

**An Archaeological and Geoarchaeological
Evaluation at St Anselm's Church,
West Hill, Dartford, Kent**

Planning Ref: DA/08/00438

TQ 53393, 74277

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Abstract

A programme of archaeological and geoarchaeological evaluation was undertaken at the St Anselm's Church, Dartford. The work was undertaken between the 1st and 3rd of December 2008 on behalf of Scott Wilson Group Ltd. Three evaluation trenches initially sampled the surface archaeology and three geo-archaeological test pits, at the end of each trench, investigated the geological sequence.

The evaluation trenches revealed only two sub-circular features, representing modern activity. These features were overlain by a deep layer of made ground, associated with the construction of the church in 1975. The first natural horizon varied in depth from 27.65 metres OD to the west of the site and 28.31 metres OD to the east of the site. The lack of archaeological remains may indicate that the natural horizon has been truncated by construction works associated with the church.

The geoarchaeological test pits revealed that Head Deposits cover the site, overlaying the weathered surface of the natural chalk. In one of the test pits a single isolated patch of fluvial sands was encountered at a depth in excess of two metres. The underlying chalk formed an uneven, undulating surface, derived from solution, occurring after the erosion of the chalk by fluvial processes. No artefacts were recovered from the test pits, however, there was an abundance of relatively large flint nodules indicating a high quality raw material in the Pleistocene.

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1.0 INTRODUCTION

1.1 Site Background

1.1.1 Archaeology South-East (ASE), a division of University College London Centre for Applied Archaeology (UCLCAA), was commissioned by St Anselm's church to undertake an archaeological and geo-archaeological evaluation of land to the east of St Anselm's Church, West Hill, Dartford, Kent (NGR 553393, 174277) (Figure 1).

1.2 Geology and Topography

1.2.1 The site is located on gardens immediately to the east of St Anselm's Church. The site is bounded to the south by West Hill roads and to the north and west by The Homestead housing development. The Church is located to the western edge of Dartford town.

1.2.2 The British Geological Survey (BGS) sheet (271) shows that the site lies on Thanet beds overlain by Boyn Hill gravels.

1.3 Planning Background

1.3.1 Planning permission was granted by Dartford Borough Council for the construction of a new building adjacent to the existing St Anselm's Church at the site (planning ref. DA/08/00438). Following consultation between Kent County Council and the council's own Heritage Conservation Group, a condition was attached to the permission requiring that:

'No development shall take place until the applicant, or their agents or successors in title, has secured the implementation of a programme of archaeological work in accordance with a written specification and timetable which has been submitted to and approved by the Local Planning Authority'

Reason: To ensure that features of archaeological interest are properly examined and recorded.'

1.3.2 A Specification for the work was produced by the Heritage Conservation Group, Kent County Council. The documentation consisted of a site specific element (*Part A*) and a set of guidelines covering general procedures (*Part B*). In combination, these documents outlined the methods to be used during the archaeological and geoarchaeological evaluation of the site, namely the excavation and recording of two 8m long, 1.8m wide and one 6m long, 1.8m wide archaeological evaluation trenches, and the excavation and recording of three geoarchaeological test-pits.

1.4 Aims and Objectives

1.4.1 The aims of this work were outlined in Kent County Councils (KCC) Site Specific Requirements and are summarised below with due acknowledgement (KCC 2008).

(a) through 'trial trenching' to 'determine whether any significant

archaeological remains would be affected by the development and if so what mitigation measures are appropriate'.

(b) 'to fully assess the potential for Palaeolithic remains and Paleoenvironmental evidence within the gravels'.

1.5 Scope of Report

1.5.1 This report details the findings of an archaeological and geoarchaeological evaluation undertaken by Dr Matt Pope and Nick Garland between the 1st and 3rd December 2008. The project was managed by Giles Dawkes (Project Manager) and Jim Stevenson (Project Manager, Post-Excavation).

2.0 ARCHAEOLOGICAL BACKGROUND by Nick Garland

2.1 Introduction

2.1.1 The Historic Environment Record (HER) maintained by KCC, and held at County Hall, Maidstone, was consulted and the results are summarised below. Details were taken of all archaeological sites and listed buildings within a 500 metre radius of the centre of the Site. The identified sites (numbered 1 – 33) are discussed below, tabulated in Appendix 1 and plotted on Figure 2.

2.2 Archaeological Periods Represented

2.2.1 Prehistoric

Palaeolithic 450,000 - 10,000 BC

Mesolithic 10,000 - 5,000 BC

Neolithic 5,000 - 2,300 BC

Bronze Age 2,300 - 600 BC

Iron Age 600 - AD 42

2.2.2 Historic

Roman AD 42 - 410

Anglo Saxon/Early Medieval AD 410 - 1065

Medieval AD 1066 - 1485

Post Medieval AD 1486 - date

2.3 Summary

2.3.1 Palaeolithic

Five findspots of Lower to Middle Palaeolithic finds have been uncovered within the study area. Palaeolithic implements were found on West Hill Road, immediately north of the site (4: TQ 57 SW 121) and a handaxe and pointed handaxe were found to the east of the site on King Edwards Avenue and Tower Road respectively (2: TQ 57 SW 117, 3: TQ 57 SW 118). To the south-east of the site, a group of four handaxes on Dartford heath (1: TQ 57 SW 21) and three pieces of debitage on Miskin Road (5: TQ 57 SW 273) were also uncovered.

2.3.2 Mesolithic

A single findspot of a tranchet axe, a pick and a second axe was found to the south-west of the site on Sullivan Close (6: TQ 57 SW 131).

2.3.3 Neolithic

No finds or sites of Neolithic date were found within the study area.

2.3.4 Bronze Age

A Late Bronze Age to Early Iron Age shallow pit was uncovered to the east of the site at the Former Holy Trinity School (7: TQ 57 SW 250). The pit contained pottery and flintwork within its fills.

2.3.5 Iron Age

Some Iron Age urn fragments were found to the north-east of the site near the County Hospital in 1932 (8: TQ 57 SW 85). These fragments were dated

to approximately 200 BC.

2.3.6 Roman

The main focus of Roman activity in vicinity of the site is the Roman Watling Street running from Dover to London, approximately 50 metres to the south. A silver coin of Vespasian was also found on West Hill, to the east of the site (9: TQ 57 SW 35)

2.3.7 Medieval

An early Medieval/Dark Age inhumation cemetery was found at the Former Holy Trinity School to the east of the site (10: TQ 57 SW 207). Twenty five inhumations, orientated in an east to west direction and arranged in four rows were found at the site. In addition, in the north-east corner of the site were two beam slots, a post-hole and a pit dating to the 11th to 12th century (11: TQ 57 SW 251) and a medieval boundary ditch dated to the 13th century (12: TQ 57 SW 252).

2.3.8 Post-Medieval

Six areas of post-medieval remains and thirteen listed buildings dating to this period are located within the area of interest.

A medieval leper hospital at Almhouses at Spital street (14: TQ 57 SW 48), the Former west hill Hospital (19: TQ 57 SW 235) including a chapel built in 1878 (17: TQ 57 SW 236) and the former Holy Trinity School built in 1827 (20: TQ 57 SW 254) were all located to the east of the site. At Tower Road, to the south-east of the site, lime kilns and a whiting works dating to the 19th century were discovered (16: TQ 57 SW 202) and to the north of the site was the previous location of Dartford railway station (15: TQ 57 SW 188).

Ten of thirteen listed buildings were located to the east of the site in the conservation area of Dartford's High street. These include a work house and hospital built at the police station (18: TQ 57 SW 197), Twistleton's almhouses built in the 16th to 18th centuries (22: MKE25557), the former West Hill Police station built in the 19th century (25: MKE25578), the former Dartford Union Work house buildings (26: MKE25579, 27: MKE25580), the Zion Strict Baptist church (28: MKE25596) and the Dartford Parish workhouse (32: TQ 57 SW 232). Three other listed buildings built in the 18th and 19th centuries did not have titles (21: MKE25556, 24: MKE25564, 29: MKE25598). A 19th century Grammar School (23: MKE25560) was located to the south of the site, Gartley cottages built in 1841 (31: MKE25601) is located to the west and Christ Church built in 1909 (30: MKE25599) was located top the south-west.

2.3.9 Modern

A World War II Air raid shelter built in 1939 for local school pupils and residents was located to the west of the site (13: TQ 57 SW 192). It was an underground shelter constructed of concrete.

2.3.10 Unknown

A Dene Hole containing Romano-British pottery was found on a footpath at the bottom of gardens in Priory close to the north of the site (33: TQ 57 SW 19).

3.0 GEOARCHAEOLOGICAL BACKGROUND By Matt Pope

- 3.1** The site occupies land on the plateau above the modern Darent River valley. It lies at approximately 31m O.D. on level ground mapped by the BGS as preserving terrace gravels of the Boyn Hill formation. The solid geology of the site is mapped as Upper Chalk. While the Upper Chalk here is mapped as undifferentiated, it is mostly comprised of the high Seaford Chalk, which is characteristically white, soft and friable with regular courses of flint nodules. The chalk across this area out-crops on the edge of the London Syncline achieving only partial exposure due to a prevailing capping of Tertiary geology (mainly Thanet Beds) within the local area. To the north and west the angle of bedding takes the chalk down below London Clay and Reading Beds into the main body of the London Syncline. While the detail of the extant geological mapping is currently available only at poor resolution for the site it would not be surprising if Upper Chalk bedrock was rapidly encountered below either topsoil or drift geology across large parts of the site. It would be expected given the plateau context, and that this chalk surface has been subjected to extensive weathering through solution subsequent to erosion and truncation through fluvial processes.
- 3.2** The Boyn Hill terrace is a widely documented early terrace of the post-diversionary Thames River system. It was first documented at Maidenhead but has been now mapped throughout the course of the Lower Thames as well as within the valleys of major tributaries such as the Roding, Lea and Wey (Ellison et al. 2004). The base of the Boyn Hill terrace sits at just under 30m O.D. in the Dartford vicinity although great variation in terrace platform height can occur depending on post-depositional solution of the underlying geology. The deposits are broadly correlated with those a few kilometres to the east at Swanscombe, the site which has produced a rich wealth of both Clactonian and Achuelean Palaeolithic tools in addition to faunal remains including a human (Pre-Neanderthal) skull (Wenban-Smith and Bridgeland 2001; Bridgeland 1994). At Swanscombe, the terrace base has been mapped at 23m O.D. (Wenban-Smith and Bridgeland 2001), suggesting caution in ruling out deeply incised parts of the MIS 11 terrace within the vicinity of the site. In general, the deposits of the Boyn Hill/Orsett Heath Formation vary in thickness from c.6m at Stone Cross, Dartford to up to 12m in a solution hollow close to the Dartford tunnel.
- 3.3** The deposits consist of medium to coarse sands and beds of well-rounded flint gravel. These deposits are variably decalcified and have produced locally rich assemblage of mammoth, rhinoceros and molluscan fauna. The Boyn Hill/Orsett deposits are now generally correlated with the initial post-Anglian formation of terrace deposits during MIS 11 (Bridgland 1994). However, this association was extensively debated, and deposits from the Wasunt Pit (2km to north west of the site) have long been the focus of controversy with regards to their age (White *et al* 1995; see below).
- 3.4** The site was mapped by the BGS as lying on Thanet Beds overlain by the Boyn Hill gravels of the Thames river system and Palaeolithic finds are listed on the HER as having been made in the immediate vicinity of the site: at West Hill Schools (TQ533744) and to the south west at Bowman's Lodge and Wansunt (TQ518738). Further Palaeolithic finds or associated palaeoenvironmental evidence would be of national importance and so it was

imperative that their possible presence at the site was investigated. The Dartford area in general is one of national importance in Palaeolithic archaeology, numerous Palaeolithic find spots have been recorded (Roe 1968; Wessex Archaeology 1994) and the Dartford Heath produced several key lower Palaeolithic assemblages, most notably material from Wansunt Pit and Bowman's Lodge. The age of these assemblages and associated deposits has been debated in the past but are now generally thought to date to MIS 11 (Wenban-Smith and Bridgland 2001).

4.0 ARCHAEOLOGICAL METHODOLOGY By Nick Garland

- 4.1** Three trial trenches, two measuring 8 m by 1.8 m and one measuring 6 m by 1.8m, were machine excavated across the area of proposed development under archaeological supervision (Figure 2).
- 4.2** The location of the trenches was altered slightly from their original positions due to unforeseen obstacles on site. Whilst Trench 1 retained its original position, Trench 2 was moved 1m to the west and Trench 3 was moved 2 m to the east and 3 m to the north.
- 4.3** The trial trenches were scanned prior to excavation using a Cable Avoidance Tool (CAT). All of the trenches were excavated under constant archaeological supervision, using a 8 ton 360° tracked excavator, fitted with a toothless ditching bucket. Revealed surfaces were manually cleaned in an attempt to identify any archaeological deposits or features. The sections of the trenches were selectively cleaned to observe and record their stratigraphy. All spoil removed from the trenches was scanned visually and with a metal detector for the presence of any stray, unstratified artefacts.
- 4.4** All encountered archaeological deposits, features and finds were recorded according to accepted professional standards in accordance with the approved ASE Written Scheme of Investigation using pro-forma context record sheets. Archaeological features and deposits were planned at a scale of 1:20 and sections generally drawn at a scale of 1:10. Deposit colours were verified by visual inspection and not by reference to a Munsell Colour chart.
- 4.5** A full photographic record of the trenches and associated deposits and features was kept (including monochrome prints, colour slides and digital), and will form part of the site archive. The archive is presently held at the Archaeology South-East offices at Portslade, East Sussex, and will in due course be offered to a suitable local museum.
- 4.6** Only undifferentiated topsoil, subsoil and overburden of recent origin was removed by machine and kept separately. The excavation was taken, in spits of no more than 0.1m for the top and sub soil, down to the top of the first significant archaeological horizon or the top of the underlying 'natural'.

Number of Contexts	13 contexts
No. of files/paper record	1 file
Plan and sections sheets	1 sheet (2 sections and 1 plan)
Photographs	32 photographs

Table 1: Quantification of site archive

5.0 GEOARCHAEOLOGICAL METHODOLOGY By Matt Pope

- 5.1** Three geoarchaeological test pits were excavated at the site (Figure 2), one at the end of each of the three archaeological evaluation trenches. The test pits measured 2 x 2.5m in extent and were each excavated to a depth in excess of 2.5m reaching and proving the solid cretaceous chalk bedrock.
- 5.2** The pits were excavated using a toothless bucket on a 2.5 excavator and were dug in 250mm spits unless a stratigraphic boundary of lithological change was encountered. Observations of lithology, colour and structure were made for each stratigraphic unit. 100l sediment samples of sands and gravels were taken for on-site sieving to determine the presence of stone artefacts for each 250mm spit of the Pleistocene sediments. Further 40 litre palaeoenvironmental bulk samples were taken for later assessment of potential for suitable sediments.

6.0 ARCHAEOLOGICAL RESULTS by Nick Garland

6.1 Trench 1

List of recorded contexts

Number	Type	Description	Max. Length	Max. Width	Deposit Depth	Height m.AOD
1/001	Layer	Topsoil	Tr.	Tr.	0.31 m	28.23 m
1/002	Layer	Made Ground	Tr.	Tr.	0.42 m	27.96 m
1/003	Layer	Natural	Tr.	Tr.	N/A	27.54 m
1/004	Cut	Cut of modern pit	0.77 m	0.66 m	0.17 m	27.54 m
1/005	Fill	Fill of modern pit	0.77 m	0.66 m	0.17 m	-
1/006	Cut	Cut of modern pit	0.60 m	0.57 m	0.42 m	28.07 m
1/007	Fill	Fill of modern pit	0.60 m	0.57 m	0.42 m	-

Table 2: Recorded contexts within Trench 1

Summary

6.1.1 The natural [1/003], a light orange stony clay with moderate inclusions of chalk and flint fragments, was observed between 27.32 OD to the north of the trench and 27.54 OD to the south of the trench. A layer of made ground [1/002], a dark brown silty clay with inclusions of CBM, concrete, glass and metal, lay over the natural and underneath the topsoil [1/001].

6.1.2 Two features were uncovered within this trench (Figure 4). A small, possibly truncated pit [1/004] was located in the centre of the trench. It was sub-circular in shape and had moderately sloping sides (Figure 5). A sherd of post-medieval pottery was recovered from the fill of this feature. A second feature [1/006] was located at the southern end of the trench during the geoarchaeological test-pitting and was partially obscured by the limit of excavation. It was slightly smaller in size, but also sub-circular in shape with sharply sloping sides. These features appear to be the remains of modern cuts, with fills similar to made ground deposit [1/002] and apparently cut through this layer.

6.2 Trench 2

List of recorded contexts

Number	Type	Description	Max. Length	Max. Width	Deposit Depth	Height m.AOD
2/001	Layer	Topsoil	Tr.	Tr.	0.33 m	28.68 m
2/002	Layer	Made Ground	Tr.	Tr.	0.59 m	28.35 m
2/003	Layer	Natural	Tr.	Tr.	N/A	27.73 m

Table 3: Recorded contexts within Trench 2

Summary

6.2.1 The natural [2/003], a light orange stony clay with moderate inclusions of

chalk and flint fragments, was observed between 27.73 OD to the east of the trench and 27.53 OD to the west of the trench. A layer of made ground [2/002], a dark brown silty clay with inclusions of CBM, concrete, glass and metal, lay over the natural and underneath the topsoil [2/001]. No archaeological features or finds were present in this trench (Figure 6).

6.3 Trench 3

List of recorded contexts

Number	Type	Description	Max. Length	Max. Width	Deposit Depth	Height m.AOD
3/001	Layer	Topsoil	Tr.	Tr.	0.38 m	28.48 m
3/002	Layer	Made Ground	Tr.	Tr.	0.34 m	28.10 m
3/003	Layer	Natural	Tr.	Tr.	N/A	27.76 m

Table 4: Recorded contexts within Trench 3

Summary

6.3.1 The natural [3/003], a light orange stony clay with moderate inclusions of chalk and flint fragments, was observed between 27.59 OD to the north of the trench and 27.76 OD to the south of the trench. A layer of made ground [3/002], a dark brown silty clay with inclusions of CBM, concrete, glass and metal, lay over the natural and underneath the topsoil [3/001]. No archaeological features or finds were present in this trench (Figure 7).

7.0 GEO-ARCHAEOLOGICAL RESULTS

7.1 Three geoarchaeological test pits were excavated at the site and proved the presence of surviving remnants of Boyn Hill river gravels. The deposits were approximately 2.5m in vertical depth and comprised of decalcified loams and gravels. However, no Palaeolithic artefacts were recovered during the course of sieving and deposits likely to provide useful palaeoenvironmental evidence were absent. Overall the fluvial deposits had been subject to truncation during the emplacement of solifluction gravels and vertical movement associated with solution of the underlying chalk.

7.2 The following observations were recorded:

Geological Test Pit 1 (Figure 8)

Depth (m)	Stratigraphy	Lithology	Colour	Coarse component	Sample	Notes
0	Made Ground (1)	Clay-sand	10YR 4/4 dark yellowish brown	10% rounded flint gravel 5-20mm		Modern CBM
0.7	Decalcified Head (2)	Silty Clay with sand	10YR 4/6 dark yellowish brown	20% rounded tertiary flint gravel 10-30mm 10% sub angular flint 30-40mm		
0.9	Calcareous Head (3)	Sandy-clay	10YR 6/6 brownish yellow	70% sub-angular chalk fragments 10-20mm 20% angular flint nodules 20-400mm (Av. 150mm)	2c00L. No artefacts	Clasts re-cemented in matrix by calcium carbonate
1.8	Calcareous Head (4)	Sandy-clay	10YR 6/6 brownish yellow	70% sub-angular chalk fragments 10-40mm 20% angular flint nodules 20-450mm (Av. 150mm)	100L. No artefacts	Clasts re-cemented in matrix by calcium carbonate
2.2	Weathered Chalk (5)	Silty-Clay		15% sub-angular flint nodule fragments 15-35mm		
2.4	Chalk (6)					Proven at 2.6m

Table 5: Sediment sequence within Test Pit 1

Geological Test Pit 2 (Figure 9)

Depth (m)	Stratigraphy	Lithology	Colour	Coarse component	Sample	Notes
0	Made Ground (1)	Clay-sand	10YR 4/4 dark yellowish brown	10% rounded flint gravel 5-20mm		Modern CBM
0.8	Decalcified	Silty	10YR 4/6 dark	20% rounded		

	Head (2)	Clay with sand	yellowish brown	tertiary flint gravel 10-30mm 10% sub angular flint 30-40mm		
1.05	Calcareous Head (3)	Sandy-clay	10YR 6/6 brownish yellow	70% sub-angular chalk fragments 10-20mm 20% angular flint nodules 30-400mm (Av. 150mm)	2c00L. No artefacts	Clasts re-cemented in matrix by calcium carbonate
1.8	Calcareous Head (4)	Sandy-clay	10YR 6/6 brownish yellow	60% sub-angular chalk fragments 10-40mm 15% angular flint nodules 30-450mm (Av. 150mm)	100L. No artefacts	Clasts re-cemented in matrix by calcium carbonate
2.1	Fluvial Sands (5)	Medium Sand	7.5YR 4/6 strong brown	80% rounded flint gravel (tertiary flint) 15-65mm. 10% subrounded nodular flint 50-120mm	100L. No artefacts	Poorly consolidated and unbedded sands, evidence of micro faulting, possibly related to underlying solution of the chalk.
2.2	Weathered Chalk (6)	Silty-Clay		25% sub-angular flint nodule fragments 15-35mm		
2.4	Chalk (7)					Proven at 2.6m

Table 6: Sediment sequence within Test Pit 2

Geological Test Pit 3

Depth (m)	Stratigraphy	Lithology	Colour	Coarse component	Sample	Notes
0	Made Ground (1)	Clay-sand	10YR 4/4 dark yellowish brown	10% rounded flint gravel 5-20mm		Modern CBM
0.5	Decalcified Head (2)	Silty Clay with sand	10YR 4/6 dark yellowish brown	20% rounded tertiary flint gravel 10-30mm 10% sub angular flint 30-40mm		
0.8	Calcareous Head (3)	Sandy-clay	10YR 6/6 brownish yellow	70% sub-angular chalk fragments 10-20mm 20% angular flint nodules 30-400mm (Av. 150mm)	200L. No artefacts	Clasts re-cemented in matrix by calcium carbonate

2	Calcareous Head (4)	Sandy-clay	10YR 6/6 brownish yellow	60% sub-angular chalk fragments 10-40mm 15% angular flint nodules 30-450mm (Av. 150mm)	100L. No artefacts	Clasts re-cemented in matrix by calcium carbonate
2.2	Weathered Chalk (6)	Silty-Clay		25% sub-angular flint nodule fragments 15-35mm		
2.4	Chalk (7)					Proven at 2.6m

Table 7: Sediment sequence within Test Pit 3

7.3 A total of 1200 litres of fluvial sediment were sieved to determine the presence of lithic artefacts and faunal remains. No artefacts were found. However the absence of artefacts from these test pits should be taken only to suggest the localised absence of human activity. The presence of notable quantities of relatively large, fresh flint nodule fragments within the gravel body suggests the local availability of high quality raw material in the Pleistocene and the potential for artefacts to occur locally within deposits equivalent to those observed at the site.

7.4 The well-developed, calcareous Head Gravels at the site offer the potential for faunal remains to be preserved although none were recovered during the course of test pitting.

8.0 DISCUSSION

8.1 Archaeological Results

- 8.1.1 Following the excavation of the three evaluation trenches only two features were uncovered. Both of these features appear to be post-medieval in date, confirmed by pottery finds from the fill of [1/004]. These features probably represent a modern fence line associated with the church. No other features were observed.
- 8.1.2 The thick layer of made ground that was evident in all three of the trenches indicates that a period of building work, probably associated with the erection of St Anselm's Church, occurred in recent history. The fact that no subsoil remains in any of the trenches may indicate that the natural has been truncated at one time and that no archaeological remains now survive in this area.

8.2 Geo-archaeological Results

- 8.2.1 The observed sequences in all geological test pits show a similar and directly comparable sedimentary sequence. In each case Head Deposits, moderately decalcified towards their top, cover the site, overlaying the weathered surface of the natural chalk. Only in GTP2 was a single isolated patch of fluvial sands encountered and this was at a depth in excess of 2m. The upper most decalcified facies of the Head Gravels contained abundant rounded Tertiary Flint, characteristic of the Reading Beds. These were absent in the lower Calcareous Gravels. It is apparent that later phases of solifluction introduced this material to the site from outcrops of Tertiary geology to the south and west of the site. The original BGS mapping of Tertiary geology at the site appears erroneous, it is possible that these pebble rich beds of Decalcified gravel were confused for solid Tertiary geology at the site during the BGS mapping.
- 8.2.2 The fluvial beds comprised a medium sand of apparent fluvial origin. The origin of these sediments appears fluvial although no bedding structures were noted, indeed beyond the main lithological and stratigraphic contacts no structures were observable within the sediments which appeared quite mixed and only moderately consolidated.
- 8.2.3 The underlying chalk formed an uneven, undulating surface. The surface modifications to the chalk appear to have derived largely from solution, occurring after the erosion of the chalk by fluvial processes related to the deposition of the sand and loams. It is the process of decalcification which has apparently led to the loss of bedding structures with the fluvial sediments.

9.0 CONCLUSIONS

9.1 Archaeological

9.1.1 The lack of archaeological remains within this area indicates that the natural horizon may have been truncated by previous construction works, most likely associated with the construction of St Anselm's Church in 1975. The remaining features are most likely modern cut features, occurring after the construction of the church. This suggests that there will be little or no archaeological material occurring in this area.

9.1.2 The archaeology of the surrounding area strongly indicates Roman activity to the south, with Watling Street passing in close proximity, as well as scattered finds of prehistoric material ranging from the Palaeolithic to the Iron Age. The existence of this archaeology coupled with the abundance of Post-Medieval material in the centre of Dartford, strongly suggests a mid to high probability of uncovering further remains in the surrounding area not affected by the construction activity at the church.

9.2 Geo-archaeological

9.2.1 The geoarchaeological sequence at the St Anselm's Church shows a 2.2m series of Pleistocene Head Deposits overlying a solution-weathered chalk surface. The presence of isolated patches of fluvial sand attest to the former presence of fluvial terrace deposits at the site. These having been latterly truncated through the emplacement of solifluction gravels. The deposits are entirely consistent with observations of the MIS 11 Boyn Hill terrace made elsewhere within the Middle Thames region. While the loss of structure and relatively shallow depth of the deposits makes direct stratigraphic comparisons difficult, it is suggested that the deposits at the site are broadly equivalent with the gravels and loams of Dartford Heath recorded at Wansunt Pit. This provides, on altitudinal grounds a strengthened case for direct correlation between the Dartford Heath gravels and Swanscombe as determined highly likely through recent investigations at Swanscombe (Wenban-Smith and Bridgland 2001). The deposits at the site broadly sit between 28 and 31m OD proving an altitudinal overlap between the observed deposits at Barnfield Pit (26-35m) and Dartford Heath (36-42m OD.; Gibbard 1994). Attitudinally the gravels and loams observed at the site may represent the stratigraphic equivalent of part of the observed extended sequence observed by Wenban-Smith and Bridgland at Swanscombe (2001). It adds some strength to the case for rejecting the Dartford Heath gravels as part of an older, pre-MIS 11 terrace system of the Thames (Gibbard 1994; Hinton and Kennard 1905).

9.2.2 The stratigraphic correlation of deposits at the site with the Boyn Hill terrace suggests the deposits at the site may have potential for preserving both Palaeolithic artefacts concentrations and palaeoenvironmental evidence. While the shallow depth and poor preservation of sediment in the local vicinity of the site has impacted on their value as a resource and may account for the lack of artefacts encountered during the test pitting, two factors should be considered before fully writing off the possibility of artefacts for the site as a whole. Firstly, artefacts have been found close to the site at West Hill Schools and in great numbers further along the ridge at Wansunt

and Bowman's lodge. Clearly these finds indicate a human presence in the area and localised concentrations of activity. Secondly, the Head Gravels contained very abundant quantities of fine-grained flint of excellent quality indicating both the possible local presence of river-cut cliffs associated with the MIS 11 Thames and providing an excellent source of raw material for handaxe manufacture.

- 9.2.3 Beyond the potential for obtaining an OSL date for this sequence, and maintaining a watching brief during ground works, no further work is recommended on the basis of the evaluation. However this area of Dartford should continue to be considered of great archaeological importance during further incidents of development.

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ACKNOWLEDGEMENTS

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Appendix 1

Gazetteer of Sites, Finds and Listed Buildings within a 500 m Radius of St Anselm's Church, Dartford:

	NGR	SMR Reference	Period	Details/Description
1.	TQ 5360 7383	TQ 57 SW 21	Lower Palaeolithic to Middle Palaeolithic	Four handaxes found in 1952 on eastern fringe of Dartford Heath
2.	TQ 536 743	TQ 57 SW 117	Lower Palaeolithic to Middle Palaeolithic	Handaxe found on King Edward Avenue
3.	TQ 535 742	TQ 57 SW 118	Lower Palaeolithic to Middle Palaeolithic	Pointed handaxe found on Tower road
4.	TQ 533 744	TQ 57 SW 121	Lower Palaeolithic to Middle Palaeolithic	Palaeolithic implements found near West Hill Road Schools
5.	TQ 536 739	TQ 57 SW 273	Lower Palaeolithic to Middle Palaeolithic	Three pieces of debitage found on Miskin Road
6.	TQ 530 740	TQ 57 SW 131	Mesolithic	Tranchet axe, pick and other axe type found.
7.	TQ 5374 7410	TQ 57 SW 250	Late Bronze Age to Early Iron Age	A shallow pit uncovered during work at the Former Holy Trinity School contained pottery and flintwork
8.	TQ 5367 7438	TQ 57 SW 85	Iron Age	Iron Age Urn fragments founds near County Hospital in 1932 dated to about 200 BC

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9.	TQ 5365 7417	TQ 57 SW 35	Roman	Silver coin of Vespasian found on West Hill
10.	TQ 5375 7410	TQ 57 SW 207	Early Medieval	Early Medieval/Dark Ages inhumation cemetery at Holy Trinity School – 25 burials orientated east-west in four rows
11.	TQ 53740 74100	TQ 57 SW 251	Early Medieval/Dark Age to Medieval	Two linear features, interpreted as beam slots, and a posthole and pit, were found on West Hill dated to 11 th to 12 th
12.	TQ 53740 74100	TQ 57 SW 252	Medieval	Medieval boundary ditch at the site of the former Holy Trinity School
13.	TQ 5321 7428	TQ 57 SW 192	Modern	WW 2 School Air raid shelter built in 1939 for pupils and local residents
14.	TQ 5380 7411	TQ 57 SW 48	Post-Medieval	Medieval Leper Hospital and Post-Medieval Almshouse that previously stood on the site of Spital Houses
15.	TQ 533 744	TQ 57 SW 188	Post Medieval	Dartford Railway Station
16.	TQ 5356 7406	TQ 57 SW 202	Post Medieval	19th century lime kilns and whiting works, now covered by housing at the east end of Tower Road
17.	TQ 53736 74222	TQ 57 SW 236	Post Medieval	Chapel at Former West Hill Hospital, built in 1878
18.	TQ 5366 7418	TQ 57 SW 197	Post-Medieval to Modern	Listed building – Police Station, Workhouse, Hospital built in 1843

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19.	TQ 53732 74195	TQ 57 SW 235	Post-Medieval to Modern	West Hill Hospital Intact workhouse built in 1838, with detached chapel, added in 1878 and two infirmary blocks of 1887 - 1897.
20.	TQ 5377 7410	TQ 57 SW 254	Post Medieval to Modern	Holy Trinity School, West Hill – established in 1827 and demolished 1996/97. An evaluation found a prehistoric feature an early Medieval cemetery a 11th-12th century building and a medieval boundary ditch
21.	TQ 5382 7413	MKE25556	Post-Medieval	Grade II Listed building - Main construction periods 1700 to 1799
22.	TQ 5380 7411	MKE25557	Post-Medieval	Twistleton's Almshouses - Grade II listed building. Main construction periods 1572 to 1704
23.	TQ 5340 7419	MKE25560	Post-Medieval	Grammar School Grade II listed building. Main construction periods 1862 to 1866
24.	TQ 5380 7413	MKE25564	Post-Medieval	Grade II Listed building, main construction periods 1700 - 1799
25.	TQ 5381 7412	MKE25578	Post-Medieval	Former West Hill Police Station, Grade II Listed building, constructed in 1843
26.	TQ 5371 7414	MKE25579	Post-Medieval	Former Dartford Union Workhouse Buildings to rear and north east of ranger fronting West Hill – Grade II listed building constructed between 1818 and 1999

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27.	TQ 5374 7414	MKE25580	Post-Medieval	Range of Former Dartford Union Workhouse facing onto West Hill - Grade II listed building constructed between 1818 and 1932
28.	TQ 5380 7418	MKE25596	Post-Medieval	Zion Strict Baptist Church – Grade II Listed building, constructed between 1700 and 1799
29.	TQ 5380 7413	MKE25598	Post-Medieval	Grade II Listed building located on west Hill and constructed between 1700 and 1899
30.	TQ 5312 7413	MKE25599	Post-Medieval	Christ Church, Grade C listed building, constructed in 1909
31.	TQ 5302 7433	MKE25601	Post-Medieval	Gartley Cottages, Grade II Listed building constructed in 1841
32.	TQ 5373 7419	TQ 57 SW 232	Post-Medieval	Dartford Parish workhouse located on corner of Priory Lane and West Hill in 1729, now demolished
33.	TQ 5361 7464	TQ 57 SW 19	Unknown	Dene-Hole containing Romano-British pottery found on a footpath at the bottom of private gardens to houses in Priory Close

SMR Summary Form

Site Name: St Anselm's Church, West Hill, Dartford	
Site Address: St Anselm's Church West Hill Dartford, Kent	
Summary: A programme of archaeological and geoarchaeological evaluation was undertaken at the St Anselm's Church, Dartford. The work was undertaken between the 1 st and 3 rd of December 2008 on behalf of Scott Wilson Group Ltd. Three evaluation trenches initially sampled the surface archaeology and three geo-archaeological test pits, at the end of each trench, investigated the geological sequence. The evaluation trenches revealed only two sub-circular features, representing modern activity. These features were overlain by a deep layer of made ground, associated with the construction of the church in 1975. The first natural horizon varied in depth from 27.65 metres OD to the west of the site and 28.31 metres OD to the east of the site. The lack of archaeological remains may indicate that the natural horizon has been truncated by construction works associated with the church. The geoarchaeological test pits revealed that Head Deposits cover the site, overlaying the weathered surface of the natural chalk. In one of the test pits a single isolated patch of fluvial sands was encountered at a depth in excess of two metres. The underlying chalk formed an uneven, undulating surface, derived from solution, occurring after the erosion of the chalk by fluvial processes. No artefacts were recovered from the test pits, however, there was an abundance of relatively large flint nodules indicating a high quality raw material in the Pleistocene.	
District/Unitary:	Parish: Dartford
Nature of Development: Building of extension for St Anselm's Church	
Period(s): Palaeolithic, Post-Medieval	
NGR (centre of site : 8 figures): NGR 553393 174277	
Type of archaeological work (delete) Evaluation	
Date of Recording: 1 st to 3 rd December 2008	
Unit undertaking recording: Archaeology South-East	
Geology: Thanet Beds	
Title and author of accompanying report: An Archaeological and Geoarchaeological evaluation at St Anselm's Church, West Hill, Dartford, Kent by Dr Matt Pope and Nick Garland	
Summary of fieldwork results Palaeolithic: No artefacts present, however, abundance of high quality flint material. Post-Medieval: Two small features located to the west of the site, which may represent post-medieval fence line.	
Likelihood of surviving archaeological remains on-site: Low to Medium: possible truncation to natural, however, site does possess potential for artefacts and environmental material in Pleistocene deposits.	
Location of archive/finds: Currently held at the offices of ASE	
Contact at Unit: Giles Dawkes	Date: January 2009

OASIS Form

OASIS ID: archaeol6-54250

Project details

Project name An Archaeological and Geoarchaeological Evaluation at St Anselm's Church, West Hill, Dartford, Kent

Short description of the project A programme of archaeological and geoarchaeological evaluation was undertaken at the St Anselm's Church, Dartford. The work was undertaken between the 1st and 3rd of December 2008 on behalf of Scott Wilson Group Ltd. Three evaluation trenches initially sampled the surface archaeology and three geo-archaeological test pits, at the end of each trench, investigated the geological sequence. The evaluation trenches revealed only two sub-circular features, representing modern activity. These features were overlain by a deep layer of made ground, associated with the construction of the church in 1975. The first natural horizon varied in depth from 27.65 metres OD to the west of the site and 28.31 metres OD to the east of the site. The lack of archaeological remains may indicate that the natural horizon has been truncated by construction works associated with the church. The geoarchaeological test pits revealed that Head Deposits cover the site, overlaying the weathered surface of the natural chalk. In one of the test pits a single isolated patch of fluvial sands was encountered at a depth in excess of two metres. The underlying chalk formed an uneven, undulating surface, derived from solution, occurring after the erosion of the chalk by fluvial processes. No artefacts were recovered from the test pits, however, there was an abundance of relatively large flint nodules indicating a high quality raw material in the Pleistocene.

Project dates Start: 01-12-2008 End: 03-12-2008

Previous/future work No / Yes

Type of project Field evaluation

Site status None

Current Land use Other 5 - Garden

Monument type NONE None

Significant Finds NONE None

Methods & techniques 'Sample Trenches'

Development type Large/ medium scale extensions to existing structures (e.g. church, school, hospitals, law courts, etc.)

Prompt Planning condition

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

Project location

Country England

Site location KENT DARTFORD DARTFORD St Anselm's Church

Postcode DA1 3

Study area 626.50 Square metres

Site coordinates TQ 53393 74277 51.4461603867 0.207603889766 51 26 46 N 000
12 27 E Point

Height OD / Depth Min: 27.65m Max: 28.31m

Project creators

Name of
Organisation Archaeology South East

Project brief
originator Kent County Council

Project design
originator Archaeology South-East

Project
director/manager Giles Dawkes

Project supervisor Nick Garland

Type of
sponsor/funding
body Developer

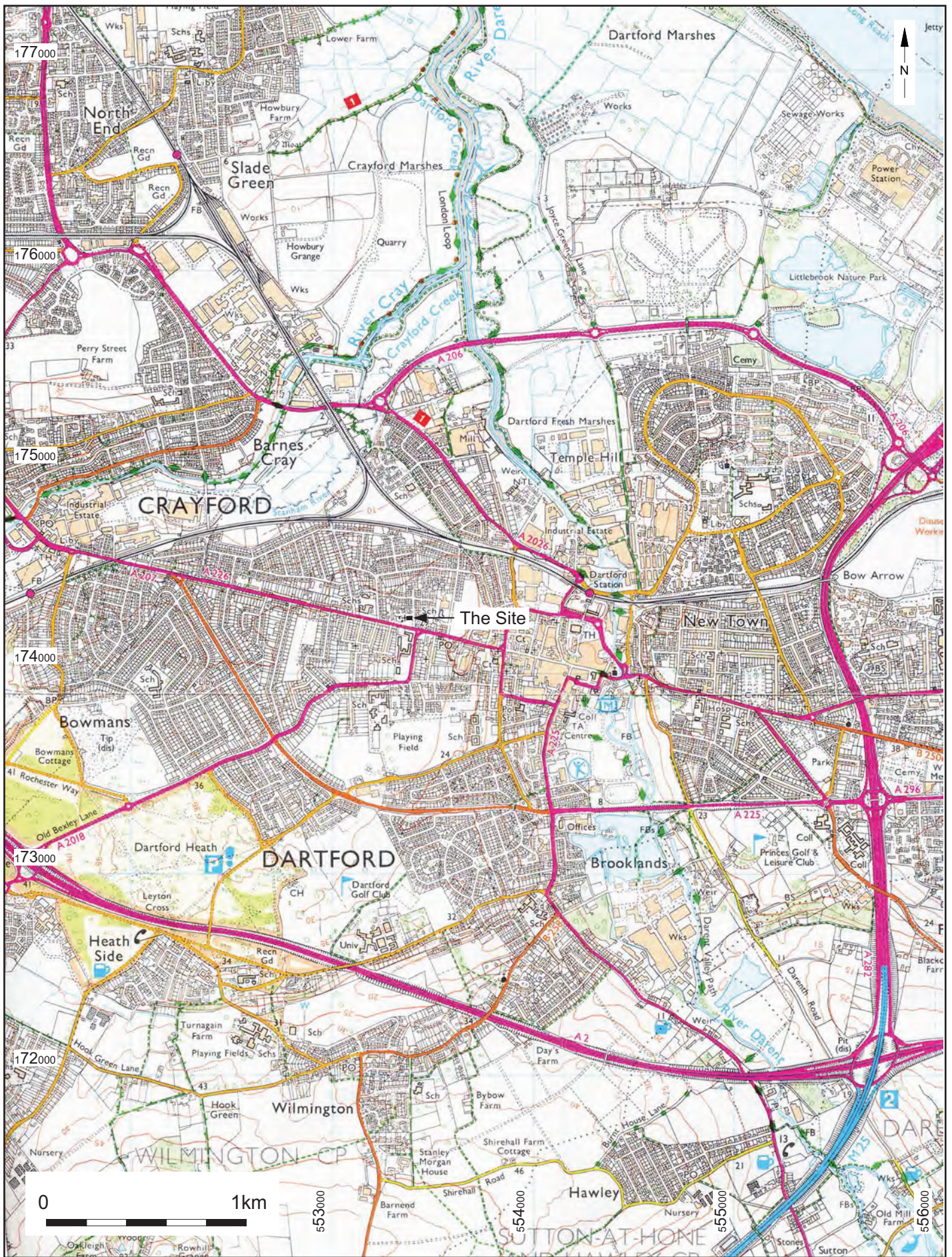
Project archives

Physical Archive
Exists? No

Digital Archive recipient	Local Museum
Digital Contents	'other'
Digital Media available	'Text'
Paper Archive recipient	Local Museum
Paper Contents	'other'
Paper Media available	'Context sheet','Notebook - Excavation',' Research',' General Notes','Photograph','Plan','Report'

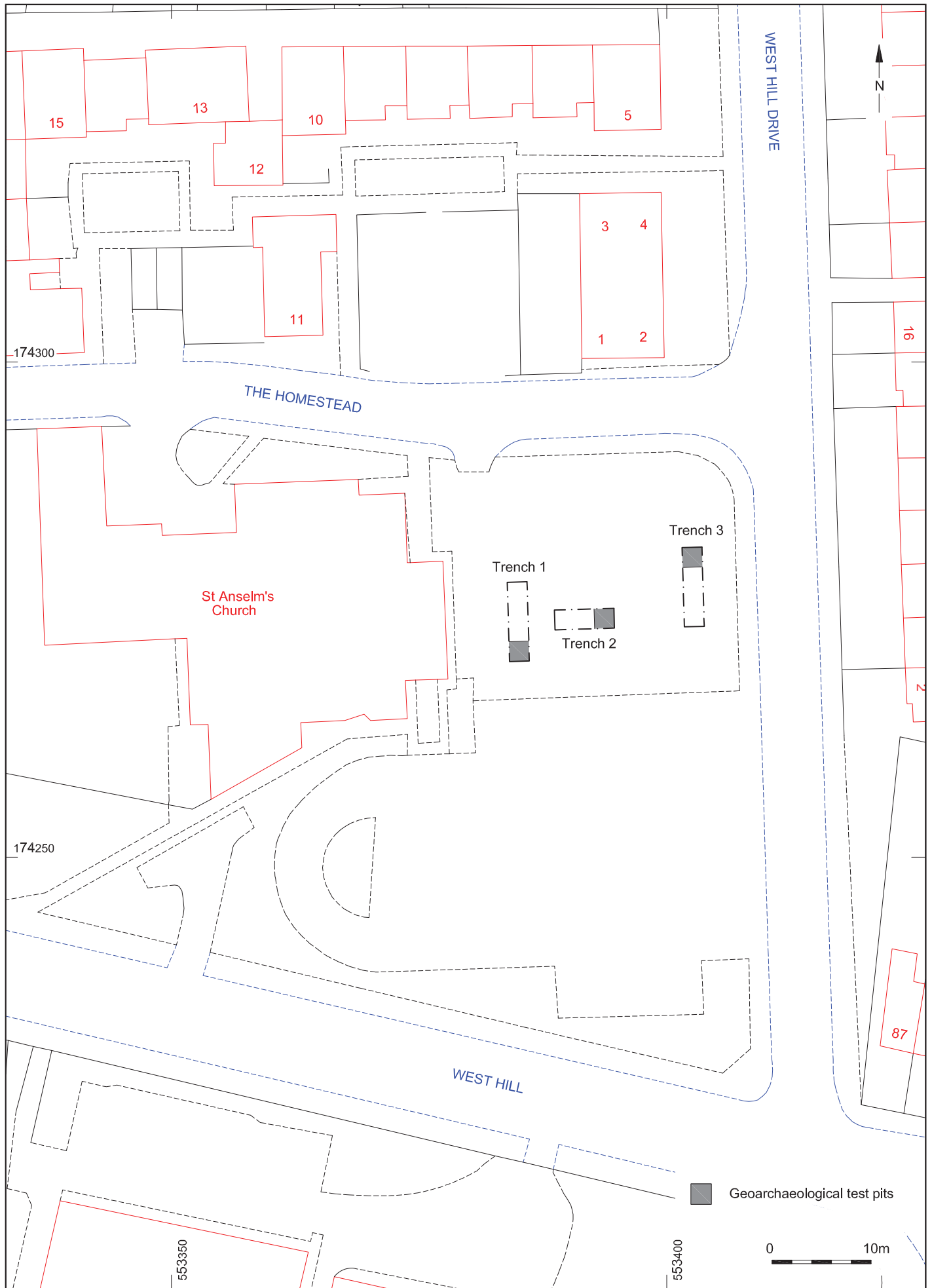
Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	An Archaeological and Geoarchaeological Evaluation at St Anselm's Church, West Hill, Dartford, Kent
Author(s)/Editor(s)	Pope, M and Garland, N
Other bibliographic details	2008221
Date	2009
Issuer or publisher	Archaeology South East
Place of issue or publication	Portslade
Entered by	Nicky Garland (n.garland@ucl.ac.uk)
Entered on	20 January 2009

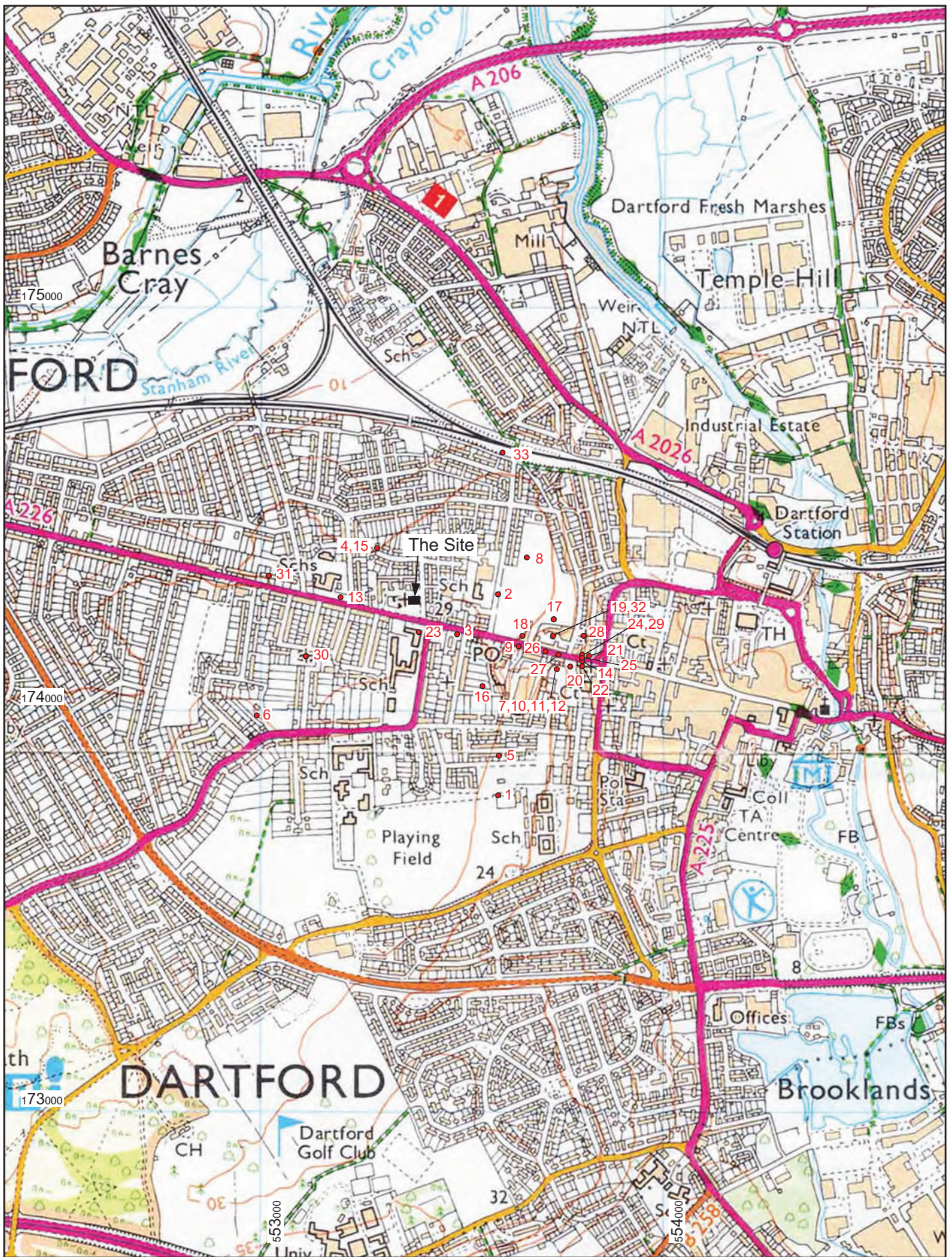


© Archaeology South-East		St Anselm's Church, Dartford	Fig. 1
Project Ref: 3659	Jan 2009	Site Location Plan	
Report Ref: 2008221	Drawn by: JLR		

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Project Ref: 3659	Jan 2009	Trench location		
Report Ref: 2008221	Drawn by: JLR			



© Archaeology South-East		St Anselm's Church, Dartford	Fig. 3
Project Ref: 3659	Jan 2009	Map of site including HER data	
Report Ref: 2008221	Drawn by: JLR		

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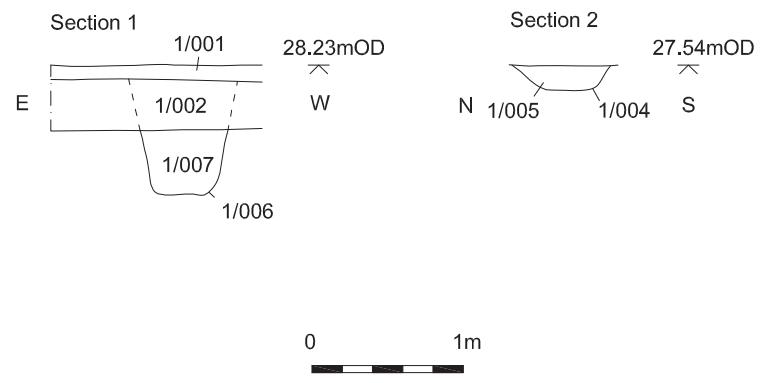
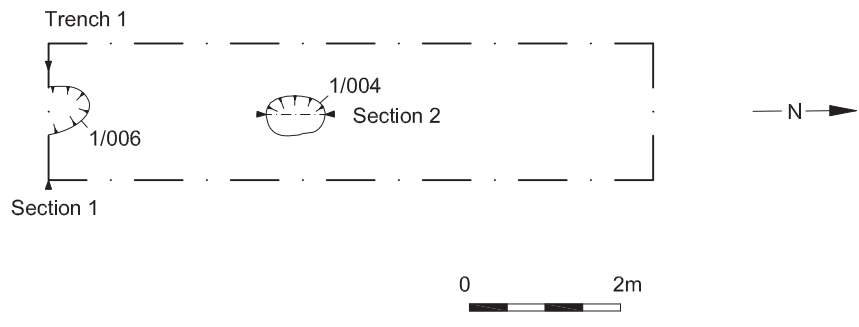




Fig 6: East facing photo of Trench 2



Fig 5: East facing section of pit 1004

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Project Ref: 3659	Jan 2009			
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Fig 7: South facing photo of Trench 3

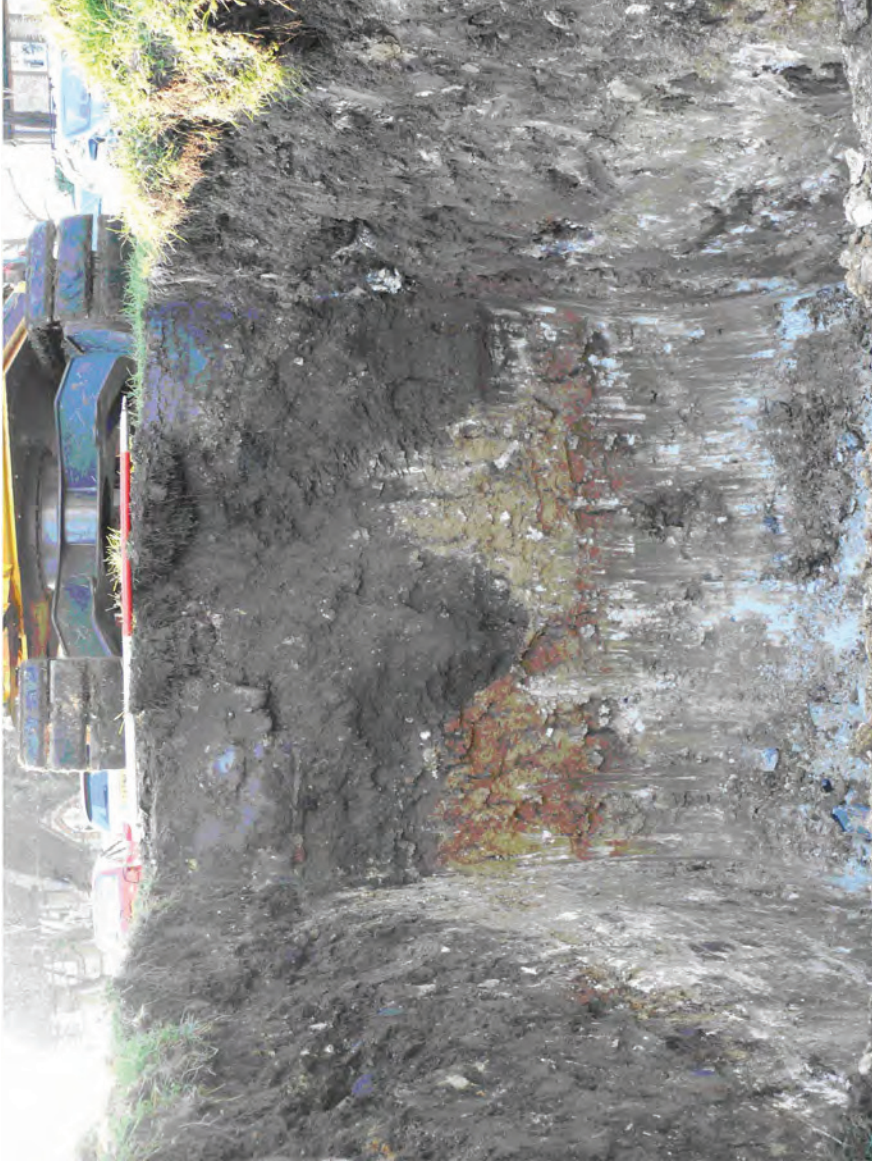


Fig 8: Geoaerchaeological Test Pit 1 north facing section



Fig 8: Geoaerchaeological Test Pit 2 west facing section

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