T H A M E S V A L L E Y

ARCHAEOLOGICAL

SERVICES

SOUTH

New Worthing School, Broadwater Road, Worthing, West Sussex

Archaeological Evaluation

by Felicity Howell

Site Code: WSW14/176

(TQ 1458 0407)

New Worthing School, Broadwater Road, Worthing, West Sussex

An Archaeological Evaluation

for Willmott Dixon Construction Limited

by Felicity Howell

Thames Valley Archaeological Services Ltd

Site Code WSW14/176

September 2014

Summary

Site name: New Worthing School, Broadwater Road, Worthing, West Sussex

Grid reference: TQ 1458 0407

Site activity: Evaluation

Planning reference: WSCC/032/14/WB

Date and duration of project: 10th–12th September 2014

Project manager: Sean Wallis

Site supervisor: Felicity Howell

Site code: WSW 14/176

Area of site: c. 0.9 ha

Summary of results: The evaluation at New Worthing School successfully investigated those parts of the site which will be most affected by redevelopment. One archaeological feature, a pit, was recorded during the course of the evaluation. The finds recovered from this pit date to the Early Neolithic, making this an important discovery because features of this date are rare, particularly on the Sussex coastal plain.

Location and reference of archive: The archive is presently held at Thames Valley Archaeological Services, Reading and will be deposited with Worthing Museum in due course.

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Report edited/checked by: Steve Ford ✓ 26.09.14

Steve Preston ✓ 29.09.14

New Worthing School, Broadwater Road, Worthing, West Sussex An Archaeological Evaluation

by Felicity Howell

Report 14/176

Introduction

This report documents the results of an archaeological field evaluation carried out at New Worthing School, Broadwater Road, Worthing, West Sussex (TQ 1458 0407) (Fig. 1). The work was commissioned by Mr Owen McGillivray of Willmott Dixon Construction Limited, Spirell 2, Icknield Way, Letchworth Garden City, Hertfordshire, SG6 4GY.

Planning permission (WSCC/032/14/WB) has been gained from Arun and Worthing Councils to demolish existing buildings on the site and construct a new school building and sports hall, along with associated soft and hard landscaping. The consent is to be subject to a condition relating to archaeology, equiring the implementation of a programme of archaeological work in advance of groundworks.

This is in accordance with the Department for Communities and Local Government's *National Planning Policy Framework* (NPPF 2012), and the Councils' policies on archaeology. The field investigation was carried out to a specification approved by Mr Mark Taylor, Senior Archaeologist with West Sussex County Council, who acts as archaeological adviser to Arun and Worthing Councils. The fieldwork was undertaken by Felicity Thompson, Odile Rouard-Dawkes and Sean Wallis between the 10th and 12th September 2014, and the site code is WSW14/176. The archive is presently held at Thames Valley Archaeological Services, Reading and will be deposited with Worthing Museum in due course.

Location, topography and geology

The site lies to the north of the historic core of Worthing, West Sussex, immediately to the west of Broadwater Road and to the north of Queen Street, TQ 1458 0407 (Fig. 2). The site was previously occupied by Northbrook College of Design and Technology and as a result, numerous abandoned cabins remain on site. These are to be demolished at a later date once construction of the new school building and sports hall begins. The site is relatively flat and lies at a height of approximately 7m above Ordnance Datum. According to the British Geological Survey the underlying geology consists of Head Deposits (sandy, silty clay, locally gravelly; chalky and flinty in dry chalk valleys) (BGS 1992). During the evaluation a silty clay gravel natural geology was recorded in all the trenches, with some trenches revealing the underlying chalk.

Archaeological background

The site is located on the West Sussex coastal plain, which is considered rich in archaeological deposits of all periods (Rudling 2003). The archaeological potential of the site has been considered in a recent desk-based assessment (Cole 2014). In summary, there have been numerous stray finds of artefacts in the surrounding area, dating from the Palaeolithic, Neolithic, Bronze Age, Iron Age and Roman periods. Although no *in-situ* archaeological remains have been found close to the site, this may merely reflect the lack of archaeological fieldwork in the area.

Objectives and methodology

The purpose of the evaluation was to determine the presence/absence, extent, condition, character, quality and date of any archaeological deposits within the area of proposed development. The investigation targeted those parts of the site which will be most affected by the development, namely the new school building and sports hall.

Specific aims of the project were:

to determine if archaeologically relevant have survived on this site;

to determine if archaeological deposits of any period are present;

to determine if archaeological deposits dating from the prehistoric period are present;

to determine if archaeological deposits dating from the Roman period are present;

to determine whether any evidence of Saxon occupation is present; and

to determine if any archaeological deposits dating from the medieval and early post-medieval periods are present.

Originally 4 trenches were intended to be dug, each measuring 30m in length and 1.80–2m in width (depending on the size of the machine), targeting those parts of the site that would be most affected by the proposed development. Due to the number of services and existing prefabricated buildings, some of these trenches had to be subdivided, resulting in a total of 7. These were dug using a 360° type machine fitted with a toothless ditching bucket under constant archaeological supervision. All spoilheaps were monitored for finds. All potential archaeological deposits were to be hand-cleaned, and sufficient of the archaeological features and deposits exposed were to be excavated or sampled by hand to satisfy the aims of the project.

Results

The seven trenches were dug close to their original planned positions (Fig. 3). All the trenches were 1.80m wide, except that Trench 5 was extended to double width, and measured between 7.00m and 30.00m in length, and between 0.60m and 0.68m in depth. A complete list of the trenches giving lengths, breadths, depths and a description of sections and geology is given in Appendix 1.

Three test pits ranging in depth from 1m-1.40m, were excavated within the trenches as part of a geoarchaeological assessment, at the request of the County Archaeologist, Mark Taylor. The gravels encountered during the evaluation may be associated with an ice age watercourse running broadly north-south through Worthing and recorded 120m to the south-east of the site during geoarchaeological investigations at North Street (Porteus and Bates 2009). The fluvial river gravels that form part of this Pleistocene channel sequence have the potential to contain archaeology relating to the early Devensian period (Pope *et al.* 2009). However, no archaeological finds were recovered from the three test pits dug during the evaluation.

Trench 1 (Pl. 1)

This trench was aligned approximately WSW–ENE, and was 30m long, and up to 0.60m deep. Natural geology was observed beneath 0.20m of topsoil and 0.30m of subsoil. No archaeological finds or features were observed, but four modern service trenches were noted throughout. Occasional patches of underlying natural chalk geology were observed, particularly towards the western end of the trench.

Trench 2

This trench was aligned approximately NNW-SSE, and was 23m long, and up to 0.60m deep. Natural geology was observed beneath 0.20m of topsoil and 0.30m of subsoil. No archaeological finds or features were observed, but one modern service trench was noted at the southern end of the trench.

Trench 3

This trench was aligned approximately NNW-SSE, and was 7m long, and up to 1.40m deep. Natural geology was observed beneath 0.20m of topsoil and 0.30m of subsoil. No archaeological finds or features were observed. However, a test pit (TP1) was excavated at the southern end of this trench as part of a geoarchaeological assessment to understand the nature and extent of the gravel natural geology encountered on site. The stratigraphy revealed below the base of trench consisted of 0.60m of gravel natural geology, above 0.30m of silty gravel natural geology, which lay directly upon chalk natural geology (Fig. 5).

Trench 4

This trench was aligned approximately NNW-SSE, and was 18.00m long, and up to 0.60m deep. Natural geology was observed beneath 0.20m of topsoil and 0.30m of subsoil. No archaeological finds or features were observed, but one modern service trench was noted at the northern end of the trench.

Trench 5 (Pls 3 and 4)

This trench was aligned approximately NNW–SSE, and was 12.00m long, and up to 0.60m deep. Natural geology was observed beneath 0.20m of topsoil and 0.30m of subsoil. Pit 1 was observed roughly centre of the trench, between 4.80m and 6.00m extending from the western bulk. A half section of this pit established that it was up to 1.03m wide and 0.33m deep, with a single fill of dark grey brown silty clay (52). The contingency for additional trenching, included in the project specification, allowed for an extension of Trench 5 in order to clarify the extent of this feature (Figs 4 and 5). Full excavation recovered a total of 229 Early Neolithic pottery sherds,188 pieces of struck flint, 13 fragments of burnt flint and a quernstone.

Trench 6 (Pl. 2)

This trench was aligned approximately WSW–ENE, and was 17.00m long, and up to 0.60m deep. Natural geology was observed beneath 0.20m of topsoil and 0.30m of subsoil. No archaeological finds or features were observed, but a modern service was noted at the eastern end of the trench. A test pit (TP2) was excavated in the centre of this trench as part of a geoarchaeological assessment to understand the nature and extent of the gravel natural geology encountered on site. The stratigraphy revealed consisted of 0.40m of gravel natural geology, above 0.10m of silty gravel natural geology which lay directly upon chalk natural geology.

Trench 7

This trench was aligned approximately WSW–ENE, and was 13.20m long, and up to 0.68m deep. Natural geology was observed beneath 0.20m of topsoil and 0.40m of subsoil. No archaeological finds or features were observed, although a modern service was noted at the western end of the trench. A test pit (TP3) was excavated at the eastern end of this trench as part of a geoarchaeological assessment to understand the nature and extent of the gravel natural geology encountered on site. The stratigraphy revealed consisted of 0.60m of gravel natural geology, above 0.20m of silty gravel natural geology, which lay directly upon chalk natural geology.

Finds

Pottery by Frances Raymond

The assemblage from Pit 1 is composed of 229 sherds (2949g.) in fresh condition derived from at least nine Early Neolithic vessels, seven of which are represented by rims. There are imperforate lugs from three vessels, while a sherd from a fourth carries a scar from a detached lug. The pottery is undecorated with the exception of fragments from one or possibly two thick-walled bowls embellished with rusticated fingertip impressions. This is an important assemblage mainly because pit groups of this date are rare in Sussex, particularly on the coastal plain, but also because the sherds provide evidence of a range of associated vessel forms. Work on the pottery at this stage has been restricted to a rapid appraisal to give an indication of its date, character, significance and potential. The rims provide clear evidence of upper vessel profiles, while the crispness of fractures suggests that it might be possible to gain further information on overall form from refitting.

The group includes fragments from at least three vessel types including two of the Sussex open bowl forms (after Drewett 1980). One large vessel has an externally expanded rim and a high neck (26–28cm diameter; Sussex Form 3, Drewett 1980, fig. 6.3), while rims from two others have a simple open neck-less profile (Sussex Form 2, Drewett 1980, fig. 6.2). There is at least one example of a closed necked bowl in the assemblage (Sussex Form 4, Drewett 1980, fig. 6.4). All of the vessels appear to be round bodied with no indication of any with carinated profiles.

Two of the imperforate lugs and the scar from the removed example are oval, while the third lug is roughly circular. Imperforate lugs are represented in several Sussex Early Neolithic assemblages, including both oval and circular varieties from The Trundle (Curwen 1929, 51; Curwen 1931, 134) and oval examples from Whitehawk (Piggott 1934, 116; Piggott 1936, 80) and North Marden (Raymond 1990, fig 4.4: 7, 11 and 12). The top of one of the expanded rims carries a double row of fingertip impressions similar in character to the lightly impressed examples from Whitehawk (Piggott 1936, fig. 13) and North Marden (Raymond 1990, fig. 4.4: 5); and several thick-walled body sherds are embellished with apparently random fingertip impressions. Rustication of this type, which is relatively unusual on Early Neolithic vessels in Sussex, was also recorded on one of the vessels from Bishopstone (Bell 1977, fig. 7.4) and occurs on a wall fragment from Ditch I, Cutting II at Whitehawk (not published; seen by the author).

Virtually all of the sherds are in various flint tempered fabrics, with ill-sorted coarse wares comparable to Fabrics 1 and 4 (Drewett 1980) being in the majority. The one exception is the circular lug made from a coarse grog tempered ware similar to Fabric 5 (Drewett 1980), which is represented in low quantities on the South

Downs at Offham (Drewett 1980) and Bury Hill (Bedwin *et al.* 1981, 81). As at other sites like North Marden (Raymond 1990), the pottery is relatively hard and well-fired and the majority of vessels have partly smoothed surfaces. The inclusions on a small but significant proportion of the sherds have been mainly covered with a layer of clay.

As a whole the group is typical of a developed Early Neolithic assemblage of the type represented on sites dated between the late 38th or early 37th century cal. BC and the mid-4th millennium (Healy *et al.* 2011).

Flint by Steve Ford

A collection of 188 pieces of struck flint were recovered during the fieldwork, all from Pit 1 (52) as detailed in Appendix 3. The material is of Earlier Neolithic date being associated with a volume of pottery of that date. However, the physical appearance is such that a Bronze Age date was initially suspected.

The collection is dominated by flakes and is largely made from flint direct from a chalk source. One or two pieces may be from other sources with one piece from the Reading Beds/chalk interface, showing a distinctive iron stained band below the cortex. The flakes are fresh, generally large and cortical and have the appearance of being primary hard-hammer knapping. Yet the assemblage does not include any other knapping debris such as fragments of cores which have shattered or large numbers of spalls and chips (though the majority of the soil samples from the pit have not been processed and such evidence may reside there). There is also an absence of cores. One of the implements recovered is an elaborate hammerstone. The assemblage, therefore seems to have been deliberately collected from a knapping episode but without the full range of knapping debris present which might be expected if the whole event had been caught on a sheet. Four worked pieces had been burnt.

As a whole, the collection is dominated by broad flakes with some narrow flakes (assigned by eye). The simple count in Appendix 3 suggests that up to 10% of the collection are narrow flakes, but this includes several pieces which are likely to be fortuitous knapping by-products rather than deliberate design. The few certain narrow flakes appear to have been made on different flint suggesting that they represent a different episode of knapping from the bulk of the material in the pit. The composition of assemblages from Earlier Neolithic procurement sites, as at Offham causewayed enclosure (Drewett 1978), are not usually chronologically distinctive (Ford 1987) and this may explain the nature of the collection here.

The assemblage includes a single scraper but the most distinctive implement is a hammerstone. The hammerstone is large (820g) and suitable for primary knapping. It has a discoidal form and has been extensively flaked to produce this shape which seems unlikely to be simple reuse of an old core. Some 40% of the

circumference is heavily abraded. The flake scars and some natural fractures are such that the hammerstone fits comfortably and securely in either the right or left hand.

The remaining implements are a series of 21 utilized or slightly retouched flakes. All of these flakes have what appears to be utilization damage or possibly very small retouch (scars <1mm across). None of the pieces were serrated nor possessed any gloss.

One small flake was recovered from the environmental sample which was processed.

Burnt Flint by Felicity Howell

Thirteen fragments of burnt flint, weighing 681g, were recovered from one context during the evaluation (Appendix 4). All the fragments came from Pit 1 (52). Four pieces of worked flint had experienced burning, as noted above. Two further fragments, weighing 19g, were recovered from the environmental sample.

Fired Clay by Sean Wallis

One small un-diagnostic fragment of fired clay, weighing 1g, was recovered from the environmental sample.

Quenstone by Steve Ford

Two large non-joining fragments (900g) of ferruginous sand stone were recovered from pit 1. Both have been worn smooth on one surface to produce a concave shape and are likely to have been used as simple saddle querns.

Environmental Samples by Sean Wallis

The fill of pit 1 (52) in trench 5 was fully sampled for future analysis. A small percentage (c. 10 litres) of this deposit was then dry and wet sieved to see whether it contained any archaeological finds and environmental evidence. The finds from this small sample consisted of one struck flint, a small fragment of fired clay and two pieces of burnt flint. The results from the wet sieving were rather disappointing, although two minute pieces of charcoal were recovered. However, larger fragments of charcoal were observed during the excavation of the pit, and it is therefore possible that the remaining samples may contain material suitable for radiocarbon dating.

Conclusion

The evaluation successfully investigated those parts of the site which will be most affected by the proposed development. Despite the absence of any Palaeolithic flintwork, the geoarchaeological assessment provided a good overview of the extent and depth of the fluvial gravels across this site. Such information will aid a greater understanding of the prehistoric landscape and environment in this locale and within a wider context.

The discovery of an early Neolithic pit was surprising, given the small amount of prehistoric activity recorded in the study area. All Neolithic material recorded from the immediate area around the site relates to isolated finds, rather than *in-situ* archaeological remains, making this feature and its rich assemblages rather significant. Early Neolithic occupation sites may be represented solely by isolated pits, or a single midden deposit (as, for example at Westhampnett; Allen and Fitzpatrick 2008) though there is growing evidence that favoured locations would be revisited over long periods (Bradley 2014).

References

Allen, M J and Fitzpatrick, A P, 2008, 'Neolithic and Bronze Age Activity (Areas 2, 3, and 4)' in A P Fitzpatrick, A B Powell and M J Allen, Archaeological Investigations on the Route of the A27 Westhampnett Bypass, West Sussex, 1992 Vol 1: Late Upper Palaeolithic—Anglo Saxon, Wessex Archaeol Rep 21, Salisbury Bedwin, O, 1981, 'Excavations at the Neolithic Enclosure on Bury Hill, Houghton, West Sussex, 1979', Proc Prehist Soc 47, 69–86

Bell, M, 1977, 'Excavations at Bishopstone', Sussex Archaeol Collect 115, 1-299

BGS, 2006, British Geological Survey, 1:50000 Sheet 318/333, Solid and Drift Edition, Keyworth

Bradley, R, 2014, 'The Neolithic and Early Bronze Age Resource Assessment', in G Hey and J Hind, Solent-Thames Research Framework for the Historic Environment: Resource Assessments and Research Agendas, Oxford Wessex Monogr 6, Oxford, 87–109

Cole, R, 2014, 'New Worthing Secondary School, Broadwater Road, Worthing, West Sussex: an archaeological desk based assessment', Archaeology South-East unpubl rep 2014013, Portslade

Curwen, E.C., 1929, 'Excavations in the Trundle, Goodwood, 1928', Sussex Archaeol Collect 70, 33-85

Curwen, E.C., 1930, 'Excavations in The Trundle, Second Season, 1930', Sussex Archaeol Collect 72, 100-49

Drewett, P L, 1977, 'The excavation of a Neolithic causewayed enclosure on Offham Hill, East Sussex, 1976', *Proc Prehist Soc* **43**, 201–41

Drewett, P, 1980, 'Neolithic pottery in Sussex', Sussex Archaeol Collect 118, 23-30

Ford, S, 1987, 'Chronological and functional aspects of flint assemblages', in A G Brown and M R Edmonds (eds), *Lithic Analysis and Later British Prehistory*, BAR **162**, Oxford, 67–85

Healy, F, Bayliss, A, and Whittle, A, 2011, 'Sussex', in A Whittle, F Healy and A Bayliss, *Gathering Time: Dating the Early Neolithic Enclosures of Southern Britain and Ireland*, 207–62

NPPF, 2012, National Planning Policy Framework, Dept Communities and Local Government, London

Piggott, S, 1934, 'Report on the pottery', in E C Curwen, 'Excavations in Whitehawk Neolithic Camp, Brighton, 1932-3', *Antiq J* 14, 112–21

Piggott, S, 1936, 'The pottery', in E C Curwen, 'Excavations in Whitehawk Camp, Brighton, Third Season, 1935', Sussex Archaeological Collections, 77, 75–80

Pope, M, Peyre, L, Whittaker, J and Scaife, R, 2009, 'A Geoarchaeological Investigation at Willowbrook Road, East Worthing', Archaeology South-East unpubl rep 3961, Portslade

Porteus, S and Bates, M, 2009, 'Geoarchaeological and Archaeological Evaluation and Watching Brief at 12 North Street, Worthing, West Sussex', Archaeology South-East unpubl rep 2009138, Portslade

Raymond, F, 1990, 'North Marden 1987 – the pottery' in A Down and M Welch (eds), *Chichester Excavations* 7, 225–31

Rudling, D (ed), 2003, The Archaeology of Sussex to AD2000, Univ Sussex, Brighton

WSCC 2007, Standards for archaeological fieldwork, recording and post-excavation work (development control), West Sussex County Council, Chichester.

APPENDIX 1: Trench details

Trench	Length (m)	Breadth (m)	Depth (m)	Comment
1	30.00	1.80	0.60	0-0.20m topsoil (50); 0.20-0.50m subsoil (51); 0.50m+ natural geology
				(gravel). Four modern service trenches uncovered throughout. [Pl. 1]
2	23.00	1.80	0.60	0-0.20m topsoil (50); 0.20-0.50m subsoil (51); 0.50m+ natural geology
				(gravel). Modern service trench at southern end.
3	7.00	1.80	0.50	0-0.20m topsoil (50); 0.20-0.50m subsoil (51); 0.50m+ natural geology
			Tets pit 1.40	(gravel). Test pit at southern end.
4	18.00	1.80	0.60	0-0.20m topsoil (50); 0.20-0.50m subsoil (51); 0.50m+ natural geology
				(gravel). Modern service trench at northern end.
5	12.00	1.80	0.60	0-0.20m topsoil (50); 0.20-0.45m subsoil (51); 0.45+ natural geology (gravel).
				Pit 1. [Pls 3 and 4]
6	17.00	1.80	0.60	0-0.20m topsoil (50); 0.20-0.50m subsoil (51); 0.50m+ natural geology
			Test pit 1.10	(gravel). Modern service at east end. Test pit dug in centre of trench. [Pl. 2]
7	13.20	1.80	0.68	0-0.20m topsoil (50); 0.20-0.60m subsoil (51); 0.60m+ natural geology
				(gravel). Modern service at west end. Test pit at east end.

APPENDIX 2: Feature details

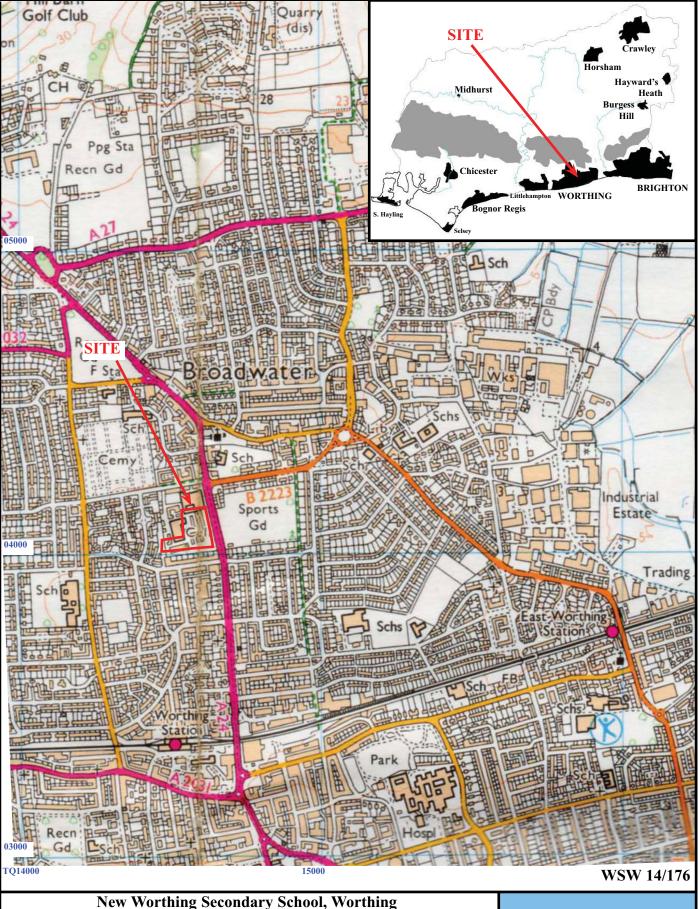
Trench	Cut	Fill (s)	Туре	Date	Dating evidence
5	1	52	Pit	Early Neolithic	Potterv

APPENDIX 3: Summary of flint from Pit 1 (52)

Flakes	134
Flakes	134
Narrow flakes	16
Spalls	1
Hammerstone	1
Cores	14
Scrapers	1
Retouched flakes	21

APPENDIX 4: Catalogue of burnt flint

Trench	Cut	Fill (s)	No. of frags	Wt (g)
5	1	52	13	681

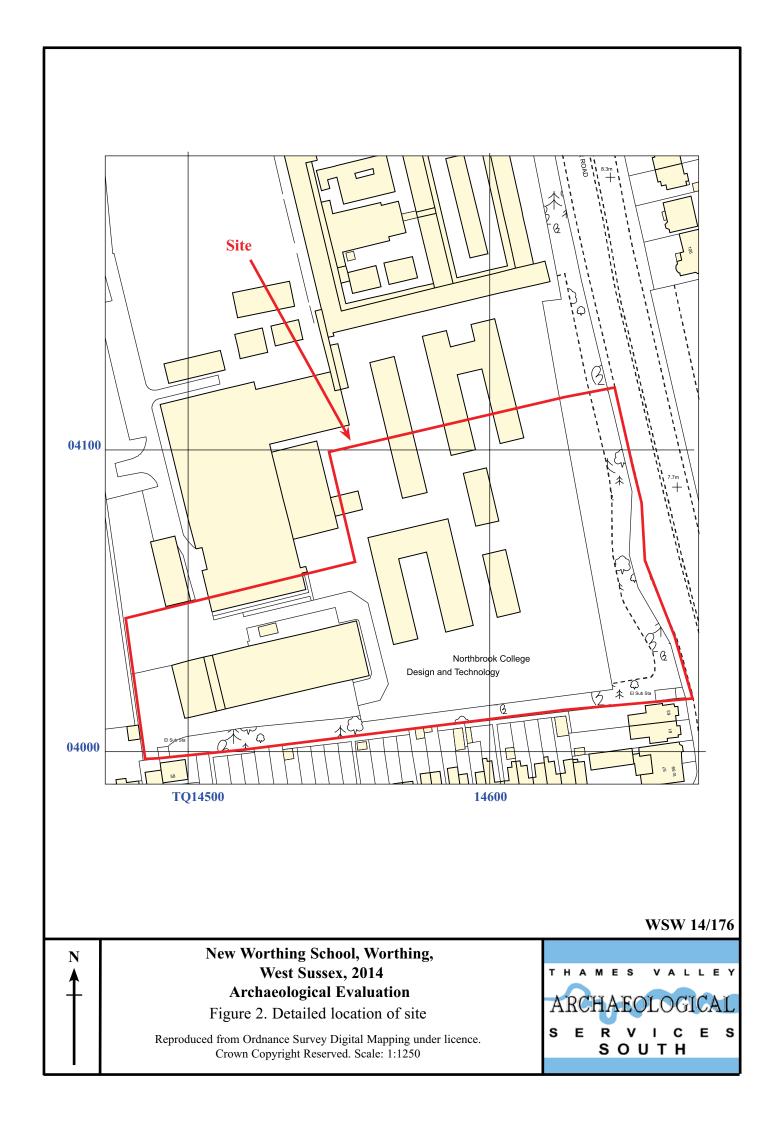


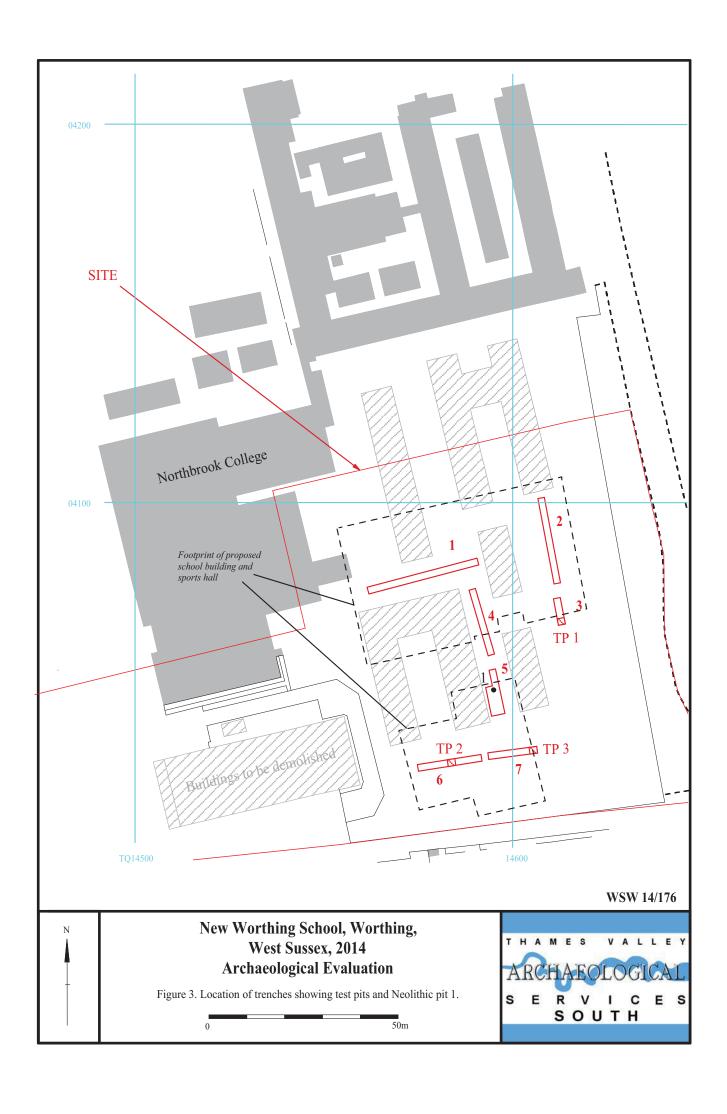
New Worthing Secondary School, Worthing West Sussex, 2014 Archaeological Evaluation

Figure 1. Location of site within Worthing and West Sussex.

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Trench 5 Modern service trench Extension of Trench 5 WSW 14/176 New Worthing School, Worthing VALLEY West Sussex, 2014

Archaeological Evaluation

Figure 4. Plan of trench.

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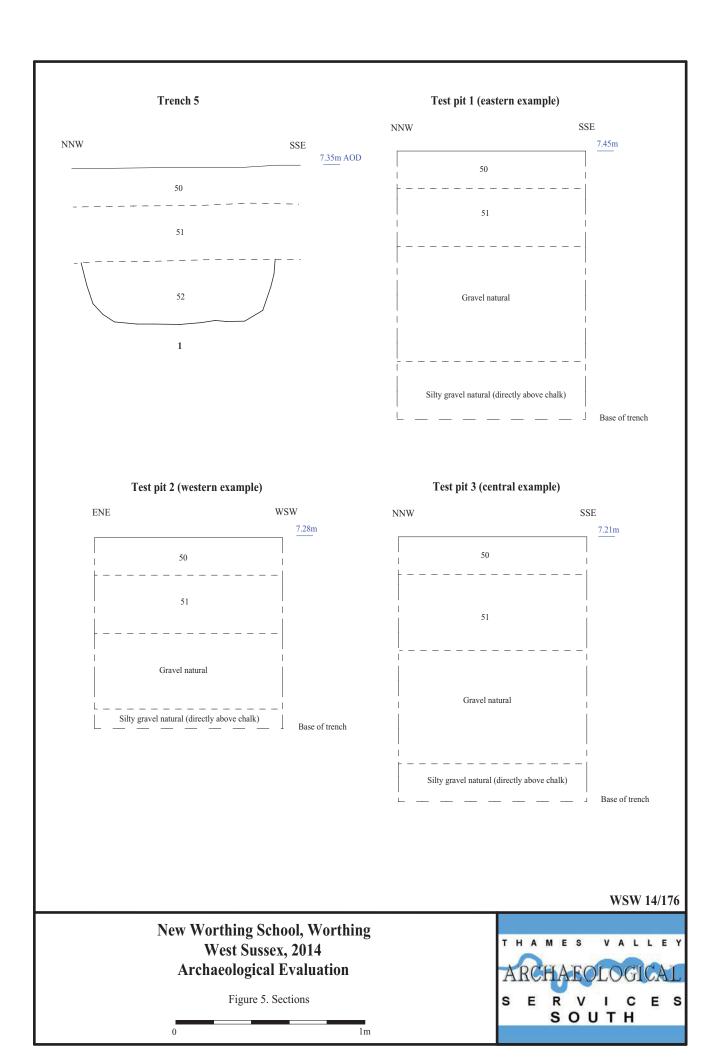




Plate 1: Trench 1 looking east. Scales: 2m, 1m and 0.5m



Plate 2: Trench 6 looking north. Scales: 2m, 1m and 0.5m

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New Worthing School, Worthing, West Sussex, 2014 Archaeological Evaluation

Plates 1-2





Plate 3: Trench 5 looking north. Scales: 2m, 1m and 0.5m



Plate 4: Trench 5. pit 1 looking west. Scales: 0.3m and 0.5m

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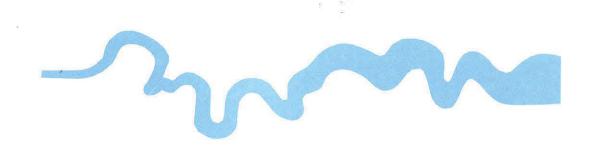
New Worthing School, Worthing, West Sussex, 2014 Archaeological Evaluation Plates 3-4



TIME CHART

Calendar Years

Modern	AD 1901
Victorian	AD 1837
Post Medieval	AD 1500
Medieval	AD 1066
Saxon	AD 410
Roman Iron Age	BC/AD
Bronze Age: Late	1300 BC
Bronze Age: Middle	1700 BC
Bronze Age: Early	2100 BC
Neolithic: Late	3300 BC
Neolithic: Early	4300 BC
Mesolithic: Late	6000 BC
Mesolithic: Early	10000 BC
Palaeolithic: Upper	30000 BC
Palaeolithic: Middle	70000 BC
Palaeolithic: Lower	2,000,000 BC
*	♥



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