

5. Archaeology & Cultural Heritage

Introduction

- 5.1 This chapter addresses the below-ground and visible archaeological resource, any standing buildings, and the historic landscape, collectively referred to as the 'cultural heritage resource'. The primary objectives of this chapter are summarised as follows:
- to identify statutory and non-statutory cultural heritage constraints (including planning constraints) within and in the immediate vicinity of the Site;
 - to gather information on the cultural heritage resource, including previous published and unpublished archaeological investigations and finds;
 - to gather information from cartographic and documentary sources on the recorded historic land use within the Site; and
 - to carry out a Site visit in order to assess the extant cultural heritage resource within the Site.
- 5.2 These objectives are intended to inform an assessment of baseline conditions within the Site. Remaining objectives include:
- to assess the baseline conditions and offer an analysis of the preservation, sensitivity, potential and value of the recorded cultural heritage resource within the Site;
 - to assess the baseline information and offer an analysis of the potential for currently unrecorded cultural heritage remains within the Site;
 - to identify the major potential impacts upon the identified cultural heritage resource within the assessment area and assess their magnitude;
 - to identify appropriate mitigation measures for significant adverse impacts; and
 - to identify residual impacts, following the implementation of mitigation.

Policy Context

National

- 5.3 National policy relating to archaeology and development is contained in Planning Policy Guidance Note 16: Archaeology and Planning (PPG 16) (November 1990). This guidance sets out the Government's policy on the preservation and investigation of archaeological remains. The key points can be summarised as follows:
- Archaeological remains should be seen as a finite and non-renewable resource, and in many cases highly fragile and vulnerable to damage and destruction. Appropriate management is therefore essential to ensure that they survive in good condition. In particular, care must be taken to ensure that archaeological remains are not needlessly or thoughtlessly destroyed. They can contain irreplaceable information about our past and the potential for an increase in future knowledge. They are part of our sense of national identity and are valuable both for their own sake and for their role in education, leisure and tourism;
 - Where nationally important archaeological remains, whether scheduled or not, and their settings, are affected by a proposed development there should be a presumption in favour of their physical preservation;

- It is reasonable for the planning authority to request adequate information on the archaeological resource so that informed decisions can be made; and
- Where sites are not of sufficient importance to warrant preservation *in situ*, an archaeological excavation for the purposes of 'preservation by record' may be an acceptable alternative and the developer must make appropriate and satisfactory provision for such recording.

Local Planning Policy: Structure Plan

5.4 The West Sussex Structure Plan 2001-2016 (adopted July 2004) contains the following policy on archaeology:

- Policy CH7 – Archaeology.
- (a) Development should not be permitted unless the archaeological heritage of West Sussex is protected and preserved and, where possible, opportunities are taken to promote the educational and amenity value of sites and areas (historic landscapes).
- (b) Local plans will include policies to ensure:
 - (1) the physical preservation *in situ* of nationally important archaeological areas, sites or monuments, whether scheduled or not, and their settings;
 - (2) the protection of other important archaeological areas and sites including, where appropriate, the preservation of remains *in situ*;
 - (3) where necessary, that site evaluation is undertaken to define the character and significance of the archaeological or historic interest of proposed development sites; and
 - (4) the excavation and recording of archaeological remains, the preservation of any finds and the subsequent publication of results.

Local Planning Policy: Local Plan

5.5 The Arun District Local Plan (adopted April 2003) contains two policies relating to archaeology which may be relevant to the Proposed Development. These include:

- Policy AREA 16 - Ancient Monuments and Sites of National Archaeological Importance. There will be a presumption in favour of the preservation of scheduled and other nationally important monuments and archaeological remains. Development which adversely affects their sites or settings will not be permitted.
- Policy AREA 17 – Sites of Archaeological Interest. Permission will not be granted for development that would be harmful to the significant archaeological interest of a site. Where the presence of archaeological remains is known or suspected:
 - (i) the applicant must arrange for archaeological assessment of the Site to be carried out before the planning application is determined;
 - (ii) where the assessment shows that the physical preservation of remains *in situ* is not justified, conditions may be attached to any permission granted that development will not take place until provision has been made by the developer for a programme of archaeological investigation and recording. The programme will be carried out prior to the commencement of the development; and

- (iii) whenever practicable, opportunities should be taken for the enhancement and interpretation of archaeological remains left *in situ*.

Assessment Methodology & Significance Criteria

- 5.6 The content of this archaeological and cultural heritage assessment has been guided by the *Oldlands Farm, Environmental Impact Assessment, Briefing Document* (Drivers Jonas 2007), the *Standard and Guidance for Desk-Based Assessment* issued by the Institute of Field Archaeologists (IFA 2001); English Heritage's (1998) *Identifying and protecting Palaeolithic remains: archaeological guidance for planning authorities and developers*; Appendix 10 of the *Good Practice Guide* for the preparation of Environmental Statements issued by the former Department of the Environment (DoE 1995); and *Environmental Impact Assessment: a Guide to Procedures* issued by the National Assembly for Wales and the former DETR (2000). The assessment of effects has followed the guidance given by the Highways Agency in 2007 in *The Design Manual for Roads and Bridges, Volume 11, Section 3, Part 2: Cultural Heritage* (Highways Agency document 208/07), henceforth referred to as HA 208/07.
- 5.7 The baseline survey involved consultation of readily available archaeological and historical information from documentary and cartographic sources. The major repositories of information consulted include:

English Heritage

- Database of Scheduled Monuments for England;
- List of Buildings of Special Architectural or Historic Interest;
- Register of Parks and Gardens of Historic Interest; and
- Register of Historic Battlefields.

West Sussex Sites and Monuments Record

- Database of known archaeological sites and findspots within West Sussex;
- Southern Rivers Palaeolithic Project report (Wessex Archaeology 1994); and
- Published and unpublished documentary sources (including development control site reports).

West Sussex Records Office, Chichester (WSRO)

- Published documentary sources.

Bognor Regis Library

- Historic maps and documents.

National Monuments Record (Swindon) (NMR)

- Vertical and oblique aerial photographic records;
- Published and unpublished documentary sources; and
- Database of archaeological sites (NMRAD).

Site Inspection

- A Site visit was made on 30 October 2007 in order to examine current land use and topography, and to assess the visible cultural heritage resource of the Site.

5.8 The significance of effects has been assessed with reference to the value of the cultural heritage resource being impacted upon and the magnitude of the impact. The value of the cultural heritage resource was defined using the criteria in Table 5.1, which is based on Tables 5.1, 6.1 and 7.1 of Annexes 5, 6 and 7 respectively in HA 208/07.

Table 5.1 Criteria for Assessing Cultural Heritage Value

Value of Resource	Description
Very high	World Heritage Sites. Assets of acknowledged international importance. Assets that can contribute significantly to acknowledged international research objectives. Historic landscapes of international value (designated or not) and extremely well preserved historic landscapes with exceptional coherence, time depth, or other critical factor(s).
High	Scheduled Monuments and undesignated assets of Schedulable quality and importance. Grade I and II* Listed buildings (Scotland category A). Other Listed buildings that can be shown to have exceptional qualities in their fabric or associations not adequately reflected in their Listing grade. Conservation Areas containing very important buildings. Undesignated structures of clear national importance. Designated and undesignated historic landscapes of outstanding historic interest (including Grade I and Grade II* Registered Parks and Gardens); undesignated landscapes of high quality and importance of demonstrable national value; and well preserved historic landscapes exhibiting considerable coherence, time depth or other critical factor(s). Assets that can contribute significantly to acknowledged national research objectives.
Medium	Designated or undesignated assets that contribute to regional research objectives Grade II (Scotland category B) Listed buildings. Historic (unlisted) buildings that can be shown to have exceptional qualities in their fabric or historical association. Conservation Areas containing important buildings that contribute significantly to their historic character. Historic townscapes or built up areas with important historic integrity in their buildings, or built settings (for example including street furniture or other structures). Designated landscapes of special historic interest (including Grade II Registered Parks and Gardens); undesignated landscapes that would justify such a designation; averagely well preserved historic landscapes with reasonable coherence, time depth or other critical factor(s); landscapes of regional value.
Low	Designated and undesignated assets of local importance including those compromised by poor preservation and/or poor survival of contextual associations. Assets of limited value, but with potential to contribute to local research objectives. Locally Listed buildings (Scotland category C(S) Listed Buildings) and historic (unlisted) buildings of modest quality in their fabric or historical association. Historic townscape or built-up areas of limited historic integrity in their buildings or built settings (for example including street furniture or other structures). Robust undesignated historic landscapes; historic landscapes with importance to local interest groups; and historic landscapes whose value is limited by poor preservation and/or poor survival of contextual associations.
Negligible	Assets with very little or no surviving archaeological interest. Buildings of no architectural or historical note and buildings of an intrusive character. Landscapes with little or no significant historical interest.
Uncertain	The importance of the resource has not been ascertained. Archaeological resources the importance of which cannot be ascertained. Buildings with some hidden (i.e. inaccessible) potential for historical significance.

5.9 The magnitude of the impact is assessed using the criteria in Table 5.2 below. This is based on Tables 5.3, 6.3 and 7.3 of Annexes 5, 6 and 7 respectively of HA 208/07.

Table 5.2: Criteria for Assessing the Magnitude of Impact

Magnitude of Impact	Description of Impact
Major	Change to most or all key archaeological materials or historic building elements, such that the resource is totally altered. Comprehensive changes to setting of archaeological or historic building assets. Change to most or all key historic landscape elements, parcels or components; extreme visual effects; gross change of noise or change to sound quality; fundamental changes to use or access; resulting in total change to historic landscape character.
Moderate	Changes to many key archaeological materials, such that the resource is clearly modified. Change to many key historic building elements, such that the resource is significantly modified. Considerable changes to the setting that affect the character of an archaeological asset. Changes to the setting of an historic building such that it is significantly modified. Changes to many key historic landscape elements, parcels or components; visual change to many key aspects of the historic landscape; noticeable differences in noise or sound quality; considerable changes to use or access; resulting in moderate changes to historic landscape character.
Minor	Changes to key archaeological materials, such that the asset is slightly altered. Change to key historic building elements, such that the asset is slightly different. Slight changes to the setting of an archaeological asset. Change to the setting of an historic building, such that it is noticeably changed. Change to few key historic landscape elements, parcels or components; slight visual changes to few key aspects of historic landscape; limited changes to noise levels or sound quality; slight changes to use or access; resulting in limited changes to historic landscape character.
Negligible	Very minor changes to archaeological materials, or setting. Slight changes to historic building's elements or setting that hardly affect it. Very minor changes to key historic landscape elements, parcels or components; virtually unchanged visual effects; very slight changes in noise levels or sound quality; very slight changes to use or access; resulting in very small change historic landscape character.
No change	No change to archaeological elements or historic building fabric and setting. No change to elements, parcels or components; no visual or audible changes; no changes arising from amenity or community factors.

5.10 Following the evaluation of the value of the cultural heritage resource and the magnitude of the impact, the significance of the effect after mitigation is assessed using the matrix shown in Table 5.3 below, based on Table 5.1 of HA 208/07. Where two alternatives are given in the table, professional judgement is used to decide which best reflects the significance of the effect of the impact identified.

Table 5.3: Matrix to Determine Significance of Effects on Cultural Heritage Resources

		Magnitude of Impact				
		Major	Moderate	Minor	Negligible	No Charge
Value	Very High	Very Large	Large/ Very Large	Moderate/ Large	Slight	Neutral
	High	Large/ Very Large	Moderate/ Large	Slight/ Moderate	Slight	Neutral
	Medium	Moderate /Large	Moderate	Slight	Neutral/ Slight	Neutral

f	Low	Slight/ Moderate	Slight	Neutral/ Slight	Neutral/ Slight	Neutral
r						
e						
s						
o	Negligible	Slight	Neutral/ Slight	Neutral/ Slight	Neutral	Neutral
u						
r						
c						
e						

Baseline Conditions

Site description and context

- 5.11 The Site is 8.8ha in size, and comprises land within one field of low lying ground, currently used for arable agriculture. It is located at the northern edge of the town of Bognor Regis, within Bersted County Parish, bounded to the west by the A29, and to the south by an Industrial Estate.

Previous Archaeological Work

- 5.12 One programme of archaeological work is recorded within the Site. This comprised an evaluation of land between Felpham and Flansham in 2006, of which only one part, Area F, fell within the Site (Fig 5.3, 3; Fig 5.4, 3; WA 2007). Sixty trenches were originally proposed for these works but waterlogging, flooding, and adverse weather conditions meant that 45 trenches were abandoned. Of the 15 trenches excavated, nine fell within, or partially within, the Site (Fig. 5.4, 3; WA 2007, 14). During the course of the evaluation four geoarchaeological test pits were also excavated in the eastern part of the evaluated area (outside the study area) in order to investigate the Pleistocene stratigraphy of the proposed road route (Roberts 2007b).
- 5.13 The results given in this report are primarily based upon the trench description tables presented in the report on the evaluation (WA 2007, 84, 92-4).
- 5.14 Two other programmes of archaeological works have been undertaken within the study area. These include:
- Archaeological investigation of land at Rowan Way, to the south-west of Site, which did not record any archaeological finds or features (Fig. 5.3, 1); and
 - Excavation in the garden of Parson's grocer's shop at Shripney in 1974, following the recovery of Iron Age, Roman and Anglo-Saxon pottery in the early 20th century. The investigation recorded medieval and Roman pottery and a cobbled surface (Fig. 5.3, 4).

Geology, Topography, and the Palaeoenvironment

- 5.15 The Site is located on the West Sussex Lower Coastal Plain (*sensu* Bates *et al.* 1997, Roberts 1999, Bates *et al.* 2000). It is mapped by the British Geological Survey (1996) as lying on Lower Chalk, dating from the Upper Cretaceous, with a superficial cover of Quaternary brickearth. The Upper Chalk at Oldlands Farm is part of the Littlehampton anticline, whose main axis passes 1.2 km to the north of the Site. Thirteen hundred metres to the north of the Littlehampton anticline is the Chichester syncline. Both features were formed as a result of tectonic processes associated with the Alpine orogeny in the Oligocene and late Miocene/Pliocene (Shephard-Thorn *et al.* 1982). The effect of these tectonic events was to fold the Chalk and

subsequent Eocene deposits (mainly London Clay and Reading Formations) along an east-west axis, leaving the Chalk of the Littlehampton anticline as a southern outlier of the main South Downs ridge. Despite the magnitude of the Tertiary tectonic events outlined above, the West Sussex Coastal Plain, is just that, a plain sloping gently downwards in a southerly direction from Chichester to Bognor Regis.

- 5.16 The geomorphology of the West Sussex Coastal Plain has been molded by marine processes during warm stages and periglaciation during cold stages of the Middle and Later Pleistocene (Figure 5.1) (Roberts 1999). The traditional view is that marine sediments (silts furthest inshore, i.e. to the north, and sands and gravels further offshore, i.e. to the south), were deposited on the coastal plain during interglacials (Bates *et al.* 1997, Roberts 1999, Bates *et al.* 2000). During subsequent cold periods the sea retreated and left the marine sediments of the coastal plain to be modified by periglacial processes. Continuing regional uplift raised the marine/periglacial deposits so that when the next interglacial occurred, the new suite of marine sediments were deposited lower down on the coastal plain. The net effect of marine sedimentation and long term uplift has been to produce a staircase of marine terraces dating from the interglacials of Marine Isotope Stages 13, 11, 7 and 5e (Table 5.4, Figure 5.2). The basis of this chronology are biostratigraphic data from the Goodwood-Slindon (at Boxgrove), Brighton-Norton (at Norton Farm) and Pagham raised beaches (Roberts and Parfitt 1999, Bates *et al.* 2000). Marine terraces of the lower coastal plain were subsequently buried by brickearth (a mixture of aeolian [loess] and low energy fluvial deposits) during the MIS 2-4 and MIS 6 cold stages. The Site sits between the cliff lines of the Brighton-Norton (north) and Pagham (south) raised beaches at an elevation of c +4m OD.
- 5.17 Recently Bates *et al.* (2007a, 2007b) have dated deposits of the Aldingbourne raised beach using optically stimulated luminescence and amino acid racemisation techniques and have derived results indicating that the beach developed in MIS 7 rather than MIS 11 as originally supposed. Roberts (2007b) has also recently suggested that the Pagham raised beach may also date to MIS 7, and therefore that marine remnants found between the Brighton-Norton and Pagham raised beaches (including those in the vicinity of the present site) may have been deposited in still stands during the MIS 7 marine regression. These marine remnants have been found *in situ* in areas where the pre-Quaternary deposits are of the London Clay or Reading Bed Formations (e.g. Lydney [SU 928 040], Woodhorn Farm [SU 912 047], Merston [SU 894 028], Aldwick Farm [SZ 912 992] and Chalcroft Nurseries [SU 918 005]), but reworked and mixed with periglacial deposits on the Chalk of the Littlehampton anticline (Hunter and Pine 2006, Roberts 2007c). Roberts (2007a) terms the mixed periglacial and marine deposits found overlying the Chalk along the Littlehampton anticline, 'Calcareous Basin Deposits' (CBD). Palaeobiological work undertaken by Roberts and Whitaker (Roberts 2007a, 2007b, 2007c) suggests that the CBD formed in a mixed fresh water (pools) and terrestrial environment (tundra), and under cold climate regimes. It is, however, presently uncertain when the CBD formed, except that deposition must have occurred between MIS 6 and MIS 2 (186-11.5 ky BP, Figure 5.1). Given the previous discussion it is highly likely that marine (albeit reworked on the Chalk of the Littlehampton anticline) and calcareous basin deposits, all dating between MIS 7-2 (c 200-11.5 ky BP), underlie the Site.
- 5.18 Palaeolithic archaeological remains have previously been found associated with the Goodwood-Slindon, Aldingbourne and Pagham raised beaches, as

well as the Chichester fan gravels (the CBD is a facies of the last of these) (Bates *et al.* 1997, 1998).

Geoarchaeology

- 5.19 There are presently no stratigraphic data from the Site beyond that revealed in the shallow archaeological trenches excavated by Wessex Archaeology in 2006 to evaluate a potential road scheme (WA 2007). It is therefore impossible to be certain of the sub-surface stratigraphy on the Site
- 5.20 Nevertheless, recent geoarchaeological work in the vicinity of the Site might provide some indication of nature of the Quaternary stratigraphy likely to be encountered. Roberts (2007b) monitored four geotechnical test pits in the suburbs of Felpham and Flansham in advance of the same road scheme as the trenches excavated by Wessex Archaeology. The closest test pit was c 2km east south-east of the Site, while the surface elevation was around +5m OD. Chalk bedrock was found at around +1m OD in all four test pits, while the overlying Pleistocene sediment cover consisted of CBD and brickearth outcropping beneath the present topsoil.
- 5.21 Further geoarchaeological investigations have been undertaken to the west of Oldlands Farm. Roberts (2007a) examined 65 geotechnical test pits and 18 boreholes that approached within 900m of the western boundary of the Site at North Bersted. The eastern-most part of the North Bersted site was associated with Holocene alluvium of the Aldingbourne Rife, but those to the west comprised a 1.15-3.50m thick bed of CBD with lenses of reworked marine sands, overlying Chalk bedrock. This sequence was sealed by brickearth and the present topsoil. A number of investigations have taken place between 2 and 2.5km to the east of the Site of which those evaluating the North Bersted perimeter road are the most wide ranging (Pine 2005). Pine examined British Geological Survey borehole data and borehole data collected by Bates to examine the Pleistocene stratigraphy. He found that at Manor Farm (SU 9231 0132) the Chalk outcropped around -1.8m OD and was buried by 2.8m of solifluction debris, which was in turn overlain by 2.60m of brickearth and 0.20m of topsoil. However, the Chalk bedrock was 4.8m higher only 80m to the north-west.
- 5.22 Available stratigraphic evidence from surrounding sites suggests that on the Site the Chalk bedrock will sit around -1 to +2m OD and will be overlain by 1.5-3.5m of CBD and 2-3m of brickearth. The Holocene soil is likely to be less than 0.5m thick. The brickearth probably dates to MIS 2 and is unlikely to contain archaeological remains, but depending upon when the CBD accreted, there is a possibility that it could contain *in situ* Palaeolithic strata and/or artefacts.

OLDLANDS FARM BUSINESS PARK, BOGNOR REGIS

ENVIRONMENTAL STATEMENT VOLUME 1

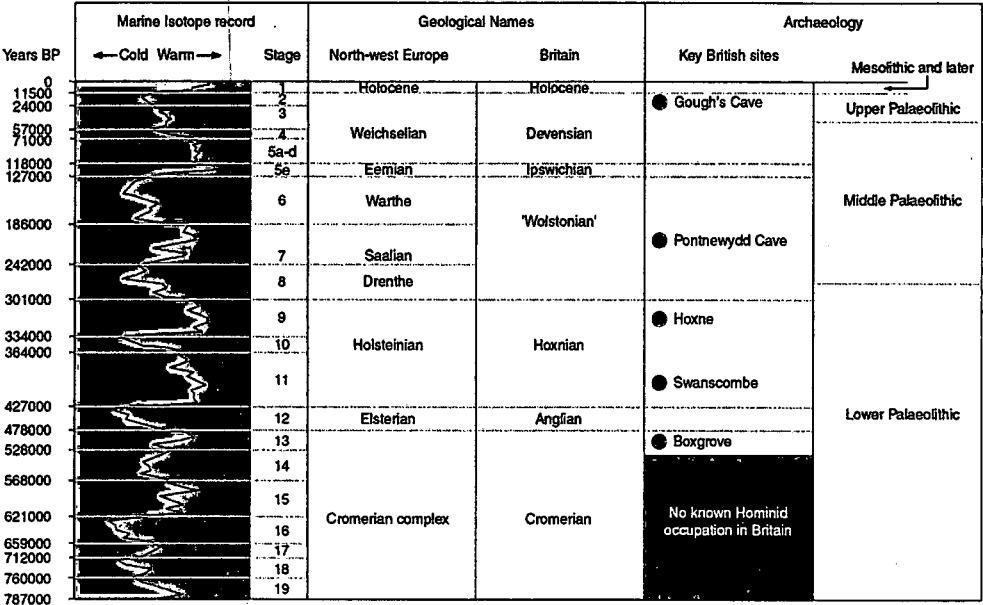


Figure 5.1 Sub-divisions of the Middle and Upper Pleistocene referenced to marine isotope climate proxies and archaeology (Wilkinson 2007, Fig. 1).

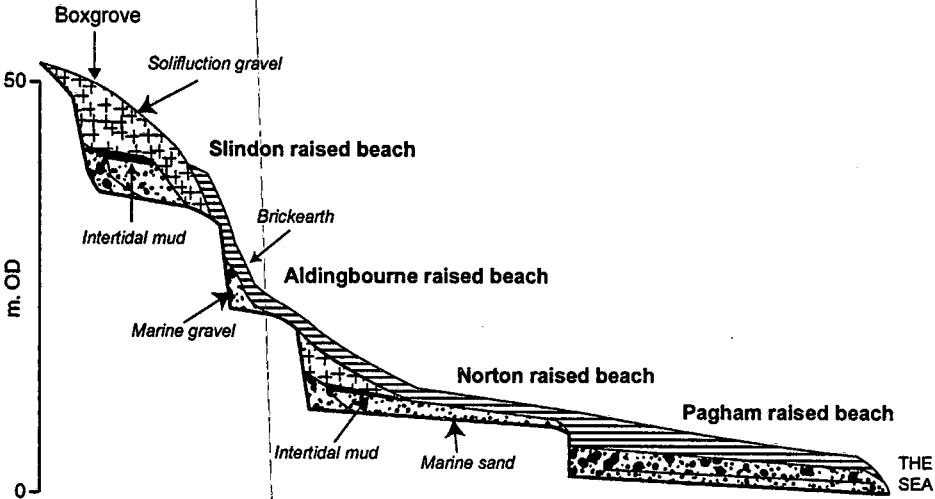


Figure 5.2 Schematic cross section through the West Sussex coastal plain (from Wilkinson 2001, fig. 10.2, modified after Roberts 1999 fig. 17).

Table 5.4 Traditional view of raised beaches and associated deposits of the West Sussex coastal plain and their age in relation to marine isotope stages (MIS).

Beach	Height (m OD)	Formation	Member	Age (MIS)
Pagham	-2 to +3	Pagham	Pagham Gravel	5e
Brighton-Norton	+5 to +12	Norton	Norton Silt	7
Aldingbourne	+17.5 to 27.5	Aldingbourne	Aldingbourne Gravel Aldingbourne Sand	11
Goodwood-Slindon	+32 to +43	Slindon	Slindon Silt Slindon Sand Slindon Gravel	13

Early Prehistory (700,000-9500 BC)

- 5.23 There are no Palaeolithic sites/artefacts recorded either on the WSSMR or on the SRPP databases for the study area or its environs as defined in Section 1.1. The SRPP reports four Palaeolithic findspots from the lower coastal plain within 10km of the Site (Table 5.5). It is notable that the commentary associated with each findspot suggests that at least two of the findspots comprises artefacts found in a secondary context. SXR B 2 11 and SXR B 2 12 are associated with Holocene deposits and have obviously been eroded from nearby Pleistocene strata. However, SXR B 2 13 and SXR B 2 14 are associated with fan gravels/periglacial deposits.
- 5.24 Both the quantity of Palaeolithic artefacts and the number of findspots on the lower coastal plain are few, particularly when compared to the upper coastal plain. In the latter situation Palaeolithic artefacts are reported from several aggregate quarries, while considerable quantities of artefacts have been recovered from sites such as Boxgrove (Pope and Roberts 2003). There are a number of reasons why such differences between the upper and lower coastal plain could occur. Firstly, if as suggested in Section 4.6 above, the Pleistocene stratigraphy of the lower coastal plain dates from MIS 6-2, it is likely, based on models produced by Hosfield (1999) and Ashton and Lewis (2002), that hominins were less frequent visitors to southern Britain during this time than in MIS 11 and MIS 13. There is less chance therefore of finding artefacts relating to this period. Secondly, most Palaeolithic finds from the upper coastal plain were made as a result of aggregate extraction, i.e. where the Pleistocene stratigraphy has been penetrated over comparatively large areas. There has been relatively little exploitation of the lower coastal plain by the aggregate industry and therefore there is a correspondingly small window through the Pleistocene deposits of this zone. Thirdly the lower coastal zone is covered by brickearth that was probably deposited at a point in MIS 2 when people are thought to have been absent from Britain. Therefore earlier Late Pleistocene deposits on the lower coastal plain are effectively masked by 2-3m of archaeologically sterile deposits.
- 5.25 The discussion above suggests that it is likely that Palaeolithic artefacts exist in low density within the periglacial deposits/CBD that are found below the brickearth on the Site. Whether such artefacts are *in situ* (i.e. associated with 'land surfaces') within the CBD, or whether they have been eroded from older raised beach strata is currently uncertain.

Table 5.5 Palaeolithic sites of the lower coastal plain as recorded on the SRPP (Wessex Archaeology 1994, Wymer 1999).

SRPP Ref.	NGR	Description
SXRB 2 11	SZ 774 992	Handaxe found in tidal creek on present foreshore in 1979.
SXRB 2 12	SZ 844 930	Broken handaxe found on Selsey Beach opposite the coastguard station in 1908
SXRB 2 13	SZ 682 917	Retouched flake, handaxe, two flakes and a Levallois core found in association with Ipswichian deposits on Selsey Bill
SXRB 2 14	SZ 852 934	Handaxe found in 1907 in head/fan gravel deposits below brickearth

history (9500 BC-present)

- 5.26 The earliest material recorded within the study area is a Mesolithic 'tranchet' axe found c. 400m to the north-west of the Site (Fig. 5.3, 2; WSHER).
- 5.27 Evaluation trenching in 2006 identified a east/west aligned Bronze Age ditch within the Site, cut into the natural 'Brickearth' at a depth of 0.3m BGL (Below Ground Level). Unfortunately waterlogging prevented full excavation of this feature (Fig. 5.4, Tr235; WA 2007, 92). No other Bronze Age features were identified in the immediate vicinity. The 2007 evaluation identified "a site-wide dispersed prehistoric and Roman landscape indicating agricultural practices and settlement." Two areas of Bronze Age activity focus, to the east of the study area, c. 1km east, and c. 1.6km south-east of the Site (not illustrated on Fig. 5.3; WA 2007, 26).
- 5.28 Residual struck flint of probable prehistoric date was recovered from the upper fill of a Roman ditch within the Site (Fig. 5.4, Tr235). Struck and burnt flint was observed in the ploughsoil during the Site visit (not retrieved). Although this material is not *in situ*, it does indicate a general prehistoric presence in the area.

Roman

- 5.29 Two ditches and a post-hole, of probable Romano-British date, have been recorded within the Site, at depths of 0.19m BGL (Fig. 5.4, Tr235; WA 2007 Fig. 6). Finds included fired clay and Roman pottery (WA 2007, 92). These features are potentially part of an agricultural landscape, although they could conceivably represent a small settlement or farmstead. A focus of Romano-British settlement was identified outside the study area, c. 800m to the east of Site (not shown on Fig. 5.3; WA 2007, Vi). Roman pottery has also been recovered from a garden, c. 400m to the north-west of the Site (Fig. 5.3, 4; WSHER).

Anglo-Saxon and medieval

- 5.30 Shripney, North Bersted, and [South] Bersted, situated to the north-west, west and south-west of the Site respectively are mentioned in a 7th-century Anglo-Saxon charter (Brooks & Kelly, forthcoming). Evidence for activity of this period within the study area comprises Anglo-Saxon pottery, bones and evidence of a fire, reportedly uncovered at a depth of c. 1.5m, in a back garden in Shripney in 1924, c. 400m to the north-west of the Site (Fig. 5.3, 4; WSHER).
- 5.31 The Site is situated within the parish of South Bersted, which was part of the parish of Pagham in the medieval period. The parishes of Pagham and

South Bersted were separated in the early 15th century, and at this time the Pagham Hundred became known as the Aldwick Hundred (Phillips 1838, 3). There is an early 14th-century reference to a manor at Shripney, c. 600m to the north-west of Site (VCH 1953, 224). This building has been demolished, and Shripney Manor dates to the post-medieval period (see 4.13 below, Fig. 2, 5).

Post-medieval

- 5.32
- Post-medieval sites within the study area comprise six buildings at Shripney, to the north-west of the Site (Fig. 5.3, 5-10; EH). Five of the buildings are Listed, the sixth was formerly Grade II Listed but has been de-Listed. These buildings are summarised in the table below:

Table 5.6 Post-medieval buildings in the study area.

Number on Fig. 5.3	Building	Description	Grade	Distance from Site
5	Shripney Manor	Late 17th-century two storey manor house	II	650m
6	Rambler Cottage	Late 17th-century house comprising two cottages	II	675m
7	Cottage	18th-century two storey cottage	II	725m
8	Shripney House	18th-century two storey cottage	II	625m
9	Studio Barn	18th-century one storey barn (converted)	II	650m
10	Old Cottage	18th-century two storey cottage	DL	500m

Modern

- 5.33
- One modern site is recorded within the study area. The Bognor Regis Branch Railway, which opened in 1864 and doubled in 1911, runs north-east/south-west, to the east of the Site (Fig. 5.3, 11; NMRAD).

Undated

- 5.34
- The 2005 evaluation of land between Felpham and Flansham identified four undated features within the study area, comprising a linear feature in Tr200, a small circular feature within Tr239, and circular and sub-circular features within Tr241 (Fig. 5.4). Adverse site conditions, namely waterlogging, prevented excavation. The features within Tr241 were within the Site, and were observed to be cut into the subsoil at a depth of 0.37m BGL. They are potentially of modern origin (WA 2007, 84, 92-94).
- 5.35
- A feature described as an archway was observed c. 0.75m below the ground in the 1920s, c. 200m to the north-west of the Site (Fig. 5.3, 12; WSHR). The feature was not dated and no further interpretation is recorded.

Historic Landscape and Buildings

- 5.36
- Ridge and furrow earthworks are visible within the Site on aerial photographs of the 1940s and 1950s (Fig. 5.3, 13). The earthworks are curved but do not demonstrate the classic 'S' shape of medieval ridge and furrow. This, and the narrow spacing between the ridges, suggests that they are of post-medieval origin. The features have been eroded by ploughing in the later 20th century, and are not visible on the modern aerial photographs. No traces of these features were seen during the Site visit.

- 5.37 The earliest available map to depict the Site is Yeakell and Gardner's 1778 map of Sussex, where it is depicted within four fields. The Site is first depicted in detail on the 1843 South Bersted Tithe Map and subsequently through the later 19th and 20th centuries by the Ordnance Survey. Information from the historic maps has been transposed onto Fig. 5.5 based on the modern Ordnance Survey map of 2004.
- 5.38 The historic maps do not show any major changes within the Site, although there have been some alterations to field boundaries. The alterations comprise a number of additions and removals in the eastern and northern areas of the Site, ultimately resulting in the large consolidated field present today. While the general line of the A29, bounding the western edge of the Site, can be seen on the map of 1778, it was widened in the early 20th century, and therefore the western Site boundary is modern, with the original road edge situated slightly to the west. Likewise the boundaries in the vicinity of the buildings at the south-eastern corner of the Site have undergone some minor alterations.
- 5.39 The southern edge of the Site is therefore the only surviving historic boundary depicted on the map of 1778. This map does not pre-date an Enclosure Act for the parish, and so the hedgerow does not have statutory protection under the criteria for the definition of 'Important' hedgerows in The Hedgerows Regulations 1997. However, depiction on a document of 1845 or earlier is often taken as a bench mark date for the consideration of hedgerows as historically 'Important' by Local Authorities, and is one of those proposed as a cut off point in the review of the Regulations published in 1998. The hedgerow surviving along this boundary may be considered of some cultural heritage interest by the Local Authority, although it is not considered to be important under the criteria of the Hedgerow Regulations (1997).

Identification & Evaluation of Key Impacts

- 5.40 The Proposed Development may impact upon any archaeological features cut into, or present within, the sediments which will be disturbed by the excavation of foundations or by associated groundworks and landscaping.
- 5.41 It is likely that Palaeolithic artefacts exist in low density within the periglacial deposits/CBD that are found below the brickearth on the Site. It is at present uncertain whether such artefacts are *in situ* (i.e. associated with 'land surfaces') within the CBD, or whether they have been eroded from older raised beach strata. If Palaeolithic archaeological remains do occur within the CBD in an *in situ* state they would have a high cultural heritage value, but if reworked this classification would revert to medium.
- 5.42 Archaeological evaluation by trial trenching has identified Bronze Age, Romano-British and undated features within the Site, on the southern edge of an area of previous archaeological evaluation. The precise nature of the activity represented by those features has not been established but they are potentially part of an agricultural landscape or conceivably part of a small settlement or farmstead. The limits of this activity have not been identified and it is possible that currently unrecorded associated features may be present elsewhere within the Site. The value of any currently unrecorded archaeological remains which survive within the Site is currently uncertain, although there is currently no evidence to suggest that remains of national importance are present.

- 5.43 There is some potential for evidence of now-removed ridge and furrow earthworks to survive below current ground level within the Site. Any such features present would be of negligible archaeological value.
- 5.44 The southern boundary of the Site is depicted on the 1778 Map of Sussex and may be considered as being of some cultural heritage value by the Local Authority. The boundary is considered to be of low archaeological value.
- 5.45 Five Grade II Listed buildings are recorded within the study area, at Shripney to the north-west of the Site. Grade II Listed buildings are considered to be of medium archaeological value.

Prediction of Impact Magnitude

- 5.46 Regarding the potential Palaeolithic deposits, the absence of stratigraphic data from the Site make it difficult to predict the thickness of the various Pleistocene sediments on the Oldlands Farm, although it is likely that the stratigraphic sequence will comprise (from top to bottom) topsoil, brickearth, calcareous basin deposits (CBD)/periglacial sediments and finally, Chalk. The deposits of most significance from the perspective of Palaeolithic archaeological resource are raised beach sediments, which as Roberts (2007a) suggests are unlikely to be found *in situ* on the Chalk of the Littlehampton anticline, and the CBD. If the stratigraphy of the Site is similar to that found at Felpham and North Bersted, then it is likely that the CBD will be buried by c. 2m of brickearth. Therefore – and again with the caveat that the stratigraphy of the Site is at present unknown – any intrusion into the top 2m of stratigraphy during construction will not impact on the Palaeolithic archaeological resource. Given the nature of the development it is unlikely that there will be widespread intrusion below 2m beneath the ground surface. Therefore the magnitude of the impact on potential Palaeolithic artefacts/strata of the development is currently unknown although it is likely to be minor, but at most moderate, depending upon the depth of intrusion.
- 5.47 The development is likely to disturb any later prehistoric and Romano-British archaeological features cut into the upper sediments within the Site, during the excavation of foundations or associated groundworks and landscaping. The magnitude of the impact is currently uncertain, as the extent of archaeological remains within the Site is currently uncertain.
- 5.48 The development is likely to impact upon many of the surviving below-ground remains of ridge and furrow earthworks within the Site, if such remains are present. The magnitude of this impact would be anticipated to be moderate, if unmitigated. The development will replace at least part of the southern boundary of the Site. The magnitude of this impact is also anticipated to be moderate.
- 5.49 The five Grade II Listed buildings recorded within the study area, at Shripney to the north-west of the Site, were not visible from the Site during the Site visit. As such it is not anticipated that the Proposed Development will adversely impact the setting of these buildings.

Assessment of Impact Significance

- 5.50 The review of the potential value of Palaeolithic remains that may exist on the Oldlands Farm and the probable impact of the development on archaeologically important Pleistocene strata suggest a moderate to slight unmitigated impact significance depending upon the depth of intrusion during development.

- 5.51 The significance of the effect, should impacts be unmitigated, of the Proposed Development on Bronze Age, Roman and undated remains within the Site is uncertain as the extent of these remains within the Site is uncertain.
- 5.52 In the event that evidence of ridge and furrow earthworks survives below ground the significance of the effect would be slight, if the impact was unmitigated. If the replacement of the southern boundary is unmitigated the significance of the effect will be slight.
- 5.53 It is not anticipated that the development will impact on the Listed buildings in the vicinity, therefore the significance of the effect is considered to be neutral.

Mitigation Measures

- 5.54 It has been stated a number of times in preceding sections of this document that a major constraint in assessing the impact of the Proposed Development on a potential Palaeolithic resource is the lack of stratigraphic data from the Site. Therefore a sensible next step, which would enable a better characterisation of the impact, is to obtain such information, if an initial study of the likely impact depths of the Proposed Development suggests deep impacts are probable. This would most *reliably* be obtained by drilling boreholes across the Site and carrying out a geoarchaeological characterisation of the sediments retrieved. Such data would not only help in determining the potential impact of the development on any Palaeolithic artefacts/strata, but would also allow spatial variations in that impact to be assessed. It is also *possible* that geoarchaeological test pitting may acquire the same data more rapidly, but if the Quaternary deposits prove to be >3.5m in thickness it will not be possible to penetrate the total Pleistocene sequence using this method, while descriptions will have to be made from a distance. An appropriate strategy will be agreed with the County Archaeologist. Further mitigation measures would depend on the nature of the borehole/test pit results, but zones of the Site determined as having a moderate/large impact significance after the borehole survey might be investigated in archaeological test pits prior to construction.
- 5.55 There is potential for unrecorded later prehistoric and Romano-British archaeological remains within most of the Site. A programme of further evaluation, in order to define the value of the resource, will be agreed with the County Archaeologist. The precise scope of these works is currently uncertain but suitable techniques may include fieldwalking and trial trenching. It is anticipated that the results of any further evaluation works required will be available for the determination of the planning application. Following the results of the evaluation, an appropriate programme of mitigation will be agreed with the County Archaeologist, and implemented.

Cumulative Effects

- 5.56 Should below ground archaeological remains within the Site be found to be associated with below ground archaeological remains impacted upon by the development of land between Felpham and Flansham, immediately to the north of the Site, there may be cumulative effects. The extent of the cumulative effects are currently uncertain, as the presence of the resource within most of the Site is currently uncertain.

Residual Effects

- 5.57 Any adverse impacts of the development upon archaeological features encountered within the Site will be partially mitigated by their recording, preserving them by record. However, as archaeology is a finite resource and cannot be directly replaced, a minor adverse impact will remain. The significance of the effect on the resource is currently unknown, as the value of archaeological remains present and is currently uncertain.
- 5.58 If Palaeolithic remains of high or medium value are disturbed the residual significance will be moderate or slight. If Bronze Age and Romano-British remains of low or medium value are present within the Site, this residual effect will be of neutral or slight significance. The residual effect upon any below ground remains of ridge and furrow earthworks and southern boundary of the Site is likely to be of slight or neutral significance.

Table 5.7 Residual Impact Table.

Impacts	Description of Impact		Description of Mitigation Measure(s)	Description of Residual Impact	
	Description	Significance		Description	Significance
Construction Impacts	Removal of below ground archaeological features	Uncertain	Evaluation possibly followed by a programme of archaeological works	Slight	Uncertain
Operational Impacts	Impact on the setting of the Listed buildings	Neutral	n/a	Neutral	Neutral

Summary

- 5.59 It is likely that Palaeolithic artefacts exist in low density within the deposits that are found below the brickearth on the Site. Further information on the depth at which the ground where the deposits may occur will be obtained from further evaluation work, if an initial study of the likely impact depths of the Proposed Development suggests deep impacts are probable. If further evaluation works are required, the scope of these will be agreed with the County Archaeologist.
- 5.60 A previous evaluation by trial trenching has identified archaeological features within the north-western corner of the Site comprising a Bronze Age ditch, and two ditches and a post-hole of Romano-British date. The extent and character of this activity within the Site is uncertain. A programme of further evaluation will be agreed with the County Archaeologist.
- 5.61 Now-removed ridge and furrow earthworks, dating to the post medieval or modern period, have been identified within the Site. There is some potential for the survival of evidence of these features below-ground. The proposed development will replace the southern boundary of the Site. The boundary is depicted on a map of 1778 and may be considered of some cultural heritage value by the Local Authority. The residual impact upon any surviving below-ground evidence of ridge and furrow earthworks, and the southern Site boundary, is likely to be of neutral or slight significance.
- 5.62 It is not anticipated that the Proposed Development will impact upon the five Listed buildings recorded within the study area. These buildings were not visible from the Site during the Site visit, as such the significance of the impact is considered to be neutral.

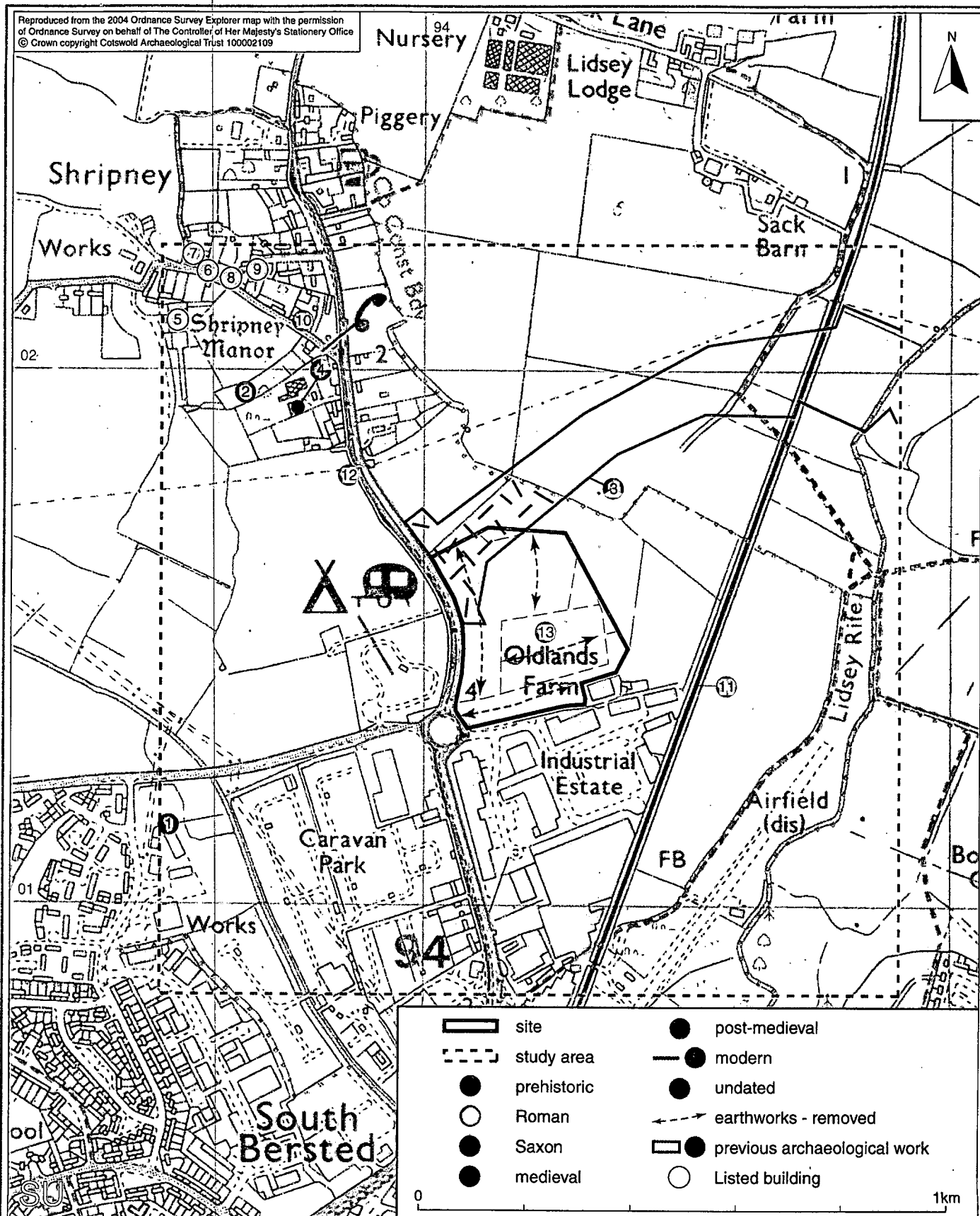


Figure:	5.3		
Title:	Known Archaeological Sites		
Project:	Oldlands Farm, Bognor Regis		
Date:	November 2007	Scale:	1:10,000

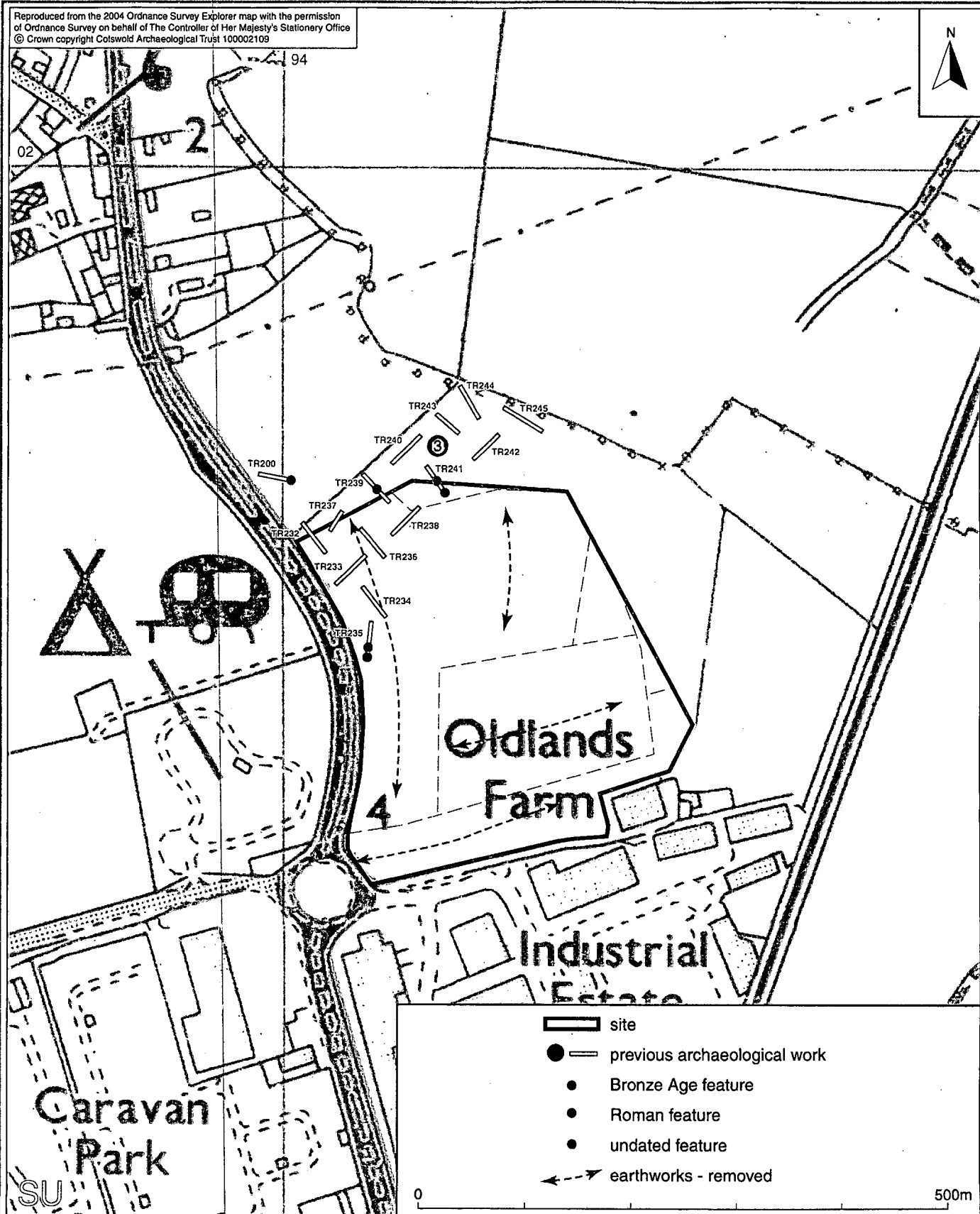


Figure:	5.4		
Title:	Known Archaeological Resource		
Project:	Oldlands Farm, Bognor Regis		
Date:	November 2007	Scale:	1:5,000

Based on the First Edition Ordnance Survey map of 1843

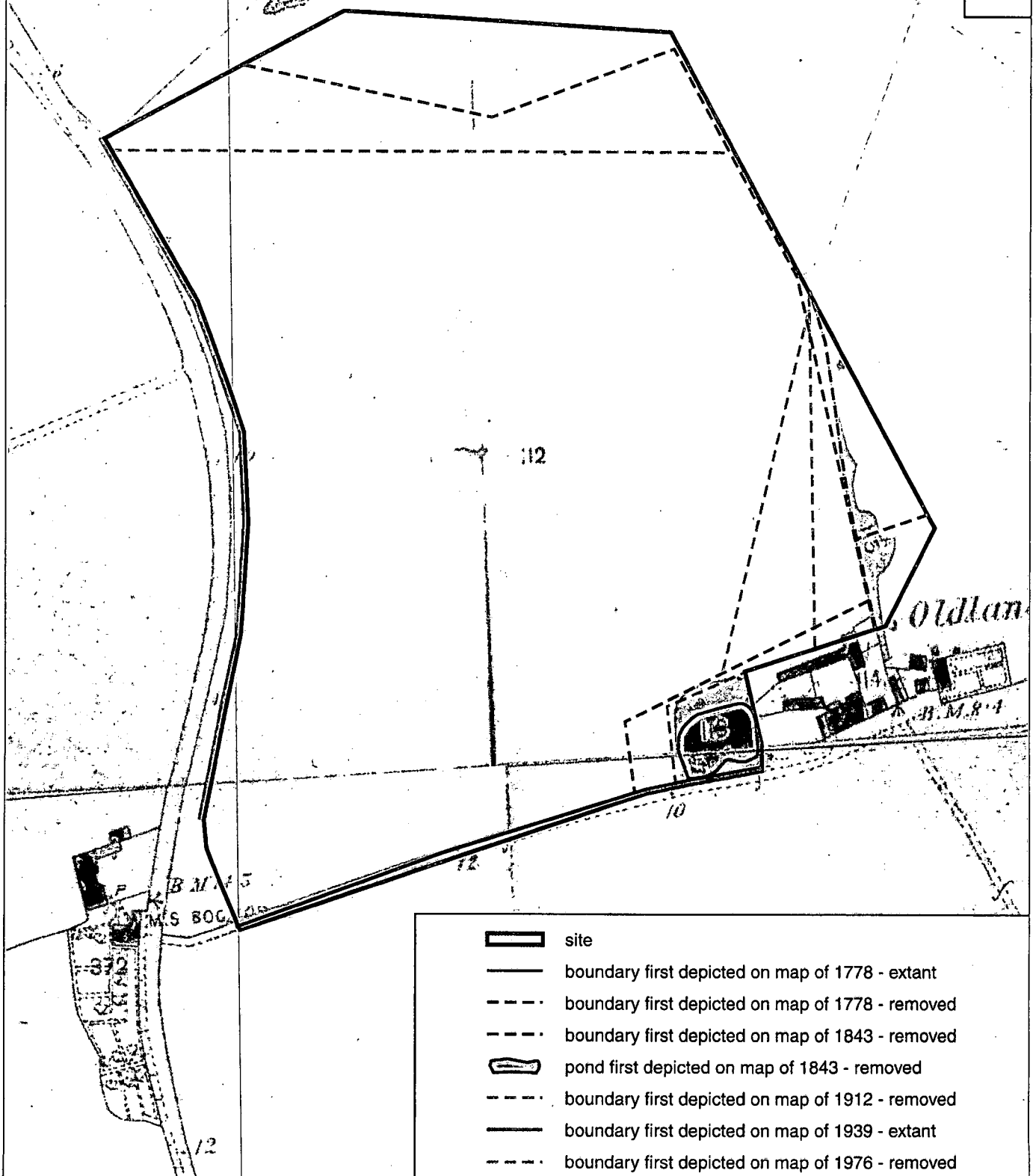


Figure:	5.5		
Title:	The Historic Landscape		
Project:	Oldlands Farm, Bognor Regis		
Date:	November 2007	Scale:	1:2500