:

Test pit:	1	Dimensions			Length (m): 4.2m			
Date:	27/02/2019				Width (m): 2m			
Height OD (m):					Depth (m): 3.8m			
Group	Context	Description	depth (top)	depth (base)	samples	vol. (L)	Lithic finds	Enviro remains
MG	100	MADE GROUND: brick rubble, ash, plastic	0	0.6			None	None
III	101	SANDY SILT-CLAY Firmly compacted dull orange / yellow brown fine sandy silt-clay. Becomes gravelly near contact with [102] below. Sharp contact with [100] above	0.6	1.3			None	None
I	102	SANDY GRAVELS Firmly compacted orange brown, unbedded or very weakly bedded coarse sand and clast supported gravels with occasional beds (<20mm) of coarse sand. A band of Mn / Fe coated pebbles was present at 2.10 bgl, sloping downwards to 2.50m bgl, below which was a band of clay coated pebbles c. 0.5m thick, underlain by a band of Fe panning, all indicating the presence of a former water table. Clasts comprise rounded to sub-angular pebbles 20-50mm (60%), 50-80mm (20%) and 80-120mm (20%). Occasional large nodular cobbles <150mm. Average clast sizes decrease towards base and proportion of coarse sand increases. All clasts comprise mostly chalk flint but frequent Tertiary pebbles. Diffuse contact with [101] above.	1.3	3.5	<1> <2>		None	None
	103	SANDY GRAVELS Moderately compacted light brown very weakly bedded coarse and matrix supported gravels with increasing large, weathered, nodular chalk flint cobbles towards base. Clasts comprise rounded to sub-angular pebbles 20-50mm (40%), 50-80mm (20%), 80-120mm (20%) and >120mm (20%). All clasts comprise mostly chalk flint but frequent Tertiary pebbles. Diffuse contact with [102] above.	3.5	>3.80	<3>		None	None
TG	104	THANET SAND Moderately compacted structureless or weakly bedded brownish grey silty fine sand. Sharp contact with [103] above with contact appear to slope down to the northwest.	3.6	>3.80	<4>		None	None

GTP2:

Test pit:	2	Dimensions			Length (m): 4.2m			
Date:	27/02/2019				Width (m): 2m			
Height OD (m):					Depth (m): 3.6m			
Group	Context	Description	depth (top)	depth (base)	samples	vol. (L)	Lithic finds	Enviro remains
MG		Concrete	0	0.2				
	200	MADE GROUND: brick rubble, ash, plastic	0.2	0.7			None	None
III	201	SANDY SILT-CLAY Firmly compacted dull orange / yellow brown fine sandy silt-clay. Merges into [202] below	0.65	1.6	<5>		None	None
II	202	CONTORTED GRAVEL / FINE SAND Very firmly compacted dull orange / yellow brown silty fine and with occasional matrix supported gravels and pebbles and frequent heavily contorted bands of rounded to sub-rounded gravel, pebbles and small cobbles < 100mm forming near-vertical flames. Diffuse contact with [201][above, base not reached.	1.2	>3.60	<6>		None	None

GTP3:

Test pit:	3	Dimensions			Length (m): 4.5m			
Date:	27/02/2019				Width (m): 2m			
Height OD (m):					Depth (m): 3.8m			
Group	Context	Description	depth (top)		samples	vol. (L)	Lithic finds	Enviro remains
MG		Concrete	0	0.15			None	None
	300	MADE GROUND: brick rubble, ash, plastic	0.15	0.7				
III	301	SANDY SILT-CLAY Firmly compacted dull orange / yellow brown fine sandy silt-clay. Becomes gravelly near contact with [302] below. Sharp contact with [300] above	0.7	1.3			None	None
I	302	SANDY GRAVELS Firmly compacted orange brown, unbedded or very weakly bedded coarse sands and clast supported gravels with occasional beds (<20mm) of pure coarse sand. Sporadic patches of Mn / Fe staining and band of Mn / Fe panning at 2.50 bgl. Clasts comprise rounded to sub-angular pebbles 20-50mm (60%), 50-80mm (20%), 80-120mm (20%) rare weathered nodular chalk cobbles >120mm. Average clast sizes decrease towards base and proportion of coarse sand increases. All clasts comprise mostly chalk flint but frequent Tertiary pebbles. Occasional large nodular cobbles <150mm. Sharp but undulating contact with [301] above.	1.3	3.3	<7> <8> <9>		None	None
	303	SANDY GRAVELS Moderately compacted light brown very weakly bedded coarse and matrix supported gravels with increasing large, weathered, nodular chalk flint cobbles towards base. Clasts comprise rounded to sub-angular pebbles 20-50mm (40%), 50-80mm (20%), 80-120mm (20%) and >120mm (20%). All clasts comprise mostly chalk flint but frequent Tertiary pebbles. Diffuse contact with [302] above.	3.2	>3.80			None	None
TG	104	THANET SAND Moderately compacted structureless or weakly bedded brownish grey silty fine sand. Sharp contact with [103] above with contact appear to slope down to the northwest.	3.5	>3.80	<10>		None	None

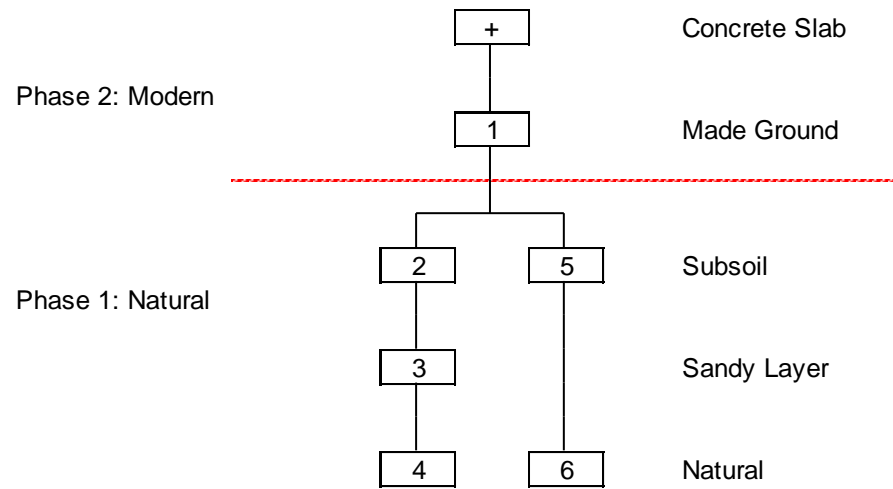
GTP4:

Test pit:	4	Dimensions			Length (m): 2m			
Date:	27/02/2019				Width (m): 2m			
Height OD	31.8				Depth (m): 3.75m			
Group	Context	Description	depth (top)	depth (base)	samples	vol. (L)	Lithic finds	Enviro remains
MG		Concrete	0	0.2				
	400	MADE GROUND: brick rubble, ash, plastic	0.2	0.5			None	None
III	401	SANDY SILT-CLAY Firmly compacted dull orange / yellow brown fine sandy silt-clay, occasional matrix supported gravel and pebbles. Merges into [2#402] below	0.5	1			None	None
II	402	CONTORTED GRAVEL / FINE SAND Very firmly compacted green tinged dull orange / yellow brown silty fine and with occasional matrix supported gravels and pebbles and frequent heavily contorted bands of rounded to sub-rounded gravel, pebbles and small cobbles < 100mm forming horizontal and near-vertical flames in the upper 1.5m of deposit. Pebble and gravel clasts become rare below 29.30m OD and sands appear showing some horizontal bedding. Diffuse contact with [401] above, base not reached.	1	>3.75	<11>			

APPENDIX 2: CONTEXT INDEX

Site Code	Context	Type	Trench	Description
KKAG19	1	Layer	1 and 2	Made Ground
KKAG19	2	Layer	1	Subsoil
KKAG19	3	Layer	1	Sandy subsoil
KKAG19	4	Natural	1	Gravelly clay
KKAG19	5	Layer	2	Subsoil
KKAG19	6	Natural	2	Gravelly clay

APPENDIX 3: PHASED MATRIX



APPENDIX 4: OASIS FORM

OASIS ID: preconst1-346341

Project details

Project name Knockhall Academy, Eynsford Road, Kent: An Archaeological Evaluation

Short description of the project An archaeological evaluation and geo-archaeological assessment was carried out at Knockhall Academy, Eynsford Road, Kent in advance of the proposed school redevelopment. No archaeological remains or horizons were identified. The geo-archaeological evaluation identified widespread disturbance of the underlying geology potentially related to bedrock collapse. No artefacts or environmental indicators were recovered during the investigations.

Project dates Start: 25-02-2019 End: 28-02-2019

Previous/future work Yes / Not known

Any associated project reference codes KKAG19 - Sitecode

Type of project Field evaluation

Site status None

Current Land use Other 15 - Other

Methods & techniques "Targeted Trenches"

Development type Public building (e.g. school, church, hospital, medical centre, law courts etc.)

Prompt Planning condition

Position in the After full determination (eg. As a condition)
planning process

Project location

Country England

Site location KENT DARTFORD SWANSCOMBE AND GREENHITHE Knockhall
Academy, Eynsford Road, Kent

Postcode DA9 9RF

Site coordinates TQ 59144 74699 51.448360675877 0.290491299485 51 26 54 N 000 17
25 E Point

Height OD / Depth Min: 31.29m Max: 31.51m

Project creators

Name of PCA
Organisation

Project brief Local Authority Archaeologist and/or Planning Authority/advisory body
originator

Project design Amelia Fairman
originator

Project Amelia Fairman
director/manager

Project supervisor Tanya Jones

Type of School
sponsor/funding
body

Name of Knockhall Primary School
sponsor/funding
body

Project archives

Physical Archive No
Exists?

Physical Archive None
recipient

Digital Archive Dartford Borough Museum
recipient

Digital Archive ID KKAG19

Digital Media "Images raster / digital photography","Survey","Text"
available

Paper Archive Dartford Borough Museum
recipient

Paper Archive ID KKAG19

Paper Media "Context sheet","Drawing","Miscellaneous Material"
available

Project bibliography 1

Publication type Grey literature (unpublished document/manuscript)

Title Knockhall Academy, Eynsford Road, Kent: An Archaeological Evaluation

Author(s)/Editor(s) Jones, T

Date 2019

Issuer or publisher Pre-Construct Archaeology Ltd

Place of issue or London
publication

Description A4 folio

Entered by Amelia Fairman (afairman@pre-construct.com)

Entered on 20 March 2019

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