

Isles of Scilly Sea Defences – Kitchen Porth

**Shadow Habitats Regulations
Assessment (HRA)**

Final Report

April 2023

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**Council of the
ISLES OF SCILLY**

JBA Project Manager

Harriet Thomlinson
 JBA Consulting
 Salts Mill
 Victoria Road
 Saltaire
 Shipley
 BD18 3LF

Revision History

Revision Ref/Date	Amendments	Issued to
V1.0	Final Report	The Council of the Isles of Scilly
V2.0	Updates following comments from NE	The Council of the Isles of Scilly
V3.0	Updates following comments from NE	The Council of the Isles of Scilly
V4.0	Updates following comments from The Council of the Isles of Scilly	The Council of the Isles of Scilly

Contract

This report describes work commissioned by The Council of the Isles of Scilly, JBA Consulting carried out this work.

Prepared by Hannah Webster BSc MSc
 Ecologist

Reviewed by Jonathan Harrison BSc MSc MCIEEM
 Senior Ecologist

Purpose

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Abbreviations

EC	European Commission
ECJ	European Court of Justice
EMP	Environmental Management Plan
HRA	Habitats Regulations Assessment
INNS	Invasive non-native species
OSGR	Ordnance Survey Grid Reference
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1 Introduction

1.1 Background

The Council of the Isles of Scilly is proposing to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, Great Popplestone, Great Porth North of Great Carn, Green Bay, Stinking Porth, and Kitchen Porth are located on the island of Bryher. Three of these sites, Porth Killier, Periglis and Porth Coose are located on the island of St Agnes. The ninth site, Lower Town Beach, is located on the island of St Martin's.

The Isles of Scilly are generally low lying and therefore many areas are vulnerable to flooding. The flood risk is likely to increase in the future as a result of the effects of climate change. The risks to the islands have been highlighted by storms in 1989, 2004 and 2014.

The aim of this project is to protect homes and businesses across the islands of Bryher, St Agnes and St Martin's, as well as key infrastructure including the islands' emergency services and road network.

The whole of the Isles of Scilly is an Area of Outstanding Natural Beauty (AoNB), a Conservation Area and a Heritage Coast. Areas of the islands are also designated as Special Areas of Conservation (SACs) under the EU Habitats Directive, Special Protection Areas (SPAs) through the EC Birds Directive, Ramsar Sites through the 1971 UNESCO Ramsar Convention, a Marine Conservation Zone (MCZ) and 26 Sites of Special Scientific Interest (SSSIs).

JBA Consulting has been commissioned to undertake a shadow Habitats Regulations Assessment (HRA) for each of the nine sites within the proposed scheme. This HRA covers the Bryher site Kitchen Porth.

This HRA document provides the Council of the Isles of Scilly information to assist in their consideration of whether the proposed coastal and flood protection works will have likely significant effects on European Sites, and in ascertaining any adverse effects on their integrity.

As the decision-making authority, the Council of the Isles of Scilly are the Competent Authority in respect of Regulation 63 of the Conservation of Habitat and Species Regulations (as amended). This document can be described as a 'shadow' HRA, providing the necessary information to the Council of the Isles of Scilly with which to make their assessment (pursuant to Regulation 63(2) of the above Regulations).

1.2 Legislative Context

The Conservation of Habitats and Species Regulations 2017 (as amended by the Conservation of Habitats and Species (amendment) (EU Exit) Regulations 2019), also known as the 'Habitats Regulations', provide legal protection to habitats and species of national importance. The regulations also secure an ecological network of protected sites, consisting of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Government guidance also requires that Ramsar sites (which support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance [Ramsar Convention]) are given the same level of protection as SACs and SPAs.

Prior to the UK's withdrawal from the EU, SACs were designated and protected under domestic legislation transposed from European Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive), and SPAs under European Directive 2009/147/EC on the Conservation of Wild Birds (Birds Directive). Together these sites formed a European-wide Natura 2000 network of protected sites. Since 31 December 2020, SACs and SPAs within the UK no longer fall within the Natura 2000 network, and instead form a National Site Network. SPAs and SACs continue to be referred to collectively

as 'European sites' within the context of the Habitats Regulations, reflecting their international importance for the conservation of biodiversity.

SACs and SPAs within the National Site Network are also still designated for habitats listed on Annex I and for species listed on Annex II of the Habitats Directive, and criteria listed under the Birds Directive, and it is these Annex I habitats, Annex II species and Birds Directive Criteria against which assessments under the Habitats Regulations are still made.

Regulation 63 of the Habitats Regulations states that "A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which (a) is likely to have a significant effect on a European Site or a European offshore marine site (either alone or in-combination with other plans or projects), and (b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives." This process is commonly referred to as Habitats Regulations Assessment (HRA).

2 Habitats Regulations Assessment Methods

2.1 Overview

Habitat Regulations Assessment follows a four-stage process as outlined in the Habitats Regulations Assessment Handbook (DTA, 2019) and summarised in Table 2-1 below.

This report provides evidence to support Stage 1 and Stage 2 of the HRA process, to provide the Competent Authority(s) with information to make their assessment.

Table 2-1: The HRA process

HRA stage	Description
Stage 1: Screening	<p>This process identifies the likely significant effects upon a European site of a project or plan, either alone or in-combination with other projects or plans and determines whether these impacts are likely to be significant.</p> <p>Following the recent ECJ judgement in the case of "people over wind" (Case C-323/17). Measures that are necessary to avoid or reduce impacts on the European site, even when considered standard environmental best-practice, can only be at Stage 2.</p> <p>If no likely significant effect is determined, the project or plan can proceed. If a likely significant effect is identified, stage 2 is commenced.</p>
Stage 2: Appropriate Assessment	<p>Stage 2 is subsequent to the identification of likely significant effects upon a European site in stage 1. This assessment determines whether a project or plan would have an adverse impact on the integrity of a European site, either alone or in-combination with other projects or plans.</p> <p>This assessment is confined to the effects on the internationally important habitats and species for which the site is designated (i.e. the interest features of the site).</p> <p>Appropriate Assessments, in line with ECJ Case C-461/17 <i>Holohan v An Bord Pleanála</i>, must also consider impacts upon habitats and species within or outside of a site boundary if they support a qualifying feature and could impact upon the conservation objectives of the site.</p> <p>If no adverse impact is determined, the project or plan can proceed. If an adverse impact is identified, stage 3 is commenced.</p>
Stage 3: Assessment where no	<p>Where a plan or project has been found to have adverse impacts on the integrity of a European site, potential avoidance/mitigation measures or alternative options should be identified.</p>

HRA stage	Description
alternatives and adverse impacts remain	<p>If suitable avoidance/mitigation or alternative options are identified, that result in there being no adverse impacts from the project or plan on European sites, the project or plan can proceed.</p> <p>If no suitable avoidance/mitigation or alternative options are identified, as a rule the project or plan should not proceed. However, in exceptional circumstances, if there is an 'imperative reason of overriding public interest' for the implementation of the project or plan, consideration can be given to proceeding in the absence of alternative solutions. In these cases, compensatory measures will have to be put in place to offset any negative impacts.</p>
Stage 4: Compensatory measures	<p>Stage 4 comprises an assessment of the compensatory measures where, in light of an assessment of imperative reasons of overriding public interest, it is deemed that the project should proceed.</p>

2.2 Guidance

The methodology used for this assessment is based on guidance in The Habitats Regulations Assessment Handbook (DTA, 2019). In addition, the following guidance documents were also consulted:

- European Commission Notice: Managing Natura 2000 sites. The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)
- UK Government Guidance on the Use of Habitats Regulations Assessment (UK Government, 2019).

2.3 Assumptions and Limitations

Information on the works and conditions on site are based on current knowledge at the time of writing.

Cumulative impacts are based on published documentation. If other projects with the potential for cumulative impacts are identified, it may be necessary to re-assess this project.

3 Description of the Project

3.1 Site Location

Kitchen Porth is located on the northeast coast of the island of Bryher, approximate central OS Grid Reference SV 88043 15482. It is a small beach composed of mainly sand with some cobbles. The south corner of the beach is vulnerable to wave activity. This wave activity leads off the ram and embankment to the rear of the beach. Longer period waves from the Atlantic diffract around the north of the island into this area. The location of the proposed scheme can be seen in Figure 3-1.

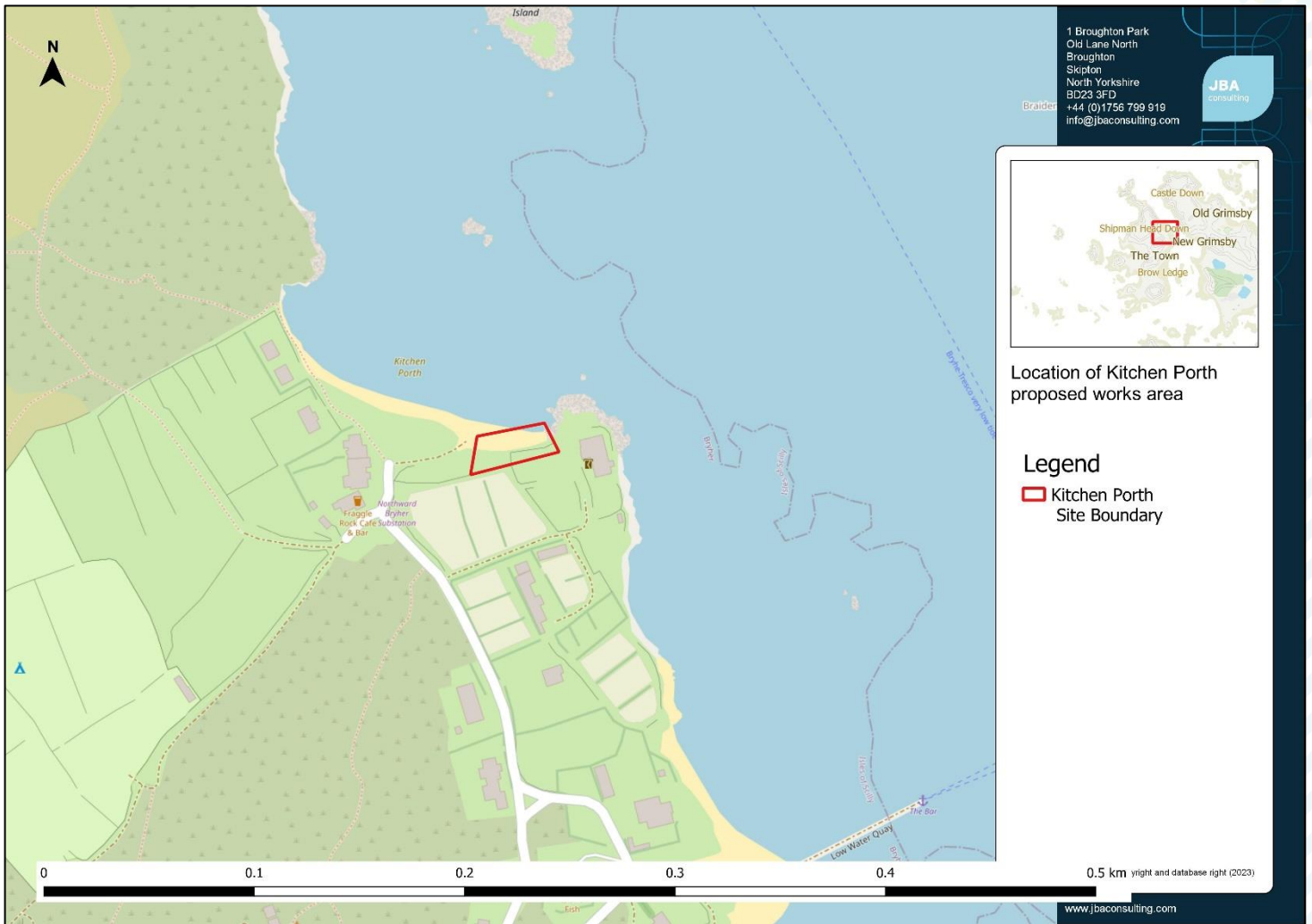


Figure 3-1: Location of proposed scheme

3.2 Proposed Works

At Kitchen Porth there is a need to increase defences to protect a cluster of residential and non-residential properties from flood risk from overtopping, along with the access road to the high-tide quay, the Shipman Head and Shipman Down (Bryher) SSSI and the Isles of Scilly Ramsar.

The proposed works include:

- The provision of additional armourstone in front of the existing structures for approximately 40m from the eastern corner of the beach up to the exit from the beach to the west to protect the exposed embankment and Ram from wave attack.
- The slope of the armourstone will be 1:2, comprising of a mix of 1 to 3 tonne armourstone, either reclaimed from existing resources on the island or imported. It will tie into existing levels at each end, into the existing bank to the north and into the rock outcrop to the south. The implementation of this armourstone should dissipate the wave energy and prevent direct attack on the Ram.
- The proposed armourstone does not include an impermeable layer, nor is the crest level proposed to be increased, and so some overtopping discharge is still expected to reach/percolate to the gardens of the leeward properties.

3.3 Construction Methodology

It is anticipated that construction of the proposed scheme at Kitchen Porth will be undertaken over approximately 20 days between September and October 2024.

The working area will be demarcated and secured using perimeter security fencing (Heras fencing or similar).

Materials will be delivered in advance of the works between April and August 2024.

Materials will either be delivered directly to the beach via barge, using the landing site on Kitchen Porth beach, or if not feasible, landed and stored at the closest feasible site and transported along the proposed access track. It is assumed that materials will be transported to the site using a 30 tonne truck, or alternative smaller vehicle if required.

Construction works across Kitchen Porth entail the provision of additional armourstone in front of existing structures. It is assumed that the 1 to 3 tonne armourstone will be moved into position using a 360° 30 tonne excavator.

Once complete, the construction site will be demobilised, and all plant and construction materials will be removed from site, and all disturbed areas will be reinstated to their former condition.

4 European Sites

4.1 Project Area of Influence and European Sites

The proposed scheme is located adjacent to the Isles of Scilly Special Protection Area (SPA), 80m from the Isles of Scilly Complex Special Area of Conservation (SAC) and 120m from the Isles of Scilly Ramsar, as shown in Figures 4-1 and 4-2.



Figure 4-1: Location of Kitchen Porth proposed works area in relation to designated sites; Overview

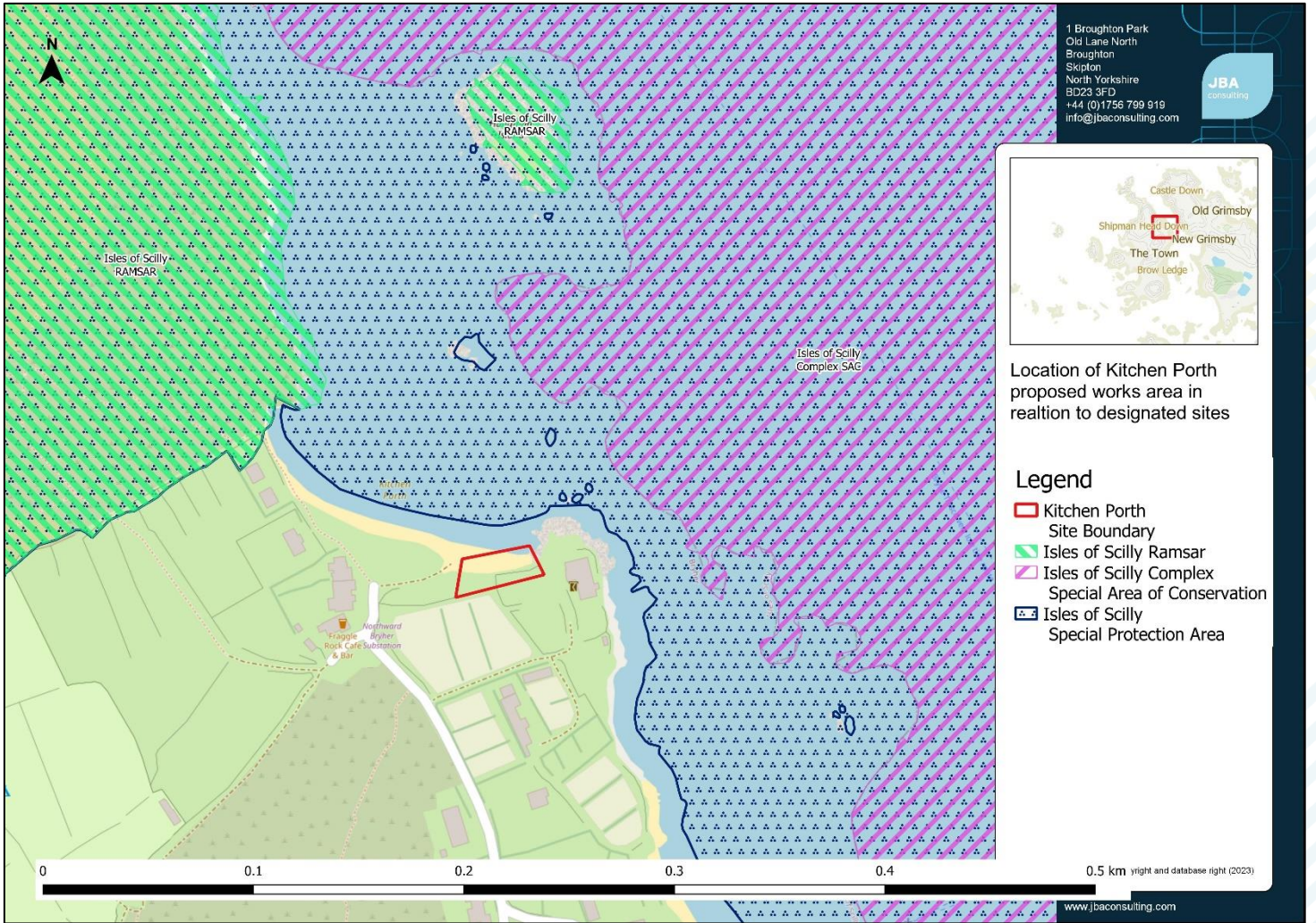


Figure 4-2: Location of Kitchen Porth proposed works area in relation to designated sites; Close Up

4.1.1 Qualifying Features

The SAC comprises 75% marine areas and sea inlets, 20% tidal rivers, estuaries, mudflats, sandflats and lagoons (including saltwork basins) and 5% shingle, sea cliffs and islets.

- Annex I habitats under the Habitat Regulations that are a primary reason for selection:
 - Sandbanks which are slightly covered by sea water all the time
 - Mudflats and sandflats not covered by seawater at low tide
 - Reefs
- Annex II species that are a primary reason for selection:
 - Shore dock *Rumex rupestris*
- Annex II species present as qualifying feature, but not primary reason for selection
 - Grey seal *Halichoerus grypus*

4.1.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

4.2 Isles of Scilly Special Protection Area (SPA)

4.2.1 Qualifying Features

The site qualifies under Article 4.1 of the Birds Directive (2009/147/EC) as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I in any season:

- European storm-petrel *Hydrobates pelagicus* (breeding)

The site qualifies under Article 4.2 of the Birds Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season:

- Lesser black-backed gull *Larus fuscus graellsii* (breeding)
- European shag *Phalacrocorax aristotelis aristotelis* (breeding)
- Great black-backed gull *Larus marinus* (breeding)

The site qualifies under SPA selection stage 1.3 as it is used regularly by over 20,000 seabirds in any season:

- In the breeding season, the site regularly supports at least 26,478 (1999) individual seabirds. The main components of the assemblage include all of the qualifying features listed above.

4.2.2 Conservation Objectives

The site's conservation objectives apply to the site and the individual species and/or assemblage of species for which the site has been classified (the "Qualifying features" listed above).

The objectives are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- the extent and distribution of the habitats of the qualifying features
- the structure and function of the habitats of the qualifying features
- the supporting processes on which the habitats of the qualifying features rely
- the populations of each of the qualifying features
- the distribution of qualifying features within the site

4.3 Isles of Scilly Ramsar

4.3.1 Qualifying Features

The site qualifies for Ramsar designation under Ramsar criterion 6 species/populations occurring at levels of international importance.

- Qualifying Species/populations (as identified at designation):
 - Species regularly supported during the breeding season:
 - European Storm Petrel, World - 71 apparently occupied sites, representing an average of 0.2% of the GB population (Seabird 2000 Census)
 - Lesser black-backed gull, W Europe/Mediterranean/W Africa - 3603 apparently occupied nests, representing an average of 2.4% of the breeding population (Seabird 2000 Census)
- Species/populations identified subsequent to designation for possible future consideration under criterion 6.
 - Species regularly supported during the breeding season:
 - European shag, Coastal N Europe 1091 apparently occupied nests, representing an average of 1.3% of the breeding population (Seabird 2000 Census)

4.3.2 Conservation Objectives

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

5 Screening Assessment

5.1 Introduction

The project is not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features. Therefore, a HRA screening assessment is required.

The following section identifies potential hazards of the proposed works. The effects of relevant hazards are then assessed in relation to each of the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The likelihood of potential exposure to the hazard and the mechanism of effect are also identified where possible. This then allows for likely significant effects on the interest features of the designated sites to be identified.

5.2 Potential Hazards to European Sites

The proposed project, as detailed in Section 3, was assessed in order to identify potential hazards that might arise to the relevant interest features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar. The list of potential hazards to the European sites are based on the designated site features and conservation objectives. These are:

- Direct habitat loss
- Noise and visual disturbance
- Water pollution
- Sediment release (temporary during construction)
- Alteration to coastal processes
- Physical damage/mortality
- Competition from, or mortality due to, invasive non-native species (INNS)

The results of this assessment are shown in Table 5-1.

Table 5-1: Potential Hazards to Relevant Qualifying Features

Potential Hazard	Sandbanks	Mudflats	Reefs	Shore dock	Breeding Birds	Grey Seal
Habitat loss/community simplification	✓	✓	✓	✓	✓	✓
Physical damage/mortality	✓	✓	✓	✓	✓	✓
Competition from, or mortality due to, invasive non-native species (INNS)	X	X	X	✓	✓	✓
Noise and visual disturbance	X	X	X	X	✓	✓
Water pollution	✓	✓	✓	✓	✓	✓
Sediment release	✓	✓	✓	X	X	✓
Alteration to coastal processes	✓	✓	✓	✓	✓	✓
Table key: ✓ = hazard potentially relevant, X = hazard not relevant						

5.3 Assessment of Likely Significant Effects

Assessment of the hazards identified in Table 5-1 was undertaken to determine whether they would be likely to have a significant effect on the relevant qualifying features of the Isles of Scilly Complex SAC and the Isles of Scilly SPA and Ramsar and their supporting habitats, as a consequence of the project either alone or in combination with other plans or projects. The results of the screening assessment are given in Table 5-2. Plans and projects considered for the in-combination assessment are outlined in Section 6.4. Where appropriate, both construction and operational phase effects are considered.

Table 5-2: Assessment of Likely Significant Effects

Qualifying Feature	Risk (Pressure)	Likely Significant Effect Alone	Yes or No	Likely Significant Effect in Combination	Yes or No
Isles of Scilly Complex SAC					
Annex I habitats: <ul style="list-style-type: none"> Sandbanks which are slightly covered by sea water all the time Reefs 	Habitat loss/ community simplification	The Annex I habitats 'sandbanks which are slightly covered by sea water all the time' and 'reefs' are not present within the works area and therefore no loss of these habitats is anticipated as part of the proposed works.	No	There is no potential for effects in combination with other PPPs.	No
	Competition from invasive non-native species (INNS)	The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the Annex I habitats present. Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however this would not be expected to impact the Annex I habitats.	No	There is no potential for effects in combination with other PPPs.	No
	Water Pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water	Yes	In combination assessment carried forward to Appropriate Assessment	

		chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.			
	Physical Damage	Reefs and sandbanks are not present within the works area and will therefore not be impacted.	No	There is no potential for effects in combination with other PPPs.	No
Annex I habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat loss/community simplification	<p>Materials will either be delivered directly to the beach via barge, using the landing site on Kitchen Porth beach, or if not feasible, landed and stored at the closest site and be transported along the proposed access track. The landing of the barge in this area could therefore result in the temporary loss of sandflats which are a feature of the SAC.</p> <p>The works are confined to the beach and existing structure and are therefore not taking place directly on any Annex I habitats. Works will be limited to areas of the beach which are dry or inundated only at high tides and there will be no permanent loss of sandflat habitat. However, there may be temporary losses within the construction areas at the top of the beach during construction due to armour stone and material storage.</p>	Yes	In combination assessment carried forward to Appropriate Assessment	

	<p>Competition from invasive non-native species (INNS)</p>	<p>The proposed works have the potential to spread terrestrial invasive species, however there are no invasive species likely to be introduced or spread which would impact the Annex I habitats present.</p> <p>Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however this would not be expected to impact the Annex I habitats.</p> <p>Works will only take place above MHWS. There is therefore negligible risk of spreading or introducing marine INNS.</p>	<p>No</p>	<p>There is no potential for effects in combination with other PPPs.</p>	<p>No</p>
	<p>Water pollution</p>	<p>During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats within the SAC, in the absence of suitable on-site avoidance and mitigation measures.</p>	<p>Yes</p>	<p>In combination assessment carried forward to Appropriate Assessment</p>	
	<p>Alteration to coastal processes</p>	<p>Although the proposed design is considered as an effective measure for reducing coastal erosion and flooding at Kitchen Porth, the structure will be expected to have a negative impact on intertidal habitats in terms of coastal squeeze. The proposed defence structure currently sits above the MHWS mark. Design drawings indicate</p>	<p>No</p>	<p>There is no potential for effects in combination with other PPPs.</p>	<p>No</p>

		<p>that the toe of the defence is approximately 5 m from the current MHWS mark at the eastern end of the defence and 10 m to the west. This will provide a limited capacity for intertidal habitat to respond and adapt to the anticipated rise in sea levels. Additionally, placing the rock armour in front of the current beach crest will encroach approximately 5 m upon the sandy beach reducing beach width and further limiting available space for intertidal habitat to migrate landward. Whilst the proposed design may have potential impacts with respect to coastal squeeze, these impacts will be minor and small-scale. Any impacts will be local to the proposed site and will not impact the overall site integrity.</p>				
	Physical damage	<p>There is the potential for works to damage the habitat 'sandflats not covered by seawater at low tide' as construction works will be limited to areas of the beach which are dry or inundated only at high tides and the tracking of vehicles across the site may result in a small amount of damage to habitats present.</p> <p>Materials will either be delivered directly to the beach via barge, using the landing site on Kitchen</p>	Yes	In combination assessment carried forward to Appropriate Assessment		

		Porth beach, or if not feasible, landed and stored at the closest site and be transported along the proposed access track. The landing of the barge in this area could therefore result in the damage to sandflats which are a feature of the SAC.			
Annex II species (primary reason for selection): Shore dock	Habitat loss/ community simplification	No Shore dock was recorded on site during the site survey, and it is believed to be absent from the works area with no recent records of Shore dock being present on Bryher. Recent surveys suggest that it may now be restricted to just the four islands Tresco, Annet, Samson, Tean (JNCC 2022).	No	No potential for effects in combination with other PPPs have been identified.	No
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats with Shore dock present within the SAC, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	No Shore dock was recorded on site during the site survey. It is believed to be absent from the works area with no recent records of Shore dock being present. Recent surveys suggest that it may now be restricted to just the four islands Tresco, Annet, Samson, Tean (JNCC 2022).	No	No potential for effects in combination with other PPPs have been identified.	No

	Competition from invasive non-native species (INNS)	Hottentot Fig was recorded during the survey and is present within and near the works area. There is therefore the potential to spread this INNS, however it would not be expected to impact populations of Shore Dock.	No	No potential for effects in combination with other PPPs have been identified.	No
Annex II species (not primary reason for selection): Grey seal	Habitat loss/community simplification	The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such. The works will result in a small area of temporary beach habitat loss, however there is ample alternative habitat available, and any potential impact on Grey Seal habitat would be negligible. Habitat loss would be temporary for the duration of on-site works. Works will not result loss of marine habitat.	No	No potential for effects in combination with other PPPs have been identified.	No
	Disturbance	Operations during the construction phase could cause noise and visual disturbance to Grey seal that are hauled out in the surrounding area. There is to be no impact pile driving or working in water; therefore, there will be no impacts on Grey Seals that are in the sea.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Grey seal	Yes	In combination assessment carried forward to Appropriate Assessment	

		within the SAC, in the absence of suitable on-site avoidance and mitigation measures.			
	Physical damage/mortality	The works are small in scale and will take place above the Mean High Water Spring (MHWS). While it is possible for seals to be hauled out on the beach during the works, works would not continue if seals were present and likely to be harmed.	No	No potential for effects in combination with other PPPs have been identified.	No
Isles of Scilly SPA					
European storm-petrel <i>Hydrobates pelagicus</i> (breeding)	Habitat loss/community simplification	The works area is not known to contain breeding or foraging habitat for Storm petrel. Habitats within or adjacent to the site do not provide nesting opportunities for Storm petrel and therefore the proposed works will not inhibit the recovery potential of Storm petrel within the SPA as no potential Storm petrel habitat will be lost as part of the works.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and visual disturbance	Storm petrels are not known to nest on Bryher. The proposed works are sufficiently far away from known nesting sites of Storm petrel associated with the SPA and it is therefore not considered that the works will result in disturbance to nesting individuals. Operations during the construction phase could however cause disturbance to	Yes	In combination assessment carried forward to Appropriate Assessment	

		Storm petrel foraging or resting at sea within the SPA.			
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding Storm petrel within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works area is not known to contain breeding or foraging habitat for Storm petrel. Habitats within or adjacent to the site do not provide nesting opportunities for Storm petrel and therefore the proposed works will not directly impact any breeding Storm petrel. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to nesting Storm petrel on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	In combination assessment carried forward to Appropriate Assessment	
European Shag <i>Phalacrocorax aristotelis</i> (breeding)	Habitat loss/ community simplification	The works area is not known as a breeding or foraging habitat for Shag, Great black-backed gull, or Lesser black-backed gull. Habitats within or adjacent to the site do not provide	No	No potential for effects in combination with other PPPs have been identified.	No

Great black-backed gull <i>Larus marinus</i> (breeding) Lesser black-backed gull <i>Larus fuscus</i> (breeding)		nesting opportunities for these species and therefore the proposed works will not inhibit the recovery potential of Shag, Great black-backed gull, or Lesser black-backed gull within the SPA as no potential breeding habitat will be lost as part of the works.		
	Noise and visual disturbance	Great Black-backed gull, Shag and Lesser Black-backed gull are known to nest within the SPA at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of these species and it is therefore not considered that the works will result in disturbance to nesting birds within the SPA. Operations during the construction phase could cause noise disturbance and workers could cause visual disturbance to Shag, Great black-backed gull and Lesser black-backed gull within the Isles of Scilly SPA.	Yes	In combination assessment carried forward to Appropriate Assessment
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by Shag, Great black-backed gull and Lesser black-backed gull within the SPA, in the absence of suitable	Yes	In combination assessment carried forward to Appropriate Assessment

		on-site avoidance and mitigation measures.			
	Physical damage/mortality	The works areas do not contain any nesting habitat for breeding bird species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to nesting seabirds on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	In combination assessment carried forward to Appropriate Assessment	
Seabird Assemblage (breeding)	Habitat loss/ community simplification	The works area is not known to contain nesting habitat for the breeding seabird assemblage of the SPA. Habitats within or adjacent to the site do not provide nesting opportunities for the breeding seabird assemblage and therefore the proposed works will not inhibit the recovery potential of the seabird assemblage within the SPA as no potential breeding habitat will be lost as part of the works.	No	No potential for effects in combination with other PPPs have been identified.	No
	Noise and Visual Disturbance	The proposed works are sufficiently far away from any known nesting sites of the qualifying bird species listed associated with the SPA and it is therefore not considered that the works will result in	Yes	In combination assessment carried forward to Appropriate Assessment	

		disturbance to nesting bird species. However, operations during the construction phase could cause disturbance to seabird assemblages resting or foraging at sea within the Isles of Scilly SPA.			
	Water Pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by seabird assemblages within the SPA, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment	
	Physical damage/mortality	The works areas do not contain any nesting habitat for seabird species. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to breeding seabirds within the Isles of Scilly SPA. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	In combination assessment carried forward to Appropriate Assessment	
Isles of Scilly Ramsar					
Species regularly supported during the breeding	Habitat loss/ community simplification	The works area is not known to contain breeding habitat for Storm petrel, Lesser black-	No	No potential for effects in combination with other PPPs have been identified.	No

<p>season (as identified at designation):</p> <ul style="list-style-type: none"> Storm Petrel Lesser black-backed gull <p>Species regularly supported during the breeding season (identified subsequent to designation):</p> <ul style="list-style-type: none"> Shag 		backed gull or Shag. Any habitat loss will be temporary, as the sand dunes and beach will be fully reinstated. There will therefore be no foraging or breeding habitat lost as part of the proposed scheme.		
	Noise and visual disturbance	<p>Storm petrels are not known to nest on Bryher however Lesser black-backed gulls and Shag have been recorded nesting within the Ramsar at the north of Bryher Island. The proposed works are sufficiently far away from known nesting sites of seabirds associated with the Ramsar site and it is therefore not considered that the works will result in disturbance to any nesting species.</p> <p>However, operations during the construction phase could cause disturbance to Storm petrel, Lesser black-backed gull or Shag resting or foraging at sea within the Ramsar site.</p>	Yes	In combination assessment carried forward to Appropriate Assessment
	Water pollution	During the construction phase, accidental fuel or concrete spills could cause changes in water chemistry and impact upon the habitats used by breeding birds within the Ramsar, in the absence of suitable on-site avoidance and mitigation measures.	Yes	In combination assessment carried forward to Appropriate Assessment

	Physical damage/mortality	The works areas do not contain any nesting habitat for Storm petrel, Lesser black-backed gull or Shag. Any birds present in the works area can reasonably be expected to move away from harm.	No	No potential for effects in combination with other PPPs have been identified.	No
	Invasive non-native species (INNS)	Brown rats pose a threat to breeding seabirds within the Isles of Scilly Ramsar. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	In combination assessment carried forward to Appropriate Assessment	

5.4 Screening Statement Conclusion

At stage 1 certain effects could not be screened out without appropriate management strategies put in place, those effects requiring appropriate assessment are summarised in Table 5-3 below.

Table 5-3: Summary of screening conclusions for the project showing all screened in hazards and European Sites

Qualifying Feature	Hazard	Likely significant effect alone or in combination
Isles of Scilly Complex SAC		
Annex I habitats: <ul style="list-style-type: none"> Sand banks which are slightly covered by sea water all the time Reefs 	Water pollution	Both
Annex I habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide 	Habitat loss	Alone
	Water pollution	Both
	Physical damage/mortality	Alone
Annex II species (primary reason for selection): Shore dock	Water pollution	Both
Annex II species (not primary reason for selection): Grey Seal	Noise and visual disturbance	Both
	Water pollution	Both
Isles of Scilly SPA		
Storm Petrel (breeding)	Noise and visual disturbance	Both
	Water pollution	Both
	Invasive non-native species	Both
Great Black-backed Gull (breeding) Shag (breeding) Lesser Black-backed Gull (breeding)	Water pollution	Both
	Noise and visual disturbance	Both
	Invasive non-native species	Both
Seabird Assemblage (breeding)	Water pollution	Both
	Noise and visual disturbance	Both
	Invasive non-native species	Both
Isles of Scilly Ramsar		
Species regularly supported during the breeding season (as identified at designation): <ul style="list-style-type: none"> Storm Petrel Lesser black-backed gull Species regularly supported during the breeding season (as identified at designation): <ul style="list-style-type: none"> Shag 	Noise and visual disturbance	Both
	Water pollution	Both
	Invasive non-native species	Both

6 Appropriate Assessment

6.1 Introduction

Stage 2 of the HRA process is an Appropriate Assessment, which is required because likely significant effects caused by the proposed works have been identified on the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar. The Appropriate Assessment determines whether a project or plan would have an adverse impact on the integrity of a European site. In this assessment, avoidance or mitigation measures are applied to a point where the effects identified are no longer significant. If no significant impact on site integrity can be demonstrated beyond reasonable scientific doubt, the project or plan can proceed. If sufficient avoidance or mitigation measures cannot be applied, the project should not be taken forward in its current form unless there is a demonstration of no suitable alternatives and there are reasons of overriding public interest.

6.2 European Sites

Table 6-1 below shows the European sites that have been screened into the Appropriate Assessment, as summarised in Table 5-3.

Table 6-1: European sites screened into this assessment

Site Name	Proximity to Site
Isles of Scilly Complex SAC	Approximately 80m
Isles of Scilly SPA	Adjacent
Isles of Scilly Ramsar	Approximately 120m

6.3 General Scheme Mitigation Measures

6.3.1 Pollution Prevention Measures

Appropriate pollution prevention measures will be implemented to ensure that the habitats within proximity of the works, including the interest features and supporting habitats of the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar are not degraded as a result of pollution events during the construction phase. This mitigation will include:

- Following relevant guidance e.g. CIRIA Guidance: Control of water pollution from construction sites. Guidance for consultants and contractors (C532D) (Masters-Williams, 2001), including the delivery of toolbox talks to site staff.
- Any chemical, fuel and oil stores will be located on impervious bases within a secured bund with a storage capacity 110% of the stored volume.
- Biodegradable oils and fuels will be used where possible.
- Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will be carried out on an impermeable surface in one designated area well away from the high tide mark with capture of any spillages.
- Emergency spill kits will be available on site and staff trained in their use.
- Operators will check their vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages will be reported immediately.
- Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective will be removed from site immediately or positioned in a place of safety until such time that it can be removed.

- This mitigation is industry standard practice and as a result will be incorporated into the project through the Environmental Management Plan (EMP).

6.4 In-combination Effects

The proposed works at Kitchen Porth are part of a wider scheme to construct new coastal and flood protection works at nine sites across islands off the Isles of Scilly. Five of these sites, including Kitchen Porth are located on the island of Bryher. In order to meet project delivery schedules, parallel working between sites may occur. In order to minimise in-combination effects as a result of parallel working it will be organised so that works do not take place on adjacent beaches.

Other plans and projects with potential in-combination impacts were reviewed. No plans were identified that could potentially act in-combination with the proposed works. All of the planning applications within 1km of each of the sites are all small-scale works that have no direct connection to the site. There are no Nationally Significant Infrastructure projects within 1km of the site.

The proposed works assessed in this HRA are included within the Local Plan. Other coastal management works included within the Local Plan include proposed works for repairs to existing structures. The rest of the proposed works within the Local Plan include dune management and management of cliff recession. In-combination impacts with these projects and between the assessed projects has already been assessed in the Local Plan HRA.

6.5 Appropriate Assessment of Project Impacts and Mitigation

Taking into account the prevailing site conditions, screened in qualifying features, and the typical habitats and species necessary to the conservation of these features, the proposed works and mitigation measures and the conservation objectives for each European site, the following table details the Appropriate Assessment undertaken for the project. In Table 6-2 avoidance and mitigation measures are presented, and an assessment is made on whether an adverse impact remains after the mitigation is applied.

Table 6-2: Appropriate Assessment of Hazards and Mitigation

Qualifying Features	Description of adverse effect(s)	Can adverse effect(s) be mitigated	Description of mitigation measures, and how they would be applied (e.g. contractual obligations, consent conditions)	Can adverse effect on site integrity be ruled out?
Isles of Scilly Complex SAC				
Annex I habitats: <ul style="list-style-type: none"> Sand banks which are slightly covered by sea water all the time Reefs 	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact the Annex I habitats within the SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3.	Yes
Annex I habitats: <ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide. 	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats within the Isles of Scilly Complex SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Habitat loss: Works are to the front of the existing structures and embankment at the rear of the beach and there will be no permanent loss of sandflat habitat. However, there may be temporary losses within the construction areas at the top of the beach during construction due to armour stone and material storage. Materials will either be delivered directly to the beach via barge, using the	Yes	Any habitat loss via the construction works and barge landing will be temporary and localised. An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to SAC habitats. Any loss of sandflat habitat as part of the material delivery by barge will be temporary.	Yes

	landing site on Kitchen Porth beach, or if not feasible, landed and stored at the closest site and be transported along the proposed access track. The landing of the barge in this area could therefore result in the temporary loss of sandflats.		To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly recover following the completion of the works.	
	Physical damage: There is the potential for works to damage the habitat 'sandflats not covered by seawater at low tide' as construction works will be limited to areas of the beach which are dry or inundated only at high tides and as part of the proposed works a vessel will be used to transport construction materials to site in the form of a barge.	Yes	Any damage to habitats present within the site via the construction works and barge landing will be temporary and localised. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly recover following the completion of the works.	Yes
Annex II species (primary reason for selection): Shore dock	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and impact upon the habitats with Shore dock present within the SAC.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
Annex II species (not primary reason for selection): Grey seal	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes

	and habitats used by Grey seal within the Isles of Scilly Complex SAC.			
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb any seals that are hauled out in the surrounding area.	Yes	<p>The proposed scheme is not located near any known breeding colonies. The works area is not a known hauling out spot for seals, although it is possible it is occasionally used as such by some individuals. There is ample alternative habitat available, and therefore any potential impact on Grey Seal habitat would be negligible. Haul out areas should be confirmed by local wildlife groups before works begin.</p> <p>Prior to works commencing each day, the works area and immediate vicinity will be checked for hauled out seals. If any seals are present within 200m of the works, site staff will keep their distance and no works will take place until the seal has moved off of its own accord.</p>	Yes
Isles of Scilly SPA				
Storm Petrel (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes

	and habitats utilised by Storm petrel within the SPA.			
	Disturbance: Operations during the construction phase could cause disturbance to Storm petrel foraging or resting at sea within the SPA.	Yes	<p>To reduce the impact of disturbance that working on multiple sites could have on resting and foraging Storm petrel, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches.</p> <p>Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.</p>	Yes
	Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	<p>Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof</p>	Yes

			containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	
Great Black-backed Gull (breeding) Shag (Breeding) Lesser Black-backed Gull (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Disturbance: Construction activity will cause an increased amount of noise and activity which may disturb resting and foraging Shag, Great Black-backed Gull or Lesser Black-backed Gull utilising the SPA at sea.	Yes	To reduce the impact that working on multiple sites could have on bird assemblages, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches. Given the short duration of the works and its relative small-scale in relation to the size of the SPA and	Yes

			abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	
	Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.	Yes	Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity	Yes

			risk assessment and mitigation strategy.	
Seabird assemblage (breeding)	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the SPA.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
	Disturbance: Construction activity could cause an increased amount of noise and activity which may disturb seabird assemblages resting or foraging at sea within the SPA.	Yes	To reduce the impact that working on multiple sites could have on seabird assemblages foraging or resting at sea, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches. Given the short duration of the works and its relative small-scale in relation to the size of the SPA and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.	Yes
	Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds on the Isles of Scilly. Materials will be delivered by barge	Yes	Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures	Yes

	which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.		include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.	
Isles of Scilly Ramsar				
Species regularly supported during the breeding season (as identified at designation):	Water pollution: Construction activity may result in accidental fuel or concrete spills which could cause changes in water chemistry and habitats utilised by breeding bird species within the Ramsar.	Yes	Strict pollution prevention measures will be implemented on site, as outlined in Section 6.3	Yes
<ul style="list-style-type: none"> • Storm Petrel • Lesser black-backed gull 				

<p>Species regularly supported during the breeding season (identified subsequent to designation):</p> <ul style="list-style-type: none"> • Shag 	<p>Disturbance: Construction activity may cause an increased amount of noise and activity which may disturb bird species resting and foraging at sea.</p>	<p>Yes</p>	<p>To reduce the impact that working on multiple sites could have on seabird assemblages foraging or resting at sea, where parallel working is preferred to meet project delivery schedules it will be organised so that works do not take place on adjacent beaches.</p> <p>Given the short duration of the works and its relative small-scale in relation to the size of the Ramsar and abundance of other available habitat it is considered that with the mitigation outlined above any potential disturbance because of the construction works will not be significant.</p>	<p>Yes</p>
	<p>Invasive non-native species (INNS): Brown rats pose a threat to nesting seabirds on the Isles of Scilly. Materials will be delivered by barge which could potentially provide a pathway for rats to be brought on to the island or reintroduced to the rodent-free St Agnes and Gugh.</p>	<p>Yes</p>	<p>Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste</p>	<p>Yes</p>

			<p>management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.</p>	
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6.6 Implementation of Mitigation

The mitigation measures listed above are to be included in the Method Statement produced by the contractor who will be undertaking the works. The appointed contractor will therefore be responsible for ensuring that all on-site mitigation measures are implemented effectively.

7 Appropriate Assessment Conclusions

The proposed scheme will not have an adverse impact upon the Isles of Scilly Complex SAC and Isles of Scilly SPA and Ramsar either alone or in combination with any other plans or projects, providing the following mitigation measures are implemented:

- Industry standard pollution prevention measures, particularly addressing the risks of fuel and concrete spills.
- Biosecurity measures will be put in place to ensure the proposed works do not result in the introduction of Brown rats. Measures include checking of material, plant and vessels for signs and presence of rats before transportation and on arrival at site, the use of rope guards on the vessel transporting construction material and ensuring food and waste onboard are all contained in rodent proof containers. Good waste management will be implemented throughout the works and a toolbox talk highlighting vigilance for rats and the importance of reporting rat activity will be given to all site personnel before works begin. The biosecurity measures outlined above to ensure that the works do not result in the introduction of Brown rats will be adhered to and documented in a biosecurity risk assessment and mitigation strategy.
- An Ecological Clerk of Works will inspect the sites before any material is brought in by barge to assess the most appropriate landing site in order to minimise impacts to intertidal habitats. To minimise disturbance and habitat degradation plant will keep to agreed haul routes and not stray outside of these areas.
- Prior to works commencing each day, the works area and immediate vicinity will be checked for hauled out seals. If any seals are present within 200m of the works, site staff will keep their distance and no works will take place until the seal has moved off of its own accord.

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+44(0)1756 799919
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