

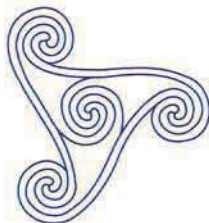
HORNS CROSS,
STONE,
DARTFORD

AN ARCHAEOLOGICAL EVALUATION REPORT

Application No.: PA05/52

NGR TQ 5730 7447

FEBRUARY 2008



National Grid Reference: **NGR TQ 5730 7447**

Site Code: STD 08

On behalf of: Countryside Properties (In Partnership) Ltd
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1 ABSTRACT

An archaeological evaluation was undertaken by AOC Archaeology Group between 14th and 17th January 2008 at Horns Cross, Stone, Dartford, Kent on behalf of Countryside Properties Ltd. The aim of the evaluation was to assess the impact of the proposed development on any surviving archaeological remains.

The evaluation comprised the machine excavation of six test trenches measuring 2.5m x 2m at base. Natural Pleistocene gravel deposits were identified at between 35.31mOD and 36.27mOD. Sealing the gravels was a layer of homogenous mid greyish brown, sandy clay subsoil, beneath a deposit of dark blackish brown, sandy clay buried topsoil, underlying modern made ground and a levelling layer of demolition rubble.

Within Trench 1 a pit and linear ditch, both dated as late prehistoric from recovered worked flints, were found cutting into the natural Pleistocene gravels.

Under the coordination of a Palaeolithic expert the natural Pleistocene gravels and sands were machine excavated in spits of up to 250mm and 100 litre samples taken at selected depths. The samples were sieved on site for the recovery of archaeological remains. This analysis of the Pleistocene deposits produced a single flint flake, from a context interpreted as a reworked Pleistocene terrace deposit.

2 SITE LOCATION

- 2.1 The site is centered on National Grid Reference (NGR) TQ 5730 7447, and lies on the edge of Stone, near Dartford (Figure 1). The site is bounded by London Road to the south, Stone Place Road to the west and residential properties to the north and east. The site has been leveled and is covered with demolition rubble
- 2.2 The site is irregularly shaped (Figure 2) and the area affected by the development covers a total area of approximately 0.5 hectares (5,000m²).

3 GEOLOGY AND TOPOGRAPHY

- 3.1 Horns Cross is situated close to the south bank of the Thames to the southwest of Greenhithe. The British Geological Survey map (Sheet 271) shows the solid geology as being chalk, which is overlain in the area of the application site by the Boyn Hill/Orsett Heath Pleistocene Formation.
- 3.2 The Boyn Hill/Orsett Heath Pleistocene formation is preserved on the south side of the Lower Thames as an intermittent east–west trending band from Dartford Heath through Dartford, Stone, Greenhithe and Swanscombe to Northfleet. The deposits in the formation consist of a sequence of predominantly fluviatile loam, sand and gravel units laid down by the ancient Thames in the post-Anglian interglacial period between c. 430,000 and 350,000 years BP (Before Present), corresponding with late Oxygen Isotope Stage 12 to early OI Stage 10 of the global framework. These are overlain in places by younger colluvial and solifluction deposits, cutting down through them and filling northward-trending dry valleys and minor tributaries, which sometimes also contain their own systems of post-Boyn Hill/Orsett Heath fluvial deposits.

4 PLANNING BACKGROUND

- 4.1 The local planning authority is Dartford Borough Council. Archaeological advice to the council was provided by Wendy Rogers, of the Kent County Council.
- 4.2 Planning permission to undertake the development has been granted under the Town & Country Planning Act (1990) (Ref No.: DA/02/0617 and DA/06/1027), subject to conditions. The proposed development (Application No.: PA05/52) of the site is for a residential development of 27 new dwellings.
- 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.

5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

- 5.1 The following information is drawn from the Desk Based Assessment (AOC 2006) and Written Scheme of Investigation (AOC 2007) previously produced for the site.

Prehistoric (before c. AD 43)

- 5.2 The human history of the Dartford area spans more than 400,000 years. During this time there were extreme climatic changes varying from full Ice Age conditions to warm, inter-glacial phases producing a rich diversity of landscapes, flora and fauna. At various times animal species as diverse as cave lion, monkey, rhino, straight-tusked elephant, bear, mammoth, deer, elk, lemming and bison frequented the Dartford area.
- 5.3 Three matching pieces of a 300,000 year old human skull, recovered at Barnfield Pit, Craylands Lane, and Swanscombe near Dartford in the 1930s and 1950s, are among the oldest human remains ever discovered in Europe. Earlier material than the Swanscombe Skull has also been recovered in the area, in the form of a large number of stone tools of Clactonian type. Animal bones, teeth and fossilised footprints, as well as snail shells and microscopic pollen grains have also been retrieved from Dartford's important prehistoric sites, providing a picture of the flora, fauna, landscape and environmental conditions existing at particular points in time.
- 5.4 Small groups of humans who frequented the Dartford area during these early prehistoric periods generally lived a nomadic lifestyle close to the banks of what would eventually become the River Thames. These people were hunter-gatherers who followed herds of wild animals from place to place, trapping them at their watering holes.
- 5.5 Approximately 5,500 years ago the first farming communities were established in the Dartford area. Forests and woods were cleared to create small fields. Crops were cultivated, and domesticated animals reared. Axes, hoes and rakes were made using flint, wood, leather and animal bone. The hunting of animals continued alongside farming activities. A number of finely worked Neolithic arrowheads have been found close to the centre of modern-day Dartford. There are indicators that a Neolithic settlement existed in the valley of the Ebbsfleet, a stream which flows into the River Thames at Northfleet east of Dartford. Pieces of pottery retrieved from this site appear to be related to the *Peterborough* phase of this period.
- 5.6 Dartford Heath was an important centre of activity during the Bronze Age. Hoards of gold brooches and bronze axes have been found in this part of Dartford.

- 5.7 Settlement in the Dartford area from the seventh to the first centuries B.C. is evidenced by pottery, agricultural implements and brooches. There was a significant Iron Age village site at Farningham just along the Darent Valley from Dartford, and another settlement consisting of two hut circles at Stone to the east of Dartford. Deposits of Iron Age pottery have been found at West Hill, Dartford.

Roman (c. AD 43 - 450)

- 5.8 The first major settlement at Dartford came in the Roman period with the building of a military road (later known as Watling Street) from London to the Kent coast across the River Darent by means of a ford. The rich soils of the Darent Valley also attracted the Romans and their villa estates, which produced corn to feed the inhabitants of London. Some of these estates are well known i.e. Darent, Lullingstone and Farningham. Important Roman settlements existed between Crayford and Welling (*Noviomagus*) and at Springhead (*Vagniacae*) on the borders of modern-day Dartford and Gravesend. Dartford itself was the site of a large and important Roman cemetery (East Hill) and had its own modest Roman villa with another villa sited at nearby Wilmington.
- 5.9 Dartford was in the front line of the Roman conquest of Britain, and for four hundred years almost every aspect of local life was influenced by the thinking and lifestyle of an alien power with its own religions, culture and language. Dartford declined in importance after AD 410, the main Roman roads fell into disuse and disrepair, and the general standard of living was greatly reduced.

Anglo-Saxon (c. 451-1065)

- 5.10 The Anglo-Saxon settlement of Kent began during the first half of the fifth century A.D. Little is known about the location, size and nature of Saxon settlements in and around the Dartford area (AOC 2006). A few occupation sites have been identified in the local area; some of these were sited close to former Roman villa sites. Some of the largest or most interesting Saxon cemeteries in Kent have been found in and around Dartford - at Dartford, Riseley (Horton Kirby), Horton Kirby, Darent, Farningham and Polhill.
- 5.11 Most of the archaeological evidence from local sites suggests that there was a significant influx of Saxon settlers into the Dartford area between the fifth and seventh centuries A.D. Small Saxon settlements evolved into larger and more permanent villages as time progressed. The town of Stone is first recorded in AD 975 as Stane (AOC 2006). Similarly, the modern-day names of many of the villages surrounding Stone contain elements characteristic of the Saxon language. Names such as Wilmington, Sutton-at-Hone, Horton Kirby, Farningham, Lullingstone, Eynsford and Swanscombe all suggest a Saxon establishment. Many churches (including those at Wilmington, Darent, Swanscombe, Fawkham and possibly Dartford) show clear evidence of Saxon architecture.

Medieval (c. 1066 - 1485)

- 5.12 The Domesday book reveals that the settlement of Stone was named Estanes in 1086, later reverting to its Saxon name of *Stanes* in 1226 (AOC2007). The Domesday entry reads “Concerning Estanes: - Estanes is a manor of the bishop of Rochester and T.R.E. it was assessed at 6 sulungs and now (it is assessed at) 3; and it is valued at £16; nevertheless, the bishop has there in his form £20, and an ounce of gold and a porpoise (marsuinum)”
- 5.13 In 1086 the royal manor of *Tarentfort* (Dartford) comprised a mixture of arable land, meadow, pasture and woodland. Other features of note were the parish church, Holy Trinity, three smaller chapels, a mill, and two wharves on the River Darent. Teams of oxen were used to plough the land; pigs foraged in the local woods.
- 5.14 The years 1000-1500 saw a remarkable transformation in the size and importance of this former royal manor. Dartford evolved into a thriving and successful medieval market town supporting a population of approximately 1,000 people. The town's new status arose from its position on the main road from London to Canterbury and the Kent coast, and its close involvement with trade and commerce. Dartford became an important market town at the centre of a network of smaller agricultural communities scattered along the fertile Darenth Valley and along the south bank of the River Thames.
- 5.15 Dartford's status was further enhanced by its role in the religious life and administration of Kent. The town became a deanery of the diocese of Rochester, provided one of the venues for the bishop of Rochester's consistory court and housed England's only community of Dominican nuns at Dartford Priory. The expansion and increasing economic prosperity of Dartford during the medieval period was also helped by the large numbers of pilgrims who passed through the town *en route* to the cathedral shrines at Rochester and Canterbury.
- 5.16 This period in Dartford's history marks the gradual change from an underdeveloped agricultural market town economy to an economy where trade, commerce and industry became increasingly important.
- 5.17 Dartford was one of nearly 700 market towns in England depending on agriculture and trading for their prosperity. Dartford was more fortunate than many other similar towns because it was relatively close to London and was sufficiently far from other Kentish market towns not to have to compete for trade and marketing opportunities.

Post-Medieval (c. 1485 - modern)

- 5.18 Dartford's population did not grow significantly between 1500 and 1600. Across England generally the population remained low for two centuries after the Black

Death. The period 1500-1600 was one of instability and inflation causing poverty and sometimes homelessness for a large number of ordinary labourers and unskilled workers.

- 5.19 There were those in and around Dartford who profited from inflation, especially those who owned land and had surplus produce to sell in the market. The wealth of Dartford's gentry and yeoman farmers rose rapidly. They were able to invest in properties, land and luxury goods, which gave them a strong position in community life and community affairs.
- 5.20 Dartford had a strong identity as a stopping-place for pilgrims. This ceased with the Reformation and the abolition of pilgrimages. This had a significant impact on the local economy. The dissolution of Dartford Priory also robbed Dartford of an important source of status and prestige. Fortunately, the decision by Henry VIII to build one of his royal manor houses at Dartford brought the town once again under the spotlight.
- 5.21 In 1610 the town of Stanes was renamed Stone. Stone appears to have remained a small, largely agricultural, hamlet for much of its existence until extensive gravel extraction began in the 19th century with some substantial workings sited around Horns Cross. The region's geographical position and natural resources attracted a number of leading entrepreneur industrialists to establish pioneering new industries in the Dartford area. Sir Martin Frobisher's smelting works, Sir John Spilman's paper mill, Godfrey Box's iron-slitting mill, and other less prominent manufactories created a mini 'industrial revolution' at a time when many other similar towns were still reliant on an agriculturally based economy.
- 5.22 Dartford's economy was consolidated between 1600 and 1800. Transport improvements, including the construction of proper roads and the introduction of stage-coach services, opened up new markets for local traders and merchants, encouraging the development of a network of local and regional trade. The prosperity and confidence of Dartford's gentry, merchants, and middle-classes fuelled changes in both living standards and cultural life.
- 5.23 Horns Cross itself is recorded in maps from the 1700s but its place name derivation is not known and it appears not to be recorded as a separate entity from the larger settlement of Stone although cartographic evidence indicates a distinct cluster of buildings around the crossroad that marks its centre.
- 5.24 Urbanisation and an increasingly mobile population brought additional problems including a rise in the number of beggars, paupers and criminals. Responsibility for addressing and resolving these entrenched problems fell on the parish vestry and the ratepayers. The construction of a Bridewell (prison) and a workhouse in Dartford showed that the local authorities were prepared to tackle the problems head-on.

- 5.25 Opportunities for self-improvement were very limited. Little provision was made for the systematic education of local children. Surprisingly little effort was made to improve the health, hygiene and welfare of the local people. Large areas of 18th century Dartford were characterised by poor housing, lack of proper sanitation and a general air of squalor.
- 5.26 Dartford 1600-1800 was a web of contrasts, extremes and contradictions. Whilst some aspects of life changed beyond recognition, others remained almost the same as they had been in 1500. In 1801, the town's population had only reached 2,406. There was still a great deal of dependence on agriculture and the marketing of agricultural produce. These traditional bulwarks of the local economy co-existed alongside the seeds of industrialisation that would transform Dartford's economy in the nineteenth century.
- 5.27 The story of Dartford in the twentieth century is the story of the gradual decline of the old community that existed in the town in Victorian times and earlier, and the growth of a new town community at the centre of an administrative borough housing a population of over 80,000. The 20th century was to bring unprecedented social, economic and demographic changes to Dartford as society itself changed out of all recognition.
- 5.28 Change and modernisation also brought many opportunities and challenges to the town. As new industries disappeared, others took their place. Dartford constantly sought to attract new commerce and business to the town. Firm links were established with Europe and European business. Economic survival depended on being able to compete on an equal footing with other rival towns in North Kent. Government backed initiatives in the 1980s and 1990s brought new hope and opportunities to Dartford, thanks mainly to its geographical position in relation to the Thames Corridor, an area designated for full-scale development in the twenty-first century.

6 AIMS AND OBJECTIVES

- 6.1 The aims of the Evaluation were defined as being:
- 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.
 - To assess the ecofactual and environmental potential of any archaeological features and deposits.
 - To determine the extent of previous truncations of the archaeological deposits.

- To enable Wendy Rogers, of the Kent County Council 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:
- Assess the potential for encountering primary context Palaeolithic remains.
 - Determine the presence and potential for analysis of any environmental and economic indicators preserved in the sediments encountered.
 - Assess the horizontal and vertical extent and sedimentological character of Pleistocene deposits at the site (with reference to the sequences identified elsewhere in North Kent).
 - Link archaeological material with interpretations of depositional or erosional processes for stratigraphic units.
 - Assess, in local, regional and national terms, the archaeological and geological importance of the Pleistocene deposits and their potential to fulfil current research objectives.
- 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 six machine-excavated test trenches measuring 2.5m x 2m at base, representative of 0.6% of the site. Before excavation the entire site was visually inspected and all trenches were scanned with a Cable Avoidance Tool (CAT) to check for live services.
- 7.2 All overburden was removed down to the top of the first recognizable archaeological horizon or the natural Pleistocene deposits using a JCB excavator with a 1.8m wide toothless ditching bucket.
- 7.3 The machine excavation of overburden was carried out under direct control of an experienced archaeologist, all faces of trenches that required examination or recording were cleaned with appropriate hand tools and all archaeological remains uncovered were carefully excavated by hand and recorded.
- 7.4 The additional excavation of Pleistocene deposits was undertaken by the mechanical JCB excavator under direct control of the Palaeolithic expert Francis Wenban-Smith. The gravel and sand sediments were excavated in spits of up to 250mm down to an appropriate level, samples were taken for sieving and the trenches were then immediately backfilled.

- 7.5 Samples of 100 litres were taken from the Pleistocene materials at interchanges in the geological formations, as directed by Francis Wenban-Smith. The samples were sieved using a 10mm sieve and any archaeological remains were retrieved for analysis by the Palaeolithic expert. No remains recovered were deemed significant enough to necessitate the re-sieving of the samples using a 4mm sieve.
- 7.6 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*.
- 7.7 A Temporary Bench Mark was set up on the site. It was transferred from a Bench Mark on the corner of Stone Place Road and London Road, in the car park of Bull Public House (Figure 2). Levels were recorded for all of the archaeological deposits.
- 7.8 The evaluation work was undertaken in four days by Paul Harris, Project Supervisor, under the overall project management of Andy Leonard, Project Manager.

8 RESULTS

8.1 Table of results

Trench 1

36.28 to 36.12mOD	(1/0014). Mixed brick, mortar and concrete demolition rubble.
36.12 to 35.88mOD	(1/001). Mid-light grey silty clay, with frequent building material inclusions. Modern made ground.
35.88 to 35.76mOD	(1/002). Dark blackish brown, sandy clay with occasional brick inclusions. Buried topsoil.
35.76 to 35.61mOD	(1/003). Mid greyish brown sandy clay subsoil.
35.61 to 35.41mOD	(1/004). Soft, yellowish-brown sand with sub-vertical rootlet hollows. Natural Pleistocene deposit.
35.41 to 35.26mOD	(1/010). Moderately soft, slightly cohesive, moderately sorted medium to coarse flint gravel in slightly-cohesive slightly clay-silty medium to very coarse sand matrix. Natural Pleistocene deposit.
35.26 to 35.11mOD	(1/011). Soft, yellowish-brown, medium to coarse sand. Natural Pleistocene deposit.
35.11 to 34.11mOD	(1/012). Moderately soft, mid orangey brown, poorly-sorted coarse flint, in a silty sand matrix

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| | with sharp very fine gravel inclusions. Natural Pleistocene deposit. |
| 34.11 to 33.86mOD | (1/013). Moderately soft, uncohesive, mid brown medium to coarse sand, with occasional gravel inclusions. Natural Pleistocene deposit. |
| 33.86 to 33.46mOD+ | (1/014). Moderately soft, uncohesive, mid brown coarse to very coarse sand with moderately common fine to coarse flint pebble inclusions. Natural Pleistocene deposit. |
-
- 8.2 Trench 1 was located in the northwest of the site (Figure 2). Due to the presence of a mains service, the trench was moved 5 metres to the south of its original planned position. It measured 2.5m x 2m.
- 8.3 The earliest deposits encountered were a series of natural Pleistocene deposits (Figures 3 and 4) comprising a layer of gravelly sand (1/014) below a deposit of fine sand (1/013), which in turn was found beneath a deposit of sandy gravel (1/012), below a layer of medium to coarse sand (1/011), a deposit of gravelly sand (1/010) and soft yellowish brown sand (1/004), as shown in the table above. No Palaeolithic remains were uncovered from sieving selected samples of the natural deposits.
- 8.4 A possible ovoid pit (1/007) and linear ditch (1/009) were found cutting into the natural gravels (1/004) within the eastern half of the trench (Figure 5). Pit [1/007] (0.90 x 0.22m) was located in the northeast of Trench 1. It had almost vertically sloping sides that broke sharply from the top and sharply to its undulating base. It was unclear whether the feature cut or was cut by linear feature [1/009] to the east, as both contained the same fill of light brown, friable sandy silt with moderate gravel inclusions (1/006) and (1/008) respectively. A worked flint flake was recovered from the deposit within pit [1/007], which has been dated to the late Bronze age/early Iron Age.
- 8.5 Linear ditch [1/009] (2.50 x 0.65 x 0.20m) had steep, near vertical sides, that broke sharply from horizontal and again to its undulating base (Figure 5). It was orientated northeast – southwest, continuing into the northern and southern extent of the trench. The ditch [1/009] and pit [1/007] revealed within Trench 1 were crudely cut into the natural deposits, but contain a silting fill that would have accumulated over time. This suggests that the features were probably the production of domestic activity.
- 8.6 Overlying the natural gravels and archaeological features described above was a layer of homogenous, sandy clay subsoil (1/003). This was recorded to a level of 35.76mOD. No archaeological remains were present overlying or cutting it. This was sealed by a dark blackish brown topsoil (1/002), buried beneath a deposit of modern made ground (1/001) and surface building demolition rubble (1/015) found at a level of 36.28mOD.

Trench 2

36.19 to 35.84mOD	(2/008). Mixed brick, mortar and concrete demolition rubble.
35.84 to 35.78mOD	(2/002). Dark blackish brown, sandy clay with occasional brick inclusions. Buried topsoil.
35.78 to 35.58mOD	(2/003). Mid greyish brown sandy clay subsoil.
35.58 to 35.14mOD	(2/004). Soft, dark yellowish-brown, slightly-silty medium sand. Natural Pleistocene deposit.
35.14 to 33.89mOD	(2/005). Moderately soft and cohesive (slightly clayey and firm in top 30cm), mid yellowish brown, moderately sorted fine to very coarse flint gravel in a clayey, silty sand matrix with frequent sharp very fine flint pebbles inclusions at its base. Natural Pleistocene deposit.
33.89 to 33.29mOD	(2/006). Moderately soft, uncohesive, mid-dark brown, medium to coarse sand. Natural Pleistocene deposit.
33.29 to 33.14mOD+	(2/007). Moderately soft, dark yellowish-brown, uncohesive sand with moderate inclusions of flint pebbles. Natural Pleistocene deposit.

- 8.7 Trench 2 was located in the northwest of the site, 52 metres to the south of the northern site boundary (Figure 2). It measured 2.5m x 2m at base
- 8.8 The natural Pleistocene deposits comprised (Figures 3 and 4) a layer of sandy gravel (2/007), below a deposit of moderately soft sand (2/006), underneath a silty, sandy gravel (2/005) and a soft silty sand (2/004), as shown in the table above. No Palaeolithic remains were uncovered from sieving selected samples of the natural deposits.
- 8.9 The latest natural Pleistocene deposit (2/004) was encountered at 35.58mOD, sealed by a layer of homogenous sandy clay subsoil (2/003). This was overlain by a deposit of dark blackish brown, sandy clay topsoil (2/002), buried below a recent deposit of building demolition rubble (2/008) which constituted the current surface at 36.19mOD.
- 8.10 No archaeological remains were identified in Trench 2.

Trench 3

36.15 to 35.86mOD	(3/007). Mixed brick, mortar and concrete demolition rubble.
35.86 to 35.76mOD	(3/001). Mid-light grey silty clay, with frequent building material inclusions. Modern made ground.

35.76 to 35.56mOD	(3/002). Dark blackish brown, sandy clay with occasional brick inclusions. Buried topsoil.
35.56 to 35.31mOD	(3/003). Mid greyish brown sandy clay subsoil.
35.31 to 34.06mOD	(3/004). Moderately soft, mid brown sand, with occasional flint pebble inclusions. Natural Pleistocene deposit.
34.06 to 33.26mOD	(3/005). Moderately soft, mid orangey brown, moderately well-sorted, flint gravel in a silty sand matrix. Natural Pleistocene deposit.
33.26 to 32.76mOD+	(3/006). Moderately soft, mid brown, silty sand with frequent flint pebble inclusions. Natural Pleistocene deposit.

- 8.11 Trench 3 was located to the northeast of the site (Figure 2) and measured 2.5m x 2m at base.
- 8.12 The natural Pleistocene deposits (Figures 3 and 4) comprised a layer of gravelly sand (3/006), below a deposit of sandy gravel (3/005), underlying a soft sand (3/004), as shown in the table above. No Palaeolithic remains were uncovered from sieving selected samples of the natural deposits.
- 8.13 Sealing the natural Pleistocene gravel deposit (3/004) at 35.31mOD was a mid greyish brown, sandy clay subsoil (3/003) found across the site. This was overlain by a deposit of dark brown sandy clay (3/002) topsoil, buried beneath modern made ground (3/001), which in turn was underneath a recent deposit of demolition rubble (3/007). The surface of the trench stood at 36.15mOD.
- 8.14 No significant archaeological remains were identified in Trench 3.

Trench 4

36.55 to 36.31mOD	(4/006). Mixed brick, mortar and concrete demolition rubble.
36.31 to 36.03mOD	(4/006). Mid grey gravel and concrete rubble levelling layer.
36.03 to 35.85mOD	(4/003). Mid greyish brown sandy clay subsoil.
35.85 to 34.35mOD	(4/004). Coarse gravel in a clayey, silty, sand matrix. Natural Pleistocene deposit.
34.35 to 33.65mOD+	(4/005). Firm, brownish-yellow very coarse, angular gravels, within a sand matrix. Natural Pleistocene deposit.

- 8.15 Trench 4 was located along the western side of the site near the centre (Figure 2) and measured 2.5m x 2m at base.

- 8.16 The natural Pleistocene deposits (Figures 3 and 4) comprised a layer of very coarse gravel (4/005) below another gravel deposit (4/004), as shown in the table above. No Palaeolithic remains were identified during sieving of selected samples of the natural deposits.
- 8.17 Sealing the natural Pleistocene gravel deposits (4/004) at 35.85mOD was a mid greyish brown, sandy clay subsoil (4/003) found across the site. This was overlain by a gravel and concrete rubble levelling layer (4/006), found beneath a recent deposit of demolition rubble (4/006). The surface of the trench stood at 36.55mOD.
- 8.18 No archaeological remains were identified in Trench 4.

Trench 5

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| 36.44 to 36.11mOD | (5/007). Mixed brick, mortar and concrete demolition rubble. |
| 36.11 to 35.55mOD | (5/001). Mid-light grey silty clay, with frequent building material inclusions. Modern made ground. |
| 35.55 to 35.43mOD | (5/002). Dark blackish brown, sandy clay with occasional brick inclusions. Buried topsoil. |
| 35.43 to 33.28mOD | (5/004). Soft, dark yellowish-brown, silty sand and fine gravel. Natural Pleistocene deposit. |
| 33.28 to 32.93mOD | (5/005). Mid brownish yellow sand, with occasional gravel inclusions. |
| 32.93 to 32.88mOD+ | (5/006). Mid yellowish brown gravel within a silty sand matrix. |
- 8.19 Trench 5 was located centrally along the eastern side of the site (Figure 2) and measured 2.5m x 2m at base.
- 8.20 The natural Pleistocene deposits (Figures 3 and 4) comprised a layer of silty, sandy gravel (5/006), below a fine sand (5/005), underneath a deposit of gravelly sand (5/004), as in the table shown above. No Palaeolithic remains were uncovered from sieving selected samples of the natural deposits.
- 8.21 Sealing the latest natural Pleistocene gravel deposit (5/004) at 35.43mOD was a mid blackish brown, sandy clay buried topsoil (5/002) found frequently throughout the site. This was overlain by a deposit of modern made ground (5/001), which in turn was underneath a recent deposit of demolition rubble (5/007). The surface of the trench stood at 36.44mOD.
- 8.22 No significant archaeological remains were identified in Trench 5.

Trench 6

- 36.53 to 36.47mOD (6/007). Mixed brick, mortar and concrete demolition rubble.
- 36.47 to 36.37mOD (6/002). Dark blackish brown, sandy clay with occasional brick inclusions. Buried topsoil.
- 36.37 to 36.27mOD (6/003). Mid greyish brown sandy clay subsoil.
- 36.27 to 33.77mOD (6/004). Mid brown, moderately soft gravely sand with gravel rich patches Natural Pleistocene deposit.
- 33.77 to 33.12mOD (6/005). Soft, brownish-yellow sand, with occasional fine flint pebble inclusions.
- 33.12 to 33.02mOD+ (6/006). Mid orangey brown gravel.

- 8.23 Trench 6 was located in the south of the site (Figure 3) and measured 2.5m x 2m at base.
- 8.23 The natural Pleistocene deposits (Figures 3 and 4) comprised a layer of pure mid orangey brown gravel (6/006), underlying a soft sand deposit (6/005), which in turn was beneath a layer of gravely sand (6/004) from which a single undiagnostic worked flake was recovered (Francis Wenban Smith, 2008) (Appendix B). This natural sequence is shown in the table above.
- 8.24 Sealing the top natural Pleistocene deposit (6/004) at 36.27mOD was the mid greyish brown, sandy clay subsoil (6/003) found across much of the site. This was overlain by a deposit of dark brown sandy clay topsoil (6/002), buried beneath a recent deposit of demolition rubble (6/007). The surface of the trench stood at 36.53mOD.
- 8.25 No archaeological features were identified within Trench 6.

9 FINDS

- 9.1 A single worked flint, spot dated on site to the late Bronze Age/early Iron Age by Francis Wenban-Smith, was recovered from the silting deposit 1/008 within pit [1/009].
- 9.2 From the sieving of Pleistocene deposits, co-ordinated by Francis Wenban-Smith a Palaeolithic flake was recovered, which was technologically undiagnostic and deemed undatable due to its inclusion within the reworked Pleistocene terrace deposit (6/004).

10 CONCLUSIONS AND RECOMMENDATIONS

- 10.1 Limited evidence of archaeological activity was identified on the site. A pit and ditch dated by the recovery of a flint flake to the late prehistoric period represent the only archaeological features identified. These probably related to domestic activity within the area and may represent part of a boundary ditch.
- 10.2 The sieving of Pleistocene deposits coordinated by Francis Wenban Smith resulted in the recovery of a single Palaeolithic flake of worked flint, from a reworked Pleistocene terrace deposit (6/004) within Trench 6.
- 10.3 The evaluation met its primary objective: to establish the presence/absence of any archaeological remains. It is therefore recommended that no further archaeological evaluation or excavation is required to satisfy the archaeological planning condition on this site. However, the final decision regarding any further work will rest with the Kent County Council and its archaeological advisor, Wendy Rogers.
- 10.4 Publication of the results will be through the ADS OASIS form (Appendix D).

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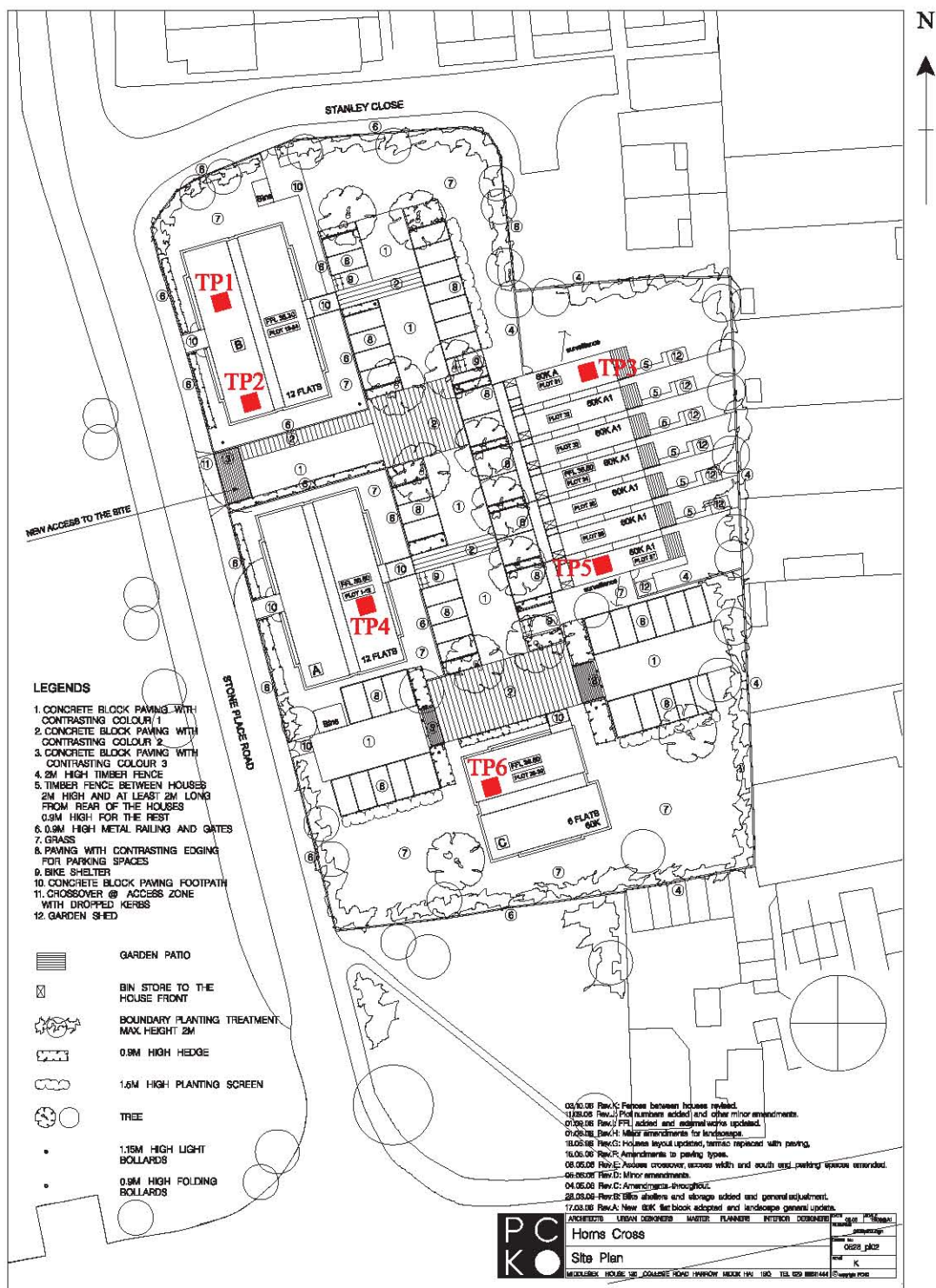
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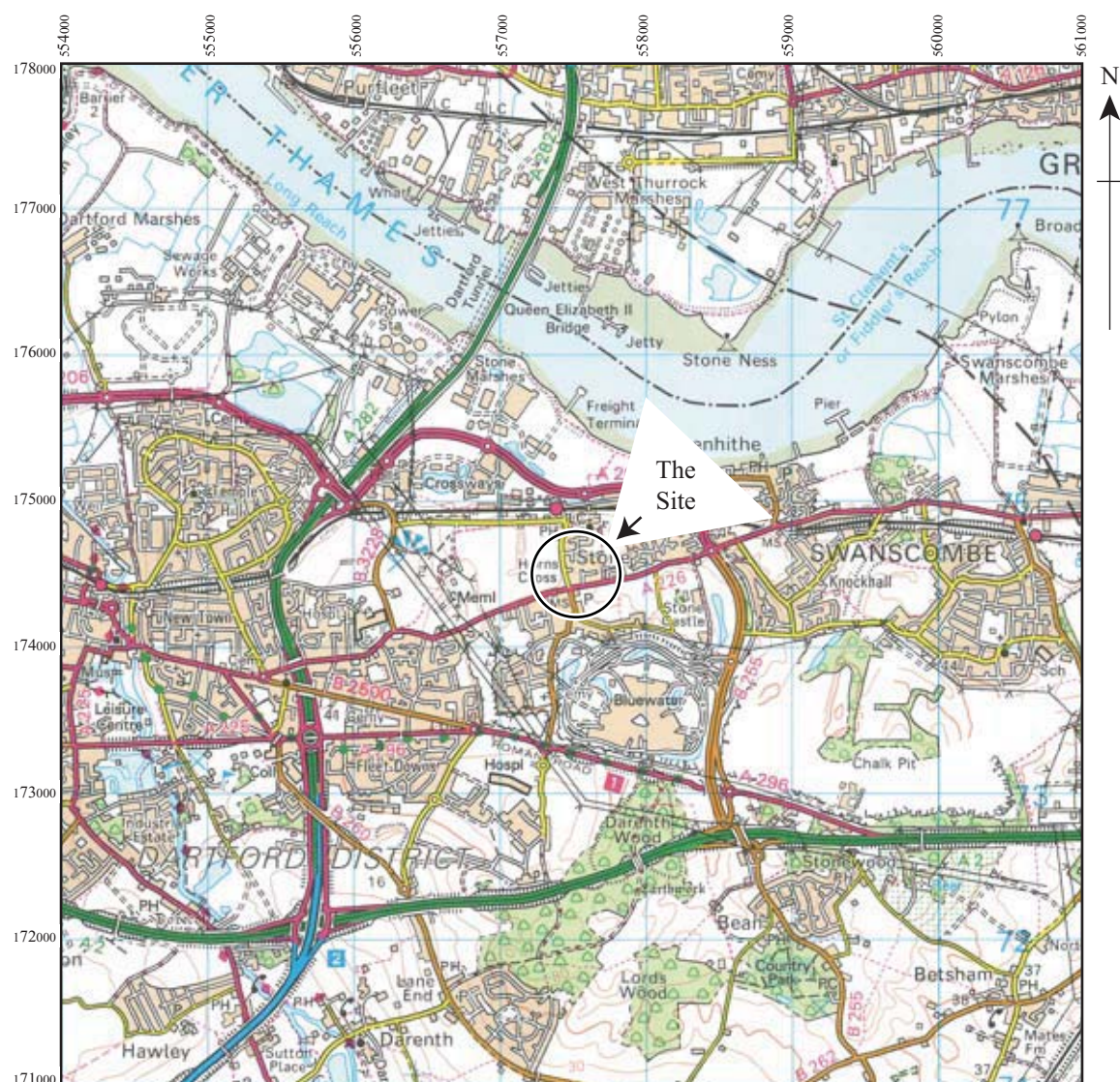
English Heritage (1998): *English Heritage London Region Archaeological Guidance Paper 2*



■ Test Pit

Figure 2: Detailed Site / Test Pit Location

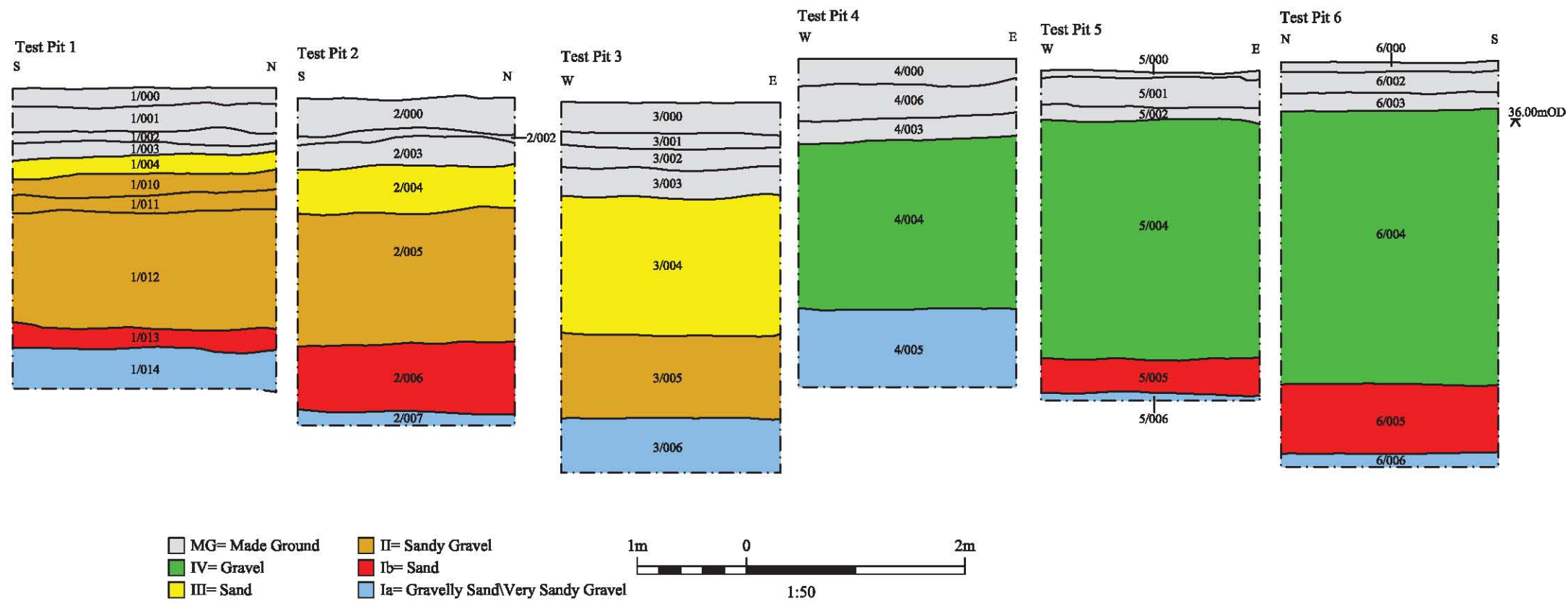




Based on the Ordnance Survey's 1:50 000 Landranger Map of 2003
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Figure 1. Site Location



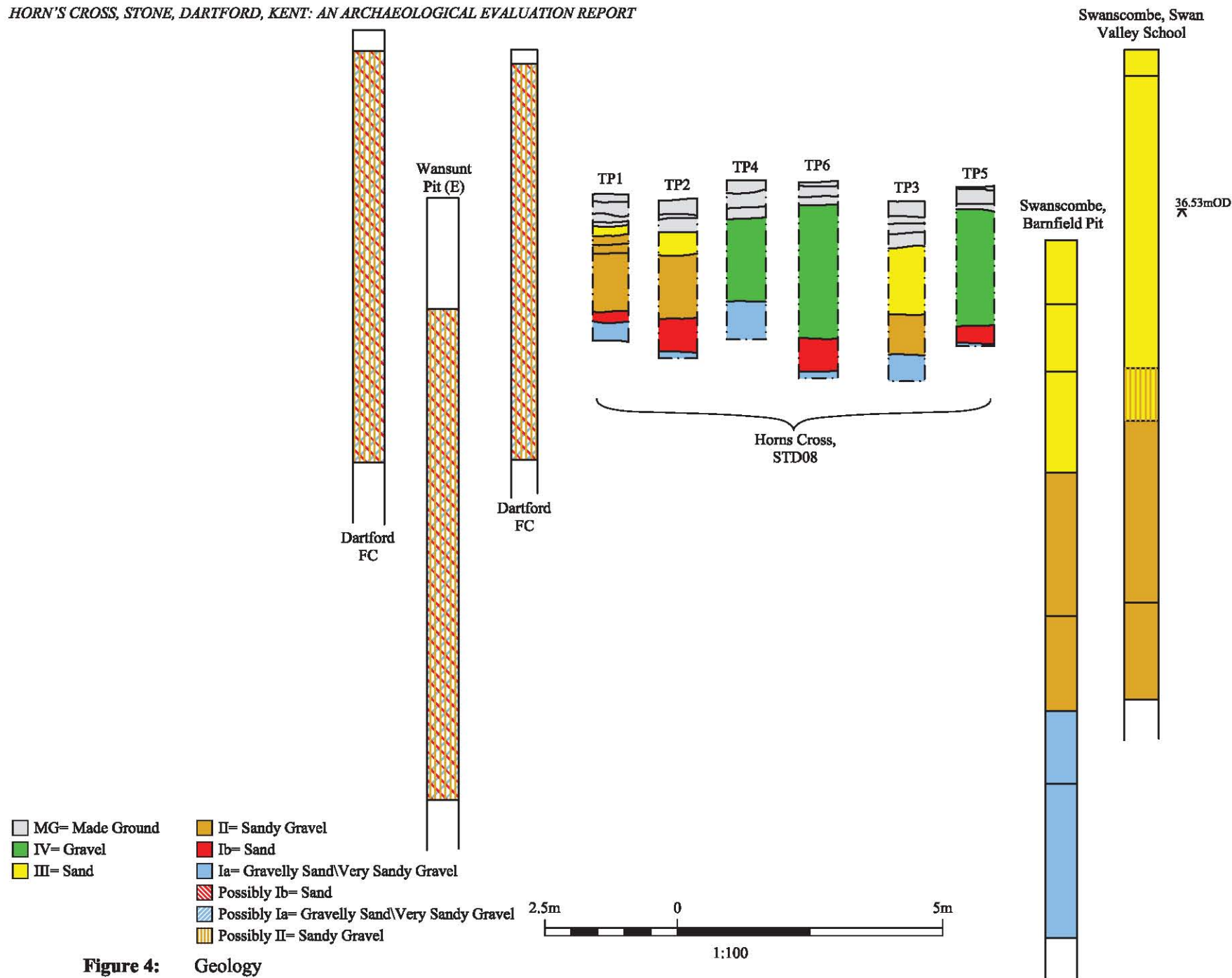


Figure 4: Geology

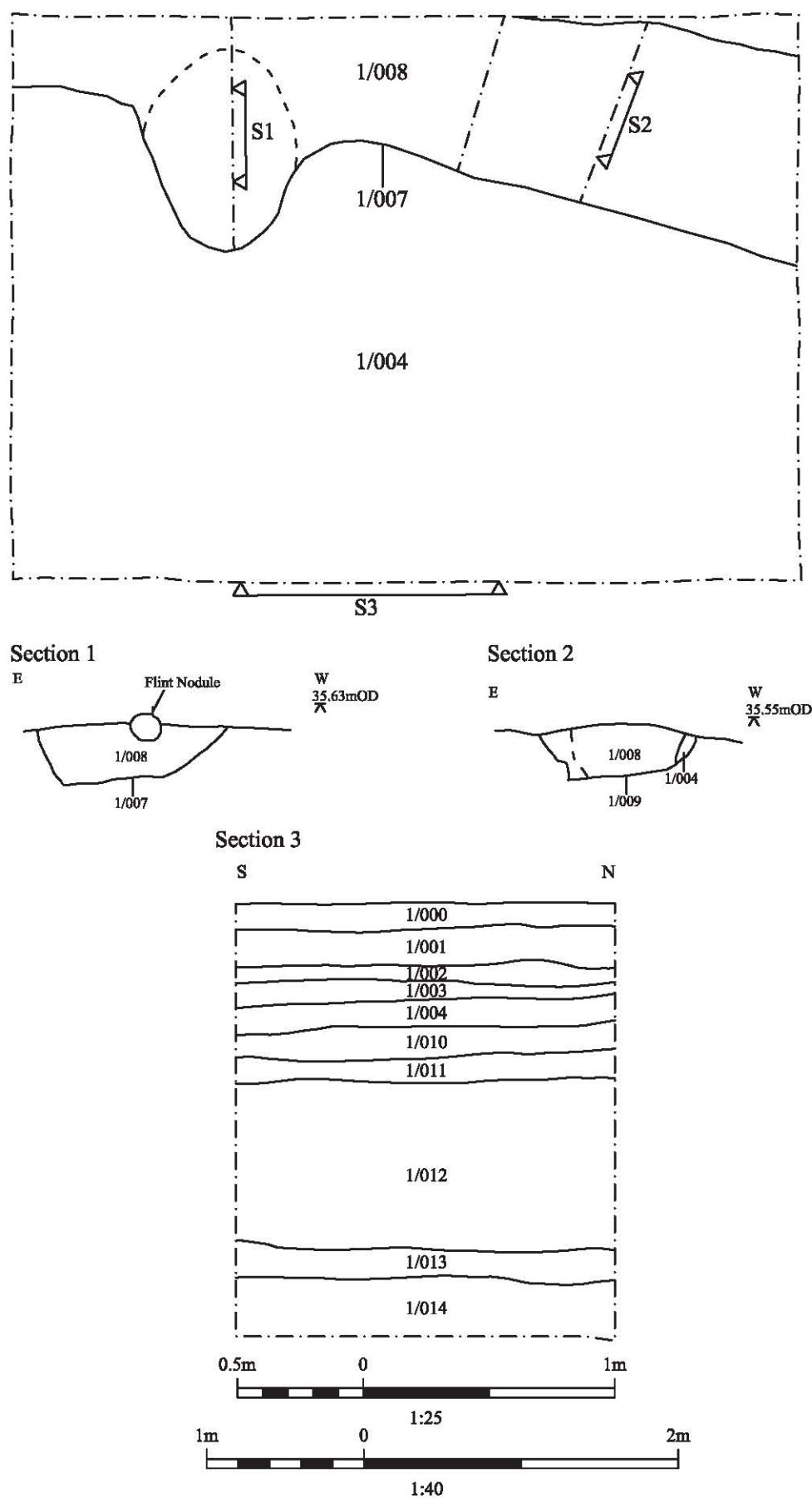


Figure 5: Trench 1: Plan (1:40), Sections 1 & 2 (1:25) & Section 3 (1:40)



APPENDIX A – CONTEXT REGISTER

Context No.	Context Description	Length	Width	Depth
1/015	Brick and concrete rubble levelling layer	2.50m	2.00m	0.16m
1/001	Modern made ground	2.50m	2.00m	0.24m
1/002	Blackish brown sandy clay buried topsoil	2.50m	2.00m	0.12m
1/003	Greyish brown sandy clay subsoil	2.50m	2.00m	0.15m
1/004	Natural Pleistocene sand	2.50m	2.00m	0.20m
1/007	Prehistoric ovoid pit	0.90m	0.45m	0.22m
1/008	Fill of pit 1/007 and ditch 1/009	2.50m+	<0.90m	<0.22m
1/009	Shallow linear ditch	2.50m+	0.65m	0.20m
1/010	Natural Pleistocene clayey silt, sandy gravel	2.50m	2.00m	0.15m
1/011	Natural Pleistocene sand	2.50m	2.00m	0.15m
1/012	Natural Pleistocene sandy gravel	2.50m	2.00m	1.00m
1/013	Natural Pleistocene sand	2.50m	2.00m	0.20m
1/014	Natural Pleistocene gravelly sand	2.50m	2.00m	0.40m+
2/008	Brick and concrete rubble levelling layer	2.50m	2.00m	0.35m
2/002	Blackish brown sandy clay buried topsoil	2.50m	2.00m	0.06m
2/003	Greyish brown sandy clay subsoil	2.50m	2.00m	0.20m
2/004	Natural Pleistocene sand	2.50m	2.00m	0.40m
2/005	Natural Pleistocene silty, sandy gravel	2.50m	2.00m	1.20m
2/006	Natural Pleistocene sand	2.50m	2.00m	0.60m
2/007	Natural Pleistocene sandy gravel	2.50m	2.00m	0.15m
3/007	Brick and concrete rubble levelling layer	2.50m	2.00m	0.29m
3/001	Modern made ground	2.50m	2.00m	0.10m
3/002	Blackish brown sandy clay buried topsoil	2.50m	2.00m	0.20m
3/003	Greyish brown sandy clay subsoil	2.50m	2.00m	0.25m
3/004	Natural Pleistocene sand	2.50m	2.00m	1.25m
3/005	Natural Pleistocene sandy gravel	2.50m	2.00m	0.80m
3/006	Natural Pleistocene gravelly sand	2.50m	2.00m	0.50m+
4/006	Brick and concrete rubble levelling layer	2.50m	2.00m	0.24m
4/006	Gravel and concrete rubble levelling layer	2.50m	2.00m	0.28m
4/003	Greyish brown sandy clay subsoil	2.50m	2.00m	0.19m
4/004	Natural Pleistocene gravel	2.50m	2.00m	1.50m
4/005	Natural Pleistocene gravels	2.50m	2.00m	0.70m+

5/007	Brick and concrete rubble levelling layer	2.50m	2.00m	0.70m
5/001	Modern made ground	2.50m	2.00m	0.25m
5/002	Blackish brown sandy clay buried topsoil	2.50m	2.00m	0.12m
5/004	Natural Pleistocene gravely sand	2.50m	2.00m	2.15m
5/005	Natural Pleistocene sand	2.50m	2.00m	0.35m
5/006	Natural Pleistocene gravel	2.50m	2.00m	0.05m+
6/007	Brick and concrete rubble levelling layer	2.50m	2.00m	0.60m
6/002	Blackish brown sandy clay buried topsoil	2.50m	2.00m	0.12m
6/003	Greyish brown sandy clay subsoil	2.50m	2.00m	0.15m
6/004	Natural Pleistocene gravely sand	2.50m	2.00m	2.50m
6/005	Natural Pleistocene sand	2.50m	2.00m	0.65m
6/006	Natural Pleistocene gravel	2.50m	2.00m	0.10m+

APPENDIX B – EXTRACTS FROM PALAEOLITHIC SITE REPORT

HORNS CROSS, STONE, DARTFORD: FIELD EVALUATION

(PALAEOLITHIC), 2008, Francis Wenban-Smith PhD, MA, BA (*ref: BLUE: CC-035-A*)

SUMMARY

Six deep test pits were dug to evaluate for Palaeolithic remains. The site is buried beneath c. 0.5 m of made ground. Beneath this, deposits in the northern part of the site consisted of *in situ* Pleistocene fluvial sand/gravel terrace deposits down to at least four metres deep, their basal level not being reached. No Palaeolithic remains were found in these deposits. At the southern end of the site the *in situ* fluvial deposits were overlain by c.1.5-2.5m of reworked Pleistocene terrace deposits, comprising mixed and structureless sand/gravel. One flint flake was found in these reworked deposits.

The work at the site has provided a useful record of *in situ* terrace deposits in the key Swanscombe area. The deposits probably correlate with the gravel deposits present on the eastern outskirts of Dartford (as recently seen at Dartford FC and in the Fastrack cutting). It is uncertain exactly how old these are, and how they correlate with the Barnfield Pit sequence. They probably date to late in the Anglian glaciation (MIS 12, c. 450,000 BP).

The lack of Palaeolithic remains in the gravels at the Horns Cross site suggests there is very low potential for further Palaeolithic recording, unless there is impact more than 4 m below the present ground-surface, in which case it would be important to record the deeper stratigraphy, to aid correlation with the Barnfield Pit sequence.

RESULTS

Stratigraphy and distribution of sediments

Four main groups (I-IV) of Pleistocene deposits were found below the made ground (MG) (**Table 2**). The whole site is underlain by Group IA deposits, which are undisturbed fluvial sand/gravel deposits with some indication of bedding in places. In the northern half of the site this deposit is overlain by sand and gravel (units IB, II) that are also probably *in situ* fluvial deposits; and these in turn are overlain by a sand deposit (Group III) that may be fluvial or colluvial. In the southern half of the site the surface of the Pleistocene fluvial deposits (Group I) appears to have been truncated by deposition of a thick structureless sand/ gravel deposit (IV) which probably represents reworked material. Detailed descriptions of the sequence in each test pit are given as an appendix (**Appendix C**); the depth and distribution of the main Pleistocene sediment groups across the site are shown (**Figure 3**), and are discussed below (**Section 5.1**).

<i>Sediment Group</i>	<i>Period</i>	<i>Deposit</i>	<i>Phase</i>	<i>Description</i>	<i>Interpretive notes</i>	<i>Test pits</i>
MG	Modern	Made ground	-	Mainly building rubble with earthy gravel, variably clay/silt/sand.	Probably all 20 th century.	1-6
IV	Pleistocene	Mixed, structureless sand/gravel	-	Variably clay-silty sand with gravel patches. Strong brown/dark yellowish-brown.	Reworked Pleistocene terrace deposits	4-6
III	Pleistocene	Sand	-	Soft yellowish-brown sand, slightly silty in places, with very occasional flint pebbles. Faint coarse bedding in test pit 3.	<i>In situ</i> Pleistocene fluvial terrace deposits	1-3
II	Pleistocene	Sandy gravel	-	Moderately soft, variably clay-silty, sandy flint gravel. Strong-brown/dark yellowish-brown.	<i>In situ</i> Pleistocene fluvial terrace deposits	1-3
I	Pleistocene	Sand	B	Moderately soft sand, strong brown to brownish-yellow. Occasional flint pebbles.	<i>In situ</i> Pleistocene fluvial terrace deposits	1,2,5,6
		Gravelly sand	A	Moderately soft, strong brown to dark yellowish-brown sand sometimes silty. Variably common flint pebbles.	<i>In situ</i> Pleistocene fluvial terrace deposits	1-6

Table 2. Major sediment groups, in stratigraphic order from base

I — Sand/Gravelly sand

Gravelly sand (IA) was the basal deposit present in all six test pits, and this deposit underlies the whole site. The surface of the deposit occurs between c.2.20-3.95m below the ground surface (33-34 m OD), but its base was not reached in any of the test pits. The sand/gravel was overlain by a thin bed of pure sand (IB) (between 20-65cm thick) in the more northerly test pits (1 and 2) and also the most easterly test pits (5 and 6). It is uncertain if these two groups of sand are directly equivalent, although they have been provisionally correlated with each other here.

Both phases probably represent fluvial deposition. The higher proportion of gravel in the lower phase IA indicates a higher energy of deposition than for the sandier bed IB

II — Sandy gravel

Sandy gravel appears in test pits 1-3 as a well defined bed directly overlying deposits of phase I at the north end of the site. The surface of the deposit dips from c.50cm beneath the present surface (in test pit 1) to 1.6m (test pit 3). This deposit is not present in the south end (test pits 4-6). This deposit is also probably fluvially laid.

III — Sand

A pure sand deposit overlies Group II sandy gravel in test pits 1-3. The base of the sand dips southward across the site, directly overlying the surface of the Group II deposits. The upper surface is broadly horizontal and is c.50cm below the current land surface. The deposit was not recognised in the southern half of the site, but may be equivalent to the more gravelly deposit IV (cf below) which was seen in test pits 4, 5 and 6. It is uncertain how the deposit formed. It is most likely fluvially laid but it may be colluvial in origin.

IV — Mixed, structureless sand/gravel

This deposit was identified in test pits 4-6 in the southern half of the site c.50cm below the ground surface. It appeared to dip and thicken southwards with its base extending more than 3m below the ground surface in test pit 6. It is uncertain how the deposit formed. Its lack of structure suggests a colluvial or solifluction origin.

Sieve-sampling and Palaeolithic finds

Thirty 100-litre gravel samples (3 cubic metres) were sieved on site for artefacts and large faunal remains (**Table 3**). One flint flake was found in the phase IV deposit of test pit 6 (**Table 4**).

<i>Test pit</i>	<i>Context</i>	<i>Deposit</i>	<i>Sed Grp</i>	<i>Phase</i>	<i>Sample/s</i>	<i>Vol. (lit.)</i>	<i>Finds</i>
1	(1/010)	Terrace gravel	II	-	1.1	100	None
	(1/011)	Terrace gravel	II	-	1.2, 1.3, 1.4, 1.5	100 each sample	None
	(1/014)	Terrace gravelly sand	I	A	1.6	100	None
2	(2/005)	Terrace gravel	II	-	2.1, 2.2, 2.3, 2.4	100 each sample	None
	(2/006)	Sand	I	B	2.5, 2.6	Fine-grained samples not sieved	None
	(2/007)	Terrace gravelly sand	I	A	2.7	100	None
3	(3/004)	Sand	III	-	3.1	100	None

	(3/005)	Terrace gravel	II	-	3.2, 3.3	100 each sample	None
	(3/006)	Terrace gravelly sand	I	A	3.4	100	None
4	(4/004)	Mixed, structureless sand/gravel	IV	-	4.1, 4.2, 4.3	100 each sample	None
	(4/005)	Terrace gravelly sand	I	A	4.4	100	None
5	(5/004)	Mixed, structureless sand/gravel	IV	-	5.1, 5.2, 5.3, 5.4	100 each sample	None
6	(6/004)	Mixed, structureless sand/gravel	IV	-	6.1, 6.2, 6.3, 6.4	100 each sample	1 flake (6.2)
	(6/005)	Sand	I	B	6.5	100	None

Table 3. Sieve-sampling and finds summary

Context	Sample	Artefact/s	Appearance	Condition	Notes
6002 (6/005)	6.2	Flint flake	Medium sized, irregular flake. Unpatinated.	Fresh	Technologically undiagnostic. Has dorsal scars from two previous removals.

Table 4. Palaeolithic artefact summary

Biological/palaeo-environmental remains

No large vertebrate faunal remains were found in the on-site sample sieving; nor were any sediments encountered with potential for small vertebrate or other micro-palaeontological remains.

Dating

No direct dating evidence was recovered. Although sand sediments were discovered, they are likely to be too old for OSL dating, so no samples or in situ sediment dose-rate readings were taken for this purpose.

DISCUSSION AND CONCLUSIONS

Stratigraphy, correlation and dating

Figure 4 shows the test pits dug at the site in relation to key comparator sequences in the region. It would appear that *in situ* Pleistocene deposits at Horns Cross (I, II and III) are at a significantly higher level than the Upper and Lower Middle Gravel deposits at Swanscombe

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making it unlikely that they are equivalent. They do however seem to be broadly at the same altitude as the Dartford Heath gravels previously investigated at Bexley Hospital (Pre-Construct Archaeology 2003), Dartford Football Club (Oxford Archaeology 2005), Dartford Fastrack (Allen & Wenban-Smith 2006) and Wansunt Pit (Oxford Archaeology 2002), although we do not know the base level of the gravels at Horns Cross.

There is currently great controversy over the date of the Dartford Heath gravels and over how they correlate with the Barnfield Pit, Swanscombe sequence (Gibbard 1995; Bridgland 1995). The Barnfield Pit Phase I and II deposits (cf **Table 1**) are definitely from MIS 11 c. 400k BP. The Dartford Heath gravels may be the same age or slightly earlier, late in the Anglian glaciation (MIS 12 c.450k BP). The Horns Cross site lies roughly half way between the Dartford Heath gravel locations and Swanscombe. The terrace gravels at Horns Cross are more likely equivalent to the Dartford Heath deposits, although to be confident about this we would need to know their base level. If this could be established the records from Horns Cross could make a contribution to resolving this long standing debate.

Lithic artefacts: recovery and depositional history

One flint flake was recovered from the phase IV deposit of test pit 6, which is interpreted as a reworked Pleistocene terrace deposit. As such, the artefact is derived from an unknown context despite being in a fresh condition.

Presence of/potential for undisturbed Palaeolithic remains

No indication was found of any undisturbed Palaeolithic remains. The coarse nature of the Pleistocene deposits recovered, and the absence of any land-surface horizons, also suggests little potential for undisturbed remains.

Significance, potential and priorities for further investigation

The horizons investigated (down to four metres below the present ground surface, above c. 33 m OD) were shown to have low importance, and there is no need for further investigation of deposits above this level. Lower uninvestigated levels may however contain important remains, and if there is any impact below 33 m OD then monitoring or further evaluation is required.

If the opportunity arises, further work to establish the nature of the lower uninvestigated deposits, and the depth of their base, would help in confirming correlation between Horns Cross, the Dartford Heath gravels (as seen at Bexley Hospital, Dartford Football Club, Dartford Fastrack and Wansunt Pit) and the Swanscombe phase I and II deposits (Lower Gravel, Lower Loam, Lower Middle Gravel and Upper Middle Gravel).

REFERENCES

APPENDIX C - PALAEOLITHIC REPORT TEST PIT SUMMARIES

Site HORNS CROSS, STONE				Test pit TP 1	
Site-code STD 08					
Site sub-div					
Dimensions	Length (m)	4.00	Co-ords (NGR)	X	Ground level — m OD 36.28
	Width (m)	1.80		Y	
	Depth (m)	2.75			

<i>Phase</i>	<i>Context</i>	<i>Description</i>	<i>Depth</i> - top	<i>Depth</i> - base	<i>Samples</i> <>	<i>Vol.</i> (lit.)	<i>Lithic finds</i>	<i>Enviro</i> <i>remains</i>
MG		CLAY AND RUBBLE. Modern made ground.	0.00	0.40	-	-	-	-
		CLAY/SILT/SAND. Modern made ground with CBM etc.	0.40	0.65	-	-	-	-
III	(1/004)	SAND. Soft, yellowish-brown medium to coarse sand with sub-vertical rootlet hollows.	0.65	0.85	-	-	-	-
II	(1/010)	CLAY-SILTY/ SANDY GRAVEL. Moderately soft, slightly-cohesive, moderately sorted medium to coarse flint gravel in slightly-cohesive slightly clay-silty medium to very coarse sand matrix. Clasts well-rounded (Tertiary pebbles) to sub-angular, moderately to well-abraded. Generally strong brown.	0.85	1.00	<1.1>	100	None	-
II	(1/011)	MEDIUM TO COARSE SAND. Dipping NE.	1.00	1.15	-	-	-	-
II	(1/1012)	SANDY GRAVEL. Moderately soft, uncohesive, moderately poorly-sorted medium to very coarse flint gravel with occasional small cobbles, in very slightly-silty medium to very coarse sand matrix with sharp very fine gravel. Clasts well-rounded (Tertiary pebbles) to sub-angular/ angular, moderately to well-abraded. Strong brown/ dark yellowish-brown. Below 1.5m becomes much looser, clast-supported in large patches, moderately sorted. Coarser clasts (coarse to very coarse) with moderately common small cobbles (up to 10cm) below 2.0m. Larger flint nodules prone to break up reflecting internal frost-fracturing. Dipping sharply NE.	1.15	2.15	<1.2>	100	None	-
					<1.3>	100	None	-
					<1.4>	100	None	-
					<1.5>	100	None	-
Ib	(1/1013)	SAND. [=2004].	2.15	2.35	-	100	-	-

Ia	(1/1014)	GRAVELLY SAND/ VERY SANDY GRAVEL. Moderately soft, uncohesive, strong brown coarse to very coarse sand with moderately common fine to coarse flint pebbles (occasionally very coarse), mostly well-rounded (Tertiary pebbles), occasionally angular/ sub-angular. Structureless. [probably =2005]	2.35	2.75	<1.6>	100	None	-
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Site				HORNS CROSS, STONE		Test pit	
Site-code				STD 08			
Site sub-div							
Dimensions	Length (m)	4.00	Co-ords (NGR)	X	Ground level — m OD 36.19		
	Width (m)	1.80		Y			
	Depth (m)	3.00					

<i>Phase</i>	<i>Context</i>	<i>Description</i>	<i>Depth - top</i>	<i>Depth - base</i>	<i>Samples <></i>	<i>Vol. (lit.)</i>	<i>Lithic finds</i>	<i>Enviro remains</i>
MG		RUBBLE.	0.00	0.40	-	-	-	-
		SANDY/STONY CLAY-SILT. Dark greyish-brown, moderately soft and cohesive, some chalk lumps in places. Probably sub-soil with occasional modern intrusion.	0.40	0.65	-	-	-	-
III	(2/004)	SAND. Soft, slightly-silty medium sand, dark yellowish-brown. Sub-vertical rootlet hollows with sub-soil infilling.	0.65	1.05	-	-	-	-
II	(2/005)	SILTY/ SANDY GRAVEL Moderately soft and cohesive (slightly clayey and firm in top 30cm) moderately sorted fine to very coarse flint gravel in clay-silty medium to very coarse sand matrix with frequent sharp very fine flint pebbles at c.1.5m. Clasts well-rounded (Tertiary pebbles), occasionally angular/sub-angular, generally moderately to well abraded. Strong brown/dark yellowish-brown. Becoming slightly looser, slightly coarser and more poorly sorted in bottom 10-15 cm, with more common very coarse flint pebbles and small cobbles. Dipping NNE.	1.05	2.25	<2.1> <2.2> <2.3> <2.4>	100 100 100 100	None None None None	- - - -
Ib	(2/006)	SAND. Moderately soft, uncohesive, strong brown medium to coarse sand with no structures apparent. Slightly gravelly, coarse to very coarse sand with occasional very fine to medium flint pebbles in bottom 20cm. Mostly well-rounded Tertiary pebbles, occasional sub-angular well-abraded flint pebbles. Dipping NNE.	2.25	2.85	<2.5> <2.6>	* *	None None	- -
Ia	(2/007)	SANDY GRAVEL/ GRAVELLY SAND. Strong brown/ dark yellowish-brown moderately soft, uncohesive medium to very coarse sand with moderately common very fine to coarse flint pebbles, mostly well-rounded Tertiary pebbles, occasional well-abraded sub-angular to angular flint pebbles. Structureless.	2.85	3.00	<2.7>	100	None	-

Site				HORNS CROSS, STONE		Test pit	
Site-code				STD 08			
Site sub-div							
Dimensions	Length (m)	4.00	Co-ords (NGR)	X	Ground level — m OD 36.15		
	Width (m)	1.80		Y			
	Depth (m)	2.90					

<i>Phase</i>	<i>Context</i>	<i>Description</i>	<i>Depth - top</i>	<i>Depth - base</i>	<i>Samples <></i>	<i>Vol. (lit.)</i>	<i>Lithic finds</i>	<i>Enviro remains</i>
MG		MADE GROUND. Rubble.	0.00	0.35	-	-	-	-
III	(3/004)	SAND. Moderately soft, strong brown, medium sand with very occasional very fine to medium flint pebbles, sub-angular/ rounded, moderately abraded. Top 30cm dark grey Diesel (or similar) stained, becoming brown slightly humic sand/ gravel (sub-soil), followed by 15cm containing sub-vertical root hollows c.5cm apart, infilled with sub-soil. Faint coarse bedding at base. Relatively extensive sub-horizontal boundary.	0.35	1.60	<3.1>	100	None	-
II	(3/005)	SANDY GRAVEL. Moderately soft, moderately/ well-sorted, medium to very coarse flint gravel in silty fine to medium sand matrix. Clasts mostly well-rounded Tertiary pebbles, some angular/ sub-angular flint pebbles, slightly to well-abraded. Below 2.2m much more sandy with sand patches. Sand matrix medium to coarse.	1.60	2.40	<3.2> <3.3>	100 100	None None	- -
Ia	(3/006)	GRAVELLY SAND. Moderately soft, strong brown, silty fine to very coarse sand with common fine to coarse flint pebbles, sub-angular to rounded, moderately to well-abraded. Increasingly gravelly at base of test-pit.	2.40	2.90	<3.4>	100	None	-

Site				HORNS CROSS, STONE		Test pit		TP 4	
Site-code				STD 08					
Site sub-div									
Dimensions		Length (m)	4.00	Co-ords (NGR)	X	Ground level — m OD 36.55			
		Width (m)	1.80		Y				
		Depth (m)	2.90						

<i>Phase</i>	<i>Context</i>	<i>Description</i>	<i>Depth - top</i>	<i>Depth - base</i>	<i>Samples <></i>	<i>Vol. (lit.)</i>	<i>Lithic finds</i>	<i>Enviro remains</i>
MG		MADE GROUND. Alternating brown earth/gravel c.10cm thick dipping shallowly south.	0.00	0.70	-	-	-	-
IV	(4/004)	GRAVEL. Coarse to very coarse gravel in clay-silty medium to very coarse sand matrix. Coarse to very coarse clasts, mostly well-rounded Tertiary pebbles. Strong brown.	0.70	2.20	<4.1> <4.2> <4.3>	100 100 100	None None None	- - -
Ia	(4/005)	Below 2.2m firmer, very coarse more angular gravel bed, with occasional flint nodules at surface, in coarse to very coarse sand, still structureless, but less silty, more brownish-yellow. Below 2.5m coarse to very coarse well-rounded Tertiary pebbles and small cobbles (still Tertiary Pebbles) in slightly silty medium to very coarse sand matrix with very fine to fine gravel, moderately soft and structureless.	2.20	2.90	<4.4>	100	None	-

Site				HORNS CROSS, STONE		Test pit	
Site-code				STD 08			
Site sub-div							
Dimensions	Length (m)	4.00	Co-ords (NGR)	X	Ground level — m OD 36.44		
	Width (m)	1.80		Y			
	Depth (m)	3.30					

<i>Phase</i>	<i>Context</i>	<i>Description</i>	<i>Depth - top</i>	<i>Depth - base</i>	<i>Samples <></i>	<i>Vol. (lit.)</i>	<i>Lithic finds</i>	<i>Enviro remains</i>
MG		MADE GROUND. Browner and more gravelly in bottom 15cm.	0.00	0.75	-	-	-	-
IV	(5/004)	SAND/ GRAVELLY SAND. Strong brown/dark yellowish-brown, soft to moderately soft, silty medium to very coarse sand and very fine gravel with patches of moderately/ poorly sorted medium to very coarse gravel in silty medium to very coarse sand matrix. Clasts sub-angular/ rounded, moderately/ well-abraded. Structureless. Occasional small brown patches throughout (root hollows).	0.75	2.90	<5.1> <5.2> <5.3> <5.4>	100 100 100 100	None None None None	- - - -
Ib	(5/005)	SAND. Fine to medium sand with occasional coarse and very fine gravel.	2.90	3.25	-	-	-	-
Ia	(5/006)	GRAVEL. Coarse gravel patches in silty sand matrix at base of test-pit.	3.25	3.30	-	-	-	-

Site				HORNS CROSS, STONE		Test pit	
Site-code				STD 08			
Site sub-div							
Dimensions	Length (m)	4.00	Co-ords (NGR)	X	Ground level — m OD 36.53		
	Width (m)	1.80		Y			
	Depth (m)	4.05					

<i>Phase</i>	<i>Context</i>	<i>Description</i>	<i>Depth - top</i>	<i>Depth - base</i>	<i>Samples <></i>	<i>Vol. (lit.)</i>	<i>Lithic finds</i>	<i>Enviro remains</i>
MG		LOOSE RUBBLE.	0.00	0.60	-	-	-	-
		EARTHY GRAVEL.	0.60	0.80	-	-	-	-
IV	(6/004)	GRAVELLY SAND. Strong brown moderately soft gravelly sand with gravel rich patches. Flint gravel clasts generally fine to coarse (occasional very coarse or small cobbles), sub-angular to rounded, sharp to well-abraded. Sand fine to very coarse, structureless. Clasts distributed throughout where present, apart from major gravel-free patches – possible major vertical fault down middle of test-pit. Below 1.7m matrix becoming soft, slightly silty, with common very fine to medium flint gravel. Clasts angular to sub-angular, moderately fresh (especially very fine to fine clasts), with smaller well-rounded Tertiary pebbles. Less gravelly (occasional very fine to fine) and coarsening sand matrix (medium to very coarse) below 2.3m with occasional gravel-rich patches. More common very fine flint gravel with dark yellowish-brown, slightly orange coarse to very coarse sand matrix below c.2.8m.	0.80	3.30	<6.1> <6.2> <6.3> <6.4>	100 100 100 100	None 1 flake None None	- - - -
Ib	(6/005)	SAND. Soft sand, possibly bedded, brownish-yellow. Very occasional very fine to fine flint pebbles, coarsening downwards to moderately to well-sorted sandy medium to coarse flint gravel.	3.30	3.95	<6.5>	100	None	-
Ia	(6/006)	GRAVEL.	3.95	4.05	-	-	-	-

Appendix D

Oasis Report Summary

1.1.1 Printable version

1.2 OASIS ID: aocarcha1-37335

Project details

Project name	Horns Cross, Stone, Dartford, Kent
Previous/future work	Yes / No
Any associated project reference codes	STD08 - Sitecode
Type of project	Field evaluation
Site status	None
Current Land use	Vacant Land 1 - Vacant land previously developed

Project location

Country	England
Site location	KENT DARTFORD SWANSCOMBE AND GREENHITHE Horns Cross, Stone
Postcode	DA9 9
Study area	0.50 Hectares
Height OD	Min: 35.31m Max: 36.20m

Project creators

Name of Organisation	AOC Archaeology
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Project brief originator	Local Authority Archaeologist and/or Planning Authority/advisory body
Project design originator	Kent County Council
Project director/manager	Andy Leonard
Project supervisor	Paul Harris
Type of sponsor/funding body	Countryside Properties

Project archives

Digital Archive recipient	Dartford Museum
Digital Contents	'Worked stone/lithics'
Digital Media available	'Images raster / digital photography','Text'
Paper Archive recipient	Dartford Museum
Paper Contents	'Worked stone/lithics'
Paper Media available	'Context sheet','Drawing','Microfilm','Photograph','Plan','Report','Section'

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Horns Cross, Stone, Dartford, Kent
Author(s)/Editor(s)	Harris, P
Other bibliographic details	Report number 7639

Date	2008
Issuer or publisher	AOC Archaeology
Place of issue or publication	AOC Archaeology

Entered by	Paul Harris (paul.harris@aocarcgaeology.com)
Entered on	5 February 2008

The AOC Archaeology Group provides a wide range of archaeological services, including consultancy, desktop studies, historic building recording, survey, excavation, post-excavation analyses, conservation and publication.

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*The logo incorporates a design from
a lead disc found on Birsay, Orkney,
dated to the sixth century AD.*