

Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended), Regulation 22 - EIA Consent Decision

Title: Borth Coastal Protection Scheme Phase 2

Regulatory Approval: Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended)

Operators: Cyngor Sir Ceredigion

Report No: Ref: CML1318

Location: Borth Seafront

Introduction

This document constitutes an EIA consent decision under Regulation 22 of the Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) (MWR), in respect of an application submitted by Ceredigion County Council. The application was supported by an Environmental Statement. The Marine Licensing Team has considered the application and information provided in support of the application and is now in a position to make an EIA consent decision to Ceredigion County Council.

Project Description

Ceredigion County Council has applied for a Marine Licence to carry out Phase 2 of the Borth Coastal Protection Scheme.

Works that require a Marine Licence under Marine and Coastal Access Act (2009) will involve:

- Construction of 2 rock groynes
- Construction of 3 rock breakwaters
- Removal of timber groynes.

These works also require Planning Permission under Town and Country Planning Act (1990). Ceredigion County Council granted the development Planning Permission on 25th November 2013 (Application number: A130533CD).

The Environmental Statement (ES)

The Environmental Statement outlined possible impacts (often by reference to actual impacts observed from Phase 1 of the project) as detailed below.

Geology and Coastal Processes

The section discusses impacts on geology and coastal processes during and post construction

Potential key issues identified and discussed include:

- Potential changes in sand and shingle (including beach recharge material) transport and associated changes to beach levels, impacts on the underlying submerged peat forest beds and sediment starvation downdrift.
- Direct loss of peat forest bed in the footprint of the rock structures.
- Damage to peat forest beds through construction activity
- Changes to sediment composition

Ecology

This section discusses the potential impacts of the proposed scheme on nature conservation sites, terrestrial, intertidal and subtidal ecology, marine mammals, fish and birds.

Key issues discussed include:

- Disturbance to coastal and maritime habitats and species, including temporary or permanent loss, both within and outside of designated sites during construction, from movement of machinery and vessels, location of site compound and excavation works.
- Disturbance to species from noise, light or other visual stimuli from machinery, vehicles and vessels on the beach and in the water.
- Disturbance to marine species from changes to water quality arising from pollution caused by spills, leakage and/or sediment disturbance.
- Smothering of species on the shingle ridge and beach due to stockpiling of materials / beach recharge activity
- Removal of species that have colonised the timber groynes when the groynes are removed.
- Impacts on protected sites and species due to changes in coastal processes as discussed in the section above.

Traffic and Transport

This section discusses the potential impacts of the proposed scheme on Traffic and Transport.

Key issues considered include:

- Traffic Flows and Junction Capacity
- Parking Availability

- Carriageway Condition
- Public Transport Services
- The Pedestrian Network
- Residents and Businesses
- Environmentally Sensitive Areas

Water

This section discusses the potential impacts on water quality (including compliance with the Bathing Waters directive, Water Framework Directive and Shellfish Waters directive) and flooding.

Potential key issues identified:

- Potential release and resuspension of sediment and associated increase of turbidity
- Potential release and resuspension of sediment and potential release of contaminants.
- Pollution risks from flooding of works / storage / site compound areas.
- Pollution risks from chemical leakage / spill
- Changes to flood risk in the area from the scheme

Sediment Quality

This section focuses on the sand foreshore, the shingle ridge forming the upper foreshore and the dune system to the north.

Potential key issues identified:

- Impacts to sediment quality via contamination brought to the construction site
- Impacts to sediment quality via pollution incidents during construction.

Noise and Vibration

This section considers the impact of noise and vibration on people and the built environment (not on ecology).

Potential key issues identified:

- Noise and vibration caused by delivery of rock/ shingle
- Noise and vibration caused by movement and tipping of rock / shingle on site

Landscape, Seascape and Visual Amenity

This section discusses the potential impacts of the proposed scheme on landscape, seascape and visual amenity derived from a variety of named guidance documents.

Potential key issues identified:

- Impacts on landcover, landform and landscape character
- Visual impacts

Tourism and Recreation

This section assesses the impacts to tourism and recreation in the area.

Potential key issues identified:

- Improved protection to the village from erosion and flooding
- Changes to tourism potential as a result of the new structures
- Disturbance to tourism and recreation (particularly the beach, golf course and caravan park) during construction works

Fishing

This section assesses the impacts to fishing activity around Borth – both the small commercial fishing industry in the area and recreational fishing activity.

Potential key issues identified:

- Loss of sub-tidal area
- Potential restricted area for casting lines due to the presence of new rock structures
- Potential changes in composition of fish and bait in the area
- Potential loss of beach launching access for vessels during construction
- Potential effects on fish species from changes in coastal processes

Historic Environment

This section assesses the impacts to the historic environment with reference to the Borth Coastal Defence Scheme Phase 1 Archaeological Watching Brief as well as the general assessment methodology.

Potential key issues identified:

- Potential damage (during construction works) to the peat and forest beds underlying the beach
- Potential impacts on the peat and forest beds, ship wrecks and fish traps in the intertidal area resulting from changes to coastal processes which could alter erosion and accretion patterns and the movement of sediment.
- Potential damage (during maintenance of the rock structures) to the peat and forest beds underlying the beach

Cumulative and in-combination impacts

This section assesses the combined effects of this scheme with other development schemes in the area which may on an individual basis, be insignificant but may cumulatively have a significant effect. Phases 1 and 2 of the Borth coastal Defence Scheme are considered along with Ceredigion County Council's refurbishment of the timber breastwork in the same area as the Phase 2 works, and replacement of the slipway in Lower Borth.

Delivery of Materials by Sea

On the 19th November 2013 the applicant submitted an additional method statement detailing potential delivery of rock material by sea and requested that this potential activity be included in the licence determination. This had not been included in the application form which was submitted and then consulted on, however as it had been included and considered in the Environmental Statement which was also submitted with the original

application and sent out to consultees the Marine Licensing Team agreed to include this activity in the licence determination. It was clear from consultee responses that the activity had been considered by the consultees when formulating their responses, so a full reconsultation was not considered necessary. NRW internal consultees and Cefas were re-consulted on the method statement. Any responses to this are detailed below in the consultation section of this report.

Environmental Sensitivities

The proposed scheme is adjacent to the Pen Llyn a'r Sarnau Special Area of Conservation (SAC) and also close to the following statutory sites:

- Cors Fochno SAC
- Dyfi Estuary Special Protection Area (SPA)
- Craig yr Aderyn SPA
- Cors Fochno and Dyfi Ramsar site
- Dyfi Site of Special Scientific Interest (SSSI)
- Borth-Clarach SSSI

A test of likely significant effect (TLSE) was undertaken and potential significant effects on several of the features of the Pen Llyn a'r Sarnau SAC could not be ruled out. An Appropriate Assessment was therefore carried out and it was ascertained that the proposal, when considered alone and in-combination, will not adversely affect the integrity of the European site(s) concerned.

Consultation with NRW (Statutory Nature Conservation Body functions) dated 19th December 2013 states: "I would stress that it is Natural Resources Wales opinion that, provided the conditions identified during the planning process are fully implemented and adhered to, there will be no adverse effect on the integrity on European sites."

Consultation

The public notice was advertised in the Cambrian News on the 15th August 2013 and 22nd August 2013, and in Fishing News on the 16th August 2013 and 23rd August 2013 to notify interested parties of the proposed works and to give interested parties an opportunity to make representation on the application as necessary. 3 public representations were received.

The marine works application was consulted on in 18th July 2013 and sent to

the following: The Natural Resources Wales – 'advisory functions' (NRW), The Centre for Environment, Fisheries and Aquaculture Science (Cefas), Ministry of Defence (MoD), Maritime and Coastguard Agency (MCA), The Crown Estate (TCE), Local Planning Authority (LPA), Local Harbour Authority (LHA), Local Biodiversity Officer (LBO), Royal Yachting Association (RYA), Royal Society for the Protection of Birds (RSPB), Trinity

House (TH), Cadw (Cadw) and Welsh Government Fisheries Branch, Marine Enforcement Officers (MEO).

Consultees who did not provide a response were assumed to have no comment.

Consultation Responses Received

As a result of the consultations a number of representations were received as outlined below. Each representation requiring a response has been sent to the applicant for comment. Marine Licensing Team (MLT) comments for each issue can be found at the end of each section. We only offer comment on the issues that we consider relevant to our remit. These issues are;

- The environmental impact of the works
- The protection of human health
- The protection of legitimate uses of the sea

The issues raised within the representations that we do not offer comment on are;

- Whether the works are worthwhile or offer value for money in any way
- Suggestions that the scheme will impact upon tourism
- Increases in traffic above Mean High Water Springs
- Any other matters not within our remit

Public Representation 1 – dated August 29th 2013

I strongly object to Phase 2 of the Borth Coastal Protection Scheme.

We have had time to see how Phase 2 has been developing and settling down. I am horrified with the result! It has made the beach inaccessible and dangerous in many places, unattractive to visitors and residents alike. I go on the beach almost every day (I can see it as I type this email) and have seen for myself the effect the huge pile of 'shingle' has had on the beach. It has moved dramatically over the last few months with a massive pile of boulders/pebbles in the central area of the row of houses that back onto the beach, but with a large area towards the south end quickly eroding away. The slopes down to the beach are really steep so nobody can easily get down to the sand when it is exposed. I took a series of photos over the summer when the beach was at its busiest - looking south towards Phase 1 nobody was using the beach, looking north towards the groynes was packed with people enjoying the beach. People like the groynes, they are used for wind breaks (much needed in Borth!) hanging towels on and holding onto for less able bodied people when they are coming off the beach.

PLEASE DON'T TAKE AWAY ANY MORE GROYNES. They are incredibly strong. When Phase 1 was going ahead I could see how deep they went down into the sand so they must still be doing an awful lot to stabilise the beach. Once they are gone there really is no going back because we cannot replace them with more hard wood.

My other objection is the noise, dust and the shaking of our property.

Many people reported increased respiratory problems whilst Phase 1 was happening. The pollution was terrible. Every morning we were woken by our house shaking and a feeling of dread with yet another day of constant noise. If more rocks need to be brought in can it not be brought in in a less populated part of Borth. Where we live, by the train station there are not many holiday homes but there are lots of flats, homes and businesses that are populated all year round. Why not have the construction work coming in from the North of the village, by the golf course?

As for tourism there have been plenty of letters to the local paper saying that people have no intention of coming back to Borth ever again. Phase 2 will just reinforce this.

PLEASE PLEASE SAY NO TO PHASE 2.

Applicant response

With regards the current access difficulties along the Phase 1 frontage, the council intend to address any temporary/localised build-up of shingle in Spring 2014.

A meeting was held with the Borth Community Council on 11th of September, which includes a number of business owners in the village. The feedback was that during the summer months, there was a large public presence on the beach during the summer months.

As regards retention of the groynes, the 2006 Strategy looked at a number of options for defending the Borth frontage, including Option 3- Maintain the existing defences, which included retention of the timber groynes. All of the options were looked at closely to understand their impacts on a number of criteria which consultation had indicated were going to be significant discriminating factors. These included:

- Technical
- Economics
- Amenity
- Environment
- Operation and Maintenance
- Health and Safety (Construction and Public)
- Constructability
- Planning Acceptability

Eleven options were evaluated, including doing nothing as the baseline. These were evaluated and scored, with this process being subject to sensitivity testing of the scoring and weighting to ensure a robust selection method. The results of the evaluation are set out in Table 9.3 of the 2006 Strategy, which is reproduced below.

Scoring:													
Acceptable - 5													
Potentially acceptable - 3													
Unacceptable- 1													
Options Reference No.	Weighting (%)	Do Nothing	Minimum Maintenance	Reconstruct Existing	Option 3 but with Retreat	Sea Wall to Village	Rock Revetment to Village	Rock Control Structures	Offshore Breakwaters	Control Structures and Rock Groynes	Option 9 but with Retreat	Option 9 with Offshore Reef	
Options Reference No.		1	2	3	4	5	6	7	8	9	10	9A	
Criteria													
1. Technical	5	1.00	1.50	2.25	3.25	4.50	5.00	5.00	5.00	5.00	5.00	5.00	5.00
2. Economics	25	1.00	5.00	2.00	2.00	3.00	4.00	4.00	3.00	4.00	4.00	4.00	4.00
3. Amenity	15	1.00	1.08	2.17	1.92	1.83	2.17	3.17	3.33	3.33	3.33	3.33	3.58
4. Environment	10	2.60	3.00	3.00	2.40	2.40	2.80	2.40	2.60	2.80	2.00	2.80	2.80
5. Operation and Maintenance	5	3.50	3.00	3.75	3.50	4.50	3.75	3.75	2.75	3.75	3.25	3.00	3.00
6. Health and Safety (Construction and Public)	15	4.33	4.25	2.75	2.83	2.08	3.00	3.58	3.67	4.00	3.92	3.75	3.75
7. Constructability	10	4.67	4.67	3.17	2.83	1.83	2.67	4.00	3.67	4.00	4.00	3.83	3.83
8. Planning Acceptability	15	1.00	1.00	4.50	3.00	2.50	3.50	3.50	3.00	3.50	3.50	4.00	4.00
Overall Score	100	2.15	3.19	2.83	2.52	2.59	3.28	3.62	3.26	3.74	3.63	3.76	3.76

The selected Option 9A which has been carried forward for implementation as Phases 1 and 2, achieved the highest overall weighted score of 3.76. In contrast, Option 3, which included retaining the groynes, scored only 2.83. Areas where this option was marked down were that it was inflexible to future change, provided no improvement to the then low standard of flood defence, and posed a health and safety risk as it would not mitigate heavy overtopping onto public accessible spaces.

The majority of the imported material during the Phase 1 works comprised shingle for beach nourishment. The phase 2 works do not include any beach nourishment, so the volumes of imported material will be greatly reduced.

It is proposed that all deliveries of bulk materials (rock) will be from the north of the village, with the entry to the beach also being to the north of the village, therefore minimising the disruption to the majority of the village.

MLT comments: *The applicant was asked to provide further details on the measures to address access difficulties caused by any temporary/localised build-up of shingle as mentioned in their response.*

Applicant response

I can confirm that Ceredigion County Council has undertaken beach reprofiling works along the coastal frontage to Phase 1 in response to the recent storm events, and as a result this has also resolved the issue highlighted by concerned residents in relation to the steepness of the shingle bank which presented some access issues across the beach. Ceredigion County Council will continue to monitor the shingle bank over the coming season and undertake further reprofiling works if deemed necessary to maintain access.

MLT comments: *Applicant has addressed the concerns raised which are relevant to our remit.*

Public Representation 2 – dated September 6th 2013

I reside in Borth and came here because the beach was a long strip of sand all the way to Ynyslas and a safe environment i.e swimming. However this has now changed with the recent " sea defenses" all we have now is two lumps of rock in the sea which have bugged up the currents and made it unsafe to swim. There are several "coal heaps "of rocks going under the misapprehension of being Groins(they have blocked passage along the beach unless it's low tide and a beach that appears to be nothing but rocks and pebbles) this catastrophe took some little time to achieve. We are now told that the good part of the beach is about to undergo the same treatment.....(A thought...; these may at present prevent encroachment headon but if the sea rises as predicted Borth will cease to exist due to flooding through the back door....YNYSLAS or are you going to build a big wall up the DYFI estuary... What a waste of money for things 'Borth' of little value compared to the environment

Applicant Response

The present Scheme of flood defence for Borth was developed from a wide ranging Strategy undertaken in 2006. This considered the coastal flooding and erosion problems facing Borth. At that time, the Strategy did not address fluvial flooding from the Leri, which is a separate problem. Schemes to address both tidal and fluvial flooding will be required for Borth, and the recent flooding from the Leri is being considered separately.

The Scheme identified by the 2006 Strategy is essentially that now being implemented in phases; the first phase having been completed in 2012, and the second phase being the subject of the present planning application.

MLT comments: *The applicant was asked to address the safety for swimming issue raised.*

Applicant Response

As far as coastal/tidal currents being affected by the works thereby creating a danger to bathers, Ceredigion County Council is not aware of any such incidents being reported either directly to the Council, or through the RNLI lifeguards located at Borth beach during the bathing season since the scheme was completed in early 2012. As far as Ceredigion County Council is concerned, bathers have been complimentary of the wide sand beach which is evident in the lee of the offshore multi-purpose reefs which provides for a safer area of beach away from breaking waves.

***MLT comments:** Applicant has addressed the concerns raised which are relevant to our remit.*

Public Representation 3 – dated 21st September 2013

We would like to register our objections to Phase 2 of the Borth Coastal Protection Scheme submitted by Ceredigion County Council.

***MLT comments:** The member of public was requested to provide details of the reason for the objection to the application.*

Response to request for more details

The original plan approved by the public was for a textile bag as a method of defending the coast and promoting the area as a surfing resort. At that stage no mention was made of large piles of rocks changing the nature of the beach. When this plan was dropped it was never made clear exactly what was to replace the bag and some visitors still thought that it was going ahead.

When Phase 1 was completed many local people regretted the loss of the groins and didn't like the new appearance of the beach, with the scouring of the south end, its concentration opposite the reef and the lack of access from the houses. It may be that the large amount of money spent on Phase 1 may be acceptable, providing defence for the houses backing onto the sea but there seems to be little justification for continuing to spend on such a short term project as Phase 2'

This is an area of designated retreat and the sooner we face that, the better. The maintenance of Phase 1 will be very expensive as it is and to include Phase 2 will be involve even more unnecessary cost. We feel very strongly that Phase 1 should be modified and Phase 2 abandoned.

Applicant Response

The Phase 1 scheme considered both a rock option and a geotextile option for construction of the offshore reefs. There were concerns about the durability of the geotextile material for this option.

With regards the current access difficulties along the Phase 1 frontage, the council intend to address any temporary/localised build-up of shingle in Spring 2014.

As regards retention of the groynes, the 2006 Strategy looked at a number of options for defending the Borth frontage, including Option 3- Maintain the existing defences, which included retention of the timber groynes. All of the options were looked at closely to understand their impacts on a number of criteria which consultation had indicated were going to be significant discriminating factors. These included:

- Technical
- Economics
- Amenity
- Environment
- Operation and Maintenance
- Health and Safety (Construction and Public)
- Constructability
- Planning Acceptability

Eleven options were evaluated, including doing nothing as the baseline. These were evaluated and scored, with this process being subject to sensitivity testing of the scoring and weighting to ensure a robust selection method. The results of the evaluation are set out in Table 9.3 of the 2006 Strategy, which is reproduced below.

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6. Health and Safety (Construction and Public)	15	4.33	4.25	2.75	2.83	2.08	3.00	3.58	3.67	4.00	3.92	3.75	3.75

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7. Constructability	10	4.67	4.67	3.17	2.83	1.83	2.67	4.00	3.67	4.00	4.00	3.83	
8. Planning Acceptability	15	1.00	1.00	4.50	3.00	2.50	3.50	3.50	3.00	3.50	3.50	4.00	
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The selected Option 9A which has been carried forward for implementation as Phases 1 and 2, achieved the highest overall weighted score of 3.76. In contrast, Option 3, which included retaining the groynes, scored only 2.83. Areas where this option was marked down were that it was inflexible to future change, provided no improvement to the then low standard of flood defence, and posed a health and safety risk as it would not mitigate heavy overtopping onto public accessible spaces.

The Shoreline Management Plan 2 Management Policy for Borth Village is Hold the Line until 2055 with a move to Managed Retreat to 2105.

MLT comments: *The applicant was asked to provide further details on the measures to address access difficulties caused by any temporary/localised build-up of shingle as mentioned in their response.*

Applicant response

I can confirm that Ceredigion County Council has undertaken beach reprofiling works along the coastal frontage to Phase 1 in response to the recent storm events, and as a result this has also resolved the issue highlighted by concerned residents in relation to the steepness of the shingle bank which presented some access issues across the beach. Ceredigion County Council will continue to monitor the shingle bank over the coming season and undertake further reprofiling works if deemed necessary to maintain access.

MLT comments: *Applicant has addressed the concerns raised which are relevant to our remit.*

NRW internal consultation comments – dated 18th September 2013

We have reviewed the Environmental Statement and have no objection to the proposal, provided that appropriate conditions to safeguard statutory nature conservation sites are

incorporated in any permission granted. Our comments are set out below, with recommended conditions in Annex 1.

Designated sites

The proposed scheme is adjacent to the Pen Llyn a'r Sarnau Special Area of Conservation (SAC) and also close to the following statutory sites:

- Cors Fochno SAC
- Dyfi Estuary Special Protection Area (SPA)
- Craig yr Aderyn SPA
- Cors Fochno and Dyfi Ramsar site
- Dyfi Site of Special Scientific Interest (SSSI)
- Borth-Clarach SSSI

With respect to these sites the nature conservation interest is a matter of international or national policy, or legislation requiring protection from damage and deterioration, with their important features conserved by appropriate management.

MLT comments: Noted. A Habitats Regulations Assessment was undertaken including an Appropriate Assessment and it was ascertained that the proposal, when considered alone and in-combination, will not adversely affect the integrity of the European sites concerned.

Residual flood risk

We welcome the following acknowledgement in section 2.3 of the Environmental Statement “It is recognised that climate change, sea level rise and increased storminess will change the conditions experienced along the Borth frontage in the future. The scheme is designed to help manage the risks along the length of the Borth – Ynyslas frontage over the next 20-50 years. The scheme alone will not eliminate the risks from flooding and erosion. Other community resilience actions to help the community adapt to climate change and reduce the impacts of flooding and erosion to the people and environment of Borth will also be needed.”

The defence is designed to withstand a 1 in 100 year tidal event at present, but the standard of protection will reduce over the life of the scheme as a result of climate change.

MLT comments: Noted.

Transition to undefended coast

We welcome the amendments to Phase 2 of the Coastal Defence Scheme following the Strategic Review set out on page 19 Section 2.5.1 of the Environmental Statement. “At the northern end, the standard of defence is reduced to provide protection against a breach, but a lower degree of protection against overtopping.

The northernmost rock breakwater is smaller than the other rock breakwaters allowing for a more gradual change between the wide shingle beach and a narrower beach to the north of the village.”

We welcome the acknowledgements in Section 2.5.2 on page 19 that state “As a result of the Strategic Review, the Borth Coastal Strategy is no longer valid for the northern section of the coastal frontage. There is no plan to continue to construct the scheme as set out in the Borth Coastal Strategy (Royal Haskoning 2001).”

We note that the originally proposed scheme, to construct defences northwards as far as Ynyslas, is no longer appropriate and welcome the modifications to the design of Phase 2 which create a suitable transition between defended and undefended coast, i.e. reduction in the height of the northernmost breakwater and the size and height of the northernmost groyne.

MLT comments: Noted.

Flood risk from the Ffos Glan Wern

Drawing 9X4832/9002 P1 - Phase 2 Works, General Arrangement and Demolition, shows the site compound is to be located adjacent to the Ffos Glan Wern. This is within an area at risk of flooding and within the Borth Internal Drainage District. Section 6.5.4.2.1 of the Environmental Statement proposes mitigation measures in relation to the flood risk to the site. While in general we welcome these mitigation measures, we do not support the construction of a temporary localised flood bund to the northern and eastern boundaries of the proposed site compound. By delaying the onset of flooding to the site it is possible that flooding will be accelerated elsewhere.

Any work or structure which could impact on the discharge of Ffos Glan Wern, or is within 7metres of the watercourse itself, will require our prior written consent. If you require further information on this aspect please contact our Flood Risk Analysis Engineer, Sue Williams, on 01248 484148. This stream has in the past experienced problems with material accumulating at its outfall and although remedial work has been undertaken to alleviate this, it is important that any work undertaken does not exacerbate this problem. The obstruction of this outfall has the potential to cause flooding problems to parts of Borth and Glanywern. Flooding of property has occurred in this area in the past.

Applicant response

The construction of a temporary bund was suggested as potential mitigation for flood impacts to the site compound during construction of P2 in section 6.5.4.2.1:

“localised flood bund could be constructed along the east and part of the northern boundary of the compound. This will delay the onset of flooding and may help manage the risk of flooding during more frequent events (with more modelling of the flood extents its benefit is hard to quantify). Any bund should be a temporary structure and be completely removed following the completion of Phase 2 construction.”

We welcome the comments of NRW in respect of this proposed mitigation and will ensure that a flood bund will not be incorporated into the site compound flood mitigation measures.

There are no works planned in the vicinity of the Glan Wern outfall as part of these proposals.

MLT comments: Noted. Applicant has addressed the concerns raised. A requirement to clear the Glan Wern outfall should the construction activities cause any blockage will be conditioned in the licence.

Width of shingle ridge

We understand that it is not intended to increase the width of the shingle ridge over the area of Phase 2. We note that the current width of the shingle ridge at Phase 2 is considered adequate to deliver the required defence function. We have no issue to the use of 5000m³ of shingle, identified as a contingency in the Environmental Statement.

MLT comments: Noted.

Peat and clay beds

Any excavated peat and clay should be retained within the system as occurred with Phase 1.

We note that the extent of peat and clay beds is greater than was appreciated prior to the construction of Phase 1 and that it will therefore not be possible to avoid these features during the construction of Phase 2. We are satisfied that the proposed working methods, which have been designed in the light of experience on Phase 1, provide a reasonable standard of protection for the peat and clay beds.

MLT comments: Noted.

Impact on coastal processes

One of the key concerns regarding Phase 1 was that the defences, particularly the reef, would prevent the northward movement of sand and shingle and thereby have an impact on the coastal processes in and around the Dyfi estuary and in particular on the Pen Llyn a'r Sarnau SAC. We were satisfied with respect to Phase 1 that this is not likely to be a significant impact. We have considered additional modelling information provided in respect of Phase 2 and are satisfied that there is not likely to be a significant impact on coastal processes in and around the Dyfi estuary, or the Pen Llyn a'r Sarnau SAC. However, it is important that this is monitored.

We recommend that consideration is given to retaining, for research or interpretation purposes, any parts of fossil trees removed during excavations.

MLT comments: Noted. Monitoring of coastal processes will be conditioned within the Marine Licence.

The Conservation (Natural Habitats, &c.) Regulations 2010

The areas of the proposed coast protection works close to the following sites are afforded protection under the Conservation (Natural Habitats &c. Regulations 2010 (the Habitats Regulations)).

- Pen Llyn a'r Sarnau SAC
- Cors Fochno SAC
- Dyfi Estuary SPA
- Craig yr Aderyn SPA
- Cors Fochno and Dyfi Ramsar site

This letter constitutes our advice under Regulation 61 (1) of the Habitats Regulations, with respect to the significance of the proposals in Phase 2 of the Scheme. We have already advised that an Appropriate Assessment will be required for Phase 2 of the Borth Sea Defences. This is to establish that there will be no adverse effect on the integrity of the sites, as required under the Habitats Regulations.

Another purpose of the Appropriate Assessment is to identify and formulate appropriate conditions that will prevent adverse effect on site integrity. It is our opinion that provided the proposed conditions listed in Annex 1 to this letter are fully implemented and adhered to, there will be no adverse effect on the integrity of the above sites.

***MLT comments:** Noted. NRW internal consultees were asked for further clarification regarding the Habitats Regulations Assessment*

NRW internal consultees response

The advice in the Countryside Council for Wales' letter of 7 November 2012 set out the scope of issues required to inform a Habitats Regulations Assessment of Phase 2 of the Borth Sea Defences and advised on which sites should be considered within the HRA. To demonstrate that all of the features of these sites have been fully considered, the initial screening stage should be clearly set out within the Test of Likely Significant Effect (section 6 of the report). Given there is the the clear potential for likely significant effects on sites such as Pen Llyn a'r Sarnau SAC, reference should also be made to the site conservation objectives, as clearly stated in the David Tildesley 2011 guidance.

In particular our scoping advice made specific reference to coastal processes in relation to potential impacts on Penllyn a'r Sarnau SAC and the Cors Fochno SAC. Natural Resources Wales response dated 9 September 2013 to the planning application for this development includes a section on 'Impact on Coastal Processes' which refers to the information Natural Resources Wales has considered in giving our advice on Likely Significant Effect. This section of our letter also includes our advice regarding a condition which we consider is necessary to ensure that there is no significant effect on coastal processes in respect of the two SACs. The Habitats Regulations Assessment should set out similar information. As the condition is needed to ensure no significant effect will occur, then to enable the proposals to pass a test for likely significant effect they would have to

form part of the scheme proposals. If the intention to is to make this a condition on the proposals following submission for planning permission (to prevent an adverse effect from occurring) then it is our view that this should be identified as part of an Appropriate Assessment, rather than a Test of Likely Significant Effect.

Table 2 of the Screening Report describes potential effects of the scheme on a number of features. As outlined in the previous paragraph, where the table notes potential effects, the measures which are to be put in place to control these potential effects (likely significant effects) should be included in an Appropriate Assessment unless it is made clear that they will be implemented as part of the scheme delivery; ie. control measures set out and conclusions drawn as to whether they are adequate to prevent the potential effects. We expect clear reference to be made to the mitigation measures and environmental controls set out in Tables 8.1 and 8.2 of the Environmental Statement as these will be important in ensuring that there is no adverse effect on the integrity of the European Sites.

I would stress that it is Natural Resources Wales opinion that, provided the conditions identified during the planning process are fully implemented and adhered to, there will be no adverse effect on the integrity on European sites. However, the information to support this conclusion, which is already available, needs to be brought together and clearly set out in a report to inform Habitats Regulations Assessments by the competent authorities (Ceredigion County Council for the Planning Permission and Natural Resources Wales' Marine Consents Unit for the Marine Licence).

MLT comments: Noted. A Habitats Regulations Assessment was undertaken including an Appropriate Assessment and it was ascertained that the proposal, when considered alone and in-combination, will not adversely affect the integrity of the European sites concerned.

Environmental controls

We welcome the mitigation measures and environmental controls set out in Tables 8.1 and 8.2 of the Environmental Statement which we note have been informed by experience on Phase 1. We request that they are covered by suitably worded conditions in any permission issued.

We request that the applicant notify us when works are to commence on site.

The applicant should be made aware of the attached guidance note which provides additional advice on pollution prevention and waste management.

ANNEX 1

CONDITIONS RECOMMENDED TO ENSURE NO ADVERSE EFFECT ON INTEGRITY OF EUROPEAN SITES.

CONSTRUCTION

1. No works are to be carried out within the Dyfi Site of Special Scientific Interest (SSSI). No materials or plant are to be stored within the Dyfi SSSI and plant must not cross the Dyfi SSSI.
2. Onshore groynes and breakwaters must not to extend into the Pen Llyn a'r Sarnau Special Area of Conservation.
3. Vessels must not be anchored or boats beached in areas where forest or peat beds or stiff, grey clays have been observed.
4. Unloading or storage of materials capable of damaging the forest or peat beds must avoid areas of the shore where forest or peat beds are known to occur, and stiff, grey clays.
5. Anchoring sites for all vessels must be located away from areas of *Sabellaria alveolata* reef or piddock beds.
6. All vessel operators must be given a briefing, alerting them to the possible presence of marine mammals in the area. All vessel operators must adhere to guidelines for safe vessel operation in the presence of cetaceans. All vessel operators must use predefined routes only.
7. If rocks are to be dropped into the sea or moved in the sea a competent person with the ability to recognise and advise on marine mammals should be available at all times during this work. If cetaceans are observed, works should be delayed until they have left the area.
8. Contractors must avoid the generation of underwater sounds at night. Night workings should be limited purely to the delivery of rock. This is to prevent the disturbance of cetaceans.
9. No machinery, plant or materials are to be stored within the tidal range (taking account of extreme high tides and storms).
10. An Environmental Clerk of Works, or similar, must be appointed and be available to throughout the construction of Phase 2.
11. In the event of unforeseen/ unforeseeable adverse impacts on the occur to features of the Special Area of Conservation, Site of Special Scientific Interest or Geological Conservation Review sites in the post construction period that are the direct or indirect result of the onshore rock groynes, breakwaters or offshore multi-purpose reefs, details of measures to mitigate those effects shall be submitted to Natural Resources Wales. Any works of mitigation agreed, in writing, shall be implemented in accordance with an agreed timetable.
12. Actions listed in Tables 8.1 and 8.2 of the Environmental Statement relating to water quality and sediment quality should be translated into enforceable conditions.

13. The colour of the block stones used for the onshore groynes and breakwaters must be similar in colour to the shingle of the storm beach.

POST CONSTRUCTION

1. A monitoring plan is to be implemented to include:
 - i) A baseline survey (beach levels and composition) must be undertaken on completion of Phase 2. A beach monitoring plan must be implemented to include the full length of the frontage and both beach width and height. The beach monitoring plan must consider both the local area and the far-field response of the sand foreshore and shingle ridge.
 - ii) A bathymetric baseline survey must be undertaken, including the area of the breakwaters and leeward of these, on completion of Phase 2. The area is to be agreed in consultation with National Resources Wales.
 - iii) A fixed-point photographic baseline survey must be undertaken of any exposed forest and peat beds fronting the Phase 2 structures on completion of Phase 2.

The plan is to be agreed in writing prior to commencement of works on the site.

OTHER RECOMMENDED CONDITIONS

1. The Glan Wern outfall must be cleared in a timely manner should it become blocked by beach material. This is requested as the obstruction of this outfall has the potential to cause flooding problems to parts of Borth and Glanywern.

If shingle is used for the replenishment of the storm beach the source will be determined as set out in Section 3.1 of the Environmental Statement.

***MLT comments:** Further clarification was requested on which condition was protective of which European site feature.*

NRW internal consultees response

Annex 1 to our letter should refer to conditions required to ensure no adverse effect on statutory sites.

Conditions 3,4,8, and 13 are not relevant to SAC features or the HRA.

As discussed, condition 8 was included in error. We do not believe that night working poses a risk of disturbance to cetaceans.

***MLT comments:** Noted. All the requirements in the recommended conditions above are included in the Marine Licence conditions with the exception of condition 8, (included in error as confirmed by NRW internal consultees above) and condition 11. Condition 11, concerning post-construction mitigation in the event of unforeseeable impacts of the works, was not included as the Marine Licence will be time limited and will permit construction activities and post construction monitoring as agreed under pre-construction plan licence requirements but not post construction "operation" of the coastal defences. It*

is noted that this condition is a requirement of the Planning Permission granted by Ceredigion County Council on 25th November 2013 (Application number: A130533CD). The planning condition satisfies the need for any post construction mitigation necessary to be a regulatory requirement.

.....

Cefas comments dated 27th August 2013

Shellfisheries

Major Comments

1. The draft ES does not provide any information about the shellfish species present in the wider area when it has been pointed out in the fishing baseline (section 6.10.1) that potting for shellfish is the main commercial fishery out of Borth. As such it would be useful to add some baseline information about which species of commercial importance are in the wider area, for example table 6.6 specifies the fish species found around Borth, something similar would be a useful addition for shellfish.

Applicant Response

The shellfish information is contained within the P1 ES, which has been referred to in the completion of the P2 ES/ the P2 ES does not seek to reproduce the information contained within the P1 ES in its entirety, but to summarise that data, which is considered to remain relevant. The following information is taken from the P1 ES. Please note, that the figure referred to as Figure 6.10 in the text below is the same as figure figure 6.12 in the P2 ES:

“Borth operates a small commercial fishing industry of approximately six vessels all of which target shellfish with pots (L. Jellett. Pers. Comm. 2010). The primary fisheries in the area are common prawn (*Palaemon serratus*), lobster (*Homarus gammarus*) and crab (various species) although some finfish, including bull huss (*Scylliorhinus stellaris*), plaice (*Pleuronectes platessa*), Sole (*Solea solea*), mullet (*Mullus surmuletus*) and pollock (*Pollachius* sp), are also caught (Asa Owen, Pers. Comm. 2009 & Colin Charman, Pers. Comm. 2010). Potting takes place approximately 1km offshore of the frontage where prawns are caught in areas of soft mud and lobsters and crabs on patches of rocky substrate (Asa Owen, Pers. Comm. 2009). Cardigan Bay is known for its scallop fishery however, there is no evidence to suggest that it occurs near Borth.

The most valuable fishery is the prawn fishery with prices ranging from £16-20 per kg whereas lobsters are generally sold for £7-16 per kg (Asa Owen, Pers. Comm. 2009). The prawn fishery runs from mid/late September to November although there is sometimes a second fishery from late February to July. The crab fishery, consisting of brown, velvet and spider crabs is believed to be year round. Mussels are also harvested all year round in the Dyfi Estuary (Asa Owen, Pers. Comm. 2009).

One of the six commercial vessels based in Borth launches directly from the beach opposite the Golden Sands Holiday Park using a tractor, the other five vessels are moored

and operate from the Ynyslas Boat yard. Approximately three other vessels operate from Aberdyfi Harbour, on the northern shore of the Dyfi Estuary. Further south, approximately 12 vessels operate from Aberystwyth Harbour. All these vessels are believed to be potting boats but it is not known how many of them fish offshore of Borth (Peter Norrington-Davis, Pers. Comm. 2009).

Seine and fixed netting for bass (*Dicentrarchus labrax*) take place along the beach between Borth and Ynyslas. Predominantly in the areas shown as zone C on the Recreational Angling Map (see Figure 6.10). Seine netting is permitted throughout the year (engines are not permitted). Fixed netting, using gill nets, is permitted from 1st December to 1st April (L. Jellett. Pers. Comm. 2010). Fixed netting utilises the existing timber groynes as anchors for the landward end of the net (L. Jellett. Pers. Comm. 2010)."

Cefas Response

In my previous advice dated 27th August 2013, I noted that the draft ES did not provide any information about the shellfish species present in the wider area. I appreciate that the information may have been contained within the Phase 1 ES; however the Phase 2 ES should be a standalone document with all the relevant information contained within. I am of the opinion that this issue still remains. It would be useful if the applicant could summarise which shellfish species are known to be present in the immediate vicinity of the project location i.e. a table (like that produced for finfish, 6.6) within the fish ecology section. If it is the case that they aren't present in the immediate vicinity then this should also be made clear in the fish ecology section (as pointed out by Mike Smith in 2010) to show that impacts to shellfish have been considered.

I am of the opinion that the given the size and nature of the proposed works, any impacts on shellfish species are likely to be minimal and localised, however an assessment should be included for clarity and completeness.

MLT comments: Noted. Applicant has addressed the Shellfisheries concerns raised.

Fish resources

Observations

2. In general, a basic summary of the fish in the area has been provided, and whereas the proposed scheme is unlikely to have major impacts on local fish, two species could have merited further consideration, angel shark (*Squatina squatina*) and turbot (*Psetta maxima*) (some further detail has been provided on this species' nursery grounds, however the report would benefit from further improvement, see point 13-15 and 17 below).
3. The methodology used to prepare and gather the evidence is appropriate and the data was timely. The mitigation for fishing (table 8.1) looks appropriate.

4. The current impact assessment on all other fish species identified (other than those identified in points 10, 13-14 of this advice minute) and fishing looks appropriate.

Major Comments

5. The ES mentions that the Phase 1 ES discussed the presence of turbot but did not assess the impacts to the area as a nursery ground. This led to the inclusion of a condition on the licence to monitor the relative abundance of turbot in the near-shore area using a seine net survey. Unfortunately Ceredigion County Council did not comply with this condition and the surveys were never undertaken. The Phase 2 ES comments that there is some grey literature (from angling sites) that small turbot are caught around Borth head and the area of the offshore reef which are too small to land, further demonstrating the importance of the area as a nursery ground. I would therefore expect an assessment of the potential impacts the proposed works may have on the turbot nursery ground to be submitted.
6. Section 6.3.2.6 also discusses the Jones, 1973 reference, which, contrary to the statement in the ES we did provide in our response to the Welsh Government, dated 19th August 2010. This reference has been included below for completeness.

Minor Comments

7. As highlighted in previous advice (dated 19th August 2010) for Phase 1, Cardigan Bay is also an important area for angel shark (*Squatina squatina*), which is listed on the Wildlife and Countryside Act, this species is not mentioned at all in the report. However we do not envisage that there is a risk significant adverse impact to this species.
8. The evidence supplied is appropriate however the ES mentions in section 6.3.2.6 that fish species observed on the video survey transects included goby, pipefish, dragonet, dogfish, flatfish and a single ray, all of which are relatively common. No signposting or reference is provided to the location of the raw data or survey details.
9. No mitigation is proposed for fish resources.
10. I notice that the commercial fishing baseline (section 6.10.1) has been substantially cut down in this ES compared with the Phase 1 ES, making this section very limited. It would be informative to include some additional text here specifying which species are fished (specifying their importance based on landings values) and where the main fishing occurs in relation to the development. This would help to put the potential impacts into perspective.
11. Figure 1.2 and 1.3 – the legends are not legible in the PDF version of the ES

Applicant Response re: turbot

The P1 ES mentions a range of fish species targeted by mainly recreational anglers, mainly mackerel (*Scomber scombrus*) and some species of flat fish such as flounder (*Platichthys flesus*) and turbot (*Psetta maxima*) (L. Jellett. Pers. Comm. 2010). Figure 6.10 in the P1 ES is reproduced in the P2 ES as figure 6.12. this shows the species

targeted at different locations along the shore. The importance of the area as a turbot nursery was not specifically mentioned during the P1 ES.

The P2 ES discusses the comments made by Cefas in their response to the Phase 1 marine licence application (and accompanying ES) in relation to the importance of the area as a turbot nursery. A review of Cefas' literature on fisheries does not indicate the area is an important turbot nursery ground. Cefas reports show the area is important for several species as nursery/spawning grounds but for all those species listed, Borth is a small area compared to the overall nursery/spawning area shown in both reports (Ellis, 2012) and (Coull, 1998). We have been unable to locate the report that Cefas cites in their response to the P1 ES (Jones, 1973). The grey literature referred to relates to comment made on angling blog sites and cannot be considered anything other than anecdotal evidence. Other small fish species are also mentioned on the same sites. This could support the Cefas literature that the area is generally used by several species for spawning / nursery.

There will be no works in the area of the reef or Borth head during P2 or in the subtidal area, as all works will be in the intertidal area and working within the water column will be kept to an absolute minimum, as set out in the mitigation measures in s6.2.4.3 and s6.3.4.3.1. The P2 ES states that "construction works are unlikely to affect fish as all works will be on the beach, not in the subtidal area" (6.3.4.6). The release of sediment or polluting material into the water column could affect fish. These matters are covered in 6.5.4.1 on water quality and mitigation measure. The ES concludes that there will be no negligible effects to fish as a result of P2.

Cefas Response

In my advice (dated 27th August 2013) I stated that I would expect an assessment of the potential impacts of the proposed works on the turbot nursery ground to be submitted.

After reviewing the additional information I am of the opinion that no further mitigation for turbot will be required if the works are intertidal and working within the water column will be kept to an absolute minimum, as set out in the mitigation measures in s6.2.4.3 and s6.3.4.3.1. I raised concerns regarding turbot nursery areas, due to information regarding newly-metamorphosed turbot appearing in the surf zone from July to October, as highlighted in the abstract from the Jones, 1973 paper below.

"The ecology of 0- and 1-group turbot was studied at Borth, Cardiganshire, during the years 1966–68. Newly-metamorphosed turbot appeared in the surf zone from July to October, Abundance during the period September 1967 to May 1968 decreased at an average rate of 25% of the sampled population per month. Fish of the 1966 year-class grew from a mean length of 4.5 cm in September 1966 to 14.4 cm in October 1967. Growth was fast in the spring and summer, slowing during the late autumn and winter. The most important food items of 0- and 1-group turbot by percentage occurrence and dry weight were polychaetes and mysids. The daily food intake of 0-group turbot in September 1967 was estimated as 2.5 % of the body weight per day."

MLT comments: *Cefas comments noted. Applicant has addressed the Fish Resources concerns raised.*

Benthic ecology

Observations

12. The timeliness of the data is appropriate and is consistent with evidence submitted for applications of a similar nature.
13. I consider the proposed mitigation and monitoring measures to be sufficient. Furthermore, it appears that experience drawn from Phase 1 of the construction have been considered and applied in informing proposed mitigation and monitoring measures for Phase 2 of the development.
14. The evidence is sufficient for a decision on the application to be made (subject to the comments 23-24 of this advice minute relating to underlying data analyses and presentation of results of such analyses being addressed).

Minor Comments

15. The methodologies described for the ecological surveys (intertidal and subtidal) appear to be fit for purpose. However, additional detail is required pertaining to the methods employed for the acquisition of sediment samples for Particle Size Analysis (PSA). Furthermore, the grab sample photographs are missing from Appendix 7. These should be provided for review as it is currently not possible to provide comment on the suitability of methods for the collection of samples for PSA as little detail is provided in regard to this component of the survey.
16. The evidence supplied is proportionate and targeted for its intended use. However, whilst the conclusions drawn from the evidence appear to be appropriate the data analyses and interpretations presented in support of these conclusions could be improved. For example, the multivariate analyses of the infaunal data identified a number of clusters. However, little detail is provided in terms of how these clusters were derived (e.g., 'cut off' at a predetermined level of similarity, SIMPROF). Furthermore, inclusion of a SIMPER analysis would allow the characterising fauna within each group to be ascertained and would provide a more robust characterisation of the faunal communities present within the area of search.
17. Section 6.3.1 reads 'In addition to the general assessment methodology, the assessment of impacts on coastal processes has been undertaken...' 'Coastal processes' should be replaced with 'ecology'.

Applicant Response re: points 15 and 16

A modified Day Grab was deployed in line with Joint Nature Conservation Committee (JNCC) Marine Monitoring Handbook Procedural Guideline No. 3- 9 (Davies 2001). Each grab location was sampled until four successful samples were obtained. The samples were sieved, fixed and stored separately in labelled airtight white opaque containers for further biological analysis with the fourth sample providing a smaller labelled and bagged sample for PSD analysis. (Subtidal survey report section 2.4- Appendix D3, Borth P1 ES).

Equipment specifications are set out in Appendix 2 of the subtidal survey report in Appendix D3). Particle size distribution analysis is set out in section 4.3 of the same report.

While accepting that there could be more detail on the analysis, the evidence has been evaluated by Cefas as proportionate and targeted for its intended use. We welcome these comments and will use them to improve future analyses.

Cefas Response

In my previous advice (dated 27th August 2013) I stated that additional detail of the methods for the PSA sediment sampling was required and that the grab sample photographs were missing from Appendix 7. The applicant has provided additional details in relation to the acquisition of sediment samples for PSA. I would advocate analysing the PSA sample from the infaunal grab sample (as a small sub-sample of sediment) to ensure that the faunal communities described are in fact representative of the sediment in which they occur. Even where the four separate samples are collected at the same target station there are often large distances between the individual samples which are intended to characterise the sediments present at a given station (particularly where the vessel does not have DPR and therefore is unable to hold position effectively). However, in terms of the survey in question, potential discrepancies in sediment characteristics between the 'replicates' are likely to be minimal given that the survey area largely comprised relatively uniform sand sediments.

However, the potential issues described here should be considered when designing any future surveys intended to characterise both sedimentary habitats and the infaunal communities associated with them.

With regards to the missing photographs from Appendix 7, these have now been submitted and I am content that they are suitable and appropriate.

MLT comments: Cefas comments noted. Applicant has addressed the Benthic Ecology concerns raised.

Coastal processes

Observations

18. Standard practices have been used. The assessment of coastal impacts was undertaken by reviewing project specific numerical modelling the designs of Phases 1 and 2 of the scheme (6.2.1, page 54).
19. The evidence supplied is appropriate and complete.
20. The evidence is consistent with that supplied for Phase 1 of the scheme at Borth which has already been constructed. The common construction methods employed on phases 1 and 2 (described in Chapter 3, page 21) allows confidence in the suitability of the proposed development.
21. The baseline environment is described in section 6.2.2 (page 54) with accurate descriptions provided of the geology and sediments (6.2.2.1, page 54) and coastal processes (waves, tidal levels, tidal and fluvial flows, sediment transport and geomorphology) (6.2.2.2, page 56).

22. The impacts of constructing Phase 2 are predicted to be similar to those resulting from Phase 1 (6.2.4, page 62). Negligible impacts are predicted to geological features (6.2.4.1, page 64). The impact on sediments may be negligible (if no shingle nourishment is required) or minor adverse (if nourishment is carried out) (6.2.4.2.1, page 66). Impacts to morphological features at Ynyslas are predicted to be negligible (6.2.4.3, page 66) and the overall impact of construction on coastal processes is assessed as minor adverse and short term (6.2.4.3.1, page 67).
23. Following construction of Phase 2 the impacts on geology are predicted to moderately beneficial (6.2.5.1, page 67). The effects on sand and shingle are also considered to be negligible once mitigation measures are implemented (6.2.5.3 and 6.2.5.3.1, page 68).
24. Beach level monitoring will continue to be undertaken by CCC and the results used to inform both Phase 2 design and future beach monitoring requirements (6.2.3.1, page 60). I agree with the importance of on-going beach monitoring and the use of the data generated to inform beach management as proposed in 6.2.3.1.1 (page 60) and 6.2.3.3.1 (page 62). Mitigation during the construction of Phase 2 is summarised in 6.2.4 (page 62). I welcome the use made of lessons learned during the construction of Phase 1. A baseline survey of beach levels and composition is proposed on completion of phase 1 (which has now been achieved), as well as annual monitoring and the development of a beach monitoring plan considering the local area and the far-field responses of the sand foreshore and shingle ridge. Baseline and annual bathymetric surveys of the area of the reefs and breakwaters (and the area leeward of these) is also proposed (6.2.4, page 64).
25. The impact of construction activities on geological features will be mitigated by the use of sensitive construction practices summarised in 6.2.4.1.1 (page 65). Impact to sediment will be mitigated by the re-use of excavated material, covering quarried material with naturally occurring shingle and the selection of shingle closely matching naturally occurring material (6.2.4.2.1 (page 66). Minimising the storage of material on the beach, careful programming of the works, removal of materials following the works and minimising the time between construction phases will mitigate any impacts to coastal processes caused by construction (6.2.4.3.1, page 67).
26. Monitoring and mitigation measures proposed to prevent impacts to coastal processes and geomorphology include a post-construction beach monitoring plan to be agreed with CCW (the findings of which will inform beach management) and, should unforeseen adverse impacts occur, the modification or removal of the built structures (6.2.5.3.1, page 68).

Major Comments

27. No statistical accuracy assessment is presented though I would not expect to see such an assessment in this document. An accuracy assessment should be presented in the report of the numerical modelling work however I have not seen such a report. I did request the Haskoning Modelling Report (23rd July 2013) but unfortunately I have yet to receive this document; I therefore cannot assess the accuracy of the modelling work.

28. The impacts of the scheme are discussed with regard to post-Phase 1 impacts (6.2.3, page 60), Phase 2 construction impacts (6.2.4, page 62) and post-Phase 2 impacts (6.2.5, page 67). The impacts detected following the construction of Phase 1 do not raise concerns though it should be noted that post-construction beach level data have not yet been analysed. At the time of writing of the ES no additional beach nourishment was required (6.2.3.1, page 60). No evidence has been seen of any geomorphological impacts at the mouth of the River Dyfi, nor has the Glan Wern outfall been affected (6.2.3.3, page 61). These should be submitted for review.

Minor Comments

29. The data are appropriately timely. I note that any review of the Borth Coastal Strategy for the northern section of the area should be carried out after the Dyfi Estuary Flood Risk Management Strategy (DEFRMS) has been completed. The DEFRMS is due to report its findings and recommendations during 2013 (2.5.1, page 18). The applicant should provide formal comment on the DEFRMS once it is available, including and implications for the proposed scheme. Similarly, formal comment should be made of the implications of the Phase 1 monitoring findings once they become available.
30. Extensive use has been made of Appendix C of the Phase 1 ES (Geology and Coastal Processes). This document provides a good overview of available data on geology, geomorphology and the long-term sediment trends to make predictions of the impacts of the various phases of the proposed developments. The document is a high-level synthesis and does not include details of the quality standards or assurance methods employed in the works upon which it is based. I would expect to see such details in the referenced reports rather than in the Appendix itself.

Applicant Response re: points 27 and 28

Please find attached the modelling report supplied to NRW in August 2013.

Please find attached the extract from the Ceredigion Beach Monitoring report for 2012-2013.

Cefas Response

In my previous advice I commented on the accuracy of the numerical modelling works; the analysis of the post construction beach level data in relation to the impacts detected following the construction of Phase 1 that do not raise concerns; evidence of any geomorphological impacts at the mouth of the River Dyfi and Glan Wern outfall; formal comment on the DEFRMS (Dyfi Estuary Flood Risk Management Strategy) once it is available, including any implications for the proposed scheme; and the Details of the quality standards or assurance methods employed in the works upon Appendix C of the Phase 1 ES (Geology and Coastal Processes) it is based are not included. I will take each in turn.

With relation to the accuracy of the numerical modelling works, the applicant notes that the same model applied in Phase 1 and presented in the previous study referred as Haskoning (2008) is used (5.4.1, page 22). As standard practice it is noted that this model was calibrated for the previous study and it is presented in Haskoning (2008) ((5.4.2 (f), page 23). In the current study, as quality assurance method, the model is validated using the physical model data (5.3, page 21 and Figure 5.3, page 24). It is noted by the applicant that the model hasn't been validated against the actual performance of the Phase 1 works; this validation should be presented. The applicant notes that initial LIDAR survey results have been compared with the modelling results (Figure 5.3, page

24); however it is not clear in Figure 5.3 if modelling results and LIDAR data are plotted together as evidence of good agreement.

With regards to the analysis of the post construction beach level data and the evidence of any geomorphological impacts, this has yet to be received for comment.

With regards to the DEFRMS, no formal comments on this have been provided nor have any formal comments related to the findings of the implications of the Phase 1 monitoring was included. Those should be provided once they become available.

No details of the quality standards or assurance methods employed in the works upon Appendix C of the Phase 1 ES (Geology and Coastal Processes) it is based were not provided therefore these issues still stand.

Applicant Response

re: accuracy of numerical modelling works

We are pleased to confirm that the model used for assessing the behaviour of Phase 2 is the same model as that used for Phase 1, as noted in the query. Furthermore, we confirm that the model was validated using the physical modelling. Subsequent to this and as part of developing the model for Phase 2 we have compared the results of the model with the developing form of the beach following completion of Phase 1. Inevitably, the shoreline is still settling down with a natural redistribution of sediment as expected. Initially, it was noted, that the uniformly placed recharge responded rapidly to individual wave conditions. Over the last year, this has settled down but in detail the shoreline is still considered to be responding to the influence of the different structures. This has been seen both from the LIDAR and through the more frequent survey work.

At the time of preparing the modelling report for Phase 2, while the survey results are consistent with the predicted behaviour from the modelling, these results could not be used as a strict validation. In the report, we have, therefore, included the results of the LIDAR as comparison only. However, to assist this comparison in response to the query above, we have overlaid the model results on the LIDAR plot. This is included as Figure 1 overleaf. 23 December 2013 9X4832/N/303486/PBor

It may be seen that to the centre and northern end of the Phase 1 works the model prediction lies very closely aligned to the results of the LIDAR. The shape of the beach matches very closely in relation to the groynes at MHWN.

Within the southern lee of the central breakwater, there is a slight cut back shown from the LIDAR compared to the model. This is still within the design parameters. To the north of the two breakwaters the lines show very good comparison.

At the southern end of the works, the salient that is developing behind the reefs is set slightly further north than predicted by the modelling. However, this is considered to show good overall comparison with predictions. This area, in particular, is still considered to be developing a more stable backshore shape.

Long term monitoring is on-going and further comparisons will be undertaken as further LIDAR data is received. This is due to be flown in January / February 2014.

We trust that this comparison answers the query above.

Re: analysis of the post construction beach level data and the evidence of any geomorphological impacts

Long term monitoring of the whole frontage has been on-going since 2006 using LIDAR, and prior to this by topographical survey since 1993. This has been supplemented by more detailed monitoring of the Phase 1 beach area, associated with the phase 1 scheme. Previous monitoring, prior to the Phase 1 scheme, has shown significant variation in the beach and lower foreshore to the north of Borth, up to the village of Ynys Las. This is reported in the discussion provided in extract of the monitoring report provided by email on the 13th November 2013. The longer term variability at the mouth of the Dyfi has been covered in Appendix C of the ES.

As noted in the response to query 1 above, the beach and lower foreshore in the area of the Phase 1 works has been undergoing a process of settling in since construction of Phase 1 was completed. This is highlighted by the LIDAR images (2011 – during construction and 2012/13 post construction) contained in the monitoring report (Figure 2). This is also highlighted in the preliminary assessment undertaken of the more detailed monitoring associated with the existing scheme. Detailed analysis of the local monitoring will be undertaken once the 2013/14 LIDAR survey has been obtained early in 2014. Notwithstanding the significant local changes that have been observed and anticipated, the monitoring has shown that, since the scheme, variation further to north remains within the natural variation seen from previous monitoring. It was noted that there was local influence of the final groyne in the Phase 1 scheme and that this has been addressed in developing Phase 2.

No impact has, therefore, been identified in relation to the entrance to the Dyfi.

With respect to the Ffos Glan Wern outfall, while lower beach levels did increase during construction and have continued to change post construction, these levels do not interfere with the operation of the outfall.

Re: DEFRMS

With respect to the Dyfi Estuary FRMS, this has now been completed in draft. Following comments from NRW (formerly CCW) a report was prepared including consideration of the approach being taken within the DEFRMS alongside that of the coastal strategy. This report is provided with this note.

The findings of this report, in particular the approach taken over the northern end of the proposed Phase 2 works have guided subsequent work and modelling in developing Phase 2.

Re: quality standards or assurance methods for Appendix C of the Phase 1 ES (Geology and Coastal Processes)

We note that the comment above recognises that Appendix C provides a good overview and that, as stated in Appendix C, this draws upon some 20 years of study, including detailed modelling and geomorphological analysis undertaken on behalf of Ceredigion County Council, alongside a review of various other research papers and studies, including those undertaken on behalf of NRW (formerly CCW). These reports and studies have, depending on the nature of study, been developed under different quality standards or assurance methods, using a variety of techniques and approaches. Certainly, with respect to the main modelling a technical reports produced for Ceredigion County Council, these have undergone full technical review.

Appendix C attempts to highlight, discuss and comment on where inevitably there are different interpretations of information covered by the different reports and has appropriately commented on this in identifying areas of continuing uncertainty. This has been taken into consideration within the ES. The Geological and Coastal Processes

assessment and in particular the concept model has, in agreement with NRW (formally CCW), been reviewed by Professor Ken Pye.

We are, therefore, uncertain as to what further evidence of quality assurance is being requested, given the diverse range of subject matter covered by referenced documents within the Appendix.

Cefas Response

In my previous advice (dated 6th December 2013), I stated that *“With relation to the accuracy of the numerical modelling works, the applicant notes that the same model applied in Phase 1 and presented in the previous study referred as Haskoning (2008) is used (5.4.1, page 22). As standard practice it is noted that this model was calibrated for the previous study and it is presented in Haskoning (2008) ((5.4.2 (f), page 23). In the current study, as quality assurance method, the model is validated using the physical model data (5.3, page 21 and Figure 5.3, page 24). It is noted by the applicant that the model hasn’t been validated against the actual performance of the Phase 1 works; this validation should be presented. The applicant notes that initial LIDAR survey results have been compared with the modelling results (Figure 5.3, page 24); however it is not clear in Figure 5.3 if modelling results and LIDAR data are plotted together as evidence of good agreement”*.

It is noted by the applicant that a comparison between the model of Phase 2 and the performance of Phase 1 has been done using survey work and LIDAR data. The evidence provided showing LIDAR data and model results for Phase 2 is welcome (Figure 1 page 2/5, 9X4832/N/303486/PBor).

With regards to the analysis of the post construction beach level data and the evidence of any geomorphological impacts, the comments provided by the applicant are noted.

According to the applicant, it is also noted that once the LIDAR survey is obtained in early 2014, a detailed analysis of the local monitoring will be undertaken. This analysis should be reported in the appropriate monitoring report.

The legend and scale of Figure 2 are not clear to assess the changes properly. The Figure shows some deposition after construction as expected.

A draft report, *Borth Management- Strategic Review, Review Statement* (2012), has been completed and provided. It is noted by the applicant that this draft report addresses the concerns with regards the DEFRMS. Along with the report there are comments regarding the DEFRMS that is taken into consideration within the Borth Management Strategy Review, e.g. pages 15, 19, 29, 30, 31, 34 and 35 (Borth Management- Strategy Review report).

No details of the quality standards or assurance methods employed in the works upon Appendix C of the Phase 1 ES (Geology and Coastal Processes) it is based were not provided, therefore these issues still stand.

Although quality standards haven’t been provided, it is noted and welcomed that The Geology and Coastal Processes assessment in Appendix C has been independently reviewed by Professor Ken Pye. Such independent review provides quality assurance.

MLT comments: Cefas comments noted. Applicant has addressed the Coastal Processes concerns raised.

Conservation designations

31. The proposed works are within the Pen Llyn a`r Sarnau/ Llyn Peninsula and the Sarnau SAC designated for reefs, shallow inlets and bays, sandbanks, estuaries and lagoons, as well as the presence of grey seals, otters and bottlenose dolphins. The works are also within 5km of the following designations:

- Dyfi SSSI (400m) designated for range of internationally and nationally important coastal landforms, habitats and species;
- Borth Clarach SSSI (1.7 km) designated for its geological interest and associated floral and annual communities as well as ornithological interests;
- Cors Fochno and Dyfi SSSI (2.5km) designated for its geological interest, estuarine habitats and wintering wildfowl and breeding birds.

32. I believe that the nature and scale of the works do not warrant an Appropriate Assessment under The Conservation of Habitats and Species Regulations 2010; however I defer comment to NRW advisory (formerly CCW).

MLT comments: Noted. A Habitats Regulations Assessment was undertaken including an Appropriate Assessment and it was ascertained that the proposal, when considered alone and in-combination, will not adversely affect the integrity of the European sites concerned.

Additional Comments

33. The scheme builds on the work carried out in Phase 1 and is a good example of the use of careful monitoring to inform adaptive management. The ES is clearly structured and well written. The Haskoning monitoring report informing the ES has not been seen at the present time and Cefas welcome the submission of the report for review.

34. The applicant should inform NRW if beach nourishment is required, and details of the operation e.g. quantities, methods for placement etc to ensure that NRW have the most up to date information.

MLT comments: Noted.

Summary

35. Based on my assessment of this application it is unclear whether the proposed works are unlikely to have an adverse effect upon the marine environment. I would recommend the applicant supply the additional information highlighted in this minute before a decision is made..

MLT comments: Noted. Discussions on specific topics raised by Cefas are documented in the text above. Following the discussions the Cefas final summary response was:

Cefas Response to Method Statement for Sea Delivery of Materials

The applicant has provided a method statement for the delivery of rock material by sea. This delivery option has been considered in the ES and the potential impacts are likely to be minimal however the application assumed delivery by road.

The method statement is appropriate and suitable for use. I welcome the applicants' proposal to mitigate the potential impacts to the peat bed and forest beds by using pre-agreed locations for the stockpiling of the rock and the handling and transportation.

MLT comments: *Noted.*

Cefas Final Response summary

Summary

Based on the assessment of the additional information, I am of the opinion that the proposed works are unlikely to have an adverse effect upon the marine environment.

I recommend the following licence conditions:

Pre-works

- The Marine Enforcement Office must be notified of the timetable of works/operations at least 10 days prior to any activities commencing.
Reason: To ensure that the Marine Enforcement Officer is aware of the operations at sea occurring within its jurisdiction in order to notify other sea users and can arrange enforcement visits as appropriate.

During works

- Any coatings/treatments utilised are suitable for use in the marine environment and are used in accordance with best environmental practice.
Reason: To ensure that hazardous chemicals that may be toxic, persistent or bioaccumulative are not released into the marine environment and used appropriately.
- The Licence Holder must install bunding and/or storage facilities to contain and prevent the release of fuel, oils, and chemicals associated with plant, refuelling and construction equipment, into the marine environment. i.e. secondary containment should be used with a capacity of not less than 110% of the containers storage capacity.
Reason: To prevent marine pollution incidents by adopting best practice techniques
- The Licence Holder must ensure that any oil, fuel or chemical spill within the marine environment is reported to the Welsh Government Marine Enforcement Officers
Reason: To ensure that any spills are appropriately recorded and managed to minimise impact to sensitive receptors and general marine environment
- Any rock that is misplaced below MHWS and cannot be recovered must be located and its position notified to the Welsh Government Marine Enforcement Office, Fisheries Liaison Officer and Licensing Authority within 48 hours.
Reason: To manage the associated safety/ navigation issues associated with rock transshipment and placement, and the potential loss of material that could cause an obstruction/hazard to other sea/sea-bed users
- The loose rock material must be inert, contain minimum fines and be from a recognised source. It should be placed in a manner that minimises disturbance to the marine environment.
Reason: To prevent pollution caused by material that may come from a polluted area or potentially change the chemical balance, pH of the environment in which it is placed
- The material to be placed must be shingle of similar size and nature to that existing at the deposit site.

Reason: To ensure that only that material which is suitable for the purpose of its use is used.

Post-works

- The Marine Enforcement Office must also be notified within 10 days of completion of the works.

Reason: To ensure that the Marine Enforcement Officer is aware of the operations at sea occurring within its jurisdiction in order to notify other sea users and can arrange enforcement visits as appropriate.

- The Licence Holder must ensure that any equipment, temporary structures, waste and/or debris associated with the works are removed within 6 weeks of completion of the works

Reason: To prevent the accumulation of unlicensed materials/debris and the potential environmental damage, safety & navigational issues associated with such materials/debris

MLT comments: Noted. All the requirements in the recommended conditions above are included in the Marine Licence conditions.

MCA comments dated 7th August 2013

The proposal has been examined by staff of the Navigation Safety Branch and it can be noted that the works are unlikely to have an adverse impact, with regards to safety of navigation, provided:

1. A copy of this consent must be given to each contractor appointed to carry out part or all of 'the works' in order that they are clear about the extent of 'the works' for which consent has been given and the conditions that are attached to the consent.
2. The Consent Holder should ensure appropriate steps are taken to minimise damage to the beach/foreshore/river bank/seabed by the works.
3. The Consent Holder should ensure that any equipment, temporary works and/or debris associated with the works are removed from the foreshore upon completion of the works.
4. The Consent Holder should ensure the best method of practice is used to minimise re-suspension of sediment during these works.
5. The Consent Holder should ensure suitable bunding, storage facilities are employed to prevent the release of fuel oils, lubricating fluids associated with the plant and equipment into the marine environment.
6. The Consent Holder must ensure the beach/foreshore/riverbank/seabed is returned to the original profile, or as close as reasonably practicable, following the completion of the works.

7. The Consent Holder should ensure the local mariners' and fishermen's organisations are notified.
8. The Consent Holder should notify the UK Hydrographic Office to permit the promulgation of maritime safety information and updating of nautical charts and publications.
9. The works shall be maintained at all times in good repair.
10. The works should be removed from below the level of mean high water springs, or such alterations made, within one month of notice being given by the Secretary of State at any time he considers this necessary or advisable for the safety of navigation, and not replaced without further consent by the Secretary of State. The owner of the works shall be liable for any expense incurred.
11. If in the opinion of the Secretary of State the assistance of a Government Department, including the broadcast of navigational warnings, is required in connection with the works or to deal with any emergency arising from the failure to mark and light the works as required by the consent or to maintain the works in good order or from the drifting or wreck of the works, the owner of the works shall be liable for any expense incurred in securing such assistance.
12. Officers of the MCA, or any other person authorised by the Secretary of State, should be permitted to inspect the works at any reasonable time.
13. The site is within port limits and the developer should consult with the responsible local navigation authority and the Harbour Authority/Commissioners where appropriate, who may wish to issue local warnings to alert those navigating in the vicinity to the presence of the works during the construction. Additionally, they may need to review their Port Marine Safety Code risk assessments.
14. The matter is an issue for the local harbour authority with conservancy responsibilities. They have the responsibility within their port limits for ensuring their harbour is fit for use by, for example, not permitting the spoil to foul navigable channels thus assuring the safety of navigation.
15. The works, and any associated temporary works, should be marked and lighted in accordance with the requirements of the General Lighthouse Authority in this case Trinity House Lighthouse Service.

If these conditions are met I am able to advise you that the Maritime and Coastguard Agency (MCA) has no objection to consent being granted provided that measures are also taken to ensure that details of the proposed works are promulgated to maritime users through notice to mariners and/or navigational warnings.

Please note, however, that a charge will be levied on the developers where appropriate, by MCA, for the transmission of maritime safety information, via Navtex or Coastguard VHF radio network, in respect of the proposed works. Agreement by the developers to pay any such charges should, ideally, be a condition of the consent if they are likely to be used.

MLT comments: Noted. All the requirements in the recommended conditions above are included in the Marine Licence conditions with the exception of 6 (as the very nature of the work will deliberately alter the profile of the beach).

Local Biodiversity Officer Response dated 21st August 2013

All of the points which I have raised from my experience with the Phase 1 development have been taken into account and included in the Environmental Impact Assessment for Phase 2.

This has resulted in much more robust proposals, mitigation and assessment on the following points which you have asked to be addressed in our consultation response:

- protection of the environment,
- human health,
- protection of local biodiversity,
- minimisation of noise and nuisance,
- potential impacts on marine archaeological interest or sites.

The Mitigation Measures in Table 8.1 of the Environmental Statement and the Draft Environmental Action Plan detailed in Table 8.2 specify the manner in which the development will be undertaken.

They especially include measures to minimise damage to the peat, clay and submerged forest deposits in the intertidal zone.

There are also measures to protect and re-establish shingle vegetation, prevent pollution and minimise noise, dust and other disturbance to residents and visitors.

I agree with the ES assessment that the impact of the proposed development during and post construction on the Pen Llyn a Sarnau SAC will not be significant. Neither will the proposed sea defences impact any European Protected Species..

The proposed works are immediately adjacent to the Dyfi SSSI at their northern end. The ES includes that there will be no incursion by plant, machinery or materials into the SSSI.

The sea defences once constructed may have an impact on longshore drift which may in turn affect the SSSO, but this has been modelled and the design has been developed to reduce any impacts.

The works will have an impact on Section 42 Habitat Supralittoral Coastal Vegetated Shingle, but this has been taken into account in the assessments and included in Tables 8.1 and 8.2. The existing shingle is sparse and patchy, and the impacts from the works will be temporary and reversible

The works will also impact Section 42 Littoral Sediment Peat and Clay Exposures – the base layers of the rock structures require excavation and removal of some of these exposures. The extent of the excavations compared with the overall extent of the sediments is insignificant, and the ES Tables 8.1 and 8.2 include measures to keep the impacts of the development on these sediments to a minimum.

I am not aware of and Section 42 Species which will be impacted.

The Marine Consent for Phase 1 (Licence number 10/51/F) included 54 supplementary conditions. Many were specific to the Phase 1 area of the beach and the building of an offshore reef.

The purpose of many of these conditions has been included in the EIA and the Draft Environmental Action Plan.

Supplementary conditions requiring adherence to the details of Tables 8.1 and 8.2, including appointment of an Environmental Clerk of Works, should be applied to any consent given.

***MLT comments:** Noted. A condition requiring the licence holder to implement Environmental Action Plan (table 8.2), and various specific mitigation measures in their own right are included as conditions in the Marine Licence.*

Trinity House Response dated 19th August 2013

Further to previous correspondence concerning the above, it is noted that the scheme for Phase 2 has now been amended since the original Phase 2 proposal from back in September 2012. (Now only 2 rock breakwaters and 3 rock groynes are being proposed and not 4 rock breakwaters and 2 groynes as originally planned).

Therefore in the interests of the safety of navigation, Trinity House has no objections to the revised proposals for the marking of both seaward ends of breakwaters 1, 2, 3 and both ends of fishtail groyne No.2 by means of pole green beacons, surmounted by green conical shaped topmarks, carried at heights of at least 2 metres above MHWS.

Trinity House does not consider that fishtail groyne No.1 requires marking, however, if the applicant wishes to proceed with marking as referred to in the application then it would be appreciated if we could be advised in order that we can correctly record the marking in our records.

***MLT comments:** Noted. Informative will be passed on to applicant.*

Royal Yachting Association response dated 22nd August 2013

Many thanks for consulting the Royal Yachting Association (RYA) in relation to the above proposal, we can confirm that we have no objection.

MLT comments: *Noted.*

.....

Crown Estate comments dated 29th August 2013

The Crown Estate is affected by the proposed works and landowner's consent will be required.

The applicant should contact Gary Thompson on 020 7851 6332 or gary.thompson@thecrownestate.co.uk for consent to the proposed works.

MLT comments: *Noted. Informative will be passed on to applicant.*

.....

Cadw Response dated 28/02/2014

Looking at the ES, it's clear that their in-house archaeological assessment has identified a number of steps which need to be taken in order to protect archaeological interests. These are detailed in the historic environment chapter (p136 – 143, mitigation proposals detailed on p143) and re-iterated in their Environmental Action Plan Pr10.1, Pr10.2 and (indirectly) D1.1 p172, 173

In order to re-iterate their archaeological responsibilities, I would suggest that (if possible) license conditions are included which are lifted directly from the ES: (Items in italics are my suggested additions and not the form of words used in the ES)

- The location of any exposed peat and clay deposits and forest remains should be noted during on-going beach monitoring (as a condition of the phase 1 construction consents) *and this on-going monitoring should continue throughout phase 2 construction and be incorporated into monitoring requirements post-construction (basically, can fit in with whatever beach monitoring regime is being conditioned in this license)*
- CCC should discuss with Cadw/RCAHMW the need to undertake geophysical survey in the phase 2 construction area to identify the extent of peat and submerged forest deposits prior to construction beginning. This should take place at the earliest possible time to ensure that if geophysical survey is required it can be undertaken in good time prior to construction to inform surveying and data collection during construction. *A written note confirming these discussions and their outcome shall be provided to NRW prior to construction beginning*

- CCC should discuss with Cadw/RCAHMMW/DAT the development of an archaeological watching brief and paleo-environmental and dendrochronology sampling *strategy* to take place during Phase 2 construction. This should take place at the earliest possible opportunity to ensure that procedures are in place prior to construction starting. *A written copy of the agreed strategy to be provided to NRW*

Is it possible to also include something along the lines of “The environmental action plan (table 8.2) presented within the May 2013 ES shall be adhered to”?

MLT comments: *The following condition was already under consideration for inclusion and Cadw was asked how far this would cover their concerns:*

“The Licence Holder must submit a monitoring scheme to Natural Resources Wales acting on behalf of the Licensing Authority for written approval at least 4 weeks before construction commences. The scheme will include a local and far-field beach monitoring plan (including baseline survey beach level, composition and bathymetry survey) and a fixed point photographic survey of exposed forest and peat beds fronting the Phase 2 structures on completion of the works. The Scheme must be implemented as agreed.”

Cadw Response

Yes, this will definitely cover the monitoring requirement..

Re: points 2 and 3, could we perhaps suggest that the applicant is responsible for producing a strategy for pre-construction archaeological survey/monitoring and for an archaeological watching brief and sampling strategy to be implemented during construction works (they can then discuss with us/RCAHMMW before getting it signed off by you).

MLT comments: *Conditions requiring agreement and implementation of these plans are included in the Marine licence.*

Conditions

Following consideration of all relevant information, including the ES and the outcome of the consultations, the Marine Licensing Team considers that the following conditions must be included in any licence granted for this project:

- Such works are as detailed in the drawing(s) and sectional plan(s) detailed below which were submitted in support of the Licence Holder’s application to NRW acting on behalf of the Licensing Authority dated **19th June 2013**.
- The works shall be carried out in accordance with the works schedule and method statement as detailed in the application form dated 19th June 2013 and method statement for sea delivery of materials dated 19th November, and as detailed in the following:

- The Licence Holder must ensure that prior to the commencement of works details of the Agents or Contractors engaged in the works are provided to NRW acting on behalf of the licensing authority.
- The Licence Holder must ensure that prior to the commencement of works details of the vessels and vehicles engaged in the works are provided to NRW acting on behalf of the licensing authority.
- All vessels employed to perform the deposit operation permitted by this Licence shall be so constructed and equipped as to be capable of the proper performance of these operations in compliance with the conditions set out in the Schedule to this licence.
- Only those Agent(s) or Contractor(s) whose names are provided in accordance with paragraph 2.1 and the vehicle(s), vessel(s) and operator(s) whose names are provided in accordance with paragraph 2.2 may operate under the terms of this Licence. Any changes must be notified to NRW acting on behalf of the Licensing Authority in writing, prior to deployment on site.
- The Licence Holder is required to ensure that a copy of this Licence and attached Schedule, any special conditions and any subsequent revisions or amendments thereto is given to:
 - All Agent(s) and Contractor(s) undertaking the works
 - The Masters of all vessels and transport managers responsible for the vehicles employed in the pursuance of this Licence
- Copies of this Licence shall also be available at the following locations:
 - at the address of the Licence Holder;
 - at any site office, located at or adjacent to the site of the works, used by the Licence Holder, agent(s) or contractors(s) responsible for the loading transportation or deposit of those substances or articles detailed at paragraph 1.2 of this Schedule; and,
 - on board each vessel or at the office of any transport manager with responsibility for vehicles from which licensed deposits are to be made.
- The documents referred to in paragraph 3 shall be available at all reasonable times for inspection by officers appropriately authorised by NRW acting on behalf of the Licensing Authority and/or authorised Marine Enforcement Officers at the locations stated in that paragraph.
- The Licence Holder must advise NRW acting on behalf of the Licensing Authority and/or authorised Marine Enforcement Officers **10 days** before the licensed operation, or an individual phase of the operation is expected to commence.

- The Licence Holder must allow officers of the Maritime and Coastguard Agency, Welsh Government Marine Enforcement Officer or any other person authorised by NRW acting on behalf of the Licensing Authority to inspect the works at any reasonable time.
- If, by reason of "force majeure" the substances or articles specified at sub-paragraph 1.4 of this Schedule, are deposited otherwise than in the area authorised by this Licence at paragraph 1.5, full details of the circumstances shall be notified to NRW acting on behalf of the Licensing Authority within **48 hours** of the incident occurring.
"Force majeure" may be deemed to apply when, due to stress of weather or any other cause, the master of a vessel determines that it is necessary to deposit the substances or articles because the safety of human life and/or of the vessel is threatened.
- In the event of the Licence Holder becoming aware that any of the information on which the granting of this Licence was based has changed or is likely to change, he/she shall notify NRW acting on behalf of the Licensing Authority at the earliest opportunity of the details.
- Similarly in the event that the Licence Holder wishes any of the particulars set down in the Schedule to be altered he/she shall inform NRW acting on behalf of the Licensing Authority at the earliest opportunity before taking any further action.
- The Licence Holder must submit a monitoring scheme to Natural Resources Wales acting on behalf of the Licensing Authority for written approval at least 4 weeks before construction commences. The scheme must include a local and far-field beach monitoring plan (including baseline survey beach level, composition and bathymetry survey) and a fixed point photographic survey of exposed forest and peat beds fronting the Phase 2 structures on completion of the works. The Scheme must be implemented as agreed.
- The Licence holder must submit an archaeological monitoring scheme to Natural Resources Wales acting on behalf of the Licensing Authority for written approval at least 4 weeks before construction commences. The scheme must include a strategy for pre-construction archaeological survey/monitoring and an archaeological watching brief and sampling strategy to be implemented during construction works. The scheme must be implemented as agreed.
- The Licence Holder must ensure a Pollution Contingency Plan is produced prior to works commencing. The Plan must detail how any accidental spillages of oil, fuel or any other substances used during the works will be contained and how any emergency arising as a result of the works will be dealt with. The Pollution Contingency plan must be communicated to all contractors' personnel involved with the works and be available for inspection by Welsh Government Marine Enforcement Officers upon request.

- The Licence Holder must ensure a notice to mariners is issued at least **10 days** prior to works commencing to notify local mariners and fishermen of the presence of the works.
- The Licence Holder must notify the UK Hydrographic Office of the timetable and location of the works, to permit the promulgation of Maritime Safety Information and the updating of nautical charts and publications, where necessary.
- The site is within port limits and the developer should consult with the responsible local navigation authority and the Harbour Authority/Commissioners where appropriate, who may wish to issue local warnings to alert those navigating in the vicinity to the presence of the works during the construction. Additionally, they may need to review their Port Marine Safety Code risk assessments.
- The Licence Holder must ensure that works are carried out outside of the Bathing Waters season (1st May to 30th September) if operationally possible. If works must be carried out during the season the licence Holder must ensure an application is made to relocate the Bathing Water monitoring point.
- The Licence Holder must ensure an Environmental Clerk of Works, or similar, is appointed and is available to contact throughout the construction of Phase 2.
- The Licence Holder must ensure the Environmental Action Plan as detailed in the Environmental Statement is implemented.
- The Licence Holder must ensure bunding and storage facilities are installed to contain and prevent the release of fuel, oils and chemicals associated with the plant, refuelling and construction equipment into the marine environment. Measures to prevent pollution caused by flooding of construction and storage sites must be implemented.
- The Licence Holder must ensure that any coatings and/or treatment used is suitable for use in the marine environment and are used in accordance with best environmental practice, e.g. approved by HSE, EA Pollution Prevention Control Guidelines.
- The Licence Holder must ensure Environment Agency Pollution Prevention Guidelines – works and maintenance in or near water: PPG5 - are adhered to at all times. Any incidents should be reported **immediately** to Natural Resources Wales by telephone on 0800 807060 and email marinelicensing@naturalresourceswales.gov.uk
- The Licence Holder must ensure that no works, material and plant storage, or plant movement takes place within the Dyfi Site of Special Scientific Interest.
- The Licence Holder must ensure that no machinery, plant or materials are stored within tidal range (taking account of extreme high tides and storms).

- The Licence Holder must ensure that no refuelling occurs on the beach.
- The Licence Holder must ensure that groynes and breakwaters do not extend into the Pen Llyn a'r Sarnau Special Area of Conservation.
- The Licence Holder must ensure vessels are not anchored, or boats beached, in areas where forest, peat beds or stiff, grey clays are known to occur or areas of *Sabellaria alveolata* reef or paddock beds.
- The Licence Holder must ensure that all vessel operators are given a briefing alerting them the possible presence of marine mammals in the area, all vessel operators adhere to guidelines for safe vessel operation in the presence of cetaceans and use pre-defined routes only.
- The Licence Holder must ensure that unloading or storage of materials capable of damaging the forest or peat beds does not take place in areas of the shore where forest, peat beds or stiff, grey clays are known to occur.
- The Licence Holders must ensure that any beaching of vessels occurs as far up the beach as possible and must be above the seaward extent of the rock structures and vehicles only collect materials from the landward side of the delivery only. No more than one delivery of materials can occur per tide.
- The Licence Holder must ensure that if rock is to be dropped or moved in the sea a competent person with the ability to recognise and advise on marine mammals should be available at all times during this work. If cetaceans are observed, works should be delayed until they have left the area.
- The Licence Holder must ensure that no vehicles track across the lower shore (sandy/mud/clay area) unless to unload materials delivered by sea, work directly on the rock structures or deliver rock to the working areas.
- The Licence Holder must ensure that an access working area of 10m around the footprint of each rock structure will be allowed and marked out on the beach.
- The Licence Holder must ensure that best practice is used to minimise re-suspension of sediment and that works stop if discolouration affects the bathing water.
- The Licence Holder must ensure that a geotextile layer is placed at the base of all rock structures before rocks are placed.
- The Licence Holder must ensure that any beach nourishment and groyne removal activities take place around low water.
- The Licence Holder must ensure that rock material used must be fit for purpose, uncontaminated, inert and free from fines.

- The Licence Holder must ensure that the colour of the rock material used for the onshore groynes and breakwaters is similar to the shingle of the beach.
- The Licence Holder must ensure any shingle used must be of similar size and nature to that existing at the deposit site and be sourced as set out in Section 3.1 of the environmental Statement submitted in support of the application.
- The Licence Holder must ensure that any blockages of the Glan Wern outfall by beach material caused by construction activity must be cleared as soon as possible.
- The Licence Holder must ensure that the works are maintained at all times in good repair.
- The licence holder must ensure that both seaward ends of breakwaters 1, 2, 3 and both ends of fishtail groyne No.2 are marked by means of green pole beacons, surmounted by green conical shaped topmarks, carried at heights of at least 2 metres above Mean High Water Springs.
- The Licence Holder must ensure that any rock misplaced below Mean High Water Springs that can not be recovered is located, and it's position notified to the Welsh Government Marine Enforcement office, Fisheries Liaison Officer and NRW within 48 hours.
- The Marine Enforcement Office must be notified within 10 days of the completion of the works.
- The Licence Holder must ensure that any equipment, temporary structures, waste and/or debris associated with the works are removed within 6 weeks of completion of the works.
- The Licence Holder must remove the works below the level of Mean High Water Springs, or make such alterations, within one month of notice being given by NRW acting on behalf of the Licensing Authority at any time it considers this necessary or advisable for the safety of navigation, and not be replaced without further consent by NRW acting on behalf of the Licensing Authority. The Licence Holder shall be liable for any expense incurred.
- If in the opinion of NRW acting on behalf of the Licensing Authority the assistance of a Government Department, including the broadcast of navigational warnings, is required in connection with the works or to deal with any emergency arising from the failure to mark and light the works as required by the consent or to maintain the works in good order or from the drifting or wreck of the works, the Licence Holder responsible for the works will be liable for any expense incurred in securing such assistance.

Regulatory Evaluation and EIA consent decision

In considering the application for the development of the Borth Coastal Protection Scheme Phase 2 the following has been considered:

- The ES, including the mitigation measures proposed;
- The relevant provisions of Marine and Coastal Access Act 2009 and
- The representations received.

Through consideration of these, a full and detailed assessment has been made of the potential direct and indirect effects of the proposals on human beings, fauna and flora, soils, water, the landscape, material assets and the cultural heritage including any risk to the integrity of nearby sites of conservation importance.

The Marine Licensing Team endorses the findings of the ES, subject to the inclusion in any licence issued of the conditions referred to above and compliance with them.

Accordingly, the Marine Licensing Team acting for and on behalf of the Licensing Authority, concludes that the project will not have a significant adverse effect on the environment. As such, a favourable EIA consent decision can be issued to Ceredigion County Council for marine works as part of the Borth Coastal Protection Scheme Phase 2.


Sign off

Produced by: Adam Cooper – Marine Licensing Team

Signed: 

Date: 24 March 2014

Approved by: Eleanor Smart – Marine Licensing Team Leader

Signed: 

Date: 24 March 2014