

Site B – Land to the north of Ancton
Historic Environment Desk-Based Assessment
December 2021

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Report

Historic Environment Desk-Based Assessment

Site

Site B – Land to the north of Ancton

Clients

Hallam Land Management Ltd (SE)

Date

December 2021

Planning Authority

Arun District Council

Site Centred At

SU 98830 00977

Prepared By

Ben Redclift BA MA ACIfA

Approved By

Rob Bourn BA MA MCIfA

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Timescales Used in This Report

Prehistoric

Palaeolithic	450,000 -12,000 BC
Mesolithic	12,000 - 4,000 BC
Neolithic	4,000 - 2,200 BC
Bronze Age	2,200 - 700 BC
Iron Age	700 - AD 43

Historic

Roman	43 – 410 AD
Saxon/Early Medieval	410 – 1066 AD
Medieval	1066 – 1485 AD
Post Medieval	1486 – 1901 AD
Modern	1901 - Present Day

Executive Summary

This historic environment desk-based assessment considers land at Bognor Regis, West Sussex, which is proposed for the relocation of the Bognor Regis golf course (Fig. 1). The site measures approximately 71ha in size. It has been researched and prepared by Orion Heritage on behalf of Hallam Land Management Ltd (SE). The site (hereinafter referred to as the “study site”) is located at grid reference SU 98830 00977.

The assessment has been prepared for the purpose of providing initial advice to the commissioning client and to form a technical appendix to the Cultural Heritage ES Chapter. A geoarchaeological deposit model and paleoenvironmental assessment has been produced (QUEST 2021; Appendix A). A geophysical survey has been completed on the site (SUMO 2021), the greyscales of which have been used to inform this assessment.

The geoarchaeological assessment (QUEST 2021; Appendix A) identified potential for Holocene estuarine alluvium in the east of the study site. The majority of the study site is underlain by Pagham Raised Beach of probable Ipswichian age overlain by ‘brickearth’ of Devensian age. These deposits are considered to have low potential for Palaeolithic artefacts. There is, however, potential for paleoenvironmental evidence within the underlying sequence. The potential for archaeological evidence, i.e. Mesolithic to Bronze Age flint artefacts within the brickearth cannot be discounted at this stage. Potential impacts to the underlying quaternary sequence are likely to occur by deep excavations (i.e. foundations / attenuation ponds. Such impacts are likely to be relatively superficial and localised; the overall impact is considered low adverse.

Recent geophysical survey (SUMO 2021) has revealed three areas of archaeological interest. In the centre of the study site geophysical survey identified a circular ditch with a smaller circular response in the centre of it (Figure 2; Orion 3). The form of this anomaly is suggestive of a prehistoric, possibly Bronze Age date. Geophysical survey (SUMO 2021) also recorded two areas of rectilinear anomalies in the north-west (Figure 2; Orion 1) and north (Figure 2; Orion 2) of the study site. The form of the rectilinear enclosures is suggestive of a Roman to medieval date. Based on available evidence the significance of these features are considered likely to be of local to regional heritage significance.

It is noted that re-landscaping will also require the fill of parts of the site which will serve to preserve below ground archaeological remains, if surviving. Groundworks associated with the excavation of the clubhouse, ponds and re-modelling for the golf course are likely to have a low - moderate magnitude of impact on these archaeological assets, subject to the results of intrusive evaluation. This would result in a low - moderate effect.

It is anticipated that the implementation of a staged programme of archaeological works would secure the archaeological interest of the study site and ensure that effects to archaeology are minor, not significant. Subject to the results of the evaluation, further mitigation works may be required. The requirement / scope for further geoarchaeological works would benefit from on-site borehole data, as such it is recommended that any future geotechnical works are integrated into the archaeological strategy for the site.

There are no designated heritage assets or listed building that will be affected by the proposed development.

On this basis it is considered that the impact of the proposed development on the archaeological potential of the study site could be adequately mitigated, and the development made acceptable in terms of archaeological impacts. It therefore accords with the requirements in paragraph 203 of the NPPF and policies DM1, DM3 and DM6 of the Arun local plan 2011-2031 (2018). It also accords with NPPF paragraph 202 regarding designated assets.

1.0 Introduction

- 1.1 This historic environment desk-based assessment considers land at Bognor Regis Golf Club (2), West Sussex (Figure 1), which measures approximately 71ha in size. It has been researched and prepared by Orion Heritage on behalf of Hallam Land Management Ltd (SE). The site (hereinafter referred to as the “study site”) is located at grid reference SU 98830 00977.
- 1.2 The assessment has been prepared for the purpose of providing initial advice to the commissioning client and to form a technical appendix to the Cultural Heritage ES Chapter. A geoarchaeological deposit model and paleoenvironmental assessment has been produced (QUEST 2021; Appendix A). A geophysical survey has been completed on the site (SUMO 2021), the greyscales of which have been used to inform this assessment.
- 1.3 In accordance with the Standard and Guidance for Historic Environment Desk-Based Assessment (Chartered Institute for Archaeologists 2017), the assessment draws together available information on designated and non-designated heritage assets, topographic and land-use information so as to establish the potential for non-designated archaeological assets within the study site. The assessment includes the results of a site survey, an examination of published and unpublished records, and charts historic land-use through a map regression exercise. The assessment also considers the setting of heritage assets, and provides an assessment of how their settings contribute to their significance.
- 1.4 The assessment enables relevant parties to assess the significance of heritage/ archaeological assets on and close to the study site and considers the potential for hitherto undiscovered archaeological assets, thus enabling potential impacts on assets to be identified along with the need for design, civil engineering or archaeological solutions. It also provides an understanding of any constraints to development of the study site due to the presence of nearby heritage assets, and provides an assessment of the potential impact development would have on the significance of heritage assets and also provides design responses that would serve to reduce that impact in line with local and national policy.
- 1.5 The study area used in this assessment is a 1km radius from the boundary of the study site (Figures 2 and 3).
- 1.6 A site visit was undertaken on 28th September 2021 when the conditions were good and visibility clear.

Location, Topography and Geology

- 1.7 Site B is located to the north of Ancton, Middleton-on-Sea, at the eastern edge of the Bognor Regis urban area and measures approximately 71ha in size. The land is primary used for agricultural (arable) purposes and is generally flat. The study site comprises four field parcels the boundaries of which comprise a variety of woodland, hedgerows and trees. The woodlands adjoining the Site’s western and southern boundaries are subject to Tree Preservation Orders (ref: TPO/M/2/91 and TPO/M/1/91). The study site is relatively level, although with local variation with an average height above ordnance datum of 3m (aOD).
- 1.8 The solid geology of the study site comprises Chalk of the Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk Formation, Culver Chalk Formation And Portsdown Chalk Formation (undifferentiated). Superficial deposits consist of River Terrace Deposits of Sand, Silt and Clay in the north and at the periphery of the site. Superficial Raised Beach deposits of Sand and Gravel can be found in the centre of the site (BGS Geology of Britain Viewer 2021).

- 1.9 Borehole data collected just outside the north west study site boundary, at the A259 north of Grevatt's Bridge, recorded a surface level of 4.6m (SU 90 SE 35). Chalk bedrock was encountered at 5.2m depth. Raised beach deposits of clayey sandy gravel were found at 3.9m and of silt with chalk pebbles and flint at a depth of 3.2m. Brickearth deposits of clay were found at 2.2m.

2.0 Aims, Objectives & Methodology

- 2.1 The principal aim of this desk-based assessment is to identify potential significant environmental effects to the historic environment, which might result from the proposed development, for the purposes of providing a technical appendix to the Cultural Heritage ES Chapter. The assessment will identify and evaluate the nature and likelihood of the impacts of the proposed development on archaeological and heritage assets against clearly defined criteria.
- 2.2 The objectives of the desk-based assessment are to:
- ✧ Gain an understanding of the archaeological potential of the study site;
 - ✧ Identify any heritage constraints to the development of the study site;
 - ✧ Assess the likely impact of the proposed development;
 - ✧ Identify potential significant environment effects for the purpose of providing a technical appendix to the Cultural Heritage ES Chapter;
 - ✧ Make recommendations for further work, if necessary.
- 2.3 The results of the archaeological desk-based assessment will inform an archaeological strategy for further on-site assessment and formulation of a mitigation strategy, as appropriate to the archaeological potential of the study site.
- 2.4 This desk-based assessment conforms to the requirements of current national and local planning policy (including *National Planning Policy Framework* 2021) and it has been designed in accordance with current best archaeological practice, and the appropriate national and local standards and guidelines, including:
- ✧ Management of Recording Projects in the Historic Environment: MORPHE (English Heritage 2006);
 - ✧ Code of Conduct (Chartered Institute for Archaeologists [CIfA] [revised edition] 2014); and
 - ✧ Standard and Guidance for Historic Environment Desk-Based Assessment (CIfA January 2017).
- 2.5 It is noted that the Chartered Institute for Archaeologists defines desk-based assessment as:
- “a programme of study of the historic environment within a specified area or site on land, the inter-tidal zone or underwater that addresses agreed research and/or conservation objectives. It consists of an analysis of existing written, graphic, photographic and electronic information in order to identify the likely heritage assets, their interests and significance and the character of the study area, including appropriate consideration of the settings of heritage assets and, in England, the nature, extent and quality of the known or potential archaeological, historic, architectural and artistic interest. Significance is to be judged in a local, regional, national or international context as appropriate.”*
- 2.6 The Chartered Institute for Archaeologists Standard for desk-based assessment states that:
- “Desk-based assessment will determine, as far as is reasonably possible from existing records, the nature, extent and significance of the historic environment within a specified area. Desk-based assessment will be undertaken using appropriate methods and practices which satisfy the stated aims of the project, and which comply with the Code of conduct and other relevant regulations of CIfA. In a development context desk-based assessment will establish the impact of the proposed development on the significance of the historic environment (or will identify the need for further evaluation to do so) and will enable reasoned*

proposals and decisions to be made whether to mitigate, offset or accept without further intervention that impact.”

Methodology

2.7 The archaeological desk-based assessment will include:

- ✧ Map regression based on Ordnance Survey maps and tithe/enclosure maps and apportionments held at West Sussex Record Office;
- ✧ Examination of material currently held in the West Sussex Historic Environment Record, including Historic Landscape Characterisation, for the proposed routes and for a 1km search radius;
- ✧ Consultation of the National Heritage List for England; and
- ✧ Site inspection.

2.8 Lidar provides topographic data and is particularly useful in the detection and identification of heritage assets that survive as earthworks. The Environment Agency (EA) regularly collects Lidar data for England and makes these data available for public use through their online portal. Digital Terrain Models (DTM) are routinely used for heritage purposes as this model shows the grounds surface with buildings and trees filtered out to create a 'bare earth' effect. The Environment Agency collected Lidar data that covers the study site at 2m resolution in 2008 and at 1m resolution in 2009-2011, 2013, 2014, 2017-2020 and as part of the National LIDAR Programme at 1m resolution in 2019. The 1m 2020 Lidar data covers the study site and was considered to provide the best resolution and most up-to-date coverage of the site. These data were processed using the Relief Visualisation Toolkit (RVT) version 1.2 and were reviewed using QGIS.

3.0 Planning Background and Development Plan Framework

Ancient Monuments & Archaeological Areas Act 1979

- 3.1 The Ancient Monuments & Archaeological Areas Act 1979 (as amended) protects the fabric of Scheduled Monuments but does not afford statutory protection to their settings.

Planning (Listed Building and Conservation Areas) Act 1990

- 3.2 The Planning (Listed Building and Conservation Areas) Act 1990 sets out broad policies and obligations relevant to the protection of listed buildings and conservation areas and their settings.
- 3.3 Section 66(1) states:
- “In considering whether to grant planning permission for development which affects a listed building or its setting, the local planning authority or, as the case may be, the Secretary of State shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses”.*
- 3.4 Section 69 of the Act requires local authorities to define as conservation areas any ‘areas of special architectural or historic interest the character or appearance of which it is desirable to preserve or enhance’ and Section 72 gives local authorities a general duty to pay special attention *‘to the desirability of preserving or enhancing the character or appearance of that area’* in exercising their planning functions. These duties are taken to apply only within a Conservation Area. The Act does not make specific provision with regard to the setting of a Conservation Area that is provided by the policy framework outlined in section 2.2, below

National Planning Policy Framework (NPPF) & National Planning Practice Guidance (NPPG)

- 3.5 Government policy in relation to the historic environment is outlined in Section 16 of the National Planning Policy Framework (NPPF), entitled ‘Conserving and Enhancing the Historic Environment’. This provides guidance for planning authorities, property owners, developers and others on the conservation and investigation of heritage assets. Overall, the objectives of Section 16 of the NPPF can be summarised as seeking the:
- ✦ Delivery of sustainable development;
 - ✦ Understanding the wider social, cultural, economic and environmental benefits brought by the conservation of the historic environment;
 - ✦ Conservation of England's heritage assets in a manner appropriate to their significance; and
 - ✦ Recognition of the contribution that heritage assets make to our knowledge and understanding of the past.
- 3.6 Section 16 of the NPPF recognises that intelligently managed change may sometimes be necessary if heritage assets are to be maintained for the long term.
- 3.7 Paragraph 194 states that planning decisions should be based on the significance of the heritage asset, and that the level of detail supplied by an applicant should be proportionate to the importance of the asset and should be no more than sufficient to understand the potential impact of the proposal upon the significance of that asset.

- 3.8 Paragraph 198 states that decisions regarding the removal or alteration of historic statues, plaques, memorials or monuments should have regard to the importance of their retention in situ and, where appropriate, explaining their historic and social context rather than removal.
- 3.9 Paragraph 203 requires the decision-maker to take into account the effect on the significance of non-designated heritage assets and to take a balanced judgement having regard to the scale of harm or loss and the significance of the asset(s) potentially affected.
- 3.10 *Heritage Assets* are defined in Annex 2 as: a building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. It includes designated heritage assets and assets identified by the local planning authority (including local listing).
- 3.11 *Archaeological Interest* is defined as: a heritage asset which holds or potentially could hold evidence of past human activity worthy of expert investigation at some point. Heritage assets with archaeological interest are the primary source of evidence about the substance and evolution of places, and of the people and cultures that made them.
- 3.12 *Designated Heritage Assets* comprise: A World Heritage Site, Scheduled Monument, Listed Building, Protected Wreck Site, Registered Parks and Garden, Registered Battlefield or Conservation Areas designated under the relevant legislation.
- 3.13 *Significance* is defined as: The value of a heritage asset to this and future generations because of its heritage interest. This interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting.
- 3.14 *Setting* is defined as: The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.
- 3.15 The NPPF is supported by the PPG (July 2019). In relation to the historic environment, paragraph 002 (002 Reference ID: 18a-002-20190723) states that:
"Where changes are proposed, the National Planning Policy Framework sets out a clear framework for both plan-making and decision-making in respect of applications for planning permission and listed building consent to ensure that heritage assets are conserved, and where appropriate enhanced, in a manner that is consistent with their significance and thereby achieving sustainable development. Heritage assets are either designated heritage assets or non-designated heritage assets."
- 3.16 Paragraph 18a-013 (Paragraph: 013 Reference ID: 18a-013-20190723) outlines that although the extent and importance of setting is often expressed in visual terms, it can also be influenced by other factors such as noise, dust and vibration. Historic relationships between places can also be an important factor stressing ties between places that may have limited or no intervisibility with each other. This may be historic as well as aesthetic connections that contribute or enhance the significance of one or more of the heritage assets.
- 3.17 Paragraph 18a-013 concludes:
"The contribution that setting makes to the significance of the heritage asset does not depend on there being public rights or an ability to access or experience that setting. This will vary over time and according to circumstance. When assessing

any application for development which may affect the setting of a heritage asset, local planning authorities may need to consider the implications of cumulative change. They may also need to consider the fact that developments which materially detract from the asset's significance may also damage its economic viability now, or in the future, thereby threatening its on-going conservation."

- 3.18 The key test in NPPF paragraphs 199-202 is whether a proposed development will result in substantial harm or less than substantial harm to a designated asset. However, substantial harm is not defined in the NPPF. Paragraph 18a-017 (Paragraph: 018 Reference ID: 18a-018-20190723) of the PPG provides additional guidance on substantial harm. It states:

"What matters in assessing whether a proposal might cause harm is the impact on the significance of the heritage asset. As the National Planning Policy Framework makes clear, significance derives not only from a heritage asset's physical presence, but also from its setting."

- 3.19 Proposed development affecting a heritage asset may have no impact on its significance or may enhance its significance and therefore cause no harm to the heritage asset. Where potential harm to designated heritage assets is identified, it needs to be categorised as either less than substantial harm or substantial harm (which includes total loss) in order to identify which policies in the National Planning Policy Framework (paragraphs 199-202) apply.
- 3.20 Within each category of harm (which category applies should be explicitly identified), the extent of the harm may vary and should be clearly articulated.
- 3.21 Whether a proposal causes substantial harm will be a judgment for the decision-maker, having regard to the circumstances of the case and the policy in the National Planning Policy Framework. In general terms, substantial harm is a high test, so it may not arise in many cases. For example, in determining whether works to a listed building constitute substantial harm, an important consideration would be whether the adverse impact seriously affects a key element of its special architectural or historic interest. It is the degree of harm to the asset's significance rather than the scale of the development that is to be assessed. The harm may arise from works to the asset or from development within its setting.
- 3.22 While the impact of total destruction is obvious, partial destruction is likely to have a considerable impact but, depending on the circumstances, it may still be less than substantial harm or conceivably not harmful at all, for example, when removing later additions to historic buildings where those additions are inappropriate and harm the buildings' significance. Similarly, works that are moderate or minor in scale are likely to cause less than substantial harm or no harm at all. However, even minor works have the potential to cause substantial harm, depending on the nature of their impact on the asset and its setting."
- 3.23 Paragraph 202 of the NPPF outlines that where a proposed development results in less than substantial harm to the significance of a heritage asset, the harm arising should be weighed against the public benefits accruing from the proposed development. Paragraph 18a-020 of the PPG (Paragraph: 020 Reference ID: 18a-020-20190723) outlines what is meant by public benefits:

"Public benefits may follow from many developments and could be anything that delivers economic, social or environmental objectives as described in the National Planning Policy Framework (paragraph 8). Public benefits should flow from the proposed development. They should be of a nature or scale to be of benefit to the public at large and not just be a private benefit. However, benefits do not always have to be visible or accessible to the public in order to be genuine public benefits,

for example, works to a listed private dwelling which secure its future as a designated heritage asset could be a public benefit.

Examples of heritage benefits may include:

- * *sustaining or enhancing the significance of a heritage asset and the contribution of its setting;*
- * *reducing or removing risks to a heritage asset; and*
- * *securing the optimum viable use of a heritage asset in support of its long-term conservation.”*

3.24 In considering any planning application for development, the planning authority will be mindful of the framework set by government policy, in this instance the NPPF, by current Development Plan Policy and by other material considerations.

Local Planning Policy

3.1 Local planning policy for the study site is currently provided by the adopted Arun Local Plan 2011-2031 (July 2018) and the Clymping Neighbourhood Plan (October 2015). The Arun Local Plan contains the following policies relevant to this assessment:

Policy HER DM1 Listed Buildings

Proposals affecting statutory Listed Buildings will be required to:

- a. *Preserve or enhance the historic character, qualities and special interest of the buildings;*
- b. *Be necessary and not detrimental to the architectural and historical integrity and detailing of a Listed Building's exterior;*
- c. *Protect the architectural and historical integrity and detailing of a Listed Building's interior;*
- d. *Protect the special interest of buildings of architectural or historic interest; and*
- e. *Protect, and where possible enhance the setting of the building.*

Total or substantial demolition of a Listed Building will only be permitted in wholly exceptional circumstances, and where it meets the following specific criteria:

- f. *Clear and convincing evidence has been provided that viable alternative uses cannot be found, through, for example the offer of the unrestricted freehold of the property on the market at a realistic price reflecting its condition and that preservation, in some form of charitable or community ownership, is not possible;*
- g. *The redevelopment would produce substantial benefits for the community which would decisively outweigh the resulting loss from demolition or major alteration; and*
- h. *The physical condition of the building has deteriorated, through no fault of the owner / applicant for which evidence can be submitted, to a point that the cost of retaining the building outweighs its importance and the value derived from its retention. A comprehensive structural report will be required to support this.*

The Local Planning Authority will support proposals for alternative uses for Listed Buildings which retain their structure and preserve character and setting where the change will provide for the long term conservation of the structure and fabric of the building.

The Local Planning Authority will only support alterations to Listed Buildings in order to mitigate climate change where such proposals respect the significance of the Listed Building and do not have an adverse impact on its appearance, character or historic fabric.

The Local Planning Authority will only approve a proposal for enabling development where there is no other alternative option available, the benefits of such as scheme outweigh any dis-benefits that arise and mechanisms are in place to ensure the conservation of the heritage asset. In determining any application the Local Planning Authority will take into account whether:

- ✧ it will materially harm the significance of the heritage asset or its setting;*
- ✧ it will avoid detrimental fragmentation of management of the heritage asset;*
- ✧ it will secure the long term future of the heritage asset and, where applicable, its continued use for a purpose sympathetic to its conservation;*
- ✧ it is necessary to resolve problems arising from the inherent needs of the heritage asset, rather than the circumstances of the present owner, or the purchase price paid;*
- ✧ there is a source of funding that might support the heritage asset without the need for enabling development; and*
- ✧ the level of development is the minimum necessary to secure the future conservation of the heritage asset and of a design and type that minimises harm to other public interests.*

Policy HER DM3 Conservation Areas

In order to preserve or enhance the character or appearance of the Conservation Area, planning permission or relevant consent will normally be granted for proposals within or affecting the setting of a Conservation Area, provided that:

- a. New buildings and structures acknowledge the character of their special environment in their layout, form, scale, detailing, use of materials, enclosure and the spaces created between buildings;*
- b. Alterations or additions to existing buildings are sensitively designed, constructed of appropriate materials and are sympathetic in scale, form and detailing and retain or emphasise the features and qualities of the existing buildings, townscape or streetscape in the area;*
- c. Traditional features such as shop fronts, walls, railings, paved surfaces and street furniture are retained and restored;*
- d. Unsympathetic features are removed and missing features are restored or reinstated;*
- e. It retains historically significant boundaries, important open spaces and other elements of the area's established pattern of development, character and historic value, including gardens, roadside banks and verges;*
- f. It does not harm important views into, out of or within the Conservation Area.*

Within Conservation Areas, permission for development involving demolition or substantial demolition will only be granted, subject to conditions, if it can be demonstrated that:

- g. The structure to be demolished makes no material contribution to the special character or appearance of the area; or,*

- h. It can be demonstrated that the structure is wholly beyond repair or incapable of beneficial use; or*
- i. It can be demonstrated that the removal of the structure and its subsequent replacement would lead to the enhancement of the area; and*
- j. Permission has been granted for the redevelopment of the site.*

Policy HER DM6 Sites of Archaeological Interest

There will be a presumption in favour of the preservation of scheduled and other nationally important monuments and archaeological remains. Where proposed developments will have either a direct impact on sites listed in Table 16.1 (i.e. developments requiring Scheduled Monument Consent) or where developments will have an indirect impact on the settings of those sites listed in Table 16.1, or where a site on which development is proposed has the potential to include heritage assets with archaeological interest (having consulted the Historic Environment Record) permission will only be granted where it can be demonstrated that development will not be harmful to the archaeological interest of these sites.

In all such instances:

- a. Applicants must arrange for a desk based archaeological assessment of the proposed development site to be undertaken by a suitably qualified person. The archaeological assessment will take the form of a factual review of the known information on historic assets and an appraisal of these assets. This information shall accompany the planning application, and, where not supplied, will be required before any planning application is determined*. Where the Planning Authority has reason to believe, either from the archaeological assessment as above, or from other evidence sources, that significant archaeological remains may exist, further assessment in the form of a field evaluation will be required to be carried out before the planning application is determined. Any field survey undertaken shall be carried out by a professionally qualified archaeological organisation or consultant only. All stages of archaeological fieldwork shall be subject to a Written Scheme of Investigation approved by the local planning authority. No development shall take place on the proposed development site until the applicant, or their agents or successors in title, is in receipt of a Written Scheme of Investigation that has been approved by the Local Planning Authority;*

or
- b. A field evaluation as above, which shall include a historic environmental record of the archaeological site without the requirement to undertake a separate desk based archaeological assessment.*
- c. Preservation in situ of archaeological sites or remnants of such sites, is the preferred option. However, where the assessment, which shall be subject to a Written Scheme of Investigation, shows that the preservation of archaeological 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. Any such programme shall be carried out prior to the commencement of the development.*
- d. Whenever practicable, opportunities should be taken for the enhancement and interpretation of archaeological remains left in situ. Developers shall record any heritage assets to be lost (wholly or in part)*

in a manner proportionate to their importance and possible impact, and to make this evidence (and any archive generated) publicly accessible.

- e. *Where development is to be phased the presumption would normally be that the whole site should be recorded as one project in order to maintain the continuity of the archaeological record.*
- f. *Developments shall also be consistent with all other Local Plan Policies.*
- ✧ *Those submitting planning applications are strongly advised however to undertake a desk based archaeological assessment in advance of a planning application being lodged as, depending on the outcome of this assessment, further assessment in the form of a field evaluation may be required (as outlined in a. above).*

- 3.2 The south of the study site lies within Middleton-on-Sea which currently has no Neighbourhood Plan. The north of the study site falls under the remit of Clymping. The Clymping Neighbourhood Plan contains the following policy of relevance to this assessment.

Policy CPN 7 Protection of Open Views

All development will be considered with regard to the need to protect the open landscape character of the countryside and beach. The Clymping Character Assessment will be used as a reference to assess the impact of proposal.

Guidance

Historic Environment Good Practice Advice In Planning Note 2: Managing Significance in Decision-Taking in the Historic Environment (Historic England 2015)

- 3.3 The purpose of this document is to provide information to assist local authorities, planning and other consultants, owners, applicants and other interested parties in implementing historic environment policy in the NPPF and NPPG. It outlines a six-stage process to the assembly and analysis of relevant information relating to heritage assets potentially affected by a proposed development:
- ✧ Understand the significance of the affected assets;
 - ✧ Understand the impact of the proposal on that significance;
 - ✧ Avoid, minimise and mitigate impact in a way that meets the objectives of the NPPF;
 - ✧ Look for opportunities to better reveal or enhance significance;
 - ✧ Justify any harmful impacts in terms of the sustainable development objective of conserving significance and the need for change; and
 - ✧ Offset negative impacts on aspects of significance by enhancing others through recording, disseminating and archiving archaeological and historical interest of the important elements of the heritage assets affected.

Historic Environment Good Practice Advice In Planning Note 3: The Setting of Heritage Assets (Historic England 2017)

- 3.4 Historic England's Historic Environment Good Practice Advice in Planning Note 3 provides guidance on the management of change within the setting of heritage assets.
- 3.5 The document restates the definition of setting as outlined in Annex 2 of the NPPF. Setting is also described as being a separate term to curtilage, character and context; while it is largely a visual term, setting, and thus the way in which an asset is experienced, can also be affected by noise, vibration, odour and other factors. The document makes it clear that setting is not a heritage asset, nor is it a heritage

designation, though land within a setting may itself be designated. Its importance lies in what the setting contributes to the significance of a heritage asset.

- 3.6 The Good Practice Advice Note sets out a five-staged process for assessing the implications of proposed developments on setting:
1. Identification of heritage assets which are likely to be affected by proposals;
 2. Assessment of whether and what contribution the setting makes to the significance of a heritage asset;
 3. Assessing the effects of proposed development on the significance of a heritage asset;
 4. Maximising enhancement and reduction of harm on the setting of heritage assets; and
 5. Making and documenting the decision and monitoring outcomes
- 3.7 The guidance reiterates the NPPF in stating that where developments affecting the setting of heritage assets results in a level of harm to significance, this harm, whether substantial or less than substantial, should be weighed against the public benefits of the scheme.

4.0 Archaeological and Historic Baseline

- 4.1 The heritage assets under consideration have been identified by means of a review of the following resources:
- ✧ West Sussex Historic Environment Record (HER) Data;
 - ✧ The National Heritage List for England (NHLE) held by Historic England;
 - ✧ Historic England Archive;
 - ✧ Pastscape;
 - ✧ Local studies and record office research; and
 - ✧ Review of historic mapping
- 4.2 This resource has been used to provide an understanding of the heritage assets which may be affected by the proposed development. This chapter will describe the heritage assets which may be affected and assess their significance.
- 4.3 The location of heritage assets mentioned in the text are shown on Figs. 2, 3 & 4.
- 4.4 The study site is covered by an Historic Landscape Characterisation of the type 'Informal Fieldscapes' (HWS25617, HWS24931) and summarised as 'Modern Field Amalgamation'. These landscapes are considered to be created from formal enclosure of Post-Medieval to Modern date, likely from 1914 onwards.
- 4.5 There are a number of Archaeological Notification Areas (ANA's) in the study area. They outline areas where significant archaeology might be expected based on their proximity to known sites and finds. One lies directly to the west of the study site (DWS8466). This covers the historic settlement of Ancton as detailed on the Yeakell and Gardner Sussex map of 1778-1783 which includes a 17th century and two 19th century farmsteads.
- ✧ (DWS8465) - Prehistoric, Roman and Medieval activity has been detected in an area to the south west of the study site at the junction of Elmer Road and Yapton Road, approximately 900m distant.
 - ✧ (DWS8467) - A Roman settlement has been detected c.760m to the west of the site boundary at Bilsham.
 - ✧ (DWS8489) - Approximately 970m to the east of the study site at Bailiffscourt is a Medieval Monastery site, where features of possible Bronze Age as well as Romano-British date have been uncovered.
 - ✧ (DWS8487) - A multi-period site containing a Bronze Age cremation and rubbish pit and a possible Roman-British boundary ditch has been excavated at The Oystercatcher Public House c.550m to the north east of the site.
 - ✧ (DWS8485) - Another multi-period site lies 720m to the north of the study site at the disused Ford Airfield where concentrations of Prehistoric flint in one area suggested a truncated Mesolithic land surface and where Bronze Age to Iron Age/Roman ditches and a possible Bronze Age roundhouse have been found.

Previous archaeological investigations

- 4.6 A geophysical survey has been completed on the site (SUMO 2021), the greyscales of which have been used to inform this assessment. The survey was completed in December 2021 and revealed three areas of archaeological interest. This comprised two areas of rectilinear anomalies in the north-west (Figure 2; Orion 1) and north (Figure 2; Orion 2), and a circular ditch with a smaller circular response in the centre of it in the centre of the study site (Figure 2; Orion 3). None of these features correspond to known structures on historic mapping. The form of Orion 3 is suggestive of a prehistoric date. The form of the rectilinear enclosures is

suggestive of a Roman to medieval date. In the case of Orion 2 it is noted that the anomalies generally respect the alignment of surrounding ridge and furrow which may strengthen the argument for a medieval date for these anomalies.

- 4.7 The WSHER records no archaeological investigations within the study site. However extensive areas of Prehistoric and Romano-British settlement have been detected in many of the archaeological investigations within the study area, revealing dense, multi-phase occupation. Excavations along the route of The Bognor Regis to Littlehampton pipeline to the north west of the study site found Prehistoric and Roman evidence in many of the segments investigated.
- ✧ (EWS787) – Multi-period activity which included a middle-late Bronze Age unurned cremation, a late Bronze Age rubbish pit and a possible Romano-British field boundary ditch were excavated in 2009 by Archaeology South East on land at the Oystercatchers Public House c.350m to the north east of the study site. Evidence for a Saxon Sunken Featured Building or ‘Grubenhaus’ was also detected.
 - ✧ (EWS1874/EWS1875) – A geophysical survey was undertaken by Magnitude surveys on behalf of Orion Heritage in 2016/2018 on Land at Ford Airfield, c.700m to the north of the study site. It revealed evidence of likely multi-period Prehistoric and Roman archaeological origin comprising linear, rectilinear and curvilinear responses in three distinct groups. These included features with multiple sub-divisions and a possible trackway, rectilinear configurations and a stone feature as well as Post-Medieval field boundaries.
 - ✧ (EWS689) – Rescue Excavations at Nalgo Lodge, c.900m to the west of the study site have also recovered worked and burnt flint, a Romano-British and Medieval ditched field system and a single, poorly preserved Anglo Saxon grave.
- 4.8 These investigations and others will be discussed as appropriate in the sections below.

Undated

- 4.9 Two paleochannels were identified in segment 22 of the Bognor Regis to Littlehampton Pipeline at a location c.910m to the west of the study site. However no finds were produced (MWS6770). Segment 23 slightly to the west also found evidence of a wide palaeochannel, a previous watercourse which may have influenced the siting of the adjacent Roman site (MWS6771).

Prehistoric

- 4.10 There are no Historic Environment Records of prehistoric date identified within the study site.
- 4.11 Recent geophysical survey (SUMO 2021) has identified a circular ditch with a smaller circular response in the centre of it in the centre of the study site (Figure 2; Orion 3). The form of the anomaly is suggestive of a prehistoric date.
- 4.12 As outlined in the geoarchaeological assessment of the Site by QUEST, Appendix A, the majority of the study site is located on bedrock of chalk overlain by River Terrace Gravels (as mapped by the British Geological Society (BGS)). In the south-east of the study site, including the lowest ground at or close to 0.0m OD, BGS maps Raised Beach Deposits (Sand and Gravel), and straddling the eastern boundary of the site maps Raised Marine Deposits (Clay, Silt, Sand and Gravel). These Raised Marine Deposits were previously mapped as ‘Tidal River Deposits’ and are evidently associated with the water course which here forms the boundary of the Site. Although BGS mapping distinguishes in these superficial deposits between River Terrace Deposits and Raised Beach Deposits, they are not readily

distinguishable in borehole records and most authorities regard all such deposits underlying the West Sussex Coastal Plain as part of a complex of raised beaches widely recognised between Chichester and Brighton.

- 4.13 The sand and gravel resting on bedrock beneath the lower coastal plain, including deposits beneath Site B can be regarded as remnants of the Pagham Formation (Pagham Raised Beach), the lowest of the Sussex raised beaches. Judging by the OSL dates reported by Bates et al (2007), this beach is of Last Interglacial (Ipswichian) age. The silty and clayey deposits ('brickearth') overlying the raised beach sediments are therefore likely to be of Devensian age.
- 4.14 QUEST note that no river deposits are now mapped as such in association with the small stream that forms the eastern boundary of the site. There is good reason however to assume that the so-called Raised Marine Deposits, formerly mapped as Tidal River Deposits, are in fact estuarine alluvium. If present, such alluvial deposits have the potential for peat layers and other organic units.
- 4.15 The potential for Lower or Middle Palaeolithic remains at the present site is considered low. No evidence of Upper Palaeolithic occupation has ever been identified on the Sussex Coastal Plain, although the valleys of the main rivers would seem to represent attractive environments for hunter-gatherer groups and Upper Palaeolithic occupation is known from the site at Beedings on the Lower Greensand to the north of the Chalk escarpment. Even in the absence of artefact remains, the Pleistocene sediments and their contained biological remains can be significant as they enable the reconstruction of landforms, climatic conditions and environments occupied by Palaeolithic communities.
- 4.16 Similarly, the potential alluvial and head deposits lain in the Holocene within the site have the potential to build a detailed understanding of the former landscapes and environmental changes. The potential for Mesolithic material culture from the brickearth can not be entirely discounted at this stage.
- 4.17 Elmer pool, along with a ditch which forms the eastern boundary of the study site, lies on an area of alluvium, separated from the coast by a narrow band of brickearth. It was therefore presumably fed by the overflow of seawater in ancient times and it seems to have naturally drained into the Rybank Rife rather than seawards. The land around the pool was evidently very marshy; the marsh of Elmer is mentioned in Medieval sources (VCH Sussex).
- 4.18 A Late Bronze Age hoard was found in 1971, c.600m to the south west of the study site (MWS2392).
- 4.19 A Bronze Age burnt mound was found in excavations as part of the Bognor Regis to Littlehampton Pipeline, c.670m to the north west of the study site (MWS6772). Fragments of middle Iron Age 'saucepan pot' were also retrieved. Just to the north of this further evidence of the mound was noted in segments 25 and 26, overlaying a Prehistoric ditch (MWS6773/MWS6774). A bronze fragment, possibly a piece of 'cake' from a founders hoard was located nearby at Bilsham Corner (MWS2416).
- 4.20 A multi-period site was excavated on land to the rear of the Oystercatcher Public House, c.350m to the north east of the study site (MWS7709). Prehistoric occupation was indicated by a Bronze Age cremation and a Bronze Age rubbish or funerary pit.
- 4.21 Worked flints, possibly Neolithic or later, have been found at Cudlow, 720m to the east of the study site (MWS1017).
- 4.22 Four possible areas of archaeological activity were detected in geophysical survey of land at Ford Airfield c.720m to the north of the study site. These are likely to be

Prehistoric to Romano-British in date (MWS14655). It is possible that military useage of the fields has truncated a larger settlement in the area.

- 4.23 Evidence for Prehistoric settlement have been found in many of the excavations within the study area, with two paleochannels also identified during investigations along the Bognor Regis to Littlehampton Pipeline route. The location of the Ryebank Rife stream in the north of the study site and the likely waterlogged prehistoric environment may also be favourable to depositional preservation. There is therefore considered to be a moderate potential for Prehistoric finds or features within the study site based on proximity to known areas of activity, but a good possibility that is contains evidence of the past environment of interest.

Roman

- 4.24 There are no Historic Environment Records of Romano-British date identified within the study site.
- 4.25 Recent geophysical survey has identified two areas of rectilinear anomalies in the north-west (Figure 2; Orion 1) and north (Figure 2; Orion 2) of the study site (Figure 2; Orion 3). None of these features correspond to known structures on historic mapping. The form of the rectilinear anomalies is suggestive of a Roman to medieval date. In the case of Orion 2 it is noted that the anomalies generally respect the alignment of surrounding ridge and furrow which may strengthen the argument for a medieval date for these anomalies.
- 4.26 The study site lay away from major Roman Roads in the area which ran through Chichester to the west (Rural Settlement of Roman Britain, ADS).
- 4.27 Three Roman ditches were excavated within a 50m trench as part of segment 23 of the Bognor Regis to Littlehampton Pipeline, c.650m to the north west of the study site (MWS6771). Roman pottery, a quern stone and floor tile were amongst the finds retrieved in the upper fills of a Palaeochannel, likely a tributary of the Rybank Rife. The location near to a watercourse may have influenced the siting of the settlement at Bilsham to the west.
- 4.28 A Roman occupation site was discovered at Bilsham corner in 1963 during extensive road works c.990m to the west of the study site (MWS2407). These consisted of traces of a ditch, flint walling and rubbish pits containing 1st to 3rd century pottery.
- 4.29 Roman occupation has also been detected at The Oystercatcher Public House where a possible Romano British field boundary/ditch was excavated (MWS7709).
- 4.30 A large hoard of silver coins consisting of 80 silver denarii and dated from 81-161AD were found c.790m to the east of the study site, probably deposited around 141AD (MWS7072). Features of Romano-British and possibly Bronze Age date were exposed at Bailiffscourt nearby, including ditches, pottery, burnt and worked flints (MWS6994/MWS6995).
- 4.31 Roman pottery was found in the shore cliff at Middleton-on-Sea in 1931, c.950m to the south west of the study site. A silver denarius dated to AD68 was found in the vicinity in 1976 (MWS2234).
- 4.32 Roman field boundaries have been identified at Bailiffscourt to the east, The Oystercatchers Public House to the north and at Bilsham to the west. Roman pottery and coin hoards have also been discovered in proximity. This indicates a moderate potential for the presence of Romano-British period archaeological finds or features within the study site.

Saxon and early Medieval

- 4.33 There are no Historic Environment Records of Saxon and early Medieval date identified within the study site.

- 4.34 Middleton is recorded in Domesday in the ownership of Earl Roger (of Shrewsbury), with a population of 12 villagers and 4 cottagers. Bilsham was under the same ownership with a population of 14 villagers (opendomesday.org).
- 4.35 The configuration of the western and northern boundaries suggests that the parish of Middleton was once part of Felpham. The position of the manor of Middleton centrally, between Felpham and either Elmer or Cudlow in Climping may have influenced the name of the parish and settlement. Elmer pool or 'eel pool' is first mentioned in 953 and by 1310 this feature and a ditch formed the eastern boundary of the parish (VCH Sussex).
- 4.36 The potential remains of a Saxon Sunken Featured Building were found during excavations at the Oystercatchers Public House, c.350m to the north east of the study site. Remains also included a latrine pit and a stake hole (MWS7709).
- 4.37 A sherd of Saxon pottery was found in excavations as part of the Bognor Regis to Littlehampton Pipeline (segment 23), c.670m to the north west of the study site (MWS6771). Segment 21 of the excavations was further to the west near the Yapton Road where further fragments of flint tempered Prehistoric or Middle Saxon pot were noted (MWS6769).
- 4.38 A single, poorly-preserved Anglo Saxon grave, orientated east/west was found within the grounds of Nalgo Lodge, c.900m to the west of the study site; carbon dated to AD 680-890 (MWS7413).
- 4.39 Evidence of early Medieval domestic occupation has been excavated at the Oystercatchers Public House to the north east of the study site and a Saxon Grave has been found at Nalgo Lodge to the west of the study site. Based on available evidence there is considered to be a low potential for early Medieval occupation features or finds within the study site based on proximity to known activity.

Medieval

- 4.40 There are no Historic Environment Records of Medieval date identified within the study site.
- 4.41 Recent geophysical survey (SUMO 2021) has identified two areas of rectilinear anomalies in the north-west (Figure 2; Orion 1) and north (Figure 2; Orion 2) of the study site (Figure 2; Orion 3). None of these features correspond to known structures on historic mapping. The form of the rectilinear anomalies is suggestive of a Roman to medieval date. In the case of Orion 2 it is noted that the anomalies generally respect the alignment of surrounding ridge and furrow which may strengthen the argument for a medieval date for these anomalies.
- 4.42 The chief centres of Medieval settlement at Middleton were around the old church, in existence from 1086, and at Elmer. There was apparently an area of occupation around Sea Lane in an area now lost to the sea. Three wells were exposed during high tide here in 1923 approximately 270m to the south of the study site (MWS7002). One of these contained fragments of Medieval jugs but no archaeological features were noted in excavations in the vicinity. A wattle-lined well was also revealed nearby in 1976, potentially also of Medieval date (MWS2413).
- 4.43 The overlordship of the manor descended with the rape until 1243, when it passed to Roger de Mohaut following the division of the d'Aubigny inheritance. It descended in direct line through the family but after the death of Robert in 1329 it passed to Queen Isabel, wife of Edward II and by 1361 was in the ownership of Edward the Black Prince. Until the mid-15th century the under tenancy descended with the honor of Halnaker through the St John and Poynings families. After the death of Thomas Poynings Lord St John in 1458 it was passed to the representative of three granddaughters and through one of them Alice to Thomas Kingston (VCH Sussex).

- 4.44 The manor of Elmer was apparently not called a manor until 1590 and it may have originated in the four hides and five yardlands which three Frenchmen held of Middleton in 1086. At the division of the d'Aubigny inheritance in 1243 the overlordship passed with to Robert Tattershall. A William Elmer held a house and six yardlands at his death in 1325 (VCH Sussex).
- 4.45 Medieval pot sherds were recovered as part of the Bognor Regis to Littlehampton Pipeline excavations c.700m to the north of the study site (MWS6774).
- 4.46 A grange and chapel for Benedictine monks was established at Atherington after 1102 and the remains of the 13th century chapel and moat still exist here at Bailiffscourt c.950m to the east of the study site (MWS3067). The chapel is the sole remaining original building and is since a sanctuary containing the remains of the Moynes family. Archaeological evaluations found evidence of 13th to 14th century pottery in the lower fills of a shallow sided feature nearby (MWS6996).
- 4.47 Although settlement is attested at Bailiffscourt, Middleton and Bilsham in the Medieval period the study site appears to have occupied the rural hinterland away from areas of known occupation. Evidence of farming practices that may have a Medieval origin could therefore be detectable within the site but there is considered to be only a low potential for the presence of significant Medieval archaeological remains.

Post Medieval

- 4.48 North Barn was a historic outfarm or field barn in the centre of the study site. It is indicated on the Ordnance Survey 2nd edition map of 1895 but has been totally demolished since (MWS12607).
- 4.49 At the death of Thomas Kingston in 1506 the manor of Middleton passed through to his grandson John Kingston then to his brother Nicholas Kingston and through Nicholas' sister Mary to her cousin William Gorfen. In 1544 William sold the manor to the Crown. In 1599 it was granted to lord mayor of London Sit John Spencer, descending with Priory Farm in Tortington between 1600 and 1640 or later. A manor house was mentioned in the later 16th century when it was evidently the residence of successive Crown Lessees. It stood north of the old Church at the south end of Sea Lane. It is recorded with a hall, office rooms, parlour and with chambers above in 1683; part of it may have still been standing in 1875 (VCH).
- 4.50 An estate called the manor of Elmer was said to have passed from John Standbridge in 1520 to his daughter Joan, wife of John Cowper. By 1590 it was also claimed by Richard Cooke and passed then to Sir Henry Goring and in 1614 to Sir Allen Apsley and Henry Bartelott. In 1768 it was in the hands of Thomas Palmer and by 1841 a namesake was still living there, though by 1851 he had become a pauper. Elmer farm of 180 acres therefore belonged to the executors of Edward Bowden Puttock in 1848 and by 1874 it had passed to the Redford Family. The farm lands were split into three portions, two of which were developed for building in 1928 (VCH Sussex).
- 4.51 A number of other historic 19th century Outfarms have also been identified in the study area;
- ✦ (MWS10431) Is a field barn at Climping, c.230m to the east of the study site, since demolished.
 - ✦ (MWS9281/MWS9282) Ancton Farm and Ancton Cottage lie c.160m to the west of the study site, only the farmhouse survives.
 - ✦ (MWS11538) Hobbs New Barn lies c.220m to the north east of the study site and is extant.

- ✦ (MWS 13958) Westground Barn, Climping was a 19th century field barn, since demolished.
- 4.52 Speeds map dated to 1610 indicates that occupation is taking place at 'Middleton' (Middleton) and 'Baylies court' (Bailiffscourt) at this date (Fig.5).
- 4.53 By the time of the Yeakell and Gardner map of Sussex of 1778-83 we can see the study site comprising a number of fields to the north of Elmer Farm and north east of Ancton (Fig.6). A wooded land parcel can be seen in the north east of the site, with the Rybank Rife stream in the north of the site. This connects with another stream in the north east which runs southwards down to the sea front and forms the eastern boundary of the site.
- 4.54 The 1805 Ordnance Surveyors drawing shows a similar situation at the beginning of the 18th century. No structures are indicated within the study site but occupation is shown at Elmers Farm and Ancton (Fig.7).
- 4.55 The site forms part of both the 1838 Middleton on Sea and the 1843 Climping parishes at the time of the tithe survey, with the majority of the site lying within Middleton on Sea (Fig.8). These land parcels are in the ownership of the Devises of the late Edward Bowden Puttock. The wooded area can be seen in the north east of the study site at this date. An L shaped building is now in place in the centre of the study site, connected by tracks to the east. The very northernmost part of the site lay within the parish of Climping and was in the ownership of the Boniface family, with the possible exception of a small area at the western boundary, then in the hands of the Governors of Christ's Church Hospital, and occupied by John Boniface.
- 4.56 The Church of St Nicholas in Middleton was built in 1847 following destruction of the earlier church during a storm in 1837 (MWS776). Extension to the lower part of the west end was completed in 1949 and a chancel added in 1977-78. Early visitors to the village often came to see the ruined church (VCH Sussex).
- 4.57 A terrace of nine cottages is shown on 1st edition OS maps of 1869-1875, c.290m to the south of the study site. It is labelled as Elmer Coastguard Station (MWS7409).
- 4.58 The earliest published OS map to capture the site in detail is the county series of 1:10,560 scale dated 1876 (Fig.9). The site consists of a single agricultural field to the south of the Rybank Rife stream and two to the north; the wooded area is no longer indicated. North Barn lies in the centre of the site and is now connected by a track to Elmer farm on the beach head to the south. Settlement is shown at Ancton Farm to the west and at Elmer Farm to the east but no other occupation is indicated. A small area of rough which could be a quarry pit is shown in the south east corner of the study site.
- 4.59 There are no changes by 1910 indicated on OS mapping (Fig.10). The central building is now labelled North Barn.
- 4.60 An aircraft factory was in place between 1914 and 1919, c.670m to the south west of the study site (MWS2411). It was built for White and Thompson Ltd and acquired by Handley Page Ltd prior to closure.
- 4.61 Geophysical survey on land at Ford Airfield c.720m to the north of the study site has revealed extensive features associated with the airfield which was opened in March 1918 by German Prisoners of War (MWS14655). Remnants of Post-Medieval canal and field boundaries were also identified although it is likely that military useage of the fields has truncated a larger Prehistoric/Romano-British settlement in the area.

- 4.62 Ford Airfield was never used for its original purpose as a 'jumping off point' for France by American troops. It was closed in 1920 and re-opened for civilian use. In World War II the airfield was renamed HMS peregrine and training units were stationed there. It was heavily bombed in a raid in 1940 which claimed 28 lives. By 1958 military occupation once more ceased and civilian flight resumed until 1980 when some of the buildings were used as an open prison.
- 4.63 Middleton's development as a resort in its own right did not begin until after 1920, chiefly as a result of its safe sandy beaches. The New City built by Sir Walter Blount and opened in 1922 south of the church being one of the earliest attempts to provide a self-contained seaside environment and by 1929 it was said to have become a formidable rival to Bognor but both quieter and cheaper (VCH Sussex).
- 4.64 Building development from 1920 brought new trades to the area and a noticeable increase in brickmaking. No significant changes are evident to the study area until the OS map of 1932 which depicts residential housing development around Elmers Farm and towards Middleton. By 1933 Ancton was added on to the parish of Middleton from Felpham. The map shows Ancton Way and other roads being laid out to the south of the study site boundary and houses being constructed directly to the south west (Fig.11). North Barn is no longer in place in the centre of the site.
- 4.65 Bailiffscourt Hotel, c.950m to the east of the study site was built between 1931 and 1935 by Amyas Phillips for Lord and Lady Moyne in late Medieval Cotswold Style entirely out of salvaged materials (MWS7684).
- 4.66 By 1957 the development at the southern boundary is complete. A wooded area takes up the centre of the site and the periphery of the site in the south, east and west is also wooded (Fig.12).
- 4.67 The OS map of 1966 shows that Grevatt's Lane at the northern study site boundary has been converted into a dual carriageway and it diverges from the original alignment in the western section. However no other changes are evident (not illustrated). Further residential development has taken place at the south western boundary of the site by 1980-1981. This relates primarily the development of a caravan park here laid out by 1978 (Fig.13)
- 4.68 There are no noticeable changes on the maps of 1991 (Fig.14) and 2021 (Fig.15).
- 4.69 Google Earth provides readily available satellite imagery between 2001 and 2020 (Fig.16). There are no significant changes to the site throughout this period although changes to land usage are evident and potential removal of field boundaries. Crop marks visible in many of the images may have an archaeological origin but equally could result from geological variations in the subsoil.
- 4.70 LiDAR assessment of the study site revealed no anomalies of likely archaeological significance, although the linear marks of modern ploughing regimes were noted across the site; orientated north/south in the north and south of the study site and east/west in the centre. Minor variations in the ground that could have a geological origin were observed in the south of the site. The potential for below-ground features across the study site was considered to be low to moderate based on this evidence.
- 4.71 North Barn was a historic outfarm in the centre of the study site, indicated on OS maps of the late 19th century but since demolished. Changes to land use and field boundaries are also evident throughout the site during the period. This indicates a high potential for the presence of Post-Medieval archaeological remains within the site.

Site Walkover

- 4.72 A site visit was undertaken on the 27th September 2021 to gain a greater understanding of existing land use and the potential for archaeological constraints within the study site. The conditions were clear and bright.
- 4.73 The study site occupies flat agricultural ground that had recently been ploughed. The area was accessed via a locked gate used to access a paintballing centre. The agricultural fields were bound by mature, high vegetation which completely screened distant views from the site. The site walkover identified no evidence of extant or buried archaeological remains.



Plate 1: General view of central part of study site from eastern boundary (dir. west)



Plate 2: General view of central part of study site from western boundary (dir. south-east)



Plate 3: General view of south-west part of study site (dir. south)

Past Impacts, Summary of Archaeological Potential and Assessment of Significance

- 4.74 Past impacts are likely to have resulted from historic ploughing.
- 4.75 The geoarchaeological potential of the site has been assessed by QUEST (Appendix A). The potential for Lower or Middle Palaeolithic remains at the present site is considered low. No evidence of Upper Palaeolithic occupation has ever been identified on the Sussex Coastal Plain, although the valleys of the main rivers would seem to represent attractive environments for hunter-gatherer groups and Upper Palaeolithic occupation is known from the site at Beedings on the Lower Greensand to the north of the Chalk escarpment. Even in the absence of artefact remains, the Pleistocene sediments and their contained biological remains can be significant as they enable the reconstruction of landforms, climatic conditions and environments occupied by Palaeolithic communities.
- 4.76 Similarly, the potential alluvial and head deposits lain in the Holocene within the site have the potential to build a detailed understanding of the former landscapes and environmental changes. The potential for Mesolithic material culture from the brickearth can not be entirely discounted at this stage.
- 4.77 Recent geophysical survey (SUMO 2021) has revealed three areas of archaeological interest. In the centre of the study site geophysical survey identified a circular ditch with a smaller circular response in the centre of it (Figure 2; Orion 3). The form of this anomaly is suggestive of a prehistoric, possibly Bronze Age date. Evidence for prehistoric occupation have been detected during excavations of the Bognor Regis to Littlehampton pipeline to the north-west of the site and land utilisation from the Bronze Age onwards is indicated in many of the excavations within the study area. Based on available evidence the significance of this feature is considered likely to be of local to regional heritage significance.
- 4.78 Geophysical survey (SUMO 2021) also recorded two areas of rectilinear anomalies in the north-west (Figure 2; Orion 1) and north (Figure 2; Orion 2) of the study site. None of these features correspond to known structures on historic mapping. The form of the rectilinear enclosures is suggestive of a Roman to medieval date. In the case of Orion 2 it is noted that the anomalies generally respect the alignment

of surrounding ridge and furrow which may strengthen the argument for a medieval date for these anomalies. It is noted that archaeological investigations have recorded Romano-British field systems and fragmentary occupation evidence throughout the study site. Domestic occupation of Saxon and early Medieval date has been found at the Oystercatchers Public House to the north east of the study site. Based on available evidence, the significance of these features are considered likely to be of local to regional heritage significance, depending on date and condition.

Designated Heritage Assets

- 4.79 This assessment will consider the potential effects of development within the study site on the significance of built heritage assets. Heritage assets and potential impacts will be assessed using best practice, including that set out in Historic England guidance on setting (Historic England 2017).
- 4.80 There are no strict parameters for the setting of study areas. This has been defined based on the results of the site visit, professional judgement and experience of potential significant direct and indirect effects likely to arise from the proposed development.
- 4.81 A radius of 1 km from the boundary of the site has been used for assessing indirect effects on all non-designated and designated heritage assets. Sixteen listed buildings were identified in the study area. There were no Conservation Areas or Scheduled Monuments.
- 4.82 The distribution of built heritage designated heritage assets in relation to the study site can be found in Figure 4. The area beyond this radius was also reviewed and no sensitive heritage assets were present in the wider area that merited further consideration in this assessment.
- 4.83 A site visit was undertaken on 27th September 2021 to assess the setting of nearby designated heritage assets. The conditions were sunny with good visibility. Additional desk-based assessment using Google Earth and maps was also utilised.

Designated assets not requiring assessment

- 4.84 Not all built heritage assets within the study area will require full assessment for impacts on an individual basis; where a heritage asset has been excluded, a clear justification will be provided, for example, if the asset is sufficiently far, and well screened from the study site. Also, not all assets will require the same level of assessment: the level of detail will be sufficient to inform the nature and degree of effect of development within the study area on the significance of the heritage asset in question.
- 4.85 The following designated assets were excluded from further assessment due to a combination of topography, the distance from the site and the built-up nature within they are located. The assets not assessed in detail (although visited during the site visit) are Rose Cottage, Grade II, NHLE 1237838; Manor Farmhouse, Grade II, NHLE 1276185; High Kettle Cottage, Grade II, NHLE 1274458; Ancton House Hotel, Grade II, NHLE 1353901; The Cottage, Grade II, NHLE 1353859; Dove Cottage, Grade II, NHLE 1233449; Virginia Cottage, Grade II, NHLE 1027675; The Black Horse Public House, Grade II, NHLE 1353860; Chapel at Bailiffscourt Hotel, Grade II*, NHLE 1233450, Outbuilding at Bailiffscourt to the north of the chapel, Grade II, NHLE 1027677; Outbuilding at Bailiffscourt to the north of the chapel and adjoining the stables on the south west, Grade II, NHLE 1027638; The stables at Bailiffscourt to the north east of the chapel, Grade II, NHLE 135879; The Gatehouse at Bailiffscourt to the north east of the chapel, Grade II, NHLE 1027637; Cottage to Bailiffscourt to the north east of the chapel, Grade II, NHLE 1276596;

Bailiffscourt Hotel and Country Club, Grade II*, NHLE 1027676; Guest House to Bailiffscourt Hotel and Country Club, Grade II*, NHLE 1274459.

Designated assets requiring assessment

- 4.86 No designated assets have the potential to be affected by the proposed development.

5.0 Proposed Development Proposed Development and Predicted Impact on Designated and Non-Designated Heritage

Site Conditions

- 5.1 Site B measures approximately 71ha in size. It is located to the north of Ancton, Middleton-on-Sea, at the eastern edge of the Bognor Regis urban area. The land is primarily used for agricultural (arable) purposes and is generally flat. The Site comprises four field parcels the boundaries of which comprise a variety of woodland, hedgerows and trees. The woodlands adjoining the Site's western and southern boundaries are subject to Tree Preservation Orders (ref: TPO/M/2/91 and TPO/M/1/91).
- 5.2 To the south is the settlement of Ancton with residential properties situated along Ancton Way and Sunneymead Close but woodlands that bound the Application Site. To the north, the Site adjoins the A259 Grevatt's Lane which is the main arterial route along the coastal plain extending from Littlehampton to Chichester. There is an agricultural access along the A259. To the east is agricultural land and a small industrial complex; Baird's Business Park. To the west are agricultural fields.
- 5.3 There is an existing Public Right of Way (PRoW) within the woodland that adjoins the western boundary of the Site (Ref: 165)'.

The Proposed Development

- 5.4 The Golf Course Scheme (Site B) submitted as a hybrid planning application for: *A full planning application for the construction of a new [18 hole] Golf Course and an outline planning application for the associated facilities including the Club House, Maintenance Facility, and practice facilities with all matters excluding access reserved.*

Potential Archaeological Impacts and Mitigation Measures

- 5.5 A geoarchaeological deposit model and paleoenvironmental assessment has been produced (QUEST 2021; Appendix A). The assessment identified potential for Holocene estuarine alluvium in the east of the study site. The majority of the study site is underlain by Pagham Raised Beach of probable Ipswichian age overlain by 'brickearth' of Devensian age. These deposits are considered to have low potential for Palaeolithic artefacts. There is, however, potential for paleoenvironmental evidence within the underlying sequence. The potential for archaeological evidence, i.e. Mesolithic to Bronze Age flint artefacts within the brickearth cannot be discounted at this stage. Potential impacts to the underlying quaternary sequence are likely to occur by deep excavations (i.e. foundations / attenuation ponds. Such impacts are likely to be relatively superficial and localised; the overall impact is considered low adverse.
- 5.6 Recent geophysical survey (SUMO 2021) has revealed three areas of archaeological interest. In the centre of the study site geophysical survey identified a circular ditch with a smaller circular response in the centre of it (Figure 2; Orion 3). The form of this anomaly is suggestive of a prehistoric, possibly Bronze Age date. Geophysical survey (SUMO 2021) also recorded two areas of rectilinear anomalies in the north-west (Figure 2; Orion 1) and north (Figure 2; Orion 2) of the study site. The form of the rectilinear enclosures is suggestive of a Roman to medieval date. Based on available evidence the significance of these features are considered likely to be of local to regional heritage significance.
- 5.7 Taking into consideration the development will require both cut and fill across the site, groundworks associated with the excavation of the clubhouse, ponds and re-

modelling for the golf course are likely to have a low - moderate magnitude of impact on these archaeological assets. This would result in a low – moderate magnitude of impact.

- 6.8 It is anticipated that the implementation of a staged programme of archaeological works would secure the archaeological interest of the study site and ensure that effects to archaeology are minor, not significant. Subject to the results of the evaluation, further mitigation works may be required. The requirement / scope for further geoarchaeological works would benefit from on-site borehole data, as such it is recommended that any future geotechnical works are integrated into the archaeological strategy for the site.

Potential Impacts on Designated Heritage Assets

- 6.9 As outlined in section 4, the development of the site will have no impact in the setting of any designated heritage assets.

6.0 Summary and Conclusions

- 6.1 This historic environment desk-based assessment considers land at Bognor Regis, West Sussex, which is proposed for the relocation of the Bognor Regis golf course (Fig. 1). The site measures approximately 71ha in size. It has been researched and prepared by Orion Heritage on behalf of Hallam Land Management Ltd (SE). The site (hereinafter referred to as the “study site”) is located at grid reference SU 98830 00977.
- 6.2 The assessment has been prepared for the purpose of providing initial advice to the commissioning client and to form a technical appendix to the Cultural Heritage ES Chapter. A geoarchaeological deposit model and paleoenvironmental assessment has been produced (QUEST 2021; Appendix A). A geophysical survey has been completed on the site (SUMO 2021), the greyscales of which have been used to inform this assessment.
- 6.3 The geoarchaeological assessment (QUEST 2021; Appendix A) identified potential for Holocene estuarine alluvium in the east of the study site. The majority of the study site is underlain by Pagham Raised Beach of probable Ipswichian age overlain by ‘brickearth’ of Devensian age. These deposits are considered to have low potential for Palaeolithic artefacts. There is, however, potential for paleoenvironmental evidence within the underlying sequence. The potential for archaeological evidence, i.e. Mesolithic to Bronze Age flint artefacts within the brickearth cannot be discounted at this stage. Potential impacts to the underlying quaternary sequence are likely to occur by deep excavations (i.e. foundations / attenuation ponds. Such impacts are likely to be relatively superficial and localised; the overall impact is considered low adverse.
- 6.4 Recent geophysical survey (SUMO 2021) has revealed three areas of archaeological interest. In the centre of the study site geophysical survey identified a circular ditch with a smaller circular response in the centre of it (Figure 2; Orion 3). The form of this anomaly is suggestive of a prehistoric, possibly Bronze Age date. Geophysical survey (SUMO 2021) also recorded two areas of rectilinear anomalies in the north-west (Figure 2; Orion 1) and north (Figure 2; Orion 2) of the study site. The form of the rectilinear enclosures is suggestive of a Roman to medieval date. Based on available evidence the significance of these features are considered likely to be of local to regional heritage significance.
- 6.5 It is noted that re-landscaping will also require the fill of parts of the site which will serve to preserve below ground archaeological remains, if surviving. Groundworks associated with the excavation of the clubhouse, ponds and re-modelling for the golf course are likely to have a low - moderate magnitude of impact on these archaeological assets, subject to the results of intrusive evaluation. This would result in a low - moderate effect.
- 6.6 It is anticipated that the implementation of a staged programme of archaeological works would secure the archaeological interest of the study site and ensure that effects to archaeology are minor, not significant. Subject to the results of the evaluation, further mitigation works may be required. The requirement / scope for further geoarchaeological works would benefit from on-site borehole data, as such it is recommended that any future geotechnical works are integrated into the archaeological strategy for the site.
- 6.7 There are no designated heritage assets or listed building that will be affected by the proposed development.
- 6.8 On this basis it is considered that the impact of the proposed development on the archaeological potential of the study site could be adequately mitigated, and the development made acceptable in terms of archaeological impacts. It therefore

accords with the requirements in paragraph 203 of the NPPF and policies DM1, DM3 and DM6 of the Arun local plan 2011-2031 (2018). It also accords with NPPF paragraph 202 regarding designated assets.

Sources

General

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The National Archives
West Sussex Historic Environment Record

Cartographic

1606 Map of the Manor of Middleton, by John Norden WSRO Add Mss 2030
1838 Plan of the Parish of Middleton, Surveyed and Drawn by Edward Fuller WRSO Add Mss 4537
1838 Tithe Map, Middleton-on-Sea
1843 Tithe map, Climping TNA IR 30/35/65
1874 Sale Particulars of Middleton and Ancton Farms (313a.) WSRO Add Mss 11809
Nd Map of land around Elmer Farm, Middleton, with note "Tracing of Plan from Deed of 20th May, 1912" Add Mss 13907
1871 Middleton and Ancton Farms, Lease for 14 years at the annual rent of £750 with plan WSRO Add Mss 11807
OS mapping 1876 - 2021

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Historic England National Heritage List for England - <https://www.historicengland.org.uk/listing/the-list/>
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Lidar

Lidar data were downloaded from the Environment Agency website in September 2021 - <https://environment.data.gov.uk/DefraDataDownload/?Mode=survey>

Tree Name	Year	Resolution (m)
SU 90 SE	2008	2
SU 90 SE	2009	
SU 90 SE	2010	1
SU 90 SE	2011	1
SU 90 SE	2013	1
SU 90 SE	2014	1
SU 90 SE	2017	1
SU 90 SE	2018	1
SU 90 SE	2019	1
SU 90 SE	2021	1
SU 90 SE	2019 (NLP)	1



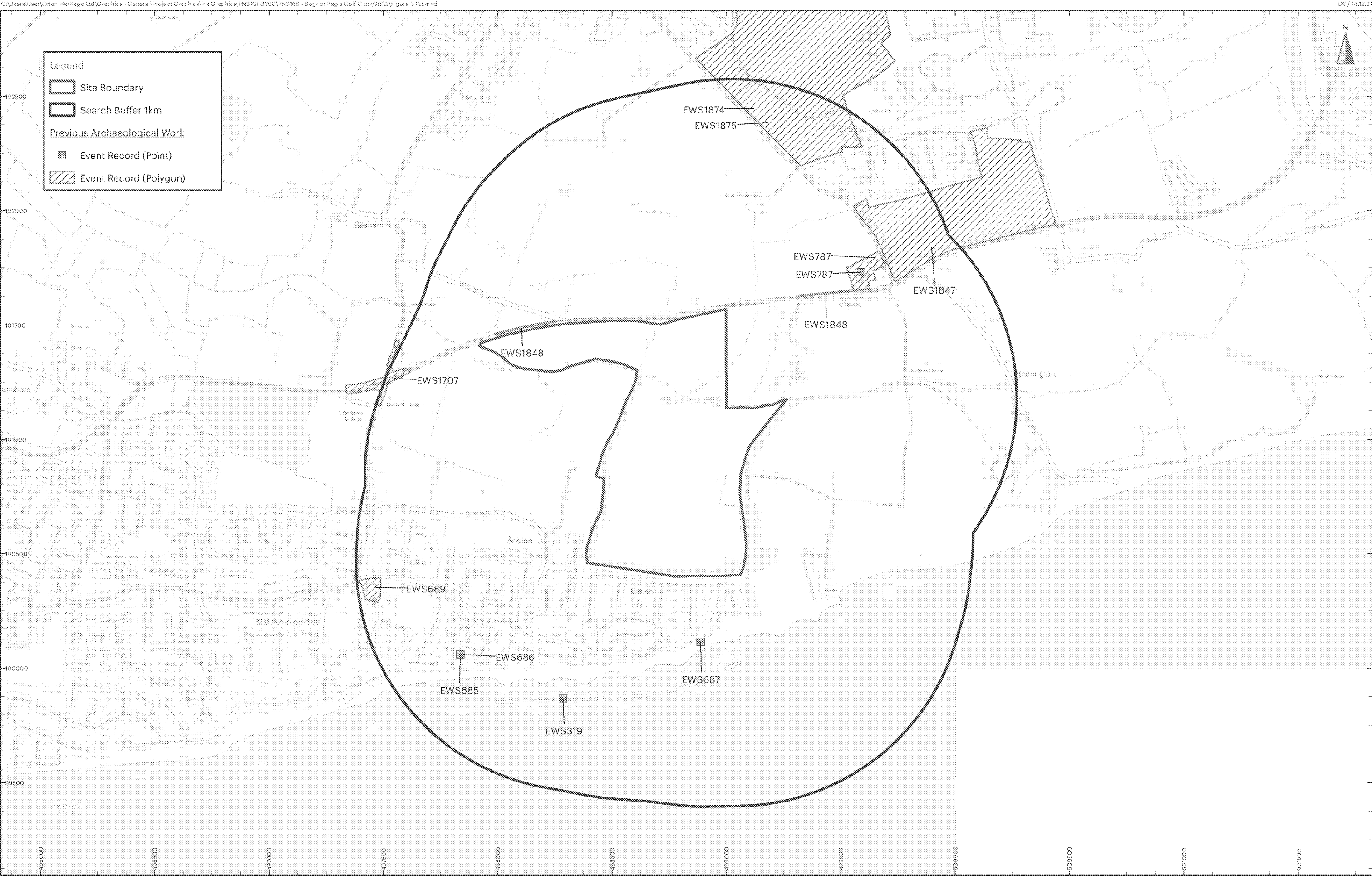
Title:
Figure 1: Site Location
Address:
Bognor Regis Golf Club 2

Scale at A4: 1:20,000

0 500m

orion.

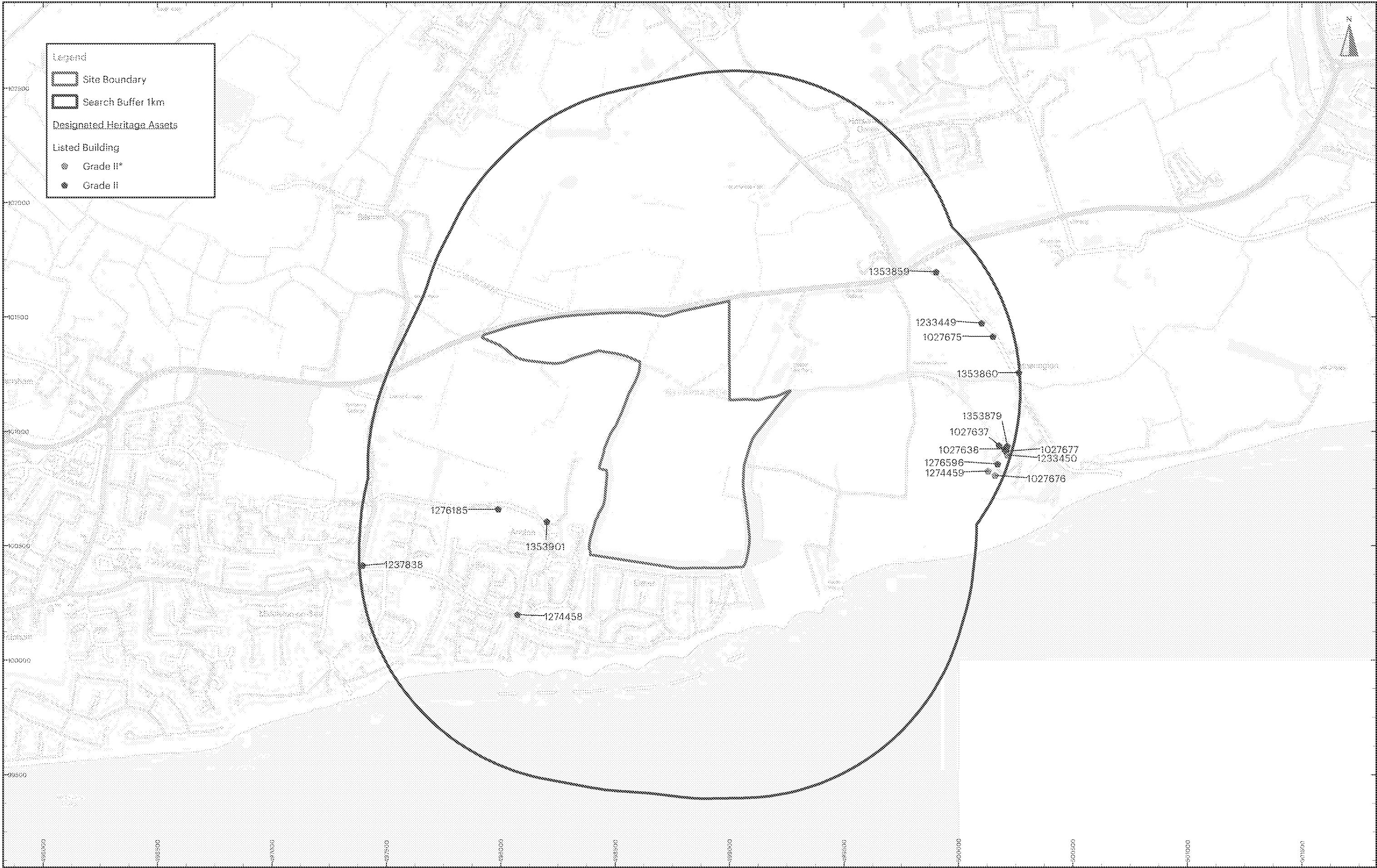




Title:
Figure 3: HER Data Plot – Event data
Address:
Bognor Regis Golf Club 2

Scale at A3: 1:15,000
0 500m

orion.



Title:
Figure 4: NHLE – Designated Assets
Address:
Bognor Regis Golf Club 2

Scale at A3: 1:15,000
0 500m

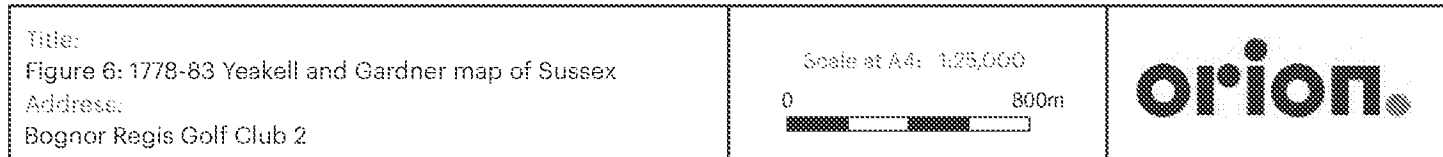




Title:
Figure 5: 1610 Speed Map of Sussex
Address:
Bognor Regis Golf Club 2

Not to Scale:
Illustrative Only

orion.





Title: Figure 8: 1838 Middleton on Sea tithe map/
1843 Climping tithe map

Address:
Bognor Regis Golf Club 2

Scale at A4: 1:8,000

0 250m

orion.

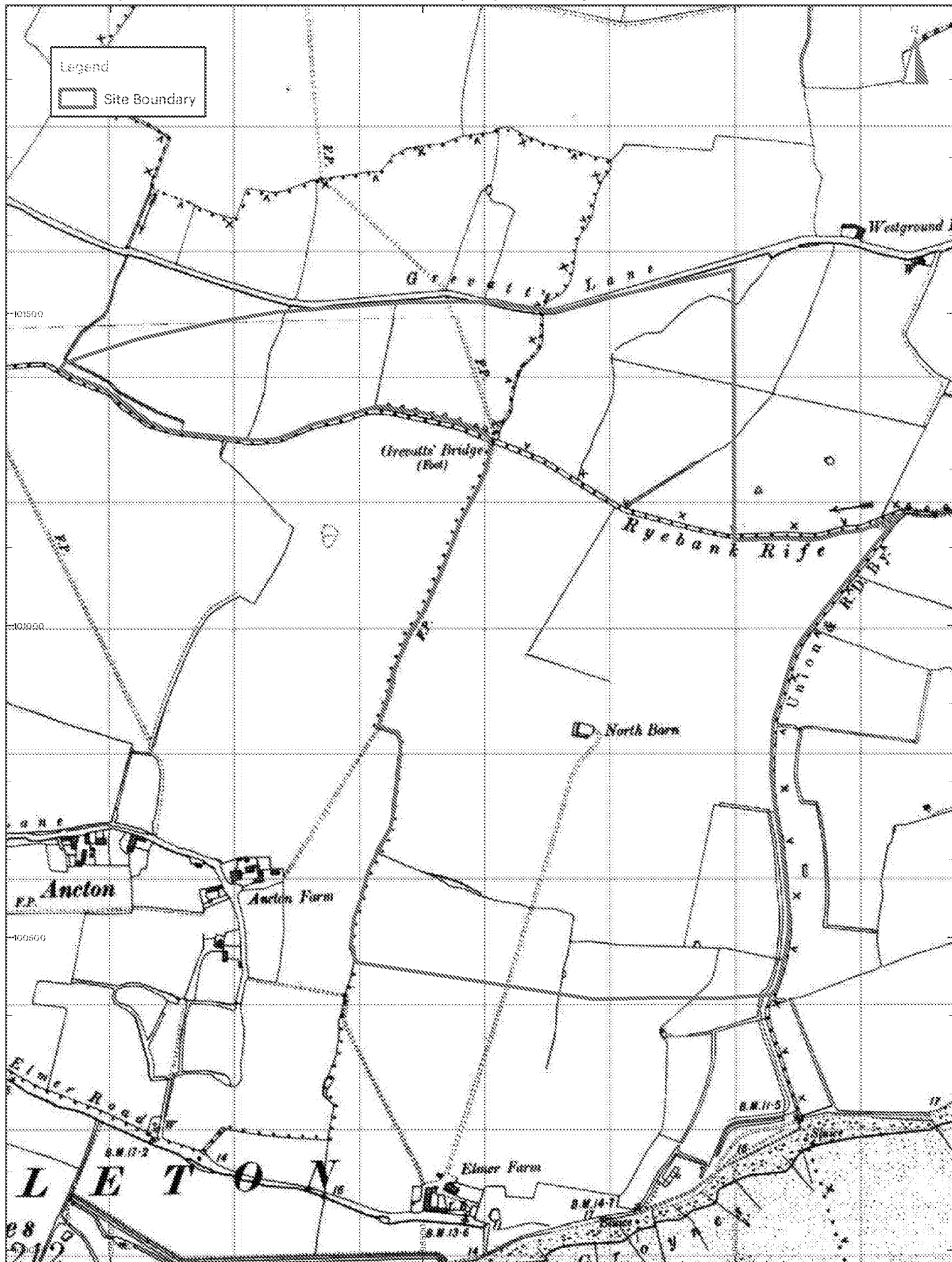


Title:
Figure 9: 1876 OS Map 1:10,560
Address:
Bognor Regis Golf Club 2

Scale at A4: 1:8,000

0 250m

orion.



Title:
Figure 10: 1910 OS Map 1:10,560
Address:
Bognor Regis Golf Club 2

Scale at A4: 1:8,000

0 250m

orion.



Title:
Figure 11: 1932 OS Map 1:10,560
Address:
Bognor Regis Golf Club 2

Scale at A4: 1:8,000

A horizontal scale bar with a dashed line. The left end is labeled '0' and the right end is labeled '250m'. Below the dashed line are three solid black rectangular blocks.

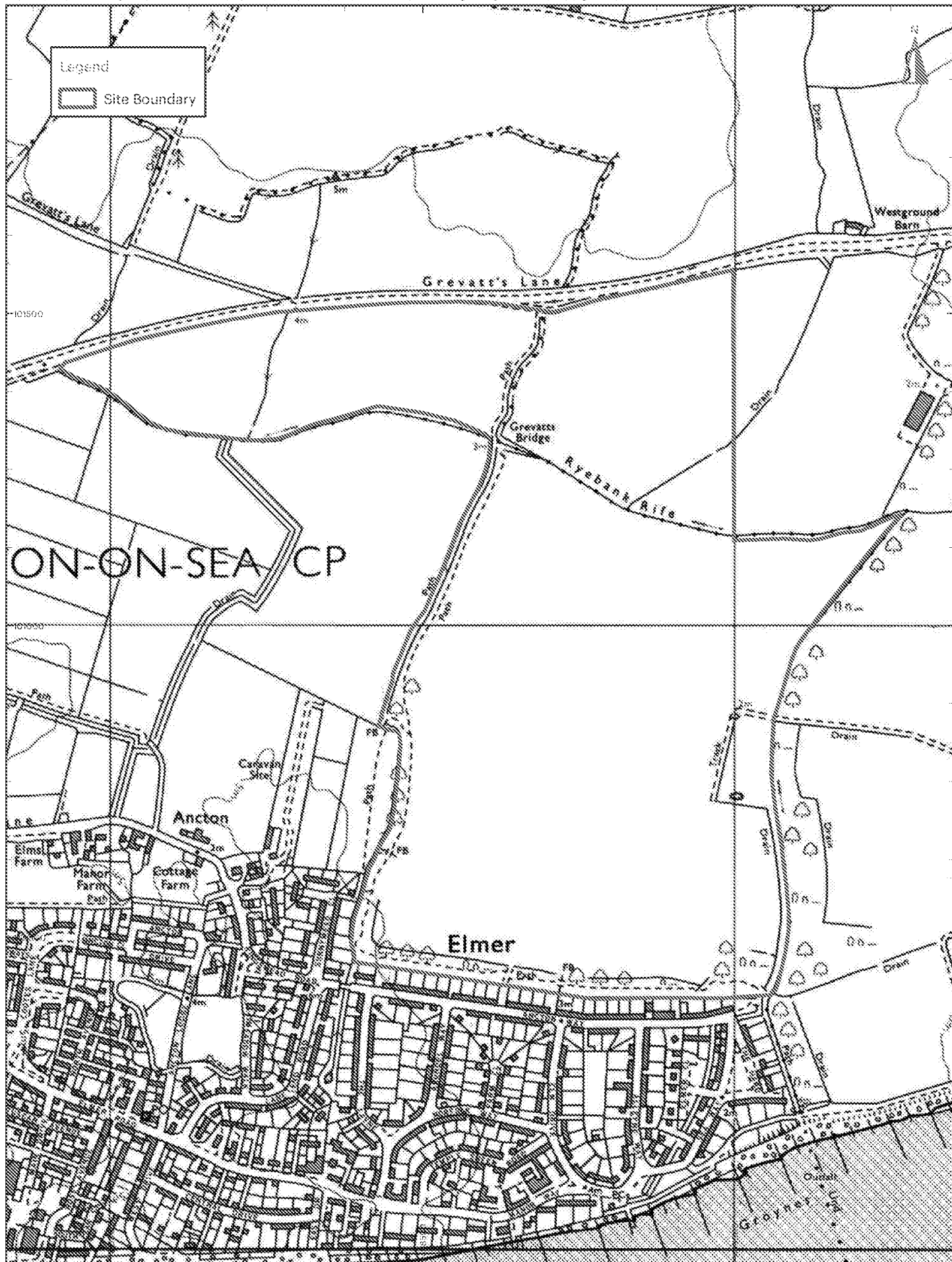
orion.



Title:
Figure 12: 1957-1961 OS Map 1:10,560
Address:
Bognor Regis Golf Club 2

Scale at A4: 1:8,000
0 250m

orion.



Title:
Figure 13: 1980-1981 OS Map 1:10,000
Address:
Bognor Regis Golf Club 2

Scale at A4: 1:8,000
0 250m

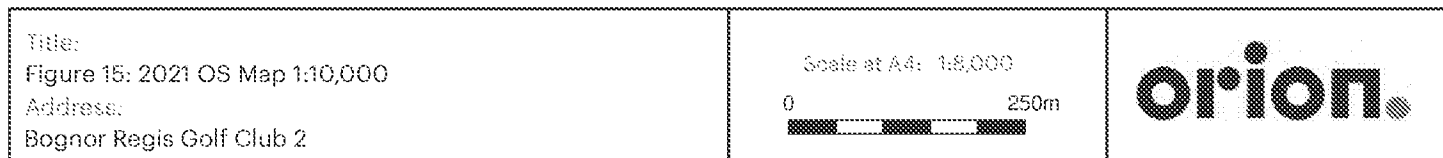
orion.



Title:
Figure 14: 1991-1992 OS Map 1:10,000
Address:
Bognor Regis Golf Club 2

Scale at A4: 1:8,000
0 250m

orion.





Title:
Figure 16: Google Earth Image
Address:
Bognor Regis Golf Club 2

Scale at A4: 1:8,000
0 250m

orion.

Appendix A -- Geoarchaeological and Paleoenvironmental Desk-based Assessment

SITE B - LAND TO THE NORTH OF ANCTON, WEST SUSSEX

Geoarchaeological & Palaeoenvironmental Desk-Based Assessment

NGR: SU 986 008

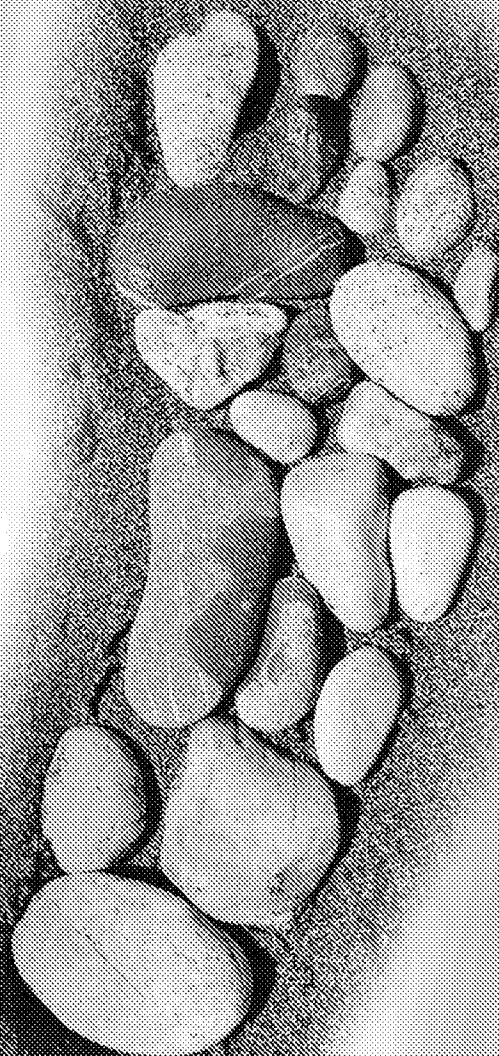
Date: 23rd November 2021

Written by: Dr C.P. Green

QUEST, School of Archaeology, Geography
and Environmental Science, Whiteknights,
University of Reading, RG6 6AB



University of Reading 2021



DOCUMENT HISTORY:

REVISION	DATE	PREPARED BY	SIGNED	APPROVED BY	SIGNED	REASON FOR ISSUE
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1. INTRODUCTION

1.1 Site context

This report summarises the findings arising from a Geoarchaeological and Palaeoenvironmental Desk-Based Assessment undertaken by Quaternary Scientific (University of Reading) in connection with the development of a new golf course east of Bognor Regis, on land north of Ancton, West Sussex (National Grid Reference (NGR): *centred on* SU 986 008; Figure 1).

The site is in the historic parish of Middleton (now Middleton-on-Sea) which now forms an eastward extension of the urban area of Bognor Regis. The site is about 5.0km to the east of the town centre and at its southern end is less than 0.5km from the coast. The main part of the site is a roughly rectangular area occupying just over 49 hectares, about 0.8km from north to south and 0.6km from east to west. A smaller area of about 11.6 hectares extends northward for ca. 0.4km on the west side of the site. To the south the site is bounded by residential properties in Ancton Way in the Elmer area of Middleton. To the north the main part of the site is bounded by a small stream, the Ryebank Rife, beyond which the site extends further northward on its west side to Gravett's Lane (A259). The western and eastern boundaries are formed by historic and heavily wooded field boundaries. On the east side of the site, the boundary coincides with a water course draining from the Ryebank Rife southward to the coast.

NB The identification and course of the Ryebank Rife is potentially confusing. In OS mapping, e.g. Landranger Series 1:50,000 Sheet 197 Chichester & The Downs, this stream is shown extending from a

point close to the River Arun westward to join the Lidsey Rife north of Bognor Regis Golf Course. In the present assessment the name is applied only to this course of the stream. However the water course marking the eastern boundary of the present site which drains southward from the Ryebank Rife to the coast is also often referred to as the Ryebank Rife.

1.2 Aims and objectives

The aims of the Geoarchaeological & Palaeoenvironmental Desk-Based Assessment were as follows:

1. To determine the Geoarchaeological & Palaeoenvironmental significance and potential of the site;
2. To determine whether there are justifications for further work on the site based on current knowledge;
3. To outline a preliminary strategy for on-site investigation.

In order to address these aims, the following objectives are proposed:

1. To review relevant existing documents and sources related to the geoarchaeological and palaeoenvironmental history of the site;
2. To propose a strategy for further investigation (if necessary).

The following documents and sources were reviewed in an attempt to determine the significance and potential of the site including but not limited to: (1) historical borehole data held by the British Geological Survey (<http://mapapps.bgs.ac.uk>), (2) relevant geological, Quaternary and archaeological literature relevant to this area of Kent, and (3) a Historic Environment Record (HER) search.

2. RESULTS OF THE DESK BASED ASSESSMENT

2.1 Topographic setting

There is very little topographic expression either within the site or in the immediately surrounding area. Natural ground levels within the site are between 1.0m and 2.0m OD, falling to 0.0m OD in the middle of the main part of the site and rising to 3m or 4m OD in a few places around the margins of the site. Apart from the channel itself, the course of the Ryebank Rife has no topographic expression within the site. However, viewed in a broader spatial context the site is seen to lie in the broad, very shallow and weakly defined valley of this small stream as it drains westwards to join the Lidsey Rife north of the present Bognor Golf Course. The proposed golf course site and the valley of the Ryebank Rife form part of the regional topographic feature known as the West Sussex Coastal Plain, more specifically part of the Lower Coastal Plain. Locally, away from the valley of the Ryebank Rife, and more widely across much of the Lower Coastal Plain between Brighton and Chichester the higher ground is at levels between 4.0m OD and 7.0m OD, rising gently northward to the 10m contour which is about 5.0km north of the present site. Further north the ground rises more steeply forming the Higher Coastal Plain and beyond that the dip slope of the South Downs.

2.2 Geological setting

Bedrock Geology

Bedrock beneath the site is Chalk of the White Chalk Subgroup (Mortimore 1986, 1997) which in this area includes the Newhaven Chalk and the Seaford Chalk. However as the Chalk here and more widely underlying the coastal plain is lost to view beneath superficial geological deposits, the British Geological Survey (BGS) maps it simply as 'White Chalk Subgroup (undifferentiated)'.

Superficial Geology

The superficial deposits underlying most of the site are now mapped by BGS (www.mapapps.bgs.ac.uk/geologyofbritain) as 'River Terrace Deposits (sand, silt and clay)'. These deposits were formerly mapped by BGS as 'Aeolian Deposits (Brickearth)' (1:50,000 Sheet 317/332 Chichester and Bognor 1996)). In the south-east of the site, including the lowest ground at or close to 0.0m OD, BGS maps Raised Beach Deposits (Sand and Gravel), and straddling the eastern boundary of the site maps Raised Marine Deposits (Clay, Silt, Sand and Gravel). These Raised Marine Deposits were previously mapped as 'Tidal River Deposits' (1:50,000 Sheet 317/332 Chichester and Bognor 1996) and are evidently associated with the water course which here forms the boundary of the site.

There are no BGS archive boreholes within the present site. In the surrounding area the deposits that underlie the lower coastal plain are known from scattered borehole records of which those closest to the site (all within 1.1km from the site boundary) are BGS archive boreholes SU90SE31 to the west and SU90SE35 to the north, both in areas mapped by BGS as River Terrace Deposits; and SU90SE39 to the east, in an area mapped by BGS as Raised Beach Deposits. In all these records the upper part of the sediment sequence is logged as 'brickearth' forming a unit ranging in thickness from 0.9m to 2.0m and described as silt or silty clay with subsidiary amounts of sand, gravel and chalk locally present. The silty nature of the 'brickearth' suggests the incorporation of windblown material (loess) but the common presence of sandy and pebbly horizons indicates reworking and incorporation of material from other sources.

In all three boreholes the 'brickearth' is underlain by a unit termed in the borehole logs 'Raised Beach Deposits (younger)'. These deposits vary in thickness from 1.5m to 2.1m and vary considerably in their make-up, including units of clayey gravelly sand, clayey sandy gravel, gravelly silt and silty clay. These deposits rest on Chalk bedrock at levels between 0.5m and 0.7m OD.

Although BGS mapping distinguishes in these superficial deposits between River Terrace Deposits and Raised Beach Deposits, they are not readily distinguishable in borehole records and most authorities (Bates *et al* 1997, 2000, 2007; Bates & Briant 2009) regard all such deposits underlying the West Sussex Coastal Plain as part of a complex of raised beaches widely recognised between Chichester and Brighton. Throughout most of this area the bedrock beneath the lower coastal plain is recorded in BGS archive boreholes at levels between ca. -2.0m OD and ca. +4.0m OD, with some indication that more than one erosional bench is represented. Most of the sand and gravel resting

on bedrock beneath the lower coastal plain, including such deposits beneath the present site can be regarded as remnants of the Pagham Formation (Pagham Raised Beach), the lowest of the Sussex raised beaches. Judging by the OSL dates reported by Bates *et al* (2007), this beach is of Last Interglacial (Ipswichian) age (MIS 5e/6). The silty and clayey deposits ('brickearth') overlying the raised beach sediments are therefore likely to be of Devensian age.

No river deposits are now mapped as such in association with the small stream that forms the eastern boundary of the site. There is good reason however to assume that the so-called Raised Marine Deposits, formerly mapped as Tidal River Deposits, are in fact estuarine alluvium. This is clearly the case in the nearby valley of the Arun where the valley floor is also mapped by BGS as underlain by Raised Marine Deposits. Boreholes there reveal a sequence of alluvial deposits that includes peat layers and other organic units. Similar organic sediments (also mapped as Raised Marine Deposits) have been recorded in Bognor in the lower valley of the Aldingbourne Rife, beneath the Butlins Bognor Regis Resort (Bates *et al* 2007); and organic alluvial deposits have been recorded at Oldlands Farm beneath the floodplain of the Lidsey Rife (ASE, 2015). It seems reasonable therefore to suppose that near the eastern boundary of the present site, ground mapped by BGS as Raised Marine Deposits, may in fact be underlain by estuarine alluvium.

2.3 Geoarchaeological, palaeoenvironmental and archaeological potential

Variations in the type and height, type, thickness and potential age of the superficial deposits are thus likely at the site, which could encompass the Pleistocene and almost certainly Holocene periods. Each of these deposits has varying potential to represent an area that might have been utilised or even occupied by prehistoric and historic people, evidence of which may be preserved in the archaeological (e.g. features and structures) and palaeoenvironmental record (e.g. changes in vegetation composition).

The Pleistocene

Pleistocene remains are the geological and biological deposits laid down by various agents – water, wind and ice between 2.6 million and 11,500 years ago. Sediments and their contained faunal and floral remains enable us to reconstruct former landforms and environments that were occupied by Palaeolithic communities. Palaeolithic remains therefore form part of the Pleistocene record and can include stone tools and the flakes produced when making them, and, much more rarely, tools of wood and bone, bones bearing marks of butchery, rudimentary structures and the remains of early humans (hominins). Such remains are important as they are the evidence that enables us to understand our earliest prehistory – how the landscape of Britain was shaped and where and how our earliest ancestors fit into it.

The potential for Lower or Middle Palaeolithic remains at the present site is low. There are few Palaeolithic findspots associated with the Pagham Raised Beach or with the 'brickearth' overlying it and the artefacts that have been recorded lack detailed provenance and are in rolled condition. They comprise, from the raised beach, a single handaxe recorded between Ford and Climping to the east of the present site and another single handaxe from Selsey to the west of the present site; and from

the 'brickearth', a single handaxe from Aldwick Road in the western suburbs of Bognor. No evidence of Upper Palaeolithic occupation has ever been identified on the Sussex Coastal Plain, although the valleys of the main rivers would seem to represent attractive environments for hunter-gatherer groups and Upper Palaeolithic occupation is known from the site at Beedings on the Lower Greensand to the north of the Chalk escarpment (Pope *et al* 2015).

Even in the absence of artefact remains, the Pleistocene sediments and their contained biological remains can be significant as they enable the reconstruction of landforms, climatic conditions and environments occupied by Palaeolithic communities. In many cases we already have, in museum collections, artefacts from geological units equivalent to those being investigated, but because of the way in which Palaeolithic artefacts were collected in the 19th and early 20th centuries, we often lack the environmental record that modern investigations of the deposits can supply. In addition, it is important to build up an understanding of the way in which the character and preservation of Pleistocene remains varies from place to place, even in the same geological unit. Recent advances in direct dating techniques, including OSL (optically stimulated luminescence), ESR (electron spin resonance), and AAR (amino acid racemization), have added further significance to Pleistocene remains, enabling us to achieve more reliable dating, relevant both to artefacts and to an understanding of landscape evolution.

The Holocene

The Holocene encompasses the last 11,500 years and spans all cultural periods from the Mesolithic to the present day. During this period, sediments have been deposited by water and wind to form alluvial and head deposits. Variations in the elevation and thickness of these different deposits can be significant as they represent different environmental conditions that would have existed in a given location during the Holocene. For example: (1) the presence of peat or soil horizons represent former terrestrial or semi-terrestrial land-surfaces, and (2) the various alluvial units represent periods of changing fluvial conditions, possibly driven by hydrological variability (e.g. relative sea-level and/ or anthropogenic activity within the river catchment). Thus, by studying the sub-surface stratigraphy in greater detail, it will be possible to build a more detailed understanding of the former landscapes and environmental changes that took place across space and time.

Fine grained alluvial and organic-rich sediments (in particular peat) also have high potential to provide detailed reconstructions of past environment. They provide an opportunity to increase knowledge and understanding of the interactions between hydrology, human activity, vegetation succession and climate during the Holocene. Such investigations are carried out through the assessment/analysis of palaeoecological remains (e.g. pollen, plant macrofossils & insects) and radiocarbon dating.

Microfossil assemblages have been recorded from marine deposits of the Pagham Formation around Pagham Harbour (Bates & Briant 2009); and from supposed solifluction deposits underlying the Pagham Raised Beach at the King George V Recreation Ground in Bognor, ca. 2.5km to the west of the present site (Bates *et al* 2007); and as noted above organic alluvial deposits have been

recorded beneath the floodplain of the Lidsey Rife (ASE, 2015). More diverse organic remains, including pollen, plant macrofossils and Mollusca have been recorded from alluvial deposits in the lower valley of the Aldingbourne Rife beneath the Butlins Bognor Regis Resort (Bates *et al* 2007). There is evidently potential for the preservation of palaeoenvironmental remains in the various deposits that underlie the coastal plain.

3. CONCLUSIONS & RECOMMENDATIONS

It can be assumed that the Golf Course site is underlain by superficial geological deposits representative of those that underlie the lower West Sussex Coastal Plain more widely. These comprise the beach deposits of the Pagham Raised Beach of probable Last Interglacial (Ipswichian) age and overlying 'brickearth' of Devensian age. Near the eastern boundary of the present site, Holocene estuarine alluvium may also be present. Evidence from other sites on the lower coastal plain indicate a low probability that Palaeolithic artefacts and/or palaeoenvironmental remains may be present in any of these deposits.

There is little detailed information about the superficial deposits underlying the lower West Sussex Coastal Plain. Subject to the development impacts of the proposed development a staged approach to further assessment is recommended. The scope and timing of such works will be agreed with Orion Heritage and the Archaeological Advisor to ADC. The strategy for further evaluation may take the form of a preliminary geoarchaeological borehole survey to establish the distribution, thickness, age and nature of the deposits, and presence or absence of organic remains. Subsequent stages may include archaeological/geoarchaeological evaluation, excavation, laboratory assessment/analysis and publication following, depending on the initial findings of the evaluation. For each stage, a separate Written Scheme of Investigation (WSI) will need to be prepared.

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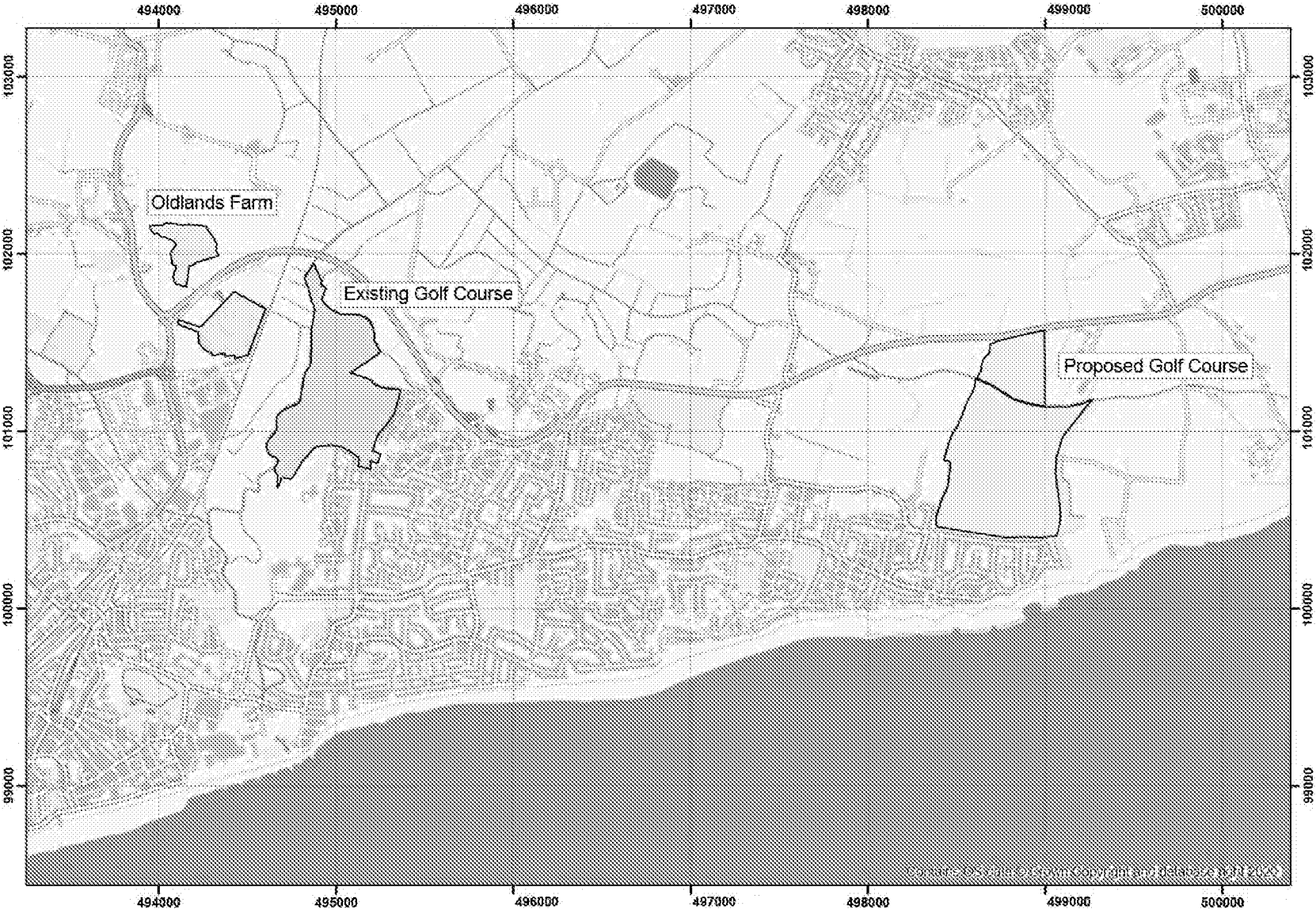


Figure 1: Location of the Proposed Bognor Regis Golf Course. Also displaying the location of the Existing Golf Course and Oldlands Farm (ASE, 2015; Margetts, 2019)

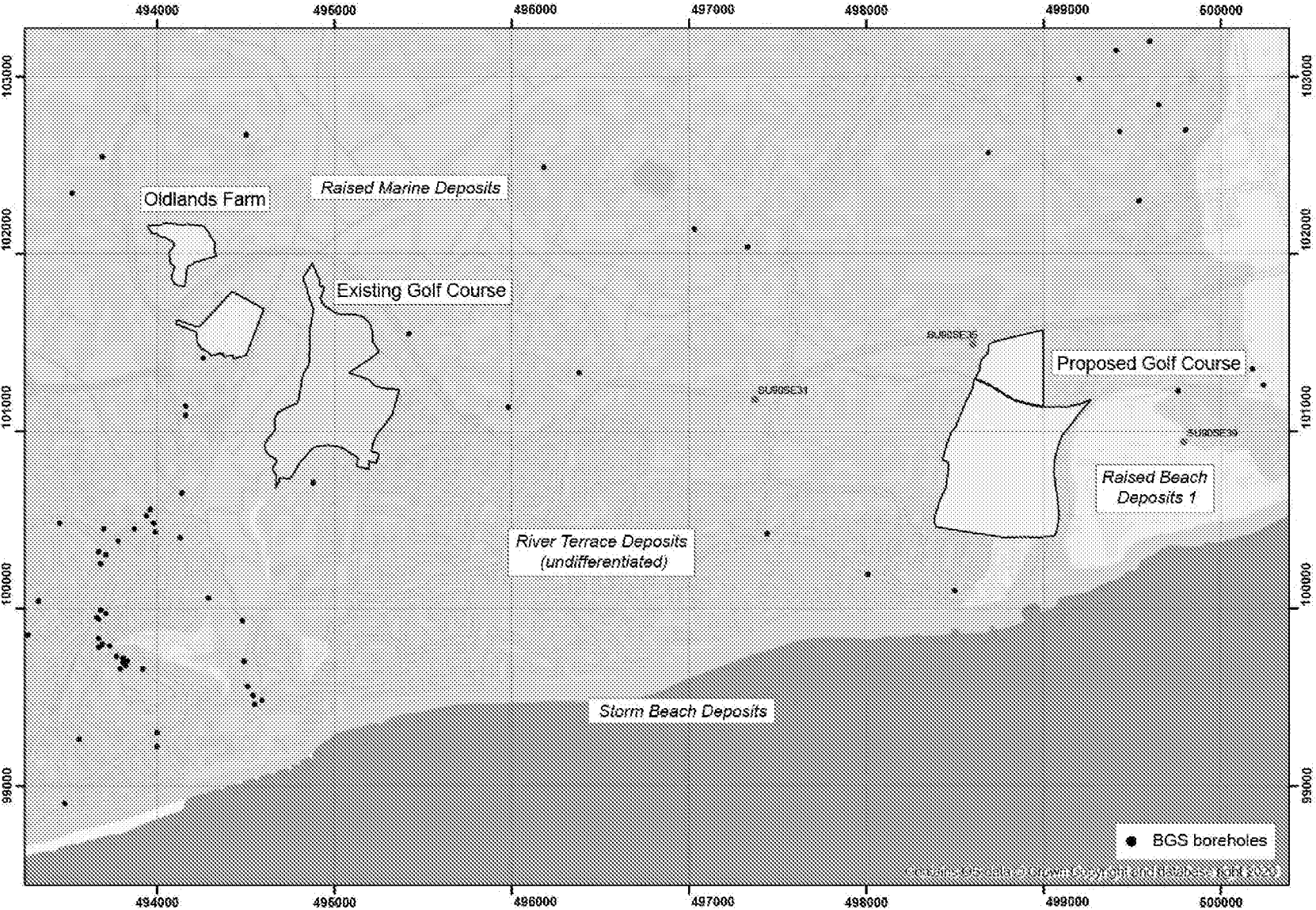


Figure 2: Superficial Geology (River Terrace Deposits, Raised Marine Deposits, Raised Beach Deposits & Storm Beach Deposits), and showing the location of nearby BGS borehole records. Contains British Geological Survey materials copyright NERC (2019).