

Report

Holyhead Waterfront Regeneration Scheme Environmental Impact Assessment

Non-Technical Summary

Client: Conygar Holyhead Ltd.

Reference: PB8908-ZZ-ZZ-RP-Z-0044

Status: Final/P01.01

Date: 14 October 2021



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Date: 14/10/21

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Classification

Project related

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1 Introduction

1.1 Purpose of this Document

This document represents the 'Non-Technical Summary' (NTS) of the Environmental Statement (ES) of the Holyhead Waterfront Regeneration Scheme (the 'Proposed Development'), providing an overview, in non-technical language, of the main findings of the Environmental Impact Assessment (EIA). It is important to note that this NTS does not, and is not intended to, convey all of the information relating to the Proposed Development and its potential effects on the environment. By necessity, the text provided herein is a summary of the detailed assessments discussed in the ES.

1.2 Background to the Proposed Development

The Proposed Development is a mixed-use regeneration scheme on the banks of Holyhead New Harbour, on Holy Island / Ynys Gybi, adjacent to Holyhead Breakwater (also known as the Great Breakwater) (see **Figure 1.1**). Artist impressions of the completed design are presented in **Figure 1.2** and **Figure 1.3**.

The Proposed Development includes new residential properties, public realm, commercial, leisure and retail use (plus associated infrastructure) and a new 250-berth marina with a protective breakwater. The Proposed Development would contribute to the development of a sustainable community that complements and enhances the existing town of Holyhead and retains the natural beauty of the coastal environment.

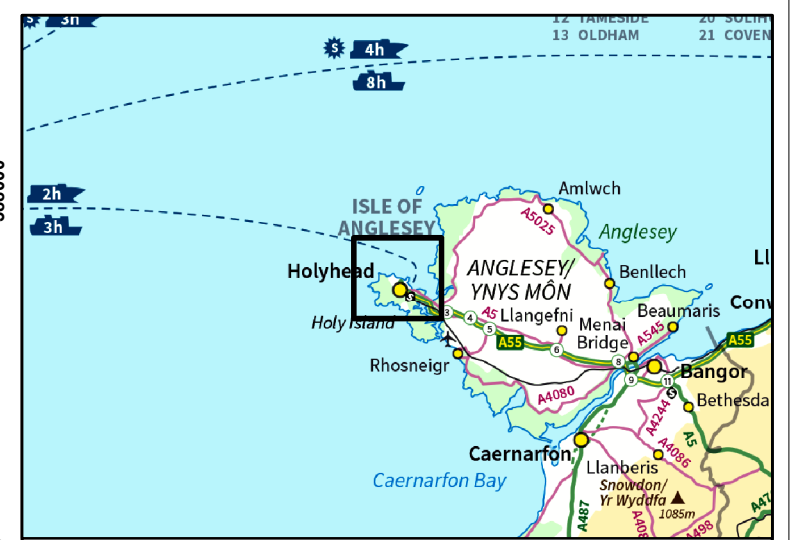
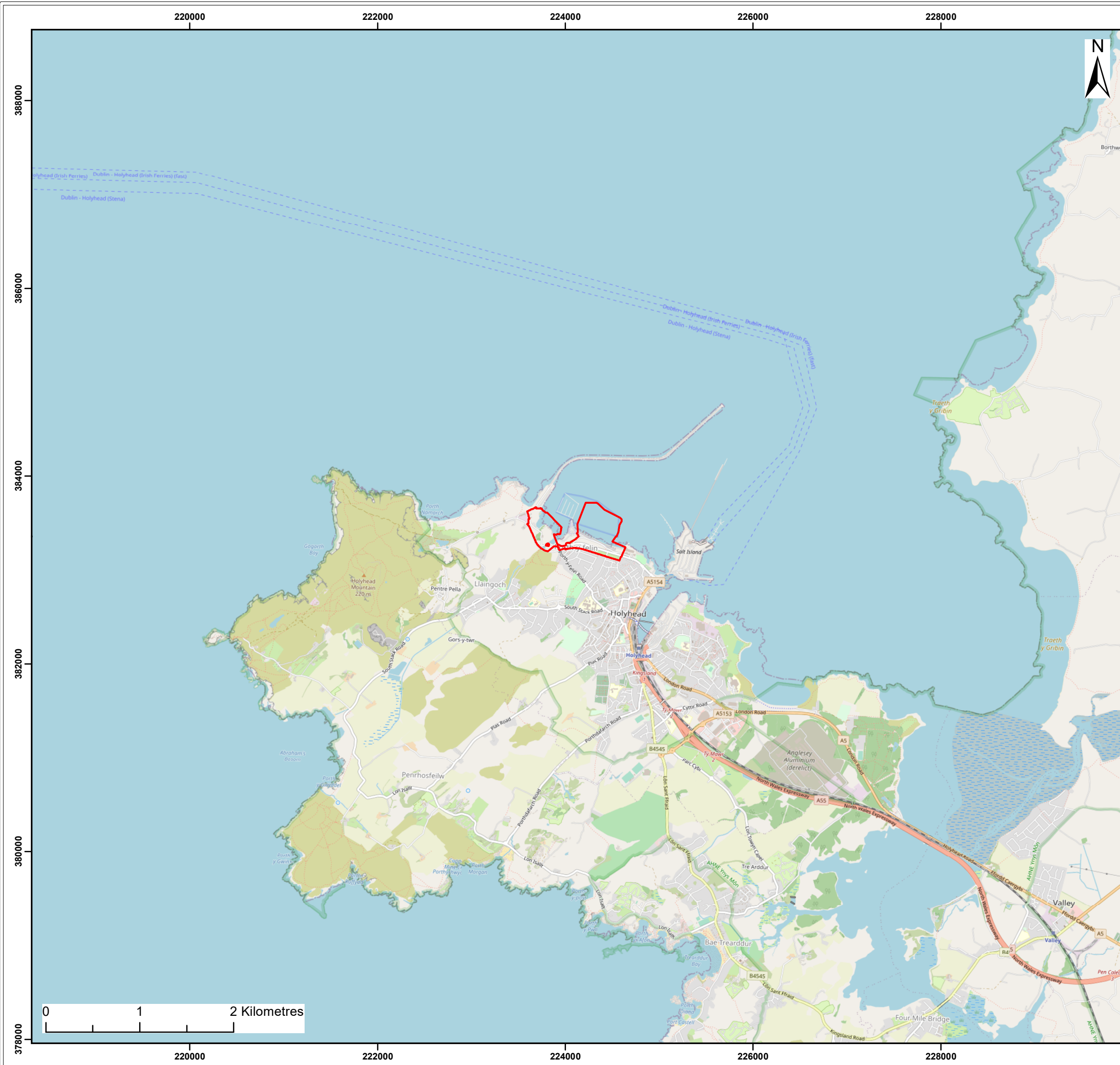
An ES for the Proposed Development was submitted to the Isle of Anglesey County Council (IACC) in 2010 (the '2010 ES') (Axis, 2010), in support of an Outline Planning Application (with All Matters Reserved). The Proposed Development was awarded Outline Planning Permission, subject to a number of conditions, by the IACC in 2014. Amongst other things, the conditions of the Outline Planning Permission required the submission of Reserved Matters applications. A further application, known as a Section 73 application, was submitted to the IACC in March 2020 with a view to extend the period of time within which the Reserved Matters applications could be submitted, and a second ES (the '2020 ES') (Axis, 2020) was submitted to take account of new baseline information and changes to legislation.

Since the 2020 ES was issued however, the Masterplan for the Proposed Development has been updated (the '2020 Masterplan', described in **Section 3** of this NTS) and the IACC has since determined that, due to the design changes in the 2020 Masterplan, a new Detailed Planning Application for the Proposed Development should be sought.

1.3 What is EIA?

In accordance with UK law, certain projects must be the subject of a particular process of environmental assessment due to their size, nature and the likelihood that they will have significant effects upon the environment. This assessment process is known as EIA.

EIA provides a valuable opportunity to avoid and reduce potential environmental impacts through design refinement. Environmental constraints and issues are identified through consultation, extensive environmental surveys and technical assessments. The information gathered informs decision-making throughout the design process, thereby providing opportunities to address potentially significant impacts where practicable; for example, by refinement of the Proposed Development design or by the incorporation of measures to avoid or reduce potential adverse impacts.



Legend:
 Holyhead Waterfront Red Line Boundary

Base map: © OpenStreetMap (and) contributors, CC-BY-SA
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Client:	Project:
Conygar Holyhead Ltd.	Holyhead Waterfront Regeneration Scheme

Title:
 Location of the Proposed Development

Figure: 1.1 Drawing No: PB8908-RHD-ZZ-ZZ-DR-Z-0045

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
01	25/05/21	JT	BH	A3	1:40,000

Co-ordinate system: British National Grid



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Figure 1.2 Artist impression of the Proposed Development overlooking Newry Beach



Figure 1.3 Artist impression of the Proposed Development overlooking Soldier's Point and Porth-y-Felin

1.4 Requirement for EIA for the Proposed Development

The following consents will be required to permit the construction and operation of the Proposed Development:

- Planning Permission from the IACC for all works above Mean Low Water (MLW) (including Listed Building Consent);
- A Marine Licence from Natural Resources Wales (NRW) for all works below Mean High Water Spring (MHWS); and,
- A Harbour Revision Order (HRO) from the Welsh Government (WG) for all works that may result in navigational impacts within the Holyhead Harbour limits.

Given that the Proposed Development requires Planning Permission, a marine licence and an HRO, the requirement for EIA has been established by the Town and Country Planning (EIA) (Wales) Regulations 2017 (as amended¹), the Marine Works (EIA) Regulations 2007 (as amended²) and the Harbour Works (EIA) Regulations 1999 (as amended³).

The Proposed Development was confirmed as an EIA development as part of the original Outline Planning Application, therefore there was no need to undertake further screening for the purpose of this application for the above consents. An all-encompassing ES has been produced that fulfils the requirements for all three sets of EIA Regulations, rather than separate documents for each consent application.

1.5 Production of the ES

The ES has been prepared by Royal HaskoningDHV, a Registered Environmental Impact Assessor with the Institute of Environmental Management and Assessment (IEMA), with contributions from EIA professionals who are competent in their relevant fields.

¹ Amended by the Town and Country Planning (EIA) (Wales) (Amendment) Regulations 2019.

² Amended by the Marine Works (EIA) (Amendment) Regulations 2017.

³ Amended by the Harbour Works (EIA) (Amendment) (England and Wales) Regulations 2009.

2 Need for the Proposed Development

The Proposed Development provides an excellent opportunity to improve and enhance Holyhead's status as a national and international tourism destination. It would enhance the appeal of Holyhead as a popular tourist attraction and provide economic and aesthetic improvements to an existing and well-known destination. It would contribute to the continued regeneration of the town of Holyhead, providing significant employment opportunities, residence and leisure facilities and acting as a catalyst for further investment and initiatives in the local area.

The Proposed Development would be a high quality and resilient regeneration that would provide a vibrant and dynamic public realm, as well as significant residential and employment opportunities including:

- Construction of a new, robust breakwater to better safeguard maritime uses and address threats of rising sea levels posed by climate change;
- Utilisation of the new breakwater to provide land for new developments;
- Regeneration of commercial and leisure opportunities to revitalise the economic and societal value of the area;
- Creation of distinctive new homes for both local populations and to encourage boat owners and other users; and,
- Restoration and viable conversion of Listed Buildings within the Holyhead Conservation Area which are currently in a state of disrepair, to improve the heritage setting of the site.

The Proposed Development would contribute to the development of a sustainable community that both complements and enhances the culture of the existing town of Holyhead and retains the natural beauty of the coastal environment to the north-west of the town.

3 The Proposed Development

3.1 Overview

The Proposed Development, which would be located along the existing Holyhead waterfront and on newly reclaimed land in Holyhead New Harbour, would be a mixed-use regeneration scheme. It would include new residential developments, public realm, commercial, leisure and retail use (plus associated infrastructure) and a new 250-berth marina with protective breakwater.

The 2020 Masterplan for the Proposed Development is shown in **Figure 3.1**, and comprises:

- New residences for both the local population and boat owners;
- New and commercially sustainable mixed uses;
- A modern and attractive 250-berth marina, complete with visitor, tourist and training facilities;
- Public realm enhancement through beach, garden, promenade and coastal linkages;
- A variety of independent character areas that complement each other and work as well together as they do in isolation; and,
- Full linkage and interaction between Holyhead town centre and $\frac{3}{4}$ mile of coastal environment, with broader links to the Holyhead Breakwater Country Park.

For clarity, and in order to provide a comprehensive explanation of the scale of the Proposed Development, the overall development has been separated into four distinct ‘development zones’:

- Zone 1 – Newry Beach;
- Zone 2 – Porth-y-Felin;
- Zone 3 – Soldier’s Point; and,
- Zone 4 – The Greens.

The first three zones are anchored by a primary development within and around which other complementary uses are proposed. Locations of the four proposed development zones are presented in **Figure 3.2**.

One of the most notable changes from the masterplan for which the 2014 outline planning permission was granted is the reduction in the overall scale and amount of new development, breakwater and associated land reclamation. Other changes, and the reasons for them, are summarised as follows:

- Breaking up the development to improve views through it;
- Parking has now been moved mostly underground;
- Raising of the development platform to make it more resilient to the effects of climate change;
- A reduction in marina capacity from 500 to 250 berths;
- Introduction of a new amphitheatre, terraced inlet and covered arcade / market;
- Improved mix of housing;
- Introduction of a yacht basin and formal park area; and,
- Conversion of the Listed Soldier’s Point House, associated out-buildings and Porth-y-Felin House into residential apartments.



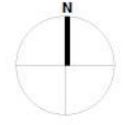
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AR



REV	DESCRIPTION	DATE	BY
F	Buildings and landscaping design updated.	04.12.2020	SP
E	Development details updated, Annotations updated.	24.09.2020	SP
D	Annotations added.	23.09.2020	TL
C	RNLI Berth	02.09.2020	TL
B	Development boundary updated.	04.09.2020	SP
A	Zone 4 updated.	30.07.2020	SP



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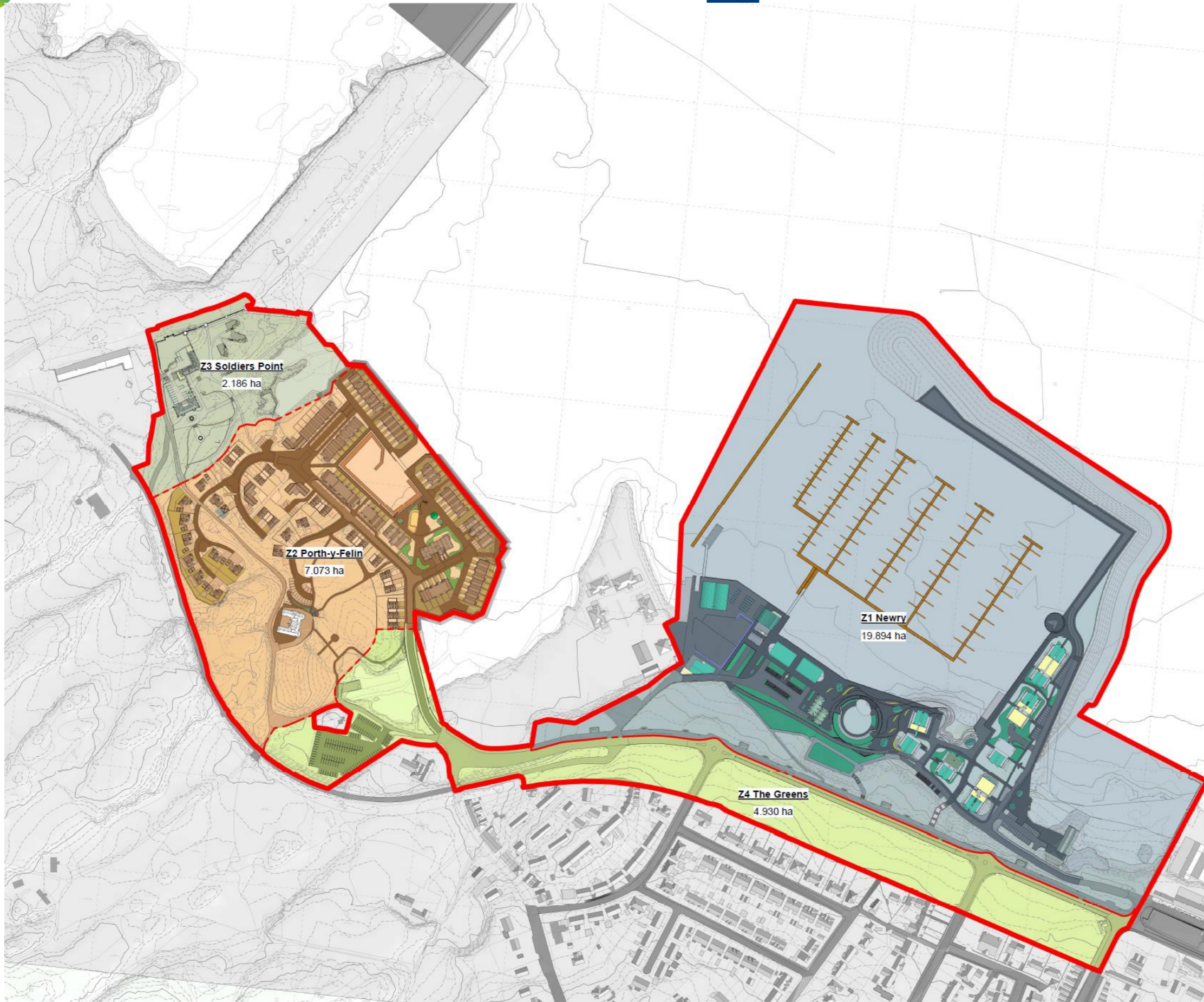


Holyhead Waterfront Regeneration Scheme
Isle of Anglesey, Wales
DATE: 11/2019
DRAWN BY: Conygar Holyhead Ltd
SCALE: 1:2000 @ A1
PROJECT: Proposed Masterplan

Planning	2571-3-00-201	F
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Figure 3.1 2020 Masterplan of the Proposed Development

Project related

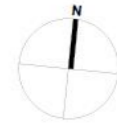
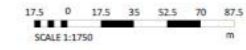


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Proposed Development Zones			
Zone	Name	Area	
		ha	acres
Z1	Newry	19.894	49.158
Z2	Porth-y-Felin	7.073	17.478
Z3	Soldiers Point	2.186	5.403
Z4	The Greens	4.930	12.182

REV	DESCRIPTION	DATE	BY
D	Zone 1 amended as per sub-zone Z1-A.	09.09.2020	SJF
C	Zones redefined as per BODMV requirements.	04.09.2020	SJF
B	Zone 4 updated.	30.07.2020	SJF
A	Zones updated.	26.03.2020	SJF

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RIBA
 Chartered Practice

Holyhead Waterfront Regeneration Scheme
 Isle of Anglesey, Wales

CLIENT: Conygar Holyhead Ltd
 PROJECT: Proposed Development Zones

DATE: 11/2019
 SCALE: 1 : 1750 @ A1
 DRAWN BY: TM

DATE: Planning	ISSUE NUMBER: 2571-3-00-202	REVISION: D
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Figure 3.2 Proposed development zones

3.2 Description of the Construction Phase

3.2.1 Zones 1, 2 and 3

3.2.1.1 Landside works

Details of the landside construction works in Zones 1, 2 and 3 are currently unconfirmed; and will not be officially confirmed until a contractor is appointed. However, for the purposes of the EIA process, the construction phase would include the following elements:

- Creation of site compound(s);
- Creation of development platforms upon newly reclaimed land (in Zones 1 and 2 only);
- Construction of new residential and commercial buildings, internal roads and associated infrastructure;
- Installation of services and drainage; and,
- Modifications to existing amenity areas, roads and buildings.

These elements would likely involve the use of the following:

- General earthworks;
- Concrete batching plant;
- Excavations for foundations,
- Rock drilling and socket piling;
- Delivery of construction materials, likely by road but potentially by sea;
- Use of cranes and barges for movement of material;
- Vibratory compaction; and,
- Topsoil stripping and cutting or terracing into the existing ground surface.

3.2.1.2 Marine works

The marine elements of the construction phase are located in Zones 1 and 2 only and consist of:

- Construction of a proposed new breakwater, c.600m long, which would offer protection to the new waterfront properties and marina;
- Land reclamation along Newry Beach waterfront and Porth-y-Felin, to support commercial and residential development;
- Construction of new marina infrastructure, including installation of pontoons and finger berths; and,
- Dredging of the soft material from the seabed within the footprint of the new breakwater, to provide a suitable surface on which the breakwater can be installed.

3.2.2 Zone 4

The landside works for Zone 4 (The Greens) are considered similar to those described for Zones 1-3; however, most of this zone would be retained and / or enhanced. Any development would be comparatively limited and would mainly comprise the construction of hardstanding for boat storage and car parking.

3.2.3 Anticipated construction programme

It is anticipated that construction works may start as early as Q4 2021, with a five-year construction programme. Land reclamation works at Newry Beach waterfront would be preceded by construction of the new breakwater, as the reclaimed land would depend on the protection offered by the breakwater. Reclamation at Porth-y-Felin may either be undertaken during or following the construction of the breakwater.

At this stage, it is uncertain as to the order in which landside works would proceed, though clearly construction of Zone 1 developments on the reclaimed land at Newry Beach and at the root of the Breakwater, plus Zone 2 developments on reclaimed land at Porth-y-Felin, cannot commence until marine elements of the project are largely complete.

3.3 Description of the Operational Phase

3.3.1 Zone 1: Newry Beach

Zone 1 of the development is located within the eastern section of the development boundary. **Figure 1.2** provides an impression of the completed development at Zone 1. The proposal seeks to integrate a new marina and complementary facilities alongside the existing marina and Holyhead Sailing Club. Development in this zone would comprise:

- A new 250-berth marina, forming the focal point to the Newry Beach Commercial and Leisure Area, which would accommodate yachts, boats and tenders ranging from 6m to 16m in length and with an enclosed area of approximately 8.4ha;
- A new breakwater to protect the marina, covering an area of 35,000m² and connected to the shoreline along Newry Beach. This would incorporate a reclaimed area at the root of the breakwater that would support residential properties, to be called the 'Newry Beach Waterfront Residential Area';
- Newry Beach Waterfront Residential Area would include six apartment buildings, providing 108no. 1-, 2- and 3-bed apartments, and extended basement car parking with 155 spaces and elements of discrete surface parking;
- A public promenade along the length of the new breakwater featuring a dominant public art piece, possibly themed around Saint Cybi, a 6th-century Cornish bishop, saint and king who worked largely in North Wales and Anglesey and for whom Holy Island is named;
- A coastal promenade to define the new shoreline and to enclose the area of land reclamation;
- An access walkway extending from the Newry Beach commercial area to the main berthing facility. There would be a new bank seating and security gates for berth holders. Electrical distribution cabinets, water main stop taps, WIFI aerials and signage would be positioned at the top of the access walkway. Services and fuel feeds would run in cable troughs below the access walkway;
- Marina pontoons, consisting of six piers connected to the shoreline via a pedestrian access walkway and main walkway, which would be 2.5m wide. The finger piers for the berths would vary in length and spacing depending on the size of the vessel they can accommodate. Generally, finger piers would be between 1.0m and 2.0m wide, depending on their length;
- A new floating pontoon running approximately parallel to Holyhead Breakwater to the west of the marina basin, designed to prevent locally generated waves from reflecting into the marina from Holyhead Breakwater and Soldiers Quay;

- A fuel pontoon and pump-out facility. The precise location of the fuel pontoon has yet to be established; however, it is likely to be at the landward end of the westernmost pier (Pier A), fed from a new 15,000-litre double-skinned tank located on land. Distribution would comply with the latest regulations and the air pressure within all the pipework at Pier A would be double skinned and monitored. A pump-out facility would also be located near to the fuel pontoon at the landward end of Pier A;
- A refuse compound located in the berth holder's car park and a number of moveable refuse bins located at the top of the access walkway;
- Relocation of the existing (c.150) swing moorings;
- A new Marina Office building incorporating associated welfare, shower and laundry facilities, ancillary commercial spaces and a bar / restaurant;
- 4no. 2-storey retail / leisure / commercial units, along with additional minor ancillary retail / leisure / commercial facilities on reclaimed land along the Newry Beach waterfront, with a combination of basement and surface parking;
- A new covered arcade for community use, such as performances and farmers' / Christmas markets, plus a new public amphitheatre;
- Reinstatement of the Victorian Sunken Gardens connecting to the new enhanced public realm, with landscaping along the promenade;
- Enhanced access and facilities to Newry Beach, including pedestrian and cycle-path connections along the full length of Newry Beach;
- Preservation of the existing marina plus remodelled and extended Holyhead Sailing Club facilities, with direct links to the new marina;
- A new area of accessible beach adjacent to Mackenzie Landing, plus a terraced inlet allowing access to sheltered water in the marina;
- Enhanced public realm, public art, landscaping, pedestrian / cycle links and parking provision around the existing Maritime Museum and restaurant; and,
- Improved linkage from the marina promenade all the way through to the Breakwater Country Park.

3.3.2 Zone 2: Porth-y-Felin

Zone 2 is centred on the re-instatement of the currently derelict listed building 'Porth-y-Felin House' within an enhanced landscaped setting, along with the delivery of the Porth-y-Felin Residential Area. Development at Zone 2 would mostly be located on land reclaimed from the sea. Zone 2 development would predominantly comprise:

- Restoration and conversion of Porth-y-Felin House into residential use, incorporating 5no. 2- and 3-bedroom apartments;
- 95no. 1-, 2- and 3-bedroom apartments and townhouses, housed within two and three storey apartment blocks along the newly reclaimed waterfront and around a new private yacht basin;
- 31no. 1-, 2- and 3-bedroom two and three storey townhouses and apartments in the Residential Central area;
- 10no. 4-bedroom detached properties in the Residential West area;
- Basement car parking facilities for apartment blocks to reduce ground-level car parking;

- New community park space adjacent to the yacht basin with play / leisure facilities and café;
- A new coastal promenade to define the new shoreline; and,
- Improved vehicular, cycle and pedestrian access to Soldier's Point and the Breakwater Country Park.

3.3.3 Zone 3: Soldier's Point

Development in Zone 3 is focused on bringing the currently derelict Soldier's Point buildings back into use, and comprises the following:

- Restoration and conversion of the listed building 'Soldier's Point House' into residential use, incorporating 4no. 2- and 3-bedroom apartments, along with restoration and conversion of the adjacent stable yard out-buildings into residential use, incorporating 2no. 3-bedroom apartments with discrete parking;
- Provision of 4no. 1- and 2-bedroom holiday lodges, located within the landscaped area external to the Misted Screen Wall; and,
- Enhanced physical linkages to Holyhead Breakwater.

Figure 1.3 provides an impression of the completed development at Zones 2 and 3.

3.3.4 Zone 4: The Greens

Development in Zone 4 is intended to form a buffer / link between Zone 1 and Zones 2 / 3 and would include the enhancement of green space, marine storage and parking overflow. Zone 4 development would include:

- Enhanced amenity grassland within The Greens, forming a southern boundary to the Proposed Development;
- Winter lay-up provision;
- Public / overflow summer parking provision for Marina users; and,
- A new approach link bridge to Porth-y-Felin across the inlet.

3.4 Site drainage

In Zones 1, 2 and 3, roof water from the buildings would be collected into a gravity-fed drainage system and routed to surface water drains. Surface water in lower basement areas would be pumped locally to elevate flows into the gravity-fed drainage system. Surface water runoff from external paved areas would be discharged into trapped gullies and linear channel. Driveways and car parking bays would be permeable surfacing to collect surface water runoff in these areas. Dependent on soakaway testing, the permeable construction may be required to be routed to the surface water drains.

Surface water drains would pass through several swales located around the development before discharging into the sea at one of seven outfall locations (three in Zone 1, four in Zones 2 and 3). Foul drainage is collected into a gravity fed drainage system and routed to the existing public sewer system.

There would be no requirement for surface water or foul drainage in Zone 4.

3.5 Access

3.5.1 Pedestrian

In terms of accessibility, the new pedestrian linkages would offer the following:

- Access to the full length of the new breakwater;
- Access to the promenade across the reinstated Victorian Sunken Gardens and expanded landscape realm, with safe separation from the main car park via elevated walkways; and,
- Access from the improved Newry Beach along the full length of the coast to Soldier's Point, Holyhead Breakwater and the Anglesey Coastal Path.

3.5.2 Vehicular

Vehicular linkages within the Proposed Development would be retained largely as existing, in terms of the main infrastructure, but would also offer the following improvements:

- Managed access to the full length of the proposed new breakwater;
- Car parking to serve the new marina and its associated facilities would principally be located below ground beneath the commercial units, with elements of surface parking partially concealed through the use of existing topography;
- New access would be created to the proposed marina apartments which would also feature basement car parking facilities along with discrete surface parking facilities;
- 'Drop-off' parking arrangements for the new marina and its associated facilities;
- Servicing access to promenade leisure accommodation via the main car parks;
- The waterfront link road between the residential apartments and the marina commercial area would be disconnected to fully enhance and protect the landscaped public realm between the two zones;
- Vehicular accessibility to Soldier's Point and Porth-y-Felin House will be enhanced;
- Porth-y-Felin dwellings and terraced townhouses would have dedicated surface parking and / or garages, while the principal apartment blocks would be served by basement car parking concealed beneath the community park;
- Soldier's Point car parking would be discretely located out of public sight;
- Existing cycling routes (numbers 5 and 8 of the Anglesey Coastal Cycle Route) would be retained and enhanced to provide links to key visitor / tourist attractions, with the minor lane past Porth-y-Felin House being retained as a dedicated cycle path; and,
- Accessibility to the existing marina, slipway and storage yard would be retained and improved.

3.6 Landscaping

Development of the landscape, both soft and hard, public and private, within the 2020 Masterplan is integral to the design process. The treatment of spaces between areas of built development is just as important as the buildings themselves and assists in the delivery of a development that benefits all users, both pedestrian and vehicular.

4 The EIA process

4.1 Consultation

Consultation has been undertaken with the appropriate authorities (primarily with the regulatory bodies Natural Resources Wales (NRW) and the IACC) as part of the pre-application process. Additionally, formal consultation has been undertaken through the EIA Scoping stage, during which statutory and non-statutory technical consultees, such as Cadw, Cefas, Dwr Cymru Welsh Water, the Royal Yachting Association amongst others, were invited to provide comment or information on the proposed scope of the EIA.

An interactive public consultation event for the Proposed Development was launched in January 2021, which provided an online showcase of the development to the local residents, business owners and other interested parties. This event also provided information on the approach taken to the EIA.

Further consultation with other individuals and organisations has been undertaken in order to collect additional and appropriate information to inform the EIA and to assess potential impacts and determine an appropriate mitigation and monitoring strategy, as required. Technical advice sought included confirming the approach to the numerical modelling of potential changes in physical coastal processes (current, waves and sediment plume from the proposed dredging), and the undertaking of ecological surveys at the site of the Proposed Development, and sediment analyses of the sediment to be dredged.

Consultation has been undertaken with the public and stakeholders as part of the statutory Pre-Application Consultation (PAC) process. A PAC Report summarising the comments received, and how they have been addressed, is provided as part of the planning application.

4.2 Impact Assessment

Impact assessment is a fundamental element of the EIA process and the results of this process are presented in the ES. Impacts are positive or negative and result either directly or indirectly from construction phase and operational phase activities associated with the Proposed Development. Each potential impact is assessed for its likely significance based on a number of factors, including the sensitivity and environmental or economic value of the receptors being considered, the magnitude of the impact and the risk of such an impact occurring.

In addition to determining potential impacts from the Proposed Development when considered in isolation, an assessment of the potential for cumulative effects has been undertaken, which considers the impacts from the Proposed Development alongside potential impacts from other proposed projects with overlapping zones of influences that may occur at the same time.

4.3 Mitigation

Mitigation measures have been proposed, where available and practical, in those cases where adverse impacts have been identified. It is important to note that the mitigation measures applied should be proportionate to the scale of the impact predicted. Appropriate mitigation measures have been discussed and agreed, where possible, with the relevant regulatory authorities and stakeholders.

Whilst mitigation for minor or negligible impacts may not be specifically defined as a matter of course, industry standard or 'embedded' mitigation often applies in these cases. It is also recognised that minor and negligible impacts could become significant when considered cumulatively with other pressures on a receptor and, in this event, mitigation may be required.

4.4 Residual Impacts

Where further mitigation measures are identified, the significance of the residual environmental impact (i.e. the post-mitigation impact) is assessed.

4.5 Reporting

The findings of the EIA are presented in the ES. In addition to adhering to the requirements of the EIA Directive and the transposed EIA Regulations, the ES also meets the requirements of:

- The Conservation of Habitats and Species Regulations 2017, as amended⁴; and,
- The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017.

This NTS presents a summary of the ES, including key aspects of the Proposed Development and the associated beneficial and adverse impacts considered to be of particular importance. It also includes a summary of the outcomes of a Shadow Habitats Regulations Assessment (HRA) and a Water Framework Directive (WFD) Compliance Assessment. Further details about the likely significant impacts of the Proposed Development can be found within the full text of the ES. The ES has been subdivided into three volumes, as follows:

1. This NTS;
2. The ES; and,
3. Technical Appendices – Specialist Technical Reports

⁴ Amended by Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019

5 Summary of Potential Environmental Impacts

5.1 Hydrodynamics, Sedimentation and Wave Climate

Chapter 7 of the ES considered the potential effects of the Proposed Development on tidal currents, waves, movement of sediment (both in the water column and along the seabed), water flushing. The assessment was supported by numerical modelling with simulations run both for the baseline condition (i.e. pre-development) and for conditions after construction (i.e. post-development).

Potential construction impacts relate to increases in suspended sediment concentrations and changes in seabed level (due to the settling out of the disturbed sediment) during and after the dredging in the footprint of the proposed breakwater, and also during the disposal of the dredged sediment at a licensed offshore disposal site, Holyhead North. An example model output, showing predicted changes in seabed level, is shown in **Figure 5.1**. Outside of the footprint and immediate vicinity of the dredging and disposal activities, predicted suspended sediment concentrations are relatively low (generally less than 100mg/l) and return to baseline within ten hours of dredging completion. During dredging, changes in seabed level as result of settling sediment would be a maximum of 0.1m, and deposited sediment would be redispersed in the long term.

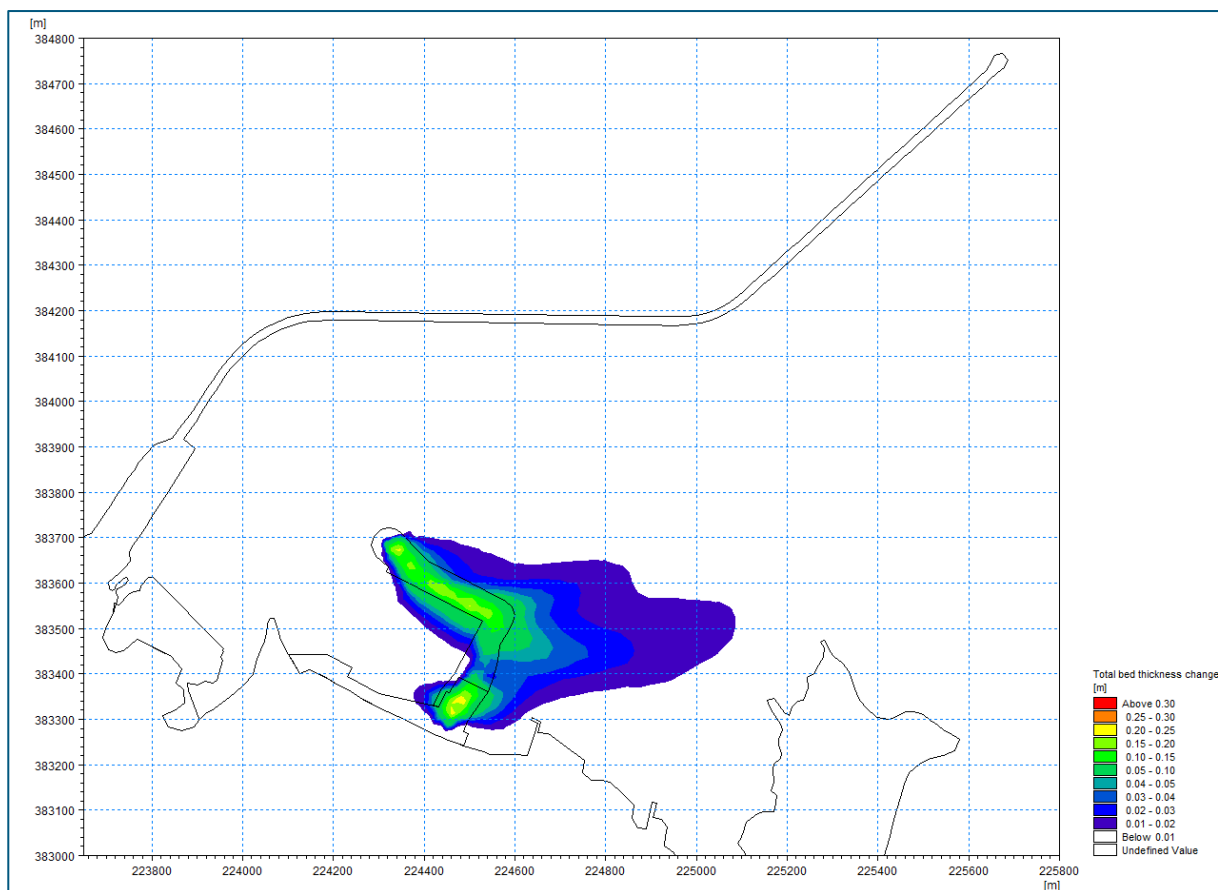


Figure 5.1 Predicted changes in seabed elevation due to deposition of the plume caused by dredging activities

Potential operational impacts relate to changes to the tidal current, wave, sediment transport and water flushing regimes due to the presence of the proposed breakwater and land reclaims. An example of the tidal current model output is shown in **Figure 5.2**.

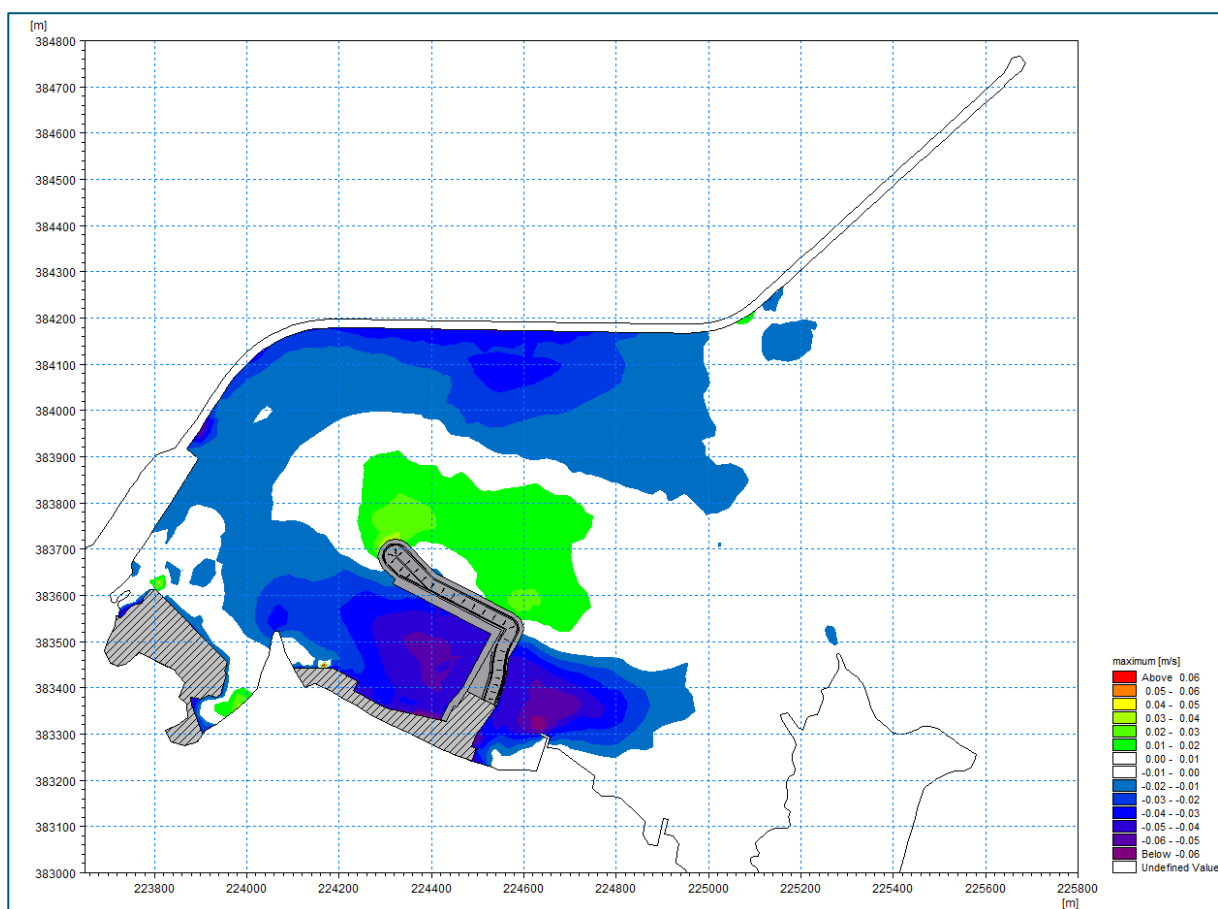


Figure 5.2 Predicted difference in maximum current speeds between the baseline and with the breakwater and land-claims in place

Overall, the effects of the Proposed Development on tidal currents, waves, sediment transport and water flushing are predicted to be small-scale, localised and temporary. Hence, they are categorised as having either no impact or being of negligible significance.

The hydrodynamics, sedimentation and wave climate chapter was also used to inform the assessments of many of the marine topics described in this NTS.

5.2 Traffic and Transportation

Chapter 8 of the ES, together with the accompanying Transport Assessment (TA) document in Appendix 8.1, sets out the assessment of the likely environmental effects of the Proposed Development from a traffic and transportation perspective. The methodology used to prepare the Chapter was based on consideration of relevant planning policy, IEMA guidance, and a study which includes, amongst others, the main highway corridor between the site and Junction 1 of the A55.

In order to establish any potential highways or transport related impacts that may arise as a result of the Proposed Development, a review of the baseline traffic conditions surrounding the site has been considered, full details of which can be read in the formal TA document. The baseline conditions surrounding the Proposed Development have been established by undertaking up to date traffic surveys, obtaining Personal Injury Accident Data (PIA) on the local highway network and appraising the accessibility of the site by sustainable, non-car travel modes.

For robustness, and in order to account for future traffic growth on the local highway network, locally adjusted growth factors and local committed developments have also been considered and accounted for within the future baseline conditions for the anticipated opening year of the Proposed Development (assumed to be 2026). Conditions have been modelled for ten years following opening (assumed to be 2036) to assess how the Proposed Development may influence the future baseline.

The assessment of impacts is based on the percentage traffic impact changes over a 12-hour period on weekdays / weekends, and also on the peak hour capacity performance of the four junctions that lie in the study area. The percentage impact assessments indicated that overall increases in traffic flows of 33-343% could be anticipated on road links close to the Proposed Development, including Beach Road / Prince of Wales Road, with impacts further afield below the 30% threshold set in the IEMA guidance. At those locations where traffic flows are predicted to rise by more than 30%, this is largely a function of the fact that baseline flows are relatively low to begin with, thereby making the percentage impact of development-related traffic look large by comparison.

In absolute terms, the total flows along Beach Road and Victoria Road would not in themselves be unduly onerous. Therefore, the significance of effect on pedestrian delay, severance, pedestrian amenity and road safety are all considered to be of **minor adverse significance**.

The capacity assessments indicated that seven of the eight key junctions within the study area would operate with spare capacity with the Proposed Development in place, whilst one (the Victoria Rd. / Boston St. priority-controlled junction) would not. To mitigate against impacts on driver delay at the Victoria Rd. / Boston St. junction, it has been proposed that the existing priority give-way junction would be signalised to comprise a simple two-stage arrangement with pedestrian crossing facilities. Based on the results of the detailed 2026 / 2036 peak hour capacity assessments of the Victoria Rd. / Boston St. junction with mitigation in place, there would be a **negligible to minor adverse impact** on driver delay at this location.

A range of travel planning measures would be adopted as part of the Proposed Development to help encourage more sustainable travel modes to and from the development. Similarly, a range of incorporated mitigation measures are proposed that would enhance the public realm and the usability of the roads and footways within the site. In turn, these measures would help encourage the use of non-car modes of transport in accordance with national transport planning policy objectives.

Based on the review of anticipated future operational highway conditions and reference to appropriate guideline standards, it has been concluded that the Proposed Development would not result in a detrimental impact on operational or environmental conditions over the local highway network when compared to future baseline traffic conditions.

5.3 Air Quality

Chapter 9 of the ES sets out an assessment of the potential impacts of the Proposed Development on local air quality. The principal aspects considered in the assessment were:

- Dust: potential effects of disamenity dust and fine particulate matter (PM₁₀) arising during earthworks / construction activities; and,
- Vehicle exhaust emissions: potential effects of vehicle exhaust emissions (NO_x / NO₂ and PM₁₀) arising from traffic generated by the Proposed Development.

The assessment has been undertaken primarily in accordance with guidance issued by the Institute of Air Quality Management (IAQM) on construction dust, air quality and planning. To inform the assessment, an existing baseline has been established through a desk study review of available local air quality data and a

site visit. This has been supplemented by atmospheric dispersion modelling of existing local traffic flows (for 2019) to determine likely existing air quality conditions.

Construction: Dust

The assessment considered the potential sources of dust during the construction phase, the proximity and number of sensitive receptors to the Proposed Development and the prevailing wind direction. In the absence of mitigation, construction activities may result in minor impacts on human health and ecological receptors due to dust soiling. The potential impact of construction activities can be readily mitigated through the implementation of standard best practice in respect of dust control and site management, as detailed in IAQM Guidance. Details would be incorporated in a Dust Management Plan to be produced prior to commencement of development. Additional mitigation above and beyond typical measures employed during large construction projects have not been deemed necessary. With the implementation of the mitigation measures, the residual impacts would be of **negligible to minor adverse significance**.

Operational: Vehicle Exhaust Emissions

An initial screening assessment was undertaken considering the predicted traffic movements associated with the Proposed Development for 2026 and 2036. This was supplemented by a detailed assessment using atmospheric dispersion modelling of the predicted traffic movements with and without development, and the associated vehicle exhaust emissions, to determine the potential changes in, and resulting pollutant concentrations, at sensitive receptors along the local road network. Based on the predicted emissions, potential impacts on human health and ecological receptors would be **negligible**.

Regardless, a range of travel planning measures would be adopted as part of the Proposed Development to help encourage more sustainable travel modes to and from the site. Similarly, a range of incorporated mitigation measures are proposed that would enhance the public realm and the usability of the roads and footways, which would help encourage the use of non-car modes of transport and hence reduce potential impacts due to vehicle emissions.

5.4 Landscape, Seascape and Visual Effects

Chapter 10 of the ES, together with the supporting appendices, sets out an assessment of the potential impacts of the Proposed Development on the existing landscape, seascape and visual setting.

The physical fabric of the area (i.e. the individual constituent elements and features of the landscape) in which the Proposed Development would be located would experience significant effects. Much of the existing fabric would be replaced, particularly along the waterfront where the land reclamation would take place. The loss of existing areas of beach and the naturalistic shoreline at Porth-y-Felin and Soldier's Point would represent a major adverse effect. However, major beneficial effects would accrue from the reintroduction of the former sunken gardens along the promenade and from the rehabilitation of the historic Listed Buildings, Porth-y-Felin House and Soldier's Point House.

Significant effects upon character would be confined to the New Harbour area, with the Proposed Development resulting in a positive change in landscape character. A unified and contemporary waterfront would be created as opposed to the incoherent and disparate features that are currently present. Specific effects on seascape character would not be significant, as the existing seascape within the harbour is largely defined by development and marine activity, and the distinction between this area and the undeveloped coastal areas to the west would be maintained.

Significant visual effects would be limited to the immediate surrounds of the Proposed Development, where the relationship between receptors and the New Harbour would change. The nature of the impact of such effects, whether adverse or beneficial, would vary depending upon location.

Potential impacts on the night-time landscape and visual setting of the Proposed Development would not be significant. Detailed lighting schemes would be prepared for each element of the Proposed Development, each of which would include best practice measures to minimise the generation of obtrusive light. The detailed layout of buildings and other structures, and of proposed landscape treatments, could also be designed to reduce the impact of artificial lighting.

5.5 Terrestrial and Coastal Ecology

Chapter 11 of the ES, and accompanying appendices, sets out the assessment of the potential impacts of the Proposed Development on the existing terrestrial and coastal ecology. The assessment was informed by a suite of ecological surveys and a desk-based review of available information. In addition to the ecological surveys, a biodiversity assessment was undertaken to establish the losses and gains in terrestrial and intertidal biodiversity as a result of the Proposed Development.

The Proposed Development is in close proximity to Holy Island Coast Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC), and the Holyhead Breakwater Country Park. Chwarel Morglawdd Local Wildlife Site (LWS) also lies adjacent to the Proposed Development.

There are a number of habitats within the Proposed Development boundary that are considered of high ecological value and are priority habitats in Wales:

- Intertidal boulder and rocks;
- Vegetated shingle above high tide;
- Boulders / rocks above high tide;
- Deciduous woodland; and,
- Hedgerows.

Protected species, including badgers, bats and common reptile species, have been recorded within, and close to, the Proposed Development boundary. Japanese knotweed, an invasive non-native species (INNS), is also known to be present in several locations.

During construction of the Proposed Development there is the potential that works could cause accidental damage to the LWS. Temporary site fencing would be established along the boundary of the LWS to prevent this occurring. With this mitigation measure in place, the residual impact is considered to be of **negligible significance**.

Construction of the Proposed Development would require the clearance of some areas of terrestrial habitat. The Masterplan has been designed to minimise this impact, with on-site habitat creation maximised as far as possible; however, overall the Proposed Development has been considered to result in loss in biodiversity. As such, off-site habitat enhancement and compensation measures have been proposed, which would result in residual impacts on biodiversity of **minor beneficial significance** in the long-term. Overall, with the implementation of pre-construction surveys and best practice measures, potential impacts to protected species was considered to be of **minor to negligible significance**.

To prevent the spread of Japanese knotweed, and any other invasive non-native species should they be present, an invasive species survey and management plan has been recommended that would include on-site training and implementation of biosecurity measures. With this in place, the potential impact from non-native species would be **negligible**.

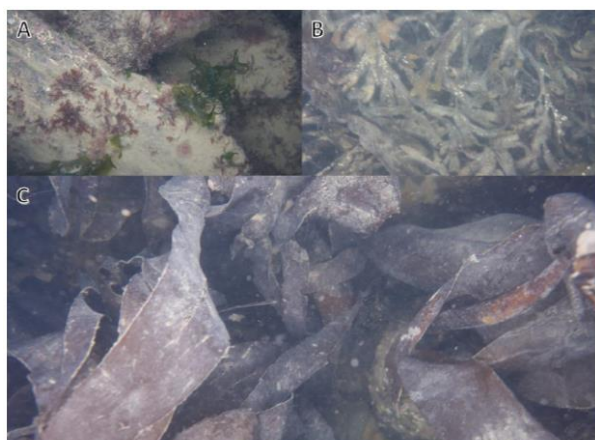
During the operational phase, visitor numbers to the Holy Island Coast SSSI and Holyhead Breakwater Country Park are likely to increase due to increased resident numbers. The resulting potential impact from increased trampling pressure on the habitats present has been considered to be of **minor adverse significance**. Management of new habitats during the operational phase would have a **minor to moderate beneficial** impact benefitting protected species such as bats, common reptile species, great crested newts and badgers.

5.6 Marine Ecology

Chapter 12 of the ES, and accompanying appendices, set out the assessment of potential impacts on subtidal marine ecology. The assessment was informed by a subtidal video survey of the seabed. The results of the survey showed that the subtidal habitats present were largely typical of those commonly found around the Anglesey coastline, although it also indicated the presence of features of conservation interest, such as Annex I 'Reef' habitat; kelp and seaweed communities on sublittoral sediment, and sea-pens (*Virgularia mirabilis*) (see example photos right and below).



Laminaria saccharina and red seaweed on infralittoral sediments



Sublittoral rock habitats recorded in survey A) Atlantic and Mediterranean low energy infralittoral rock; B) Fucooids on sheltered marine shores; and C) Silted kelp on low energy infralittoral rock with full salinity.

The potential loss of Annex I 'reef' habitat due to the Proposed Development would be mitigated by the creation of new rocky habitat in the form of a revetment and new sea wall at Porth-y-Felin and the rubble mound substructure of the proposed breakwater. The residual impact therefore of the loss of subtidal habitats and species is considered to be of **minor adverse to moderate adverse** significance.

Potential impacts to subtidal habitats and species because of increased suspended sediment concentration and smothering have been considered to be of **minor adverse** significance, based on the modelling of potential sediment plumes presented in the hydrodynamics, sedimentation and wave climate assessment (Chapter 7 of the ES). Potential impacts

as a result of re-suspension and deposition of potentially contaminated sediment during dredging activities have been considered to be of **minor adverse** significance, based on chemical testing that has been undertaken on the material to be dredged.

An invasive non-native species survey was undertaken to determine the presence of, in particular, carpet sea squirt (*Didemnum vexillum*) on structures within and around the footprint of the Proposed Development. No carpet sea squirt was recorded during the survey. Given the results of the survey and considering the implementation of Stena Line's biosecurity plan within Holyhead Harbour, an impact of **minor adverse** significance associated with the spread of invasive carpet sea squirt has been predicted during both the construction and operational phases.

Potential impacts to subtidal habitats and species as a result of the increased risk of water pollution from an increased number of recreation craft have been considered to be of **negligible** significance.

5.7 Fish and Shellfish Resources

Chapter 13 of the ES sets out the assessment of the potential impacts of the Proposed Development on fish and shellfish resources, notably those of commercial value (e.g. those targeted by commercial fisheries), ecological importance (e.g. prey items for other species) and conservation interest (e.g. those protected by legislation and / or recognised on national / international biodiversity lists).

The assessment comprised a desk-based review of survey data and other public sources of information, including subtidal, intertidal and planktonic (i.e. eggs and larvae) surveys undertaken along the North Anglesey coastline. Information on spawning and nursery areas for juvenile fish have been drawn from sources regularly used in the assessment of development impacts on fish stocks. The assessment also takes into account the potential impact of disruptions to commercial and recreational fisheries activities, as well as the potential impacts that changes in commercial fish distribution and / or populations arising from the Proposed Development may have on landings.

Potential construction phase impacts on fish and shellfish relate to the loss of habitat because of the proposed breakwater and land claims, changes in water quality during dredging / disposal and disturbances associated with underwater noise.

The rocky habitat provided by the new breakwater and revetment at Porth-y-Felin would provide new habitat which would offset habitat lost. The level of deposition of fine sediment during dredging and disposal activities would not significantly change the seabed composition. As such, the potential impact has been considered to be of **minor adverse significance** for less mobile individuals, such as berried crabs, but of less significance for more mobile individuals or species.

Potential increases in suspended sediment levels and contaminant levels have been shown to not be significant. As such, potential impacts from changes to water quality would be of **minor adverse significance** when considering vulnerable species or those of conservation / commercial interest. Potential impacts on fish from underwater noise have been considered to be minor even when considering hearing-sensitive species, such as herring, as no 'noisy' works (e.g. driven marine piling) have been proposed. Given the localised nature of the proposed works within the New Harbour, potential disturbance to commercial and recreational fishing would be **negligible**.

During the operational phase, increased numbers of vessels from the marina would have a **minor adverse** impact on fish and shellfish within the New Harbour itself but would have **no impact** on the general distribution and population of commercial fish and shellfish in the wider Holyhead Bay area. As noted in the hydrodynamics, sedimentation and wave climate assessment (Chapter 7 of the ES), there would be a **negligible** change in coastal processes and with flushing of water from the new marina having been determined to be 'good', so there would be **negligible** impact on fish and shellfish.

5.8 Marine Mammals

Chapter 14 of the ES sets out the assessment of the potential impacts of the Proposed Development on marine mammals. A review of the marine mammal species found that the most likely species present would be harbour porpoise, bottlenose dolphin, Risso's dolphin and grey seal. Other species have been recorded in the general area, including common dolphin, minke whale, and other large baleen whale species; however, these species would be present infrequently and in such small numbers that there would be no significant risk of impact due to the Proposed Development.

Underwater noise impacts are considered to be the most critical for marine mammals, owing to their reliance on sound for foraging and hunting, communicating with each other, and breeding and rearing. While noise

is a key issue, any emission of underwater noise as a result of the Proposed Development be limited due to the construction methodologies proposed. As such, the potential impact would all be of **negligible significance**.

Other potential impacts assessed included increased risk of collision with vessels during both construction and operation, and indirect impacts to marine mammals through both a change in prey availability and distributions, and a change in water quality. For collision risk during construction, potential impacts have been assessed as being of **negligible significance**, due to the low sensitivity of mammals to collision with slow-moving vessels, the low risk of any collision occurring, and the small area over which any impacts may occur. Potential impacts on marine mammals due to changes in prey availability and water quality would also be of **negligible significance**, due to the very localised and temporary nature of such changes, and the low sensitivities of mammals to those changes.

During the operational phase, whilst there would be an increase in vessel activity within the Holyhead area, there already exists a considerable level of marine traffic, due to the existing marina and moorings within Holyhead New Harbour and Holyhead Port. There would therefore be a **negligible** impact from collision risk during operation. There would be a **negligible impact** from underwater noise and from indirect impacts (i.e. due to changes in prey availability or water quality) during operation.

5.9 Ornithology

Chapter 15 of the ES assesses the potential impacts of the Proposed Development on breeding and non-breeding birds. The assessment, which focuses on key species of conservation interest, was based on a desk-based review of ornithological data for the area, supplemented by site-specific bird and habitat surveys undertaken in 2009 and a verification habitat survey undertaken in 2019.

The following bird species were specifically considered in the assessment:

- Breeding common terns, Arctic terns and Sandwich terns from the Anglesey Terns / Morwenoliaid Ynys Môn SPA, which may forage from nationally important colonies at The Skerries, Ynys Feurig and Cemlyn Bay;
- Breeding black guillemots, which are understood to nest in the Port of Holyhead in regionally significant numbers;
- Breeding and non-breeding choughs, which are nationally important qualifying features of the Holy Island Coast / Glannau Ynys Gybi SPA; and,
- Breeding and non-breeding coastal / seabirds from Chwael Morglawdd Caergybi LWS.

Other species regularly recorded at the site of the Proposed Development are generally considered to be locally and regionally common and are not considered individually. However, potential impacts on general bird breeding / foraging activity were considered in the assessment.

Potential construction phase impacts relate to the disturbance of both marine and terrestrial birds, notably those in the list above, due to works activities, plus the direct impacts on breeding habitat during site clearance and the indirect impacts on seabirds that a change in prey resource availability may have.

Potential disturbance impacts on foraging black guillemot and terns would be of **negligible significance** given that modelled seabird usage of the affected marine area, which forms a minor part of the relevant foraging ranges, is low; plus Holyhead New Harbour is already a source of notable marine-oriented disturbance. Potential disturbance impacts on foraging chough and birds from the LWS have been predicted

to be of **minor adverse significance**, as there are ample, more optimal, foraging sites elsewhere in the general area.

Best practice measures would be employed, including pre-construction surveys and contractor briefing, to ensure that birds in the process of nesting would not be disturbed during construction activities, with possible temporary exclusion zones implemented; therefore potential impacts on general bird breeding activity would be of **minor adverse significance**, at worst.

Supporting information from the hydrodynamics, sedimentation and wave climate assessment (Chapter 7 of the ES), and the marine ecology (Chapter 12 of the ES) and fish and shellfish (Chapter 13 of the ES) assessments indicated that there would be no significant effect on the distribution and availability of fish and invertebrate species that provide a food source. As such, it has been predicted that there would be **negligible impact** on the prey ability of terns, black guillemots and other coastal / seabirds.

The potential operational phase impacts assessed again related to the disturbance of marine and terrestrial birds, use of recreational / charter vessels from the new marina and Yacht Basin in nearby marine areas, and recreational use of areas within the Holy Island Coast / Glannau Ynys Gybi SPA.

Recommended mitigation measures included the provision of circular walking routes to promote use of open spaces within the Proposed Development (rather than in the SPA), the provision of information notice boards on paths leading from the Proposed Development to educate visitors regarding the importance of the SPA and its qualifying features and ensuring that new vessel owners are aware and adhere to the Anglesey Marine Code (which helps to protect nesting and foraging seabirds).

With such measures in place, it is anticipated that disturbance impacts during operation would be **minor adverse**, at worst, especially given the existing use of the Harbour as a hub for vessels exploring the nearby coastline and the popularity of South Stack Cliffs RSPB reserve and the Breakwater Country Park for recreational use.



Black guillemot (Cephus grylle)
(source: ebird.org, copyright Holly Merker)

5.10 Ground and Geo-environmental Conditions

Chapter 16 of the ES assesses, identifies and summarises the existing superficial and bedrock geology, groundwater regime and risk from contaminated land. This helps to understand the potential risks and impacts the Proposed Development could have on these features and lists measures for avoiding and / or mitigating impacts. The assessment utilises the information acquired during a desk-based study and preliminary ground investigation (including outline remediation requirements). A detailed ground investigation and subsequent Remediation Strategy would be produced.

The area has been used for small scale industry with potential for localised contamination from historical land use. Six key areas were identified as having pertinent historical land uses:

- Soldier's Wharf (Holyhead Breakwater);
- Stena Line Warehouse and Laydown Area;
- Porth-y-Felin House Interceptor;

- Pumping Station and Discharge;
- Maritime Museum and café; and,
- Mackenzie Landing.

Any potential impacts would be mitigated with a remediation strategy and would not be significant. The geology within the Proposed Development boundary is regarded as having insignificant quantities of groundwater, therefore the risk to Controlled Waters would also not be significant.

During the construction and operational phases of the Proposed Development, there were no significant residual impacts subject to the following mitigation measures being initiated (following detailed ground investigation and subsequent production of a Remediation Strategy):

- Removal of fuel storage tanks and any associated localised contaminated soils and groundwater;
- Installation of clean cover soils within soft landscaped areas;
- Installation of ground gas protection measures, where required;
- Treatment and/or disposal of invasive plants, including Japanese Knotweed;
- Construction Environmental Management Plan; and,
- A Material Management Plan for reuse of soils / rock on site.

5.11 Water Quality, Surface Waters and Flood Risk

Chapter 17 of the ES assesses the potential impacts of the Proposed Development on water quality, surface waters and flood risk.

Potential construction impacts to water quality were informed by chemical analysis of the sediment within the dredge footprint. Results of the analysis showed that heavy metals and PAHs were present at levels marginally exceeding Cefas Action Level 1, and therefore were considered to not have a significant effect on water quality.

Numerical modelling of the behaviour and fate of the sediment plume at the Proposed Development and at the Holyhead North disposal site, indicated that the risk to water quality was short-term, localised and temporary, dispersing to within background levels within hours of dredging and disposal activities ceasing. The potential impact was therefore considered to be of **minor adverse significance**. A reduction in water quality due to the land claim and land-based construction, with appropriate mitigation to prevent run-off entering surface and marine waters, was considered to be of **negligible significance**.

Operational impacts to water quality arising through the presence of the Proposed Development were considered to be of **minor to negligible adverse significance**. The water exchange within the proposed marina was calculated to have 'good' water exchange. As a result, stagnation of water within the marina was considered to be unlikely and discharge from surface water drains would be dispersed quickly. Standard marina management measures to minimise pollution in the marina would be put in place. Lastly, the design of the Proposed Development would raise the area so it is considered to be at little or no risk of river or tidal/coastal flooding and therefore would not increase flood risk to the Proposed Development, or the surrounding area.

5.12 Noise and Vibration

Chapter 18 of the ES provides an assessment of the potential noise and vibration impacts of the Proposed

Development during the construction and operational phases at sensitive receptors. To establish any likely impact from noise, established baseline sound levels were considered based on fixed position noise monitoring at two noise sensitive receptor areas over a weekend period.

The assessment of construction noise and vibration was carried out in accordance with relevant standards. Best Available Techniques would be employed to control noise and vibration generation during the construction phase to ensure any short-term peak noise activities are controlled and impacts would be minimised.

During construction, the predicted increase in noise could potentially be of **major adverse** significance during general and peak noise periods, in the absence of mitigation. Implementation of mitigation measures, in the form of best practical measures, would reduce construction phase noise impacts to a level of **minor to moderate adverse significance**. Vibration levels would not be significant.

The assessment of potential noise impacts associated with general activities during the operational phase, concluded that potential impacts at the nearest sensitive receptors would not be significant. An assessment of fixed plant noise and occasional event noise, without mitigation, could potentially be significant, but with the introduction of mitigation and management controls the noise impacts would be of **negligible to moderate adverse significance**.

Road traffic movements as a result of the Proposed Development have been considered on the local road network relative to existing receptors. The assessment concluded that the noise impacts associated with additional road movements would not be significant.

5.13 Commercial and Recreational Navigation

Chapter 19 of the ES assesses the potential impacts of the Proposed Development on commercial and recreational navigation.

Potential impacts to navigational safety during the construction and operational phases of the Proposed Development have been considered to be effectively managed through the services provided by Holyhead Port Control, which manages navigational safety within the Statutory Harbour Area, and the issuing of Notices to Mariners. Such Notices would inform commercial and recreational mariners at Holyhead of the location, timing and nature of construction activities associated with the Proposed Development, plus inform mariners of appropriate measures they should take.

During construction of the marina, it would be necessary to relocate a number of existing swing moorings from their current location off Newry Beach; discussions with Holyhead Sailing Club would determine the best solution to minimise any disruption. As such, potential impacts to commercial and recreational navigation during the construction and operation of the Proposed Development were assessed to be of **minor adverse to negligible significance**.

5.14 Archaeology and Heritage

Chapter 20 of the ES assesses the potential impacts of the Proposed Development on archaeology and heritage. The Chapter was informed by a desk-based assessment (DBA) and a Heritage Impact Assessment (HIA) which was undertaken in 2021, updating the findings of earlier assessments. The work has been carried out to identify both potential terrestrial and marine archaeological and heritage constraints associated with the development of the site. It also assesses the potential impact of the Proposed Development on the historic environment, specifically the designated historic assets within the site and surrounding area.

Terrestrial archaeology and heritage

There are 382 previously recorded terrestrial sites of archaeological interest within 1.5km of the Proposed Development, including three Conservation Areas, one Scheduled Monument, 49 Listed Buildings, and 12 proposed Character Areas. Ten sites are located within the Proposed Development site itself, all of which have the potential to be directly impacted, including:

- Four Listed Buildings: Porth-y-Felin House, Soldier's Point House, Screen Wall to Soldier's Point House and The Lifeboat House;
- One Conservation Area: Holyhead Beach Conservation Area;
- Four proposed Character Areas: Soldier's Point and Breakwater; Porth-y-Felin Farm, Newry Beach Promenade and Newry Beach; and,
- Two non-designated sites (Beaching Ground, Newry Beach (PRN 34011; NPRN 519102) and Pill Box, Soldier's Point, Holyhead Breakwater (NPRN 270424)).



Aerial view of Soldier's Point House, demonstrating its current state of disrepair

The Proposed Development would have an impact of **major beneficial significance** upon Soldier's Point House, Screen Wall to Soldier's Point House and Porth-y-Felin House, given the planned renovation. It should be noted that, at the time of writing, these buildings were in a state of disrepair, and in danger of potential collapse. The Proposed Development would also have a **major adverse** impact upon views towards the existing harbour, in Holyhead Beach Conservation Area, but

moderate beneficial or **neutral** impact upon other views.

The listed Lifeboat House is within the Proposed Development site, but there are no plans for this to be redeveloped; however, the Proposed Development would have an impact of **moderate adverse significance** on the setting of this building. There would also be a **moderate adverse** impact upon the setting of the Listed Buildings Trinity House Office, Trinity Yard Large Workshop, Trinity Yard Small Workshop, Holyhead Breakwater and the Lighthouse on Holyhead Breakwater, which are all located close to the Proposed Development site.

There would be a **minor adverse to negligible** impact on the Listed Buildings located within Holyhead's Old Harbour: Admiralty Pier and Sea Wall, Lighthouse on Admiralty Pier, George IV Arch, The Harbour Office, The Customs Office, and South Pier, Turkey Shore Road. The listed Gunpowder Magazine is located approximately 0.7km to the south-west of the Proposed Development, and the development would have an impact of **negligible significance** upon this building.

The Scheduled Monument of Caer y Tŵr Iron Age Hillfort (AN019) is located within 3km of the Proposed Development. The assessment has determined that the Proposed Development would have an impact of **negligible significance** upon this monument.

There would be a potential impact of **moderate adverse** significance on the two non-designated sites, Beaching Ground, Newry Beach and the Pill Box, Soldier's Point, Holyhead Breakwater, and the proposed Character Areas of Soldier's Point and Breakwater, Porth-y-Felin Farm, Newry Beach Promenade and Newry Beach.

To mitigate against the potential direct and indirect heritage impacts, a series of recommendations have been set out, comprising a phased programme of building recordings as well as appropriate archaeological field evaluations, data analysis and watching brief, as required.

Mitigation measures relating to the indirect impacts and subsequent effects of development during the operational phase already form part of the initial design scheme for the Proposed Development. The beneficial effects of the development on some of the archaeological and heritage assets have been outlined in the DBA and HIA.



Aerial view of Porth-y-Felin House, demonstrating its current state of disrepair

The proposed renovation and redevelopment of Soldier's Point House, the Screen Wall to Soldier's Point House and Porth-y-Felin House would be beneficial and would save these structures from an uncertain future and possible collapse. The restoration of these historic buildings would also lead to improved access and the visibility of these structures and their immediate settings. This, in turn, would reconnect elements of the historic landscape, improve the readability and understanding of this landscape, and ultimately safeguard the future viability of these historic assets. With a sympathetic design scheme, any adverse impacts on heritage assets and setting would be reduced.

Marine archaeology and heritage

In terms of marine sites and assets of archaeological interest, there is one potential designated heritage asset located within the 1km study area. This is an aviation crash site relating to the *Saro London II K6927* which is reported as lost, although the remains have never been found. Should these remains be identified, they would be protected under the Protection of Military Remains Act 1986. There are no designated wrecks or archaeological sites within the study area.

With regard to non-designated heritage assets, there are no known Seabed Prehistory sites located within the Proposed Development footprint or the 1km study area. A total of 54 non-designated records have been identified below MHW within the 1km study area by the RCAHMS (Royal Commission for Ancient and Historic Monuments Wales), five of which are located within Proposed Development boundary; however, none of these comprise confirmed wreck remains and are not located within the footprint of the Proposed Development. In addition, further reported wreck sites were targeted during the acquisition of side-scan sonar data in 2010 but were not identified in the data and are no longer recorded as known sites by the RCAHMS.

Submersible video footage identified a series of objects of which an anchor, several anchor chains and a series of possible metal objects were the only objects of possible archaeological interest. Although possibly associated with existing records of wrecks, it is also possible that these are modern and associated with the

destruction to the marina caused by Storm Emma in 2018. As the anchor is located in the footprint of the land reclamation it would be effectively lost, resulting in an overall **minor adverse** impact.

Potential impacts associated with the Proposed Development may result from the land reclamation and dredging associated with the construction of the breakwater; however, as there are no known Prehistoric sites, known wrecks or aviation crash sites there would be **no impact**. While low, there remains some potential for unknown wreck remains and aviation remains to be present within the footprint of the Proposed Development. Should they be present, and should these be encountered during works, the Proposed Development would result in an overall **moderate adverse** impact.

To mitigate against potential impacts, it has been recommended the anchor be moved outside of the land reclamation footprint and a Protocol for Archaeological Discoveries (PAD) be implemented. With these mitigation measures undertaken a residual impact would be of **minor adverse significance**.

5.15 Socio-economic Effects

Chapter 21 of the ES considers the potential socio-economic effects from the Proposed Development, including the effect on employment and gross value added (GVA), fiscal effects (business rates and council tax), population, education and healthcare provision, as well as wider, less tangible, benefits.

This assessment indicated that there would be no significant adverse effects from the Proposed Development, with construction and longer-term employment and consequential GVA, as well as local fiscal effects, being **beneficial**. There could be potential negative effects in relation to aspects of education and healthcare provision, but the assessment assumed that new primary and secondary school places, and GP and dentist patient provision, could be provided when needed, without recourse to conditions or legal agreement.

The Proposed Development is estimated to support 660 'person years' of construction employment, which represents an estimated 66 full-time equivalent (FTE) jobs based on the convention that ten person years of employment is approximate to one permanent job. An estimated 27 of these jobs are expected to be 'net additional local' (jobs taken by local people that would not otherwise be available).

When completed, it has been estimated that the Proposed Development could generate a total of 138 FTE jobs arising from activity in the new commercial facilities (retail / leisure premises and the arcade), the marina, from other visitor expenditure, and by household expenditure from new residential properties – with the commercial premises supporting 92 jobs and the marina 20 jobs. Of these, 87 FTE jobs are considered likely to be 'net additional local'. It is assessed that the development would generate £3.6m in 'net additional local' GVA per year.

The Proposed Development could accommodate an estimated total of 517 residents when fully occupied. On the basis that GPs have the capacity to accept additional patients this is likely to have a **negligible** impact on this aspect of healthcare provision. However, there may be a potential **moderate adverse** effect on NHS dental provision if what is understood to be current issues with provision were to continue. It has been estimated that the Proposed Development could accommodate a total of 54 children of statutory school age when fully developed and occupied - 26 of primary school age and 28 of secondary school age. Based on the most recent available data (2020), it is estimated that the potential increase of 28 secondary pupils could be accommodated within the current surplus of 148 available places. However, there is current shortfall of 112 places in local primary school places and the addition of 26 pupils would increase this to a total deficit of 138 places (+23%).

It has been judged that the Proposed Development would have positive benefits on regeneration, strengthening and diversifying the economic base, the social and community fabric, and the image of Holyhead.

5.16 Climate Change

Chapter 22 of the ES considers the contribution of the Proposed Development to national greenhouse gas (GHG) emissions, and its resilience to the projected effects of climate change. As part of the assessment, a description of the current GHG emissions within the Anglesey region is provided, along with a summary of the current climatic conditions.

GHG emissions arising from construction plant and equipment, and ‘embodied’ carbon within materials to be used as part of the Proposed Development were quantified in the construction phase GHG assessment. The operational phase GHG assessment quantified emissions from the consumption of gas and electricity, and the movement of road vehicles to and from the Proposed Development. The results of the assessment highlight that GHG emissions during construction and operation of the Proposed Development would not hinder the UK’s ability to meet its Carbon Budgets or its emission reduction target.

The climate resilience assessment identified that the parameters most likely to affect the Proposed Development due to climate change were increased temperature, surface water flooding, sea level rise and storm surges. The key components of the Proposed Development were not considered to be vulnerable to increased temperatures. The design of the Proposed Development had included consideration for sea level rise and storm surges. In addition, the risk of surface water flooding was considered to be low. Therefore, the Proposed Development was not considered to be vulnerable to the projected effects of climate change.

5.17 Population and Human Health

Chapter 23 of the ES considers the potential environmental and socioeconomic impacts of the Proposed Development on public health and wellbeing. It followed recent best practice guidance in considering health effects with regard to the general population, using the World Health Organisation definition of health as a ‘*state of physical, mental and social wellbeing*’. The Chapter uses information from other assessments, such as the air quality, noise and vibration, socio-economic and landscape and visual setting assessments, to assess potential impacts on human health.

Following the EIA Scoping process, the following potential impacts on human health were identified:

- Impacts from increased noise associated with road traffic and marine vessels;
- Impacts brought about by changes in access to, and character of, surrounding landscape and visual setting; and,
- Impacts arising from socioeconomic changes.

With the implementation of mitigation measures designed to reduce the potential effect of noise emissions, air quality changes and changes to the landscape and visual setting (set out for the relevant sections above), there would be no significant long-term impacts on human health.

Socioeconomic benefits, including the introduction of new employment opportunities to the local area and the provision of community amenities / facilities has been expected to have a **moderate beneficial** impact on community health, due to the increase in economic security and the health benefits this may have. Additionally, a Welsh Language Impact Assessment was undertaken for the Proposed Development, which concluded that there would be **minor beneficial** impacts on the use and promotion of the Welsh language

through the use of local labour and bilingual signage throughout. This would have a knock-on positive effect on the wellbeing and sustainability of the local community.

5.18 Cumulative Impact Assessment

Chapter 24 of the ES presents the Cumulative Impact Assessment (CIA) that has been undertaken to assess the potential cumulative impacts between the Proposed Development and other relevant projects / developments in the general area. The other projects / developments given consideration in the CIA were:

- Parc Cybi (mixed use development);
- Penrhos Leisure Village (Land and Lakes);
- Holyhead Eco Park;
- Holyhead Deep Tidal Array (Minesto);
- West Anglesey Demonstration Zone (WADZ) (known as 'Morlais');
- Business units at Penrhos Industrial Estate;
- Anwyl Homes Residential Development at South Stack Road (Phases 1 and 2);
- Port of Holyhead Expansion;
- Maintenance dredging at the Port of Holyhead;
- Holyhead Breakwater Refurbishment; and,
- Holyhead Marina Rebuild.

Of these, only the Breakwater Refurbishment Scheme, the Holyhead Port Expansion Project and the residential development at South Stack Road (Phase 2) were considered in detail as all other projects had no likely pathway for cumulative impacts based on a lack of temporal and / or spatial overlap, or a lack of detail regarding those projects. Following assessment, it has been concluded that there would be **no cumulative impacts** arising from the Proposed Development and the three projects considered further.

5.19 Water Framework Directive Compliance Assessment

Chapter 25 of the ES presents the WFD compliance assessment that has been undertaken on the Proposed Development. It was carried out in line with NRW guidance for assessing activities and projects for compliance with the WFD (OGN72) and the Environment Agency's Clearing the Waters for All guidance.

An assessment of the construction and operation activities of the Proposed Development against the WFD scoping criteria identified that the following parameters could be at risk within the Holyhead Bay coastal water body:

- Construction – construction of the new marine structures (breakwater and two reclamation areas):
 - Biology (habitats) – Within 500m of a higher sensitivity habitat; and,
 - Chemical contamination – Sediment contamination present at levels exceeding Cefas AL1.
- Operation – presence of the marine structures:
 - Hydromorphology – interruption of hydrodynamics, wave climate and sediment transport; and,
 - River Basin Management Plan mitigation measures.

Detailed assessment of the above concluded that non-temporary effects were not anticipated and therefore a deterioration in the water body has not been predicted. Cumulative effects between the Proposed Development and other projects in the general area were assessed and it was concluded that there would be no reduction in class of habitats or a deterioration in the status of the Holyhead Bay coastal water body.

Overall, the assessment concluded that the construction and operational activities would **not cause a deterioration** within the Holyhead Bay coastal water body. As a result, the Proposed Development has been considered to be compliant with WFD requirements.

5.20 Shadow Habitats Regulations Assessment

Chapter 26 of the ES presents the shadow Habitats Regulations Assessment (HRA) that has been undertaken to assess the potential impacts of the Proposed Development on the following National Site Network (NSN) sites:

- Anglesey Terns / Morwenoliaid Ynys Môn SPA;
- North Anglesey Marine / Gogledd Môn Forol Special Area of Conservation (SAC);
- Holy Island Coast / Glannau Ynys Gybi SPA and SAC; and,
- Menai Strait and Conwy Bay / Y Fenai a Bae Conwy SAC

In most instances, **no likely significant effect** (LSE) was concluded, either alone or in-combination with other projects, on the qualifying features and Conservation Objectives of the NSN sites listed above.

An LSE was concluded on European dry heath and North Atlantic wet heath, qualifying features of the Holy Island Coast / Glannau Ynys Gybi SAC, as a result of a potential increase in trampling pressure. Additionally, LSE was concluded on benthic habitats within the Menai Strait and Conwy Bay / Y Fenai a Bae Conwy SAC as a result of the potential spread of invasive marine species during operation. As such, information has been provided to inform an appropriate assessment, specifically regarding these potential impacts, in the form of mitigation measures that would ensure that the Proposed Development would not have an adverse effect on the integrity of either SAC.



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