



**GALLOPER WIND FARM
ONSHORE WORKS
SIZEWELL GAP, LEISTON, SUFFOLK**

Heritage Statement

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1 INTRODUCTION

1.1 Project Background

1.1.1 Wessex Archaeology was commissioned by RWE npower renewables, on behalf of Galloper Wind Farm Ltd., to prepare a Heritage Statement to form part of an application for a Development Consent Order (DCO) for an offshore wind farm and associated infrastructure, including an onshore substation, with respect to the Galloper Wind Farm (GWF). The proposed new substation is to be sited on land to the south of Broom Covert, at Sizewell Gap, Leiston, Suffolk, located at NGR 646624 262742, hereafter ‘the Site’ (**Figure 1**).

1.1.2 An earlier desk-based assessment (Wessex Archaeology 2009) identified the Site to be located within an area of high archaeological potential relating to possible prehistoric and medieval archaeological remains, as indicated by a concentric ring ditch recorded in the Historic Environment Record (HER) as visible on an aerial photograph and recorded artefact scatters. Results from archaeological works associated with the neighbouring onshore infrastructure for the Greater Gabbard Offshore Wind Farm (GGOWF) also revealed significant archaeological deposits within the area.

1.1.3 Following consultation with Suffolk County Council’s Conservation Team Archaeological Officer, it was agreed that an archaeological evaluation prior to the determination of the planning application was required. The aim of the evaluation was to further inform the archaeological potential of the Site by quantifying the quality and extent of the archaeological resource at the Site and to inform the suitability of the area for development. The results of the evaluation would also be used to help define the need for, and scope of, any further archaeological mitigation.

1.2 The Site, location and geology

1.2.1 The Site is located immediately to the west of the GGOWF substation, and to the south of Broom Covert, with the proposed development area measuring c.5ha (**Figure 1**).

1.2.2 The Site lies at approximately 10-12m above the Ordnance Datum (aOD). The underlying geology of the Site comprises soils which are deep sand derived from the underlying glacio-fluvial drift of the Lowestoft Till Formation (Geological Survey of Great Britain, 1:50,000 map sheet 191).

1.2.3 The Site predominantly lies within agricultural land which is regularly cultivated and ploughed.

2 METHODOLOGY

2.1 Aims and scope

- 2.1.1 The aim of this assessment is to establish the known and potential heritage resource within the Site, which may be affected by the proposed development, and to assess the potential impact of development on this resource.
- 2.1.2 Furthermore, the assessment will also produce recommendations on the need for, and appropriateness of, further archaeological work in this area to ensure effective management of the heritage resource in the context of the proposed development.
- 2.1.3 This assessment sets out current understanding of the historic environment resource within the Site on the basis of publicly available information and the results of recent archaeological surveys which included desk-based research, an archaeological field evaluation, and also the results of a geophysical survey of the Site undertaken to assess the risk of unexploded ordnance (UXO) across the Site (6 Alpha Associates 2011).
- 2.1.4 This document does not comprise a full desk based assessment as this has already been undertaken for a wider study area (see Wessex Archaeology 2009); instead this document represents a tightly focused assessment of the Site itself based on previous desk-based, non-intrusive and intrusive archaeological investigation.

2.2 Assessment methodology

- 2.2.1 The principal national guidance on the importance, management and safeguarding of the archaeological resource within the planning process is Planning Policy Statement 5: Planning for the Historic Environment (PPS 5) issued by National Government on 23rd March 2010, replacing Planning Policy Guidance 16: Archaeology and Planning (PPG 16) and Planning Policy Guidance 15: Planning and the Historic Environment (PPG15). The aim of PPS 5 is to ensure that Regional Planning Bodies and Local Planning Authorities, developers and owners of heritage assets adopt a consistent and holistic approach to conserving the historic environment and to reduce complexity in planning policy relating to the historic environment. PPS 5 embodies and builds upon the policies set out in PPG 15 and PPG 16. The policies in PPS 5 set out parameters within which consents affecting the heritage resource are determined.
- 2.2.2 Recently published National Policy Statements, principally the Overarching National Policy Statement for Energy (EN-1), as well as the National Policy Statement for Renewable Energy Infrastructure (EN-3) and National Policy Statement for Electricity Networks (EN-5), give guidance on the assessment of generic impacts on the historic environment (see section 5.8 of EN-1; pages 49 and 67 of EN-3). These recommendations, aimed at assisting the Infrastructure Planning Commission (IPC) in deciding on applications for energy developments, follows the approach required in PPS5 and references both PPS5 and its associated Practice Guide.
- 2.2.3 Development Management policies set out in PPS 5 identify the approach to be taken by planning authorities in considering applications for consent that

may affect ‘heritage assets’, defined as a building, monument, site, place, area or landscape positively identified as having a degree of significance meriting consideration in planning decisions.

- 2.2.4 Conservation Areas and Listed Buildings are given statutory protection through the Planning Process (Listed Buildings and Conservation Areas Act 1990). This protection is achieved by the inclusion of suitable buildings within the lists of buildings of special architectural and historic interest (Listed Buildings) and the designation of Conservation Areas.
- 2.2.5 Sections 16 and 66 of the Act (Listed Buildings and Conservation Areas Act 1990), require: ‘...authorities considering applications for planning permission or listed building consent for works which affect a listed building to have special regard to certain matters, including the desirability of preserving the setting of the building’.
- 2.2.6 Hedgerows are afforded protection by the Hedgerow Regulations 1997 (amended 2002). Hedgerows are deemed to be Important if they are either associated with a Scheduled Monument, a site recorded in the Sites and Monuments Record or if they form an integral part of a pre-1845 field system. In practice, this means that hedgerows shown on the appropriate pre-1845 tithe or enclosure map are considered Important in planning terms.
- 2.2.7 The management and mitigation of change to the heritage resource resulting from development is based on the recognition of Government planning objectives that ‘heritage assets are a non-renewable resource’ (PPS5 para. 7). Impacts to the historic environment and its associated heritage assets arise where changes are made to their physical environment by means of the loss and/or degradation of their physical fabric or setting, which in turn leads to a reduction in the significance of the historic environment and its heritage assets.

2.3 Evaluation Criteria

- 2.3.1 There is no single accepted or standard guidance for the assessment of the likely impacts and effects of development on archaeology and the historic environment. Although developed for use on trunk road schemes, the Design Manual for Roads and Bridges Volume 11, Section 3, Part 2 ‘Cultural Heritage’ (HA 208/07) (DMRB 11.3.2) published in August 2007 sets out a detailed methodology for considering the historic environment, which to date represents the most comprehensive published guidance. The significance of the effects of development are assessed through a process combining an evaluation of the importance of the archaeological and historic environment resource (‘assets’) and the scale of impact (magnitude of change) that would arise due to the construction and operation of the development, taking into account mitigation measures incorporated into the design and/or delivered during the construction and operation stages of the development.
- 2.3.2 The differences in the nature and scale of archaeological, built heritage and historic landscape features necessitate, within a broadly comparable framework, the use of different methodologies in order to assess the significance of the impacts of any proposed development. In order to arrive at a judgement on the significance of the overall impact of the proposals, the assessment needs to consider the relative importance of the individual elements of the cultural heritage resource and how these are likely to be

affected. To achieve this outcome a three-step process has been applied to the principal topics which comprise the cultural heritage resource at the Site and within the surrounding area (archaeology, built heritage and historic landscape):

Step 1 - Evaluation of value of resource

Archaeology

2.3.3 The importance/value of archaeological features has been assessed using the Secretary of State's non-statutory criteria for the selection of monuments for scheduling, as modified by English Heritage, as the basis for the designation of ancient monuments as part of its Monument Protection Plan (MPP). The criteria for archaeological features are:

- survival
- documentation (archaeological)
- documentation (historical)
- group value (association)
- group value (clustering)
- diversity (features)
- potential
- amenity value.

2.3.4 These criteria are applicable to the assessment of all sites, whether scheduled or not.

Built Heritage

2.3.5 The assessment of the importance of built heritage follows the Secretary of State's criteria for the inclusion of buildings on the statutory list, defined as:

- architectural interest
- historic interest
- close historical association
- group value.

2.3.6 By virtue of their designations, Listed Buildings Grade I and II* are of a High value with Listed Buildings Grade II and Conservation Areas of Medium value.

Historic Landscape

2.3.7 There is no statutory guidance for evaluating historic landscapes, although, within a historic landscape zone certain elements of that landscape may have statutory designations, such as Registered Parks and Gardens (Grades I, II* and II), Registered Battlefields, Scheduled Monuments and Listed Buildings, which individually may be of High or Very High value. However, the overall value of the historic landscape is not necessarily determined by the presence or absence of statutorily designated sites and/or areas.

2.3.8 The importance/value of the historic landscape has been assessed using a modified version of the criteria for assessing the importance of

archaeological sites and monuments as shown above. The criteria used are:

- documentation
- rarity
- diversity
- amenity value
- fragility/vulnerability
- time depth
- survival/condition
- typicality
- potential

Value of assets

2.3.9 The value of individual elements which comprise the cultural heritage resource is assessed on a six point scale:

- Very High
- High
- Medium
- Low
- Negligible
- Unknown

2.3.10 These values are illustrated in Table 1.1, and are based on those contained within DMRB 11.3.2.

Table 1.1 Scale of Significance/Importance

Value	Archaeology	Built Heritage	Historic Landscape
Very High	World Heritage Sites inscribed for their archaeological or built heritage qualities. Sites of international importance.	Standing remains inscribed as of universal importance as World Heritage Sites. Other buildings of recognised international importance.	World Heritage Sites inscribed for their historic landscape qualities. Historic landscapes of international value, whether designated or not. Extremely well preserved historic landscapes, with exceptional coherence, time-depth or other critical factor(s).
High	Scheduled Monuments or monuments in the process of being Scheduled. Undesignated sites and monuments of schedulable quality and importance. Previously unknown sites of schedulable quality and importance, discovered in the course of evaluation or mitigation (i.e. sites of demonstrable national importance).	Grade I and II* Listed Buildings. Other Listed Buildings that can be shown to have exceptional qualities in their fabric or historical association not adequately reflected in the Listing. Registered Historic Parks and Gardens Grades I and II*. Conservation Areas containing Very Important buildings	Designated historic landscapes of outstanding interest. Undesignated landscapes of outstanding interest. Undesignated landscapes of high quality and importance, and of demonstrable national value. Well preserved historic landscapes, exhibiting considerable coherence, time-depth or other critical factor(s).

Value	Archaeology	Built Heritage	Historic Landscape
Medium	Local Authority designated heritage sites. Previously unknown and undesignated sites that would justify Local Authority designation (i.e. sites of regional importance). Sites with specific and substantial importance to the local community.	Grade II Listed Buildings, Registered Historic Parks and Gardens Grade II. Historic buildings that can be shown to have exceptional qualities or historical association. Conservation Areas. Historic townscapes or built-up areas with historic integrity in their buildings, or built setting.	Designated special historic landscapes. Undesignated historic landscapes that would justify special historic landscape designation. Landscapes of regional importance. Historic landscapes with specific and substantial importance to the wider community. Averagely well-preserved historic landscapes with reasonable coherence, time-depth or other critical factors.
Low	Undesignated sites of local importance. Sites with specific and substantial importance to local interest groups, but with limited wider importance. Archaeological sites whose importance is limited by poor preservation and/or poor survival of contextual associates Sites and features of limited value in themselves or whose importance is limited. These may include those for which detailed information is available in primary sources and where archaeological investigation would add no significant additional information.	'Locally Listed' Buildings. Historic (unlisted) buildings of modest quality in their fabric or historical association. Historic Townscape or built-up areas of limited historic integrity in their buildings, or built settings.	Robust undesignated historic landscapes of local importance. Historic landscape with specific and substantial importance to local interest groups, but with limited wider importance. Historic landscapes whose importance is limited by poor preservation and/or poor survival of contextual associations. Historic landscapes of limited value, including those for which detailed information is available in primary sources and where further investigation would add no significant information.
Negligible	Sites with no surviving archaeological component	Buildings of no architectural or historical merit. Buildings of an intrusive character	Landscapes with no significant historical interest
Unknown	The importance of the resource cannot be ascertained.	Buildings with some hidden (i.e. inaccessible) potential for historic significance	The importance of the resource cannot be ascertained.

Step 2 - Assessment of magnitude of impact

2.3.11 Due to the great variety of resources and receptors, there is no standard scale of comparison against which the severity of impacts on the cultural heritage resource may be judged. Assessment of direct impacts has therefore considered the proportion of the features affected, and whether key characteristics would be impacted upon. Direct impacts are permanent, as physical loss of, or damage to, elements of the cultural heritage resource cannot be repaired, replaced or re-created. For the purposes of this assessment, all cultural heritage elements which fall within the Site boundary are viewed as being potentially subject to direct impact.

2.3.12 Indirect impacts refer to the perceptible visual effects on the setting of components of the cultural heritage resource that can be appreciated at a

given time. The setting of the cultural heritage resource embraces the concept of amenity.

2.3.13 The magnitude of impact (summation of direct and indirect impacts) on the cultural heritage resource has been assigned one of the following descriptors:

- major
- moderate
- minor
- negligible
- no change

2.3.14 Impacts are expressed using a five point scale from ‘no change’ to ‘major’. Impacts may be beneficial as well as adverse. The assignment of a magnitude of impact in this way is a matter of professional judgement. Factors in the assessment of the magnitude of impact on the historic environment resource are listed in Table 1.2 below.

Table 1.2 Summary of factors for assessing magnitude of impact

Value	Archaeology	Built Heritage	Historic Landscape
Major	Change to most or all key archaeological materials, such that the resource is totally altered. Comprehensive changes to setting.	Change to many key historic building elements, such that the resource is totally altered. Comprehensive changes to setting.	Change to most or all key historic landscape elements, parcels or components; extreme visual effects; gross change of noise or change to sound quality; fundamental changes to use or access; resulting in total change to historic landscape character unit.
Moderate	Changes to many key archaeological materials, such that the resource is clearly modified. Considerable changes to setting that affect the character of the asset.	Change to many key historic building elements, such that the resource is significantly modified. Changes to the setting of an historic building, such that it is significantly modified.	Change to many key historic landscape elements, parcels or components; visual change to many key aspects of the historic landscape; noticeable differences in noise or sound quality; considerable changes to use or access; resulting in moderate changes to historic landscape character.
Minor	Changes to key archaeological materials, such that the asset is slightly altered. Slight changes to setting.	Change to key historic building elements, such that the asset is slightly different. Changes to the setting of an historic building, such that it is noticeably changed.	Change to few key historic landscape elements, parcels or components; slight visual changes to few key aspects of the historic landscape; limited changes to noise levels or sound quality; slight changes to use or access; resulting in limited change to historic landscape character.

Value	Archaeology	Built Heritage	Historic Landscape
Negligible	Very minor changes to archaeological materials or setting.	Slight changes to historic buildings elements or setting that hardly affect it.	Very minor changes to key historic landscape elements, parcels or components; virtually unchanged visual effects; very slight changes in noise levels or sound quality; very slight changes to use or access; resulting in a very small change to historic landscape character.
No change	No change.	No change to fabric or setting.	No change to elements, parcels or components; no visual or audible changes; no changes in amenity or community factors.

Step 3 – Determination of significance of effects

2.3.15 The significance of the impacts is a product of the importance of the resource and the magnitude of the impact upon it. This is illustrated in Table 1.3 below, which is reproduced from the DMRB 11.3.2 (Annexes 5, 6 and 7) and illustrates how the value of the asset and the magnitude of impact are combined to produce an assessment of the significance of effect.

Table 1.3. System for deriving the significance of effect on cultural heritage resource

Value of Resource	Magnitude of impact				
	No Change	Negligible	Minor	Moderate	Major
Very High	Neutral	Slight	Moderate/ Large	Large/ Very Large	Very Large
High	Neutral	Slight	Slight/ Moderate	Moderate/ Large	Large/ Very Large
Medium	Neutral	Neutral/ Slight	Slight	Moderate	Moderate/ Large
Low	Neutral	Neutral/ Slight	Neutral/ Slight	Slight	Slight/ Moderate
Negligible	Neutral	Neutral	Neutral/ Slight	Neutral/ Slight	Slight

2.3.16 Impacts can arise as a result of the effects of construction on below ground archaeological remains. Such impacts can be either temporary or permanent. Impacts can also arise as a result of changes to the setting of an historic monument or Listed Building caused by the proximity of new structures, for example noise, dust, vibration or lighting. Where a significant impact is identified it may be appropriate to propose suitable mitigation measures in order to reduce the level of impact.

2.3.17 **Section 3** provides a summarised baseline assessment of the historic environment resource, allowing for an assessment of the scale and magnitude of the impact to the heritage resource resulting from the

construction and operation of the proposed onshore scheme to be detailed in **Section 4**.

3 BASELINE ASSESSMENT OF HISTORIC ENVIRONMENT RESOURCE

3.1 Introduction

3.1.1 A desk-based assessment was previously undertaken in December 2009 for a wider study area, which included the Site (Wessex Archaeology 2009): the results are summarised in section 3.3 below.

3.2 Designated Heritage Assets

3.2.1 The Site does not contain any remains with statutory or local heritage designations.

3.2.2 The nearest Scheduled Monuments comprise a bowl barrow on Aldringham Common c.1.6km to the south-southwest of the Site, and the remains of the second site of Leiston Abbey c.2.4km to the north-west of the Site.

3.2.3 The Leiston Conservation Area lies c.2km to the west of the Site, which also contains a number of Listed Buildings, but there are no listed buildings within a 1.8km radius of the Site.

3.2.4 There are no hedgerows deemed *Important* under the Hedgerow Regulations 1997 (amended 2002) within the Site.

3.3 Archaeological and historical context

3.3.1 The Site currently lies within an area of heath and agricultural land which separates the inland settlement of Leiston to the west from the coastal village of Sizewell to the east. The Site was once Crown Land, and was open common until it was enclosed during the mid 19th century, having formerly been part of the monastic lands held by Leiston Abbey until the Dissolution in the 1530s when the land holdings were seized by the Crown.

3.3.2 The Suffolk County Council (SCC) Historic Environment Record (HER) records a potential prehistoric ring-ditch feature within the Site, as well as a prehistoric artefact scatter immediately to the south, in an area where medieval coarseware pottery has also been recorded (SSC Archaeological Service 1994). However, further investigation of this aerial photograph (recorded on Figure 4 in Richmond 1994) suggests that the location of the ring ditch has been erroneously recorded in the HER. When plotted in ArcGIS, the cropmark feature in question would appear to be a few metres to the north-east of the point recorded in the HER, but should still have been encountered during the archaeological evaluation (see Figure 1, Wessex Archaeology 2011). The HER were unable to find the original aerial photograph from which the cropmark ring ditch was identified, and therefore the accuracy of the rectification could not be ascertained.

3.3.3 Previous archaeological excavations associated with the neighbouring GGOWF substation recorded the remains of an early medieval boat which has been broken up during the 14th century and part of the hull re-used to create a timber lining for a square cistern or shallow well. A natural low-lying

channel crossed the evaluation area, along which evidence for timber buildings, hearths and wood-lined water pits were recorded. On the higher ground to the west of Sandy Lane the remains of a large aisled barn and ancillary buildings were found. Archaeological features indicative of Romano-British field and enclosure ditches were also recorded, demonstrating the longevity of settlement and occupation in the area (Atfield, *et al* 2009).

3.4 Previous archaeological investigations

3.4.1 The Site was included in a wider archaeological evaluation undertaken by SCC Archaeological Service (SCCAS) in 1994 in response to a proposal to construct a Pressurised Water Reactor (PWR) nuclear power station to the north of the current Sizewell power plant, to be known as Sizewell C. The Site was located in an area proposed for the potential disposal of peat deposits which were to have been excavated in substantial volumes during the construction phase of Sizewell C. These deposits were proposed to be spread out and ploughed into the existing soils, thus raising the level of the current land surface, with attendant risks to any surviving archaeological deposits (Richmond 1994: 5-6).

3.4.2 As part of the 1994 evaluation, desk-based research suggested the presence of a potential prehistoric ring-ditch within the Site, visible as a cropmark on aerial photographs (APs). The Site was also fieldwalked, and corresponds to Field XIV, in which a scatter of several pot boiler flints and other worked flints of likely Neolithic or Bronze Age date were recorded, as well as some medieval coarseware pottery (see **WA05** and **WA27**, Wessex Archaeology 2009).

3.4.3 No further archaeological investigations are recorded at the Site until the pre-determination archaeological evaluation undertaken by Wessex Archaeology in July 2011. Prior to this, a geophysical survey was conducted across the Site in May 2011 (6 Alpha Associates 2011), due to the potential risk of Unexploded Ordnance (UXO) across the Site.

Geophysical survey

3.4.4 A programme of magnetometer survey was undertaken at the Site in May 2011 due to the potential risk of UXO across the Site (6 Alpha Associates 2011). The survey identified a number of anomalies, 121 in total, and it was recommended that a 5m buffer be placed around them for the purposes of the archaeological evaluation.

Archaeological Field Evaluation

3.4.5 Subsequent to completion of the geophysical survey, a programme of archaeological trial trenching based upon the UXO geophysical survey results was undertaken at the Site in July 2011 (Wessex Archaeology 2011). The anomalies identified during the geophysical survey are illustrated alongside the locations of the trial trenches in **Figure 2**.

- 3.4.6 Due to the potential for UXO and an exclusion zone of 100m buffering the overhead power lines (OHL)¹, the available area for evaluation was reduced to 3.16ha in agreement with SCC (Jess Tipper, pers comm.). A 5% sample of the available area was evaluated, with a total of 35 evaluation trenches, each 25m long and 1.8m wide, machine excavated under constant archaeological supervision across the Site.
- 3.4.7 The evaluation proved the existence of features consistent with small-scale Late Prehistoric and Romano-British activity, most likely relating to farming practices. The majority of the pottery recovered from the Site was of Romano-British date, with the largest concentration recorded in Trench 12.
- 3.4.8 Trench 13 had been specifically located to characterise the potential concentric ring ditch recorded as part of the 1994 SCCAS evaluation, based on its location as recorded within the SCC HER. Although no evidence pertaining to a possible prehistoric ring ditch was encountered in Trench 13, neighbouring Trench 12 did contain two parallel ditches, aligned north-south, set c.3m apart, both of which were also similar in form, being straight-sided and with convex bases. The westernmost of the two ditches had clearly been recut, whilst the eastern ditch contained numerous fills, one of which contained both pottery and ceramic building material, all of Romano-British date, and may potentially represent the cropmark feature. Post-evaluation research into the accuracy of the aerial photograph which formed the basis of the potential ring ditch feature recorded in the HER (LCS 068, WA16 in Wessex Archaeology 2009) suggests that the cropmarks seen lie c.8m to the north-east of Trench 13, and therefore should have been visible in Trenches 2 and 3. This conclusion is based on digitising into ArcGIS the cropmarks as plotted on Figures 4 and 5 in Richmond 1994 and spatially relating them to the Site: unfortunately, the HER was unable to locate the original aerial photograph to verify the accuracy of the features as plotted in 1994. No traces of a ring ditch feature was found in Trenches 2 and 3.
- 3.4.9 Romano-British pottery was recovered from both ditches in Trench 12 in notable quantities when compared to the level of finds recovered elsewhere across the Site. The ceramic building material included pieces from at least two smaller, thinner Roman bricks of the type predominantly used in hypocausts or in lacing/bonding courses in walls. A single piece of animal bone from a large mammal bearing cut marks were also found in the ditch, suggestive of food waste and therefore some degree of domestic/settlement activity by association with both the pottery and evidence of building material.
- 3.4.10 The Romano-British pottery from across the Site exclusively comprised local greyware jars and bowls, with Samian, amphorae, mortaria or other imported or British finewares conspicuously absent. However, numerous re-fitting pieces were noted from the large assemblage in Trench 12.
- 3.4.11 Trench 30 in the south-west corner of the evaluation area contained a single, small charcoal rich pit which had been deliberately backfilled with a

¹ A 100m buffer of the OHL was placed as a condition on the evaluation by EDF/British Energy, due to the risk of UXO and the sensitivity of the OHL leading into a nuclear power station (Sizewell B).

deposit containing abundant burnt flint pieces, of likely Neolithic or Bronze Age date. Struck flints were also recorded in Trenches 1, 7, 14 and 20, as well as a scraper also from Trench 1, all of which were considered to be of likely later Neolithic or Bronze Age date. Other notable features across the Site include various pits, gullies and ditches, some of which contained pottery or struck flint, indicating a spread of patchy prehistoric and Romano-British activity across the Site.

- 3.4.12 Small quantities of artefacts were found in ten of the 35 evaluation trenches, which were predominantly of Romano-British date, although small quantities of prehistoric, late Saxon and post-medieval/modern material was also recorded.
- 3.4.13 Charred plant remains were recovered only in small quantities. A sample from a gully of potential Romano-British date in Trench 35 contained cereal remains in a moderate number, including grains of barley and hulled wheat, emmer or spelt. A small number of weed seeds were recorded from an undated (but potentially Romano-British) ditch in Trench 23. The charred plant remains assemblage is consistent with others observed from Romano-British features at other Suffolk sites, such as at Stowmarket and Mildenhall, and appears indicative of rural settlement activity.

3.5 Historic Landscape Character

- 3.5.1 The historic landscape character (HLC) assessment undertaken here has been based on the Suffolk Historic Landscape Characterisation map (v.3, 2008) made available to Wessex Archaeology under Licence no. SHLC11/01, and historic map regression undertaken during the earlier desk-based assessment phase (Wessex Archaeology 2009).
- 3.5.2 The Site lies predominantly within an area of 18th century and later enclosure, having been formerly common arable or heathland. However, the northern portion of the Site, lying within Broom Covert, is characterised as Unimproved Land, comprising heath or rough pasture (**Figure 3**).
- 3.5.3 The Site is depicted as lying within unenclosed Crown Land on the 1840 Adringham Estate map and the 1841 Leiston Tithe map, but by the time of the 1st Edition Ordnance Survey map (surveyed in 1881) the land within the Site had been enclosed, creating Broom Covert (561) and the field (184) in which the Site is located (see Figures 6 and 7, Wessex Archaeology 2009). The map also clearly depicts the surrounding enclosed fields and area of rough pasture and furze (185) in field 184, to the south of the current Site.
- 3.5.4 The Site itself retains the historic boundaries created when the Crown Land was enclosed during the mid 19th century, and has remained as arable land thereafter. The field was formed from land that was previously part of a larger open common, and typifies the field shape of this HLC type, which is largely rectangular with straight boundaries, having been laid out to measured plans by surveyors.
- 3.5.5 As a landscape character type, the historic landscape character of the Site is commonly found within a 5km radius of the Site, and accounts for just over a

quarter of the historic landscape character within the surrounding area (see **Figure 3**).

3.6 Potential archaeological/palaeoenvironmental resource

- 3.6.1 Across the Site there is the potential for further archaeological features to be present, which were not encountered during the recent archaeological evaluation, as this only investigated only a 5% sample of a restricted survey area. It is considered that any further features are likely to be of similar morphology to those already encountered, and thus relate to rural settlement activity dating to the prehistoric and Romano-British periods in particular, although material from other periods cannot be ruled out.
- 3.6.2 There is the potential for the UXO anomalies identified during the geophysical survey by 6 Alpha Associates to actually be of archaeological interest, and may relate to material dating to the Iron Age or later.
- 3.6.3 There is also the potential for the low-lying channel identified during work associated with the neighbouring GGOWF onshore substation to continue across into the area of the cable corridor leading south from the substation: the OHL exclusion zone and potential for UXO meant that this area was not assessed during the archaeological evaluation, and may contain deposits of archaeological interest dating to the medieval period or earlier.
- 3.6.4 Likewise there is the potential for waterlogged palaeoenvironmental deposits to exist within the southern part of Site (within the area of the proposed cable corridor), which was similarly excluded from the archaeological evaluation because of potential UXO and the OHL exclusion zone.
- 3.6.5 The footprint of the proposed substation within the northern portion of the Site occupies a raised area distinct from the surrounding low-lying ground, suggesting that this may have remained relatively dry during periods of wet weather or possible tidal inundation. As such this area would have been suitable for occupation, as suggested by the assemblages of finds from across the Site. The ditches recorded during the evaluation showed episodes of recutting, which suggests at least seasonal if not more regular re-establishment of these drainage and/or boundary features. The sandy nature of the natural ground and the exposed nature of the Site would also have necessitated their re-establishment, if settlement were to continue for longer periods.

4 ASSESSMENT OF IMPACT

4.1 Introduction

- 4.1.1 This assessment of impact is informed by the following policy and guidance:
- Overarching National Policy Statement for Energy (EN-1) (Department of Energy and Climate Change, July 2011);
 - PPS5 Historic Environment Planning Practice Guide (Department for Communities and Local Government, Department for Culture, Media and Sport, and English Heritage, March 2010);

- *Conservation Principles, Policies and Guidance* (English Heritage 2008);
- *The setting of heritage assets: English Heritage guidance* (English Heritage Consultation Draft, 2010); and
- The Design Manual for Roads and Bridges, Volume 11 Environmental Assessment, Section 3 Environmental Topics, Part 2 HA 208/07, Cultural Heritage (Highways Agency, August 2007).

4.2 Summary of identified heritage resource and its importance

4.2.1 This assessment has identified the following heritage assets within the Site which may be sensitive to the changes associated with any development:

- Potential buried archaeological/palaeoenvironmental remains

4.2.2 On the basis of the results of the recent intrusive archaeological evaluation, the importance of this resource is considered to be of **low** value.

4.2.3 There is no built heritage resource within the Site itself. Within a 1.8km radius of the Site the built heritage resource is of **low** value, comprising largely 19th century dwellings such as Halfway Cottages, located 400m to the south-west of the Site. However, c.2km to the west of the Site lies the Leiston Conservation Area and a number of Listed Buildings, which are considered to be of **medium to high** value, but are not considered to be affected by the proposed development.

4.2.4 The historic landscape character of the Site has been assessed to be of **low** value, as it is considered to be a robust undesignated historic landscape which is of importance to local interest groups, but would not justify special historic landscape designation. It is represented within c.27% of the surrounding historic landscape character up to a 5km radius from the Site.

4.3 Identified impacts

Direct and indirect impacts (construction phase)

Designated assets

4.3.1 As the Site has little or no direct line of sight to any Listed Buildings or Scheduled Monuments the proposed development is unlikely to produce any indirect (visual) impact on their setting. The predicted indirect magnitude of impact during the construction phase, and in terms of cumulative and residual impact, is assessed as **No Change**, and therefore the significance of the impact of the proposed development is **neutral**.

Buried Archaeology

4.3.2 Excavations for construction groundworks associated with the substation and associated infrastructure may damage/remove buried archaeological deposits where present, which would constitute a direct **major** adverse impact. The recent intrusive archaeological evaluation identified a number of prehistoric and Romano-British features representing the likely remains of rural settlement, and further similar features are likely to be encountered elsewhere across the Site.

4.3.3 Archaeological remains are considered to be a non-renewable resource, and hence their removal/destruction during any groundworks at the Site will always be regarded as having a **major** direct adverse impact. However, the value of the resource is considered to be of **low**, local value and therefore the significance of effect will be **slight/moderate**. However, this can be partly mitigated through a programme of archaeological works to record and conserve the resource through ‘preservation by record’.

Built Heritage

4.3.4 The built heritage resource within the surrounding area (with the exception of the designated assets) is considered to be of **low** value. The proposed development will have a degree of visual intrusion within the surrounding landscape, and as such there is considered to be a **minor** magnitude of indirect impact on the built heritage resource surrounding the Site, resulting in a **neutral/slight** significance of impact. However, this can be mitigated through the use of screening and other design factors.

Historic Landscape

4.3.5 The historic landscape character of the Site and surrounding area is considered to be of **low** value, as a robust undesignated historic landscape of local interest. The setting of the surrounding wider historic landscape character has already been degraded by the construction of the Sizewell nuclear power station; the impact of the proposed development due to its size and location is considered to be **minor**, and therefore of **neutral/slight** significance on the setting of the wider historic landscape.

4.3.6 The magnitude of impact on the historic landscape character of the immediate Site is considered to be **minor**, given that the Site comprises c.4 hectares of a character type area which constitutes c.1300ha of the 4800ha within a 5km radius of the Site. The loss of 0.3% of this HLC type is considered to be a **negligible** impact, thus resulting in a **neutral/slight** significance of impact on the historic landscape character of the Site.

Mitigation Measures

4.3.7 Following the intrusive archaeological evaluation and monitoring visit by SCC, it has been agreed that any further archaeological works at the Site can be undertaken by way of an Archaeological Condition subsequent to the granting of planning consent for the Site.

4.3.8 It is proposed that a staged programme of archaeological mitigation be undertaken at the Site, which would comprise, in the first instance, a programme of archaeological monitoring of any ground investigation works undertaken, such as geotechnical test-pitting and the removal of potential UXO.

4.3.9 It is likely that the Archaeological Condition placed on the planning consent for the Site will request a ‘strip, map and record’ within the footprint area of the substation site and cable corridor, especially as the latter area could not be evaluated because of restrictions due to UXO and the OHL exclusion zone. A watching brief will most likely be requested in areas of deep excavation, such as along the cable corridor.

4.3.10 The development masterplan has been designed to minimise the visual intrusion of the Site within the surrounding landscape.

Residual impacts

- 4.3.11 It is proposed that all cultural heritage assets directly affected by the proposed development will be subject to archaeological mitigation. Any indirect effects on the setting of the cultural heritage resource within the wider landscape beyond the boundary of the Site will be mitigated by design factors such as the proposed tree screening and landscape mitigation areas.

Buried Archaeology

- 4.3.12 The proposed mitigation strategy set out above will ensure full *Preservation by Record* of all sites, features and deposits identified. Mitigation in the form of archaeological works during construction or activities involving any groundworks (such as the clearing of potential UXO prior to development) would reduce the significance of direct impact from **slight/moderate** to **slight**, as preservation by record constitutes compensatory works for the loss of the resource. However, loss of the resource can never be fully mitigated. The residual impact of the Scheme on the buried archaeological resource is therefore assessed to be **slight**.

Built Heritage and Historic Landscape

- 4.3.13 ‘Mitigation by design’ results in a **negligible** magnitude of impact on the built heritage resource surrounding the Site, resulting in a **neutral/slight** significance of any indirect residual impact. Similarly, the residual impact on the historic landscape character of the surrounding area results in a minimal loss of integrity, and thus has a **neutral/slight** significance of residual impact.
- 4.3.14 In terms of historic landscape, the proposed development lies at the edge of one landscape type (former common land) and borders two others (unimproved land (Broom Covert) and woodland (the area in which the GGOWF substation has been built). The proposed tree screening at the Site will blend the development into the Woodland HLC area, with minimal loss of integrity to the surrounding HLC types. As such, the significance of the residual impact of the proposed development is considered to be **neutral/slight**.
- 4.3.15 Following all mitigation, it is anticipated that during the operation life of the Site, there will be no further effect on the cultural heritage resource, and therefore the significance of the residual impact is **neutral**.

Cumulative impacts

- 4.3.16 The cumulative effects of the proposed development have been assessed in relation to the existing GGOWF substation and infrastructure and the existing and proposed extension to the Sizewell Power Station (Sizewell ‘C’).

Buried archaeological resource

- 4.3.17 The significance of effect of the direct cumulative impact of the proposed development on the buried archaeological resource has been assessed to be **moderate adverse**, as clearly more of the buried archaeological resource, which is non-renewable, will ultimately be destroyed during the construction of both the GWF substation and infrastructure and Sizewell C works. This assessment has been derived by using professional judgement which assessed that there would be a **major** magnitude of direct impact on the buried archaeological resource (destruction of the resource), which is considered to be of likely **medium** or **low** importance (value). However,

given that this loss has been, and will be, mitigated by a programme of archaeological recording, the significance of this cumulative impact has been assessed to be **neutral/slight**.

Historic Buildings and Historic Landscape

- 4.3.18 The development masterplan has been designed to minimise the visual intrusion of the Site within the surrounding landscape, including provision for tree screening to surround the Site. The Site lies within an area which is already characterised by patches of existing woodland and the proposed tree screening will blend the Site into its immediate environs.
- 4.3.19 A new substation for the GGOWF has already been constructed within the wooded area immediately to the east of the Site, which historic mapping shows to have been planted with a formal arrangement of deciduous trees between the 3rd Edition OS map of 1938 and the 4th Edition of 1947. The proposed tree screening outlined on the development masterplan for the Site will screen the new substation and blend it into the existing landscape. Therefore the cumulative indirect impact of the development on the historic landscape and setting of the built heritage resource is considered to be **negligible**, resulting in a **neutral/slight** effect.
- 4.3.20 A proposed new nuclear power station, Sizewell C, is intended to be built to the north of the current Sizewell B: it is considered that there is a **minor** cumulative indirect impact on the setting of the historic landscape resource in relation to the Gallopier substation Site, resulting in a **neutral/slight** cumulative significance of effect.

5 CONCLUSIONS

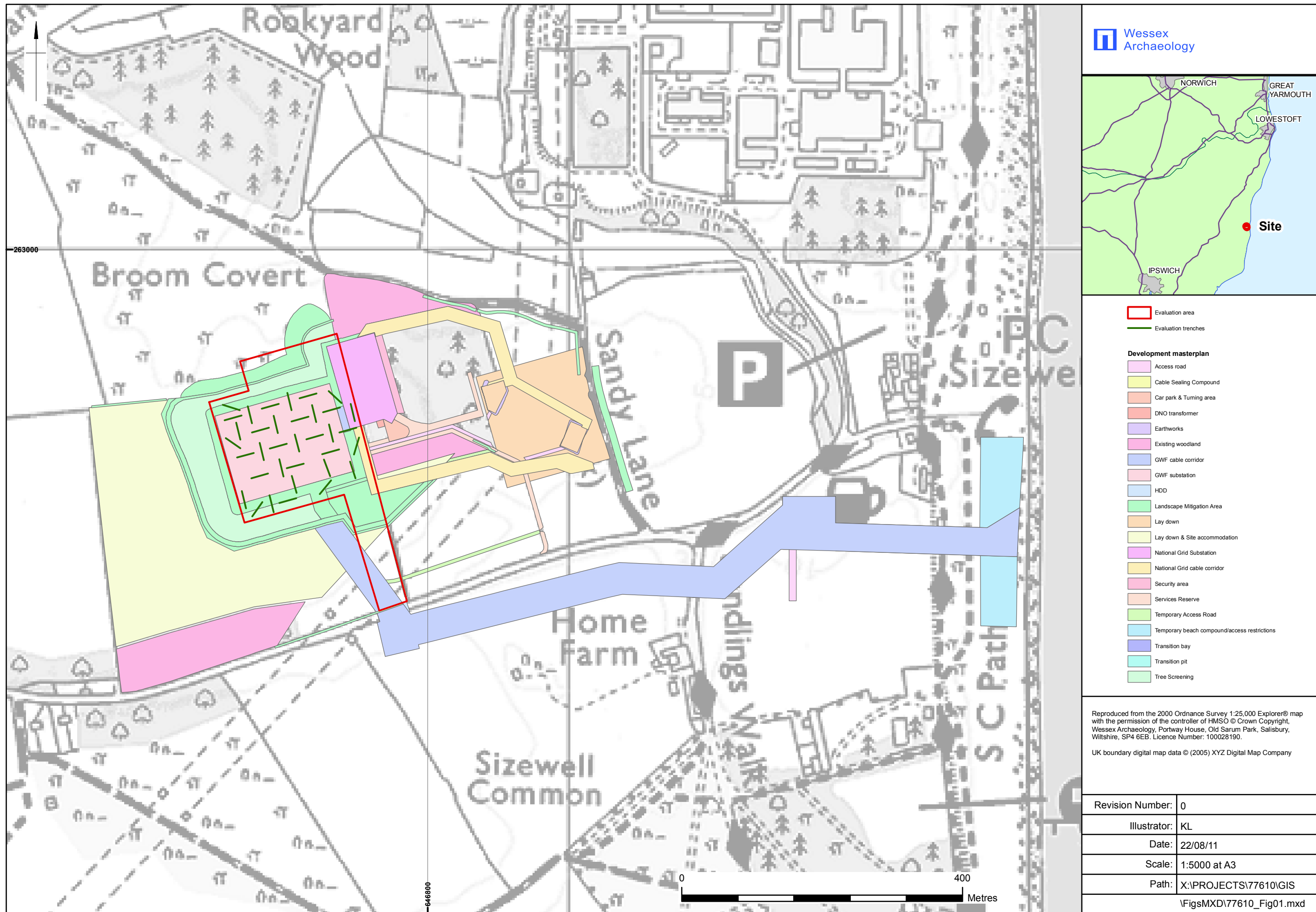
- 5.1.1 Although the Site has a high potential for archaeological finds and features to be present, the findings from a desk-based assessment and intrusive surveys indicate that the archaeological resource is of **low** sensitivity. Similarly, the built heritage and historic landscape surrounding the Site is also assessed as being of **low** sensitivity, based on the criteria outlined in **Table 1.1**.
- 5.1.2 The construction of the GWF substation and associated infrastructure will potentially result in the destruction of the archaeological resource within the works footprint, comprising a major direct magnitude of impact, and slight/moderate significance of effect. However, with mitigation in the form of an agreed programme of archaeological works, the residual impact of the Scheme on the buried archaeological resource is assessed as **slight**.
- 5.1.3 The magnitude of the indirect impact of the Scheme on the built heritage resource and historic landscape is assessed as being negligible, resulting in a **neutral/slight** significance of effect.
- 5.1.4 Following all mitigation, it is anticipated that during the operational life of the Site there will be no further effect on the historic environment resource, and therefore the significance of the residual impact is **neutral**.
- 5.1.5 Cumulative impacts of the development of the Site on the historic environment resource (archaeology, built heritage and historic landscape) is assessed as **neutral/slight**.

Recommendations

- 5.1.6 Based upon the available information it is recommended that the Local Planning Authority (LPA) are likely require further archaeological evaluations prior to construction (e.g. during any test-pitting and/or UXO removal) and archaeological monitoring within the Site during the construction phase.
- 5.1.7 The scope, extent and timing of any further work should be discussed and agreed with SCC and any works undertaken should be carried out under the remit of a Written Scheme of Investigation (WSI) prepared by the applicant and approved in advance by the SCC Conservation Team.

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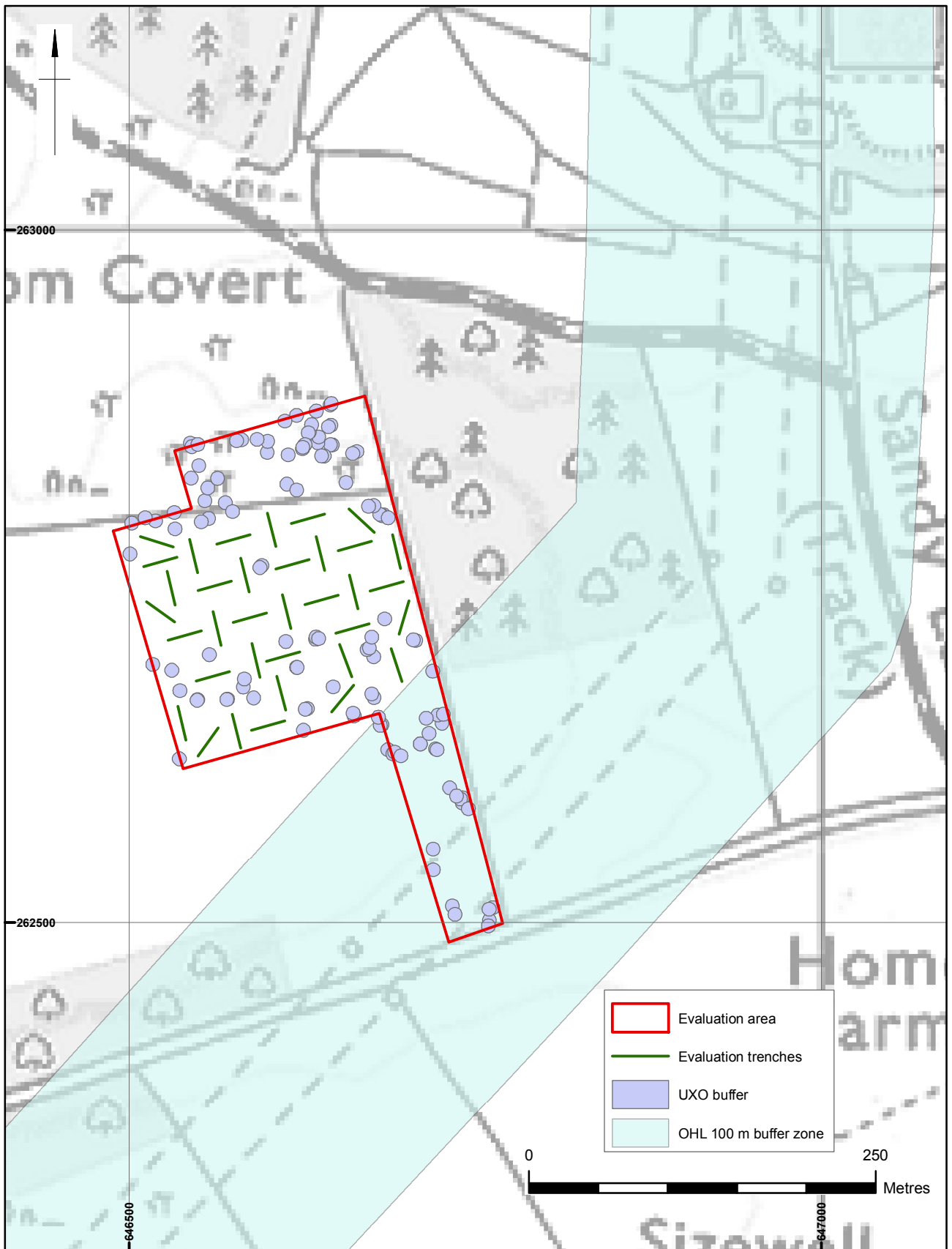
- Evaluation area
 - Evaluation trenches
- Development masterplan**
- Access road
 - Cable Sealing Compound
 - Car park & Turning area
 - DNO transformer
 - Earthworks
 - Existing woodland
 - GWF cable corridor
 - GWF substation
 - HDD
 - Landscape Mitigation Area
 - Lay down
 - Lay down & Site accommodation
 - National Grid Substation
 - National Grid cable corridor
 - Security area
 - Services Reserve
 - Temporary Access Road
 - Temporary beach compound/access restrictions
 - Transition bay
 - Transition pit
 - Tree Screening

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Location plan

Figure 1



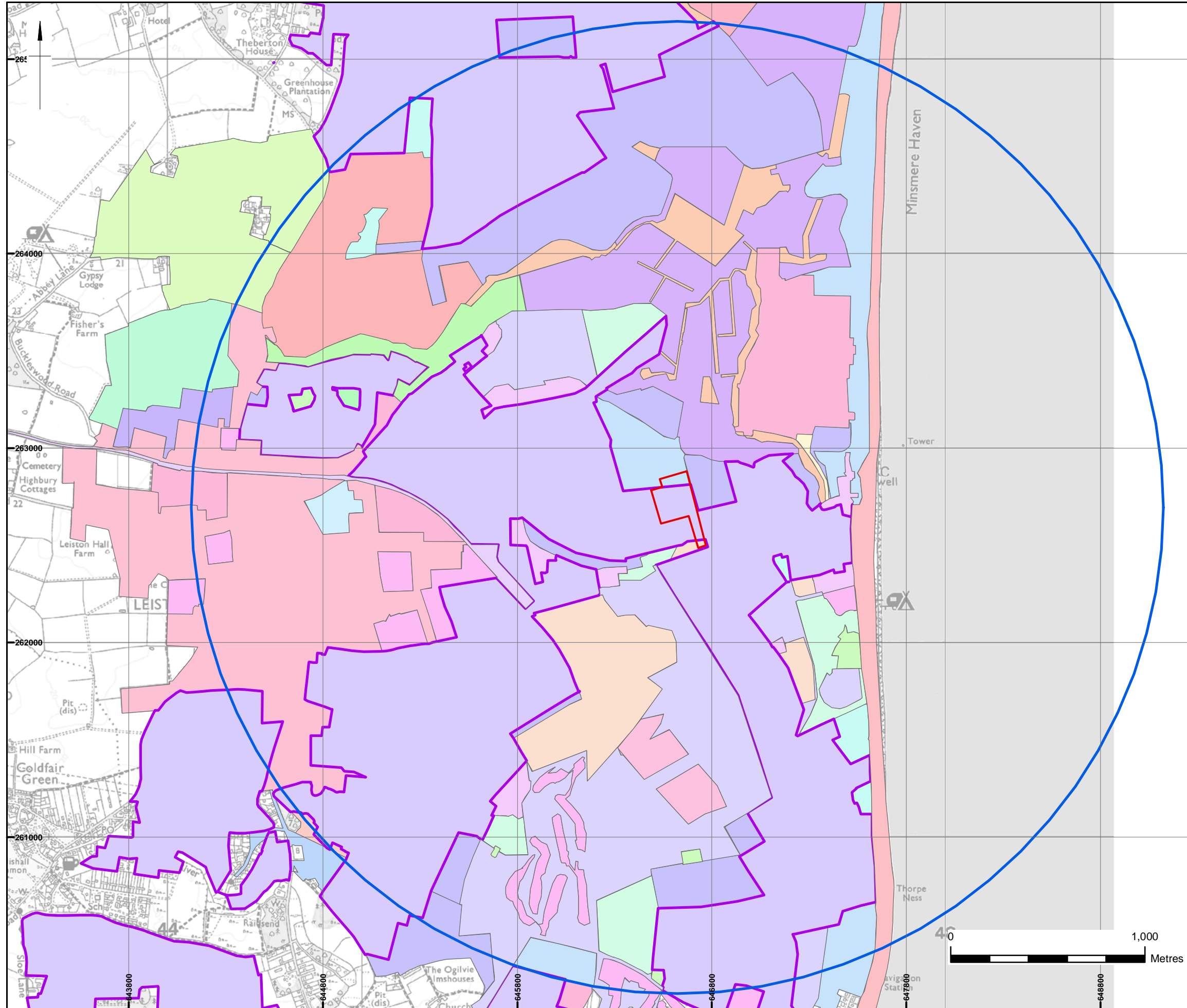
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Location of evaluation trenches, UXO buffers and OHL exclusion zone

Figure 2



- 5 km study area
 - Evaluation area
- Suffolk HLC Galloper**
- Allotments
 - other
 - Boundary loss from post-1700 fields
 - Boundary loss from random fields
 - Built margin, Built margin
 - Current industrial landscape
 - Disused mineral extraction
 - Former coastal marsh
 - Former common arable or heathland
 - Former common pasture, open margin
 - Former marsh or fenland
 - Green edge or infill, Green edge or infill
 - Hamlet, Hamlet
 - Heath or rough pasture
 - House or farmstead
 - Intertidal land, Intertidal land
 - Irregular co-axial fields
 - Meadow
 - Modern leisure
 - Modern plantation on former common arable or heath
 - Modern plantation on former common pasture
 - Nurseries with glass houses
 - Open margin
 - Railway
 - Random fields
 - Town, Town
 - Unspecified
 - Wet woodland or alder carr
 - Wooded common

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