

# Stone House Hospital Dartford



## Archaeological Watching Brief Report




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Issue	Prepared by	Checked by	Approved by	Signature
1	Rowan McAlley Supervisor and Chris Carey Geoarchaeologist	Elizabeth Stafford Head of Geoarchaeological Services	William Bedford Contracts and Commercial Manager	

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**Janus House**

Osney Mead

Oxford OX2 0ES

t: +44 (0) 1865 263800

e: oasouth@thehumanjourney.net

f: +44 (0) 1865 793496

w: oasouth.thehumanjourney.net

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## Stone House Hospital, Dartford

### *Archaeological Watching Brief Report*

*Written by Rowan McAlley and Chris Carey*

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## Summary

*On the 2<sup>nd</sup> to 6<sup>th</sup> August 2010, Oxford Archaeology (OA) undertook a Watching Brief at Stone House Hospital, Dartford (NGR 556100, 174100) prior to the development of new housing. The Watching Brief consisted of monitoring a series of geotechnical boreholes and test pits to provide additional information regarding the archaeological potential across the Site.*

*Detailed examination of the interventions revealed areas of substantial modern made ground and truncation of the original Holocene soil profile associated with the construction of the hospital buildings which significantly reduces the potential for archaeological features to be preserved. However, possible intact subsoil deposits identified away from the main buildings suggest discrete areas may exist where truncation may have been less severe. No archaeological features or artefacts were identified during the Watching Brief which suggests the area was not a focus of intensive activity in the past.*

*Substantial thicknesses of Pleistocene gravel deposits associated with the Boyne Hill Formation underlie much of the site. Similar sequences in the region are known to contain important Palaeolithic remains dating to the Hoxnian interglacial. Variation within the sediment structure at Stobehouse Hospital suggests some of the finer grained deposits may have been deposited in low energy environments and as such have greater potential for preserving insitu artefacts.*



## 1 INTRODUCTION

### 1.1 Scope of work

1.1.1 The Stone House Hospital site in Dartford, has been proposed to redevelop and maintain existing buildings, into a new residential development, within the already established parkland and mature grounds. Prior to any development works an archaeological Watching Brief was maintained on geotechnical ground investigations (boreholes and testpits). The purpose of the Watching Brief was to provide additional baseline data regarding the character of the sub-surface stratigraphy, the depth and extent of modern disturbance and the potential for archaeological remains to be preserved.

### 1.2 Location, geology, topography and archaeological potential

1.2.1 The Stone House Hospital site is located and accessed by Cotton lane (NGR 556100 174100) and is approximately 3 km to the east of Dartford town centre, in a residential area. To the south and west of the site are the residential communities of St John's Road and Invicta Road. To the south-east of the site approximately 1 mile away is the large out-of-town shopping complex of Blue Water (Figure 1). The existing hospital buildings and parkland are grade II listed (Dartford County Council Development Framework Appendix A 2008).

1.2.2 The site is situated on a relatively flat area of high ground (c. 37-40m OD) on the east side of the Darenth Valley. The current channel of the River Thames lies 2km to the north. The solid geology is mapped as Upper Chalk overlain by drift deposits of Pleistocene river gravels (BGS sheet 271).

### 1.3 Archaeological and historical background

1.3.1 A detailed archaeological desk based assessment of the Site has not been carried out. The archaeological and historical background of the Site is referred to within the Development Framework (Dartford Council, 2008, Appendix A). In summary finds from the surrounding area suggest a general potential for archaeological remains of all periods to be present, although the building of the hospital is likely to have disturbed much of the near surface stratigraphy.

1.3.2 Palaeolithic remains may be preserved at depth and have been found in the adjacent areas within the gravel terrace deposits on which the hospital site lies. The site is located on the Boyn Hill/Orsett Heath Terrace Formation which dates from MIS12 to MIS10. This is the oldest terrace in the Lower Thames area following the diversion of the river to its current course during the Anglian glaciation (Bridgland 1994). The earliest flint artefacts in the Lower Thames derive from the Boyne Hill Gravel in the Swanscombe area. Sites include Barnfield Pit, Sweyne School, Eastern Quarry and the Southfleet Road elephant butchery site. The best preserved sequence was recorded at Barnfield Pit where the Upper Middle Gravel produced an early human skull (Swanscombe Man), making it, along with Boxgrove in Sussex, one of only two sites in England with Lower or Middle Palaeolithic human skeletal remains (Wenban-Smith, *et al.* 2006). Along with the abundance of flint artefacts a large mammalian and molluscan assemblage has been recovered from the gravels which is consistent with a MIS11 Hoxnian Interglacial date (Bridgland and Harding 1994).



## 2 PROJECT AIMS AND METHODOLOGY

### 2.1 Aims and objectives

2.1.1 The aim of the Watching Brief was to record the sediment sequences within each test pit and borehole in order to provide further information on the archaeological potential of the Site. In order to achieve this aim the following objectives were set:

- To record the depth and extent of modern made ground across the site.
- To examine the degree of truncation of the Holocene sediment profile/top of the Pleistocene gravels.
- To record variations in the Pleistocene lithologies that may indicate the presence of interglacial deposits with reference to units of fine grained or fossiliferous deposits or horizons indicative of ancient landsurfaces.
- To identify any archaeological remains present within the test pits.

### 2.2 Methodology

2.2.1 The excavation of 18 boreholes and 14 test pits were monitored across the site. The test pits were excavated using a JCB mechanical excavator with toothless bucket and were approximately 3.6 m in length and between 2.4m and 3.6m in depth. The majority of the boreholes were drilled using a 'terrier' windowless sampler (prefixed WS) to depths of between 2m and 5.5m. A small number of deep boreholes (prefixed BH) were also drilled using cable percussive and rotary techniques. The drilling of these boreholes was not monitored on-site, although the engineer's logs from BH2 and BH3 have been examined.

2.2.2 The test pits were recorded and drawn at a scale of 1:20 with the respective contexts recorded. All test pits were photographed digitally and with colour and black and white print film. The deposit sequence was recorded from the edge of excavation and recording followed procedures detailed in the OAU Fieldwork Manual (1<sup>st</sup> Edition 1992). No testpits were entered due to safety considerations, however, all of the resulting spoil was examined for the retrieval of artefacts. The drilling of the terrier boreholes was also monitored. The sediment sequence in each borehole was recorded. Retrieved cores were extruded on-site by the geotechnical contractor, at which point they were inspected and digitally photographed by the monitoring archaeologist.

## 3 RESULTS

### 3.1 General

Context descriptions from each test pit and borehole are included in the appendix at the back of this report. In order to avoid repetition the borehole descriptions are not presented here. A brief summary of each excavated test pit is included given these larger interventions provide the best visibility for establishing the degree of truncation and the presence/absence of archaeological remains. No archaeological features or artefacts were identified during the Watching Brief.

### 3.2 Site stratigraphy

3.2.1 The stratigraphy across the site can be broken down into a basic Holocene sequence and a series of Pleistocene units:

- Modern topsoil



- Modern disturbance or 'made ground'
- Subsoil
- Pleistocene terrace gravels

#### ***Modern topsoil and made ground***

- 3.2.2 Modern made ground was encountered over much of the site beneath either the modern topsoil or tarmac/concreted areas (WS3, WS4, WS5, W7, WS10, WS14, WS16, WS18, WS19, TP1, TPS2, TP5, TPS6, TP7). This consisted of variable deposits of redeposited gravel, gravelly clays with brick fragments, ash, slag and hardcore layers. Invariably these deposits directly overlay the insitu Pleistocene gravels with a very abrupt contact suggesting truncation of the the latter. No buried topsoil was noted at the base of the made ground. The thickness of the made-ground was variable, reaching up to 1.66m in TP2 located on a landscaped mound in the northwestern part of the site. On occasion the modern topsoil was noted to directly overlie the gravels, once again with a very abrupt contact suggesting truncation of the latter (WS6, WS15 WS11 and TPS1)
- 3.2.3 The extent and thickness of the topsoil/made ground deposits recorded across the Site has been modelled in Figure 3. It should be noted, however, that the sample locations are quite widely spaced and it is very likely more substantial localized deposits of disturbed or made ground exist in areas occupied by, or adjacent to, buildings where no data is available.

#### ***Subsoil***

- 3.2.4 Where clear modern made-ground was absent a number of interventions recorded an interface layer or 'sub-soil' beneath the topsoil and Pleistocene gravels. This layer averaged 0.40m in thickness was quite variable, consisting of brown or brownish grey silt or silty sand with variable amounts of flint gravel (WS1, WS2, WS8, WS9, WS17, TPS3, TP4,TPS5).
- 3.2.5 These deposits probably, for the most part, represent disturbance of the original soil profile and natural gravels associated with the construction of the hospital, and on occasion the subsoil was described as mixed. Such disturbance may also have occurred by the tracking of heavy vehicles and the northern area of the site has recently been used as as a construction compound. However, it is also noted that no recent material such as fragments of brick or porcelain were recovered from these deposits and it is possible at some locations remnants of a ploughsoil or B/C horizon above terrace gravel may be preserved, implying localized areas of lesser truncation may exist within the hospital complex away from the main activity areas.

#### ***The Pleistocene gravels***

- 3.2.6 The Boyn Hill Terrace deposits observed were composed of various lithologies:
- Sand dominated units
  - Gravel dominated units
  - Clay dominated units
- 3.2.7 Such complex variation is a common feature of the Terrace Formation reflecting a variety of shifting depositional environments. It is noted the upper part of sequence along the northern edge of the Boyne Hill Gravel in this part of northwest Kent is known to be disturbed by later incision and solifluction (F. Wenban Smith pers comm).





- 3.2.8 The coarser grained deposits (sands and sandy gravels) are likely to have been deposited in a relatively high-energy depositional environment and are often associated with cool climate braided stream systems. Consequently any artefacts or ecofacts are likely to have suffered considerable reworking. In contrast the finer grained clays, where not effected by solifluction processes producing a mixed gravelly unit, have considerably higher potential to preserve artefacts insitu or stabilization horizons, perhaps related to warmer interglacial or interstadial environments
- 3.2.9 These finer grained deposits were noted within a number of interventions as follows:
- |       |              |  |
|-------|--------------|--|
| WS1:  | 1.4m – 4.8m  | Orange clay, with sand and flint gravel  |
| WS4:  | 3.2 – 4.56m  | Brown wet 'sticky sand'                  |
| WS17: | 0.2 – 1.0m   | Brown orange clay, with silt             |
| WS18: | 1.3 – 2.0m   | Orange clay, with sand and flint gravel  |
| TPS1: | 1.0 – 2.1m   | Orange clay, with sand and flint gravel  |
|       | 3.0 – 3.3m   | Orange clay, with sand and flint gravel  |
| TP2:  | 1.66 – 2.58m | Orange sand, with clay and flint gravel  |
|       | 2.58 – 3.6m  | Orange clay sand gravel                  |
| TPS2: | 1.6 – 2.2m   | Gravel, with clay and sand               |
|       | 2.8 – 3.2m   | Orange clay, with gravel                 |
| TP3:  | 1.0 – 2.2m   | Orange clay, with sand, flint and gravel |
|       | 2.2 – 3.6m   | Orange clay, with silt, sand and gravel  |
| TP4:  | 0.8 – 3.5m   | Orange clay, with sand, silt and gravel  |
| TP5:  | 1.56 – 2.4m  | Orange clay, with silt, sand and gravel  |
| TPS5: | 1.7 – 2.3m   | Orange brown clay with sand              |
|       | 2.3 – 3.4    | Orange clay                              |
| TP6:  | 2.4 – 3.5    | Orange clay, sand and gravel             |
| TPS6: | 1.8 – 3.4m   | Orange clay                              |
| TP7:  | 1.2 – 3.1m   | Orange clay, with sand and gravel        |
- 3.2.10 The deep cable percussion boreholes penetrated the full depth of the Pleistocene gravel, encountering chalk at approximately 11m below ground surface.

### 3.3 Test pit descriptions

#### *Test pit 1 (TP1)*

- 3.3.1 Test pit 1 was located within a green/open park area to the north of the main hospital complex and between boreholes WS1(P) and WS2(P). Current topsoil levels were seen and were 0.16m thick. Below this were a series of layers of made up ground (2021 and 2022) and are probably remnants of disturbed ground from the construction of buildings to the north of the test pit. Clay-gravels were observed at a depth of 1.2m (2024) and further horizons seen at a depth of 1.6m-3.5m (2025).

**Test pit sump 1 (TPS 1)**

- 3.3.2 The test pit was located within a green/open park area between borehole WS1(P) to the north and test pit 4 to the south. With the removal of the topsoil (2000) and subsoil (2001) revealed yellow sand deposit at a depth of 0.4m (2002). Below 2002 was the geological natural (2003), which consisted of an orange clay-sand-gravel found at a depth of 1m. The test pit continued down to a depth of 3.3m and found further sand and gravel formations (2004 and 2005).

**Test pit 2 (TP2)**

- 3.3.3 Test pit 2 was located on a landscaped mound to the north west of the site and north of the main hospital complex. Most of the deposits seen in the bank were redeposited gravel sequences, most likely from the footings of the hospital. At a depth of 1.66m Pleistocene formations were observed and consisted of a orange, clay-sand with sub angular flint cobbles and gravels (2044). The test pit went down to a depth of 3.6m and further gravel deposits were evident (2045).

**Test pit 2 Sump (TPS2)**

- 3.3.4 The test pit was located on a raised landscaped area north of the main hospital complex and is south west from borehole BH2(P). The latest deposits observed during the excavation were a series of redeposited gravels and sands to form the landscaped bank. These deposits may have derived from the excavation of the hospital foundations and the gravels re-used in part of the landscaping. Undisturbed Pleistocene sediments were found at a depth of 1.6m and consisted of a dark brown-orange, clay-sand-gravel (2063). Further geological sand and gravel deposits were observed at 2.2m and 2.8m respectively (2064 and 2065). The test pit was 3.2m in depth.

**Test pit 3 (TP3)**

- 3.3.5 Test pit 3 was located to the north of St Luke's chapel, with the open green area to the east. At a depth of 0.1m made ground was observed, consisting of brick rubble and pieces of broken drain pipe (2081). Below 2081, was a deposit of clay sand seen at a depth of 0.6m, which in turn overlay a Pleistocene sediment (2083), composed of a brown-orange, clay-sand-silt- gravel and was seen at a depth of 1.58m. The deposit continued at the depth of the limits of the test pit at 3.1m.

**Test pit 3 Sump (TPS3)**

- 3.3.6 The test pit was located to the east of the hospital complex close to the main access to the site, on a grassed part of the site. With the removal of topsoil (2100) and subsoil (2101) a brown sand deposit (2102) was observed at a depth of 0.6m. Below this deposit was observed the natural geology which consisted of a orange, clay-sand with angular and sub angular flint cobbles (2103). The depth of the Pleistocene sediments was 1m and was 1.1m thick. A further sediment deposit (2104) was observed at a depth of 2.2m and consisted of a highly concentrated flint gravel-clay-sand matrix, which continued to the limit of the test pit at a depth of 3.6m.

**Test pit 4 (TP4)**

- 3.3.7 Test pit 4 was located north of the former stable block and hospital complex within the grass land area. To the east was borehole WS6(P) and to the north west TPS1. With the removal of topsoil and subsoil layers (2120 and 2121), geological natural was observed at a depth of 0.8m. The geological natural (2122) consisted of an orange clay-sand-gravel with rounded flint pebbles. The deposit was observed down to the full depth of the test pit at 3.5m.

**Test pit 4 Sump (TPS4)**

- 3.3.8 The sump test pit was located on the roundabout island to the south of St Luke's chapel and north of the main hospital complex. The latest deposits observed saw a mix of yellow sands and some gravels (2142 and 2143), which are most likely the man-made build up and construction of the roundabout. At a depth of 2m Pleistocene sediments (2144) were observed which consisted of an orange clay-sand-gravel with a high density of rounded flint pebbles. This deposit continued to the depth of the test pit at 2.7m.

**Test Pit 5 (TP5)**

- 3.3.9 Test pit 5 was located to the north of St Luke's Chapel and close to a landscaped tree line. With the removal of topsoil, a made ground horizon (2161) was seen at a depth of 0.1m. 2161 consisted of a dark grey silt and rubble deposit, with broken bricks which are very similar to the ones used with the hospital construction. This could be derived during the alterations made within the 1890's and 1924 of the hospital. Below (2161) at a depth of 0.46m was layer 2162, which consisted of a yellow sand, which was above (2163) and was observed at a depth of 1.56m. (2163) comprised of an orange clay-sand-gravel and was seen to the limits of the test pit at 2.4m.

**Test Pit 5 Sump (TPS5)**

- 3.3.10 The location of the test pit was at the southern end of the hospital complex on a large grassed area. To the north east is borehole WS14 (P), and to the west is TPS6. With the removal of the top soil and subsoil, a yellow-grey sand deposit (2182) was observed at a depth of 0.4m. Layer (2182) maybe an early subsoil with the layers above made up for the current grassed area. Below (2182) was the Pleistocene deposit (2183), and seen at a depth of 0.8m and consisted of a orange-brown-sand-gravel. Below (2183) were further variations in the terrace deposits at 1.7m and 2.3m respectively (2184 and 2185). The test pit was limited at a depth of 3.4m.

**Test Pit 6 (TP6)**

- 3.3.11 Test pit 6 was located in the south west of the hospital grounds. To the east is located borehole WS16. After the removal of topsoil and subsoil, a yellow sand-gravel (2202) was observed at a depth of 0.38m. Below (2202) was layer (2203) which appears to be the Pleistocene sediment. (2203) consisted of an orange firm sand-gravel with flint cobble inclusions, at a depth of 0.8m. A further layer concentrated with flint nodules and orange sand was seen at a depth of 1.1m (2204) with further geological horizons (2205 and 2206) seen until the limits of the test pit at 3.5m.

**Test Pit 6 Sump (TPS6)**

- 3.3.12 The test pit was located in the south west of the hospital grounds on a large grassed area. To the east is TPS5 and to the south west is TP8. With the removal of the topsoil a layer of made ground consisting of tarmac and brick rubble (2221) was observed at a depth of 0.2m. This may have resulted from the construction debris from the access road a few metres to the west of the test pit. Below (2221) was layer (2222) which consisted of sand-gravel which was grey-brown in colour at a depth of 0.38m. Further terrace deposits were recorded such as (2224) at 1.3m and consisted of orange sand-gravel, with rounded flint cobbles. A further geological horizon (2225) was established at a depth of 1.8m and continued to the extent of the test pit at 3.4m.

**Test Pit 7 (TP7)**

- 3.3.13 Test pit 7 was located in the south west corner of the hospital complex with an access road less than a metre to the east. Located to the south is borehole BH3(P). With the removal of the topsoil horizon, a thick layer of made-up ground (2241) was revealed at a depth of 0.2m and consisted of a mix of hardcore aggregate and crush material. (2241) was most likely derived from the construction of the access road and nearby services which run parallel with the test pit. Below at a depth of 0.8m was seen layer (2242) which consisted of a grey gravel-silt with inclusions of sub angular flint gravels. In turn (2242) overlies (2243) which consisted of a yellow-grey sand-gravel, which was seen at a depth of 1m. At 1.2m in depth (2244) was seen and consisted of an orange clay-sand-gravel and continued to the full depth of the test pit at 3.1m.

**Test Pit 8 (TP8)**

- 3.3.14 Test pit 8 was originally located in the south west corner but was moved and placed opposite TPS6, close to the access road round the hospital. With the removal of topsoil a redeposited layer of geological natural (2262) was observed at a depth of 0.5m. This was evident as at a depth of 1.36m where the remains of a drain were revealed within the yellow sand backfill around it (2264). Natural geology (2266) was observed at a depth of 1.64m and consisted of an orange clay-sand- gravel, of which its extent continued to the full depth of the test pit at 2.4m.

**3.4 Finds**

- 3.4.1 No Finds were recovered from the boreholes or from the test pits.

**3.5 Environmental remains**

- 3.5.1 No environmental samples were taken.



## 4 DISCUSSION AND CONCLUSIONS

- 4.1.1 On a cautionary note it should also be pointed out that although the interventions were fairly evenly distributed across the site, apart from the southeastern sector, they were quite widely spaced and covered a small sample area. The testpits were quite small and not accessible due to safety considerations. Archaeological visibility should therefore be considered moderate to poor
- 4.1.2 It is clear, however, from the results of the Watching Brief that substantial and extensive deposits of modern made ground and disturbance exist across the Site associated with the construction of the hospital buildings and later land use. In addition, the abrupt contacts observed between the top soil, made ground and terrace gravels suggest a substantial amount of truncation and disturbance, of the original Holocene soil profile has occurred. This greatly reduces the potential of the Site to preserve archaeological features. Although it is possible the base of some deeper features may have survived truncation, it is unlikely shallow or more ephemeral remains survive.
- 4.1.3 Where interventions record an interface deposit or 'subsoil' between topsoil and gravel, invariably in areas away from the main buildings, it is possible the level of truncation at these locations has not been so severe. However, it should be noted that no archaeological features or artefacts were recorded either during the excavation of the testpits or boreholes suggesting this area was not the subject of intense activity in the past
- 4.1.4 Although truncation episodes are visible on some areas of site, substantial sequences of Boyn Hill terrace gravel survive, with varying sediment architectures. In places the surface of these deposits occur beneath the modern topsoil. The Boyn Hill terrace sequence has the potential to contain significant archaeological remains of Palaeolithic date. The presence of frequent clay dominated or finer grained sediments, within the terrace is potentially indicative of interglacial deposits. No artefactual material or fossiliferous sediments were noted during the Watching Brief. However, more systematic examination of the sequence by an appropriate Palaeolithic specialist should be considered should these deposited be impacted upon significantly during construction.

**APPENDIX A. ARCHAEOLOGICAL CONTEXT INVENTORY****Bore hole table of contexts****WS1**

Context	Type	Depth	Comments
100	Layer	0-0.2m	Top soil
101	Layer	0.2-1m	Sub soil
102	Layer	1-4.8m	Orange Clay-sand -flint gravel
103	Layer	4.8-5m	Yellow sand

**WS2**

Context	Type	Depth	Comments
150	Layer	0-0.1m	Topsoil
151	Layer	0.1-0.5m	Subsoil
152	Layer	0.5-2.5m	Yellow sand natural with flint cobbles

**WS3**

Context	Type	Depth	Comments
200	Layer	0-0.1m	Topsoil
201	Layer	0.1-1m	Made ground, Light grey with brick fragment inclusions
202	Layer	1-1.8m	Wet orange-yellow sand
203	Layer	1.8-2m	Dry compact orange sand gravels
204	Layer	2-2.3m	Compacted yellow orange flint gravel

**WS4**

Context	Type	Depth	Comments
250	Layer	0-0.18m	Topsoil
251	Layer	0.18-0.35m	Made ground, ash, slag gravel
252	Layer	0.35-1m	Orange yellow sand
253	Layer	1-1.5m	Orange clay and flint cobbles
254	Layer	1.5-2.5m	Orange-yellow sand
255	Layer	2.5-3.2	Orange sand-silt flint gravel
256	Layer	3.2-4.6m	Brown wet sticky sand
257	Layer	4.6-5m	Grey sand-clay with yellow banding



## WS5

Context	Type	Depth	Comments
300	Layer	0-0.1m	Topsoil
301	Layer	0.1-1.2m	Made ground, with flint cobbles and
302	Layer	1.2-2m	Yellow Sand gravel and flint cobbles
303	Layer	2-2.6m	Compacted flint gravels and small pebbles
304	Layer	2.6-3m	Orange sand and flint gravels

## WS6

Context	Type	Depth	Comments
350	Layer	0-0.3m	Topsoil
351	Layer	0.3-1m	Yellow orange sand, large flint cobbles
352	Layer	1-1.4m	Orange yellow sand
353	Layer	1.4-3m	Compacted flint cobbles and orange brown sand
354	Layer	3-3.3m	Pale grey sand, small flint pebbles
355	Layer	3.3-5m	Orange brown, fine grained sand and rounded flint gravel

## WS7

Context	Type	Depth	Comments
400	Layer	0-0.1m	Topsoil
401	Layer	0.1-0.2m	Loose silt, light grey, small flint gravels
402	Layer	0.2-0.3m	Light grey, yellow flint pebbles and gravels
403	Layer	0.3-0.8m	Disturbed made ground horizon
404	Layer	0.8-1m	Orange brown sand
405	Layer	1-1.46m	Compacted flint gravels and orange sand
406	Layer	1.46-2.6m	Orange brown sand
407	Layer	2.6-3m	Compacted flint gravel, pale white-grey

## WS8



Context	Type	Depth	Comments
450	Layer	0-0.2m	Topsoil
451	Layer	0.2-0.3m	Subsoil, light brown-grey, mixed rounded flint cobbles
452	Layer	0.3-1.7m	Compacted dark yellow-brown sand
453	Layer	1.7-2m	Pale yellow, grey sand and flint cobbles
454	Layer	2-2.6m	Compacted sand, dark-pale brown, flint pebble inclusions

## WS9

Context	Type	Depth	Comments
500	Layer	0-0.1m	Topsoil
501	Layer	0.1-0.2m	Subsoil dark brown-grey with occasional flint pebbles
502	Layer	0.2-0.8m	Pale brown yellow sand, flint cobbles
503	Layer	0.8-1m	Orange clay sand
504	Layer	1-1.7m	Dark brown orange sand
505	Layer	1.7-2m	Loose sand gravel with flint pebbles

## WS10

Context	Type	Depth	Comments
600	Layer	0-0.12m	Tarmac
601	Layer	0.12-0.5m	Hardcore bedding for road
602	Layer	0.5-1m	Made ground rubble foundation
603	Layer	1-1.3m	Compacted orange clay gravel, sand
604	Layer	1.3-2.15m	Compacted sand, Light brown
605	Layer	2.15-2.27m	Compacted brown-orange sand-clay flint pebbles and nodules

## WS11

Context	Type	Depth	Comments
650	Layer	0-0.3m	Topsoil
651	Layer	0.3-1m	Pale yellow gravel
652	Layer	1-2m	Compacted dark yellow sand flint gravel
653	Layer	2-3m	Dark brown yellow flint gravel





## WS13

Context	Type	Depth	Comments
700	Layer	0-0.2m	Tarmac/road surface
701	Layer	0.2-0.8m	Hardcore bedding
702	Layer	1-2.4m	Yellow sand
703	Layer	2.4-3m	Gravel sand, dark brown with rounded flint gravel

## WS14

Context	Type	Depth	Comments
750	Layer	0-0.2m	Tarmac/road surface
751	Layer	0.2-0.6m	Made ground/bedding for road surface
752	Layer	0.6-1.4m	Sand gravel, Orange brown
753	Layer	1.4-2.8m	Brown Sand
754	Layer	2.8-3.6m	Sand gravel, brown orange
755	Layer	3.6-4m	Pea grit and sand brown orange

## WS15

Context	Type	Depth	Comments
800	Layer	0-0.2m	Topsoil
801	Layer	0.2-1.5m	Yellow sand-silt-gravel
802	Layer	1.5-2m	Compacted orange brown, clay-silt-sand-gravel
803	Layer	2-3m	Mixed grey sand, gravel

## WS16

Context	Type	Depth	Comments
850	Layer	0-0.2m	Tarmac/road surface
851	Layer	0.2-1m	Made ground/bedding for road surface
852	Layer	1-1.5m	Orange clay- gravel
853	Layer	1.5-2m	Flint gravel, pale brown orange

## WS17

Context	Type	Depth	Comments
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900	Layer	0-0.2m	Topsoil
901	Layer	0.2-1m	Subsoil, Mixed brown, orange clay-silt
902	Layer	1-2.6m	Fine yellow, grey sand gravel

WS18

Context	Type	Depth	Comments
950	Layer	0-0.12m	Tarmac
951	Layer	0.12-0.5m	Hardcore bedding for tarmac
952	Layer	0.5-1.3m	Hardcore bedding for tarmac
953	Layer	1.3-2m	Orange clay, sand flint gravel
954	Layer	2-2.55m	Mixed grey sand, and gravel layer

WS19

Context	Type	Depth	Comments
1000	Layer	0-0.2m	Topsoil
1001	Layer	0.2- 0.4m	Made ground, aggregate deposit
1002	Layer	0.4-1.5m	Brown sand with rounded flint gravels
1003	Layer	1.5-2.1m	Pale sand, gravel, rounded flint gravels

**Test pit table of contexts**

Test Pit Sump 1 (TPS1)

Context	Type	Depth	Width	Length	Comments
2000	Layer	0-0.2m	0.6m	2.5m	Topsoil
2001	Layer	0.2-0.4m	0.6m	2.5m	Yellow sand, flint gravel
2002	Layer	0.4-1m	0.6m	2.5m	Yellow sand
2003	Layer	1-2.1m	0.6m	2.5m	Orange clay-sand-flint gravel
2004	Layer	2.16-3m	0.6m	2.5m	Brown yellow sand gravel
2005	Layer	3-3.3m	0.6m	2.5m	Orange clay-sand-flint gravel

Test Pit 1 (TP1)

Context	Type	Depth	Width	Length	Comments
2020	Layer	0-0.16m	0.6m	3m	Topsoil



2021	Layer	0.16-0.46m	0.6m	3m	Made up ground horizon, occasional brick fragments
2022	Layer	0.46-0.8m	0.6m	3m	Bedding hardcore gravel layer
2023	Layer	0.8-1.2m	0.6m	3m	Brown, orange gravel-silt and rounded flint
2024	Layer	1.2-1.6m	0.6m	3m	Brown orange sand-clay-silt flint gravel
2025	Layer	1.6-3.5m	0.6m	3m	Orange sand-clay-gravel and flint cobbles

Test Pit 2 (TP2)

Context	Type	Depth	Width	Length	Comments
2040	Layer	0-0.2m	0.6m	3.66m	Topsoil
2041	Layer	0.2-0.6m	0.6m	3.66m	Subsoil, brown clay-silt
2042	Layer	0.6-1.16m	0.6m	3.66m	Redeposited Orange clay-silt-sand gravel
2043	Layer	1.16-1.66m	0.6m	3.66m	Yellow-grey sand
2044	Layer	1.66-2.58m	0.6m	3.66m	Orange sand-clay flint gravel
2045	Layer	2.58-3.6m	0.6m	3.66m	Orange clay-sand-gravel

Test Pit Sump 2 (TPS2)

Context	Type	Depth	Width	Length	Comments
2060	Layer	0-0.36m	0.6m	3.1m	Topsoil
2061	Layer	0.36-1m	0.6m	3.1m	Made ground, sand gravel, brick fragment inclusions
2062	Layer	1-1.6m	0.6m	3.1m	Yellow-brown, sand
2063	Layer	1.6-2.2m	0.6m	3.1m	Gravel-clay-sand. Dark brown Orange
2064	Layer	2.2-2.8m	0.6m	3.1m	Yellow
2065	Layer	2.8-3.2m	0.6m	3.1m	Orange, clay-gravel

Test Pit 3 (TP3)

Context	Type	Depth	Width	Length	Comments
2080	Layer	0-0.1m	0.6m	3.6m	Topsoil



2081	Layer	0.1-0.6m	0.6m	3.6m	Made ground, brick rubble
2082	Layer	0.6-1.58m	0.6m	3.6m	Orange-brown clay-sand
2083	Layer	1.58-3.1m	0.6m	3.6m	Brown-orange, clay-sand-silt-gravel

## Test Pit Sump 3 (TPS3)

Context	Type	Depth	Width	Length	Comments
2100	Layer	0-0.2m	0.6m	3.6m	Topsoil
2101	Layer	0.2-0.6m	0.6m	3.6m	Brown-grey subsoil
2102	Layer	0.6-1m	0.6m	3.6m	Brown sand
2103	Layer	1-2.2m	0.6m	3.6m	Orange clay-sand and flint cobbles
2104	Layer	2-3.6m	0.6m	3.6m	Orange clay-silt-sand flint gravel

## Test Pit 4 (TP4)

Context	Type	Depth	Width	Length	Comments
2120	Layer	0-0.2m	0.6m	3m	Topsoil, dark grey, clay silt
2121	Layer	0.2-0.8m	0.6m	3m	Pale brown-yellow subsoil, silt sand
2122	Layer	0.8-3.5m	0.6m	3m	Orange clay-sand-gravel

## Test Pit Sump 4 (TPS4)

Context	Type	Depth	Width	Length	Comments
2140	Layer	0-0.2m	0.6m	2.5m	Topsoil
2141	Layer	0.2-0.58m	0.6m	2.5m	Brown-yellow sand, silt
2142	Layer	0.58-1.2m	0.6m	2.5m	Yellow sand, flint gravel
2143	Layer	1.2-2m	0.6m	2.5m	Yellow-brown sand
2144	Layer	2-2.7m	0.6	2.5	Orange clay-sand-gravel and flint pebbles

## Test Pit 5

Context	Type	Depth	Width	Length	Comments
2160	Layer	0-0.1m	0.6m	4m	Topsoil
2161	Layer	0.1-0.46m	0.6m	4m	Made ground horizon, dark grey, brick rubble
2162	Layer	0.46-1.56m	0.6m	4m	Yellow sand
2163	Layer	1.56-2.4m	0.6m	4m	Orange clay-silt-sand-gravel

## Test Pit 5 Sump (TPS5)



Context	Type	Depth	Width	Length	Comments
2180	Layer	0-0.2m	0.6m	3.6m	Topsoil
2181	Layer	0.2-0.4m	0.6m	3.6m	Brown-grey, clay-silt subsoil
2182	Layer	0.4-0.8m	0.6m	3.6m	Yellow-grey, sand
2184	Layer	0.8-1.7m	0.6m	3.6m	Orange-brown sand-flint gravel
2185	Layer	1.7-2.3m	0.6m	3.6m	Orange-brown, clay-sand
2186	Layer	2.3-3.4m	0.6m	3.6m	Orange clay

Test Pit 6

Context	Type	Depth	Width	Length	Comments
2200	Layer	0-0.18m	0.6m	3.6m	Topsoil
2201	Layer	0.18-0.38m	0.6m	3.6m	Subsoil, grey-brown, clay-silt
2202	Layer	0.38-0.8m	0.6m	3.6m	Yellow sand-gravel
2203	Layer	0.8-1.1m	0.6m	3.6m	Orange sand
2204	Layer	1.1-1.6m	0.6m	3.6m	Orange sand and flint cobble inclusions
2205	Layer	1.6-2.4m	0.6m	3.6m	Orange-brown moist sand
2206	Layer	2.4-3.5m	0.6m	3.6m	Orange, clay-sand-gravel

Test Pit 6 Sump (TPS6)

Context	Type	Depth	Width	Length	Comments
2220	Layer	0-0.2m	0.6m	3.6m	Topsoil
2221	Layer	0.2-0.38m	0.6m	3.6m	Made ground, brick and rubble layer, grey-brown
2222	Layer	0.38-0.8m	0.6m	3.6m	Sand-gravel, grey brown flint gravel
2223	Layer	0.8-1.3m	0.6m	3.6m	Brown-orange sand
2224	Layer	1.3-1.8m	0.6m	3.6m	Orange, sand-gravel, Flint cobbles
2225	Layer	1.8-3.4m	0.6m	3.6m	Orange, clay-sand-gravel

Test Pit 7 (TP7)

Context	Type	Depth	Width	Length	Comments
2240	Layer	0-0.2m	0.6m	3.2m	Topsoil



2241	Layer	0.2-0.8m	0.6m	3.2m	Made-ground, mix of hardcore crush
2242	Layer	0.8-1m	0.6m	3.2m	Grey, gravel-silt
2243	Layer	1-1.2m	0.6m	3.2m	Yellow-grey, sand-gravel
2244	Layer	1.2-3.1m	0.6m	3.2m	Orange, clay-sand-gravel

Test Pit 8 (TP8)

Context	Type	Depth	Width	Length	Comments
2260	Layer	0-0.1m	0.6m	3.6m	Topsoil
2261	Layer	0.1-0.5m	0.6m	3.6m	Grey-brown, rounded flint gravel
2262	Layer	0.5-1m	0.6m	3.6m	Orange, sand-gravel, rounded flint gravel
2263	Layer	1-1.36m	0.6m	3.6m	Brown-orange, sand
2264	Layer	1.36-1.5m	0.6m	3.6m	Yellow, sand. Backfill for old drain service
2265	Layer	1.36-1.64m	0.6m	3.6m	Brown sand
2266	Layer	1.64-2.4m	0.6m	3.6m	Orange, clay-sand-gravel



## APPENDIX B. BIBLIOGRAPHY AND REFERENCES

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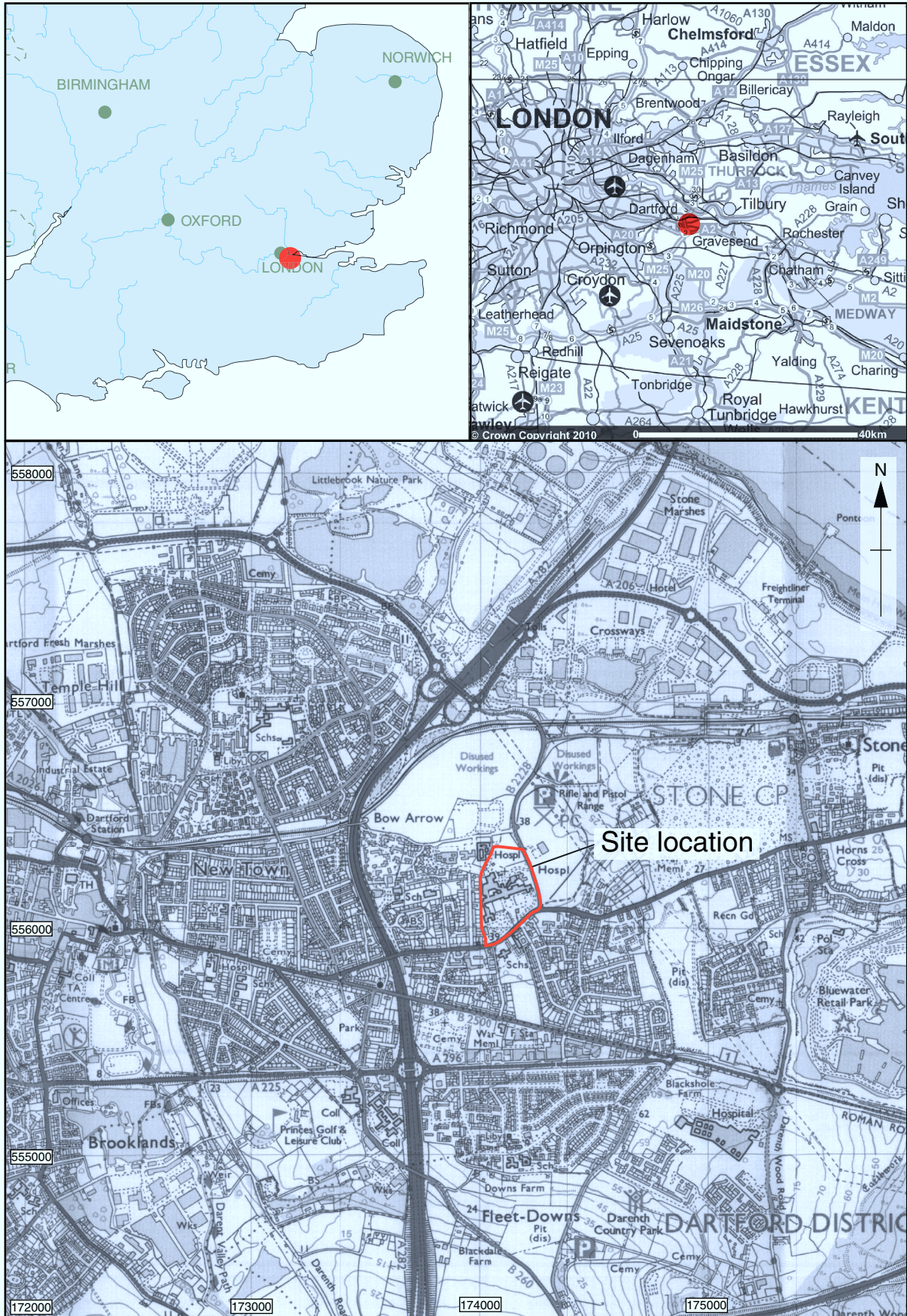
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## APPENDIX C. SUMMARY OF SITE DETAILS

Site name:	Stone House Hospital
Site code:	DASHH10
Grid reference:	TQ 561 741
Type of watching brief:	Geotechnical test pits and boreholes
Date and duration of project:	2 <sup>nd</sup> August 2010
Area of site:	
Summary of results:	A total of 18 boreholes and 14 geotechnical test pits were monitored prior to the redevelopment of the Stone House Hospital. No archaeological remains were identified. Substantial deposits of made ground exist across the site with significant truncation of the Holocene soil profile. The underlying Pleistocene gravels (Boyne Hill Formation) appear to be preserved to some thickness and has the potential to preserve remains of Palaeolithic date at depth
Location of archive:	The archive is currently held at Janus House, Oxford awaiting the receiving museum.





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Figure 1: Site location





Figure 2: Plan of site and geotechnical investigations

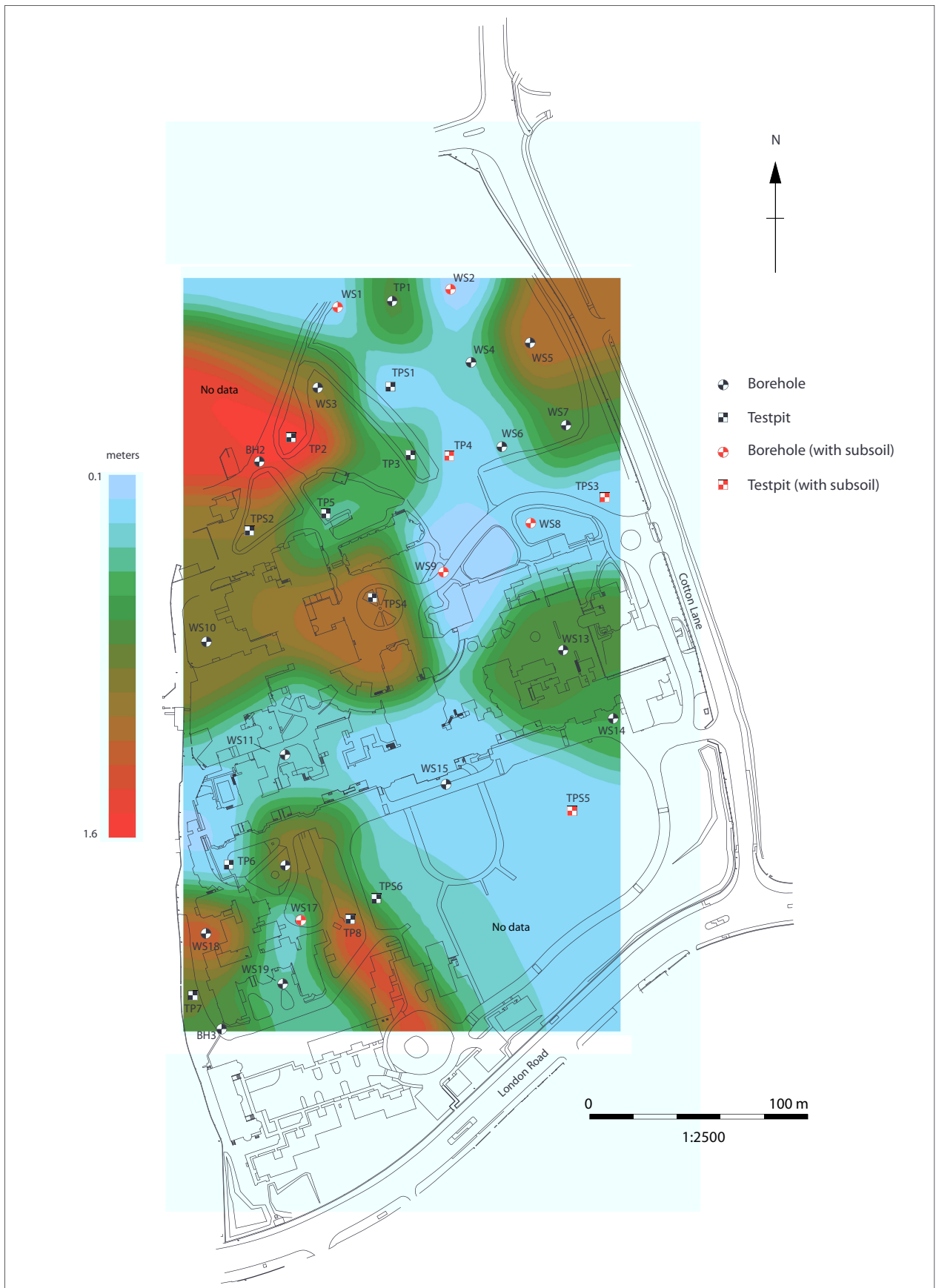


Figure 3: Modelled thickness of modern made ground



#### **OA East**

15 Trafalgar Way  
Bar Hill  
Cambridgeshire  
CB23 8SQ

t: +44 (0) 1223 850500  
f: +44 (0) 1223 850599  
e: oaeast@thehumanjourney.net  
w: <http://thehumanjourney.net>

#### **OA North**

Mill 3  
Moor Lane Mills  
Moor Lane  
Lancaster LA1 1GF

t: +44 (0) 1524 541 000  
f: +44 (0) 1524 848 606  
e: oanorth@thehumanjourney.net  
w: <http://thehumanjourney.net>

#### **OA South**

Janus House  
Osney Mead  
Oxford OX2 0ES

t: +44 (0) 1865 263 800  
f: +44 (0) 1865 793 496  
e: info@oxfordarch.co.uk  
w: <http://thehumanjourney.net>

#### **OA Grand Ouest**

7 Rue des Monderaines  
ZI - Ouest  
14650 Carpiquet  
France

t: +33 (0) 249 88 01 01  
f: +33 (0) 249 88 01 02  
e: info@oago.fr  
w: <http://oago.fr>

#### **OA Méditerranée**

115 Rue Merlot  
ZAC La Louvade  
34 130 Maugeio  
France

t: +33 (0) 4.67.57.86.92  
f: +33 (0) 4.67.42.65.93  
e: oamed@thehumanjourney.net  
w: <http://oamed.fr/>

**Director:** David Jennings, BA MIFA FSA



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Head Office: Janus House, Osney Mead, Oxford, OX2 0ES, t: +44 (0) 1865 263 800*