An Archaeological Evaluation at Hildon Close, Durrington, Worthing, West Sussex.

TQ 116 043

Project No. 1728

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Summary

Seven trenches were mechanically excavated across the site in advance of a proposed housing development. Six trenches were 25 metres in length, however the seventh trench was only 20 metres in extent due to lack of space. An eighth trench was abandoned as it ran right across the site access. The site was considered to have archaeological potential as it lies immediately west of the Centenary House site, where recent excavations also undertaken by Archaeology South East (ASE) uncovered traces of a Late Bronze Age settlement, including two hut circles.

The westernmost trench (Trench 7) produced evidence of early Roman activity. Two intercutting ditches and a pit were identified, together with a ditch terminal, which were all aligned just east of north-south and at a depth of approximately 1 metre below existing ground levels. Recovered artefacts included one sherd of South Gaulish Samian.

One further trench (Trench 3) contained an east-west aligned ditch, probably of post-medieval date. No other features of archaeological significance were observed, and no evidence was found to suggest that the Bronze Age settlement located at the Centenary House site to the east extends into the current site.

A geoarchaeological test-pit was excavated to establish the presence of palaeogeographical deposits, particularly marine deposits. Such deposits were located at c.4 metres below ground level.

Archaeology South-East

Archaeology South-East is a division of the Field Archaeology Unit, University College London, one of the largest groupings of academic archaeologists in the country. Consequently, Archaeology South-East has access to the conservation, computing and environmental backup of the college, as well as a range of other archaeological services.

The Field Archaeology Unit and South Eastern Archaeological Services (which became Archaeology South-East in 1996) were established in 1974 and 1991 respectively. Although field projects have been conducted world-wide, the Field Archaeology Unit retains a special interest in south-east England with the majority of our contract and consultancy work concentrated in Surrey, Hampshire, Sussex, Kent, Greater London and Essex.

Based in the local community, the Field Archaeology Unit sees an important part of its work as explaining the results to the broader public. Public lectures, open days, training courses and liaison with local archaeological societies are aspects of its community-based approach.

Drawing on experience of the countryside and towns of the south east of England the Unit can give advice and carry out surveys at an early stage in the planning process. By working closely with developers and planning authorities it is possible to incorporate archaeological work into developments with little inconvenience.

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1.0 INTRODUCTION

1.1 Archaeology South-East (a division of University College London Field Archaeology Unit) were commissioned by Osborne Housing to undertake an archaeological evaluation of a site off Hildon Close, Durrington, Worthing, West Sussex (Fig. 1 - NGR TQ 116 043).

1.2 The site lies in West Durrington, a suburb on the north-western outskirts of Worthing, and comprises a small L-shaped patch of waste land formerly used as animal pasture, with a smaller heavily overgrown plot immediately to the west, separated from it by a wire fence. The site is bordered to the north by residential housing around Hildon Close, to the west by a footpath and a public park, to the south by houses fronting onto the A2032 (Littlehampton Road) and to the east by the grounds of the Worthing Custody Centre (Sussex Police). The site aspect is generally flat (altitude approximately 10mOD).

1.3 Planning permission has been granted by Worthing Borough Council for a residential development (planning ref. WB/03/0039/FULL) at this site. Due to the archaeological sensitivity of the area West Sussex County Council (WSCC) (Worthing Borough Council's advisors on archaeological issues) have recommended that a programme of archaeological work be carried out at the site. As a result, a planning condition requiring such a programme of works was attached to the consent.

1.4 The first stage of the archaeological programme was to consist of a field evaluation (trial trenching). The aim of the evaluation was to establish the presence/ absence, date, nature and condition of any archaeological deposit at the site that may be affected by the proposed development. This would allow informed decisions to be made regarding the likely impact of the proposed development on the archaeological resource and thus Stage 2 mitigation measures to be formulated in the event of important remains being present.

1.5 A Brief for the work was prepared by John Mills of West Sussex County Council.[1] In accordance with this Brief, a Specification for the work was prepared by Neville Hall of Archaeology South-East outlining the programme of work to be followed at the site, involving the excavation of eight trial trenches and up to two geoarchaeological test-pits with an additional contingency for a further 80 square metres of trial trenching if required. It was agreed with WSCC that cartographic regression and SMR analysis were not necessary prior to the commencement of the fieldwork phase as they had previously been carried out for the adjoining Centenary House site immediately to the east. The data collected then is repeated in this report.

[1] J. Mills, *WB/03/0039/FULL Land off Hildon Close, Durrington, Worthing, West Sussex: Stage 1 (trial) archaeological investigation: Brief: trial trench excavation* (Draft WSCC document May 2003).

1.6 The archaeological evaluation was carried out by Richard James, Paul Riccoboni and Gary Bishop on the 11th-14th August 2003. The geoarchaeological test-pitting was undertaken out by Chris Pine on the 12th August 2003. The project was managed by Neville Hall (Projects Manager).

2.0 GEOLOGICAL AND ARCHAEOLOGICAL BACKGROUND

2.1 According to the British Geological Survey 1:50,000 map (Sheet 318/333 *Brighton and Worthing*), the underlying geology is recorded as Brickearth overlying undifferentiated Upper and Middle Chalk. The eastern half of the site comprises a partially gleyed Brown Earth soil (Hook Series), characterised as a silt or silty clay loam, often with impeded drainage leading to a high water table, and containing frequent ferro-manganese concretions in the lower horizons. The western half of the site consists of a similar, but non-gleyed, soil unit (Hamble Series).[2]

2.2 The site lies in an area of known archaeological sensitivity. A Late Bronze Age settlement has been recently excavated at Centenary House immediately east of the site[3], comprising evidence for two roundhouses and a large assemblage of pottery. Archaeological features and finds of Iron Age and Roman date were observed during building works at Windermere Crescent, just south of Littlehampton Road in 1959. Recent work by Archaeology South-East at Northbrook College, 800 metres to the south-west, uncovered ditches and pits of Roman date, together with late prehistoric roundhouses, associated with an early Roman villa previously excavated in the 1980s.

3.0 CARTOGRAPHIC EVIDENCE

3.1 The following limited selection of historic maps were consulted:

Thomas Yeakell & William Gardner, *2-inch 'Great Survey' of Sussex* (1780)
Durrington Enclosure map (1818)
Durrington Tithe Map (1838)
Ordnance Survey 6-inch Sheet LXIV.SW (1899)
Ordnance Survey 6-inch Sheet LXIV.SW (1938)

3.2 Yeakell & Gardner's 2-inch 'Great Survey' of 1780 (Fig. 3) shows the site as lying within a series of small strip fields bounded by hedgerows, representing an episode of early enclosure (the bulk of the open fields of Durrington, shown as large blocks on the 1780 map, were not enclosed until 1818). A kink is shown in the field boundary nearest to the road that may be identified as a prominent dog-leg visible on later maps. The 1818 enclosure map (Fig. 4) shows a similar arrangement of long narrow fields along the Littlehampton

[2] J.M. Hodgson, *Soils of the West Sussex Coastal Plain* (Soil Survey of Great Britain Bulletin No. 3, 1967).
[3] R. James (in prep.), *A Late Bronze Age Settlement Site at Centenary House, Worthing.*

Road frontage. The site lay across what were three separate plots, two of which were owned by a Mrs Elizabeth Dickenson and the third by a Mrs Robinson. By the time the tithe map was compiled in 1838 (Fig. 5), the two northern fields had been amalgamated, preserving the dog-legged kink in the field boundary. This boundary ran through the southern part of the site.

3.3 The 1899 OS map (Fig. 6) shows the site itself as largely unchanged, although the group of fields to the north had now been combined into one large plot. This map clearly demonstrates the rural nature of the surrounding area at this time. The next available map shows the area 40 years later. By 1938 (Fig. 7), the field boundary crossing the site was no longer in use, although the western corner had now been enclosed to form a small triangular shaped plot. Housing had been built along the southern frontage of the site, but the land to the east and north was still largely rural in nature, although it had now been sub-divided to form a series of smallholdings containing an assortment of sheds. The dense residential sprawl, which now surrounds the site, is of post-war origin.

4.0 ARCHAEOLOGICAL METHODOLOGY

4.1 A trench layout plan compiled by Neville Hall of Archaeology South East and agreed with WSCC comprised 8 machine-excavated trenches, each measuring 25 metres in length and 1.8 metres in width. The trenches were laid out by tapes using a site survey provided by the client. The accuracy of this method was acceptable as the trenches lay very close to the site boundaries. In addition, up to two geoarchaeological test-pits were to be excavated in the western half of the site in locations to be decided by the geoarchaeologist.

4.2 The trenches were excavated with a JCB 3cx mechanical excavator fitted with a 1.6 metre wide toothless ditching bucket under the supervision of staff from Archaeology South-East. The trenches were scanned with a CAT scanner prior to excavation to locate any extant services.

4.3 The excavation was to be taken down to the top of the 'natural' geological deposits or any significant archaeological deposit whichever was the higher. Care was taken not to damage archaeological deposits through excessive use of mechanical excavation. Revealed surfaces of the 'natural' were selectively cleaned in an attempt to identify individual archaeological features. Spoil was scanned for the presence of artefacts.

4.4 All encountered archaeological deposits, features and finds were recorded according to accepted professional standards, using context record sheets based upon the Central Excavation Unit recording system as modified for use by Archaeology South-East. Deposit colours were recorded by visual inspection and not by reference to a Munsell Colour chart.

4.5 All encountered deposits were levelled to a Spot Height of 10.70mOD located on the site survey.

4.6 A full photographic record of the work was kept as appropriate and will form part of the site archive. The archive (including the finds) is presently held at the Archaeology South-East office in Ditchling and will be offered to Worthing Museum in due course.

5.0 RESULTS

5.1 The evaluation took place following a prolonged period of hot and dry weather. Consequently, the Brickearth subsoil proved to be extremely difficult and time-consuming to excavate using a toothless bucket, which tended to slide across the top of the deposit rather than digging in to it. As a result of these practical difficulties, and the time constraints built into the project, a decision was made to reduce the width of the trenches to 1.6 metres, the full width of the ditching bucket. Further time constraints were imposed by the presence on site of geotechnical engineers, who required safe access to all areas of the site for a 20-ton survey truck[4], the loss of one JCB due to a broken hydraulic ram, and the (fortuitously short-lived) breaking down of its replacement.

5.2 *Trench 1*

This trench measured 25 metres in length and 1.6 metres in width (Fig. 2). The northern end of the trench was slightly displaced 4 metres to the north-east in order to avoid a geotechnical pit. The trench was excavated to a depth of 0.9-1.2 metres, and comprised a 0.2 metre deep topsoil deposit (Context **1**) (light greyish-brown friable silty clay loam containing approximately 1% each of fire-cracked flint, charcoal flecks, small sub-angular flint nodules and small rounded flint pebbles, together with occasional burnt clay flecking. Artefacts were very scarce, but included roof tile and china overlying a 0.7-0.9 metre thick deposit of reworked Brickearth (Context **2**) (a homogenous mid orange-brown firm clay-silt containing a general mix of fire-cracked flint, pottery (one medieval sherd), coal and natural flints, concentrating in the upper 0.2 metres of the deposit). This deposit was identified as a former ploughsoil or ploughsoils given the depth of this deposit, which may have involved some element of colluviation derived from the downland slopes to the north. Below this was the natural Brickearth, noticeably more mottled in appearance, with patches of ferro-manganese nodules. No archaeological features or *in situ* artifacts were recovered from this trench.

5.3 *Trench 2*

This trench measured 25 metres in length by 1.6 metres in width (Fig. 2), and was excavated to a depth of 0.8 metres. Stratigraphy comprised Context **1** (0.2 metres deep) overlying Context **2** (0.6 metres deep). No archaeological features were observed, although a modern stone-filled soakaway/drain capped with asbestos sheeting was observed at the northern end of the trench.

[4] Of which Archaeology South-East were not forewarned.

5.4 *Trench 3*

This trench measured 25 metres in length by 1.6 metres in width (Fig. 2), and was excavated to a depth of 0.9 metres. Stratigraphy comprised Context **1** (0.2-0.26 metres deep) overlying Context **2** (0.6-0.7 metres deep). One archaeological feature was identified running along the centre of the trench (Fig. 8, S1 & 2). This was a 0.63 metre wide linear gully, surviving to a depth of 0.2 metres (Context **3**) and containing one fill (Context **4**), a firm mid greyish-brown silty clay containing small amounts of fire-cracked flint, charcoal flecks and flint flakes and two small sherds of medieval pottery.

5.5 *Trench 4*

This trench measured 25 metres in length by 1.6 metres in width (Fig. 2), and was excavated to a depth of 0.6 metres. The trench was moved some 10 metres to the north to avoid tree cover. Stratigraphy comprised Context **1** (0.2 metres deep) overlying Context **2** (0.4 metres deep). No archaeological features were observed.

5.6 *Trench 5*

This trench measured 25 metres in length by 1.6 metres in width (Fig. 2), and was excavated to a depth of 0.6 metres. The trench was moved slightly to the west to avoid a geotechnical test-pit. Stratigraphy comprised Context **1** (0.2 metres deep) overlying Context **2** (0.4 metres deep). No archaeological features were observed.

5.7 *Trench 6*

This trench was also repositioned and realigned to the east of its intended position due to the presence of a disabled JCB adjacent to Test-Pit 2 (Fig. 2). It was also shortened to allow access to be maintained to the eastern part of the site. It measured 20 metres in length by 1.6 metres in width, and was excavated to a depth of 0.8 metres. Stratigraphy comprised Context **1** (0.2 metres deep) overlying Context **2** (0.4-0.6 metres deep). No archaeological features were observed.

5.8 *Trench 7*

This trench was positioned within the small, heavily overgrown triangular plot to the west of the main site (Fig. 2). The trench was repositioned slightly to avoid trees and two geotechnical test-pits. The trench measured 25 metres in length by 1.6 metres in width, and was excavated to a maximum depth of 1.2 metres. Stratigraphy comprised Context **1** (0.2 metres deep) overlying Context **2** (0.5 metres deep at the northern end of the trench; and 1 metre in depth at southern end of the trench). Four archaeological features were identified within this trench (Fig. 8), three of which produced pottery of early Roman date. A linear feature, 0.45 metres wide and 0.11 metres deep (Context **5**) ran across the centre of the northern half of the trench on an alignment just east of N-S, terminating within the trench itself. The feature contained one fill (Context **6**), a greenish-brown silty clay. Two slots were excavated through this feature (Fig. 8, S3 & 4), from which were recovered two small sherds of late 1st-2nd-century pottery and some fire-cracked flint. The feature was observed at a depth of approximately 0.9 metres below existing ground levels.

5.9 The southern end of the trench contained a complex arrangement of features at a depth of 1.2 metres below existing ground level. Hand cleaning revealed two parallel linear features (Contexts **7** and **12**), aligned on the same axis as **5**, and a pit (Context **9**). The earliest feature was Cut **12** (Fig. 8, S5), measuring 0.4 metres in width and 0.15 metres in depth and consisting of a steep-sided flat-bottomed cut which gradually petered out to the north. The feature was filled by a firm, light brownish-grey silty clay (Context **13**). No artefacts were recovered from this fill. This feature was cut by a large pit (Context **9**) that extended beyond the trench edges to the east and west. This feature was unclear in plan, but appeared to be roughly circular in shape, measuring 2 metres from north-south, with steep concave sides. The base was not reached within the deep, cramped confines of the trench, but was over 0.35 metres in depth. One fill was recorded **(Fig.8, S5-7),** Context **10**, a firm mid/dark greyish-brown silty clay, which contained thirteen sherds of late 1st-2nd-century pottery, together with fire-cracked flint and three small struck flint flakes. This pit was in turn cut by a further linear feature (Context **7**), which was at least 0.5 metres in width and 0.6 metres in depth. However the full extent of each could not be ascertained as the eastern side of the feature lay beyond the trench edge. The main fill (Context **8**) was a greyish-brown silty clay (Fig. 8, S5-7) containing 11 sherds of late 1st-2nd-century pottery, including one piece of South Gaulish Samian, together with struck flint, fire-cracked flint and fired clay. Above this and towards the southern end of the trench was a second fill (Context **11** – Fig. 8, S7), a light orange-brown silty clay, probably redeposited Brickearth slumped into the top of the silted-up feature. No artefacts were recovered from this fill. Environmental samples were taken from Contexts **8** and **11**, but contained nothing of significance.

5.9 *Trench 8*

This trench was abandoned as it was aligned right across the access point to the site (Fig. 2). The limited space available, particularly due to the requirement to allow safe access for the geotechnical crew, allowed no scope for repositioning the trench elsewhere in the vicinity.

6.0 THE FINDS AND ENVIRONMENTAL SAMPLES (by Luke Barber)

6.1 The evaluation produced a relatively small assemblage of finds. These are quantified in Table 1.

Context	Pottery	CBM (Tile)	Worked Flint	F. C. F	Other	Deposition Date
U/S	2/5g		5/215g	16/525g		-
Tr. 1	1/5g	1/20g	10/190g	7/170g		Med/ early PM CBM
T. 3 1 & 2		4/149g	9/290g	6/210g		Med/ early PM CBM
T. 3 4 slot 2	2/2g		4/40g	7/130g	Coal 2/2g	Medieval C13th-C14th
T. 5 2	1/3g			2/25g		P M prob C19th
T. 6 2	3/18g	2/75g	7/80g	5/105g		P M CBM C19th
T. 7 6 Slot 1	2/5g			11/15g		Late C1st-C2nd
8 Slot 2	11/34g		4/55g	8/95g	F. Clay 1/1g	Late C1st-C2nd
T. 7 8 surface	3/3g					C1st-C2nd
T.7 8 Slot 1	2/8g					Late C1st-C2nd
T. 7 10 surface	4/75g					Late C1st-C2nd
T. 7 10 Slot 1	2/2g			4/143g		Late C1st-C2nd
T. 7 10 Slot 2				17/175g		
10 Slot 2	7/35g					Late C1st-C2nd
10 Slot 3			3/35g			

Table 1: Finds Quantification (excluding those from environmental samples)

6.2 The finds assemblage includes a small quantity of pottery. The material is generally in poor condition with extensive abrasion and attack from acidic ground conditions. Sherd sizes range from very small to medium (to 50mm across). The vast majority of the assemblage is of Roman date, most probably later 1st to 2nd century. These include a number of sandy wares, both reduced and oxidised, probably from the 'Arun Valley' industries. A single sherd of South Gaulish Samian was recovered from Trench 7, Context **8**. A little medieval material is present. This consists of a coarse sand with flint sherd of 12th- to early 13th- century date (Trench 1) and a fine sand-tempered glazed jug of 13th- to 14th century date (Trench 3, Context **4**). Both sherds are small and could result from manuring. The only post-medieval pottery from the site came from Context **2** (Trenches 5 and 6) where high-fired earthenware, probably from 19th- century flower pots was located.

6.3 The tile assemblage from the evaluation consists of a small quantity of late medieval to early post-medieval peg tile fragments (Trench 3, Contexts **1/2** and a piece of post-medieval brick from Context **2** (Trench 6).

6.4 A small assemblage of worked flint was also recovered. This consists virtually exclusively of hard-hammer waste, including a couple of crude cores, which would not be out of place in the Late Bronze Age. A single broken blade fragment (Context **2**, Trench 6) hints at earlier Mesolithic/Neolithic activity. However, the flintwork appears to be fairly typical of the background spread of such material expected on the coastal plain. A scatter of fire-cracked flint, probably associated with the flintwork, was also noted.

6.5 The remainder of the artefact categories are only represented by odd pieces including coal and burnt clay. No bone or shell material was recovered but this is almost certainly due to the acidic nature of the sub-soil. The finds assemblage from the evaluation phase of the work is not considered to have any potential for further analysis.

6.6 Two environmental samples were taken during the evaluation. These are listed below in Table 2.

Context No.	Sample No.	Sample Size (litres)	Sub-Sample Size
8	1002	14	7
11	1001	14	7

Table 2: Environmental Samples

6.7 A 50% sub-sample from each sample was processed for the purpose of assessment, with the view to processing the remainder if the results of the sub-samples warranted it. In the event the results from the sub-sample did not warrant this. All samples were processed using bucket flotation. The flot from each sample/ sub-sample was caught on a 250-micron sieve with the residue being retained on a 1mm mesh. Once the residues were dry they were sorted by eye to extract material of archaeological/environmental interest with the remaining stones etc being discarded. The results of this sorting are given in Table 3 below. The dried flots were also scanned by eye, and with the help of a microscope (x20 magnification) where necessary, to assess the presence/absence and quality of archaeobotanical remains (seeds) and charcoal (Table 3) and thus the potential of the current site for addressing environmental and economic questions regarding the Romano-British activity at the site.

6.8 The flots from the samples (Table 3) contain small amounts of charcoal. The material is generally of a small to medium size and in poor/moderate condition. Without exception the flots appear to contain no ancient seeds. However, some modern (uncharred) wild seeds were noted in both samples. Modern contamination on site from roots etc appears to be moderate. All in all the flots from this evaluation are considered to have no potential for further analysis.

Context	Modern Roots	Charcoal	Seeds	Residue (*retained)
8	*	* to 3mm	- Cereal * Wild (modern)	
11	**	* to 6mm	- Cereal * Wild (modern)	Burnt clay 1/1g

Key : - *: None* * : *Very Low* ** : *Low* *** *: Moderate* **** : *High* (frequency)
(Wild - non-cultivated plants)

Table 3 : Results of Environmental Samples : Flots and Residues

6.9 The residues from the samples contained only one piece of burnt clay. As such the residues from the evaluation are considered to have no potential for further analysis. The lack of bone and shell is likely to be due to the acidic ground conditions.

7.0 GEOARCHAEOLOGICAL EVALUATION AND TEST PIT RECORD
(By Chris Pine)

7.1 *Introduction*

A planning condition requiring a programme of archaeological work has been applied to the development site. As a component part of the required archaeological work it was stipulated that a series of up to two purposive Geoarchaeological test pits should be excavated and recorded by a suitably qualified geoarchaeologist to record and assess sedimentary sequences lying beneath the site. The brief and specification for archaeological investigation, (Stage1) was compiled by Neville Hall of Archaeology South East (ASE).

7.2 This summary report presents details of the findings of a programme of Geoarchaeological investigation, by trial pitting, at the site and makes recommendations for possible further investigation and analysis. Fieldwork was undertaken by C. A. Pine on Tuesday August 12th 2003. Archaeology South East's Field Officer and site director was Richard James.

7.3 Assessment of the potential significance of sediments lying at depth below the site is made by reference to both the results of purposive geoarchaeological trial pitting and study of extant geotechnical data for the site as detailed below (N.B. the geotechnical data referred to here was collected in 2002, before the archaeological work was carried out).

7.4 *Aims and objectives*

The main impetus of geoarchaeological monitoring was to confirm the presence of marine deposits, or other potentially significant palaeogeographic deposits, at the site location. Marine deposits if present may contain important palaeoenvironmental information and enable preliminary stratigraphic correlation to be made with other sites of Pleistocene age within the West Sussex Lower Coastal Plain. At this preliminary stage (Stage 1) of the investigation the requirement was to carry out sedimentological recording of the exposed site sequences and assess the palaeoenvironmental significance and potential of recorded sequences.

7.5 *Information made available in advance of report submission*

- Archaeological Evaluation (Stage 1) Specification (ASE Document)

- Geotechnical and Geo-environmental Interpretive Report. Selected borehole and test pit site logs. (Compiled by WSP Environmental Limited and commissioned by Osborne Housing for Hildon Close, Durrington, West Sussex).

- The British Geological Survey (BGS) 1:50,000 Series Solid and Drift Geology Survey sheet for Brighton and Worthing, Sheet 333 (1978) indicates the site area to be underlain by Brickearth with London Clay at depth.

7.6 *Summary of regional topography and palaeogeography*

The West Sussex Coastal Plain is bounded at its northern margin by the truncated dip slope of the South Downs and by the modern coastline at its southern margin. The Plain is at it widest, approximately 17kms north-south between Chichester in the north and Selsey to the south. To the west the plain merges into the Solent area, to the east it narrows to meet the present coastline at Black Rock near Brighton.

7.7 Palaeogeography of the study area was shaped by transgressive and regressive marine actions beginning approximately 500,000 years before present and that are still occurring today. The area is geographically divided into two (the division is based on altitude and is clearly defined between Chichester and Arundel though on the western and eastern areas this division is less clear). The upper coastal plain region consists of land above 15m OD (Ordnance Datum) and beneath approximately 60m OD and is therefore represented by a narrow strip approximately 2kms wide. The A27 road presently broadly defines the southern margin of the upper coastal plain. The lower plain consists of land to the south that is lower than 15m OD. The study site located at NGR TQ 116 043 lies at an elevation of approximately 10m OD south of a proposed cliff line associated with the 15m contour.

7.8 Soils of the Upper Coastal plain are developed on solifluction or head deposits with high flint gravel components. The soils are derived from the Tertiary regolith, once covering the Downland region, and are mixed or interbedded with calcareous Coombe Rock. The Lower Coastal Plain soils are predominantly developed on loess deposits derived from glacial melt-debris with significant flint gravel and sand component.

7.9 Present day surface topography is predominantly flat. Immediately to the east of Chichester, where the plain is at its widest, there is a fall to the modern coastline from a high of approximately 30m OD at the foot of the truncated dip slope of the South Downs, over a distance of approximately 17kms. Two main rivers cut the coastal plain, the Arun and the Adur. The Downs are incised with many dry valleys, such as the Binsted valley, that cut through both surface drift and bedrock. Drift deposits overlying bedrock over the coastal plain have long been recognised as being indicative of marine deposition testifying to periods of variable sea level. These drift deposits are at selected locations overlain by angular flint gravels, probably laid down as a result of solifluction.

7.10 *Methodology*

Geoarchaeological Test Pit A was sited towards the north west of the site (Fig. 2). The ground surface height adjacent to the test pit was given as + 11.25m OD. A JCB3cx excavator fitted with a 1.6 metre wide toothless bucket was used to excavate the test pit. Test Pit dimensions were approximately 3 metres long by 1.6 metres wide to a depth of 3.70 metres below ground level (+7.55m OD). Recording was carried out using standard sedimentological terminology; colours were recorded using a Munsell Colour chart[5].

7.11 Recording to a depth of 1.2 metres below ground level was undertaken from prepared section faces, and beneath this depth from arisings. Small 'pinch' samples (1 Litre) were recovered and retained from key units for subsequent laboratory examination to augment field description.

7.12 Note: Due to breakdown of the excavator only a single purposive Geoarchaeological test pit was excavated. However in discussion with Malcolm Ball (Osborne Housing) C. A. Pine confirmed that the results of an intrusive investigation using extensive test pitting (x7) and drilling of window sampler boreholes (x3) at spaced site locations would be made available for review. Existing geotechnical data for the site is reproduced as Appendix 1 of this summary report, and the test-pit and window sample locations are indicated on Fig. 2.

7.12 It was considered by C. A. Pine in consultation with Neville Hall (ASE) and John Mills (WSCC Archaeology Planning Officer) that review of the extant geotechnical data set combined with results of the recording of the single

[5] Munsell Soil Color Charts, 1975. Baltimore, Maryland: Munsell Color.

Geoarchaeological test pit, would be sufficient to assess the significance of sediments within the site area.

7.13 *Results: Geoarchaeological Test Pit A*

Description

Depth	**Geoarchaeological Test Pit A** (Ground Surface at (+11.25m OD) Field Description / Lab Based Description
0.00-0.0.18 (Unit 7) +11.25-11.07m OD	10YR 5/3 brown to 10YR 3/2 greyish brown silty clay. Lose and friable matrix supports frequent sub angular to angular flint 'fractured fragment' predominantly less than 2cms diameter and occasional brick and some concrete fragments. The unit is moderately heavily rooted (modern). Topsoil / made ground. +11.07m OD Diffuse horizontal contact
0.18- 1.60 (Unit 6) +11.07-9.65m OD	5YR 4/3 reddish brown with mottles of 10YR5/4 yellowish brown cloy silt becoming 5YR 5/4 reddish yellow to 5YR 5/6 yellowish red silty clay beneath c. 1.5m BGL. Matrix is moderately dense firm and compact and becomes more moist and clastic with depth. (Upper Brickearth silts) +9.65m OD Moderately sharp gently undulating contact
1.60-1.80/2.10 (Unit 5) +9.45/9.15 m OD	5YR 7/6 reddish yellow silt with 10YR 8/3 pink chalk grains and sub rounded chalk pellets. (Chalk pellet gravel and chalk rich silt sub unit) +9.45/9.15m OD Moderately sharp dipping (north south) contact
1.80/2.10-3.10 (Unit 4) +9.45/9.15-8.15 m OD	10YR 7/6 yellow clay silt with frequent sub rounded to well rounded chalk pellets in upper 50cms of the unit. The unit is weakly bedded with chalk grains appearing as thin < 2cms deep lenses. At approximately 2.6m in the east facing section is a single sub angular chalk 'block' approximately 35cms diameter. Matrix is moderately dense firm and compact becoming more plastic with depth. +8.15m OD Diffuse horizontal contact
3.10-3.30/3.40 (Unit 3) +8.15-7.95/7.85m OD	10YR 4/2 dark greyish brown silty clay with 10YR 5/3 brown mottles of granular clay silt. Matrix is moderately firm with discrete pockets that are dense firm and compact. The unit exhibits a weak 'block' structure. +7.95/7.85m OD Diffuse horizontal contact

3.30/3.40-3.60 (Unit 2) +7.95/7.85-7.65m OD	10YR 7/3 very pale brown clay silt with slight 10YR 6/6 brownish yellow silt and very fine sand as weak laminations within the matrix. The sand fraction increases with depth becoming 10YR 6/3 pale brown fine sand and silt beneath approximately 3.50 +7.65m OD? Moderately sharp horizontal contact.
3.60 -3.70 (Unit 1) +7.65-7.55 m OD	10YR 5/2 greyish brown to 10YR 5/1 grey medium sand. Very lose and not cohesive. (No sample recovery due to machine failure). Upper contact to marine sands?) **+7.55m OD End of Test Pit**

7.14 *Discussion*

The site sequence from Geotechnical data set is summarised as:

Top (m.bgl)		
0.00	0.2	Brown silty clay with roots (Topsoil)
0.2	0.3-0.6	MADE GROUND: Brown silty clay, slight fine to coarse gravel of brick fragments, occasional ceramic or plastic fragment, some black gravels in WS1 (TP1, TP2, and WS1 only)
0.3-0.6	4.0-4.8	Firm brown silty CLAY occasional fine to medium flint gravel, or Soft grey-brown and orange mottled silty CLAY, or Soft brown orange silty CLAY (BRICKEARTH)
4.0-4.8	5.0 proven	Medium dense to dense grey-brown and orange fine SAND (RAISED BEACH DEPOSITS)

7.15 The sequence recorded at Geoarchaeological Test Pit A, sited proximal and to the east of the location of WS1 records upper contact to a sand rich silt unit, interpreted as upper contact to marine sands, lying at approximately +7.50m OD (c. 3.75 metres below ground level).

7.16 The log for WS1 confirms an upper contact to a sand unit recorded as marine sands lying at 4.50 metres below ground with sands logged to 5.00 metres below ground. Contact to marine sands at WS2 and WS3 is recorded at 4.80 metres below ground and 4.00 metres below ground level respectively.

7.17 The absence of ground surface heights recorded relative to Ordnance Datum for the geotechnical survey records precludes mapping an accurate upper contour surface for the sand unit across the site. However it may be concluded that upper contact to marine sands lies at between c 3.80 to 4.50 metres below ground across the site area.

7.18 The combined results of review of extant geotechnical data and recording of upper marine sands at c. +7.65-7.55m OD in Geoarchaeological Test Pit A confirms marine sands are present beneath the study site at depths of c. 3.70 to 4.50 metres below ground level.

7.19 In all geotechnical logs a 'Brickearth' unit is recorded lying between c.0.20/0.50m below ground to 3.50 metres (maximum depth of test pit survey). At all window samples (WS) borehole locations Brickearth units contact and overlie sand units that are recorded as marine sands. The Geoarchaeological test pit record confirms the variability in the sediment characteristics of the Brickearth units suggested by the geotechnical data set. The British Regional Geology memoir of the Wealden District (1965) describes Brickearth as a structureless loam or silt and can contain scattered, small angular stones and pockets of flint gravel. The Brickearth often comprises distinct beds of sandy silt, silt clay and silt with minor proportions of gravel.

7.20 It is considered that some sediment sorting may have occurred, post deposition, throughout the Brickearth unit possibly attributable to water seepage through the unit causing sorting of sediment fractions.

7.21 Although the presence of chalk fragments appears not to have been recorded in the geotechnical data set the presence of a chalk rich unit (Units 4 and 5) in the Geoarchaeological test suggests that at some site locations down profile seepage of a calcium rich solution may create a localised depositional environment that may be beneficial to the preservation of some types of micro and macrofossils contained within marine sands.

7.22 *Recommendations for further work*

Preliminary stratigraphic correlation between of marine sands present at the site and previously investigated sites at Yeoman Road[6] and Roundstone Lane, Angmering[7] is considered possible from existing information sets.

7.23 The existing geotechnical information sets do not record whether sands possess micro or macrofossil content. The presence of chalk recorded in Brickearth silt that overlies the sands suggests there is a moderate potential for preservation of both macro and micro fossils within the sands.

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[6] Pine, C.A 1999 *Field Notes and summary report on field logs for Yeoman Road Site Durrington Worthing West Sussex*. Evaluation Report submitted as a component of an Archaeological investigation for Wessex Archaeology; PINE, C.A. 1999 *Field Notes and Laboratory based core descriptions of U4/U100 core samples recovered from the Yeoman Road Site Durrington Worthing West Sussex.* Secondary Evaluation Report submitted as a component of an Archaeological investigation for Wessex Archaeology.

[7] Pine, C.A. 2001 *Summary Report on Results of Purposive Geoarchaeological Test Pitting undertaken at Roundstone Lane Angmering West Sussex*. Evaluation Report submitted as a component of an Archaeological investigation for Archaeology South East; Pine, C.A. 2001 In preparation. *Presentation of Results of Purposive Geoarchaeological Borehole Investigation at Roundstone Lane Angmering West Sussex*. Evaluation Report submitted as a component of an Archaeological investigation for Archaeology South East.

7.24 Should marine shells, forams / ostracoda be preserved within marine sands this would greatly enhance the significance of the marine sediments at the site. Biostratgraphic correlation may be possible between this site and other key regional sites. If age determinations based on analysis of the fossil fraction is undertaken then chronostratigraphic correlation may also be achievable.

7.25 It is understood that additional geotechnical survey work may be undertaken at the site. It is recommended that Archaeology South East should be informed of the timing and methodology to be used for this additional survey work and a suitably qualified and experienced geoarchaeologist should attend, at key times, to assess macro and microfossil preservation within marine sediments. Should field assessment indicate a sufficiently high and well preserved fossil content within the sands then provision, in the form of drilling a single purposive Geoarchaeological borehole (Wire line percussive / shell and auger) should be made specifically to recover controlled samples (U4/U100 core samples) from key sedimentary units for analysis.

8.0 DISCUSSION

8.1 The evaluation succeeded in its primary aim in that it established that archaeological deposits exist on the site, albeit at some depth, localised and truncated. However, these archaeological deposits are limited to the extreme western end of the site. The remainder of the site contained no archaeological features other than one truncated ditch. This feature appears to correspond with a field boundary shown on 19th and 20th-century maps, and is likely to be a field boundary ditch of post-medieval date. The discovery of two small medieval sherds from this feature is unlikely to be of any significance as the small size is suggestive of residual material derived from manuring.

8.2 The absence of any Late Bronze Age material is interesting as it indicates that the settlement site recently excavated at Centenary House does not extend westwards into the present site. This is useful in providing a western boundary to the Late Bronze Age settlement.

8.3 The Roman material in Trench 7 is difficult to interpret given the small area examined. The linear features are probably truncated field boundary ditches. All three are aligned along a common axis suggesting successive re-use of a fixed boundary, although perhaps separated by periods of disuse. Of great interest is the fact that the alignment of the ditches coincides with the axis of the footpath that borders the site on the west – this is visible on the historic maps as a field boundary that may, therefore, fossilise an earlier field system of great antiquity (perhaps forming part of the estate associated with the known Iron Age settlement and succeeding early Roman villa at Northbrook College to the south-west). Ditches **5** and **12** could possibly be two parts of the same feature, or they may be separate recuttings along a common line. The large pit feature between ditches **7** and **12** is enigmatic. It is later than the undated Ditch **12**, which to allow sufficient time to silt up before the pit was cut through it, may be late Iron Age in date (this would suggest that it is not, therefore, the same feature as Ditch **5** which produced early Roman pottery).

However, the pit was itself cut by Ditch **7** which produced pottery of a broadly similar date, including a piece of Samian. There appears to be a concentration of activity in this area of the site, which is impossible to understand within the restricted view obtained during the present fieldwork phase. What is clear, however is that the western end of the site falls within a late 1st-century landscape where land was being enclosed, often a sign of pasture (perhaps associated with meadowland bordering the stream valley 200 metres to the west), but within a regime seemingly subject to some periodic fluctuation in usage, allowing ditches to silt up enough for successive recuts to follow slightly different lines. Further deposits of Late Iron Age/Roman date may well survive to the west of the site beneath the existing playing field.

9.0 CONCLUSIONS

9.1 Although hampered to a certain extent by practical problems, including the sheer hardness of the ground, the evaluation indicated that no features or deposits of archaeological significance survive within the greater part of the site. A series of complex Roman features, comprising three ditches and a pit, survive at the extreme western end of the site, but at a depth exceeding one metre. Marine deposits relating to a buried raised beach underlie the site at depths exceeding 4 metres. These deposits may contain palaeoenvironmental material of great significance, but the depth at which they occur means that they are likely to be unaffected by all except the deepest groundworks. At the time of writing, the exact foundation design to be utilised in the development remains undecided.

10.0 ACKNOWLEDGEMENTS

10.1 The use of information supplied by West Sussex County Council is gratefully acknowledged, as is the assistance provided by Malcolm Ball (Osborne Housing).

SMR Summary Sheet

Site Code	HCD 03					
Identification Name and Address	Hildon Close, Durrington, West Sussex					
County, District &/or Borough	Worthing Borough					
Parish	Formerly Durrington					
OS Grid Refs.	TQ 116 043					
Geology	Brickearth					
Archaeology South-East Proj. No.	1728					
Type of Fieldwork	Eval. ✓	Excav.	Watching Brief	Standing Structure	Survey	Other
Type of Site	Green Field ✓	Shallow Urban	Deep Urban	Other		
Dates of Fieldwork	Eval. 11-14/8/03	Excav.	WB.	Other		
Sponsor/Client	Osborne Housing					
Project Manager(s)	Neville Hall/Luke Barber					
Project Supervisor	Richard James					
Period Summary	Palaeo.	Meso.	Neo.	BA	IA	RB ✓
	AS	MED	PM ✓	Other		

100 Word Summary.

Seven trenches were mechanically excavated across the site in advance of a proposed housing development. Six trenches were 25 metres in length, however the seventh was only 20 metres in extent due to lack of space. An eighth trench was abandoned as it ran right across the site access. The site was considered to have archaeological potential as it lies immediately west of Centenary House, where recent excavations also undertaken by Archaeology South East (ASE) have uncovered traces of a Late Bronze Age settlement, including two hut circles.

The westernmost trench (Trench 7) produced evidence of early Roman activity. Two intercutting ditches and a pit were identified, together with a ditch terminal, all aligned just east of north-south and at a depth of approximately 1 metre below existing ground levels. Recovered artefacts included one sherd of South Gaulish Samian.

One further trench (Trench 3) contained an east-west aligned ditch, probably of post-medieval date. No other features of archaeological significance were observed, and no evidence was found to suggest that the Bronze Age settlement to the east extends into the current site.

A geoarchaeological test-pit was excavated to establish the presence of palaeogeographical deposits, particularly marine deposits. Such deposits were located at c.4m below ground level.

APPENDIX 1

Geotechnical Survey Results (WSP Environmental)

- **Test Pit Logs 1-7**
- **WS Borehole Logs 1-3**