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Archaeological Services Ltd**



**Report on a
Geoarchaeological
Investigation at
West Rise Infant & Junior
School,
Eastbourne, East Sussex**

EB/3198/CC

CBAS0545

By

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November 2014

Summary

An evaluation, comprising a geoarchaeological auger survey was carried out in October 2014. Two holes were augered to depths of 2.66m and 2.5m respectively. There was an absence of the typical Willingdon sequence and an absence of any peat here, which indicates that the embayment in which the site is located has a local sediment variation. This data is useful in the compilation of a geoarchaeological record for modelling the deposits through the Shinewater / Willingdon area.

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1.0 Introduction

1.1 Chris Butler Archaeological Services Ltd was commissioned by East Sussex County Council (The Client) to carry out a geoarchaeological auger survey as the first stage of archaeological fieldwork in connection with a planning application for extensions and internal alterations to existing School buildings to increase from 2FE to 3FE, together with alterations to external areas including a new staff car park and the removal of existing temporary classrooms at West Rise Infant and Junior School, Eastbourne, East Sussex (EB/3198/CC).

1.2 As a result of the site's location, and the archaeological potential of the area, the local planning authority have requested that they require an appropriate programme of archaeological work to be undertaken as a condition of approval.

16. No development shall take place until the developer has secured the implementation of a programme of archaeological work in accordance with a Written Scheme of Archaeological Investigation, which has been submitted to and approved in writing by the Director of Communities, Economy and Transport.

Reason: To ensure that the archaeological and historical interest of the site is safeguarded and recorded to comply with the National Planning Policy Framework.

17. The development hereby permitted shall not be brought into use until the archaeological site investigation and post investigation assessment (including provision for analysis, publication and dissemination of results and archive deposition) has been completed in accordance with the programme set out in the Written Scheme of Investigation approved under Condition 16 and that provision for analysis, publication and dissemination of results and archive deposition has been secured.

Reason: To ensure that the archaeological and historical interest of the site is safeguarded and recorded to comply with the National Planning Policy Framework.

1.3 The site is centred on TQ624026, on the south-east side of Chaffinch Road, which is situated north of West Langney Lake, in west Langney (Fig. 1). The site is located within a former valley/embayment now filled with alluvium over Weald Clay bedrock on the northern margin of the Willingdon Levels. The school site occupies the eastern side of this embayment below the 5m AOD contour line.

- 1.4** The site is located just north and east of the nearest Archaeological Notification Area (ANA), which covers the Willingdon Levels (Fig. 2). Archaeological work in and around the Willingdon Levels has revealed a rich archaeological heritage stretching back to the Neolithic Period with evidence for occupation in every subsequent period through to the present day.
- 1.5** The geology of the site, according to Geology of Britain¹, consists of Weald Clay formation – Mudstone, with superficial deposits of Alluvium, silts and peats. Geotechnical investigations report that the school site is underlain by top soil, made ground and alluvial deposits which mask and cover the Weald Clay bedrock.
- 1.6** The appropriate programme of archaeological work comprised an initial geoarchaeological auger survey which has provided an archaeological record of the sediments beneath the school which will be impacted by the proposed development work, and has informed our understanding of the archaeological interest of this section of the Willingdon levels.
- 1.7** A written scheme of investigation² covering this phase of work, was prepared in accordance with a brief issued by the Archaeology team at ESCC³. The objectives were to (a) record and interpret the sedimentological and palaeo-environmental potential of the sediment sequences; (b) to place the sequences with the wider context of the Willingdon Sequence, and (c) it was hoped that coring would record and recover suitable peat sequences enabling the dating of this horizons, and the provision of some chronological markers through the deep alluvial sequences.

¹ <http://mapapps.bgs.ac.uk/geologyofbritain/home.html> Accessed 15/10/2014

² Klemenic, S. & Butler, C. 2014 *Written Scheme of Investigation for a Geoarchaeological Investigation at West Rise Infant and Junior School, Eastbourne, East Sussex*

³ Brief for geoarchaeological auger survey at West Rise Infant and Junior school, Eastbourne, East Sussex.

2.0 Archaeological & Historical background (HER Ref 298/14) Fig. 3

- 2.1 A Lower Palaeolithic handaxe was found to the southwest of the site at Lottbridge Drove (MES507). There is no evidence for Mesolithic activity in the vicinity of the site. However, there are numerous find spots of Mesolithic flintwork from around the edges of the Levels, just above where the peat horizon stopped encroaching at the 5m contour line, which could suggest that Mesolithic activity may be found in the vicinity of the site.
- 2.2 Neolithic finds are absent from Langney, although scatters of Neolithic flintwork and individual finds of Neolithic axes suggest that activity, probably associated with hunting and fishing, continued around the edges of the marshy Levels during this period. The evidence suggests that the Levels continued to be used for hunting and fishing, although the peat had begun to accumulate during this period⁴, perhaps allowing greater access into the area.
- 2.3 In 1995, a Late Bronze Age timber platform and associated trackway (MES7375) were discovered on Shinewater Marsh to the northwest of the site. Copper-alloy artefacts, pottery and worked and burnt flint were recovered during the limited excavations⁵. This and other trackways / causeways (MES15463 and MES16119) hint at extensive Late Bronze Age activity on the Willingdon Levels. This activity does not appear however to have extended onto an adjacent site at West Langney Lake as no archaeological features or artefacts were recorded here during an evaluation in 1996 and two later watching briefs in 2000 and 2002 (EES13948, EES14058 and EES13947).
- 2.4 During the Early Iron Age, it seems likely that the Levels became untenable due to flooding from the sea⁶. This may have led to a decrease in activity in the area or more probably a retreat to the higher ground again. No Iron Age finds or features have been recovered close to the site.
- 2.5 The coastline in the Roman period was very much different from today (Fig. 5), with the site having been located close to the water's edge. The Roman Saxon Shore Fort at Pevensey (MES4712) was built in the late 3rd century AD, on a peninsula that jutted out into the sea and provided shelter for a port (ME16194S) on its protected north side. A Roman settlement developed at Westham, outside the large fort. Another coastal settlement may have been sited in the area of Roselands, Eastbourne as a possible water hole, containing Roman pottery, was discovered here during roadworks in 1929 (MES516). There is no evidence of a Roman presence in the area of the site.

⁴ Woodcock, A. 2003. 'The Archaeological implications of Coastal Change in Sussex', in Rudling, D. (Ed) *The Archaeology of Sussex to AD2000*. Heritage Marketing and Publications Ltd.

⁵ Greatorex, C. 2003. 'Living on the Margins? The Late Bronze Age Landscape of the Willingdon Levels', in Rudling, D. (Ed) *The Archaeology of Sussex to AD2000*. Kings Lynn: Heritage Marketing and Publications Ltd.

⁶ *Ibid.*

- 2.6** The Domesday Book records Langney as having comprised two land holdings prior to the Conquest⁷. The absence of Saxon finds and features suggests that few people lived in the area of the site during the Saxon period, as it was still marginal land at this time. Therefore, the site has a low likelihood of containing evidence for Saxon activity.
- 2.7** After 1066, William de Keynes and Ranulf held off the Count of Mortain the two land holdings of Langney, which were each one hide in size⁸. This manor had seen its value decline since the Conquest from 16 8d to 10s, and was occupied by a total of just four smallholders at the time of the survey.
- 2.8** Sometime after the completion of the Domesday Book in 1086, the Count granted fishing rights at Langney to the Priory of Wilmington⁹. Prior to 1106, when the Count forfeited his lordship of Pevensey, William gave his hide to the Cluniac monks of St Pancras Priory in Lewes, whilst Herbert gave them two hides in Langney with grazing on the seashore¹⁰. Langney had a chapel (MES514) by 1121, when the Bishop of Chichester confirmed it and other chapels to Lewes Priory. The estate had a further hide and a half by the time of the Charter of Confirmation in 1135.
- 2.9** Little is known about the monastic grange (or farming estate) at Langney. The historic fieldnames of Great Cliff, Little Cliff and Cold Harbour reflect the coastal location of the grange, with the harbour having been sited where Langney Sewer bends in towards Priory Road. As the grange was located within the rich pastoral lands of the Pevensey Marshes, its income may have relied heavily on rearing sheep for principally the wool trade. A tidemill (MES7019) belonging to the grange existed somewhere nearby, behind marshland, in the first half of the 12th century¹¹, revealing that some of the land worked by the monks was under cultivation. Sea fishing may have been a secondary means of sustaining the grange, with small fishing boats having perhaps anchored at the harbour. The large pond that survives behind Langney Priory may have originated as a medieval fishpond, which the monks would have kept well stocked.
- 2.10** Much of the Levels were reclaimed by the 13th century¹², and the mill at Langney may have ceased to work during the 13th-14th centuries as a result. There are medieval references to saltpans in the Pevensey Levels¹³, and it may have been during the lengthy process of land reclamation that the grange was possibly involved in the manufacture of salt. The 1st Edition OS map shows clusters of mounds sited along the A259 from Langney southwest to Wartling Road at Roselands, for a distance of c.1.8km. These mounds may represent extensive medieval saltworkings that were established along the edge of the former coastline; the mounds comprise the raked out remains of fires that heated saltpans in which saltwater was evaporated.

⁷ Morris, J. (Ed.) 1976. *Domesday Book: Sussex*. Chichester: Phillimore & Co. Ltd.

⁸ *Ibid.*

⁹ <http://www.british-history.ac.uk>

¹⁰ Toy, S. 1953. 'Langney Grange, Westham, *Sussex Archaeological Collections* **91**, 125-133.

¹¹ *Ibid.*

¹² Salzmann, L.F. 1910. 'The Inning of Pevensey Levels', *Sussex Archaeological Collections* **53**, 33-60.

¹³ *Ibid.*

- 2.11** A letter by Henry VIII¹⁴, dated 12th July 1509, commissioned the prior of St Pancras monastery, amongst others, to construct sewers through various areas including ‘through the marsh of Wellyngdon and Moryngesmyll to Langneygotte, and thence to sea’. Whether a sluice gate or an actual upstanding gate providing access out of the marsh, Langney Gate is sited at Langney Bridge, towards the base of Langney Rise. Today, Willingdon and West Langney Sewer and Langney Sewer meet a short distance to the west of Langney Gate, to flow past it as Langney Sewer.
- 2.12** Lewes Priory was dissolved in 1537, and from this time onwards Langney Priory (MES514) was the farmhouse of Langney Farm¹⁵. In the 16th century, a timber-framed building was built to create a west entrance front to the house. The building underwent later extension work to its north.
- 2.13** A land conveyance document¹⁶, dated 4 January 1677 and concerned with an intended marriage between Thomas Dyke and Philadelphia Nutt, declares ‘the use of a Fine’ of various properties including ‘The capital messuage and farm called Langney farm, with dovehouse and buildings and lands, meadows and marshlands’. In addition to other lands, the detailed inventory for the farm lists ‘the Cliffhouse lands’, ‘the Innings’ (i.e. reclaimed land), ‘Anthony Hill’, ‘Hidny’ and ‘the Shinwaters’.
- 2.14** Yeakell and Gardner’s map of 1778-1783 shows the site to have been located in a series of fields, the pattern of which was preserved until more recent development. A building stood at Langney Gate and was presumably the sluice house (MES7933). At this time, the settlement at Langney was small, comprising a small number of buildings to mainly the east side of Langney Rise. The land to the immediate west side of the road, from the bridge up to the settlement, appears to have been wholly cultivated, in contrast to the predominantly pastoral lands to its east side.
- 2.15** The Ordnance Survey surveyor’s draft of 1813¹⁷ reveals the defence tactics adopted during the early 19th century, a line of Martello towers was built to defend the coastline between Eastbourne and Pevensey¹⁸ and the coastal forts at Langney were re-armed and two batteries (MES7955) were built to protect their rear. A third battery was strategically sited at Langney Gate (MES7949). The 1838 Tithe map for Westham Parish shows no change.
- 2.16** The 1st Edition OS map (1879) shows the site and its surrounding area still as fields (Fig. 4), whereas by the time of the 2nd Edition OS map (1899) a brickworks has been established just to the north of the site (Fig. 5). Through the 20th century development progressively moves northwards from Langney Village, and by the 1981 OS map the school has been built and is surrounded on all sides by housing development (Fig. 6).

¹⁴ <http://www.british-history.ac.uk/report.aspx?compid=102620>

¹⁵ Toy, S. 1953. ‘Langney Grange, Westham’, *Sussex Archaeological Collections* 53, 125-133.

¹⁶ ESRO ASH/4501/961

¹⁷ <http://www.visionofbritain.org.uk/maps>

¹⁸ Butler, C. 2007. *East Sussex under Attack*. Stroud: Tempus Publishing.

2.17 The archaeological and palaeo-environmental potential of this area and peat and alluvial deposits is highlighted by the significant discoveries on the Willingdon Levels of well preserved Neolithic to Roman waterlogged artefacts, structures, platforms and trackways and palaeo-environmental evidence which is considered to be nationally important (British Archaeology 1995; Greatorex 1995a; 1995b; 1996a; 1996b; 1998; 2003; Jennings *et al.* 1993; 2003; Stevens 1997). The presence of extensive waterlogged deposits are rare in south east England and the potential for pollen referencing not only local wetlands, but also the vegetation of the chalk which is essentially devoid of pollen (Scaife 1987), is clearly important.

2.18 Previous palaeo-geographic research by Jennings & Smyth (1982; 1987 etc.) and excavation at Arkwright Road (Allen 2012) indicate a relatively uniform Holocene sedimentary sequence comprising, in summary, made ground over alluvium over a thin peaty and variably peat horizon over thick alluvial deposits. From this work they have been able to summarise that the sequence at Willingdon Levels (Shinewater) comprises (after Jennings & Smyth 1987, 211): -

Unit 4	Upper Silty Clay	+3.15m to +1.4m OD	Upper Alluvium
Unit 3	Willingdon Peat	+1.4m to +0.4m OD	Willingdon Peat
Unit 2	Lower Silty Clay	+0.4m to -6.08m OD	Lower Alluvium
Unit 1	Valley Gravels	-6.08 to -8.189mOD	

2.19 Further they indicate that the Willingdon Levels were originally drained by a river debouching to the east of Eastbourne and prior to the formation of Langney Point and the Crumbles (Jennings & Smyth 1985; 1990). The lower silty clay (unit 2) formed under estuarine conditions. Humic silts, peat formation and more terrestrial facies (unit 3; Willingdon Peat) formed as a result of regression and lowering relative sea-levels. Salt marsh and brackish conditions prevailed locally and freshwater fen carr developed. Three successive facies were identified in the Willingdon Peat (Jennings & Smyth 1987; Jennings *et al.* 2003) and are sedge peat, and organic silt as a result of flooding, and a second sedge peat. The flooding event (organic silty clay) was identified as an event prior to the construction of the Shinewater platform, where this peat sequence is seen to form during the Middle Bronze Age to Early Iron Age. The upper sediment (unit 4; Upper Silty Clay) shows a further marine transgression. Present conditions and drainage could only be maintained following the development of the Crumbles shingle bar and Langney Point (Jennings & Smyth 1985)

3.0 Archaeological Methodology

- 3.1 Brief requested 2 x hand auger holes to 3m depth and cores/samples taken suitable for subsampling for pollen and C14 dating. The aim being to auger the upper part with large diameter Dutch auger, and then use a large diameter Russian (peat) corer to obtain undisturbed cores, or if too stiff to use a narrow diameter gouge auger. Willingdon Peat is at c +1.4 to +0.4m OD.
- 3.2 Location 1 (A1 and A2) was on the edge of the football pitch and grassed playing area, while location 2 (A3) was adjacent to the schools raised beds. Both locations are in areas of modified ground levels. The turf was removed over the auger points and a large diameter (6cm) Dutch auger used to remove stiffer sediments and enable the deployment of the Russian corer removing larger undisturbed sediment of soft and organic deposits. Due to the stiff and local wet nature of the sediment some gaps in the recovered sequence where deposits were not retrieved was inevitable. The selected sediment profiles were removed from the 2.5m diameter gouge auger as coherent 0.5m long samples and wrapped in cling film and placed in plastic supporting troughs. The auger holes were backfilled, heeled-in and the cut turf replaced on completion of the augering.
- 3.3 The fieldwork was carried out on the 30th October 2014 by Dr Mike Allen, assisted by Andy Bradshaw (Fig. 7).
- a) Auger hole 1 was abandoned at 45cm (Made Ground over plastic pipe) at 2.75m OD
 - b) Auger hole 2 to 2.66m (at 0.57m OD) - no peat (*sensu stricto*) and too stiff to auger further
 - c) Auger hole 3 to 2.50 (at 0.42m OD) - no peat or humic silts, very very stiff hand augering could not proceed further
- 3.4 A TBM was established on the site and was used for all levels recorded during the fieldwork. It was tied into the nearest OS bench mark of 5.34m OD. The levels register is included in the site archive & Table 1.

- 3.5** All logs were recorded on site by Dr Mike Allen, using standard notation.¹⁹ The 2.5cm diameter sediment columns were carefully unwrapped and cut from the cling film, laid out, cleared and examined under illuminated magnification. Any further observations were added to the field descriptions (see Appendix 3). The sequences were subsampled for pollen at 10mm and-width and 8cm intervals, closing to 4cm were deposits looked more humic.
- 3.6** A full photographic record of the work was kept as appropriate and will form part of the site archive. Chris Butler Archaeological Services Ltd presently holds the archive, until it can be deposited in Eastbourne Museum. A site reference of WRS14 has been allocated.

¹⁹ Hodgson, J.M. 1997. *Soil Survey Field Handbook*. Silsoe: Soil Survey and Land Research Centre
Jones, A.P., Tucker, M.E. & Hart, J.K. 1999. *The description and analysis of Quaternary stratigraphic sections*. London: Quaternary Research Association Technical Guide 5

4.0 Results

4.1 The auger points were at between 2.93 and 3.20m OD (Table 1), and are related to the general Willingdon Sequence below (Discussion). The Cores are described and presented in the logs below (Appendix 3). The first auger point (A1) went through made ground and hit a plastic or clay pipe at 0.48m depth (to 2.72m OD). A second auger (A2) attempt managed to record 2.66m of deposits (i.e. to 0.57m OD) and recover deposits from 1.52m (1.60m OD) to 2.66m depth. One auger (A3) at location 2 was hand augered to 2.50m depth (i.e. 0.42m OD).

Table 1

Point	E	N	Z
Auger Hole 1	427.569	468.135	3.199
Auger Hole 2	419.013	473.288	3.229
Auger Hole 3	466.091	549.732	2.917

4.2 *The sediment profiles*

A significant proportion of the upper deposits was clearly made ground. At location one (on the edge of the sports field and adjacent to the tarmac playground) up to 0.82m was made ground, presumably to construct the level football pitches and playing fields.

The deposits below this in both sequences are entirely largely stone-free, fine-grained minerogenic deposits typical of the 'alluvial' silty clays of the Willingdon Sequence. The Willingdon Peat (typically at +1.4 to -+0.4m OD) was not present, nor was any peat or highly humic deposits.

The deposits are brown becoming greyer with depth (location 1), and pale yellow and lighter grey at depth at (location 2). They are predominantly silts and silty, and lightly gleyed (1.22-2.06m depth) mottled. In auger hole 2 (location 1) fine humic and fine weathered peaty fragment inclusions were present in the silty clays between 1.86 and 2.06m depth (i.e. 1.37 -1.17m OD). The fine weathered and humified peaty/humic fragments may have eroded from the Willingdon peat exposed elsewhere in the Shinewater/Willingdon system.

4.3 *Sampling*

A total of 38 samples were removed for pollen/diatoms from the sequences; 18 from auger hole 2 (location 1) and 20 from auger hole 3 (location 2); see logs below (Appendix 3).

5. Discussion

5.1 It is not possible to ascertain with certain whether these silts belong or relate to the Willingdon Upper Silty Clay or Lower Silty Clays, or even if this sequence is the conflation of the two with the absence of the Willingdon Peat Formation. It is possible that this small embayment on the eastern edge of the Willingdon Levels contains a local sequence not fully represented elsewhere.

5.2 *The sequence*

The sequence indicates a low-energy fluvial environment that may be freshwater (alluvial) or brackish water (estuarine/tidal) (freshwater). These overlie Wealden Clay which was not reached with any certainty; the weathered upper facies of the Weald Clay can be difficult to distinguish from fine-grained compressed firm silty clay deposits, especially with such a narrow window of examination.

The broad bands of changing particle size (malleable silts and firm silty clays) indicate some changes in the deposition but little in the general fluvial environment. There is no obvious stasis, nor hiatus in the sequences; no evidence of stabilisation, terrestrial soil formation or peat formation is present.

5.3 *Potential*

The inorganic minerogenic sediment do not provide the potential for dating by radiocarbon methods. Although there is slim possibility that the fine, humified peat inclusions may allow a radiocarbon assay, but this will not be helpful as it will date the formation of the peat (elsewhere), and not the deposition of the sediment.

Although there is the potential for pollen to survive which may provide a local vegetation history, the potential of this is severely diminished by the lack of any possibility of dating any vegetation changes. Similarly diatoms may survive (though sample size was taken for pollen, and are small for diatoms). Nevertheless, if diatoms were present indicating the presence of fresh, brackish or marine waters, again the sequence would be undated. In both cases the information would not be relatable to other sites and thus would be of minimal use.

The geocarcheological record and absence of the typical Willingdon sequence and absence of any peat here is, however, interesting. This data is useful in the compilation of a geoarchaeological record for modelling the deposits through the Shinewater / Willingdon area. This embayment is a local sediment variation.

5.4 *Archaeological potential*

The lack of peat minimises the potential of the presence and preservation of waterlogged wood and wooden artefacts and other associated material.

The uniform nature of the sediments suggests a relatively quiet and undisturbed sequence with little anthropogenic activity.

The embayment provides the potential for a sheltered hard, and quays, but the geoarchaeological work here does not provide any evidence for or against such a possibility.

There is no obvious evidence of human activity, artefacts, or structures.

The archaeological potential, as indicated by the two hand augers profiles, is low to minimal.

6. Conclusions and Recommendations

- 6.1** The two sediment profiles do not conform to the Willingdon sequences as might have been expected. The lack of peat and the presence of relatively uniform minerogenic deposits suggest a very local sediment deposition history, possibly related to this minor topographic feature – the former embayment.
- 6.2** The palaeo-environmental and archaeological potential of these 2.6m deposit sequences seem however to be very low. Nevertheless the geoarchaeological record here is a useful addition to the sediment records of the area, indicating unexpected local variations. It will assist in mapping the nature and distribution of the deposits in the Shinewater / Willingdon complex.
- 6.3** No further work is recommended, and it is recommended that the 38 pollen samples are discarded.

7 Acknowledgements

- 7.1** We would like to thank East Sussex County Council for appointing us to undertake this work. Andy Bradshaw assisted in the field and carried out all the surveying. The project was managed by Chris Butler, and Dr Mike Allen carried out the fieldwork and analysis.

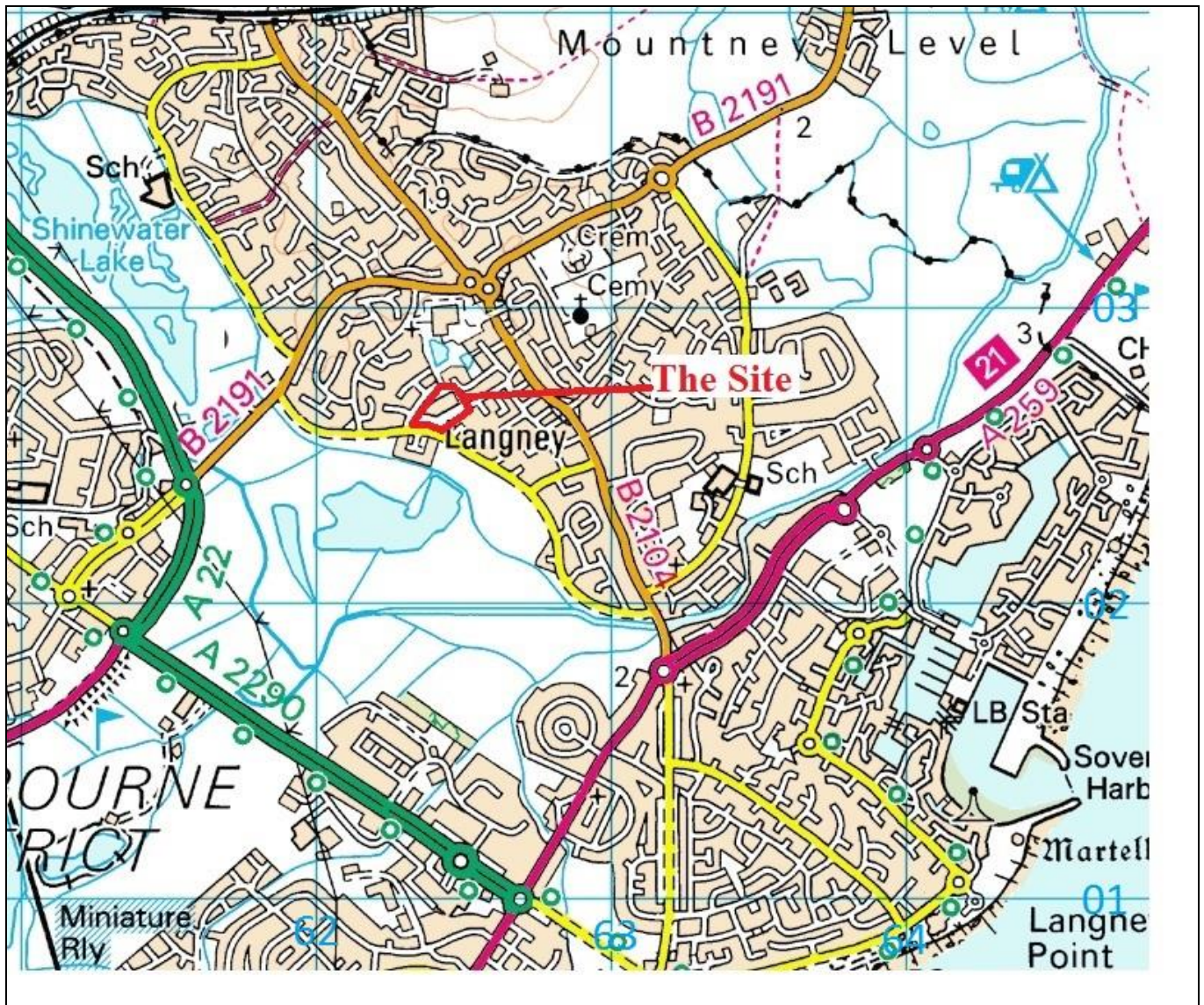


Fig. 1: West Rise Infant & Junior School: Location of Site
Ordnance Survey © Crown copyright 2004 All rights reserved. Licence number 100037471

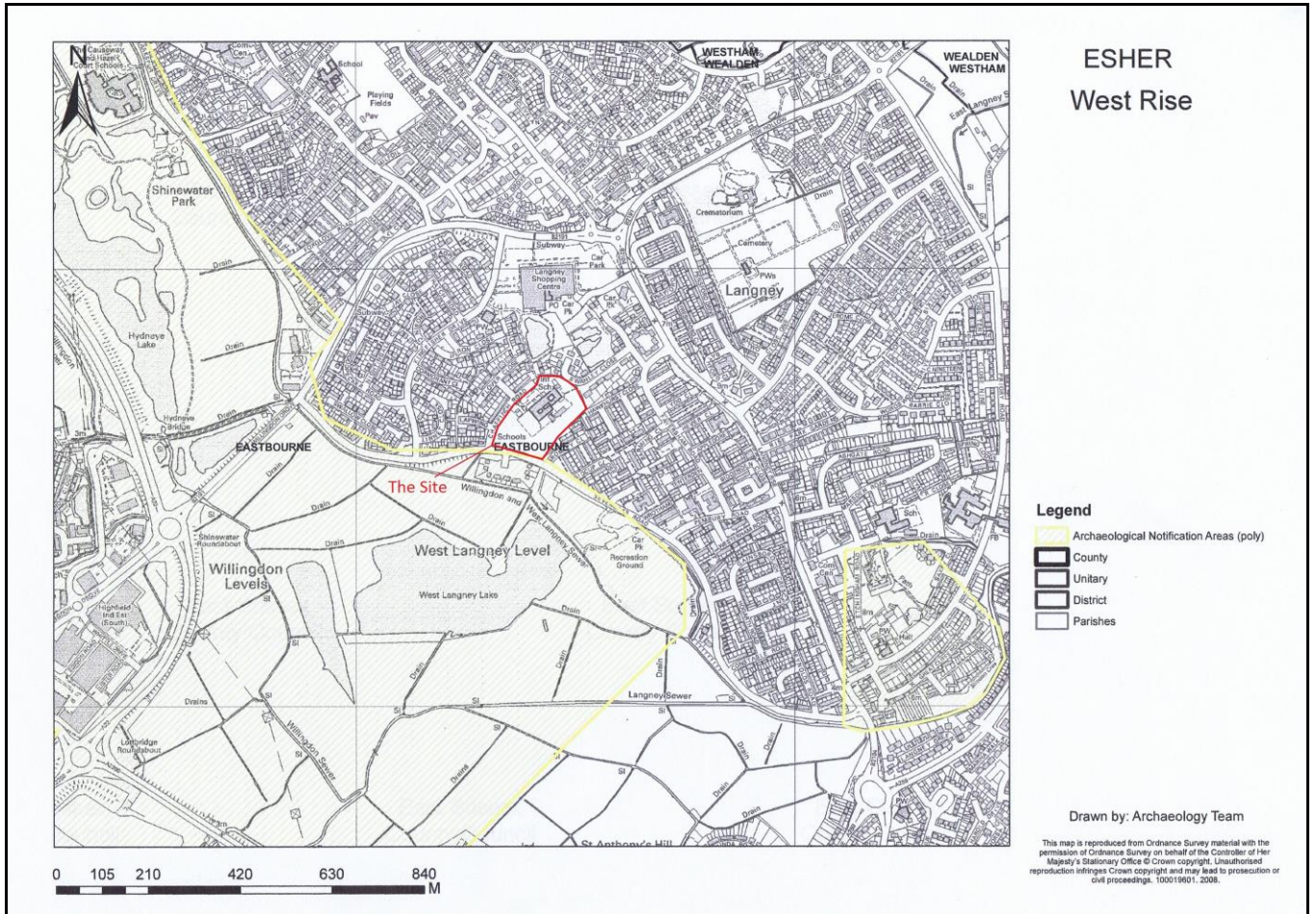


Fig. 2: West Rise Infant & Junior School: ANA Map
Adapted from map provided by ESCC
Ordnance Survey © Crown copyright 2004 All rights reserved. Licence number 100037471

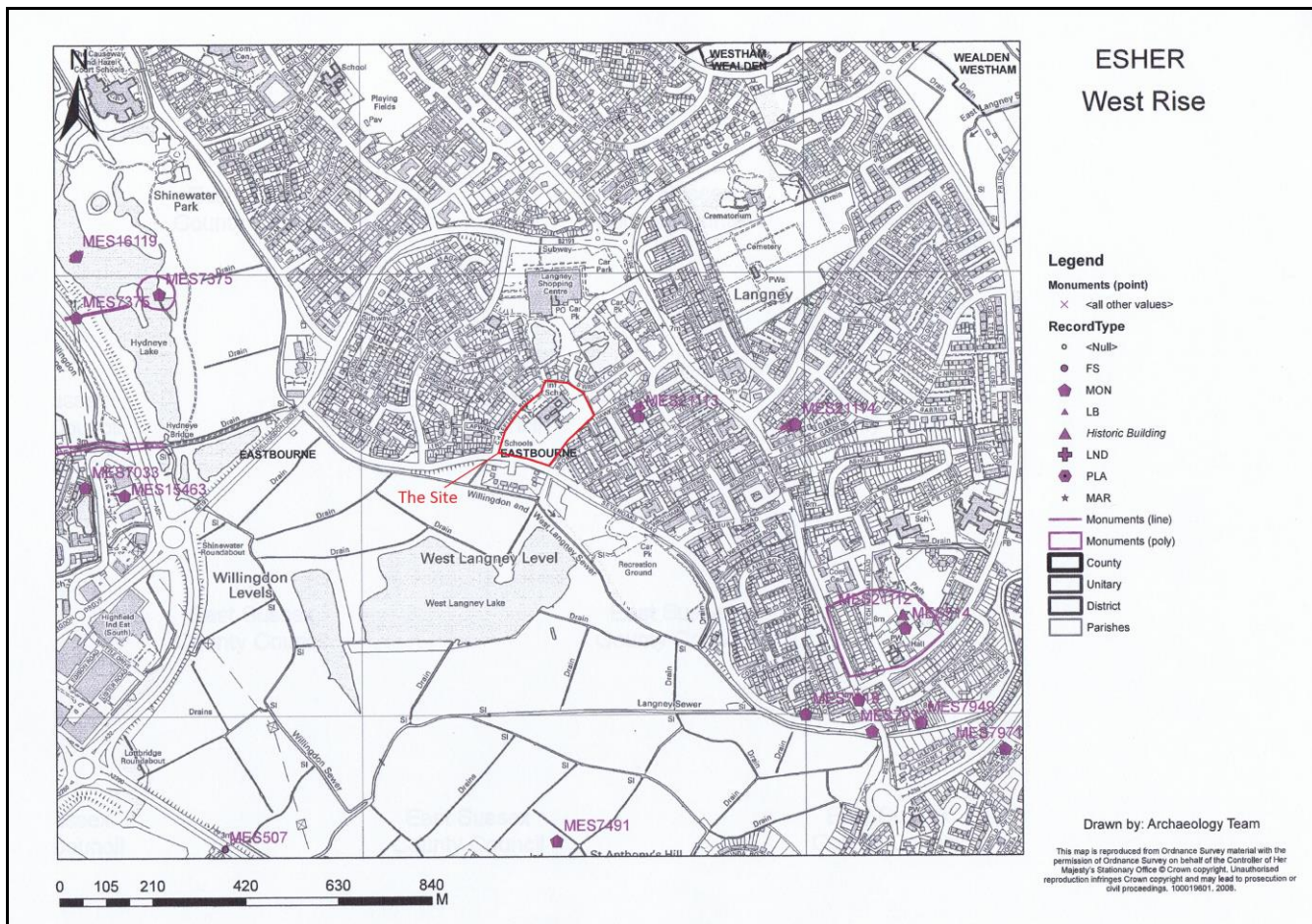


Fig. 3: West Rise Infant & Junior School: HER map
Adapted from map provided by ESCC
Ordnance Survey © Crown copyright 2004 All rights reserved. Licence number 100037471

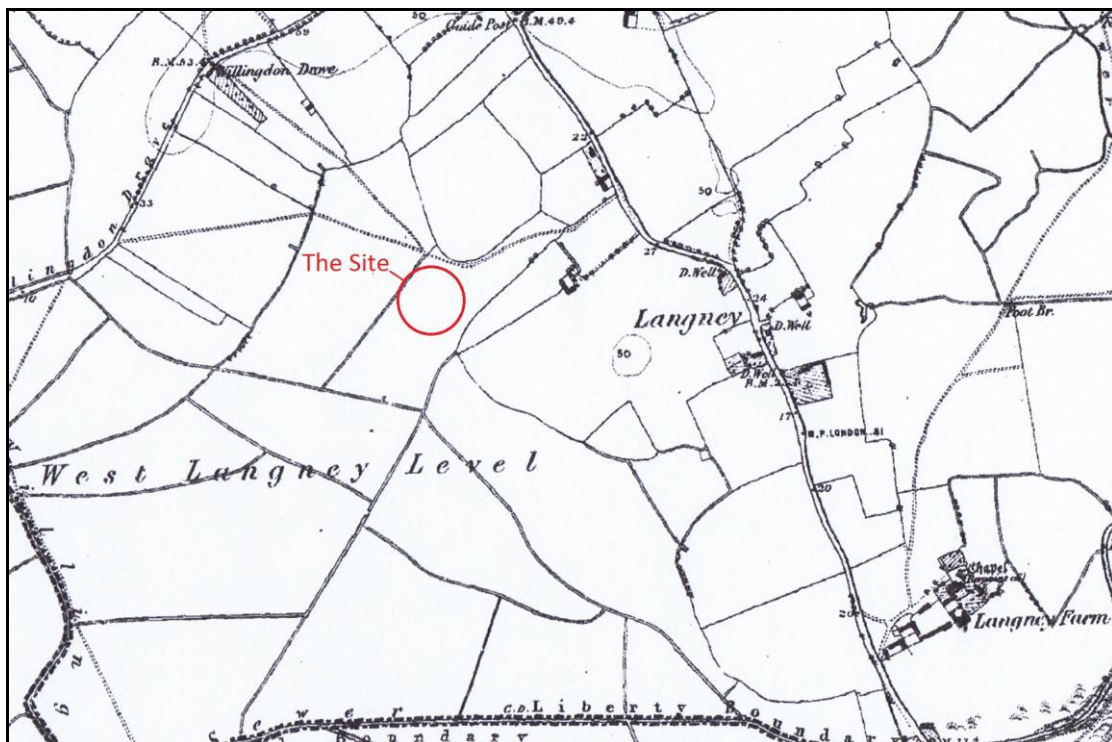


Fig. 4: West Rise Infant & Junior School: 1st Edition OS Map (1879)

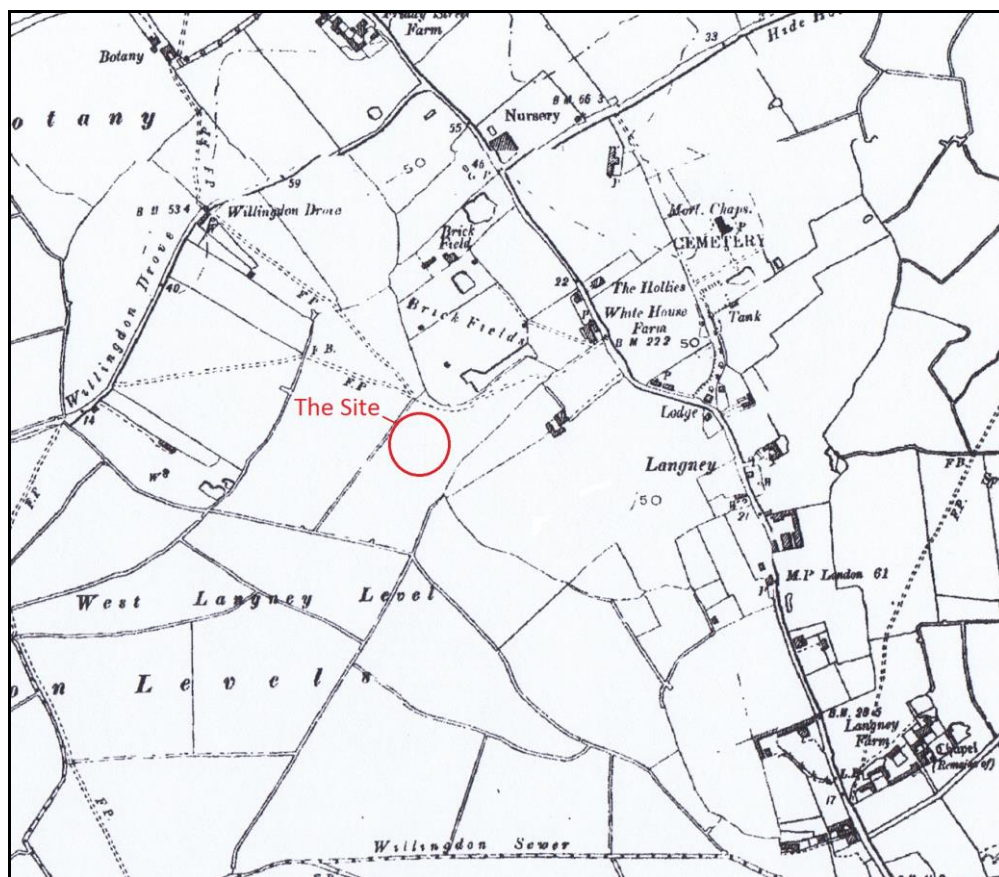


Fig. 5: West Rise Infant & Junior School: 2nd Edition OS Map (1899)

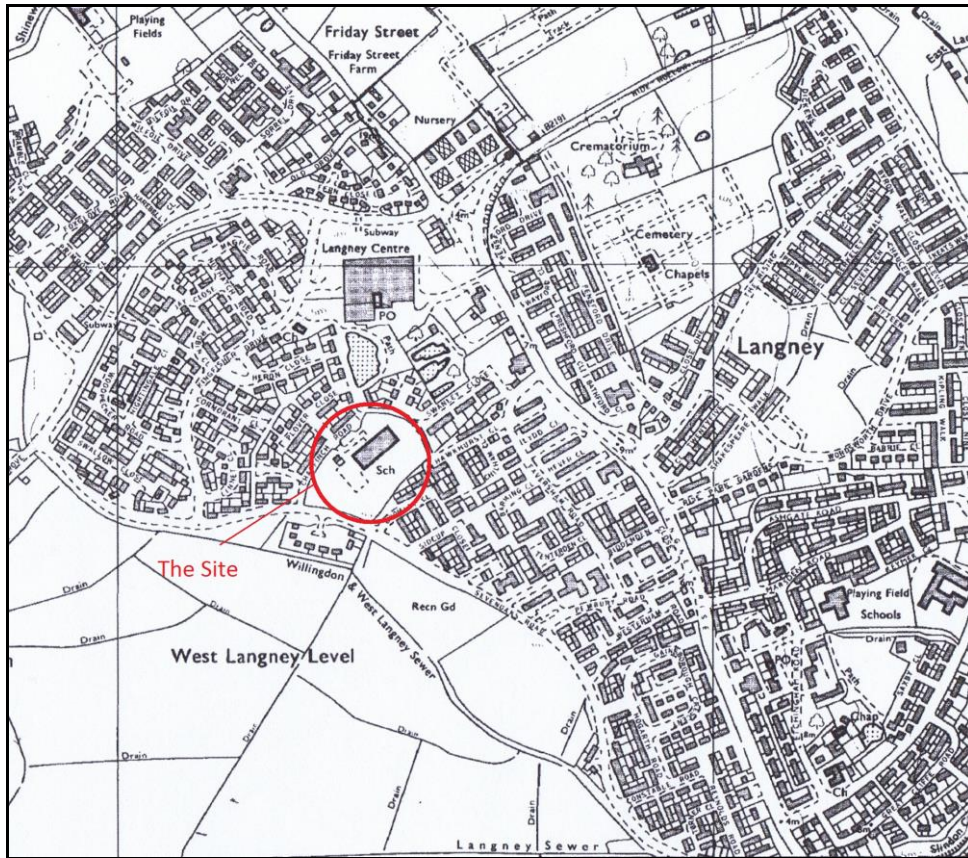


Fig. 6: West Rise Infant & Junior School: 1981 OS Map

Appendix 1: HER Summary Form

Site Code	WRS14					
Identification Name and Address	West Rise Infant & Junior School, Eastbourne, East Sussex					
County, District &/or Borough	ESCC/Eastbourne Borough Council					
OS Grid Refs.	TQ 624 026					
Geology	Alluvium over Weald Clay bedrock					
Type of Fieldwork	Eval. X	Excav.	Watching Brief	Standing Structure	Survey	Other
Type of Site	Green Field	Shallow Urban X	Deep Urban	Other		
Dates of Fieldwork	Eval. 30/11/14	Excav.	WB.	Other		
Sponsor/Client	ESCC					
Project Manager	Chris Butler MIFA					
Project Supervisor	Dr M Allen MIFA					
Period Summary	Palaeo.	Meso.	Neo.	BA	IA	RB
	AS	MED	PM	Other		
<p>100 Word Summary</p> <p><i>An evaluation, comprising a geoarchaeological auger survey was carried out. Two holes were augered to depths of 2.66m and 2.5m respectively. There was an absence of the typical Willingdon sequence and absence of any peat here, which indicates that the embayment in which the site is located has a local sediment variation. This data is useful in the compilation of a geoarchaeological record for modelling the deposits through the Shinewater / Willingdon area.</i></p>						

Appendix 2 – References

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Appendix 3: AUGER LOGS – SEDIMENT PROFILES

Auger Hole 1 (location1)

c. 3.199 OD

Depth (cm)	OD of top	Deposit	Sample	Description
0-12	3.20	Ah		Very dark brown, stone-free humic silt to silty clay, clear to abrupt boundary
12-48	3.08	MG		Light yellowish brown, becoming yellowish brown, silty clay loam
48+	2.72	MG		Plastic or Clay pipe

Auger Hole 2 (location 1)

3.229 OD

Depth (cm)	OD of top	Deposit	Sample	Description
0-8	3.23	Ah		Dark brown to dark yellowish brown (10YR 3/3-4) humic silt-silty clay, stone-free, clear abrupt boundary
8-18		A		Dark yellowish brown (10YR 4/4) plastic silty clay, stone-free with streaks of light grey (2.5YR 7/2), clear boundary
18-59		MG		Brown to dark yellowish brown (10YR4/3-4) massive tenacious stiff silty clay, stone-free, gleyed light grey (10YR 7/2) indistinct mottles, rare very small stones from 30cm, sharp boundary
59-82		Dump – MG		White – very pale brown (10YR 8/1-2) small and rare medium chalk lumps in a massive chalky marl, abrupt boundary
82-122	2.41	(Upper) silty clay		Strong brown (7.5YR 5/6) and grey (10YR 5/1) gleyed mottled massive stone-free silty clay, very stiff,
122-138			124cm 132cm	Greyish brown (10YR 5/2) silty clay, massive and stone-free, common greenish grey indistinct diffuse mottles
138-152				Gap – sediments missing
152-186			156cm 164cm 172cm 184cm	Dark grey (10YR 4/2) <u>silt</u> to silty clay becoming slight darker (?humic), common greenish grey indistinct diffuse mottles abrupt boundary
186-206	1.37 1.17		188cm 192cm 196cm 200cm 204cm	Very dark greyish brown humic silt, with rare to common medium peaty fragment inclusions, gradual boundary
206-254			212cm 220cm 228cm 236cm 244cm 252cm	Very dark greyish brown (10YR 3/2) soft silt, becoming moister at 206cm-323cm
254-266+			260cm	Dark greyish brown firm stiff silty clay, stone-free
266+	0.57			As above but not augered

Cores at 152-173cm, 173-22cm and 222-266cm

Auger Hole 3 (Location 2)

2.917m OD

<i>Depth (cm)</i>	<i>OD of top</i>	<i>Deposit</i>	<i>Sample</i>	<i>Description</i>
0-12	2.92	Ah		Dark greyish brown (10YR 4/2) wet soft humic silt, stone-free abrupt boundary
12-21				Greyish brown stiff stone-free silty clay, abrupt to sharp boundary
21-39		MG		Common chalk lumps in a chalky matrix, abrupt boundary
39-89	2.53			Olive grey (7.5YR 3 /4) very stiff clay to silty clay, rare very small chalk and small flints
89-93				Gap – sediments missing
93-116			96cm 104cm 112cm	Dark greyish brown (2.5Y 4/2) stiff stone-free silt to lay, abrupt boundary
116-141			120cm 128cm 136cm	Yellowish brown (10YR 5/6-8) stiff stone-free gleyed (10YR 7/1) light grey silty clay with diffuse mottles, abrupt boundary
141-185			144cm 152cm 160cm 168cm 176cm 184cm	Pale yellow (2.5Y 7/3) soft sticky massive silt, gradual boundary
185-250+			192cm 200cm 208cm 216cm 224cm 232cm 240cm 248cm	Grey (2.5Y 6/1) grey silty cay to clay, massive, firm and very stiff
250+	0.42			

Cores 90-140, 140-195, 195-255

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Chris Butler has been an archaeologist since 1985, and formed the Mid Sussex Field Archaeological Team in 1987, since when it has carried out numerous fieldwork projects, and was runner up in the Pitt-Rivers Award at the British Archaeological Awards in 1996. Having previously worked as a Pensions Technical Manager and Administration Director in the financial services industry, Chris formed **Chris Butler Archaeological Services** at the beginning of 2002.

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Chris specialises in prehistoric flintwork analysis, but has directed excavations, landscape surveys and watching briefs, including the excavation of a Beaker Bowl Barrow, a Saxon cemetery and settlement, Roman pottery kilns, and a Mesolithic hunting camp. He has recently undertaken large landscape surveys of Ashdown Forest and Broadwater Warren and is Co-Director of the Barcombe Roman Villa excavation project.

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Chris Butler Archaeological Services Ltd is available for Flintwork Analysis, Project Management, Military Archaeology, Desktop Assessments, Field Evaluations, Excavation work, Watching Briefs, Landscape and Woodland Surveys & Fieldwalking, Post Excavation Services and Report Writing.

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