

Portland
energy recovery
facility

Environmental statement



World heritage site

13 Dorset and East Devon Coast World Heritage Site

Introduction

- 13.1 This chapter has been prepared by Terence O'Rourke Ltd on behalf of Powerfuel Portland Ltd and assesses the likely significant effects of the proposed ERF development with respect to impacts on the Dorset and East Devon Coast World Heritage Site (WHS; the Jurassic Coast). This chapter and its associated figures and appendices should be read in conjunction with chapter 2 (site description and development proposals), chapter 7 (cultural heritage), chapter 9 (landscape, seascape and visual effects) and the information submitted in support of the planning application.
- 13.2 The Dorset and East Devon Coast WHS was inscribed by the World Heritage Committee of UNESCO in 2001. It is England's only natural World Heritage Site and covers 2,550 hectares, in eight sections stretching 155 kilometres from Orcombe Point near Exmouth to Studland Bay. The limestone peninsula of Portland represents a significant portion of the WHS. The summary description by UNESCO, which is included in the entry on the National Heritage List for England reads:
- "The cliff exposures along the Dorset and East Devon coast provide an almost continuous sequence of rock formations spanning the Mesozoic Era, or some 185 million years of the earth's history. The area's important fossil sites and classic coastal geomorphologic features have contributed to the study of earth sciences for over 300 years."*
- 13.3 The boundaries of the inscribed area generally follow the boundaries of nationally designated areas such as the Dorset AONB and the West Dorset heritage coast. The WHS covers only the undeveloped sections of coastline, so excludes the urban areas at Exmouth, Sidmouth, Seaton, Lyme Regis, West Bay, Weymouth, Portland Port and Swanage. The closest sections to the main part of the site at Incline Road are Chesil Beach c.1.5 km to the west and East Weare c.1.1 km to the south. The boundaries of the WHS at Portland and the coast to the north are shown on figure 13.1.
- 13.4 The Outstanding Universal Value (OUV) of the WHS is defined in the approved Statement of OUV, which is reproduced in the Jurassic Coast Partnership Plan 2020-2025; Management Framework for the Dorset and East Devon Coast World Heritage Site Appendix 1: Significance and description of the site and its setting (Jurassic Coast Trust, 2020) and is presented at technical appendix M1.

Legislation and policy

Legislation

- 13.5 The WHS is inscribed under the UNESCO Convention Concerning the Protection of the World Cultural and National Heritage 1972, which was ratified by the UK in 1984. As stated in the *Operational Guidelines for the Implementation of the World Heritage Convention* (UNESCO, 2019), "The Convention aims at the identification, protection, conservation, presentation and transmission to future generations of cultural and natural heritage of Outstanding Universal Value" (paragraph 7). As a party to the World Heritage Convention,

the UK has a responsibility to “ensure the identification, nomination, protection, conservation, presentation, and transmission to future generations of the cultural and natural heritage found within [its] territory” (paragraph 15).

13.6 The guidelines state at paragraph 96 that

“Protection and management of World Heritage properties should ensure that their Outstanding Universal Value, including the conditions of integrity and/or authenticity at the time of inscription, are sustained or enhanced over time.”

13.7 In relation to the setting of a WHS, which may be one of the attributes that convey or express OUV, the guidelines refer specifically to the potential to establish buffer zones and note that a broader setting may have a role in supporting the OUV:

“The broader setting may relate to the property’s topography, natural and built environment, and other elements such as infrastructure, land use patterns, spatial organisation, and visual relationships. It may also include related social and cultural practices, economic processes and other intangible dimensions of heritage such as perceptions and associations.” (paragraph 112).

National planning policy and guidance

13.8 WHS are protected through the operation of the planning system, as stated in the Ministry of Housing, Communities and Local Government’s online National Planning Practice Guidance: Historic environment:

“England protects its World Heritage Sites and their settings, including any buffer zones or equivalent, through the statutory designation process and through the planning system.

The Outstanding Universal Value of a World Heritage Site, set out in a Statement of Outstanding Universal Value, indicates its importance as a heritage asset of the highest significance to be taken into account by:

- *the relevant authorities in plan-making, determining planning and related consent applications (including listed building consent, scheduled monument consent, development consent orders and Transport and Works Act Orders)*
- *and, where relevant, by the Secretary of State in determining such cases on appeal or following call -in*

Effective management of World Heritage Sites involves the identification and promotion of positive change that will conserve and enhance their Outstanding Universal Value, authenticity, integrity and with the modification or mitigation of changes which have a negative impact on those values.”

(Paragraph: 026, reference ID: 18a-026-20190723, revision date: 23.07.19.)

13.9 Authority for the protection of the WHS is delegated to the Jurassic Coast Trust, which is also responsible for the producing the management plan (see below).

- 13.10 The NPPG confirms that “*World Heritage Sites⁽¹⁾ are defined as designated heritage assets in the National Planning Policy Framework*” (paragraph: 027, reference ID: 18a-027-20190723, revision date: 23.07.19). As stated in the National Planning Policy Framework (NPPF), heritage assets are an irreplaceable resource, and should be conserved in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of existing and future generations (paragraph 184).
- 13.11 The detailed policies in the NPPF on development management concern the need to clearly define the significance of any potentially affected site or area, the pre-application information requirements for any proposals, including for archaeological field evaluation, and the principles to be considered in determining any proposal for change potentially affecting heritage assets. There is an overall requirement to gather sufficient information to ensure an adequate understanding of the significance of an asset before any decisions affecting its future are made (paragraph 189). The objective is to avoid or minimise conflict between a heritage asset’s conservation and any aspect of the proposal (paragraph 190).
- 13.12 Paragraph 192 states that in determining planning applications:
- “Local planning authorities should take account of:*
- *The desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation;*
 - *The positive contribution that conservation of heritage assets can make to sustainable communities including their economic vitality; and*
 - *The desirability of new development making a positive contribution to local character and distinctiveness.”*
- 13.13 “*Great weight*” should be given to the objective of conserving designated heritage assets, irrespective of the degree of harm, and local planning authorities are required to take the significance of an asset into account when considering proposals (paragraph 193). All harm requires “*clear and convincing justification*” (paragraph 194).
- 13.14 Paragraphs 195 and 196 define the judgement to be made in cases of harm to designated heritage assets, based on public benefits that could outweigh the harm, taking into account the weight to be given to conservation, and whether the conflict between the provision of such public benefits and heritage conservation is necessary. A key concept in the NPPF is proportionality; that the information required, efforts to preserve, and degree of public benefits necessary to justify any harm or loss of an asset should be based on an understanding of its significance.
- 13.15 Concerning the information requirements specifically in relation to WHS, the NPPG states:

¹ Including the Jurassic Coast as the sole natural WHS in England. The relevant statutory consultees include both Historic England and Natural England.

“Applicants proposing change that might affect the Outstanding Universal Value, integrity and, where applicable, authenticity of a World Heritage Site through development within the Site or affecting its setting (including any buffer zone or equivalent) need to submit sufficient information with their applications to enable assessment of the potential impact on Outstanding Universal Value. This may include visual impact assessments, archaeological data and/or historical information. In many cases this will form part of an Environment Statement. Applicants may find it helpful to use the approach set out in the International Council on Monuments and Sites’s Heritage Impact Assessment guidelines and Historic England’s guidance on setting and views.”

(Paragraph: 035, reference ID: 18a-035-20190723, revision date: 23.07.19.)

- 13.16 The setting of a heritage asset is not an asset or a designation in itself, and its importance lies in what it contributes to the significance of the heritage asset. The approach to identifying those heritage assets likely to be affected by a development proposal is given in the guidance by Historic England (*Good Practice Advice note GPA3 The setting of heritage assets*, 2017), which states that *“The setting of a heritage asset is ‘the surroundings in which a heritage asset is experienced’ (NPPF, Annex 2: Glossary). Where that experience is capable of being affected by a proposed development (in any way) then the proposed development can be said to affect the setting of that asset.”* (paragraph 20).
- 13.17 The guidance aims for a consistent approach to the assessment of setting and the range of historic, visual and functional relationships that can define the contribution of adjoining land to the significance of any single asset or group of assets. These include physical attributes and perceptual values, depending on the nature of an asset and its past and present surroundings. Potentially significant views can be deliberately designed or incidental, or the result of later changes. Additional guidance on the setting of a WHS specifically is provided by the ICOMOS guidance (see below).
- 13.18 On the setting of the WHS, the NPPG notes the protection of the immediate setting in the Operational Guidelines given above, and that *“It may be appropriate to protect the setting of World Heritage Sites in other ways, for example by the protection of specific views and viewpoints, both from and to the site. Other landscape designations may also prove effective in protecting the setting of a World Heritage Site.”* (Paragraph: 033, reference ID: 18a-033-20190723, revision date: 23.07.19).

Local planning policy

- 13.19 The local planning policy in relation to heritage assets is provided by the Bournemouth, Christchurch, Poole and Dorset Waste Plan (adopted December 2019), policies 14: Landscape and design quality and 19 Historic environment, and the West Dorset, Weymouth & Portland Local Plan (adopted October 2015), policies ENV1 Landscape, seascape and sites of geological interest and ENV4 Heritage assets. Relevant policies of the Neighbourhood Plan for Portland 2017-2031 (referendum version January 2020) are Port/EN4 Local heritage assets and Port/EN7 design and character. Portland Port is identified within the draft Neighbourhood Plan as the ‘Northern Arc’, a vital employment zone.

Guidance

- 13.20 The ICOMOS (2011) Guidance on Heritage Impact Assessments for Cultural World Heritage properties provides advice on evaluating the impacts of development on WHS². It states that *“World Heritage properties need to be seen as single entities that manifest OUV. Their OUV is reflected in a range of attributes, and in order to sustain OUV it is those attributes that need to be protected.”* It is emphasised that the assessment should be *“clearly and directly tied to the attributes of OUV”*.
- 13.21 On the setting of WHS, the guidance states that *“Direct impacts can result in the physical loss of part or all of an attribute, and/or changes to its setting – the surroundings in which a place is experienced, its local context, embracing present and past relationships to the adjacent landscape”* (paragraph 5-3). The assessment of impacts on setting refers to *“perceptible visual and aural (noise) effects that can be appreciated at a given time”* (paragraph 5-4).
- 13.22 The guidance also provides a hierarchy of values and the potential contribution of the setting to OUV in Appendix 3A: Example Guide for Assessing Value, and to the levels of change in Appendix 3B: Example Guide for assessing magnitude of impact, see technical appendix M2.
- 13.23 The Jurassic Coast Partnership Plan 2020-2025; Management Framework for the Dorset and East Devon Coast World Heritage Site outlines five strategic aims:
- *“Protect the Site’s Outstanding Universal Value and World Heritage Status.*
 - *Conserve and enhance the Site, its attributes, presentation and setting.*
 - *Inspire and engage people with the Site and deepen their understanding of its values.*
 - *Maintain and improve access to and experience of the Site.*
 - *Enable the Site’s World Heritage Status to be of benefit to people and communities.”* (page 9)
- 13.24 Policy R4, under strategic aim 1, states that:

“Those elements of landscape character, seascape, seabedscape, natural beauty, biodiversity and cultural heritage that constitute the WHS’s functional or experiential setting are protected from inappropriate development.” (page 45).

Methodology

- 13.25 Chapter 3 explains the assessment methodology used throughout this ES. This chapter makes use of the definitions of the importance or sensitivity of the receptors that may be affected by the proposed development, and the magnitude or scale of the predicted change used in the cultural heritage assessment as shown on figures 7.4 and 7.5, and in the landscape, seascape

² On the advice of Sam Scriven, Head of Conservation and Heritage, Jurassic Coast Trust, dated 12.03.20 it was confirmed that this guidance is appropriate for use in assessing impacts of the proposed development on the natural site.

and visual effects assessment, as shown in figures 9.1, 9.2, 9.4 and 9.5. These are then related directly to the consideration of the OUV. The definitions of the degree of the potential effects can be generated by feeding the results into the generic degree of effect matrix in chapter 3 (figure 3.1). Effects of moderate degree and above are classed as significant effects for the purposes of the EIA.

- 13.26 The chapter provides an assessment of the effects of the proposed development on how the setting of the WHS serves to reflect or convey the OUV. As stated in the ICOMOS guidance (2011), the OUV *“is fixed by the World Heritage Committee at the time of inscription and since 2007 has been encapsulated in a Statement of OUV. OUV thus defines the thinking at the time of inscription and is non-negotiable.”* The adopted Partnership Plan 2020-2025 explains that *“The long-term preservation of the Site’s OUV depends on the maintenance of dynamic natural processes in the setting, and the awareness that processes acting in the land or sea setting may impact on the Site itself.”* (page 19).
- 13.27 The baseline information given in this chapter is extracted from the Statement of OUV adopted in 2010, with additional material from the adopted Partnership Plan 2020-2025 on the attributes that are associated with or express the OUV, and on the identified functional and experiential aspects of the setting of the WHS.
- 13.28 The descriptions of the setting of the WHS in the Statement of OUV are expressed in terms of the information in the *Dorset Landscape Character Assessment* (Dorset County Council, 2009). This chapter accordingly makes extensive use of the assessment of landscape, seascape and visual effects in chapter 9 of this ES, which assesses effects on the landscape character areas defined in that document and those produced by the former West Dorset district and Weymouth & Portland borough councils. To ensure consistency with chapter 9, the study area for this chapter extends to 10 km from the main site on Incline Road.
- 13.29 The chapter refers to the material produced as part of the landscape, seascape and visual effects assessment, including the zones of theoretical visibility (ZTV), representative viewpoint photographs and visualisations (figures 9.16-9.35). An explanation of how these have been produced is provided in technical appendix J, part 3. The assessment also refers to the photographs in figure 7.10, chapter 7: cultural heritage.
- 13.30 In order to identify receptors to use as the basis of the assessment this chapter takes the conclusions of chapter 9 on the landscape character, landscape resources and visual receptors that may be affected by the proposed development (the methodology for the identification of these is given in chapter 9 and technical appendix J). Those receptors for which a change of any magnitude above negligible is predicted have been taken either individually or have been grouped together based on a judgement of a range of aspects, including the physical character, visual relationships and functional connections. The historic aspect has been integrated using the assessment of effects on heritage assets in chapter 7.

- 13.31 This chapter then provides an assessment of the importance of the contribution of each identified receptor or receptor group to how the setting of the WHS is experienced and serves to convey the OUV.
- 13.32 The judgement of magnitude of change again refers to the assessment in chapter 9 of the predicted change to the landscape character or resources, or to visual qualities for the construction and post-construction phases of the development, including any predicted night-time effects. To ensure full assessment of the change to the cultural and sensory experience of the WHS and its setting, where relevant the assessment also considers any other aspects such as changes to traffic, noise sources, functions and land uses or public access, referring to the other chapters in this ES as required.
- 13.33 The conclusions for the degree of effects for each receptor or receptor group are then applied to the overall judgement of the magnitude of effect of the development on the qualities of the setting of the WHS and its contribution to the attributes and to conveying OUV.
- 13.34 The data sources consulted for the assessment are listed in table 13.1.

Dorset Council and BCP Council, 2019, Bournemouth, Christchurch, Poole and Dorset Waste Plan
English Heritage, 2008, Conservation principles – policies and guidance for the sustainable management of the historic environment
Historic England, 2015, Good Practice Advice notes GPA1 Local plan making; GPA2 Managing significance in decision-taking in the historic environment
Historic England, 2017, Good Practice Advice note GPA3 The setting of heritage assets
Historic England, 2017, Conservation principles for the sustainable management of the historic environment, consultation draft
ICOMOS, 2011, Guidance on Heritage Impact Assessments for Cultural World Heritage properties
Jurassic Coast Trust, 2020, Jurassic Coast Partnership Plan 2020-2025; Management Framework for the Dorset and East Devon Coast World Heritage Site
Ministry of Housing, Communities and Local Government, 2019, National Planning Policy Framework
Ministry of Housing, Communities and Local Government, 2019, Planning Practice Guidance (online)
Portland Neighbourhood Plan Group, 2020, Portland Neighbourhood Plan Referendum Version
UNESCO, 2012, Operational Guidelines for the Implementation of the World Heritage Convention
West Dorset District Council and Weymouth & Portland Borough Council, 2015, West Dorset, Weymouth & Portland Local Plan
Table 13.1: References and data sources

Scoping opinion

- 13.35 A scoping opinion from Dorset Council was issued on 24 February 2020. This and the response from the Jurassic Coast Trust requested a separate chapter considering the effects on the WHS. Subsequent consultation with the Jurassic Coast Trust³ confirmed the narrow scope of the assessment of effects on the setting of the WHS. On methodology, the trust confirmed that the ICOMOS 2011 guidelines on cultural sites should be used for the assessment. Further consultation with the trust included a meeting with the landscape assessor.

³ On the advice of the Sam Scriven, Head of Conservation and Heritage, Jurassic Coast Trust, 12.03.20.

Limitations of the study

13.36 Professional judgement is an important consideration in the determination of the overall cultural heritage effects and landscape and visual effects and, even with qualified and experienced professionals, there can be differences in the judgements made. In the absence of specific guidance on assessment of effects on the natural site, a bespoke methodology has been formulated for this assessment, based on advice from the Jurassic Coast Trust.

Baseline

13.37 The Dorset and East Devon WHS was inscribed on the list under Criterion (viii): *Earth's history and geological features*. It was also nominated for Criterion (vii): *Superlative natural phenomena or natural beauty and aesthetic importance*, but it was considered by the World Heritage Committee that, while of national importance for these values, as reflected in the AONB designations, it did not meet the tests of OUV.

13.38 The following section is based on extracts from the Statement of OUV adopted in 2010 and the Partnership Plan 2020-2025, including the consideration of the setting. Technical appendix M1 reproduces the full text of the Statement of OUV.

13.39 The WHS significance values are listed as:

- *A1-1.1 Geological values:
The coastal exposures within the Site provide a near-continuous, accessible sequence of rocks that documents almost 190 million years of the history of the Earth, spanning the Mesozoic Era*
- *A1-1.2 Palaeontological values:
The Site includes a remarkable range of internationally important fossil localities, which have produced superbly preserved and diverse evidence of life during Mesozoic times*
- *A1-1.3 Geomorphological values:
The Site represents an exceptional range of text-book exemplars of coastal geomorphological features, landforms and processes*
- *A1-1.4 History of Science values:
The Site has been a crucible of earth science investigations for over three hundred years. It has helped foster major contributions to many aspects of geology and geomorphology*
- *A1-1.5 Research and educational values:
The Site is exceptionally well studied and documented, with a continuing importance for many aspects of earth science research, and is a teaching and training resource for the earth sciences of the highest quality"*

13.40 In 2012, further to the Statement of OUV and on the guidance of UNESCO and English Heritage, a number of attributes were agreed and are outlined in the Partnership Plan. These are *"aspects of a property which are associated with or*

express the Outstanding Universal Vale and can be tangible or intangible.” The attributes agreed for the WHS are:

- “1) Stratigraphy (the rock record) and structure.*
- 2) Paleontological record.*
- 3) Geomorphological features and processes.*
- 4) Ongoing scientific investigation and educational use, and role in the history of science.*
- 5) Underlying geomorphological processes in the setting of the Site.”*

13.41 Section A1-2 of the Statement of OUV provides a description of the WHS. The relevant extracts concerning Portland and the adjacent coast are as follows:

“Chesil, the Fleet and Portland Coast

Chesil Beach is one of the finest barrier beaches in the World. It has protected the landscape behind from erosion and so the slopes dip gently into the Fleet Lagoon which is trapped behind the beach. The pebbles came from the landslides further west at the end of the last Ice Age, less than 10,000 years ago. The Isle of Portland is formed from a wedge of hard limestone that dips gently below sea level at Portland Bill. The famous Portland Limestone and Fossil Forest directly above it are of very late Jurassic age (145 million years). The Limestone formed in shallow seas while the Forest grew on low lying surrounded by swamps and lagoons. The rocks are criss-crossed by huge fractures known as gullies and these have controlled the evolution of the cliffs. The Great Southwell landslide of 1734 is the largest historical landslide event ever recorded. The Portland Bill raised beaches provide important evidence of sea level change during the last Ice age, some 125 and 240,000 years ago. Most of the World Heritage Site on the island is completely inaccessible but the story of Portland stone contained in the landslides and the old and working quarries, is the story for Portland.”

“Portland Harbour Shore

The foreshore and low cliffs contain rocks from the start of the Upper Jurassic period, between about 150 and 160 million years ago but a considerable proportion are now poorly exposed due to the construction of the Portland Harbour breakwaters that have slowed erosion rates. Kimmeridge Clay forms low, slumped cliffs below Wyke Regis and these change to sandy grits and limestones through to the Nothe Fort at the mouth of Weymouth Harbour.”

13.42 The section A1-3 ‘Description of the Setting’ is based on extracts from the *Dorset Landscape Character Assessment* (2009). For a full consideration of this document, see chapter 9: landscape, seascape and visual effects.

“Dorset: Dorset’s coastal landscape is composed from rocks of Jurassic, Cretaceous and tertiary age. The Dorset Landscape Character Assessment draft Countryside Types includes some of the following;...

Limestone Peninsula – Portland. The Isle of Portland lies on the south side of the Weymouth Anticline, the huge fold described above. The hard Portland Limestone dips gently into the sea at Portland Bill and represents the last remnant of this vast structure. The Island lies on the axis of the fold or the

lowest point. To the east and west the rocks rise up, exposing softer Kimmeridge Clay which has been eroded away by the sea. The Portland Limestone is one of the most important building stones in the World.

Limestone Plateau – Purbeck. The Portland Limestone and Purbeck Beds form a plateau that extends from Swanage through to St Aldhelm’s Head. The thin soils support a diversity of limestone loving plants and associated wildlife.”

13.43 The Management Plan provides detail on the setting of the WHS based on two definitions:

“1) Experiential definition: The setting should be regarded as the surrounding landscape and seascape, and concerns the quality of the cultural and sensory experience surrounding the exposed coasts and beaches. Although not inscribed on the World Heritage list for its natural beauty, UNESCO recognised its value with respect to this criterion as ‘nationally important’, justified further by the UK Government’s 50+ year designation of the East Devon and Dorset Areas of Outstanding Beauty (AONB), which cover more than 80% of the WHS area. An assessment of landscape and seascape character provides a starting point for evaluation of the impact of change in the setting. The special qualities of the AONBs, such as tranquillity and the undeveloped character of coast and seascapes, are important for helping determine how people experience and enjoy the setting of the WHS.

*2) Functional definition:
The setting should also be considered in terms of the OUV and attributes of the Site. This manifests itself in several ways. Firstly, the setting is important in that development and activity within it may sooner or later impact the World Heritage Site itself. The development of housing, for instance, may lead to a need for future coastal defences. The coastal cliffs will inevitably continue to retreat and, with climate change, erosion may accelerate. In order that its OUV is maintained, the cliffs need to be allowed to erode into a natural setting. Secondly, the Site, most notably the coastal landforms, are defined and explained by past and present geomorphological and hydrological processes, on land, or from the sea. Developments that impact on these processes might may well have a resulting impact in the Site itself, and so more work is needed to see whether this can be developed into a meaningful management tool in terms of the setting.” (page 22).*

Identified receptors

13.44 This section of the chapter defines a number of receptors in order to capture both the experiential aspects of the setting of the WHS and how the functional aspect is expressed in the landscape.

13.45 As explained in chapter 9 and the appended methodology, the landscape character areas / types and associated landscape resources from the county and local landscape character assessments⁽⁴⁾ that have some inter-visibility with

⁴ Dorset Landscape Character Assessment (2009), West Dorset District Council Landscape Character Assessment (2009) and the Weymouth & Portland Borough Council Landscape Character Assessment

the site and therefore may be affected by the proposed development have been identified and assessed. The predicted magnitude of change as a result of the construction and the completed development from that chapter are given in table 13.2. These changes are adverse unless specified.

Landscape character receptor	Construction magnitude of change (short- term)	Completed development magnitude of change
The site	Medium	Medium beneficial
South Dorset Escarpment	Negligible	Negligible
Harbour / Wetland / Lagoon	Negligible	Negligible
Open Chalk Downland (South Dorset Downs and Chaldon Downs)	Negligible	Negligible
Ridge & Vale (South Dorset Ridge & Vale and Osmington Ridge & Vale)	Negligible	Negligible
Lower Wey and Lorton Valley	Negligible	Negligible
Man-made harbour	Medium	Medium
LCA1: Fortuneswell, Chesil Beach and Osprey Quay	Small	Small
LCA2: The Grove and The Verne	Small	Small

Table 13.2 Magnitude of change, landscape effects (chapter 9)

13.46 Chapter 9 identifies a range of visual receptors and the associated photographs of a representative selection of views from locations where the site is visible, covering a range of receptors from varying directions and distances. These and the ZTVs for the ERF building and for the stack are shown on figures 13.2 and 13.3. The conclusions on the magnitude of visual change are given in table 13.3. Night time changes are all predicted to be negligible and are not considered further.

(2013). The Dorset AONB web-based LCA also includes landscape character types from the Dorset Coast Landscape and Seascape Character Assessment September 2010.

Visual receptor	Construction magnitude of change (short-term)	Completed development magnitude of change
Weymouth residential areas. VPs 4 and 5	Negligible	Negligible
South West Coast Path. VPs 6, 7 and 14	Negligible	Small / negligible
South Dorset Ridgeway and Osmington White Horse. VP11 and photowire	Negligible	Negligible
Weymouth beachfront. VP 6	Negligible	Small
Portland Port and breakwaters, including the Sailing Academy and Portland Marina and Portland Harbour. VP 3	Medium	Medium
Footpath and bridleways south of Littlemoor including S1/21, S1/24, S1/32 and S1/33. VP 13	Negligible	Small
Ringstead Bay National Trust Car Park viewpoint and public rights of way, including S34/12 byway and S33/6, S33/8, S34/15 and S34/16 footpaths. VP 12	Negligible	Negligible
East Weare public rights of way S3/68, S3/70, S3/72 and S3/81. VPs 1 and 2	Medium	Medium
The A354. VP 8 and photomontage	Negligible	Negligible
The A353 (no VP)	Negligible	Negligible
The B3155. VP 6	Negligible	Negligible
Sandsfoot Castle, Park and Garden. VP9 and photomontage	Small	Medium
Nothe Fort. VP10	Small-negligible	Small
Dorset AONB. VPs 7, 11, 12 and 14 and photowires	Negligible	Negligible
West Dorset Heritage Coastline. VPs 7, 11, 12 and 14 and photowires	Negligible	Negligible
Dorset & East Devon Coast WHS. VPs 1, 5, 7 and 14	Negligible	Negligible
Table 13.3 Magnitude of change, visual effects (chapter 9)		

13.47 Receptors have been identified based on those landscape and seascape and visual receptors for which a magnitude of change greater than negligible is predicted, grouping them together based on visual, functional and historic relationships, including the related designated heritage assets. The predicted visual change to the WHS itself is negligible; however, it has also been included for completeness.

13.48 The five identified receptors are listed below, with references to the relevant representative viewpoint photographs in chapter 9: landscape, seascape and visual effects:

- The ERF site within the surrounding development of Portland Port, the seascape of the harbour and the breakwaters, and the views from the cliffs of East Weare above and from the marina, represented by VPs 1, 2 and 3 (figures 9.18 to 9.20)
- Landscape character areas LCA1: Fortuneswell, Chesil Beach and Osprey Quay and LCA2: The Grove and The Verne
- The views from Weymouth seafront, the South West Coast Path and footpaths around Littlemoor, represented by VPs 6, 7, 13 and 14 (figures 9.23, 9.24, 9.30 and 9.31)
- The views of the harbour and the breakwaters, from the designated heritage assets Sandsfoot Castle and Nothe Fort, represented by VPs 9 and 10 (figures 9.26 and 9.27)

- The views of the Dorset & East Devon Coast WHS to the south and east of the site represented by VPs 1, 5, 7 and 14 (figures 9.18, 9.22, 9.24 and 9.31)

Future baseline

13.49 The site has extant planning permissions for the development of an energy plant fuelled by vegetable oil and waste rubber crumb from end-of-life tyres, which could be implemented in the absence of the proposed development. However, as discussed in chapter 2, for the purposes of this assessment it has been assumed that the site will remain in its current use in the absence of the proposed development.

Assessment of importance

13.50 In accordance with figures 7.4, 9.1 and 9.4, the WHS as a whole is of high importance. The assessment of the value to the experience of the setting of the WHS, and to how the functional aspect of the setting is expressed in the landscape, for each of the five identified receptors below makes use of / combines the assessment criteria from these tables.

13.51 The site is part of the secure port estate and is surrounded by the varied industrial and marine uses and the modern port operations, including some very large structures and the shipping at berths and in motion. It is an allocated employment area with an extant planning permission for an energy plant, and is within the large area at the north and east of Portland where public access is restricted. The adjacent designated heritage assets are the dock office and harbour breakwaters and some of the associated defences, which are part of the extended group of military sites that illustrate the strategic significance of Portland Harbour over a long period. The publicly available views are the very wide views across East Weare and the seascape from the high ground at the Verne, and other views across the harbour from the new public areas at the marina (see figure 7.10). The cliffs and the high escarpment of the north of the island, and the evidence of historic patterns of use of the landscape is highly visible, forming the backdrop in most of these views.

13.52 The ERF site within the surrounding development of Portland Port, the seascape of the harbour and the breakwaters, and the views from the cliffs of East Weare above and from the marina, represented by VPs 1, 2 and 3, is of medium importance for its value to the experience surrounding the exposed coasts and beaches, and to the expression in the landscape of the function of the setting of the WHS.

13.53 The landscape character areas across the north part of the island, LCA1: Fortuneswell, Chesil Beach and Osprey Quay and LCA2: The Grove and The Verne, include the principal built-up areas of the historic settlements at Chesilton and Fortuneswell, with the surrounding extensive modern housing areas, the port and related activity, the marina and the industrial areas including the developing business park at Osprey Quay (see figure 7.10). The developed area at the port, the port land at East Weare and the A354 Portland Beach Road are excluded from the WHS, and access to large areas in the north and east is restricted by the secure port estate and HMP The Verne. The large number of heritage assets relate to both the naval base at the harbour and to the active

and former quarries that dominate much of the centre of the island. There are extensive sea views towards Chesil Beach and across to the Dorset coastline.

- 13.54 LCA1: Fortuneswell, Chesil Beach and Osprey Quay and LCA2: The Grove and The Verne are of medium importance for their value to the experience surrounding the exposed coasts and beaches, and to the expression in the landscape of the function of the setting of the WHS.
- 13.55 The built-up coast and urban areas at Weymouth are excluded from the WHS. These are significant for the public access to the beaches, and the section of the South West Coast Path. There are large numbers of heritage assets in the historic centre of Weymouth and the conservation area including the Esplanade and the long frontage to the sea. There are some views of the sea and Portland on the horizon from within the residential areas at Littlemoor inland, though a large proportion of views are screened by vegetation, built development and the topography.
- 13.56 The views from Weymouth seafront, the South West Coast Path and footpaths around Littlemoor, represented by VPs 6 and 13, is of medium importance for the value to the experience surrounding the exposed coasts and beaches, and to the expression in the landscape of the function of the setting of the WHS.
- 13.57 The related group of the principal military sites at Portland encompasses the harbour, the breakwaters and land defences, and the related fortifications across the harbour. Sandsfoot Castle is one of the pair of artillery forts constructed in 1539, together with Portland Castle. It is now a ruin and is the focal point of a small public garden. Nothe Fort was constructed as part of the defences of the new naval secure anchorage, along with The Verne Citadel. It is also within an area of public open space. The wide views across the sea and the coast are essential to the experience of these assets and understanding of their setting.
- 13.58 The views of the harbour and breakwaters from the heritage assets of Sandsfoot Castle and Nothe Fort, represented by VPs 9 and 10, are of high importance for their value to the experience surrounding the exposed coasts and beaches, and to the expression in the landscape of the function of the setting of the WHS.
- 13.59 The closest section of the WHS to the south of the site is at East Weare, where major features remain of the former military use in the structures of the former rifle range. Large areas are inaccessible within the port land and public access to the surrounding land is restricted by the two prison estates. From the sections of the WHS along the coastline to the north east of the site, the route of the South West Coast Path and large areas of public access land allow views of the seascape and cliffs and the dramatic landform of Portland jutting out into the English Channel.
- 13.60 The views of the Dorset and East Devon Coast WHS to the south and east of the site, represented by VPs 1, 5, 7 and 14, is of high importance for the value to the experience surrounding the exposed coasts and beaches, and to the expression in the landscape of the function of the setting of the WHS.
- 13.61 The importance of the receptors is summarised in table 13.4.

Receptor	Importance
The ERF site within the surrounding development of Portland Port, the seascape of the harbour and the breakwaters, and the experience from the cliffs of East Weare above and from the marina, represented by VPs 1, 2 and 3	Medium
Landscape character areas LCA1: Fortuneswell, Chesil Beach and Osprey Quay and LCA2: The Grove and The Verne	Medium
The experience from Weymouth seafront, the South West Coast Path and footpaths around Littlemoor, represented by VPs 6, 7, 13 and 14	Medium
The experience of the harbour and the breakwaters, from the designated heritage assets Sandsfoot Castle and Nothe Fort, represented by VPs 9 and 10	High
The experience of the Dorset & East Devon Coast WHS to the south and east of the site represented by VPs 1, 5, 7 and 14	High

Table 13.4: Summary of importance

Potential effects

- 13.62 The proposed development could be a source of impacts on the setting of the WHS through:
- Effects of construction processes – e.g. visual presence, noise, vibration,
 - The presence of the new built form, its siting, scale, extent, appearance and character
 - Changes to the visual qualities of the site
- 13.63 The cable routes to the substation and to the piers are underground within the existing roads or port access routes, and any associated infrastructure such as junction boxes would be very small structures. It is considered that, because of the nature of the works and the existing context, there is no potential for effects on the WHS from this aspect of the proposals, which is not considered further.
- 13.64 Mitigation of adverse effects through the developing scheme design is integral to the iterative process of EIA; these primary mitigation measures are included in the proposals described in chapter 2, and shown in the detailed plans in figures 2.3 to 2.8, are summarised in paragraphs 9.108 and 9.109 in chapter 9.
- 13.65 The design and access statement explains the development of the design of the proposals and how it has responded to the surroundings of the site. Inspiration has been taken from the geological formations of the East Weare and the man-made diagonal of the former cable-driven railway, now Incline Road, as the basis of the massing of the proposed building, which will create a range of heights as a result of its inscribed geometry. The appearance of the adjacent cliffs, with the mix of scrub vegetation, landslides and exposed stone, has also influenced the choice of materials and colours for the façades of the buildings. The top of the 80 m high stack will lie at approximately the same level as the base of the upper cliff face on East Weare, well below The Verne, which is at approximately 130 m AOD. The materials chosen are non-reflective and are intended to merge with the backdrop of the cliffs and the overall outline of the Isle of Portland in more distant views.
- 13.66 The assessment of effects considers the effects without additional secondary mitigation. An appropriate programme of mitigation could reduce the severity of an adverse effect or remove it completely; however, potential for mitigation may be limited where impacts are caused by fundamental issues such as the

proximity, location, scale, or prominence of a development (GPA3, Historic England 2017).

Effects during construction

- 13.67 For the receptor group ERF site within the surrounding development of Portland Port, the seascape of the harbour and the breakwaters, and the experience from the cliffs of East Weare above and from the marina, represented by VPs 1, 2 and 3, medium changes to the landscape and seascape character and to the visual qualities are predicted during construction. A negligible change is predicted to the listed breakwater structures immediately adjacent to the site during construction. The alteration to the quality of the experience surrounding the exposed coasts and beaches, and to the expression in the landscape of the function of the setting of the WHS, will be a small to medium change to a receptor of medium value, which will result in a short-term slight to moderate adverse effect that is significant.
- 13.68 The predicted change during construction to the landscape character areas LCA1: Fortuneswell, Chesil Beach and Osprey Quay and LCA2: The Grove and The Verne will be small. No effects are predicted on heritage assets. The alteration to the quality of the experience surrounding the exposed coasts and beaches, and to the expression in the landscape of the function of the setting of the WHS, will be a small change to a receptor of medium value, which will result in a short-term slight adverse effect that is not significant.
- 13.69 The predicted change to the qualities of the views from Weymouth seafront, the South West Coast Path and footpaths around Littlemoor, represented by VPs 6 and 13, during construction will be negligible. The alteration to the quality of the experience surrounding the exposed coasts and beaches, and to the expression in the landscape of the function of the setting of the WHS, will be a negligible change to a receptor of medium value, which will result in a short-term negligible to slight adverse effect that is not significant.
- 13.70 The predicted change to the qualities of the views of the harbour and breakwaters, from the designated heritage assets Sandsfoot Castle and Nothe Fort, represented by VPs 9 and 10 will be negligible to small. The alteration to the quality of the experience surrounding the exposed coasts and beaches, and to the expression in the landscape of the function of the setting of the WHS, will be a negligible to small change to a receptor of high value, which will result in a short-term slight adverse effect that is not significant.
- 13.71 The predicted change to the qualities of the views of the Dorset and East Devon Coast WHS to the east of Portland represented by VPs 1, 5, 7 and 14 will be negligible. The alteration to the quality of the experience surrounding the exposed coasts and beaches, and to the expression in the landscape of the function of the setting of the WHS, will be a negligible change to a receptor of high value, which will result in a short-term slight adverse effect that is not significant.
- 13.72 Combining the predicted landscape character, visual and heritage effects on the selected receptors, the effects of the construction phase of the proposed development on the OUV of the WHS because of the changes to the experiential and functional value of part of the setting will be a negligible to small

change to an asset of high value, which will result in a short-term slight to moderate adverse effect that is significant.

Effects post-construction

- 13.73 For the ERF site within the surrounding development of Portland Port, the seascape of the harbour and the breakwaters, and the experience from the cliffs of East Weare above and from the marina, represented by VPs 1, 2 and 3, medium changes to the landscape and seascape character and to the visual qualities are predicted. The effect of the changed character of the site itself is predicted to be medium beneficial. Small and negligible to small changes to the designated heritage assets are predicted. The alteration to the quality of the experience surrounding the exposed coasts and beaches, and to the expression in the landscape of the function of the setting of the WHS, will be a small to medium change to a receptor of medium value, which will result in a long-term slight to moderate adverse effect that is significant.
- 13.74 The predicted change to the landscape character of the landscape character areas LCA1: Fortuneswell, Chesil Beach and Osprey Quay and LCA2: The Grove and The Verne will be small. Small and negligible to small changes to heritage assets are predicted. The alteration to the quality of the experience surrounding the exposed coasts and beaches, and to the expression in the landscape of the function of the setting of the WHS, will be a negligible to small change to a receptor of medium value, which will result in a long-term slight adverse effect that is not significant.
- 13.75 The predicted change to the qualities of the views from Weymouth seafront, the South West Coast Path and footpaths around Littlemoor, represented by VPs 6, 7, 13 and 14, will be small. The alteration to the quality of the experience surrounding the exposed coasts and beaches, and to the expression in the landscape of the function of the setting of the WHS, will be a small change to a receptor of medium value, which will result in a long-term slight adverse effect that is not significant.
- 13.76 The predicted change to the qualities of the views of the harbour and breakwaters from the heritage assets of Sandsfoot Castle and Nothe Fort, represented by VPs 9 and 10, will be medium to small. The alteration to the quality of the experience surrounding the exposed coasts and beaches, and to the expression in the landscape of the function of the setting of the WHS, will be a medium to small change to a receptor of high value, which will result in a long-term moderate adverse effect that is significant.
- 13.77 The predicted change to the qualities of the views of the Dorset and East Devon Coast WHS to the east of Portland represented by VPs 1, 5, 7 and 14 will be negligible. The alteration to the quality of the experience surrounding the exposed coasts and beaches, and to the expression in the landscape of the function of the setting of the WHS, will be a negligible change to a receptor of high value, which will result in a long-term slight adverse effect that is not significant.
- 13.78 Combining the predicted landscape character, visual and heritage effects on the selected receptors, the effects of the completed development on the OUV of the WHS because of the changes to the experiential and functional value of part of

the setting will be a small change to an asset of high value, which will result in a long-term moderate adverse effect that is significant.

Mitigation and monitoring

13.79 At all stages of the iterative design development, the objective was to avoid or reduce potential adverse effects through the primary mitigation that is incorporated in the plans that formed the basis of the above assessment of effects. The measures outlined in the design and access statement on the evolution of the form, scale and appearance of the proposals were informed by the heritage and landscape sensitivity, as well as the geological and topographical setting. However, the predicted change will occur as a result of the fundamental characteristics of the proposed development, its location and siting, and of its form and scale. It is therefore not considered appropriate to monitor these effects.

Residual effects

13.80 Table 13.5 summarises the significant residual effects predicted to remain after the application of the mitigation measures.

Topic	Significant residual effect	Receptor importance	Impact magnitude	Nature	Duration	Degree of effect	Level of certainty
Dorset and East Devon Coast world heritage site	Change to OUV because of the change to the experiential and functional value of part of the setting of the WHS during construction	High	Negligible to small	Adverse	Short-term	Slight to moderate	Reasonable
	Change to OUV because of the change to the experiential and functional value of part of the setting of the WHS post-construction	High	Small	Adverse	Long-term	Moderate	Reasonable

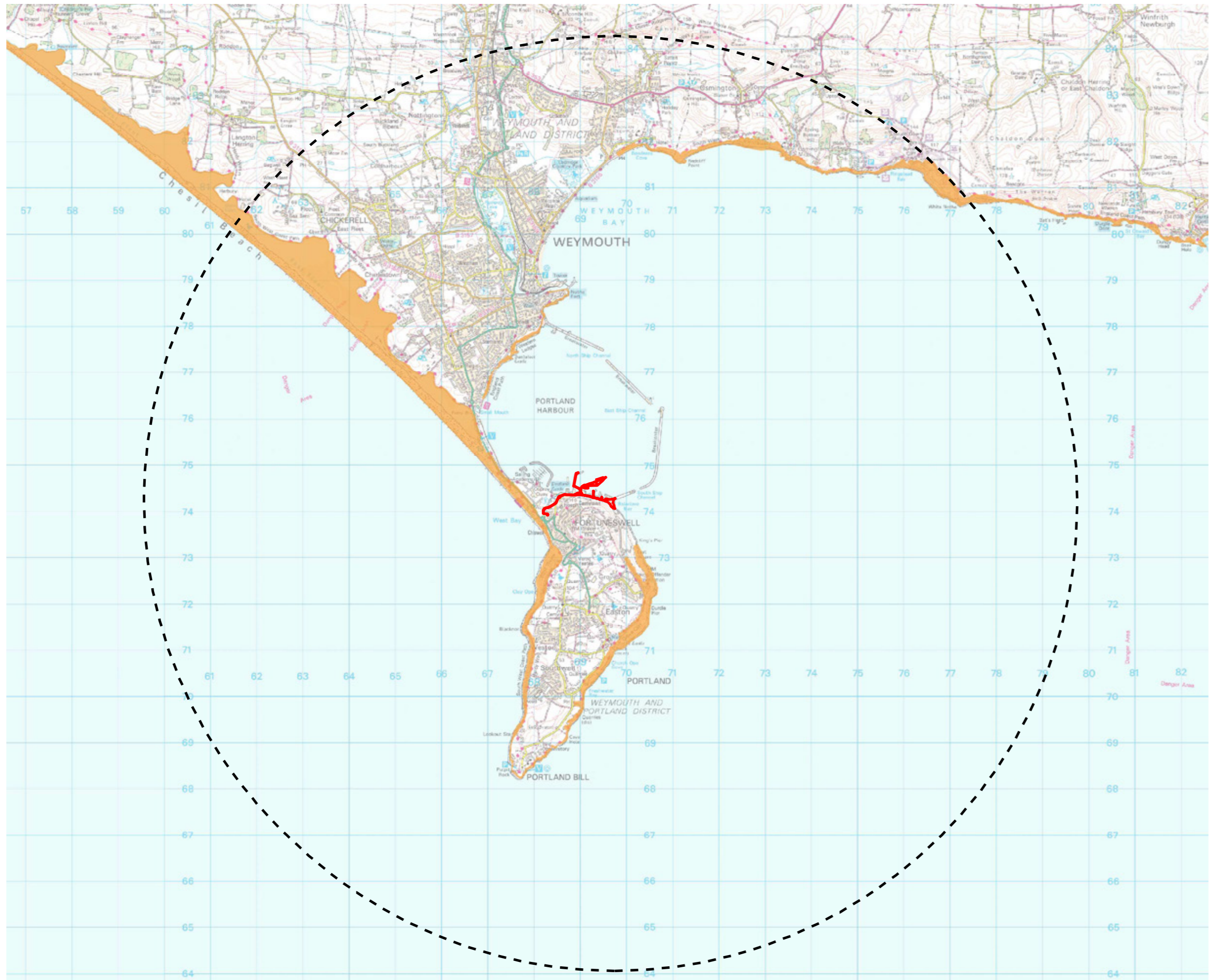
Table 13.5: Significant residual effects

Cumulative effects

13.81 For the purposes of assessing the cumulative effects, consideration has been given to all approved developments, and additional developments scoped in, that have the potential to result in significant cumulative effects alongside the proposed development. Full details of all the cumulative schemes are given in chapter 3 (table 3.3 and figure 3.2).

13.82 The assessment of effects on cultural heritage predicts a small cumulative effect on the listed structures adjacent to the site as a result of the ERF development and consented schemes, and negligible to small cumulative effects on assets at The Verne Citadel and Portland Castle. The assessment in chapter 9 predicts no cumulative effects.

13.83 These apply to two of the receptors: the ERF site within the surrounding development of Portland Port, the seascape of the harbour and the breakwaters, and the experience from the cliffs of East Weare above and from the marina, represented by VPs 1, 2 and 3; and landscape character areas LCA1: Fortuneswell, Chesil Beach and Osprey Quay and LCA2: The Grove and The Verne. The proposed development will result in a negligible cumulative effect on the OUV of the WHS in combination with the other developments.

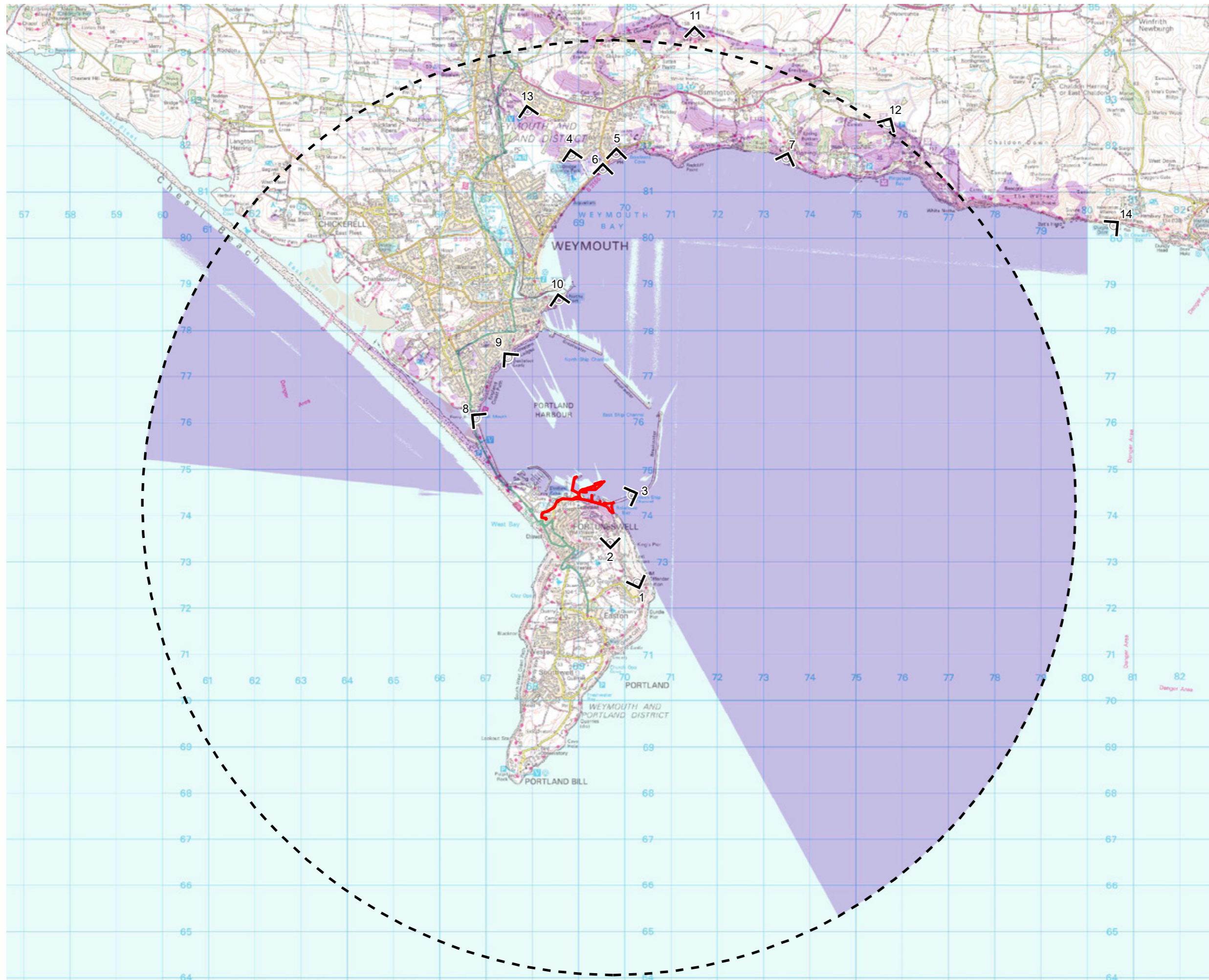


- Site boundary
- 10km study area
- World Heritage site

0 1,900 m



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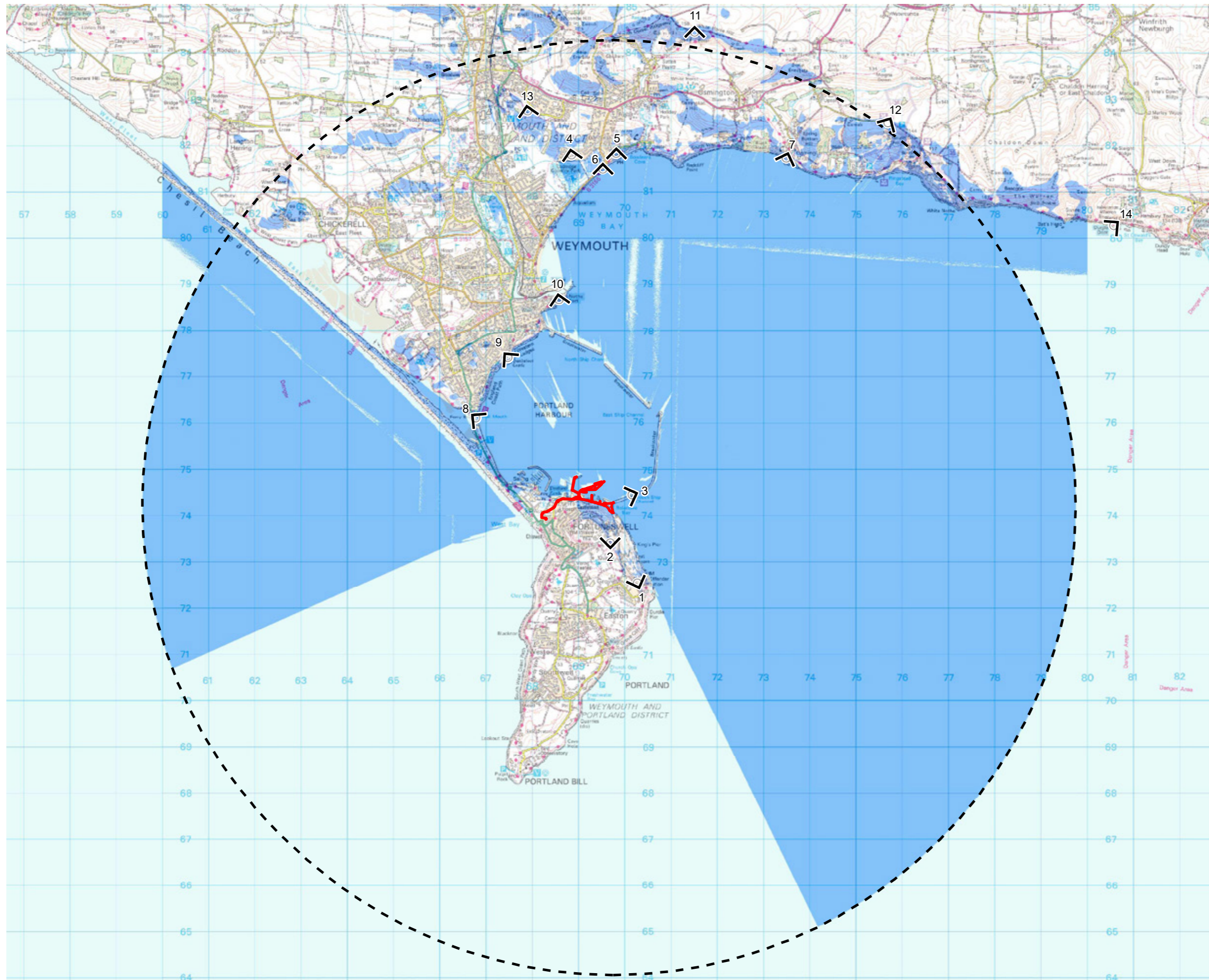


- Site boundary
- 10km study area
- ↙ Viewpoint locations
- ZTV

0 1,900 m



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0 1,900 m



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Figure 13.3 Zone of theoretical visibility of the proposed stack and viewpoint locations