



## Project Erebus Environmental Statement Chapter 23: Onshore Archaeology and Cultural Heritage

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## Acronyms

<b>Term</b>	<b>Definition</b>
DAT	Dyfed Archaeological Trust
RCAHMW	Royal Commission on the Ancient and Historical Monuments of Wales
SM	Scheduled Monument
LB	Listed Building
HER	Historic Environment Record
PRN	Primary Record Number

# Chapter 23 Onshore Archaeology and Cultural Heritage

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## 23.1 Introduction

23.1.1.1 Project Erebus (the Project) is a proposed demonstration scale Floating Offshore Wind (FLOW) development in the Celtic Sea region. The Applicant, Blue Gem Wind, is a joint venture between Simply Blue Energy (SBE) and TotalEnergies, set up to create a new low carbon offshore energy sector in the region that contributes to climate change targets, supply chain diversification and energy security.

23.1.1.2 This chapter of the Environmental Statement (ES) assesses the likely significance of the effect of the Project upon the archaeological and cultural heritage resource within the Proposed Development and surrounding area. This chapter addresses effects upon the onshore resource, above Mean High Water Spring (MWHS). Offshore impacts are assessed in Volume 1 Chapter 14 Offshore Archaeology and Cultural Heritage.

23.1.1.3 This chapter is based on a detailed Desk-Based Assessment, carried out by Dyfed Archaeological Trust (Poucher, 2021).

23.1.1.4 This assessment has been undertaken by DAT Archaeological Services. This Chapter has been authored by Philip Poucher (MCIfA), who has over 20 years' experience in commercial archaeology and has prepared a number of Environmental Statement Chapters over the previous 10 years.

## 23.2 Legislation, Policy and Guidelines

23.2.1.1 A detailed overview of the relevant policy and legislation for the Project is provided in Chapter 5: Policy and Legislation. The Project is seeking a Section 36 consent, with deemed planning permission, under the Electricity Act 1989 from Welsh Ministers, administered by Planning and Environment Decision Wales (PEDW) and a Marine Licence under the Marine and Coastal Access Act (MCAA) 2009 from NRW.

### 23.2.2 Legislation

23.2.2.1 Relevant legislation and guidance documents have been reviewed and taken into account as part of this assessment. Of particular relevance are:

- The Ancient Monuments and Archaeological Areas Act 1979 (1979 Act). This requires the Welsh Government (WG) and Cadw to compile and maintain a Schedule of monuments considered to be of national importance. The statutory consent of Cadw is required before any works are carried out which would have the effect of demolishing, destroying, damaging, removing, repairing, altering, adding to, flooding or covering up a Scheduled Monument (SM). In addition, impacts of development works upon the setting of a SM form an important planning consent consideration. This has since been amended by The Historic Environment (Wales) Act 2016.

- Planning (Listed Buildings and Conservation Areas) Act 1990. This enacts special controls in respect of buildings and areas of special architectural or historic interest. Listed buildings are categorised as Grades I and II in decreasing order of special architectural and historic importance. Section 66 requires planning decision makers to have special regard to the desirability of preserving listed buildings and their settings. Conservation Areas may also be designated under this Act. Section 72 requires planning decision makers to pay special attention to the desirability of preserving or enhancing the character or appearance of the area. This too has since been amended by The Historic Environment (Wales) Act 2016.
- Historic Environment (Wales) Act 2016. This is the primary legislation for protecting heritage assets in Wales. Cadw, the Welsh Government's historic environment service, define the purpose of the Act as to:
  - Give more effective protection to listed buildings and scheduled monuments;
  - Improve the sustainable management of the historic environment;
  - Introduce greater transparency and accountability into decisions taken on the historic environment.

### **23.2.3 Policy**

23.2.3.1 The following planning policy was reviewed and taken into account as part of this assessment:

- Future Wales: The National Plan to 2040 (2021). The plan seeks to provide a strategy for addressing key national priorities through the planning system, including the economy, housing and environment. It shows where nationally significant developments like energy, transport, water and waste projects should take place, where growth should happen, what infrastructure and services are needed and how Wales can help fight climate change. The plan is in line with the Well Being of Future Generations (Wales) Act 2015. Policy 32 – Haven Waterway and Energy states “In determining any applications for energy proposals, consideration should be given to the contribution it will make to decarbonising energy supplies, the impacts on the landscape, seascapes, natural and historic environment and the economic benefits they would bring to the region”.
- Planning Policy Wales (Ed.11, Feb.2021) is designed to ensure the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales, as required by the *Planning (Wales) Act 2015* and the *Well-being of Future Generations (Wales) Act 2015*. The planning system must take into account the Welsh Government's objectives to protect, conserve, promote and enhance the historic environment as a resource of present and future generations.

- Technical Advice Note (TAN) 24: The Historic Environment (2017) supplements *Planning Policy Wales (Ed.11, Feb.2021)*. This provides guidance on considering the historic environment in the planning system, including World Heritage Sites, Scheduled Monuments, Archaeological remains, Listed buildings, Conservation areas, Historic parks and gardens, historic landscapes and historic assets of special local interest. This advocates the use of The Conservation Principles for the Sustainable Management of the Historic Environment in Wales (Conservation Principles) (2011) in assessing potential impacts of development upon the historic environment. When assessing impacts upon designated assets Cadw have produced additional guidance in the form of *Heritage Impact Assessment in Wales (2017)* and *Setting of Historic Assets in Wales (2017)*.
- Pembrokeshire County Council LDP (2013 - currently undergoing review), The historic environment is referenced throughout the document in numerous policies, emphasising its significance to the county. The main policy references to the Historic Environment are outlined in policy GN.38 Protection and Enhancement of the Historic Environment, which states *“Development that affects sites and landscapes of architectural and/or historical merit or archaeological importance, or their setting, will only be permitted where it can be demonstrated that it would protect or enhance their character and integrity”*.
- Pembrokeshire Coast National Park LDP (2020). Policy 8 Special Qualities (Strategic Policy) includes the historic environment. The aim of which is “To conserve, enhance and promote the historic environment of the National Park, its archaeological resource, historic buildings and landscapes, parks and gardens”

23.2.3.2 Recognisance has been taken of the following best practice guidelines / guidance:

- Design Manual for Roads and Bridges (DMRB, LA106 Cultural Heritage Assessment)
- Conservation Principles (Welsh Government/Cadw, 2011);
- Heritage Impact Assessment in Wales (Welsh Government/Cadw, 2017);
- Managing Historic Character in Wales (Welsh Government/Cadw, 2017);
- Setting of Historic Assets in Wales (Welsh Government/Cadw, 2017)
- Standard and Guidance For Historic Environment Desk-Based Assessment (Chartered Institute for Archaeologists 2014)

## 23.3 Consultation and Scoping

23.3.1.1 A stakeholder meeting was held on the 15<sup>th</sup> April 2021 with representatives from ITP Energised, MarineSpace, MSDS Marine Cadw, Dyfed Archaeological Trust – Development Management in their capacity as archaeological advisors to the relevant planning authorities, Pembrokeshire Coast National Park Authority Archaeologist and a representative from the Royal Commission on the Ancient and Historical Monuments of Wales.

23.3.1.2 Further consultation was carried out with Dyfed Archaeological Trust – Development Management during the course of the assessment.

**Table 23.1 – Stakeholder meeting response summary.**

<b>Consultee</b>	<b>Response</b>	<b>Applicant Action</b>
Cadw (Neil Maylan, Louise Mees)	The approach to the assessment was agreed, and the people undertaking the assessment were considered appropriate. This included the extent of the assessment, the study areas, and the sources used. Confirmation was also given that an ASIDOHL was not required, but landscape characterisation areas should be included in the assessment.	No further action
Dyfed Archaeological Trust – Development Management (Mike Ings, Zoe Bevans-Rice)	As above, the approach to the assessment was agreed, including the extent, study areas and sources used.  A Written Scheme of Investigation (WSI) detailing the methodology for the assessment was requested	A WSI was produced and sent to DAT-DM on 26-4-21. Approved by Mike Ings in an email on the 27-4-21.
Pembrokeshire Coast National Park (Tomos Jones)	Happy with assessment approach. Should any issues with specific sites come up during the assessment they would be happy to discuss further.	No further action.

## 23.4 Assessment Methodology and Significance Criteria

23.4.1.1 Detailed discussion on the EIA methodology can be found in Chapter 2: Overview of EIA Methodology.

23.4.1.2 The specific objectives of this current assessment were to:

- Identify the Historic environment baseline within and in the vicinity of the proposed development.
- Consider the application site in terms of its archaeological and historic environment potential
- Assess the potential and predicted effects of the construction and existence of the development on the baseline historic environment resource within the context of relevant legislation and planning policy guidelines.
- Propose measures, where appropriate to mitigate any predicted significant adverse effects

23.4.1.3 The baseline data was collected through a desk-based assessment carried out by Dyfed Archaeological Trust – Archaeological Services (Poucher 2021). Only the information which is relevant to the final design has been included within this ES.

23.4.1.4 All sites identified in the research were assessed to determine their potential significance and the predicted impact from the development on them. The assessment methodology for this ES chapter followed that detailed in the Design Manual for Roads and Bridges (DMRB, LA106 Cultural Heritage Assessment), which is considered relevant to this assessment. DMRB is the established good practice guidance for assessing the impact of the effects of the Proposed Development on the archaeological and heritage resource. Consideration was given to more recent guidance issued by Cadw in 2017 in examining designated assets and their settings, however, for reasons of consistency in terminology for the ES chapter, at this stage, the terms expressed in the DMRB were used, and assets are referred to as Receptors.

### **23.4.2 Study Area**

23.4.2.1 This assessment has used an initial Study Area of 500 m from the edge of the Proposed Development to identify archaeological and historic receptors. This Study Area was expanded to 3 km from the boundary of the proposed development to examine the potential effect on the setting of surrounding designated assets. The extent of this study was agreed following initial consultation with Cadw and the archaeological advisors to the relevant planning authorities.

23.4.2.2 The proposed development area comprises a largely linear cable route corridor that extends for approximately 14.5 Km across the Castlemartin peninsula in southern Pembrokeshire. The Milford Haven Waterway runs to the north of the peninsula, the Pembroke River to the east, with the sea to the southwest.

23.4.2.3 The landfall site for the onshore cable route will be West Angle Bay (SM 852 032). There are currently two options being considered. One would come ashore across the sandy bay and onto the relatively low-lying agricultural land that backs the bay, before turning southward to cross an area of enclosed farmland comprising medium-sized amalgamated rectangular fields of mixed pasture and arable, enclosed by hedgerows with some stone walling present to the west. The onshore cable corridor would cross the access road to West Angle Bay. The second option would come ashore to the south of the bay, where the coastline is fronted by a rocky sea cliff. The onshore cable corridor would then travel south before turning east, through similar enclosed agricultural land.

23.4.2.4 From SM 8560 0225 the onshore cable corridor takes an east to south-easterly route across an area of large straight-sided fields bounded by embankments and post-and-wire fencing (the former RAF Angle airfield), with smaller semi-regular fields bounded by hedgerows and some stone walling to the east. At around SM 8855 0090 the onshore cable corridor crosses the B4319 and B4320 to take a northerly detour around Kilpaison Burrows, an extensive area of vegetation covered sand dunes that back Freshwater West beach. This northerly route runs through an area of regular, straight-sided fenced agricultural enclosures, surrounded by security fencing to enclose an area of oil refineries to the north.

23.4.2.5 To the east of the burrows/oil refinery land, the onshore cable corridor runs to the southeast, crossing the local road to Neath Farm, and running south of Wogaston Farm through an area of medium to large irregular fields, enclosed by hedgerows, and around solar farm arrays.

23.4.2.6 The onshore cable corridor then turns northeast to Wallaston Cross, a meeting of several local roads, and then continues east towards the coast at the mouth of the Pembroke River, and along the northern side of a small stream valley. The proposed onshore substation is located on the northern side of this small valley, close to Lambeeth Farm. The onshore substation would then connect to Pembroke Power Station which lies approximately 700 m to the north.

23.4.2.7 The onshore cable corridor climbs gradually to the south of West Angle Bay to approximately 60 m OD at which point it turns east to south-easterly and crosses a relatively level landscape with gradual undulations. To the south the ground falls slightly to a rocky sea-cliff edge. To the north the ground falls gradually to the sand, mud and rock foreshore of Angle Bay, cut by small stream channels and valleys. East of Kilpaison Burrows the landscape undulates more sharply but reaches its highest point of 73 m OD at Green Hill Reservoir, immediately north of Wallaston Cross. East of this the land falls away to the mouth of the Pembroke River, which feeds the Milford Haven Waterway to the north, and is flanked by wide tidal mudflats along its western edge. The settlement pattern in the area comprises dispersed farmsteads and dwellings, some in relatively close proximity to one another, linked by a network of local roads, with the B4320 providing the main east – west route across the peninsula. The village of Angle lies on the west side of Angle Bay, laid out in a linear fashion along the road. The small villages, or hamlets, of Rhoscrowther and Pwllcrochan lie to the north of the route, now largely abandoned due to the development of the adjacent oil refineries. The closest nucleated settlements comprise Pembroke, on the Pembroke River 4.5 km to the east, Pembroke Dock, on the south side of the Milford Haven 2.5 km to the northeast, and Milford Haven itself, on the north banks of the river 4 km to the north. The north coast of the peninsula is now dominated by large oil refineries and Pembroke Power Station, and to the southeast lies the Castlemartin Artillery Range.

23.4.2.8 The underlying geology of the area is largely split between the rocks of the Milford Haven Group to the south, and more mixed rocks to the north. The Milford Haven Group rocks comprise a wide east-west ridge of interbedded sandstone and argillaceous rocks to the south of a line that runs from East Blockhouse at the western end of the peninsula to just south of Wallaston Cross and the edge of the Pembroke River at the eastern end of the peninsula. North of this line lie bands of conglomerate of the Ridgeway Conglomerate Group, sandstone of the Skrinkle Sandstone Formation, interbedded limestone and mudstone of the Avon Group, and limestone of the Black Rock Subgroup and Gully Oolite Formation. An area of blown sand overlies the bedrock around Kilpaison Burrows midway along the route (BGS viewer). The soil is largely described as freely draining slightly acid loamy soil with a band of fertile freely draining slightly acid but base rich soils extending between East and West Angle Bays, and sand dunes soils extending from the north of Kilpaison Burrows (Soilscapes Viewer).

### **23.4.3 Desk Study**

23.4.3.1 A desk-based study of the Study Area was undertaken to identify known archaeological sites within the site and its environs and assesses the potential for hitherto unknown remains to be present within the proposed development area.

23.4.3.2 The scope of the report also includes an assessment of the impact on the settings of surrounding designated historic receptors, including scheduled monuments, listed buildings, historic landscape character areas, registered parks and gardens and conservation areas.

23.4.3.3 The report included relevant information from a number of sources including:

- Dyfed Archaeological Trust Historic Environment Record (HER) data;
- Map regression exercise using earlier cartographic sources;
- Available and relevant reports on any archaeological work undertaken in the area that affects the sites or their setting;
- Archive records held at the County Archive, the National Library of Wales (NLW) and the Royal Commission on the Ancient and Historic Monuments of Wales (RCAHMW);

- Aerial photography, satellite imagery and Lidar data;
- Relevant records held by the developer; and,
- Information on any Scheduled Monuments, Listed Buildings, Registered Parks and Gardens, Registered Historic Landscapes, Historic Landscape Character Areas or Conservation Areas within or in the vicinity of the site area (Cadw, DAT, NRW).

#### **23.4.4 Site Visit / Surveys**

23.4.4.1 A number of site visits were undertaken in late April, mid May and early June 2021. Weather conditions were very mixed, from bright and sunny, through to foggy, windy and wet, but sufficient visits were made to ensure good visibility from the site and surrounding designated receptors.

23.4.4.2 The site visit was a visual walked search of the entire accessible area for the Proposed Development. The ground surface was visually inspected for all earthworks, structures and finds. The location of any environmental archaeological deposit, or areas that may have the potential for such deposits, were taken into account along with more traditional 'visible' archaeology. The visit also considered the impact upon and views toward (and from) heritage receptors, including Scheduled Monuments, Listed Buildings, historic landscapes and Conservation Areas.

23.4.4.3 An archaeological watching brief was also undertaken during recent ground investigation works in archaeologically sensitive areas. This watching brief focussed on investigations around the onshore substation location, Kilpaison Burrows, the former Angle Airfield and around West Angle Bay. Geotechnical excavation comprised pits measuring approximately 1.2 m by 0,6 m, and of varying depth but into the geological natural. Nothing of significant archaeological interest was encountered.

#### **23.4.5 Assessment of Potential Effect Significance**

23.4.5.1 This assessment methodology follows that detailed in the Design Manual for Roads and Bridges (DMRB, LA106 Cultural Heritage Assessment), which is considered established good practice guidance for assessing the potential effect significance of the Proposed Development on the archaeological and cultural heritage resource.

23.4.5.2 The following terminology is used:

- Value.
- Magnitude of impact.
- Significance of effect.

##### Value

23.4.5.3 The value of all the known and potential receptors that may be affected by the development are ranked, whether they are archaeological remains, historic buildings or historic landscapes. The value of each receptor is ranked according to the scale presented in Table 23.2.

23.4.5.4 Due to the nature of archaeology, a potential for remains can be identified but the nature, extent and state of preservation of that potential remains unclear, therefore the value of that receptor in that instance is unknown. However, for the purposes of consistency of assessment a value will be ascribed which is deemed appropriate in highlighting the potential significance of the remains.

**Table 23.2 – Value Levels for Historic Environment receptors**

Value	Description
High	Features of national importance - Scheduled Monuments, Listed buildings Grade I and II*, well preserved historic landscapes, registered parks and gardens and historic battlefields. Undesignated assets of schedulable quality and importance. Assets that can contribute significantly to acknowledged national research objectives
Medium	Non-scheduled sites of regional or county importance. Listed Buildings Grade II reasonably preserved historic landscapes. Designated or undesignated assets that contribute to regional research objectives. Designated landscapes/settings of special historic interest, averagely well-preserved historic landscapes, landscapes of regional value.
Low	Designated and undesignated assets of local importance. Assets compromised by poor preservation and/or poor survival of contextual associations. Locally listed buildings and historic (unlisted) buildings of modest quality in their fabric or historical association. Assets of limited value, but with potential to contribute to local research objectives. Robust undesignated historic landscapes/settings with local interest, or where their value is limited by poor preservation and/or survival of contextual associations.
Negligible	Assets with very little or no surviving archaeological interest. Buildings of little architectural or historic note. Landscapes/settings with little significant historical interest.

**Magnitude**

23.4.5.5 The magnitude of the impact needs to be viewed in conjunction with the *value* of the monument, in order to appreciate the overall significance of any effect on a given archaeological feature. The magnitude of the impact (degree of change) can also be negative or positive and should be ranked without regard to the value of the receptor. The total destruction of a Low Value receptor will have the same magnitude of impact on the receptor as the total destruction of a High Value receptor; the value of the receptor is factored in when the significance of the effect is assessed. The magnitude of impact is ranked according to the following scale.

**Table 23.3 – Magnitude of impact levels for historic environment receptors**

Sensitivity	Description
Major	Change to most or all key archaeological materials, such that the resource is totally altered. Comprehensive changes to setting.
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.
Slight	Changes to key archaeological materials, such that the asset is slightly altered. Slight changes to setting.
Negligible	Very minor changes to archaeological materials or setting.

Significance of Effect

- 23.4.5.6 The significance of the effect upon the Historic Environment is determined by correlating the magnitude of the impact and the sensitivity/value of the receptor, as presented in Table 23.4. On this basis potential impacts are assessed as of negligible, minor, moderate and major significance (definitions are provided in Chapter 2: Overview of EIA Methodology).
- 23.4.5.7 For the purposes of this assessment, any effects with a significance level of major and/or moderate have been deemed significant in EIA terms, while those of minor or negligible are deemed non-significant.

**Table 23.4 – Effect Significant Matrix**

		Sensitivity			
		High	Medium	Low	Negligible
Magnitude	Major	Major	Major	Moderate	Minor
	Moderate	Major	Moderate	Minor	Minor
	Slight	Moderate	Minor	Minor	Negligible
	Negligible	Minor	Minor	Negligible	Negligible

**23.4.6 Standard Mitigation**

- 23.4.6.1 A range of standard mitigation measures has already been applied to the Project as part of the over-arching site selection and iterative design process (see below and Chapter 3: Site Selection and Alternatives). These have been introduced in order to minimise potential impacts of the Project on any affected receptors.
- 23.4.6.2 Standard mitigation measures which the Project has already implemented, or is committed to in the future, in order to minimise potential impacts on the Historic Environment are listed below:
- Consultation during development of initial design freezes to avoid known areas of significant archaeological remains;
  - Archaeological monitoring of geotechnical ground investigations (complete);
  - Identification of archaeological receptors on construction plans. Where practicable these receptors should be avoided through micro-siting of cable routes and construction activity within the development boundaries. Where practicable these receptors should also be identified on the ground and fenced off during the use of the working area for construction. The approach to protecting these archaeological remains should be included within the Construction Environment Management Plan and agreed in advance of construction with Dyfed Archaeological Trust – Development Management in their capacity as archaeological advisors to the relevant local planning authorities; and,

- As the Proposed Development passes through archaeologically sensitive areas an Archaeological Watching Brief should be maintained during ground-breaking activities associated with construction. This would entail archaeological monitoring of ground-disturbing works to a point where the presence or absence of potential archaeological remains could be established. This would allow, within the resources available, the preservation by record of archaeological deposits, the presence and nature of which could not be established (or established with sufficient accuracy) in advance of development or other potentially disruptive works. It would also provide the opportunity to identify significant archaeological remains, for which further mitigation may be required. Such work would be subject to the approval of a Written Scheme of Investigation, produced by a suitably qualified archaeological contractors, and approved by Dyfed Archaeological Trust – Development Management in their capacity as archaeological advisors to the relevant local planning authorities.

### **23.4.7 Assessment for Residual Effect Significance**

23.4.7.1 The impact assessments and conclusions on significance of effect presented in Section 23.23.6 assume that these standard mitigation measures listed above have been successfully implemented. Where significant environmental impacts remain even after these standard measures have been factored in, then project-specific mitigation measures are detailed and the residual significance of effect presented.

### **23.4.8 Limitations to Assessment**

23.4.8.1 It is assumed that the information held within the consulted datasets is sufficiently accurate for the purpose of assessing impacts on the archaeology and cultural heritage resource. The HER and NMRW datasets are records of known archaeological and historical assets. They are not exhaustive and do not preclude the existence of further assets which are unknown at present.

23.4.8.2 At the time of site surveys were carried out some areas of the Proposed Development remained inaccessible due to landowner consent. An area of approximately 1.8 km could not be accessed, between Broomhill and Neath Farms midway along the route, and on the approach to Pembroke Power Station at the end of the route. However, the approach to Pembroke Power Station had been visited and examined in recent studies, and the area around Broomhill Farm was clearly visible from nearby publicly accessible areas. The remaining c.1 km of the route has not been visited, but other detailed information pertaining to this area was available, and therefore this is not considered to impact upon the study as a whole.

23.4.8.3 Areas of archaeological potential can be identified, but the precise nature of this resource is not fully understood at this stage.

## 23.5 Baseline Conditions

### 23.5.1 *Designated archaeological and cultural heritage receptors*

- 23.5.1.1 A 3 km search area around the Proposed Development boundary was used to identify designated receptors that may potentially be impacted upon by the development. This search area was agreed after discussions with Cadw, and within a Written Scheme of Investigation for the assessment, approved by Dyfed Archaeological Trust – Development Management, in their capacity as archaeological advisors to the relevant planning authorities. The designated receptors examined included Scheduled Monuments, Listed Buildings, registered Historic Landscapes, registered Historic Parks and Gardens and Conservation Areas as shown in Volume 2 Figure 23.1 to 23.4.
- 23.5.1.2 There are 28 Scheduled Monuments within the 3 km search area surrounding the proposed development site. None of these sites lay within the proposed development boundaries. These Monuments cover a wide range of archaeological sites and periods, from Neolithic monuments to sites still in use during the 2<sup>nd</sup> World War.
- 23.5.1.3 Of these 28 Scheduled Monuments, 18 were dismissed as having no links to the proposed development and would therefore remain unaffected, 10 sites were identified that may potentially be affected. Given their Scheduled status, these sites are considered to be of High Value. These sites are listed in Table 23.5.

**Table 23.5 – Scheduled Monuments potentially affected by proposed development.**

Scheduled Monument	Description	Value	Distance to red line boundary
Chapel Bay Fort PE333	Mid to late-19 <sup>th</sup> century fort on the northern edge of the Angle Peninsula.	High	355 m
West Angle Bay early medieval settlement PE554	Early-medieval cemetery and chapel site on the south side of West Angle Bay	High	60 m
The remains of East Blockhouse PE398	16 <sup>th</sup> century coastal defensive structure on the west coast of the Angle Peninsula.	High	745 m
Devil's Quoit Burial Chamber PE020	Neolithic chambered tomb on the northern edge of Kilpaison Burrow near Broomhill Cottage.	High	50 m
Corston Beacon Round Barrow PE059	Bronze Age burial site southeast of Wallaston Green.	High	1345 m
Dry Burrows Round Barrows PE060	Collection of Bronze Age burial sites northwest of Orielton.	High	1880 m

Scheduled Monument	Description	Value	Distance to red line boundary
Wallaston Round Barrows PE064	Collection of Bronze Age burial sites south of Wallaston Green	High	420 m
Round Barrow 400m N of West Orielton PE525	Bronze Age burial site.	High	2430 m
Defensible Barracks, Pembroke Dock PE379	19 <sup>th</sup> century military barracks overlooking Pembroke Dock.	High	2540 m
Gravel Bay anti-aircraft battery PE494	Second World War emplacement defending RAF Angle and Milford Haven Waterway, south of Broomhill Cottage.	High	125 m

23.5.1.4 There are 119 listed building within the 3 km search area surrounding the proposed development site, largely as this search area includes part of Pembroke Dock with its concentration of surviving 19<sup>th</sup> century structures, but also includes clusters of listed buildings within Angle and around West Orielton amongst others. None of these sites lay within the proposed development boundaries.

23.5.1.5 Of these listed buildings, the majority would remain unaffected by the proposed development. Ten buildings were identified that may potentially be affected. Given their Listed status, these sites are considered to be of High Value. These sites are listed in Table 23.6.

**Table 23.6 – Listed Buildings potentially affected by proposed development.**

Listed Building	Description	Value	Distance to red line boundary
Thorne Island Fort 17169	Grade II* listed mid-19 <sup>th</sup> century fort located off the mouth of West Angle Bay.	High	845 m
Chapel Bay Fort 17165	Grade II listed fort, also Scheduled PE333.	High	405 m
Nos 34 & 35 Angle Road 17159 & 17160	Pair of Grade II listed cottages remodelled in circa 1905 by landowner Colonel Mirehouse as part of a systematic village improvement.	High	160 m

Listed Building	Description	Value	Distance to red line boundary
Windmill adapted as machine-gun post 5926	Grade II listed 18 <sup>th</sup> century windmill structure adapted during World War 2 to act as a machine gun post.	High	300 m
Rocket Cart House and Lookout Tower 17166 & 17167	Grade II listed late 19 <sup>th</sup> century base for the cliff-rescue team.	High	140 m
War Memorial 17162	Grade II listed memorial to honour those lost in the First World War.	High	150 m
Somerton Farmhouse 6598	Grade II listed late 18 <sup>th</sup> century house built in a picturesque style.	High	920 m
The Defensible Barracks 6448	Grade II* barracks, also Scheduled PE379.	High	2540 m

23.5.1.6 Some sections of the proposed cable route corridor lie just within the Milford Haven Waterway Landscape of Outstanding Historic Interest (HLW(D)3). This area covers the Milford Haven Waterway and the Cleddau rivers as far as Haverfordwest to the north and Pembroke through to Carew to the east. In order to better characterise the historic environment of the Historic Landscape it has been sub-divided into a number of Historic Landscape Character Areas (HLCA). These areas do not necessarily confine themselves to the illustrated limits of the registered Historic Landscape. The onshore cable corridor crosses through four such areas, although a potential impact is only identified on three, these comprise:

- HLCA 342 Angle, centred on the village of Angle, its mix of medieval, 19<sup>th</sup> and 20<sup>th</sup> century architecture, including the surrounding agricultural land, with distinctive strip fields, part of a former medieval open field system. Its preservation of historic elements, along with much of the area subsequently becoming a Conservation Area, this is of High value.
- HLCA 341 Rhoscrowther, a large agricultural area typified by large, dispersed farms with regularly shaped fields. It is traversed by the 'Ridgeway', which attracted important prehistoric activity, has a variety of important early medieval, medieval and post-medieval features. Many of the settlements and farms were established during the medieval period, although 19<sup>th</sup> century buildings now predominate. Due to its variety of archaeological material, and the preservation of an essentially medieval settlement and enclosure pattern beyond the limits of the oil refineries, it is considered to be of High value.

- HLCA 343 Angle Airfield. farmland reclaimed from the 2<sup>nd</sup> World War airfield, and the outline and route of the main runways is still visible in the field layout and use. Due to the preservation of the outline of the airfield, giving the area a distinctive appearance, and potential for associated below-ground archaeological remains, it is of High value,

23.5.1.7 There is one registered historic park and gardens within the 3 km search area. The grade II listed Orierton (PGW (Dy) 38(PEM) lies on the edge of the search area to the southeast, with the parkland extending to approximately 2 km from the site of the proposed substation. This parkland should remain unaffected by the Proposed Development.

23.5.1.8 Angle Conservation Area lies within the search area, encompassing the village of Angle, surrounding strip field remnants, Chapel Bay Fort and surrounds, and both Angle Bay and West Angle Bay. The northernmost of the two proposed landfall corridors at West Angle Bay would pass through part of this Conservation Area.

- Angle Conservation Area. High value.

### **23.5.2 Non-Designated archaeological and cultural heritage receptors and general archaeological background**

23.5.2.1 A search of data held by the HER and other databases was made within a 500 m radius area around the proposed development, as agreed in the approved Written Scheme of Investigation. This identified known sites that may be affected by the Proposed Development, and highlighted areas of archaeological potential as shown on Volume 2 Figure 23.1 to 23.4.

23.5.2.2 The HER records 201 assets within the search area. Twelve receptors are recorded within or adjoining the onshore cable corridor of the Proposed Development itself. In topographical order, starting at the landfall site, these sites are listed in Table 23.7:

**Table 23.7 – HER sites within or adjoining the proposed development area.**

HER site	Description	Value	Distance to red line boundary
Sea Defences PRN 35015	Extant stone wall sea defences built of masonry and concrete, likely therefore multi period from post-medieval through to modern.	Low	Within
Findspot PRN 35014	Mid-19 <sup>th</sup> century gun, which was placed in West Angle car park, but no longer present.	Negligible	Within
Field System PRN 5701	Fossilised remnants of medieval strip field agriculture surrounding Angle.	Low	Within
Brickworks PRN 33855	Place-name evidence of activity associated with brick-working,	Low	40 m

HER site	Description	Value	Distance to red line boundary
	possibly early 19 <sup>th</sup> century.		
Pillbox PRN 101392	Extant and well-preserved Second World War pillbox. Previously recommended for Scheduling, but not yet scheduled.	High	1 m
Field Boundary PRN 107739	Extant boundary recorded on mapping relating to World War One activity.	Low	Within
Anti-Aircraft Battery PRN 102553	World War Two defensive site, identified from map sources, not above-ground remains.	Low	Within
Pillbox PRN 101389	Extant and well-preserved Second World War pillbox. Previously recommended for Scheduling, but not yet scheduled.	High	1 m
Anti-Aircraft Battery PRN 44603 / 110426	World War Two defensive site associated with RAF Angle. A modified field wall and concrete gun holdfast visible, along with suggestions of below-ground remains.	Medium	Within
Cross PRN 7931	Place-name evidence suggesting a possible medieval cross. More likely however to refer to adjacent cross-roads.	Low	25 m
Cross PRN 7932	Place-name evidence suggesting a possible medieval cross. More likely however to refer to adjacent cross-roads.	Low	30 m
Defended enclosure PRN 3244	Well-defined, but plough-denuded Iron	High	50 m

HER site	Description	Value	Distance to red line boundary
	Age defended enclosure lying adjacent to the proposed development area.		
Round barrows PRN 48371	Pair of Bronze Age round barrows in the locality, excavated in the 1920s. No above ground remains, and location unknown.	Medium	120 m

- 23.5.2.3 A detailed archaeological and historical background broken down into chronological periods is provided within the desk-based assessment, included as an appendix to this ES (Poucher 2021). This background is developed from the known archaeological resources of the area recorded on the HER. This is not reproduced in full here, but it has been used to produce areas of archaeological potential throughout the study area.
- 23.5.2.4 In brief summary, collections of Mesolithic artefacts have been found along the coastline in this area, indicating flint working sites and the movement of groups through this area during the Mesolithic period, with particular areas of concentration. These artefacts may also indicate areas of activity during the Neolithic period, alongside which Devil's Quoit Chambered Tomb (PRN 3071), lying within Kilpaison Burrows, within 60 m of the red line development boundary, indicates an area of significance during this period. During the Bronze Age there is an apparent concentration of funerary and ritual monuments along the 'Ridgeway', a route roughly followed by the present B4320 through this area. Similar sites are suggested elsewhere along the route, along with sites of burnt mounds near local water sources, suggesting more widespread activity. Sites dating to the Iron Age appear relatively confined to coastal locations at either end of the cable route and include some defended enclosures near West Angle Bay and Lambeeth Farm.
- 23.5.2.5 During the early medieval period a chapel and cemetery site has been identified on the south side of West Angle Bay, with the likelihood of associated settlement in the locality. A further burial is recorded in Kilpaison Burrows, the only other known site in the area being an ecclesiastical centre at Rhoscrowther to the north. Much of the layout of the landscape is known to have medieval origins. The village of Angle, and many of the farmsteads, are recorded during the medieval period, strip fields are remnants of medieval field divisions, and many of the current field layouts are likely to also have medieval origins.

- 23.5.2.6 A large number of records within the HER relate to the post-medieval period. Broadly they can be sub-divided into a smaller number of categories. The settled, agricultural, landscape that was identified during the medieval period continued and began to expand by the later post-medieval period, with further farmsteads recorded, and their associated features, along with small settlements, outlying cottages and a number of windmills. Much of the field system was well-established by this period, along with the network of roads. In addition to the agricultural landscape, a noted addition during this post-medieval period is the significant increase in industrial activity, with a large number of quarries, mainly small-scale, and limekilns recorded. West Angle was also the site of a brickworks established in the later 19<sup>th</sup> century. Given its location, a maritime element is another important characteristic of this period. Such sites are varied, but include mooring, sea defences, a coastguard lookout and rocket station, and sailor's graves at West Pickard Bay. By the mid-19<sup>th</sup> century Milford Haven was becoming increasingly militarised, with a number of impressive coastal forts established to protect the ship building centres and military docks, which included Chapel Bay Fort to the north of Angle.
- 23.5.2.7 There are a significant number of sites recorded on the HER of modern date, these relate largely to sites established in the area during the Second World War. Due to the important naval bases and shipping associated with the Milford Haven Waterway, the area was heavily protected from air attack by a large number of airfields, anti-aircraft batteries, radar stations and search lights, with a number of temporary camps set up to house the additional personnel required for such facilities. The main feature of this area was Angle Airfield, opened in June 1941 to protect Pembroke Dock and escort convoys at sea. The sites and remains of anti-aircraft batteries, searchlight batteries, lookout stations and pillboxes can also be found surrounding the airfield. The personnel serving these sites were also spread around a number of camps in the surrounding area. Other outlying features include a high frequency direction finding station and a minefield protecting the military base at East Blockhouse. There are a smaller number of features relating to the earlier World War I defences of the Haven, although less concerned with aerial assault, these are concentrated along the coastline.
- 23.5.2.8 The archaeological background to the area highlights a number of areas of archaeological potential throughout the proposed development area. Although a general potential can be highlighted, the nature or the specific archaeological resource that may represent within the Proposed Development area is unknown, therefore no accurate value can be ascribed to these areas of potential. However, for the purposes of providing a meaningful way of assessing this resource within the parameters of this assessment, an average value of medium is assumed. In summary they comprise:
- Mesolithic activity. A low to medium potential is highlighted around the coastal areas of West Angle Bay at the west end, and on the approach to Lambeeth at the east end, and around Kilpaison Burrows in the centre. Elsewhere potential appears low.
  - Neolithic activity. A low to medium potential is highlighted around the coastal areas of West Angle Bay at the west end, and on the approach to Lambeeth at the east end, rising to a medium potential around Devil's Quoit Chambered Tomb in the centre. Elsewhere potential appears low.
  - Bronze Age activity. A low to medium potential is highlighted around the landfall areas, falling to low around the former RAF Angle. Potential increases to medium to high in the Kilpaison Burrows area, particularly around local watercourses, and remains a medium potential to the east.
  - Iron Age activity. A low to medium potential is highlighted around the southern landfall option, and a medium to high potential around the substation location. Elsewhere potential appears low.

- Early medieval activity. A medium potential is highlighted around West Angle Bay, across both potential landfall options. Elsewhere potential would appear to be low.
- Medieval activity. A medium potential is highlighted around the medieval settlements of Angle and Newton Farm. Elsewhere a low to medium potential for general agricultural activity is suggested.
- Post-medieval activity. A medium potential for industrial and maritime activity is highlighted around West Angle Bay, and a medium potential for settlement activity around Wallaston Cross, elsewhere a low to medium potential for general agricultural activity is suggested.
- Modern activity. Relating specifically to wartime activity, a low to medium potential is highlighted on the approach to the East Blockhouse (southern landfall option), a medium to high potential as the route passes through the site of the former RAF Angle, and a medium potential around Broomhill Cottage.

### **23.5.3 Newly identified archaeological and cultural heritage receptors**

- 23.5.3.1 The assessment included an examination of previous archaeological work undertaken in the area, and examination of historic maps, aerial photographs, lidar, other relevant documents and a walkover survey. This work identified a number of additional receptors that had not been recorded within the HER. In order to distinguish these receptors, they were given an assessment-specific reference. A total of 25 new receptors were identified as shown in Volume 2 Figure 23.1 to 23.4.
- 23.5.3.2 Historic mapping identified a potential post-medieval farmstead or dwelling near Lambeeth Farm (EWF01) and a section of potential medieval road (EWF02) near South Studdock farm. Area of strip field agriculture (EWF03), potentially medieval in origin, lay to the north of Newton Farm. Field names suggested the possibility of the limekiln (EWF04) and windmill (EWF05) near Bangeston, and a predecessor to North Studdock Cottage (EWF06).
- 23.5.3.3 Later maps and aerial photographs identified a number of specific features related to the Second World War RAF Angle Airfield, including the runways (EWF07), a building (EWF08), dispersal pens (EWF09 & EWF10), a small building complex (EWF11) and the airfield boundary (EWF14).
- 23.5.3.4 Aerial photographs also identified a possible enclosure (EWF12) and wartime radar station (EWF13) to the east, and further enclosures (EWF15) and buildings (EWF16) around Broomhill Cottage likely related to wartime activity. The enclosure EWF12 was subsequently dismissed as a natural feature after a site visit. The site of an outlying domestic structure (EWF23), likely related to nearby anti-aircraft batteries, was picked up from an earlier survey of wartime structures. The aerial photographs also suggested the presence of some outlying Bronze Age barrows (EWF17), since lost to oil refinery development.
- 23.5.3.5 Geophysical Survey and archaeological evaluation on an adjacent scheme have identified the presence of possible prehistoric enclosures (EWF18) and a Bronze Age barrow (EWF19) between Broomhill and Neath Farms. A prehistoric ditch (EWF20), cooking pit (EWF22) and Bronze Age barrow (EWF21) were further identified to the south of Neath farm. These works also identified two linear features (EWF24 & EWF25) of potential archaeological interest extending into the proposed development area between Wallaston Cross and Lambeeth Farm, one possibly representing an enclosure boundary, the other thought to be potentially geological in nature.
- 23.5.3.6 None of these receptors were visible on the site walkover survey, they therefore represent known and potential below-ground remains. In list form, these sites are listed in Table 23.8:

**Table 23.8 – Newly identified sites within or adjoining the proposed development area.**

<b>Project specific reference no.</b>	<b>Description</b>	<b>Value</b>	<b>Distance to red line boundary</b>
EWF01	Post-medieval farmstead/dwelling.	Low	15 m
EWF02	Medieval road.	Low	Within
EWF03	Medieval strip field agriculture.	Low	Within
EWF04	Post-medieval limekiln.	Low	45 m
EWF05	Post-medieval windmill.	Medium	100 m
EWF06	Early 19 <sup>th</sup> century cottage.	Low	5 m
EWF07	RAF Angle Airfield runways.	Medium/Low	Within
EWF08	RAF Angle Airfield building.	Low	Within
EWF09	RAF Angle Airfield dispersal pen.	Low	Within
EWF10	RAF Angle Airfield dispersal pen.	Low	10 m
EWF11	RAF Angle Airfield building complex.	Low	Within
EWF12	Enclosure.	Negligible	Within
EWF13	WW2 radar station.	Low	Within
EWF14	RAF Angle Airfield boundary.	Low	Within
EWF15	WW2 enclosures.	Low	Within
EWF16	WW2 buildings.	Low	Within
EWF17	Bronze Age barrows.	Low	260 m
EWF18	Prehistoric enclosures.	Medium	8 m
EWF19	Bronze Age barrow.	Medium	30 m
EWF20	Prehistoric ditch.	Low	75 m
EWF21	Bronze Age barrow.	Medium	130 m

Project specific reference no.	Description	Value	Distance to red line boundary
EWF22	Prehistoric cooking pit.	Medium	55 m
EWF23	WW2 domestic site.	Low	Within
EWF24	Curvilinear feature/enclosure.	Medium	Within
EWF25	Linear feature/geology.	Low	Within

## 23.6 Potential Environmental Effects

### 23.6.1 Construction

23.6.1.1 The significance of effect arising from construction will be based on consideration of the magnitude of the impact and the significance, condition and reliability of the individual receptors effected. Potential effects of the proposed development include physical impacts upon standing and buried historic receptors and impacts upon historic receptors as a result of changes to their settings. The assessment is based on the realistic worst-case scenario for the proposed development.

23.6.1.2 Construction techniques have the greatest potential to impact upon the identified receptors within the proposed development area. Details of the onshore construction methodology is provided in Chapter 4: Proposed Development Description. It is anticipated that construction compounds, HDD compounds, a 30 m wide cable construction corridor, and the substation location, will initially be stripped of topsoil and other overlying deposits. Within the drilling compounds and along the onshore cable corridor, machine excavations will be carried out for drilling pits, cable trenches and joint bays, and within the onshore substation location levelling works, foundation and service excavations are also likely. Any such ground-breaking activities have the potential to disturb or destroy historic environment features, both above and below ground. Other construction activities, such as vehicle movements, soil and overburden storage and landscaping also have the potential to cause direct impacts on the historic features. Such impacts are likely to be permanent.

23.6.1.3 Construction activity also has the potential to impact upon the setting of designated receptors, through removing or affecting the condition of elements that contribute to the setting of these receptors and affecting access to and visibility to and from these receptors. Changes to the elements are permanent impacts, but these appear rare. Changes to access and visibility are temporary impacts, lasting only as long as construction works are in progress.

23.6.1.4 Within the area of the proposed development, the assessment has identified 32 potential instances where historic environment receptors would be directly impacted upon by the proposed development, as well as an impact upon general archaeological potential, through construction methods outlined above.

#### Negligible Effects

23.6.1.5 There are a small number of recorded receptors that should remain either unaffected by proposed works, or of negligible importance. These include:

- Findspot PRN 35014 – this refers to a feature that has since been removed from the development area,
- Enclosure EWF12 – the site visit indicated that this potential feature was likely natural in origin, and therefore of negligible archaeological value.
- Cross PRN 7931 – a reassessment of his potential feature indicates it refers to a local road junction and is therefore of negligible archaeological value.
- Cross PRN 7932 - a reassessment of his potential feature indicates it refers to a local road junction and is therefore of negligible archaeological value.

23.6.1.6 In summary, the impact on these receptors is considered to be **negligible**, which is not significant in EIA terms.

#### *Additional Mitigation and Residual Effect*

23.6.1.7 None of effects identified above are major or moderate adverse (significant in EIA terms). Therefore, no additional mitigation is required to reduce the significance to non-significant in EIA terms and the significance of residual effects remain as detailed above.

#### *Minor Adverse Effects (Low Value)*

23.6.1.8 A slight adverse level of impact has been identified for 15 receptors, which themselves are considered to be of low value. Their value is ascribed because either they are a commonplace and well understood feature of the historic environment, a poorly preserved or greatly disturbed feature, or of limited archaeological interest. The impacts upon these features may vary, but these are outlined below. The following list comprises the recorded receptors, and is laid out topographically from west (landfall sites) to east (Pembroke Power Station):

- Sea Defences PRN 35015 – potential cable trenching through this feature could result in a section of the sea defence wall being removed. This is however likely to be in an area of modern walling of limited interest, and only a small section of the overall feature.
- Brickworks PRN 33855 – specific features relating to brick-working activity have not been positively identified in this area, no surface remains survive suggesting any related features are unlikely to be substantial, and any features exposed within the cable route corridor may comprise simple extraction pits of limited value.
- Cottage EWF06 – the main value of this receptor is held within the structural remains of the cottages, which will lie outside the proposed development area. Associated remains, such as sub-surface remains of former enclosure and outbuildings, may extend into the development area to be exposed, damaged or destroyed through construction activities, but these will be of limited value.
- Field Boundary PRN 107739 – an extant field boundary, therefore cable trenching through this area could remove a section of this boundary. This is however of limited archaeological interest, with the majority of the receptor lying outside proposed development boundaries.
- Boundary EWF14 – a removed boundary, but sub-surface evidence may exist that could be exposed, damaged or destroyed by the cable route corridor that crosses this feature. Only a small section of the overall length of this boundary would be affected, however.

- Road EWF02 – there is the potential for sub-surface evidence of this former road to survive that could be exposed, damaged or destroyed within the cable trench corridor, but subsequent developments (airfield construction, agricultural ploughing) is likely to have impacted on potential remains.
- Dispersal Pens EWF09 & EWF10 – no surface features remains, but there is the potential for sub-surface remains of these features to be exposed, damaged or destroyed within the onshore cable corridor. Sub-surface evidence of these features is however anticipated to be minimal.
- Airfield Buildings EWF11 - no surface features remains, but there is the potential for sub-surface remains of these features to be exposed, damaged or destroyed within the onshore cable corridor. The site appears to have been comprehensively cleared, and sub-surface evidence is anticipated to be of limited value, however associated evidence could be contained within the local field banking.
- Radar Station EWF13 – the focus of interest and value for this site lies outside the Proposed Development. There is the potential for associated features to be exposed, damaged or destroyed within the onshore cable corridor, but these are likely to be of limited value.
- Buildings EWF16 – no surface remains exists, but there is the potential for sub-surface features to exist that could be exposed, damaged or destroyed within the onshore cable corridor and construction compound. It is anticipated however that sub-surface features are likely to be minimal, and of limited archaeological value.
- Enclosures EWF15 – no surface remains exists, but there is the potential for sub-surface features to exist that could be exposed, damaged or destroyed within the onshore cable corridor. It is anticipated however that sub-surface features are likely to be of limited archaeological value due to their likely modern date.
- Boundary Ditch EWF20 – this feature was identified outside the Proposed Development, but its alignment suggested it could extend into the onshore cable corridor, and therefore be exposed, damaged or destroyed. It is likely however the majority of this feature will remain outside the onshore cable corridor.
- Strip Fields EWF03 – This covers a relatively extensive area through which the onshore cable corridor will travel, therefore it has the potential to expose, damage or destroy associated remains. The nature of this feature however suggests any sub-surface remains are likely to be ephemeral in nature and contain limited archaeological information.
- House / farmstead EWF01 – this site lies on the edge of the proposed onshore substation location, and although no surface traces remain there is the potential for sub-surface remains to be exposed, damaged or destroyed through construction activity. However, the lack of any surface evidence of the site, and a lack of evidence from geotechnical excavations in this area, suggest sub-surface remains may be minimal at best.

23.6.1.9 In summary, the impact of proposed development on these sites is considered to be **minor adverse**, which is not significant in EIA terms.

*Additional Mitigation and Residual Effect*

23.6.1.10 None of the impacts identified above are major or moderate adverse (significant in EIA terms). Therefore, no additional mitigation is required to reduce the significance to non-significant in EIA terms and the significance of residual effects remain as detailed above. However, they remain of some archaeological interest, but potential impact could be dealt with by standard mitigation measures during the construction phase, such as through the archaeological monitoring of ground-disturbing works (archaeological watching brief).

*Minor Adverse Effects (Medium Value)*

23.6.1.11 A slight adverse level of impact has been identified for 2 receptors, which themselves are considered to be of medium value. Their value is ascribed because either they are less commonplace within the local historic environment, positive remains have been identified, or they are of greater archaeological interest. The impacts upon these features may vary, but these are outlined below. The following list comprises the recorded receptors, and is laid out topographically from west (landfall sites) to east (Pembroke Power Station):

- Runway EWF07 – sub-surface, and some surface remains of the former runways are known, and the runways are an important feature of the former RAF Angle. The onshore cable corridor crosses the line of these runways at one point, and therefore could expose, damage or destroy known remains in this area. It is anticipated however that such remains will likely be the hardcore base to the runway, and much of the runway route will remain outside the Proposed Development.
- Windmill EWF05 - no surface traces remain, but sub-surface remains of this feature would be of greater archaeological value, and there is the potential for construction activity to expose, damage or destroy any sub-surface remains. However, the presence and location of this feature is unknown.

23.6.1.12 In summary, the impact of proposed development on these sites is considered to be **minor adverse**, which is not significant in EIA terms.

*Additional Mitigation and Residual Effect*

23.6.1.13 None of the impacts identified above are major or moderate adverse (significant in EIA terms). Therefore, no additional mitigation is required to reduce the significance to non-significant in EIA terms and the significance of residual effects remain as detailed above. However, they remain sites of archaeological interest, but potential impact could be dealt with by standard mitigation measures during the construction phase, such as through the archaeological monitoring of ground-disturbing works (archaeological watching brief).

*Minor Adverse Effects (High Value)*

23.6.1.14 A slight to moderate adverse level of impact has initially been identified for 3 receptors, which themselves are considered to be of high value. This impact is however based on there being no mitigation in place, but impact is reduced to a negligible adverse impact through standard mitigation incorporated within the construction phase. The value of these receptors is ascribed because either they are unusual features within the local historic environment, well-preserved remains have been identified, or they are of significant archaeological interest. The impacts upon these features may vary, but these are outlined below, as is the standard incorporated mitigation. The following list comprises the recorded receptors, and is laid out topographically from west (landfall sites) to east (Pembroke Power Station):

- Pillbox PRN 101392 – A well-preserved extant structure that has previously been recommended for Scheduled status (which it does not currently have). It lies on the edge of the Proposed Development, however, by adequately highlighting this as a protected structure on construction plans, protective fencing of the structure, with such protections laid out in the CEMP, the structure should remain largely unaffected, although there remains the potential for associated features of lesser importance to extend within the area of construction activity.
- Pillbox PRN 101389 – A well-preserved extant structure that has previously been recommended for Scheduled status (which it does not currently have). The structure is deliberately built into the field boundary and is therefore not immediately apparent. It lies on the edge of the Proposed Development, however, by adequately highlighting this as a protected structure on construction plans, protective fencing of the structure, with such protections laid out in the CEMP, the structure should remain largely unaffected, although there remains the potential for associated features of lesser importance to extend within the area of construction activity.
- Defended enclosure PRN 3244 – similar features are often considered of high value, although this feature has clearly been denuded through regular ploughing. The site lies outside the Proposed Development, and by adequately highlighting this as a protected feature on construction plans, protective fencing of the feature, with such protections laid out in the CEMP, the feature should remain largely unaffected, although there remains the potential for associated features of lesser importance to extend within the area of construction activity.

23.6.1.15 In summary, the impact of proposed development on these sites is considered to be **minor adverse**, which is not significant in EIA terms.

#### Additional Mitigation and Residual Effect

23.6.1.16 None of the impacts identified above are major or moderate adverse (significant in EIA terms). Therefore, no additional mitigation is required to reduce the significance to non-significant in EIA terms and the significance of residual effects remain as detailed above.

23.6.1.17 Standard mitigation measures, including the archaeological monitoring of ground-disturbing works (archaeological watching brief) would also help to ensure these features remain protected.

#### Minor Adverse Effect (Moderate Impact)

23.6.1.18 A moderate adverse level of impact has been identified for 5 receptors, which themselves are considered to be of low value. Their value is ascribed because either they are a commonplace and well understood feature of the historic environment, a poorly preserved or greatly disturbed feature, or of limited archaeological interest. The impacts upon these features may vary, but these are outlined below. The following list comprises the recorded receptors, and is laid out topographically from west (landfall sites) to east (Pembroke Power Station):

- Second World War domestic site (EWF23) – this site lies within the onshore cable corridor, and it is likely any remains of the site will be damaged or destroyed through construction activity. However, no above ground evidence survives, and sub-surface remains are likely to be of limited archaeological interest.
- Anti-Aircraft Battery PRN 102553 - this site lies within the onshore cable corridor, and it is likely any remains of the site will be damaged or destroyed through construction activity. However, no above ground evidence survives, and subsequent agricultural development of the site suggest the survival of sub-surface features of value may be limited.

- Building EWF08 - this site lies within the onshore cable corridor, and it is likely any remains of the site will be damaged or destroyed through construction activity. Surface remains have however clearly been cleared, and sub-surface evidence appears minimal, although artefacts may survive within the cleared remains.
- Linear feature EWF24 – this sub—surface feature likely extends across the onshore cable corridor, therefore it is likely construction activity will expose, damage or destroy elements of it. The nature of the feature is not fully understood, however.
- Linear feature EWF25 - this sub—surface feature also likely extends across the onshore cable corridor, and potentially into the onshore substation location, therefore it is likely construction activity will expose, damage or destroy elements of it. It has been suggested however that this feature may be geological, rather than archaeological, in nature.

23.6.1.19 In summary, the impact of proposed development on these sites is considered to be **minor adverse**, which is not significant in EIA terms.

#### Additional Mitigation and Residual Effect

23.6.1.20 None of the impacts identified above are major or moderate adverse (significant in EIA terms). Therefore, no additional mitigation is required to reduce the significance to non-significant in EIA terms and the significance of residual effects remain as detailed above. However, they remain sites of archaeological interest, but potential impact could be dealt with by standard mitigation measures during the construction phase, such as through the archaeological monitoring of ground-disturbing works (archaeological watching brief).

#### Minor Adverse Effect (Setting)

23.6.1.21 A slight adverse level of impact has been identified on the setting of 11 designated receptors, of high value. The receptors include Scheduled Monuments, Listed Buildings, Historic Landscape Character Areas and Conservation Area. The impacts upon these features may vary, but these are outlined below. The following list comprises the recorded receptors, and is laid out topographically from west (landfall sites) to east (Pembroke Power Station):

- Chapel Bay Fort PE333 / LB 17165 – A Scheduled Monument and Grade II listed building on high ground to the north of Angle. Construction activity will affect views to the site from the south, and views from the site, but these are not considered significant views. This will be a temporary impact.
- West Angle Bay early medieval settlement PE554 – A Scheduled Monument lying on the south side of West Angle Bay. Construction activity will affect views of the receptor in its setting, and views from the receptor either southward across rising ground, or northeast across West Angle Bay. These impacts will be temporary. Due to proximity, there is a potential for contemporary activity associated with the cemetery, which would form part of its original setting, to extend into the Proposed Development, which could then be damaged or destroyed through construction activity. This would be a permanent impact, but the presence of such activity is as yet unknown.

- Devil's Quoit Burial Chamber PE020 – A Scheduled Monument lying in relatively close proximity to the Proposed Development as it passes Kilpaison Burrows. Visibility of the monument from the north will be affected during construction activity. This will be a temporary impact. Due to proximity, there is the potential for contemporary associated remains, which would form part of its original setting, to extend into the proposed development area. The loose sandy nature of the surrounding soil also raises the potential for vibration from heavy construction activity in the locality to disturb elements of this monument. These impacts would be permanent, but such impacts should be addressed through standard mitigation allowing for the consideration of construction techniques included within the CEMP for activities within this area.
- Gravel Bay anti-aircraft battery PE494 – A Scheduled Monument lying to the south of the proposed development as it passes Broomhill Cottage. Views towards the monument will be affected during construction, and the establishment of a construction compound to the north. This may also affect access to the site via a public footpath. This will be a temporary impact. Contemporary activity associated with the site is recorded alongside the road to the east, with the possibility that associated remains extended into the Proposed Development area, see EWF15 and EWF16, which would form part of its original setting. This would be a permanent impact.
- Thorne Island Fort LB 17169 – A Grade II listed building lying off West Angle Bay. Construction activity within West Angle Bay will affect views from the site, and more significantly affect views of the building from the bay (dependent on landfall location). This impact will be temporary.
- Rocket Cart House and Lookout Tower 17166 & 17167 – A pair of Grade II listed buildings lying to the north of the proposed development area. Important views from the building south towards the coast will be affected during construction works. This will be a temporary impact.
- Historic Landscape Character Area 342 Angle – Part of the Milford Haven Landscape of Outstanding Historic Interest, this area lies around the village of Angle, extending as far as West Angle Bay. Construction works pass through this area, affecting some views and access points, although landscape components should remain unchanged. This will be a temporary impact.
- Historic Landscape Character Area 341 Rhoscrowther – A large agricultural area encompassing that majority of the Proposed Development. Construction work will remove some small sections of field boundaries, although the enclosure pattern will remain unaltered. Associated archaeological remains may be affected, although known sites of significance will be avoided. Some viewpoints and access points may be affected, although no significant viewpoints have been identified in the development area. This will be a temporary impact.
- Historic Landscape Character Area 343 Angle Airfield – An area encompassing the World War 2 airfield. There is the potential for elements that formed part of the airfield to be damaged or destroyed through construction works. This would be a permanent impact, but these affected elements would be below-ground remains, and visible characteristics of the area should remain unaltered. Some access points and viewpoints would be affected during construction works, but no significant viewpoints have been identified in the development area. This will be a temporary impact.

- Angle Conservation Area – A Conservation Area that is focussed on the settlement of Angle but includes surrounding farmland and the area around West Angle Bay. West Angle car park and the adjacent field are highlighted as important open spaces, and a roadside hedgerow and walling are also highlighted as noted features. Construction work could extend through these features, but they will be restored to their previous appearance after construction. Four identified viewpoints would be affected during construction, limiting access and visibility. This will be a temporary impact.

23.6.1.22 In summary, due to the temporary nature, or uncertainty over permanent nature, the impact of proposed development on these sites is considered to be **minor adverse**, which is not significant in EIA terms.

#### Additional Mitigation and Residual Effect

23.6.1.23 None of the impacts identified above are major or moderate adverse (significant in EIA terms). Therefore, no additional mitigation is required to reduce the significance to non-significant in EIA terms and the significance of residual effects remain as detailed above.

23.6.1.24 As it lies a short distance away from the development area, particular attention should be drawn to work in the vicinity of Devil's Quoit Burial Chamber PE020. As part of the standard mitigation, appropriate construction techniques should be adopted as part of the CEMP to reduce any potential disturbance of the receptor arising from the loose nature of the surrounding material.

#### Moderate Adverse Effect

23.6.1.25 A moderate adverse level of impact has been identified for four receptors, which themselves are considered to be of medium value. Their value is ascribed because either they are less commonplace within the local historic environment, positive remains have been identified, or they are of greater archaeological interest. The impacts upon these features may vary, but these are outlined below. The following list comprises the recorded receptors, and is laid out topographically from west (landfall sites) to east (Pembroke Power Station):

- Anti-Aircraft Battery PRN 44603 – some standing wall remains, and surface evidence of this complex survive. These remains lie outside the Proposed Development area, but very close to the boundary, however standard mitigation measures should ensure their protection. There are also an indication of associated sub-surface remains extending into the onshore cable corridor however, which could be exposed, damaged or destroyed through construction activity.
- Enclosure EWF18 / Bronze Age Barrow EWF19 – sub-surface features that have been positively identified as features of likely prehistoric date, with an indication that associated activity could extend into the onshore cable corridor, although this has not yet been proven. There is the potential therefore for construction activity to expose, damage or destroy any sub-surface remains.
- Round barrows PRN 48371 – similar features are often considered of high value, although these barrows have clearly been both excavated and denuded as they are no longer visible, therefore their value has been compromised. There is however the potential for important sub-surface remains of these barrows to survive, which could be exposed, damaged or destroyed through construction activity. The exact location of these features is unknown, however.

- Archaeological potential – a general potential for archaeological remains, which varies by likelihood and period throughout the length of the proposed development area, is highlighted in section 24.5.2.8. The ultimate value of potential archaeological will vary, as will the potential impact upon them, however for the purpose of assessment within EIA terms the general archaeological potential is given a medium value, with a moderate adverse impact.

23.6.1.26 In summary, the impact of proposed development on these sites is considered to be of **moderate adverse** effect, and therefore potentially significant in EIA terms.

#### Additional Mitigation and Residual Effect

23.6.1.27 Due to the predicted moderate adverse (significant) effect of construction activity, additional, project specific mitigation will need to be applied.

23.6.1.28 For all sites potential impact could be reduced through an improved understanding of the likely location and layout of archaeological remains. Similar schemes have benefitted from geophysical surveying as an initial investigation of potential archaeological remains. Some areas along the route have previously been surveyed, and these need not be resurveyed, but for the remainder of the development area geophysical survey should highlight features of potential archaeological interest, narrowing down broad areas of archaeological potential, and potentially identifying surviving remains of known archaeological sites.

23.6.1.29 Dependent therefore on the presence or absence of potential remains, further mitigation measures could then be carried out. It may be possible to avoid areas of archaeological remains within the Proposed Development through construction design. The results of the geophysical survey may require testing through intrusive archaeological evaluation. Trenched archaeological evaluation should test the veracity of the geophysical survey results, potentially allowing the nature and extent of archaeological features to be identified.

23.6.1.30 Sufficient information should be gained through survey and evaluation to inform whether archaeological features required preservation within the final construction design, micro-siting of the cable route, or preservation through record (archaeological excavation).

23.6.1.31 The application of these additional mitigation would potentially reduce the level of impact to negligible, resulting in a **minor adverse** effect, which is not significant in EIA terms.

### **23.6.2 Operational Phase**

23.6.2.1 Potential effects of the proposed development during the operational phase largely comprise impacts to the setting of surrounding designated historic environment receptors through visible structures erected during the operational life of the scheme, namely the substation compound. The final design of the substation compound has not been finalised, but the assessment is based on the maximum parameters for the proposed development. No further impacts from the functioning of the proposed development have been identified.

23.6.2.2 The substation compound is anticipated to contain a building and a variety of electrical equipment, contained within a fenced compound, with appropriate lighting and security features. Precise details of the layout and appearance of the compound are contained in Chapter 4: Proposed Development Description.

23.6.2.3 Impacts to the setting will last as long as the substation compound is required. Due to the anticipated life of the proposed development of at least 25 years this is considered to be a permanent impact.

23.6.2.4 The assessment has identified 4 potential instances where the settings of designated historic environment receptors would be impacted upon by the proposed development.

*Moderate Adverse Effect (Setting)*

23.6.2.5 A slight adverse level of impact has been identified on the setting of 4 designated receptors, of high value. The receptors include two Scheduled Monuments, a listed building and a Historic Landscape Character Area, and include:

- Corston Beacon Round Barrow PE059 – A prominent Bronze Age round barrow alongside the B4320 to the south of the substation location. Significant views are largely associated with visible contemporary barrows remains in the vicinity, which does not at present include views towards the proposed onshore substation, but the potential for barrows (PRN 48371) in the Lambeeth Farm area suggests the original setting of the monument may have incorporated views in this direction. The proposed onshore substation will be visible from this receptor. The onshore substation will increase the sense of modern industrial development in views in this direction, although this is likely to a minor increase on the existing views incorporating Pembroke Power Station and the oil refinery to the rear. The onshore substation will affect some views towards the receptor from public footpaths around the northern edge of the development. The receptor is however an indistinct feature of the landscape in these views. Neither this view or construction activity will affect the relationship with the prehistoric ridgeway, nor will it affect inter-visibility with known contemporary barrow assets in the vicinity
- Wallaston Round Barrows PE064 - A collection of Bronze Age round barrows to the southeast of Wallaston. The impact upon these receptors will be identical to that of PE059.
- Somerton Farmhouse LB 6598 – A grade II listed farmhouse. The positioning of the farmhouse suggests views north represent a significant view in its original setting. This view will incorporate the proposed onshore substation, increasing the sense of modern industrial development in this view, albeit at a distance. Other aspects of the setting - the main views of the house, its association with surrounding farmland, access from the main road, associated outbuildings, will remain unaffected.
- Historic Landscape Character Area 341 Rhoscrowther – A character area forming part of the Milford Haven Waterway Landscape of Outstanding Historic Interest. The onshore substation location will be taken out of agricultural use, the main characteristic of this HLCA. The establishment of the substation may also be seen as an expansion of the neighbouring HLCA of Pembroke Power Station, and a reduction in the area of this HLCA, but it will be a very small reduction of this large area.

23.6.2.6 In summary, although impacts are minor, the high value of these receptors means the impact on these receptors is considered to be of **moderate adverse** effect, and therefore significant in EIA terms.

*Additional Mitigation and Residual Effect*

23.6.2.7 Due to the predicted moderate adverse (significant) effect of construction activity, additional, project specific mitigation will need to be applied.

23.6.2.8 As the potential impact is largely a visual one, when viewed from the south, mitigation measures should be concentrated on the final design scheme of the substation appearance and layout to reduce the visual impact of the complex. Such measures could include keeping the height of the substation to a minimum, a choice of materials sympathetic to the locality, introducing a green element to reduce visual impact when viewed from the south, and keeping lighting to a minimum. A subsequent reduction in the visual impact of the substation would potentially reduce the level of impact to negligible, resulting in a **minor adverse** effect, which is not significant in EIA terms.

### **23.6.3 Decommissioning**

23.6.3.1 The approach to decommissioning is laid out in Chapter 4: Proposed Development Description. It is anticipated that, where buried, the cable will remain in situ. This will have no further impact upon the archaeological and cultural heritage resource.

23.6.3.2 Above ground elements of the substation will be removed, and if required foundations will also be removed. As foundation removal includes ground disturbance, there is potential for sub-surface archaeological remains to be disturbed, but this is unlikely to be a significant impact above and beyond what may have occurred during the initial construction phase. The removal of the visual elements of the substation is likely to reverse the slight adverse impact outlined in Section 24.6.2.5.

### **23.6.4 Effects on Human Health and Population**

23.6.4.1 There will be no effects on population or human health in relation to the Historic Environment.

## **23.7 Additional Mitigation**

23.7.1.1 Standard mitigation incorporated into the scheme is outlined in Section 23.4.6. Additional mitigation is outlined below.

### **23.7.2 Construction**

23.7.2.1 Similar schemes have benefitted from geophysical surveying as an initial investigation of potential archaeological remains prior to construction work commencing. Some areas along the route have previously been surveyed, and these need not be resurveyed, but for the remainder of the development area geophysical survey should highlight features of potential archaeological interest, narrowing down broad areas of archaeological potential, and potentially identifying surviving remains of known archaeological sites. It may therefore be possible to avoid areas of archaeological interest within the construction design and micro-siting of the cable route.

23.7.2.2 The results of the geophysical survey may require testing through intrusive archaeological evaluation. This involves machine-excavating trenches, subsequently hand-cleaned, investigated and recorded, across potential archaeological features or areas of potential archaeological interest to a level where the presence or absence of archaeological remains can be identified. Trenched archaeological evaluation should test the veracity of the geophysical survey results, potentially allowing the nature and extent of archaeological features to be identified.

23.7.2.3 Information from the survey and evaluation should provide detail to allow for further selective mitigation, such as alternative construction methods, micro-siting of the cable route and construction activity and/or preservation of the archaeological resource through record via archaeological excavation.

### **23.7.3 Operation**

- 23.7.3.1 Mitigation to reduce impacts upon the setting of identified receptors derived from the operational life of the Proposed Development will likely need to be carried out prior to the construction phase. Such mitigation is largely to be included in the final design, appearance and layout of the substation. If the visual impact of the substation is reduced when viewed from the south, then impacts to receptors outlined in 23.6.2.5 should be reduced.
- 23.7.3.2 Further mitigation of effects resulting from changes to the setting of historic receptors is not usually possible during the operational phase, and therefore no further mitigation measures are proposed.

### **23.7.4 Decommissioning**

- 23.7.4.1 All significant physical impacts would have occurred during the construction phase. No mitigation measures are proposed.

## **23.8 Inter-Related Effects**

- 23.8.1.1 Consideration has been given to the assessment of impacts arising from construction, operation and decommissioning of the Project impacting on receptors addressed in different aspects of the Project, which may potentially further contribute to the significance of effect.
- 23.8.1.2 Within the Onshore Archaeological and Cultural Heritage assessment the Historic Landscape Character Area 341 Rhoscrowther is the only receptor to be affected during both construction and operational phases of the Proposed Development. However, impacts during the construction phase are predominantly temporary in nature, and do not increase the significance of effect beyond what is assessed in the operational phase alone.
- 23.8.1.3 In terms of different aspects of the Project, clearly the archaeological and cultural heritage resource straddles both the onshore and offshore areas. The offshore resource is assessed in Chapter 14: Offshore Archaeology and Cultural Heritage Resource. No specific impacts have been identified however that would further impact upon receptors assessed in the Onshore Archaeology and Cultural Heritage and vice versa.
- 23.8.1.4 There is a potential visual impact on archaeological and cultural heritage receptors from the wind turbines themselves. This visual impact is assessed in Chapter 13: Seascape and Visual Impact and Chapter 21: Landscape and Visual Impact. No specific impacts have been identified however that would further impact upon receptors assessed in the Onshore Archaeology and Cultural Heritage and vice versa.

## **23.9 Cumulative Assessment**

- 23.9.1.1 A Cumulative Effects Assessment (CEA) has been made based on existing and proposed developments in the Study Area (Chapter 30: Cumulative Effects). The approach to the CEA is described in Chapter 30: Cumulative Effects. Cumulative effects are defined as those effects on a receptor that may arise when the development is considered together with other reasonably foreseeable projects.
- 23.9.1.2 In this case there is a potential cumulative impact when the Proposed Development is considered alongside a similar onshore cable route to convertor station being undertaken by Greenlink Interconnector Ltd.

### **23.9.2 Construction**

- 23.9.2.1 The construction methodology for the cable route is assumed to be similar for both schemes. Four receptors are identified that may potential be affected by construction activity related to both schemes.
- 23.9.2.2 Devil's Quoit Burial Chamber PE020, a high value sites, lies in close proximity to both schemes. A temporary adverse impact upon the setting of this receptor is identified for both schemes. However, the temporary nature of the impacts, and likely time difference between them, will result in no cumulative increase in the significance of effect.
- 23.9.2.3 Prehistoric enclosures EWF18 and Bronze Age barrow EWF19, medium value receptors, were identified within the preliminary assessments associated with the Greenlink Scheme. EWF19 is to be preserved in situ within the Greenlink development program, therefore there will be no cumulative increase in effect. A moderate adverse effect was identified for EWF18. There is a likelihood that this feature extends into the Proposed Development boundaries, with the potential therefore for a greater proportion of the receptor to be adversely impacted upon. However, this potential cumulative increase in impact and subsequently effect is reduced through mitigation to be adopted within the Greenlink scheme, and therefore there is unlikely to be an increase in the impact and effect outlined in section 23.6.1.25.
- 23.9.2.4 Prehistoric ditch EWF20, of low value, lies within the Greenlink scheme, the impact assessed as high adverse (equivalent to Major adverse in the current assessment parameters). There is the potential for this to extend into the Proposed Development area, but given the likely area affected this is assessed as a minor effect. As the main impacts would have been dealt with within the Greenlink scheme, this further minor effect is not considered to cumulatively raise the level of effect.

### **23.9.3 Operation**

- 23.9.3.1 Archaeological and Cultural Heritage assessment as part of the Greenlink project has assessed the development of the Greenlink convertor station to have a negligible impact on Dry Burrows Round Barrows PE060, Orierton registered Park & Garden PGW (Dy) 38 (PEM) and Enclosure and Earthworks at Lewiston Hall PE400. These sites should remain unaffected by the current Proposed Development, and therefore there will be no cumulative increase in effect.
- 23.9.3.2 The Greenlink assessment identified a 'low' impact (equivalent to slight within these assessment parameters) for the Milford Haven Waterway Landscape of Outstanding Historic Interest HLW (D) 3 (specifically HLCA 431 Rhoscrowther), Wallaston Round Barrows PE064, and Defensible Barracks PE379. The Greenlink assessment considered the resultant significance of effect to be *minor adverse*.
- 23.9.3.3 The potential impact upon HLCA 431 Rhoscrowther during the operational phase of the current Proposed Development results from the change of use from an agricultural area, to an industrial one, effectively reducing the size of the HLCA. However, the potential area assessed includes sufficient size to incorporate the development of both schemes, therefore there will be no cumulative change to effect.
- 23.9.3.4 The visible structural elements of both schemes would form part of an increased modern industrial element within the views from Wallaston Round Barrows PE064, and the possibility that this may affect inter-visibility between the Wallaston Barrows and the possible barrows near Lambeeth Farm. This does not alter the potential impacts of this scheme alone however, as the presence and location of barrows near Lambeeth is unconfirmed, and main views and elements of the setting remain unaffected by the Proposed Development, therefore there will be no cumulative change to effect.

- 23.9.3.5 The Proposed Development is not considered to have any additional cumulative impact upon the Defensible Barracks PE379.

### **23.9.4 Decommissioning**

- 23.9.4.1 No cumulative impact from decommissioning is anticipated.

## **23.10 Summary**

- 23.10.1.1 This assessment has identified potential impacts on up to 47 receptors, of which 17 are considered high value sites, 6 medium value sites, 20 low value sites, and 4 of negligible value.
- 23.10.1.2 Standard mitigation has included regular consultation to avoid known sites of significance, and monitoring of geotechnical works. Further standard mitigation will include identification and protection of archaeological sites where practicable within the construction programme, to be included within the CEMP, and an archaeological watching brief during groundworks.
- 23.10.1.3 During the construction phase a **negligible** effect has been identified for four receptors.
- 23.10.1.4 A negligible to slight impact, resulting in a **minor adverse** effect, has been identified for 15 receptors of low value, 2 receptors of medium value and 3 receptors of high value. With standard mitigation measures in place these effects are not considered significant in the context of EIA regulations.
- 23.10.1.5 A moderate impact, but still resulting in a **minor adverse** effect, has been identified for a further 5 receptors of low value. With standard mitigation measures in place these effects are not considered significant in the context of EIA regulations.
- 23.10.1.6 A slight impact, largely of a temporary nature, resulting in a **minor adverse** effect has been identified on the setting of 11 receptors of high value. With standard mitigation measures in place these effects are not considered significant in the context of EIA regulations.
- 23.10.1.7 A moderate impact, resulting in a **moderate adverse** effect, has been identified for four receptors of medium value. A moderate adverse impact is considered significant, and additional mitigation will need to be applied. Such mitigation could take the form of geophysical surveying, and subsequent trenched archaeological evaluation, which should provide sufficient information to either allow the effects to be reduced through standard mitigation, or to inform whether any further additional mitigation would be required to reduce effects. Such additional mitigation should result in a **minor adverse** effect.
- 23.10.1.8 During the operational phase a slight impact, resulting in a **moderate adverse** effect, has been identified on the setting of four receptors of high value. A moderate adverse impact is considered significant, and additional mitigation will need to be applied. Such mitigation relates specifically to the proposed substation, and should include considerations of size, materials, distribution, lighting and screening in the final design. This should result in a **minor adverse** effect.

**Table 23.9 – Summary of Effects.**

Description of Effect	Significance of Potential Effect (assuming standard mitigation implemented)		Additional Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
<b>Construction</b>					
Construction activity around PRNs 7931, 7932, 35014 and EWF12	Negligible	-	None.	Negligible	-
Ground-breaking works around low value PRNs 33855, 35015, 102553, 107739, EWF01, EWF02, EWF03 EWF06, EWF08, EWF09, EWF10, EWF11, EWF13, EWF14, EWF15, EWF16, EWF20, EWF23, EWF24 and EWF25	Minor	Adverse	None	Minor	-
Ground-breaking works around medium value EWF05 and EWF07	Minor	Adverse	None	Minor	Adverse
Ground-breaking works and general construction activity around high value PRNs 3244, 101389 and 101392.	Minor	Adverse	None	Minor	Adverse
Visual impact and disruption in access to sites and viewpoints through	Minor	Adverse	None	Minor	Adverse

Description of Effect	Significance of Potential Effect (assuming standard mitigation implemented)		Additional Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
construction activity, thereby temporarily affecting the setting of high value sites PE020, PE333, PE494, PE554, LB 17166, LB 17167, LB 17169, HLCA 341, HLCA 342, HLCA 343 and Angle Conservation Area.					
Ground-breaking works and general construction activity around medium value PRNs 44603, 48371, EWF18, EWF19 and Archaeological Potential.	Moderate	Adverse	Preliminary geophysical survey potentially followed by trenched archaeological evaluation.  Subsequently standard mitigation may suffice, or additional mitigation in the form of archaeological excavation, may be required.	Minor	Adverse
<b>Operation</b>					
Visual impacts of the substation development on the setting of high value sites PE059, PE064, LB 6598 and HLCA 341.	Moderate	Adverse	Considerations of size, materials, distribution, lighting and screening in the final design of the substation.	Minor	Adverse
<b>Decommissioning</b>					
N/A					

**Table 23.10 – Summary of Cumulative Effects.**

Receptor	Effect	Cumulative Developments	Significance of Cumulative Effect	
			Significance	Beneficial/ Adverse
N/A				

## 23.11 References

### Literature:

ClfA. (2014). *Standard and guidance for historic environment desk-based assessment*. Available at: [http://www.archaeologists.net/sites/default/files/ClfAS%26GDBA\\_3.pdf](http://www.archaeologists.net/sites/default/files/ClfAS%26GDBA_3.pdf)

Design Manual for Roads and Bridges. (2021). LA 106 Cultural heritage assessment. Available at: <https://standardsforhighways.co.uk/dmrb/>

Poucher, P. (2021). *Project Erebus, Floating Offshore Wind Development, Pembrokeshire: Historic Environment Desk-Based Assessment*. Dyfed Archaeological Trust Report No.2021-57.

Welsh Government/Cadw. (2011). *Conservation Principles*. Cardiff: Cadw. Available at: <https://cadw.gov.wales/advice-support/historic-assets/scheduled-monuments/best-practice-guidance#>

Welsh Government/Cadw. (2017). *Heritage Impact Assessment in Wales*. Cardiff: Cadw. Available at: <https://cadw.gov.wales/advice-support/historic-assets/scheduled-monuments/best-practice-guidance#>

Welsh Government/Cadw. (2017). *Managing Historic Character in Wales*. Cardiff: Cadw. Available at: <https://cadw.gov.wales/advice-support/historic-assets/scheduled-monuments/best-practice-guidance#>

Welsh Government/Cadw. (2017). *Setting of Historic Assets in Wales*. Cardiff: Cadw. Available at: <https://cadw.gov.wales/advice-support/historic-assets/scheduled-monuments/best-practice-guidance#>

### Legislation:

UK Government (1979). The Ancient Monuments and Archaeological Areas Act. Accessed July 2021. Available at: <https://www.legislation.gov.uk/ukpga/1979/46>

UK Government (1990). Planning (Listed Buildings and Conservation Areas) Act. Accessed July 2021. Available at: <https://www.legislation.gov.uk/ukpga/1990/9/contents>

Welsh Government (2016). *Historic Environment (Wales) Act 2016*. Accessed July 2021. Available at: <http://www.legislation.gov.uk/anaw/2016/4/contents>

Welsh Government (2021). *Planning Policy Wales*. Accessed July 2021. Available at: <https://gov.wales/planning-policy-wales>

Welsh Government (2021). *Future Wales: The National Plan to 2040*. Accessed July 2021. Available at: <https://gov.wales/future-wales-national-plan-2040>

Welsh Government (2017). *Technical Advice Note (TAN) 24: The Historic Environment*. Accessed July 2021. Available at: <https://gov.wales/technical-advice-note-tan-24-historic-environment>