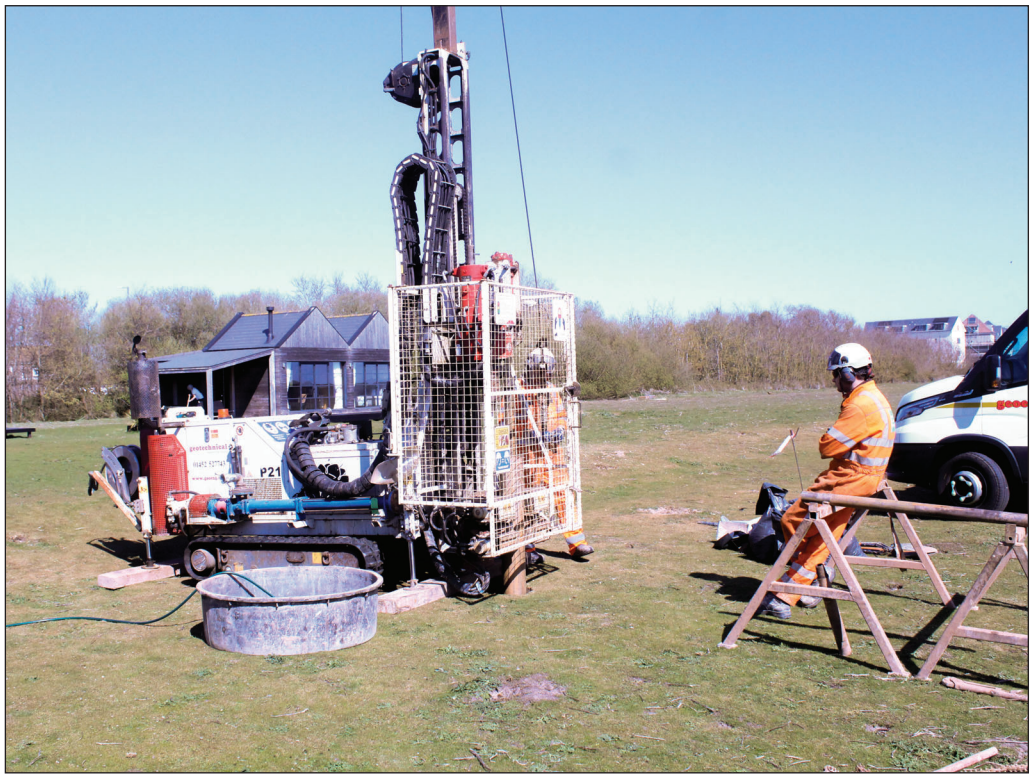
Cabu by the Sea Phase 3
New Romney

Geoarchaeological Borehole Survey and Deposit Modelling



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wessexarchaeology

Unit R6
Sheaf Bank Business Park
Prospect Road
Sheffield
S2 3EN

www.wessexarch.co.uk

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Document compiled by	Jasmin Lycett
Graphics by	Marijane Porter

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Summary

A programme of geoarchaeological borehole survey and deposit modelling was undertaken at Cabu by the Sea, St Mary's Bay, Kent. The principal aims of the investigation were to assess the geoarchaeological potential of the superficial deposits at the Site, and to make suitable proposals for further work (where appropriate). Two rotary boreholes (WA01 and WA02) were undertaken on the Site within the footprint of proposed cabins 26 and 27 to a depth of 2.30m bgl (below ground level), both of which were monitored and described by the attending geoarchaeologists. A programme of geoarchaeological deposit modelling was subsequently undertaken, integrating the results of the new geoarchaeological borehole survey with existing GI data.

The results of the work identified a sequence of superficial deposits comprising of sandy interridge deposits underlain by coastal gravels associated with the Dungeness Foreshore Barrier Gravel, with the interface between the two units being encountered at 4.30m OD in WA01 (0.40m bgl) and at 4.17m OD (0.38m bgl) in WA02. Whilst the archaeological and palaeoenvironmental potential of the barrier gravel is low, the unit is of geomorphological significance, with the unit providing an important insight into patterns of mid to late Holocene coastal change, barrier evolution and the interrelationship to the back-barrier environment of New Romney.

The base of the Dungeness Foreshore Barrier Gravels was not encountered during this phase of works, but the unit is known to overlie tidal flat deposits of probable Late Holocene age at a depth c. 4.00-4.50m bgl from previous geoarchaeological investigations within the Site (Wessex Archaeology 2023). The tidal flat deposits are preserved below the depth of impact for the proposed works (2.00m bgl) and the archaeological and palaeoenvironmental potential of these deposits is considered low. The Dungeness Foreshore formed under a process of longshore drift, and of progressively younger age as the barrier developed to the east. At the site the barrier is likely of a relatively recent age, with the evolution of the foreshore rapidly prograding eastwards from c. 2 Kya (Long et al. 2007).

Although organic and peat rich units of geoarchaeological potential have been identified within the interridge deposits of the Dungeness Foreland and across Romney and Welland Marsh, no such deposits were encountered within WA01 and WA02; this is consistent with previous investigations within the Site (Kirby 2013, Wessex Archaeology 2023). The likelihood of organic interridge deposits being present within the Site is considered low.

Shell-rich sub-units of the barrier gravels were identified within the prior geoarchaeological borehole survey (Wessex Archaeology 2023) at a minimum depth of 2.76m OD (2.00m bgl) in the north-east of the Site (BH1), with the top of the sub-unit being encountered at 0.87m OD (4.00m bgl) and 1.89m OD (2.65m bgl) in BH6 and BH8 respectively in the centre of the Site (**Figure 1**). No shell-rich sub-units were encountered within WA01 or WA02, however these boreholes terminated at 2.40m OD and 2.25m OD respectively; the possibly of this unit being present at a depth below the investigation depth cannot be discounted from this phase of works.

The proposed development will impact on deposits of the Dungeness Foreshore Barrier Gravels present at a shallow depth within the footprint of cabins 26 and 27. However, the deposits identified within the boreholes have limited geoarchaeological and archaeological potential and are not in themselves unique, being consistent with deposits present widely across the Dungeness Foreland.

Acknowledgements

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Jasmin Lycett. The report was compiled by Jasmin Lycett and reviewed by Dr Alexander Brown. Figures were produced by Marijane Porter. The project was managed on behalf of Wessex Archaeology by Dr Alexander Brown.

Cabu by the Sea Phase 3, St. Mary's Bay, Kent

Geoarchaeological Borehole Survey and Deposit Modelling

1 INTRODUCTION

1.1 Project and planning background

1.1.1 Wessex Archaeology has been commissioned by CABÜ Ltd ('the client') to produce a report outlining the results of geoarchaeological borehole survey and deposit modelling at Cabu by the Sea, Kent (the 'Site'). The site (centred on National Grid Reference (NGR) TR 09020 27170) is located within the Romney Marsh and Dungeness Foreland Site of Special Scientific Interest (SSSI), approximately 0.45 km south of St Mary's Bay, Kent (**Figure 1**).

1.1.2 The proposed development of the site comprises two new semi-detached holiday cabins constructed on screw piles (the depths of which are not likely to exceed approximately 2 m). The proposed works comprise a purposive geoarchaeological borehole survey targeting the area of the proposed new cabins 26 and 27 and are informed by the results of a previous geophysical survey (Wessex Archaeology 2021b) and borehole survey (Wessex Archaeology 2023).

1.2 Scope of works

1.2.1 Previous geophysical survey (Wessex Archaeology 2021b) and geoarchaeological borehole survey works (Wessex Archaeology 2023) identified the presence of Quaternary superficial geological deposits and features of geomorphological and geoarchaeological interest within the site. These are comprised of sands and gravels of the Dungeness Foreland gravel barrier, comprising ridges and inter-ridge depressions that are overlain or infilled in places by inter-ridge or post-gravel deposits comprised of silty sands. The gravel barrier is underlain, as encountered in one borehole, by tidal flat deposits.

1.2.2 Such Quaternary geological deposits may have potential to contain archaeology, as well as environmental remains reflective of past human activity, landscapes and environments. Assessment of the archaeological resource associated with Quaternary deposits is 'deposit-led', and requires multidisciplinary 'geoarchaeological' approach combining archaeological, geological, geophysical and palaeoenvironmental investigative techniques.

1.2.3 Assessment of the archaeological resource associated with Quaternary deposits is 'deposit-led', with the aim to provide lithostratigraphic and chronostratigraphic frameworks and to assess the archaeological and palaeoenvironmental potential of different deposits. A multidisciplinary 'geoarchaeological' approach combining archaeological, geological, geophysical and palaeoenvironmental investigative techniques is often required in order to fully assess that potential.

1.2.4 The agreed program of works comprises:

- 2 no. purposive geoarchaeological boreholes to 2.7m below ground level (bgl), undertaken using a rotary drilling rig targeting the Dungeness Foreland gravel barrier;

- A programme of updated geoarchaeological deposit modelling integrating the data from existing GI logs.

1.2.5 All works undertaken were in accordance with Written Schemes of Investigation (WSI) which detailed the aims, objectives, methodologies and standards to be employed to undertake the evaluation (Wessex Archaeology 2025).

1.2.6 The borehole survey was undertaken on the 7th of April 2025.

1.3 Scope of document

1.3.1 The purpose of this report is to provide a detailed description of the results of the geoarchaeological borehole survey and updated deposit modelling, reviewing the lateral and horizontal extent of the different deposits identified, and to interpret the results within a local, regional or wider geoarchaeological context and to assess whether the aims of the borehole survey have been met.

1.3.2 The presented results will provide further information on the geoarchaeological resource that may be impacted by the proposed development and facilitate an informed decision with regard to the requirement for, and methods of, any further archaeological works; or the formation of a mitigation strategy (to offset the impact of the development on the archaeological resource); or a management strategy.

1.3.3 To help frame geoarchaeological investigations of this nature, Wessex Archaeology has developed a four-stage approach, encompassing different levels of investigation appropriate to the results obtained, accompanied by formal reporting of the results at the level achieved. The stages are summarised below (**Table 1**). This report relates to Stage 2 of this process.

Table 1 Staged approach to geoarchaeological investigations

Stage 1: Geoarchaeological deposit model and Desk-based Assessment (GDBA)	A geoarchaeological deposits model and desk-based assessment (GDBA) examines a range of information (published and unpublished ("grey literature"), geological mapping, Ground Investigation data, historic maps etc.) to inform on the geoarchaeological potential of deposits within a Site The GDBA may include a Geoarchaeological Landscape Characterisation (GLC) which divides the Site into different zones (Geoarchaeological Characterization Zones – GCZs) based on variations in deposits and potential. The GDBA establishes the requirements for and scope of Stage 2 geoarchaeological field investigations. Should Stage 2 work be required, appropriate and proportionate recommendations for each GCZ are provided.
Stage 2: Geoarchaeological borehole survey	Borehole survey to establish the geoarchaeological potential of deposits within a defined area, and which recovers samples for Stage 3 palaeoenvironmental assessment. A borehole survey report is produced, which includes updated deposit modelling and an updated GLC. If required, recommendations for Stage 3 sample assessment are made.
Stage 3: Palaeoenvironmental assessment	Palaeoenvironmental samples recovered during Stage 2 are assessed to inform on the archaeological and geoarchaeological potential of deposits and guide the scope and need for Stage 4 analysis. A report is produced outlining the palaeoenvironmental potential of the deposits including targeted and proportionate recommendations for Stage 4 analysis.

Stage 4: Palaeoenvironmental analysis	Based on the results of the Stage 3 palaeoenvironmental assessment, palaeoenvironmental analysis on selected deposits/samples may be required. In addition to full analysis of suitable samples identified during the assessment. work at Stage 4 may include additional scientific dating where appropriate/required. A final analysis report is provided on completion of the analysis. Where appropriate, this may include recommendations for publication or other forms of dissemination.
Publication	The scope and location of a publication report will be agreed in consultation with the client and LPA advisor. The publication report may comprise a note in a local journal or a larger publication article or monograph, dependant on the significance of the archaeological work.

2 BACKGROUND

2.1 Introduction

2.1.1 This section provides background information relevant to the borehole survey, including site location, topography and geology, and information relating to possible geoarchaeological resource present.

2.1.2 Background on the Site and the geoarchaeological resource that may be present was provided in a prior WSI (Wessex Archaeology 2025). Relevant information is summarised below, with additional sources of information referenced, as appropriate.

2.2 Chronology

2.2.1 Geoarchaeological investigations are typically undertaken with reference to geological periods (e.g. Quaternary), epochs (e.g., Pleistocene) and sub-epochs (e.g., Devensian) that reflect major climate sea-level and/or environmental changes. Here we adopt British nomenclature correlated to the Marine Isotope Stage (MIS) record to distinguish between different climatic periods, with dates given in Kya BP (thousands of years before present).

2.2.2 Marine Isotope Stages are deduced from marine palaeoclimatic records and reflect alternating warm (interglacial and interstadial) and cold (glacial and stadial) periods throughout the Quaternary (**Table 2**).

2.2.3 Where age estimates are available these are expressed in millions of years (Mya), thousands of years (Kya) and within the Holocene epoch as either years Before Present (BP), Before Christ (BC) and Anno Domini (AD). These are linked to the global Marine Isotope Stage (MIS) chronological framework.

Table 2 British Quaternary chronostratigraphy

Geological Period	**Chronostratigraphy**		**Age (Kya)**	**MIS**
Holocene	Holocene interglacial		11.7 – present	1
Late Pleistocene	Devensian Glaciation	Loch Lomond Stadial	11.7 – 12.9	2 – 5d
		Windermere Interstadial	12.9 – 15	
		Dimlington Stadial	15 – 26	

Geological Period	Chronostratigraphy		Age (Kya)	MIS
		Upton Warren Interstadial	40 – 43	
		Early Devensian	60 – 110	
	Ipswichian interglacial		115 – 130	5e
Middle Pleistocene		Unnamed cold stage	130 – 374	6
		Aveley interglacial		7
		Unnamed cold stage		8
		Purfleet interglacial		9
		Unnamed cold stage		10
	Hoxnian interglacial		374 – 424	11
	Anglian glaciation		424 – 478	12
	Cromerian Complex		478 - 780	13 – 19

2.3 Site location, topography and geology

2.3.1 The underlying bedrock at the site is mapped by the BGS as the sandstones, siltstones and mudstones of the Hastings Bed, formed 134 –145 Mya during the Cretaceous period (BGS 2025). The superficial geology across the site is mapped by the BGS as Storm Beach Deposits formed up to 3 Mya during the Quaternary Period (BGS 2025). Recent investigations have shown that these gravel deposits are likely to date to the Holocene and are likely to have formed within the last 4000 years (see below).

2.3.2 The Site is located to the south of St Mary's Bay at Cabu by the Sea, Kent. The Site area is limited by Dymchurch Road/A259 to the north-west and Romney Sands to the west and south-west, with the former site of the Sands Motel being located to the north-east of the Site. The Site is coastal and generally flat, with ground level being between 4.50m and 5.00m OD.

2.4 Previous investigations

2.4.1 The results of recent work undertaken at the site by Wessex Archaeology (2021b; 2023) are summarised below.

Electrical Resistivity Tomography (ERT) survey (Wessex Archaeology 2021b)

2.4.2 An electrical resistivity tomographic (ERT) survey was conducted at the site with the aim of establishing the presence (or otherwise) and nature of detectable archaeological deposits in support of a planning application for the development of the site for 10 new semi-detached holiday cabins and a fish shack constructed on screw piles, with associated landscaping.

2.4.3 A total of six ERT transects were undertaken within a 2.5 hectare triangular area of land. The ERT was successful in identifying sub-surface deposits consistent with the established sedimentary sequence of the site. This comprises nearshore sands (low resistivity) overlain by gravels (high resistivity), which are intersected by a series of depressions infilled by finer grained material.

Geomorphological and geoarchaeological survey (Wessex Archaeology 2023)

2.4.4 A programme of geomorphological and geoarchaeological survey was undertaken at the site in order to refine understanding of the presence, nature and distribution of sediments, and to assess the geomorphological and archaeological significance of those deposits in combination with the previous ERT survey. Informed by the results of the ERT survey and LiDAR data, four geoarchaeological boreholes were drilled to investigate the geomorphology of the gravel ridges and inter-ridge depressions.

2.4.5 The following sedimentary units were identified during the borehole survey:

- Tidal flat deposits
- Beach sands and gravels
- Inter-ridge/post-gravel deposits

2.4.6 The character and distribution of these deposits is discussed below.

Tidal flat deposits

2.4.7 This unit, of uncertain but likely Late Holocene date, was encountered underlying the beach gravels in one borehole towards the northeast of the site (BH1) at 4.2 m bgl. The contact between these units is considered likely to lie at a similar depth (c. 4-4.5 m) across the remainder of the site, although this unit was not reached in the remainder of the boreholes. This contact is located below the expected maximum depth of impact of the proposed development (2.00m).

2.4.8 These deposits are minerogenic in BH1, with no organic-rich or peat units recorded. Their archaeological and palaeoenvironmental potential is considered to be low, and they are unlikely to be suitable for optically-stimulated luminescence (OSL) or radiocarbon dating due to the nature of the material and uncertain provenance (see Wessex Archaeology 2023).

Beach sands and gravels

2.4.9 These deposits were recorded across the site, confirmed to a depth of 4.2 m bgl in borehole BH1. The beach gravels were formed in a high energy coastal environment, with the gravel highs representing storm ridges and the deposition of gravel above the intertidal zone. Slight variations in the main gravel body were identified, with a general coarsening-upwards, with occasional interbedded clay, silty sand, coarse sand, fine gravel and shell-rich sub-units.

2.4.10 Whilst the archaeological and palaeoenvironmental potential of the beach sands and gravels was considered to be low, their high geomorphological significance was highlighted. For example, OSL dating of the basal sand unit within these deposits has the potential to provide an important insight into patterns of mid- to late-Holocene coastal change, barrier evolution and the interrelationship to the back-barrier environment of New Romney (see Wessex Archaeology 2023).

Inter-ridge/post-gravel deposits

2.4.11 These deposits, comprised of silty sands and containing occasional rounded pebbles, were recorded in thicknesses of between 0.3 and 0.7 m across the site, directly overlying the beach sands and gravels. These deposits are interpreted as forming within a low-energy intertidal environment and are equivalent to the sands, silts and clays found as the upper unit across much of Romney and Walland Marsh in embayments or areas enclosed by gravel ridges. These sediments may include wind-blown deposits or material derived from over (through) wash behind the gravel ridges.

2.4.12 No organic-rich or peat units were identified within these deposits, and as such they were considered to have no direct palaeoenvironmental potential.

2.4.13 The report on the geomorphological and geoarchaeological survey (Wessex Archaeology 2023) concluded that geomorphology of the gravel topography at the site and the deposits investigated are consistent with surrounding areas within the Dungeness Foreland SSSI, and are therefore not in themselves unique, being typical of the barrier-interface deposits present elsewhere in the SSSI.

2.4.14 The site has surface geomorphology, but this was in many parts of the site degraded. The geomorphological features were therefore not considered of high quality, and there were no indications that the gravel in the area to be impacted by the proposed development is unique within the SSSI (see Wessex Archaeology 2023).

2.5 Geological and geoarchaeological context

2.5.1 The site is part of the Dungeness Foreland barrier running along the eastern shores of Romney Marsh. The sedimentary sequence across the site comprises nearshore sands overlain by gravel ridges (beach barriers) of the prograding shingle barrier of the Dungeness Foreland. The barrier is interrupted by a series of natural depressions infilled with fine-grained and locally organic Holocene sediment representing tidal inlets and brackish lagoons.

2.5.2 The current shingle barrier of the Dungeness Foreland overlies a series of older beach ridges that formed part of a more extensive coastal barrier extending from Fairlight Head in the west (26 km south-west of St Mary's Bay) to Hythe in the east (10 km north-east of St Mary's Bay). St Mary's Bay and the wider Romney Marsh landscape have been well studied as part of a significant body of investigation on the Holocene evolution of the Dungeness Foreland, including an Aggregate Levy Sustainability Fund (ALSF) study focusing on barrier dynamics and marshland evolution (Long *et al.* 2007).

2.5.3 Research to date has generated significant data on the chronological evolution of the Dungeness Foreland and Romney Marsh, along with its vegetation history, evidence for human impact and relationship to patterns of coastal change (e.g. Long *et al.* 2007). Recent research documented in Long et al., (2006, 2007), Roberts and Plater (2007), Plater *et al*. (2006, 2009), Mellett *et al*., (2012), Opus (2014), Jacobs (2020), and Wessex Archaeology (2018, 2023) has significantly enhanced our understanding of geomorphology and Holocene coastal change within the Dungeness landscape, providing a depositional chronology from the mid- to late Holocene (5000 years to present) (Kirby *et al* 2014). However, Kirby (2013) highlights that the chronology of gravel deposition and barrier evolution is not well understood for the part of the barrier system between Dungeness and Hythe, in which the present site is located.

2.5.4 The complexity of the coastal geomorphology and wider marshland at Dungeness is unparalleled in the UK. Formed as a result of long-term sea-level change, coastal erosion and sediment deposition over that last 5000 years, the Dungeness Foreland has been designated SSSI status for its international geomorphological significance to inform on coastal geomorphology and Holocene coastal change (Kirby 2013). A recent geomorphological survey immediately to the west of the site at St Mary's Bay Rugby Club (Kirby 2013) showed that the superficial deposits consisted of a sequence of buried gravel and near surface finer-grained minerogenic deposits of sand, silt and clay, interspersed with variable amounts of gravel. As a whole these sediments were considered typical of the deposits on the edge of Dungeness foreland, which interface with the adjacent marshland deposits to the northwest (Kirby 2013).

2.5.5 The fine-grained deposits comprised of sands, silts and clays form the upper unit across much of Romney and Walland Marsh, and represent deposition by tidal processes under lower energy intertidal conditions in embayments, or areas enclosed by surrounding gravel ridges, possibly during historical times (see Plater & Long 1995). The underlying gravels were deposited in high energy coastal conditions, and the gravel highs represent storm ridges and the deposition of gravel above the intertidal zone (Spencer *et al*. 1998, Plater *et al*. 1999).

2.5.6 The chronology of gravel deposition and barrier evolution is not well understood for this part of the barrier system between Dungeness and Hythe (Kirby 2013), and there remains some uncertainty as to the age of the gravel deposits in the area of the present site since they have not been directly dated. The geomorphological investigations undertaken by Kirby (2013) at St Mary's Bay Rugby Club showed that the alignment of the gravel ridges are similar in character to those of the original barrier which extended from Fairlight towards Hythe in a southwest/northeast trending alignment. Kirby (2013) therefore considered it possible that the gravel here is a remnant of this original linear barrier feature, potentially dating from around 4000 years ago.

2.5.7 However, on the basis that a series of breaches of the barrier occurred from c. 0 BC/AD, including one around 750 AD in the area of New Romney, it is possible that the gravel is relatively recent and formed as a result of erosion and reworking following the barrier breach (Kirby 2013).

3 AIMS AND OBJECTIVES

3.1 Introduction

3.1.1 The aims and objectives of the borehole survey are in accordance with those outlined within the WSI (Wessex Archaeology 2025).

3.2 Overarching aims

3.2.1 The general aims (or purpose) of the borehole survey, in compliance with the CIfA *Standard and guidance for archaeological field evaluation* (CIfA 2020a) and *KCC Manual of Specification Part B: Specification for Preliminary Evaluating of Quaternary Deposits and Palaeolithic Potential,* were to:

- provide information about the geoarchaeological potential of the Site;
- consider the possible significance of any geoarchaeological evidence present, or potentially present, in the context of national and regional research priorities and agendas (e.g., English Heritage 2008a, Natural England 2022, South East Research Framework), and
- inform on possible requirements for further geoarchaeological work that may be required to further characterise the geoarchaeological resource, to offset the impact of the development on the geoarchaeological resource or develop a management strategy.

3.3 Overarching objectives

3.3.1 In order to achieve the above aims, the overarching objectives of the evaluation were to:

- record the sequence of deposits at each borehole location;
- obtain geoarchaeological samples of relevant deposits (where possible);

- undertake deposit modelling of the data arising from the borehole survey, integrating any available GI data and relevant BGS archive boreholes, in order to map the extent, thickness and depth of Quaternary deposits;
- interpret the probable environments represented;
- determine the importance of the deposits with regard to their geoarchaeological potential; and
- make specific recommendations for further work, where appropriate, which may include Stage 3 palaeoenvironmental assessment and/or scientific dating

3.4 Site-specific objectives

3.4.1 The following specific objectives of the borehole survey were identified in the WSI (Wessex Archaeology 2025):

- Identify the presence of inter-ridge depressions and the character of the sediments infilling them;
- Identify the likely impact of the development on the gravel deposits, and the presence of sub-gravel deposits within the depth of impact;
- Record sequences and obtain suitable samples, where possible, from the deposits to characterise the full sequence of sediments;
- Integrate the results of the geophysical and geoarchaeological borehole surveys to update the deposit model for the site, including, where appropriate, representative transects, thickness plots and digital elevation models (DEMs);
- Establish the potential of the deposits to preserve archaeological or palaeoenvironmental remains, and;
- Report on the results, with recommendations and proposals for further work where appropriate.

4 FIELDWORK METHODS

4.1 Introduction

4.1.1 All works were undertaken in accordance with the detailed methods set out within the WSI Wessex Archaeology). Any significant variations to these methods were agreed in writing with the Kent County Archaeologist, Natural England and the client, prior to being implemented.

4.1.2 The borehole survey comprised of two purposive geoarchaeological boreholes drilled to 2.3m bgl using a Commanchio type rotary drilling rig.

4.1.3 The fieldwork was carried out under the supervision of experienced geoarchaeological specialists from Wessex Archaeology's geoarchaeological team.

4.2 Setting out of the boreholes

4.2.1 All boreholes were set out using GNSS in the positions shown in **Figure 1**.

4.3 Service location and other constraints

4.3.1 Before excavation began, area of the boreholes was walked over and visually inspected to identify the location of any below/above-ground services. All borehole locations were scanned before and during excavation with a Cable Avoidance Tool (CAT) to verify the absence of any live underground services.

4.3.2 A hand-dug test pit was excavated to a depth of 0.80m below ground level (bgl) prior to drilling; the depth of the inspection pit was decreased from the standard depth of 1.20m due to encountering coarse-grained geology difficult to clear by hand-digging methods at this depth. As natural was encountered and the depth of impact of the proposed works would still be reached (2.00m bgl), drilling proceeded from 0.80m.

4.4 Drilling methods

4.4.1 A total of two boreholes (WA01 and WA02) were put down at the locations shown in **Figure 1** in the footprint of proposed cabins 26 and 27.

4.4.2 At each borehole location sleeved cores 1.50m in length was extracted using a rotary drilling rig (Commachio type) with a windowless sampling barrel.

4.4.3 The boreholes were drilled to a depth of 2.30m bgl; this depth comprises of a 0.80m deep inspection pit and one 1.50m core run. The target drilling depth of 2.70m was not reached due to the decreased depth of the inspection pit from 1.20m to 0.80m; the geoarchaeological borehole survey was designed to get a single core of 1.50m from each position.

4.4.4 Drilling works were carried out by experienced geotechnical engineers from Geotechnical Engineering Ltd under the supervision of suitably experienced members of Wessex Archaeology's geoarchaeological team.

4.4.5 The supervising geoarchaeologists recorded, described and interpreted the sequences of deposits encountered and their likely geoarchaeological potential assessed. Where deposits with geoarchaeological were identified, selected core lengths were retained.

4.4.6 Retained core lengths were sealed and marked with the project number, site number, borehole number and sample depth and returned to the Wessex Archaeology laboratory for retention.

4.5 Sediment description

4.5.1 The boreholes were recorded using Wessex Archaeology's pro-forma digital recording system. For each stratigraphic unit descriptions and interpretations of the deposits are provided. Descriptions of deposits included information such as:

- *Depth*
- *Texture*
- *Composition*
- *Colour*
- *Inclusions*
- *Structure*
- *Shape and nature of contacts between deposits*

4.5.2 Interpretations included, where possible, probable depositional environments and formation processes.

4.5.3 A full photographic record was made using a digital camera equipped with an image sensor of not less than 10 megapixels. This recorded both the detail and the general context of the principal lithological and stratigraphic features, and the evaluation area as a whole.

4.5.4 Digital images were subject to managed quality control and curation processes which will embed appropriate metadata within the image and ensure long term accessibility of the image set. Photographs were taken of all areas, including access routes, to provide a record of conditions prior to and on completion of the borehole survey.

4.6 Sampling

4.6.1 Where deposits of geoarchaeological potential were identified in the boreholes, Wessex Archaeology retained suitable core lengths in sleeved liners.

4.7 Survey

4.7.1 The real time kinematic (RTK) survey of all boreholes was carried out using a Leica GNSS connected to Leica's SmartNet service. All survey data was recorded in OS National Grid coordinates and heights above OD (Newlyn), as defined by OSGM15 and OSTN15, with a three-dimensional accuracy of at least 50 mm.

5 POST-EXCAVATION METHODS

5.1 Stratigraphic evidence

5.1.1 All written and drawn records from the evaluation have been collated, checked for consistency.

5.1.2 Where possible, probable depositional environments, formation processes and chronostratigraphic context have been considered.

5.1.3 A written description was made of all geoarchaeological deposits, ordered by intervention and lithostratigraphy. Details of all lithostratigraphic contexts are provided in tables in **Appendix 1**.

5.2 GI log review

5.2.1 The results of the borehole survey were supplemented by a review of the stratigraphic logs arising from previous GI works (Kirby 2013, Wessex Archaeology 2023), including a total of 6 logs from Kirby 2013 and 4 logs from Wessex Archaeology 2023 for a total of 10 additional records (**Appendix 2)**.

5.2.2 A review of nearby British Geological Survey (BGS) archive boreholes was undertaken, however none within 1km of the Site had sufficient detail to be utilised for deposit modelling.

5.2.3 The log review was undertaken by a suitably qualified geoarchaeologist, with an assessment of the quality of the sediment descriptions and a geoarchaeological interpretation of the deposits cross-referencing the GI locations with nearby monitored interventions, existing BGS mapping and their topographic context.

5.3 Deposit modelling

5.3.1 The data has been utilised to provide an updated deposit model. Deposit modelling identifies the range of Quaternary deposits that may be present in a defined area and maps their lateral extent and depth.

5.3.2 The deposit modelling has been carried out in accordance with *Deposit modeling and archaeology: guidance for mapping buried deposits* (HE 2020) and Kent County Councils *Manual of Specifications Part B Specification KCC generic specification requirements for desk-based assessment of geoarchaeological potential (including baseline deposit modelling).*

5.3.3 Only lithostratigraphic records with sufficiently detailed descriptive terminology and location data (including surface elevation) were included in the model. In total 12 deposit records were used in the deposit modelling, as shown in **Appendix 2**.

5.3.4 All available data points were entered into industry standard geological utilities software (Rockworks™ 23). Each stratigraphic unit was given a colour and pattern allowing cross correlation and grouping of the different sedimentary units. The grouping of these deposits is based on lithological descriptions, which define distinct depositional environments referred to as 'stratigraphic units' (e.g., Bedrock, Alluvium and Made Ground).

5.3.5 Outputs include two-dimensional stratigraphic profiles ('transects') of selected interventions, generated using RockWorks 23™ for the stratigraphic units present within the evaluation area.

5.3.6 Where data points are not uniformly distributed over the area of investigation the reliability of the outputs is variable. In order to account for this, the modelling algorithm has been adjusted to include a maximum distance cut-off filter, so that only those areas for which sufficient stratigraphic data is present will be included in the model. A maximum distance cut-off filter equivalent to a 50m radius around each data point is applied to the outputs.

6 RESULTS

6.1 Introduction

6.1.1 This section outlines the results of the geoarchaeological borehole survey. It includes summaries of the deposits identified, integrated with an updated deposit model for the Site, an assessment of any archaeological finds recovered and review of any retained samples.

6.1.2 A total of two geoarchaeological boreholes (**Appendix 1**) were undertaken as outlined in **Section 4.4**, with a programme of geoarchaeological deposit modelling integrating the results of this borehole survey and the existing deposit model for the Site. The results of the geoarchaeological deposit modelling are shown in **Figure 2.**

6.2 Deposits

6.2.0 The lithostratigraphy of deposits encountered during the borehole survey is listed and summarised below. The specific lithologies and lithostratigraphic succession encountered in each intervention are outlined in **Appendix 1**.

6.2.1 The generalised lithostratigraphic sequence encountered within the Site comprised:

- Dungeness Foreshore Barrier Gravel (Holocene)

- Clast Supported Barrier Gravel
- Matrix Supported Barrier Gravel

- Inter-ridge Sands (Holocene)

6.2.2 Deposit modelling has been carried out, which allows the vertical and horizontal distribution of these lithostratigraphic units to be considered.

6.2.3 The outputs of the deposit modelling comprise one transect aligned south-west to north-east and is shown in **Figure 2.**

6.2.4 The deposits, their lithostratigraphic relationship and their distribution are described below.

Dungeness Foreshore Barrier Gravel

6.2.5 The Barrier Gravel was encountered in both WA01 and WA02 from 0.40 m bgl (4.30 m OD) and 0.38 m bgl (4.17 m OD) respectively to the base of the intervention. The barrier gravels are composed of gravels and sandy gravels, with the gravel being predominantly sub-angular to sub-rounded.

6.2.6 Two discrete types of Barrier Gravels were identified; clast supported Barrier Gravel and matrix supported Barrier Gravel, with the clast supported gravels overlying the matrix supported gravels. Clast supported gravels trended as gravels, whereas the matrix supported gravels comprised sandy gravels.

6.2.7 No continuous grading was noted within the gravels, with units becoming finer abruptly when transitioning from Clast Supported gravels to Matrix Supported gravels; the sequence is coarser to top.

6.2.8 No organic or shell-rich subunits were encountered within the Dungeness Foreshore Barrier Gravel in WA01 or WA02; the unit was wholly minerogenic.

Clast supported Barrier Gravel

6.2.9 Clast supported Barrier Gravel was encountered in both WA01 and WA02, with the deposit being encountered between 0.40 and 1.40 m bgl (4.30-3.30 m OD) in WA01 and from 0.38m with WA02 (4.17-2.25m OD). The base of the clast supported Gravels was not encountered in WA02.

6.2.10 The clast supported Gravel is moderately variable, being a medium to coarse predominantly rounded gravel between 0.40 and 1.40m bgl (4.30-3.30 m OD) in WA01, a slightly sandy fine to coarse gravel between 0.38 and 1.78 m bgl (4.17-2.77 m OD), a fine well sorted gravel between 1.78 and 2.02 m (2.77-2.53 m OD) and a fine to coarse gravel from 2.02-2.30 m bgl (2.53-2.25 m OD) in WA02.

6.2.11 The clast supported Barrier Gravels indicate a period of very high energy, with such deposits generally representing storm beach deposits when encountered in coastal settings. The lack of matrix may be controlled diagenetically (i.e. the matrix was removed from the unit post initial deposition via gravity or fluvial processes) or by finer particulates not being deposited with the gravel due to travelling further, suggesting a reduction of energy during the depositional period likely caused by coastal waves losing velocity when hitting land and returning seaward.

Matrix supported Barrier Gravel

6.2.12 Matrix supported Barrier Gravel was encountered within WA01 between 1.40 and 2.30 m bgl (3.30-2.40 m OD) and was a sandy moderately well sorted fine to medium gravel.

6.2.13 The matrix supported Barrier Gravels indicate a period of high energy similar to the clast supported Barrier Gravels; the stronger presence of a matrix is likely due to deposition in a lower energy setting than clast supported gravels. This increase of energy over time is likely controlled by the accretion of the Dungeness Foreshore, with the unit becoming increasingly more exposed to higher energy conditions as more gravel was deposited.

Interridge Sands

6.2.14 The interridge Sands were encountered in both WA01 and WA02 from ground level to 0.40 m bgl (4.70-4.3 m OD) and 0.38m bgl (4.55-4.17m OD) respectively and comprised of light brown fine to medium sands with rare to sparse coarse sub-rounded gravel. Both units of Interridge Sands directly overlie clast supported Barrier Gravel, with the boundary between the Interridge Sands and the clast supported Barrier Gravel being abrupt to sharp.

6.2.15 It is uncertain if the Inter-ridge Sands indicate a dominantly fluvial tidal or aeolian dune deposit from this borehole survey due to a lack of diagnostic sedimentary structures visible within the unit (i.e. ripple marks, cross-bedding). However, due to the presence of rare coarse gravels in suspension, likely derived from the underlying Dungeness Foreland Barrier Gravel, it is presumed that the unit is predominantly fluvial; aeolian processes rarely transport larger particles, though particle creep is not discounted.

6.2.16 The inter-ridge Sands are distinctly finer than the underlying Dungeness Foreland Barrier Gravels and indicate a lower energy environment, likely being an intertidal deposit with possible influence of aeolian processes. The gravel is likely derived from wash dislodging clasts from the barrier gravels.

6.2.17 No distinct topsoil horizon was identified within WA01 and WA02. No organic matter was encountered within the Interridge Sands during the works.

6.3 Finds evidence

6.3.1 No archaeological finds were made during the borehole survey.

6.4 Retained core lengths

6.4.1 Core lengths 0.80-2.30 m from both geoarchaeological boreholes were retained, containing deposits associated with the Dungeness Barrier gravels, and against which further works may be recommended where appropriate in accordance with the staged approach outlined in **Table 1** and **Section 7.3**.

7 DISCUSSION

7.1 Introduction

7.1.0 The borehole survey has successfully characterised the Quaternary deposits present within the Site and recovered samples suitable for assessing the geoarchaeological resource.

7.1.1 The work was undertaken in order to provide information about the geoarchaeological resource that might be impacted by the proposed development, to consider the possible significance of any geoarchaeological evidence present, and to inform the scope and

requirement for any further geoarchaeological work or palaeoenvironmental assessment that may be required.

7.2 Sedimentary sequences and depositional environments

7.2.0 The sedimentary sequence captured corresponds with that revealed during earlier studies, comprising coarse-grained deposits of the Dungeness Foreland barrier gravels overlain with inter-ridge sands. Tidal flat deposits as described within the Site during previous investigations (Wessex Archaeology 2023) but were not encountered during this phase of works.

Deposits underlying the Dungeness Foreland Barrier Gravels in the Hythe Inlet

7.2.1 In the wider area of the Dungeness Foreland the gravel barrier is underlain by a sequence of nearshore sands that are >10m thick at Jury's Gap and with a surface elevation of around -2m OD (Long et al. 2006). OSL (Optically Stimulated Luminescence) dating of these nearshore sands demonstrates that they are progressively younger from west to east as the barrier developed under the influence of eastward longshore drift (Long et al. 2007).

7.2.2 Between Jury's Gap and The Wicks the nearshore sands have been dated between approximately 4650 ± 200 cal BP to 3580 ± 180 cal BP, compared to Dungeness Power Station (10km east) where the sands date to 650 ± 40 cal BP and 560 ± cal 30 BP (Long et al. 2007).

7.2.3 At the present Site the gravel barrier was noted to be underlain by tidal flat deposits rather than nearshore sands as noted between Dungeness and The Wicks (Wessex Archaeology 2023); these were recorded in borehole BH1 to a level of 0.56m OD (4.2m bgl) and are interpreted as sand or mud flats deposited in the intertidal zone prior to the accumulation of the overlying gravel.

7.2.4 No tidal flat deposits were encountered in WA01 or WA02 but are expected to be present from approximately c. 4.00-4.50m bgl.

The Dungeness Foreland Barrier Gravels

7.2.5 Development of the shingle gravel barrier of the Dungeness Foreland occurred through the longshore movement of offshore derived gravels and erosion of the Cretaceous chalk cliffs and associated Pleistocene deposits (Long et al. 2007). The gravel barrier has a surface relief of 3 to 4m OD between Jury's Gap and South Brooks, with a depth of gravels of up to c. 6m; the base of the Dungeness Foreland Barrier Gravels was encountered at 4.20m bgl (0.56m OD) within BH1 only during the previous geoarchaeological borehole survey (Wessex Archaeology 2023).

7.2.6 Boreholes were drilled to investigate the Quaternary deposits within the depth of impact. The base of the barrier gravels was therefore not encountered during this geoarchaeological borehole survey.

7.2.7 The gravel barrier gradually prograded eastward, creating a huge tidal lagoon landward and leading to the establishment of tidal mudflats and saltmarsh across Romney Marsh; these were subsequently replaced by freshwater peats which had begun to form within the adjacent river valleys from 6800 cal. BP (Long et al. 2006). However, the chronology of gravel deposition and barrier evolution is not well understood for the part of the barrier system in which the present Site lies (between Dungeness and Hythe).

7.2.8 The Dungeness Foreland Barrier Gravels are well documented to coarsen up-sequence (Long et al. 2007), with coarsening being abrupt and splitting the barrier gravels into distinct units; this was observed within WA01, with predominantly coarser clast supported gravels transitioning abruptly into finer matrix supported gravels at 3.30m OD (1.40m bgl). This coarsening is consistent with the results of the previous geoarchaeological borehole survey, with the coarsening upwards sequence being noted within BH1, BH3 and BH6 (Wessex Archaeology 2023).

7.2.9 From previous investigations at the Site the surface of the Dungeness Foreland barrier gravels is recorded at levels between 3.84 and 4.24m OD, with the undulations in the gravel surface typical of the ridge (gravel high) and swale (gravel low) recorded during the 2021 ERT survey and elsewhere on the gravel barrier, where beach ridge amplitude varies between c. 0.50 and 2.00m (Plater and Long 1995, Wessex Archaeology 2021b and 2023). The surface level of the barrier gravels in WA01 and WA02 is consistent with these previously recorded depths at 4.30m OD and 4.17m OD respectively.

7.2.10 The clast supported gravels within WA02 were notably thicker than within WA01, with matrix supported gravels not encountered within the intervention by 2.30m bgl (2.25m OD). The thicknesses of the sub-units within the Dungeness Foreshore Barrier Gravels in the Site was observed to be variable during the previous geoarchaeological borehole survey (Wessex Archaeology 2023), with this variability being indicative of the complexity of the barrier gravels' geomorphology.

7.2.11 The age of the barrier gravels within the Site is unclear, but as the Site lies on the eastern side of the Dungeness Foreland it is likely that the gravels date to within the last c. 2 Kya (Long et al. 2007) and probably of medieval or later date.

Interridge Sands – inter-ridge deposits and post-barrier sedimentation

7.2.12 A sharp lower boundary between the inter-ridge deposits and barrier gravels is indicative of a rapid change to lower depositional energies, probably as a result of seaward or alongshore migration of the barrier beach, leading to a reduced influence of high energy wave and storm processes.

7.2.13 As highlighted by Kirby (2013), these sands, silts and clays are recorded as the upper unit across much of Romney and Walland Marsh in embayments, or areas enclosed by surrounding gravel ridges (Spencer et al. 1998; Plater et al. 1999). It is possible these sandy deposits also incorporate wind-blown sands or material derived from over (through) wash behind the gravel ridges.

7.2.14 The inter-ridge deposits as noted within WA01 and WA02 were fine to medium sands with rare rounded gravel and are interpreted as a coastal deposit, but it is unclear if the depositional method is dominantly fluvial or aeolian due to a lack of diagnostic sedimentary structures such as cross-bedding or ripple marks. However, gravel requires very high energy to be transported by aeolian means, though particle creep (as opposed to suspension or saltation) may be possible in storm settings. It is probable that the unit is indicative of an intertidal fluvial deposit with possible intermittent aeolian deposition, with the gravel being "washed" redeposited clasts sourced from the Dungeness Foreland Barrier Gravels.

7.2.15 No organic-rich or peat units were identified within the interridge sands in WA01 and WA02, and as such they have no direct palaeoenvironmental potential. No shell was noted within the unit. No inter-ridge sand was retained from this phase of works.

7.2.16 No distinct topsoil horizon was identified overlying the unit within WA01 and WA02 despite topsoil being noted in prior GI works (Kirby 2013, Wessex Archaeology 2023). However, the surface level of WA01 and WA02 is lower than seen in the other units, suggesting that the prior topsoil surface has been removed between the prior works and this phase of works.

7.2.17 The chronology of the post-gravel deposits in this area is unclear due to a lack of radiocarbon dating, although palaeomagnetic dating of marsh sediments on Dungeness Foreland proper (Plater et al. 2006) suggests that these deposits accumulated between c. 1050-550 BP (AD 900–1400), with foraminiferal analysis showing a sequence of tidal and brackish environments (Plater et al. 2006).

7.2.18 As highlighted by Kirby (2013), these deposits are likely to have been deposited across Romney Marsh relatively recently shortly before and during reclamation of the marshland during historical times.

7.3 Geoarchaeological resource and retained samples

7.3.0 Arisings from 0.80-2.30m bgl were retained from WA01 and WA02 as sleeved liners and contain Dungeness Foreshore Barrier Gravels, with no interridge sands being retained. The interface between the interridge sands and the upper clast supported gravels was not captured.

7.3.1 The paleoenvironmental and archaeological potential of the retained cores is low, with any material appropriate for dating or palaeoenvironmental analysis being of uncertain provenance due to the Dungeness Foreshore Barrier Gravel having formed via longshore drift.

7.3.2 Gravel dominant units are less suitable for OSL than sandy units; prior OSL works in the Dungeness Foreland have focused on the underlying and overlying units of the barrier gravel rather than on the barrier gravel itself (Long et al. 2006, Roberts and Plater 2007). As such, OSL dating is not recommended on the retained samples as they are too coarse.

8 CONCLUSION AND RECOMMENDATIONS

8.1 Conclusion

8.1.0 A targeted geoarchaeological borehole survey has helped to refine understanding of the nature and distribution of the Quaternary geological deposits in the Site. A programme of geoarchaeological deposit modelling integrating the results of the borehole survey with previous GI works at the site has enabled a reconstruction of the distribution, thickness and topography of these deposits, and provided information on the evolution of the landscape in this area.

8.1.1 The sequence at the Site comprises Late Holocene inter-ridge beach deposits underlain by Holocene aged barrier sands and gravels associated with the Dungeness Foreland barrier gravels, present from 0.40m bgl (borehole WA01) and 0.38m bgl (borehole WA02)

8.1.2 The base of the Dungeness Foreshore barrier gravels was not encountered during this phase of works, but the formation is known to overlie tidal flat deposits from the prior geoarchaeological borehole survey (Wessex Archaeology 2023). The tidal flat deposits will not be impacted by the proposed development.

8.1.3 The coarse-grained, inorganic sediments captured during this phase of GI works are of low archaeological and palaeoenvironmental potential. Although they have potential to preserve

microfossil remains (ostracods, foraminifera, diatoms) they will of uncertain source area due under the dominant high energy marine processes of the Dungeness Foreland.

8.1.4 OSL dating has been employed on the deposits of the Dungeness Foreland with success in previous studies (Roberts and Plater 2007). However, the cores retained from this borehole survey contain are not suitable for OSL dating.

8.1.5 The potential of the retained core lengths has been concluded to be low.

8.2 Recommendations

8.2.0 The borehole survey has demonstrated that development proposals will impact on the underlying Quaternary stratigraphy, including the Gravel Barrier of the Dungeness Foreland which is present from 0.40m bgl (borehole WA01) and 0.38m bgl (borehole WA02)

8.2.1 However, the deposit sequence at the Site is consistent with that encountered widely across the Dungeness Foreland landscape and is not in itself unique. Furthermore, within the proposed depth of impact, the deposits have limited geoarchaeological potential and a low potential for palaeoenvironmental assessment or scientific dating. No further work is recommended.

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APPENDICES

Appendix 1 Borehole summaries

The stratigraphic succession encountered in each borehole are outlined below. Both heights and coordinates were taken at the centre of the position. Depth bgl = below ground level

Site Code: 250842	**Site Name:** Cabu by the Sea	**GeoTech Tr ID:** WA01
Coordinates (NGR) X: 608980.1329	**Coordinates (NGR) Y:** 127103.789	**Level (top):** 4.70m OD
Length: n/a	**Width:** n/a	**Depth:** 2.3m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
101	Light brown fine to medium SAND. Few coarse sub-rounded clasts. Abrupt to 102.	Interridge Sands	0.00-0.40	4.70-4.30	-
102	Moderately soft brown sandy GRAVEL. Gravel is medium (60%) to coarse, clast supported, rounded (85%) to sub angular. Abrupt to 103.	Beach/barrier gravels Clast supported	0.40-1.40	4.30-3.30	Core 0.80-2.3
103	Moderately soft light brown sandy GRAVEL. Gravel is fine to medium, sub-angular (50%), rounded (50%), matrix supported, moderately to moderately well sorted, moderate sphericity.	Beach/barrier gravels Matrix supported	1.40-2.30	3.30-2.40	Core 0.80-2.30

Site Code: 250842	**Site Name:** Cabu by the Sea	**GeoTech Tr ID:** WA02
Coordinates (NGR) X: 608990.4446	**Coordinates (NGR) Y:** 127094.9685	**Level (top):** 4.55m OD
Length: n/a	**Width:** n/a	**Depth:** 2.3m

Context Number	Description	Interpretation	Depth m BGL	Depth m aOD	Samples
201	Moderately soft light brown slightly gravelly fine to medium SAND. Sparse to common medium flint clasts, sub-rounded, matrix supported, moderately well sorted, medium sphericity. Sharp to 202.	Interridge Sands	0.00-0.38	4.55-4.17	-

202	Moderately soft brownish grey slightly sandy GRAVEL. Gravel is fine to coarse, sub-angular to sub-rounded, clast supported moderately well sorted. Moderate sphericity. Sharp to 203.	Beach/barrier gravel Clast supported	0.38-1.78	4.17-2.77	Core 0.80-2.30
203	Brownish grey GRAVEL, fine, sub angular to sub rounded, clast supported. well sorted. Moderately low sphericity. Clear lower boundary to 204.	Beach/barrier gravel Clast supported	1.78-2.02	2.77-2.53	Core 0.80-2.30
204	Moderately soft brownish grey GRAVEL. Gravel is fine to coarse. Sub-angular to sub-rounded, clast supported moderately well sorted. Moderate sphericity.	Beach/barrier gravel Clast supported	2.02-2.30	2.53-2.25	Core 0.80-2.30

Appendix 2 Data used in the deposit model

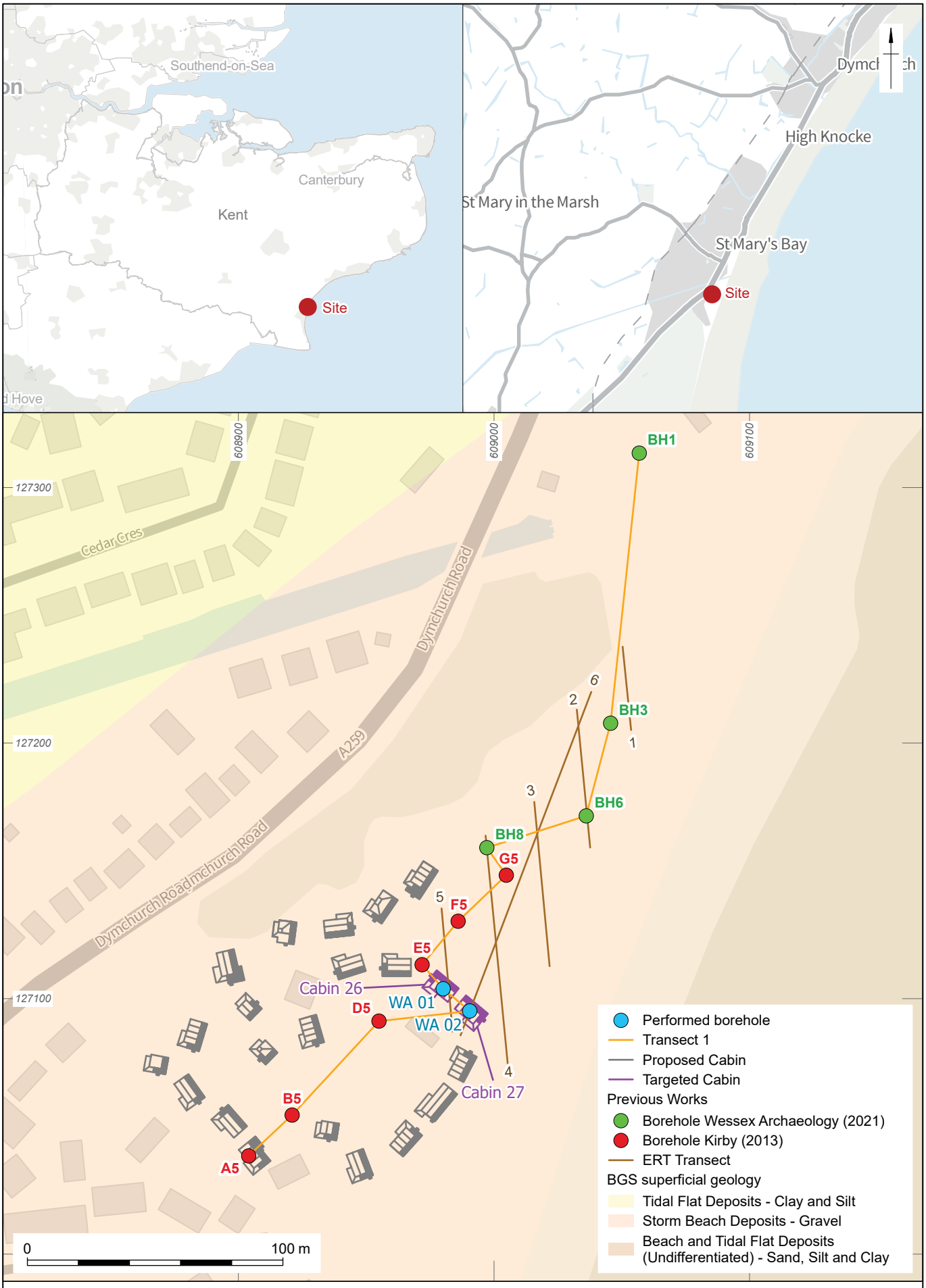
Name	Easting	Northing	Total depth (m)	Elevation (m OD)	Source
WA01	608980.1329	127103.789	2.3	4.697484	-
WA02	608990.4446	127094.968	2.3	4.551013	-
BH01	609057	127313	6	4.76	Wessex Archaeology 2023
BH03	609045	127207	3	4.49	Wessex Archaeology 2023
BH06	609036	127171	4.4	4.87	Wessex Archaeology 2023
BH08	608997	127159	3	4.54	Wessex Archaeology 2023
A5	608904	127038	1.02	4.83	Kirby 2013
B5	608921	127054	0.51	4.75	Kirby 2013
D5	608955	127091	0.54	4.84	Kirby 2013
E5	608972	127113	0.38	5.02	Kirby 2013
F5	608986	127130	0.44	4.95	Kirby 2013
G5	609005	127148	0.82	4.96	Kirby 2013

Appendix 3 OASIS Summary for wessexar1-533895

OASIS ID (UID)	wessexar1-533895
Project Name	Borehole Survey at Cabu by the Sea Phase 3, New Romney
Sitename	Cabu by the Sea Phase 3, New Romney
Sitecode	250842
Project Identifier(s)	250842
Activity type	Borehole Survey
Planning Id	
Reason For Investigation	Planning requirement
Organisation Responsible for work	Wessex Archaeology
Project Dates	07-Apr-2025 - 07-Apr-2025
Location	Cabu by the Sea Phase 3, New Romney NGR : TR 09020 27170 LL : 51.00592912856089, 0.977979081637864 12 Fig : 609020,127170
Administrative Areas	Country : England County/Local Authority : Kent Local Authority District : Folkestone and Hythe Parish : St. Mary in the Marsh
Project Methodology	A programme of geoarchaeological borehole survey and deposit modelling was undertaken to assess the geoarchaeological potential of the superficial deposits at Cabu by the Sea Phase 3. A total of 2 rotary boreholes were undertaken on the Site in the footprint of proposed cabins 26 and 27 (WA01 and WA02). A programme of geoarchaeological deposit modelling was subsequently undertaken, integrating the results of the new geoarchaeological borehole survey with existing GI data, resulting in a total of 12 data points for the deposit model.

Project Results	The results of the work identified a sequence of superficial deposits comprising of sandy interridge deposits underlain by coastal gravels associated with the Dungeness Foreshore Barrier Gravel, with the interface between the two units being encountered at 4.30m OD in WA01 (0.40m bgl) and at 4.17m OD (0.38m bgl) in WA02. Whilst the archaeological and palaeoenvironmental potential of the barrier gravel is low, the unit is of geomorphological significance, with the unit providing an important insight into patterns of mid to late Holocene coastal change, barrier evolution and the interrelationship to the back-barrier environment of New Romney. The base of the Dungeness Foreshore Barrier Gravels was not encountered during this phase of works, but the unit is known to be overlying tidal flat deposits of probable Late Holocene age at a depth c. 4.00-4.50m bgl from previous geoarchaeological investigations within the Site (Wessex Archaeology 2023). The tidal flat deposits are below the depth of impact for the proposed works (2.00m bgl) and the archaeological and paleoenvironmental of these deposits is considered low. The Dungeness Foreshore Barrier Gravels young regionally to the east and the barrier gravels identified within WA01 and WA02 are probable to be geologically young, with the evolution of the foreshore rapidly prograding eastwards c. 2 kya (Long et al. 2007). Although organic and peat rich units appropriate for palaeoenvironmental analysis have been identified within the interridge deposits of the Dungeness Foreland elsewhere in Romney and Welland Marsh, no such deposits were encountered within WA01 and WA02; this is consistent with previous investigations within the Site (Kirby 2013, Wessex Archaeology 2023). The likelihood of organic interridge deposits being present within the Site is considered low. Shell-rich subunits of the barrier gravels were identified within the prior geoarchaeological borehole survey (Wessex Archaeology 2023) at a minimum depth of 2.76m OD (2.00m bgl) in the north-east of the Site (BH1), with the top of the subunit being encountered at 0.87m OD (4.00m bgl) and 1.89m OD (2.65m bgl) in BH6 and BH8 respectively in the centre of the Site (Figure 1). No shell-rich subunits were encountered within WA01 or WA02, however these boreholes terminated at 2.40m OD and 2.25m OD respectively; the possibly of this unit being present at a depth below the investigation depth cannot be discounted from this phase of works. These deposits should not be impacted at the proposed depth of impact for the construction works but have a moderate possibility of being present by 3.00m bgl. Shell-rich deposits may be appropriate for AAR (Amino Acid Racemisation) dating and are of moderate geoarchaeological interest. As noted from the prior geoarchaeological borehole survey within the Site (Wessex Archaeology 2023), whilst the proposed development will impact the Dungeness Foreshore Barrier Gravels, the geomorphology of the barrier gravel topography at the Site and the deposits investigated are consistent with the immediate area within the Dungeness Foreland SSSI, and are therefore not in themselves unique, being typical of barrier deposits present elsewhere in the SSSI. There are no indications that the gravel in the impact area of the proposed development is unique within the SSSI.
Keywords	
Funder	Private or public corporation CABU Ltd
HER	Kent HER - unRev - STANDARD
Person Responsible for work	Alex Brown
HER Identifiers	
Archives	Digital Archive - to be deposited with Archaeology Data Service Archive;

Report generated on: 15 May 2025, 11:11



Coordinate system: OSGB 1936 British National Grid

Date: 12/05/2025	Created by: MKP	Revision: 0	Scale: 1:2,000 at A4

Figure 1. Site location and performed boreholes with previous and targeted areas

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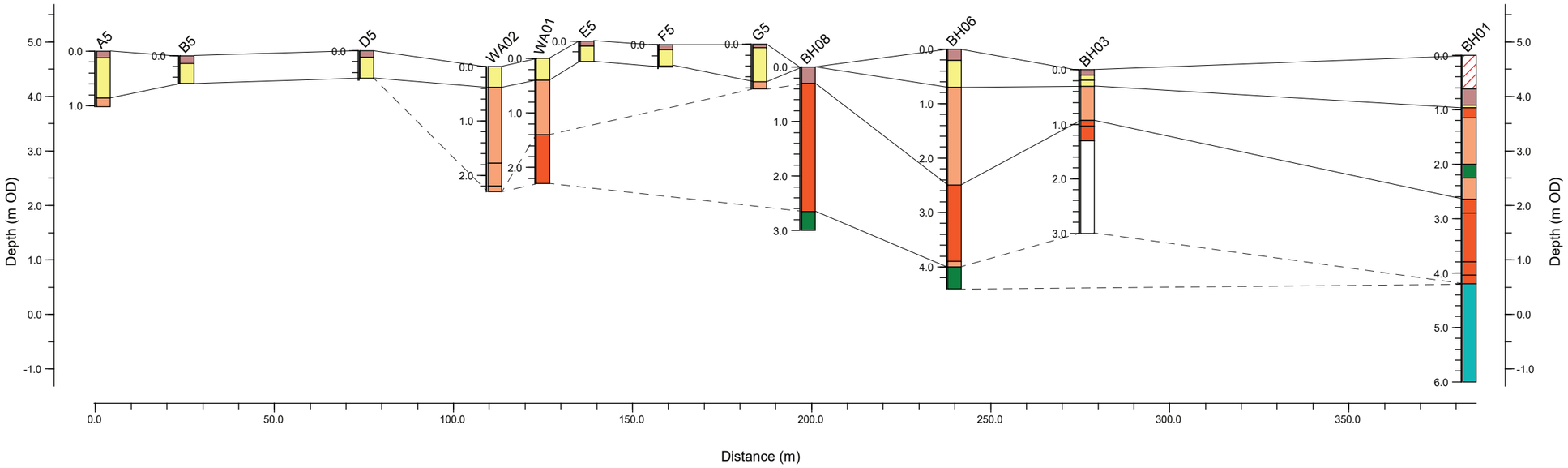

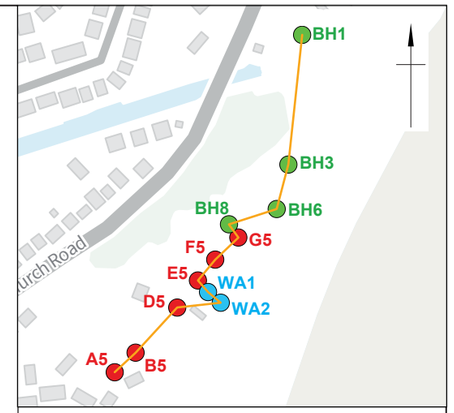

0 200 m

- Performed borehole
- Transect 1

Previous Works
- Borehole Wessex Archaeology (2021)
- Borehole Kirby (2013)

Transect Stratigraphy
- Topsoil
- Made Ground
- Interridge Sands
- Clast Supported Barrier Gravels
- Matrix Supported Barrier Gravels
- Shelly Barrier Gravels
- Tidal Flat Deposits
- No Recovery

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Figure 2. Transect 1

Wessex Archaeology Ltd registered office Portway House, Old Sarum Park, Salisbury, Wiltshire SP4 6EB
Tel: 01722 326867 Fax: 01722 337562 info@wessexarch.co.uk www. wessexarch.co.uk