HOLYHEAD MARINA RE-BUILD STRATEGY ENVIRONMENTAL SCOPING REPORT

A REPORT ON MATTERS TO BE CONSIDERED IN AN APPLICATION FOR A HARBOUR REVISION ORDER (WORKS) UNDER SECTION 14 OF THE HARBOURS ACT 1964, AN APPLICATION TO NATURAL RESOURCES WALES (NRW) UNDER THE MARINE AND COASTAL ACCESS ACT 2009 (AS AMENDED) FOR A MARINE CONSTRUCTION PERMIT AND A PLANNING APPLICATION TO THE ISE OF ANGLESEY COUNTY COUNCIL TO RE-BUILD HOLYHEAD MARINA PROTECTED BY A SOLID RUBBLE MOUND BREAKWATER

Report prepared by G.C.Garrod, Architect on behalf of Holyhead Marina Ltd. June 2019

HOLYHEAD MARINA

GATEWAY TO NORTH WALES SAILING

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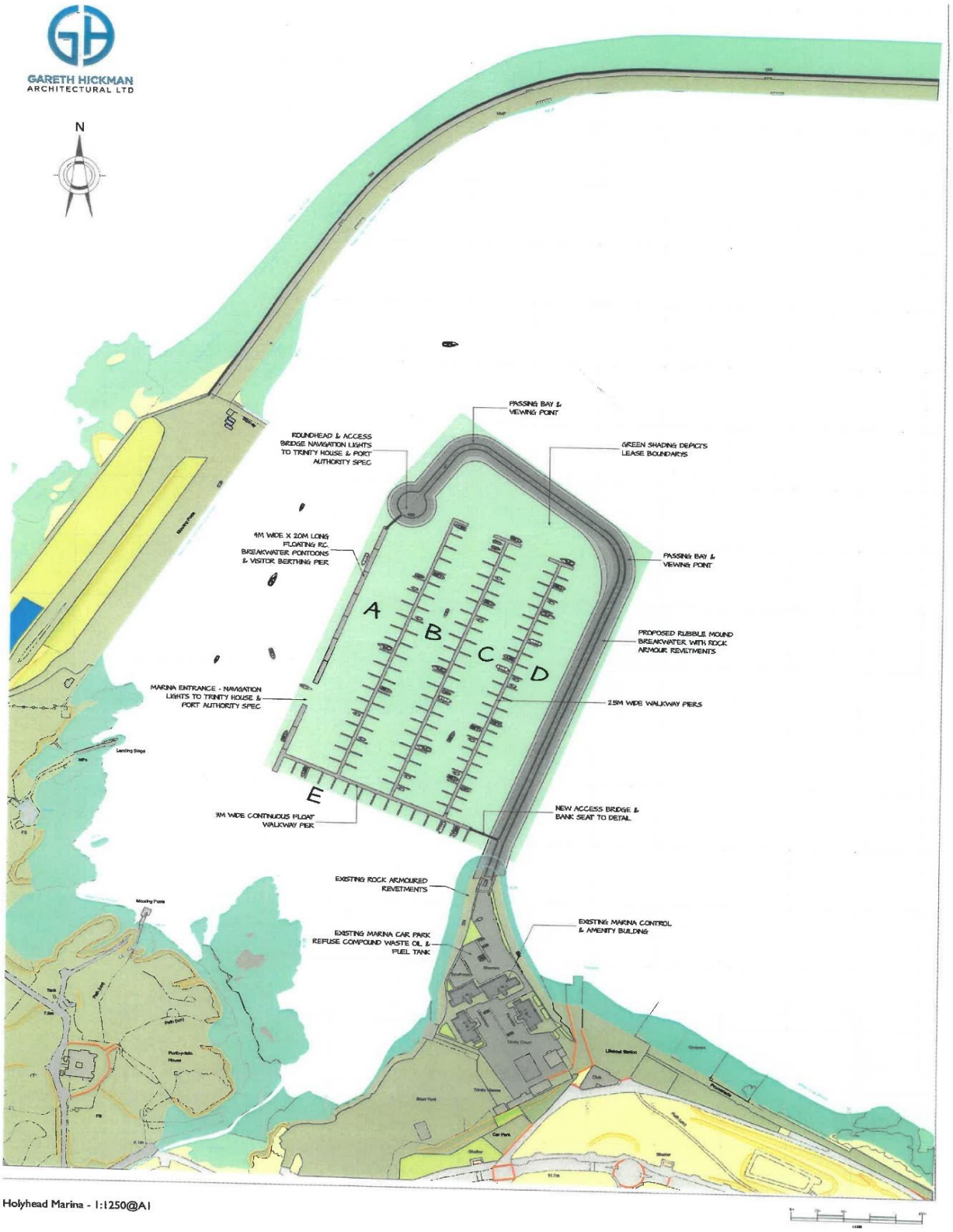

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1 EXECUTIVE SUMMARY

Holyhead Marina was destroyed during Storm Emma in early March 2018. The Company now intends to re-build the marina as quickly as possible to alleviate the detrimental economic impact the loss of this facility has caused on this strategically important port town. Consultants have confirmed that the storm which caused this disaster was unprecedented and, due to the increasing likelihood of extreme weather events related to climate change /global warming, the primary sea defences cannot be made of floating breakwaters.

In order to protect the new marina from un-survivable north easterly storms in the future the Company has no alternative but to build a permanent sea wall within its harbour lease area. This will create a permanent safe harbour with 24 hour tidally unrestricted access. Given Holyhead's geographically important position in the Irish Sea and its excellent road/rail links to the major population centres, this project will compound the many facilities already on offer, support the expanding customer demand and generate opportunities for satellite businesses.

The Statutory Harbour Authority is Stena Line Ports Ltd. However the owner of this sector of the harbour and Holyhead Marina's landlord is Conygar(Holyhead)Ltd. This company has a project consented in outline under the Town and Country Planning Act to develop the main Newry waterfront and the Soldiers Point headland with shore side speculative residential and retail development and a competing 500 berth marina. Cumulative impacts are therefore considered in this proposal.

Holyhead Marina already has its shore side infrastructure in place for a 500 berth marina; and a long successful track record in the management and operation of a marina in this important harbour. This proposal does not depend on shore side property speculation and looks forward, and beyond the immediate needs of this small business tenancy, to a permanent safe harbour for Holyhead.

Holyhead Marina intends to apply for a Harbour Revision Order under section 14 of the Harbours Act 1964 to authorise the proposed scheme. A marine construction permit under the Marine and Coastal Access Act will also be required as well as a Planning Consent from the County of Anglesey.

It is clear that an EIA (environmental impact assessment) will be required for this project. This Environmental Scoping Report has been prepared to allow the Planning Inspectorate and Natural Resources Wales (NRW) to issue their EIA screening/scoping opinions, in parallel, if possible. The report will also inform the local Planning Authority of the relevant matters under consideration and assist with a pre-application consultation. The report identifies what the Company considers to be relevant environmental, economic and physical impacts of the project both during construction and during the operational stages of the project. The report also takes account of the cumulative impacts of other projects in the locality and identifies significant impacts, how they will be assessed and what measures will be taken to mitigate or manage those impacts.

The Report will say that the scope of EIA should be considered carefully by the Consenting Authorities to ensure that the relevant environmental impacts are assessed proportionally in the context of the marina's pre-existence and the lessons learned in its destruction. Environmental impacts must be minimised, mitigated or managed. The Report will emphasise the opportunities in the proposals and urges the Consenting Authorities to recognise the economic importance of the project on the economy of this small community.

There are 11 key issues which the Report will highlight:-

1. Bio security and control of invasive non-native species (INNS) are recognised as paramount considerations in the re-build of Holyhead Marina. A permanent harbour wall is likely to change the salinity and flushing rate in this sector of the harbour. An increased surface concentration of fresh water from stream outfalls in Porth- y- Felin is likely to reduce the proliferation of INNS based on the most recent scientific opinion of researchers currently engaged in this matter. Floating breakwater pontoons currently support INNS, the permanent harbour wall will not. This needs to be assessed scientifically to confirm the best possible bio-security for future generations.
2. Creation of new habitats in the revetments of the rubble mound breakwater is an opportunity which is likely to add to the health and diversity of the aquatic environment in this sector of the harbour. This report identifies environmental concerns, habitats, possible effects on protected species and threats to water quality during construction and operation.

3. The new breakwater will address the matters of climate change, sea level rises and coastal flooding - and considers the well-being of future generations by looking forward to a permanent safe harbour for Holyhead and its strategic importance in the Irish Sea as a tidally unrestricted safe haven.
4. The project is environmentally sustainable and considers the need to support wind and tidal energy projects in the Irish Sea as well as recreational boating and tourism opportunities.
5. The new proposals will increase public accessibility for all and improve the waterside experience and tourism offer of the area.
6. The new project justifies the millions of pounds already invested, a substantial proportion of which came from the public purse; and it compounds the proven economic importance of this project on the local community.
7. The proposals recognise the visual, cultural and landscape/seascape impacts of a permanent harbour wall in this historic harbour and balances those impacts against the economic and environmental opportunities.
8. The project considers the cumulative impacts of other likely projects in the harbour - and it considers sea defences and harbour engineering matters (outer breakwater) demonstrating opportunities to dissipate wave energy currently causing concern on the historic fabric of the great breakwater.
9. The project integrates well with the town's infrastructure, the County's development plan and the historic and environmental sensitivity of the site and its immediate surroundings. The project does not threaten existing valued waterfront amenities, views of the historic harbour or bathing/boating beaches. The project respects and caters for neighbouring facilities such as the Sailing Club and the RNLI – and it maintains the prescribed distance from Soldiers Quay to maintain its commercial viability for the Port.
10. The project integrates the lessons learned following Storm Emma and ensures that the effects of damage from future storms are addressed. The release of pollutants such as polystyrene or structural breakdown of pontoons is permanently prevented by containment and protection. The project accepts the conclusion of experts that floating breakwaters - of any size or design - will never survive the wave length/height experienced during Storm Emma – and therefore removes the threat of a repeat of this disaster.
11. As a pre-existing berthing facility with many years' experience of building and managing a marina in accordance with the Yacht Harbour Association's and British Marine's Codes of Practice, Holyhead Marina has a successful track record and an excellent reputation in this field. Environmental practices are embedded in the culture of the organisation and its facilities which include guidance under the Green Blue initiative. The Green Blue is the environmental awareness initiative set up by the Royal Yachting Association and British Marine to promote the sustainable use of coastal and inland waters by boating and water sports participants, as well as the sustainable operation and development of the recreational boating industry. Investment in boat handling equipment and planning for imminent possible legislation with regard to wash down facilities and the like are on-going. Recommended good practices with regard to sea toilet discharges, holding tanks and pump out facilities are already at the forefront of Holyhead Marina's business plan.

Holyhead Marina Ltd – June 2019

2 HISTORY OF THE PROJECT

Holyhead Marina Ltd was established in 1995 and commenced trading in tandem with the established boatyard business - Trinity Marine Ltd - as a general boatyard on land previously owned by Trinity House as a buoy maintenance depot and lighthouse control centre. The early research and development into the prospect of a marina in the western sector of Holyhead Harbour followed a feasibility study commissioned by the County Council's Economic Development Department (Wallace Evans Feasibility Report) in the mid 1990's. This study concluded that a marina protected by floating breakwaters was feasible and made suggestions for various sites within the outer harbour mainly in the western sector where Holyhead Marina was eventually built. Wind and wave data available at the time based on historic records, distance of north easterly fetch and research by appointed consultants confirmed viability and informed the detailed design of the marina.

Holyhead Marina negotiated a 35 year seabed lease with Stena Line Ports Ltd and commenced construction in 2000 following a lengthy period of consenting for Marine Permits and Planning Permission. The marina grew steadily over a number of years finally reaching a capacity of some 350 berths offering tidally unrestricted visitor and contract berthing. The shore side development of 26 apartments completed in March 2007 partly funded the infrastructure costs. Satellite businesses (café, restaurant, chandlery, brokerage and marine engineering) established themselves on the site and the marina became a successful local economic catalyst and reputable berthing facility in the Irish Sea. The leased area of seabed originally owned by Stena Line Ports Ltd is now owned by Conygar (Holyhead) Ltd.

The marina used 70 tonne floating reinforced concrete breakwater pontoons to protect against the north easterly fetch of some 5.5km which from data available at the time could attenuate a predicted wave height and frequency. Tethering was designed by Tension Technology International – a specialist firm experienced in marine mooring systems for oil rigs using highly specialised rope/chain tethers. The marina was always vulnerable to north easterly storms but operated successfully with very little damage to vessels or pontoons until March 2nd 2018 when Storm Emma generated an unprecedented weather system causing an un-survivable sea state. This lead to the catastrophic breakdown of the entire marina. Some 80 vessels were lost and the resultant break-up of the walkway piers lead to the release of large amounts of polystyrene from marina floats being pounded against the rocky foreshores around the Soldiers Point headland. The Storm also damaged the inner face of the great breakwater and undermined the promenade sea wall in conditions never seen in living memory in the history of this Harbour of Refuge.

The disaster was managed without injury to personnel and in close collaboration with NRW officers, WG Fisheries, MRCA, the Port Authority and the County Council. Lessons learnt in the clean-up operation have been fed back to Regional Emergency Planning Service by way of a multi-agency debrief held in Llangefni in November 2018 and form an important part of the re-build strategy. In particular this relates to containment in anticipation of increasingly severe weather systems, rising sea levels and climate change/global warming.

EARLY MORNING MARCH 2ND 2018 STORM EMMA

3 ANALYSIS OF STORM EMMA

Holyhead Marina commissioned specialist harbour engineers to undertake a study of the storm wave conditions approaching the marina site during Storm Emma. The study was also to include an assessment of how extreme the storm was and the likelihood of re-occurrences. Based on this analysis the consultants were asked to recommend future design conditions (wind speed, direction and duration) and simulate the wave conditions approaching the marina site for the recommended design conditions.

RPS of Belfast are a reputable firm of consultants who also act for the Government of the Republic of Ireland in monitoring Irish Coast storm surges.

The conclusions drawn by the RPS report are clear. Global warming/climate change have altered the frequency of severe events such as Storm Emma. The conditions prevalent during Storm Emma were too severe for the safe use of floating breakwaters as the primary protection and it is recommended that the marina be protected by a fixed rubble mound structure.

The following extract from the RPS report entitled RESULTS OF WAVE SIMULATIONS AND IMPLICATIONS FOR THE MARINA summarises the findings and forms the basis of the re-build strategy:

RESULTS OF WAVE SIMULATIONS AND IMPLICATION FOR THE MARINA

Storm Emma Wave Climate at the Marina Site

The wave climate predicted to have occurred during storm Emma has the following parameters:

Significant wave height Hm0 1.57 metres

Maximum wave height Hmax 3.05 metres

Spectral Peak wave period Tp 3.86 seconds

Mean Energy wave period Tm10 3.50 seconds

Wave length 24 metres

From the above it will be seen that the wave climate predicted to have occurred at the marina site during storm Emma is extremely severe for what would have been considered to be a sheltered site. RPS would not recommend floating protections structures for the protection of a marina in such a severe wave climate. Even if you could have obtained a 40% attenuation with the 4m wide breakwaters the wave climate in the marina would have had significant wave heights in excess of 0.9m at the pontoon berths. This is away above any recommended wave height for such berthing systems and severe damage to any moored vessel is bound to have occurred irrespective of any failure of the breakwaters themselves.

Our examination of the calculations for the mooring system indicates that although the wave heights were in excess of those used in the design, there is enough resilience in the system that we think that the mooring would have survived in storm Emma's conditions. Our view is that with very large maximum wave heights, in excess of 3 metres, it is unlikely that the concrete breakwater system could survive such a large overload. This large breaking wave would probably snap any joint system that could be used on such floating structures irrespective of any reasonable amount of maintenance that could be undertaken.

Future Design Conditions for a Marina at the Site in Holyhead

RPS has examined the design conditions which we think will be required for a marina at the site of the existing marina at Holyhead. Based on historical data these conditions would have had a return period approximating to 1 in 200 years. However we are already seeing the effects of climate change on wave heights in the Irish Sea thus we think that within the life time of the marina the 1 in 200 year events likely to have a lower return period due to the effects of increased storminess due to climate change.

The recommended wind and wave data for a redesigned marina should be at least as follows:

- *3 second gust speed 48m/s*
- *30 second gust speed 38 m/s*
- *Significant wave height 1.80 metres*
- *Maximum wave height 3.50m*
- *Spectral Peak wave period 4.2 seconds*

Mean energy wave period 3.8 seconds

These conditions in our opinion are too severe for the safe use of floating breakwaters as the primary protection. We recommend that the marina be protected by a fixed rubble mound structure. Subject to detailed modelling it may be possible to use floating breakwaters for secondary protection measures.

STORM EMMA MARCH 2ND 2018

4 NEED FOR A RE-BUILD

Holyhead is a strategically important port town and an important link to Dublin. It is well connected by road and rail to the major population centres and offers the only truly tidally unrestricted deep water facility in the region. Before the Storm the business proved itself to be an economic catalyst for the local economy responsible for direct cash injections into local businesses. Visitors on passage in the Irish Sea demand berthing, boatyard facilities, chandlery, fuel, water and power.

The disaster brought the economic impact of the loss of this facility sharply into focus. The Welsh Government allocated funds to assist with the clean-up and compensate local businesses for the loss of their customer base. The County of Anglesey assisted with rates relief and clean-up costs and there is a political will to regenerate the marina as quickly as possible.

Increasing demand for commercial berthing has been noticeable over the last decade particularly from windfarm support craft, military vessels, survey vessels and lifeboats. In particular, demand for commercial vessel berthing has come from the highly successful local employer – Holyhead Group comprising of Turbine Transfers, Holyhead Towing and Holyhead Marine Services – located adjacent to Holyhead Marina. There is also an increasing demand from support vessels servicing the needs of tidal energy projects in the locality.

Holyhead Marina was also an important link in the chain of marinas around the Welsh Coast offering safe haven and strategic transport links for vessels on passage together with unrestricted access to safe sailing waters at any state of the tide without locks or sills. The marina was also important for its proximity to many other marinas in the Irish Sea particularly those within a day's sail from Holyhead. Strategically Holyhead is central in the Irish Sea, it offers the shortest crossing to Dublin and is an easy day's sail to the Isle of Man. Holyhead has strong traditional ties with Liverpool, Dun Laoghaire, the Isle of Man and the Scottish Islands and its central location and constant deep water make it an important facility for vessels on passage.

Holyhead Marina employed 12 marina and boatyard staff and operated a 24 hour facility seven days a week. However the satellite businesses have been calculated to account for a further 30 - 40 jobs in the locality – some seasonal or part time – but nevertheless a significant number in this small town.

There is an emerging tidal energy market and a re-emerging wind turbine market in this sector of the Irish Sea. Berthing for support vessels will undoubtedly increase. There is also an increasing demand from the south coast yachting fraternity requiring 24 hour accessible facilities and good transport links to compensate for the oversubscribed south coast marina offer.

5 ALTERNATIVES – RE-BUILD OR DO NOTHING

Holyhead Marina is a viable, proven and strategically important facility with all its shore-based infrastructure in place. Demand for berthing – recreational and commercial – was established and growing. The customer base is loyal and eagerly awaits the re-build of this important facility.

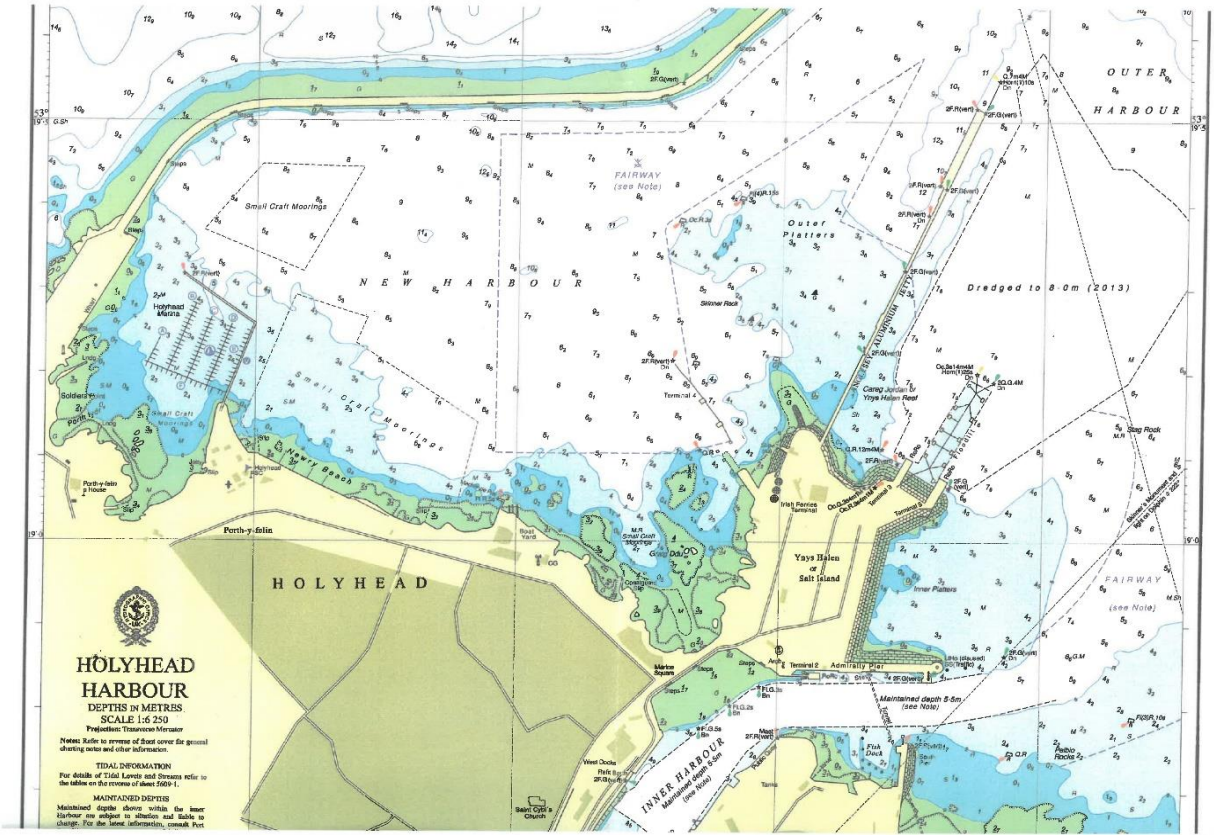
To support and maintain local demand Holyhead Marina is currently operating a limited on-water facility with a fair weather landing stage for visitor berthing. The marina control remains open and demand, although obviously lower, is consistent. Holyhead Marina is determined to press ahead with the development of the new facility as quickly as possible, not least to try and maintain continuity with its customer base. The Company has engaged with the Landlords on the matter and they have stated that they are happy for Holyhead Marina to work towards the rebuilding.

There exist other plans to develop a marina in Holyhead Harbour. These were developed by a joint venture company constituting Stena Line Ports Ltd and Conygar Investment Co Ltd – now solely

owned by Conygar(Holyhead)Ltd and would see the development not only of a new marina on the Newry waterfront but also an extensive shore side residential development. These plans are consented under the terms of an outline planning permission but no detail is currently available for the marina construction. Indeed in correspondence from the Landlord's representative in August 2018, it was stated that '[Holyhead Marina's} existing development plan is years ahead of the Conygar development which is currently in the early stages having secured outline planning consent'.

Whilst the development of a second marina in Holyhead at a later date may raise questions, it is considered that the facilities provided by any marina in Holyhead i.e. a well-protected deep water harbour, in conjunction with the development of improved shore side facilities, will serve only to increase demand and support the development of further satellite businesses.

There is an engineering logic to the position of Holyhead Marina in the extreme western sector of the great harbour. Firstly – it is an allocated lease area with immediate access to deep water and shore side infrastructure, secondly – it is already consented and fits well with the town's infrastructure (and the principles of the recently adopted JLDP), and thirdly – the re-build does not depend on speculative residential development or the removal/destruction of a valuable waterfront amenity which is the essence of the Newry Beach Conservation Area. Furthermore, although there will be a visual impact in the creation of a permanent harbour wall, this impact will be manageable because of the pre-existence of the marina away from the primary viewpoints on the main waterfront and marries well with the root of the great breakwater forming a logical permanent harbour. Not only will the new harbour wall help to dissipate wave energy and protect elements of the historic outer breakwater but it will also offer an opportunity to extend public accessibility, create new habitats and compound the efforts in time, money and experience already invested in this project.



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6 SUBSTANTIAL INTEREST (Section 14 Harbours Act 1964)

Subject to legal advice, in principle, this project appears to meet the criteria defined in section 14 of the Harbours Act 1964 requiring the applicant for a Harbour Revision Order to have a "substantial interest "in the Harbour. Holyhead Marina Ltd has a 35 year commercial lease over a defined area of some 65,000 square metres plus a promontory of shore side land projecting into constant deep water with a footprint of some 3,200 square metres.

Holyhead Marina has full landlord/tenant rights having invested several million pounds and intends to remain in occupation - although the current Landlord – Conygar (Holyhead) Ltd - has development plans consented in outline by the County Planning Authority to develop adjoining land and a competing marina along the waterfront promenade and around the Soldiers Point headland. Holyhead Marina already has substantial infrastructure in place including the marina car park, fuel and waste compound, an amenity and control office, electricity sub-station, mains services and freehold boatyard land with appropriate plant and machinery. Holyhead Marina also has an established customer base and an 18 year successful track record in managing and operating a marina on this site.

7 THE STUDY AREA

The marina site is located in a sensitive area not only for its historical maritime significance but also for its natural beauty and proximity to nature conservation designations. It is also clear that the harbour is a significant marine environment and any proposal to re-build the marina must consider the likely effects (both during construction and during the operation of the facility) on the aquatic environment, habitats, species, aquaculture, coastal processes and marine ecology. Also it is clear that the visual impact of the proposal should be carefully considered in relation to the landscape, seascape and cultural heritage of the area.

However, prior to Storm Emma the marina was an established, consented and, until recently, fully operational facility in this sector of the great harbour. The facility was well known in the yachting fraternity for its 24 hour access and excellent shore side services. The marina had an excellent reputation and was well known for hosting major events. The business was financially sound, had an 18 year track record and already made a prominent visual impact on this sector of the harbour.

Many of the issues which will need to be assessed in the re-build were substantially addressed in the original facility – clean well managed water, healthy marine life, awareness of INNS and bio-security, controlled waste management, contingency planning, healthy bird population, tourist information, economic catalyst etc.. The marina complied with the County's development plans and fitted well into the town's infrastructure with regard to sewage, traffic, parking and linkage with the town centre. The marina shore base became a destination in itself and remains so. It is also a link between the town and the Breakwater Country Park and a staging post along the Anglesey Coastal Path offering information, refreshment and amenities. The marina accommodated the RNLI afloat lifeboat and existed in harmony with adjoining organisations – Holyhead Sailing Club, the Maritime Museum, Sea Cadets, local water sports businesses and the residential community in the area.

With this in mind it is important that the scope of EIA is focussed on the specific and relevant matters in the locality so that the facility can be replaced within a realistic timescale and mitigate the economic effects of the loss of the marina to this community. Recognition of this loss was reinforced by the high level of Welsh Government concern in the aftermath of Storm Emma, two visits by the First Minister for Wales and WG financial assistance for the clean-up and local businesses affected by the Storm.

For the purposes of this scoping exercise and in recognition of the pre-existence of Holyhead Marina it has been suggested that the study area might be limited in scope to approximately one kilometre from the centre of the new proposals which should ensure that terrestrial and aquatic impacts are properly assessed but limited to expedite a viable and timely re-build.

Notwithstanding this assumption it is recognised that there are matters specifically relevant to the re-build proposals which will have wider implications - for example the cumulative impacts of other projects in and near the harbour and specifically lessons learned in Storm Emma and its aftermath. Also there are matters relating to biosecurity which have wider environmental implications than just the harbour area.

The scope of the area of assessment and the specific impacts following Storm Emma will be informed by consultants' modelling studies referred to in this report and through detailed consultation with NRW and relevant consultees as the project develops.

8 GENERAL SUMMARY OF SITE SPECIFIC ENVIRONMENTAL MATTERS TO BE CONSIDERED

The proposal to re-build Holyhead Marina will necessarily require detailed assessment of the normal range of environmental matters to ensure that the construction work and the operation of the facility have minimal or manageable environmental effects. While there are many matters which need to be considered e.g. habitats, species, marine ecology, sustainability and the like – all of which need to be addressed carefully in the consenting process – there are matters which have been identified specifically for Holyhead Marina based on experience, track record and local knowledge. These matters have come into focus following the destruction of the marina in March 2018 and are outlined thus:-

1. Disaster management, emergency planning, safety, forecasting, polystyrene release, containment, clean up techniques, command and control, hierarchy of concerned organisations, emergency response capabilities, communications etc..
2. Global warming/climate change – potential for more extreme weather conditions, sea level increases, flooding, etc., and changes to the way extreme north easterlies generate wave behaviour in the harbour.
3. Control of invasive non-native species (INNS) – in particular *didemnun vexillum* – in order to ensure that there will be no repeat of potential spread through the break-up of the fabric of the new marina and in the event of severe damage there is containment to prevent spread into the aquatic environment.
4. Changes to the movement of water in this sector of the harbour caused by permanent structures affecting the natural movement of tidal waters and the effects this may have on marine life. Also the potential changes in salinity caused by fresh water outfalls not being flushed away as before when the marina was primarily made up of floating structures which allowed water movement through and around it.
5. The visual effects on landscape and seascape given the historic significance of the outer breakwater, the essence of the Conservation Area and the historic maritime significance of this area. The visual impact of creating a permanent harbour wall within the historic harbour must be carefully considered and balanced against the economic gains which such a development will create.

6. The likely implications of wave behaviour on the structure of the great breakwater due to changes in wave reflection patterns in the western sector of the outer harbour. During east, north east and south east winds there is a distinct reflective pattern off the vertical quay wall, the initial straight section of the breakwater beyond Soldiers Quay and the curved part of the breakwater between the first and second steps. These patterns vary depending on the height of the tide. The new rubble mound sea defences being proposed will probably reduce impacts on the existing structure through attenuation. The great breakwater is already showing signs of undermining both on its inner and outer faces and requires substantial maintenance. This matter has to be assessed to ensure that there are no detrimental effects on Holyhead's primary sea defences.
7. From experience and local knowledge the effect of large ferry ships manoeuvring into berths on the north side of Salt Island specifically during extreme north westerly winds using full engine or thruster power which sends a powerful undertow into the outer harbour and has, on many occasions, caused violent movement of the entire marina, created snatch loadings and damaged superstructure. These berths did not exist during lease negotiations and initial design of the marina but must now be assessed in relation to the proposed solid rubble mound breakwater.
8. The impact of the construction phase of the proposed re-build given the need to import large quantities of stone to form the permanent harbour wall, consideration of the source of the materials to be used, the impact on traffic and highways and the methodology to minimise the environmental impacts of the construction phase.

9 DESCRIPTION OF THE PROPOSED SCHEME

The marina has a defined lease area based on the original negotiations with Stena Line Ports Ltd and their agents Edmund Kirby of Liverpool. There was also a defined fairway and an anchor zone to accommodate the lateral tethers securing the marina. This seabed lease area is defined by GPS and OS map coordinates and occupies some 65,000 square metres in the western sector of Holyhead Harbour.

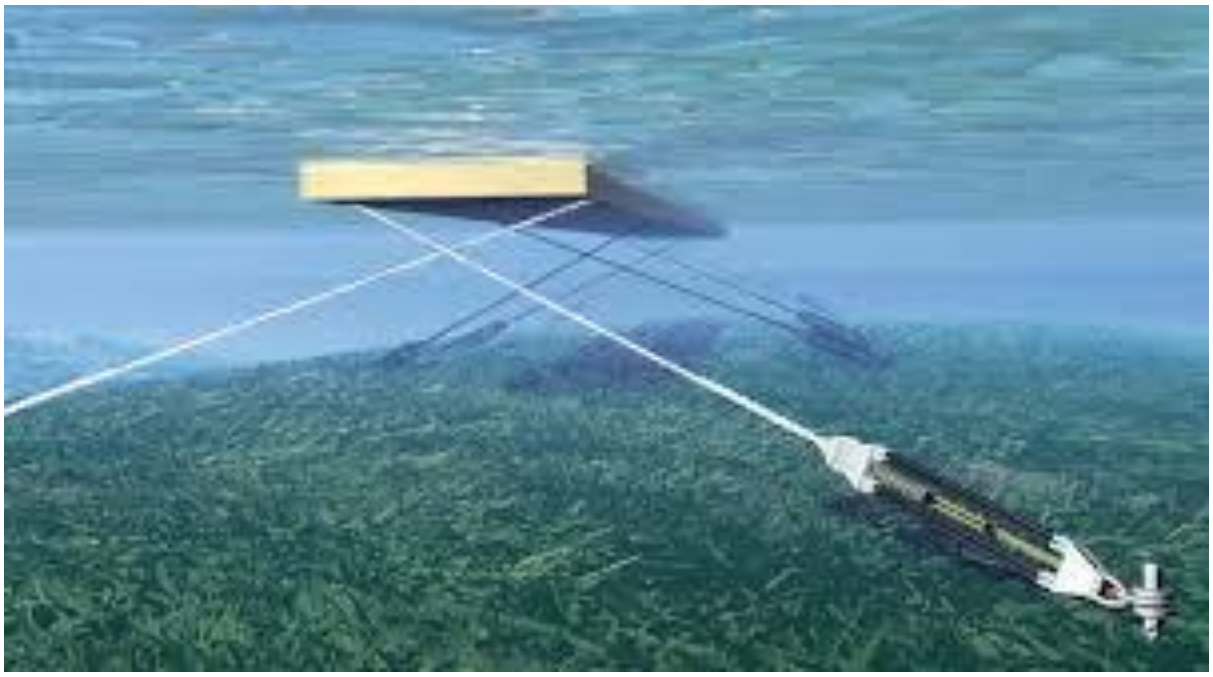
From over 30 years of local knowledge operating the boatyard on the Trinity Marine site and some 18 years of actual experience of wave behaviour in Holyhead outer harbour during the construction and operation of Holyhead Marina, an outline design has been prepared for the purposes of consultation, scoping for EIA, Marine Permit applications and a Planning application.

Harbour consultants RPS of Belfast have been given a preliminary brief to develop the project up to and including information required for permit applications. This work will include:-

- Hydraulic wave disturbance modelling to provide data for the most economical layout of the rubble mound breakwater and other protection structures
- Preliminary design of the rubble mound structure to give the required protection in the most economical way
- Production of an outline specification and construction methodology with layout and cross sectional drawings for the purposes of planning and permit applications.

Detailed bathymetric surveys and geological assessment of the seabed will be commissioned to establish the most appropriate sustainable methodology with minimal environmental impact.

Wave data and design parameters will be provided for the floating structures which will be designed, manufactured and installed by a marina specialist. The likely supplier based on a long established relationship would be Inland and Coastal Marina Systems Ltd of Co Offaly in the Republic of Ireland. This company has wide international experience of floating breakwaters, design/build contracts and marina developments in Ireland, the UK and Europe. Holyhead Marina has worked with this company for many years and assisted with product development. RPS of Belfast also work with this Company in product development and marina/breakwater design.



The tethering system is likely to be a proprietary system such as Seaflex (Seaflex AB, Sweden) which stretches and returns with the tidal range and holds the pontoons on station laterally with minimal disturbance of the seabed using sustainable materials and well established technology. The Seaflex tethers are likely to be anchored by concrete clump anchor blocks placed on the seabed. The floating breakwater element (pier A) will probably re-use the TTI combination chain/rope/chain system with 10 tonne clump anchors which proved to be effective even during the extremes of Storm Emma.

It is well known that some traditional mooring tethers can damage the underwater flora and fauna by allowing chain to scour the seabed creating dead spots with no vegetation. The Seaflex system avoids scouring of the seabed because it is constantly under tension. Also the materials do not release any pollutants and can be fully recycled. The moorings are made from the highest quality stainless steel or titanium offering the best protection against corrosion.

The footprint of the rubble mound breakwater is designed to be completely within the existing defined lease area extending the existing access spit by some 500 metres to enclose and protect the new marina from east/north east weather systems. It also takes account of the reflected wave from the vertical walls of Soldiers Quay and the root of the main breakwater and maintains the required distance from Soldiers Quay (105 metres) to allow its continued use as a commercial quay.

Future sea level rises will be predicted and built into the detailed design of the fixed breakwater to ensure that the structure can cope with climate change/global warming in the future.

Holyhead Marina already has its established shore-side infrastructure based on the original proposals for a 500 berth facility. Standards for sanitary facilities, car parking, and waste management comply with current recommendations issued by the Yacht Harbour Association.

Boatyard services are already in place. The boatyard has just invested in a new 25 tonne slipway straddle hoist which was commissioned to be ready for the 2019 launching season and is now in full operation. This equipment is variable width and can handle much beamier vessels than before.

Based on the consultant's conclusions that floating breakwaters could never survive the wave height and frequency generated by Storm Emma, the only alternative is to build a fixed solid breakwater to protect the pontoon berthing system. This will involve extending the existing promontory or spit which currently extends to the bridgehead bank seating. While the detailed methodology has yet to be established by detailed design it is likely that the most economical method of construction will be by end tipping suitable core material arriving by tipper trucks and trimming/shaping using long reach excavators. Geotextile membranes will be installed to contain the fines and the entire structure will be armoured with a secondary layer and a primary layer of rock armour stone. The seaward face is likely to require rock armour units weighing some 200kg (W_{50}=200kg). The inner revetment is likely to require a primary armour in the region of 110kg (W_{50}=110kg). The roundhead (and bends) seaward primary layers are likely to require a primary layer comprising of 520kg units (W_{50}=520kg).

Based on an average depth below Chart Datum of approx. 4.5 metres and a top level to safely cope with surge tides of about 5.0 AOD the total core volume required will be in the order of 116,000 cubic metres of controlled fill faced with some 40,000 cubic metres of primary and secondary rock armour.

There would be a flexible pavement topping to the roadway which is anticipated to be single carriageway with passing bays and viewing points at the bends. The roundhead will be designed to allow emergency vehicles and maintenance plant to turn around adjacent to the second bridge head. There will also be navigation lights marking the roundhead in accordance with the Harbour Authority and Trinity House requirements.

Measures will be taken to minimise environmental risks during the construction phase. There is a risk of potential spillage of fuel, oils and release of fines during construction. Contractors will be required to produce a Construction Environmental Management Plan cross referenced to the Port's latest pollution prevention plan.

During the operational phase there will be a need for occasional maintenance, re-surfacing and remedial work following extreme storms. Works above high water will not require permits but it will be necessary to have a planned maintenance regime following all the principles of the Construction Environmental Management Plan in order to ensure minimal environmental impact.

There are no plans for decommissioning the rubble mound breakwater. This will be a permanent harbour wall.

9.1 FLOATING ELEMENTS

The floating elements of the marina will follow a similar layout to the original design comprising of four piers A, B, C and D linked by the southernmost pier E. The basic berthing unit is expected to be the 9 metre finger berth cantilevered from the walkway piers at approximately 9 metre centres. There will be a number of 10.5 metre berthing fingers and possibly 12 metre finger berths distributed around the marina to cater for the larger vessels. There will also be some small vessel finger berths (7metre) to cater for the growing demand for RIBS and smaller motor boats. The walkways will be proprietary GRC planked units, 2.5 metres wide tethered using the Seaflex system.

Pier A, the westernmost walkway, will be a floating breakwater running roughly parallel to Soldiers Quay. This pier will provide protection from any reflected wave off the vertical quay wall at high

tide. This reflected component is likely to be radically reduced by the additional protection provided by the rubble breakwater. It is anticipated that this pier will become the visitor and commercial vessel berth with its own bridgehead from the roundhead at the end of the new rubble breakwater. The pier will be made of new and salvaged 70 tonne 4 metre wide floating breakwaters tethered with the TTI chain/rope/chain system or the Seaflex system previously mentioned. The pier will be some 7 units long (140 metres) and will also act as primary containment should future storms cause damage within the marina area thus preventing marina floats from escaping.

The entrance to the marina will be a break in pier A on the western side marked with navigation lights (probably 2 fixed vertical reds) subject to Trinity House and Harbour Authority specification. Beyond the entrance Pier A will continue in 4 metre wide breakwater units for large vessel berthing until it connects to E pier, the southernmost walkway.

E pier is anticipated to be a 3 metre wide continuous float reinforced concrete walkway linking with piers B, C and D. This pier is likely to be made from reinforced concrete 3 metre wide x 20 metre long breakwater units to complete the necessary containment should future storms cause breakdown of the marina structure.

9.2 BRIDGEHEAD, ACCESS AND SECURITY

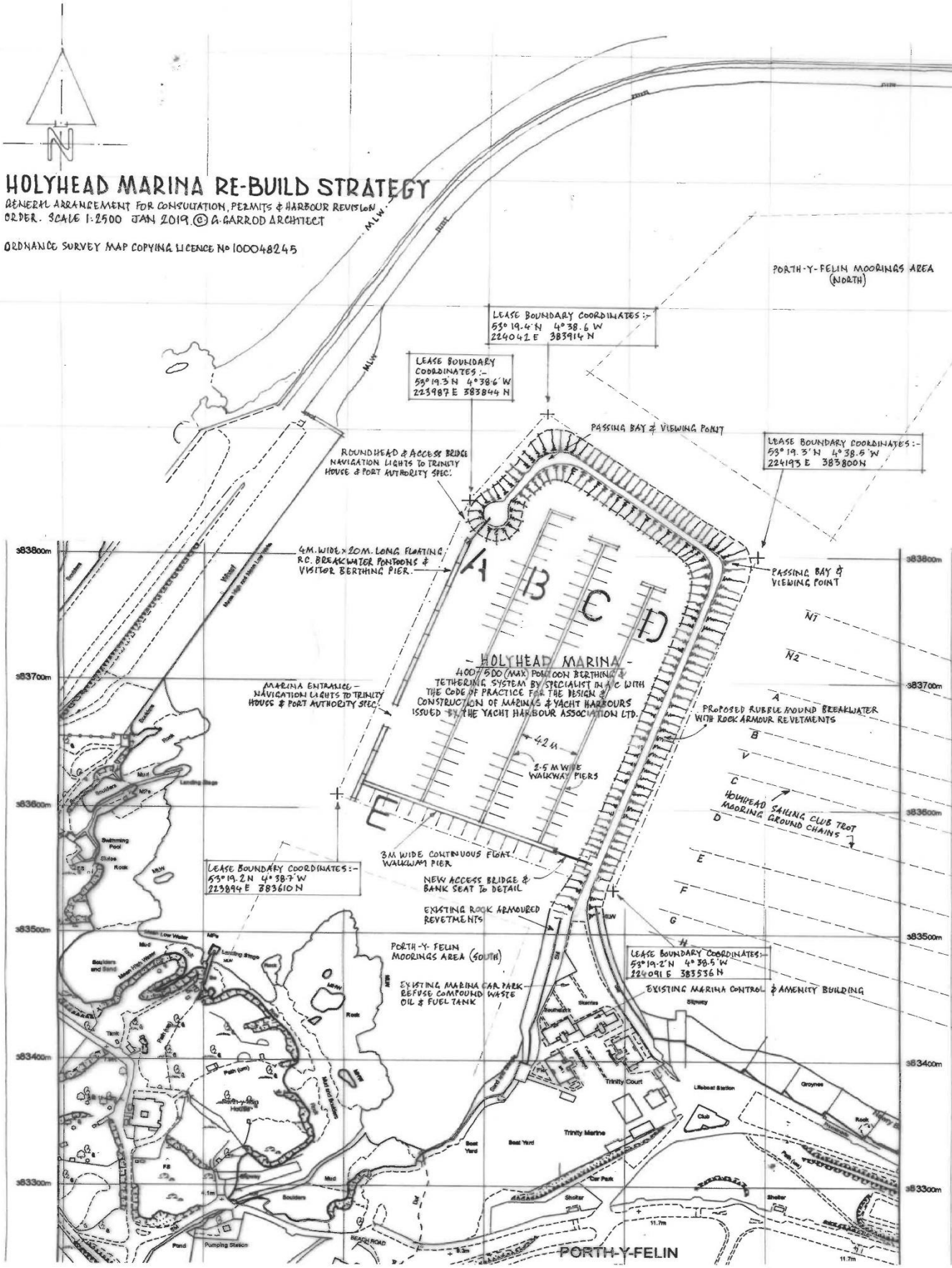
Access to the main berthing facility for berth holders will be via a new gangway from the root of the rubble mound breakwater leading directly onto pier E. There will be a new bank seating and security gates for berth holders. Electrical distribution cabinets, water main stop taps, wifi aerials and signage will be positioned at the top of the gangway. Services and fuel feeds will run in cable troughs below the gangway. Due to the 6.5 metre tidal rise and fall there will be a need to address assisted access for the disabled particularly wheelchair users. Research into mechanically assisted access equipment is on-going and the emerging business plan has already identified a market demand from many client groups with disabilities requiring access to sailing experiences.

9.3 FUEL PONTOON

There will be a fuel pontoon on pier E fed from the existing 15000 litre double skinned tank located in the refuse compound in the berth holders' car park. Distribution will comply with the latest regulations with air pressure monitored double skinned pipework contained within service ducts within E pier. The precise location of the fuel pontoon has yet to be established but it is likely to be at the western end of pier E where it joins pier A so larger commercial vessels can easily come alongside.

9.4 RNLI AFLOAT LIFEBOAT

It is hoped that the RNLI will continue to work with Holyhead Marina to find a suitable design for a permanent facility for the RNLI afloat lifeboat. Current policy requires the provision of freehold or long leasehold berthing facilities independent from the rest of the marina so that the lifeboat can operate privately and separately from the rest of the berthing facility. This may require a separate gangway onto a rising/falling lifeboat pen. Holyhead Marina's lease area may not be able to accommodate this facility but it is possible that the Landlord could consent an overspill area behind the protection of the new harbour wall to accommodate the requirements of the RNLI. Alternatives will be considered as the detail of the project emerges.


HOLYHEAD MARINA RE-BUILD STRATEGY
GENERAL ARRANGEMENT FOR CONSULTATION, PERMITS & HARBOUR REVISION ORDER. SCALE 1:2500 JAN 2019. © A. GARROD ARCHITECT
ORDNANCE SURVEY MAP COPYING LICENCE No 100048245
PORTH-Y-FELIN MOORINGS AREA (NORTH)
LEASE BOUNDARY COORDINATES :- 53° 19.4' N 4° 38.6' W 224042 E 383914 N
LEASE BOUNDARY COORDINATES :- 53° 19.3' N 4° 38.6' W 223987 E 383844 N
PASSING BAY & VIEWING POINT
LEASE BOUNDARY COORDINATES :- 53° 19.3' N 4° 38.5' W 224193 E 383800 N
ROUNDHEAD & ACCESS BRIDGE NAVIGATION LIGHTS TO TRINITY HOUSE & PORT AUTHORITY SPEC.
4M. WIDE × 20M. LONG FLOATING R.C. BREAKWATER PONTOONS & VISITOR BERTHING PIER.
PASSING BAY & VIEWING POINT
- HOLYHEAD MARINA -
400 / 500 (MAX) PONTOON BERTHING & TETHERING SYSTEM BY SPECIALIST IN A/C WITH THE CODE OF PRACTICE FOR THE DESIGN & CONSTRUCTION OF MARINAS & YACHT HARBOURS ISSUED BY THE YACHT HARBOUR ASSOCIATION LTD.
MARINA ENTRANCE – NAVIGATION LIGHTS TO TRINITY HOUSE & PORT AUTHORITY SPEC.
PROPOSED RUBBLE MOUND BREAKWATER WITH ROCK ARMOUR REVETMENTS
42 M
2.5 M WIDE WALKWAY PIERS
HOLYHEAD SAILING CLUB TROT MOORING GROUND CHAINS
3M WIDE CONTINUOUS FLOAT WALKWAY PIER
LEASE BOUNDARY COORDINATES :- 53° 19.2' N 4° 38.7' W 223894 E 383610 N
NEW ACCESS BRIDGE & BANK SEAT TO DETAIL
EXISTING ROCK ARMOURED REVETMENTS
PORTH-Y-FELIN MOORINGS AREA (SOUTH)
LEASE BOUNDARY COORDINATES :- 53° 19.2' N 4° 38.5' W 224091 E 383536 N
EXISTING MARINA CAR PARK REFUSE COMPOUND WASTE OIL & FUEL TANK
EXISTING MARINA CONTROL & AMENITY BUILDING
PORTH-Y-FELIN

10 CONSENTS AND LEGISLATION

The construction of the rubble breakwater and the new pontoon berthing facility will require statutory consents and related environmental assessments. The primary consents required are summarised below:-

1. A Harbour Revision Order under Section 14 of the Harbours Act 1964
2. A Marine Construction Permit under Part 4 of the Marine and Coastal Access Act 2009 for works below the level of MHWS
3. Planning Permission under the Town and Country Planning Act

The Harbours Act 1964 specifies that notice of intention to submit an HRO should include information specified in the relevant EIA Directive. EIA will be required and this Environmental Scoping Report has been prepared as part of the EIA process.

This project falls under Annex II paragraph 12(b) [Marinas] of DIRECTIVE 2011/92/EU and Annex II.A of DIRECTIVE2014/52/EU specifies the information that should be provided.

The project also needs to be considered in relation to other legislation and directives outlined below:-

1. The Conservation of Species and Habitat Regulations 2010 – should the works be deemed to have a likely significant effect on European sites such as Special Protection Areas or Special Areas of Conservation, an Appropriate Assessment should be undertaken by the competent authorities assessing the potential implications of the proposed project on the conservation objectives of the protected sites. After consultation with NRW to test the LSE of the project guidance on the scope of a Habitats Regulations Assessment will be sought.
2. The Wildlife and Countryside Act 1981 – any operations within or adjacent to an SSSI will require input from NRW regarding the need for an AA under the Habitats Regulations. The nearest SSSI is approximately 1.5 km west of the marina site (Holy Island Coast SSSI).
3. Water Framework Directive – the WFD applies to all waterbodies that have the potential to be impacted by the proposed scheme. This project is within Holyhead Bay Coastal Waterbody (GB681010360000). A WFD Compliance Assessment will need to be undertaken as part of the EIA. Identification of the risks on the following receptors will be required – hydromorphology, fish, habitats, water quality and protected areas. It is likely that the following activities could potentially impact WFD parameters: - construction spillages, release of suspended sediments, disturbance of fish, loss of subtidal habitat and changes to coastal processes. Assessment to determine whether the new project will have permanent significant impacts on the Waterbody status will be required.
4. Bathing Water Directive – although there is no designated Bathing Water in the harbour it is clear that the shingle beaches along Newry Waterfront are used for bathing and since the removal of sewage outfalls into the harbour the water has become clean and popular for bathers. It is unlikely that sediments released during construction will release bacterial contamination but the principles of the Bathing Water Directive should be considered.
5. Shellfish Waters Directive – the WFD now addresses the requirements of the Shellfish Water Directive. The only designated Shellfish Water near the marina site is Beddmanarch Bay Shellfish Water approximately 4km south east of the marina site. As this is a mussel nursery

vulnerable to INNS advice will be sought from NRW and WG Fisheries regarding potential impacts.

6. Priority Substance Directive – compliance with these standards forms the basis of good surface water chemical status under the Water Framework Directive.

7. Waste Framework Directive – provides measures to protect the environment and human health by preventing or reducing the adverse impacts of the generation and management of waste. There is a waste hierarchy with the most favoured option being prevention and the least favoured option being disposal. The proposed scheme has the potential to generate waste both during construction and during operation which should be manageable through standard waste management planning and the Port's waste management plan.

8. Welsh National Marine Plan – currently in development by Welsh Government to cover Welsh inshore and offshore waters in accordance with the UK Marine Policy Statement which provides a framework for preparing marine plans and taking decisions affecting the marine environment. The MPS is intended to assist in achieving sustainable development in the UK marine area. The Welsh National Marine Plan is advanced but still in development but the guidance, legislation and principles must be applied to ensure that marine resources are used in a sustainable way in line with high level objectives.

11 WELL-BEING OF FUTURE GENERATIONS ACT

Wales is one of the first countries to introduce a law like this. The Act says that 44 public bodies, such as Local Authorities, the NHS and others must work together towards seven well-being goals:-

1. A prosperous Wales
2. A resilient Wales
3. A healthier Wales
4. A more equal Wales
5. A Wales of cohesive communities
6. A Wales of vibrant culture and thriving Welsh language
7. A globally responsible Wales

Wales faces a number of challenges now and in the future, such as climate change, poverty, health inequalities and jobs and growth. To give current and future generations a good quality of life we need to think about the long term impact of decisions we make. The law requires our public sector bodies to work together towards these goals.

The consenting authorities must take into account the principles of this Act in the assessment of these proposals by reviewing short term needs balanced against long term needs, preventing problems, integrating objectives with well-being goals, collaborating with other public bodies and involving people with an interest in achieving the well-being goals. The sustainable development principle described in the Act requires public bodies to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs. The seven well-being goals are described thus:-

1. Prosperity – an innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change) and which develops a skilled and well educated population in an economy which

generates wealth and provides employment opportunities, allowing people to take advantage of the wealth generated through securing work.

2. Resilience – a nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example climate change)

3. Health – a society in which people's physical and mental well-being is maximised and in which choices and behaviours that benefit future health are understood.

4. Equality – a society that enables people to fulfil their potential no matter what their background or circumstances (including their socio economic background and circumstances).

5. Cohesiveness – attractive, viable, safe and well connected communities.

6. Culture – a society that promotes and protects culture, heritage and the Welsh language, and which encourages people to participate in the arts, and sports and recreation.

7. Global responsibility – a nation which, when doing anything to improve the economic, social and cultural well-being of Wales, takes account of whether doing such a thing may make a positive contribution to global well-being.

It is important that public bodies apply the sustainable development principle in their work, and that they can show people that they are making progress towards achieving the well-being goals. It is essential that any impact assessment in the consenting process to re-build Holyhead Marina is assessed in relation to the requirements of this important Act.

12 NATURE CONSERVATION DESIGNATIONS AND RSPB RESERVES

The marina site is located in a sensitive area not only for its historical maritime significance but also for its natural beauty and proximity to nature conservation designations. It is also obvious that the harbour is a significant marine environment and any proposals to re-develop the marina must address the likely effects on the aquatic environment, the protected terrestrial habitats of important species and the likely effects on marine species. Any proposal to re-build the marina must address the likely effects (both during construction and during the operation of the facility) on the aquatic environment, habitats, species, aquaculture, coastal processes and marine ecology. Also it is clear that the visual impact of the proposal should be considered in relation to the landscape, seascape and cultural heritage of the area.

The marina site is located in the western sector of the outer harbour adjacent to or within a range of sensitive sites which may be affected by the proposals and will require careful consideration in the consenting process:-

1. Glannau Ynys Gybi - Holy Island Coast SAC (Special Area of Conservation) is located to the west of the site around the headland of Holyhead Mountain. Any proposals should take account of the environmental effects on species and habitats in this area, both in the construction and operational stages of the project.

2. Area of Outstanding Natural Beauty – the Anglesey AONB is predominantly a coastal designation and covers a large proportion of Holy Island. The coastal features are of significant environmental value and the designation boundary is within a short distance west of the site.

3. RSPB Reserve – South Stack Cliffs. This important reserve covers much of the western coastline of Holy Island with habitats for breeding seabirds and choughs. It is important that these habitats remain undisturbed particularly during the breeding seasons.

4. North Anglesey Marine pSAC - special area of conservation for harbour porpoises. This site covers a wide area reaching north-west of Anglesey into the Irish Sea.

5. Holy Island Coast SPA lies to the west of the marina site designated due to its support of a population of chough which depends on the range of diverse habitats in this area both during the breeding season and wintering periods.
6. Sites of Special Scientific Interest - Holy Island Coast SSSI and Beddmanarch – Cymyran SSSI are both located in the locality of the marina site. The Holy Island SSSI is of special interest for its geology, cliffs, grasslands and special habitats and is located around the North West coastline of Holy Island commencing just west of the root of the great breakwater at "Rocky Coast". The Beddmanarch-Cymyran site is a long established habitat for birds and plant species well east of the site but should be considered for its botanical importance and migrating birds.
7. Anglesey Terns pSPA is a combination of three protected areas – Ynys Feurig, Cemlyn Bay and The Skerries - including surrounding marine areas used by breeding terns of various species.

13 CONSERVATION AREAS, CULTURAL HERITAGE, ARCHAEOLOGY, LANDSCAPE AND SEASCAPE

The marina site is located in an historically significant harbour area bounded by Rendell's magnificent breakwater to the north and by the Conservation Area along the Holyhead Waterfront to the South; and the Soldiers Point headland to the West.

The essence of the Conservation Area is the open waterfront, promenade and greens laid out to present the great harbour and its breakwater. The promenade runs along the Holyhead waterfront above clean shingle beaches interspersed with ageing groynes. These shingle beaches were man made during the construction of the breakwater and Salt Island comprising of stone fines from the quarry blastings taken from the Holyhead Mountain quarry. These were transported by the broad gauge railway which ran to Salt Island along the high level roadway south of the Boathouse Hotel on Beach Road.

The shingle beaches (Newry Beach) were originally designed for careening small sailing coasters and the like but have established themselves – particularly since raw sewage outfalls have been removed from the harbour – as safe, clean bathing beaches for locals and visitors. The waterfront from Mackenzie Pier running North West up to the Trinity House site is a well-used popular promenade catering for walkers, swimmers, kayakers and dinghy sailors. Holyhead Sailing Club has a built up groyne used as a ferry landing stage to service its trot moorings plot; and a slipway which is also used by the RNLI for its D Class inshore lifeboat.

The greens and promenade have been used as public open spaces for many years – specifically designed to display the great harbour and its stone breakwater. The Conservation Area document produced by the County Council displays images of the harbour filled with coasters and schooners at anchor and promenading Victorians enjoying the waterfront, gardens and town greens.

The old Admiralty Wall running along the top of the greens defines the southern boundary of the Conservation Area and is a listed structure. This wall originally defined the extent of Crown owned property established during the construction of the port and thereafter in the charge of the British Transport Commissioners. The greens and promenade were leased to the Isle of Anglesey County Council but the owners of the port – Stena Line Ports Ltd in association with a development company called Conygar – terminated this lease via a break clause and have handed control of the greens to the Town Council. This appears to be part of a development strategy to support the Outline Planning consent to develop the waterfront and Soldiers Point together with a new 500 berth marina directly in front of the established waterfront.

NEWRY BEACH WATERFRONT: TRADITIONAL PARADE OF SAIL

The seaward boundary of the Conservation Area appears to have been drawn along the original line of mean high water which is where it would be expected to be drawn had the Statutory Harbour Authority been in the ownership of the Crown Estate. However as the seabed is actually privately owned the common boundary is the line of mean low water so the County of Anglesey actually extends to this line. This anomaly means that there is a strip of the County of Anglesey running along the line of the Conservation area which is actually not in the Conservation area i.e. the foreshore, the very waterfront which the Conservation area is designed to protect. It is hoped that the County Council might review the Conservation area boundaries and bring them into line with other anomalies such as the development boundary lines – again based on original lines of mean high water.

13.1 OLD TRINITY HOUSE SITE – HOLYHEAD MARINA SHORE BASE

The Trinity House Site forming the established marina shore base was originally a Trinity House Buoy Maintenance Depot and Lighthouse Control Centre. The main Trinity House workshop, The Lighthouse Control Centre (now the RNLI Crewstation) and the old lightmen's stores (now the RNLI Inshore Lifeboat House) are a listed grade II group of maritime buildings forming the dominant character of the marina shore base. A courtyard of four storey buildings was completed in March 2007 centred on the large Buoy Maintenance workshop. These buildings were designed to complement the maritime tradition of the site using low pitched pre-patinated copper roofs and colours to match the original Trinity House livery of white and green.

During the summer of 2018 the old Trinity House main workshop was severely damaged by fire. The roof, windows and lofts were completely destroyed and the hand operated rolling gantry crane was severely damaged. The flanking walls and gables remain intact and are structurally sound. This fine building is scheduled to be restored and converted subject to planning and listed building consent. It forms the central focus of the marina courtyard and is a prominent landmark. It had become largely redundant as a workshop because of the narrowness of the main doors and was always going to be converted for new use. It could be a magnificent maritime or lighthouse/lifeboat museum but would also convert into residential apartments to complete the marina courtyard. There could also

be scope for some ground floor retail space. This project is in the feasibility stage and will be subject to detailed consultation with the County's historic buildings officer and CADW.

Holyhead Marina's shore base within this development of 26 apartments and ground floor retail space was built on reclaimed land between the original lines of mean high and mean low water. This was possible because the seabed in the great harbour is now in private ownership having been transferred from the Crown Estate (British Rail/Transport Commissioners) into private ownership. The common boundary between the shore side freehold ownership and the harbour owners was therefore the line of mean low water.

Holyhead Marina has an amenities facility, reception and offices in the ground floor of one of the courtyard wings. Holyhead Marina also runs the boatyard, workshops and storage yard with appropriate plant and machinery. The seabed lease for the marina includes the access spit of reclaimed land forming the marina car park up to the bridgehead. This spit is protected on its outer revetments with rock armour and is a permanent feature consented and permitted under previous marine construction licences.

The RNLI purchased the original light men's stores (small workshop) and lighthouse control centre from Trinity House early in the marina project and made a commitment to berth the afloat lifeboat in a purpose built lifeboat pen on the marina. The buildings were renovated and converted to accommodate the crew facilities, training rooms and the inshore lifeboat house. Unfortunately Storm Emma damaged the lifeboat pen after 18 years of successful operation. The RNLI remain committed to this site but have berthed the Severn afloat lifeboat in the inner harbour for the time being pending review of Holyhead Marina's rebuild strategy and the aftermath of Storm Emma.

13.2 LISTED BUILDINGS AND HERITAGE ASSETS

The great breakwater is listed Grade II* built between 1848 and 1873 in response to the growth in shipping at Holyhead. Most of the stone was transported by the broad gauge railway from the mountain quarry which now forms the Breakwater Country Park. Work began in 1845 under the direction of superintendent engineer J.M.Rendel and after his death in 1856 the project was completed by John Hawkshaw. The purpose of the project was to create more than 400 acres of deep water harbour. The breakwater is 2.4 km long, the longest in the UK. It took over seven million tonnes of stone to form the core of the breakwater which was then dressed with imported cut limestone. The root of the breakwater at its western extremity is Soldiers Quay – a wide platform and vertical drying quay wall still used for commercial vessels.

The breakwater lighthouse at the end of the great breakwater is a listed grade II structure unusual for its square tower. With its black and white livery this structure forms a prominent historic landmark and still functions as a navigational light and sound signal.

The Maritime Museum is housed in the old Holyhead Lifeboat House, previously the Zodiac Restaurant adjacent to Mackenzie Pier. The building was built in the 1850's and is one of the oldest surviving lifeboat houses in Wales. It has been extensively renovated and extended to accommodate the museum, a restaurant and external terrace. The maritime museum is a popular destination containing extensive historical maritime displays and records.

Porth-y-Felin House is a prominent structure on the Soldiers Point headland overlooking the western sector of the great harbour. It was built circa 1849 for the resident engineer of the breakwater construction project. Also known as Government House and used for some years as the Harbour Master's residence. It was taken over by the Ministry of Defence and used as an RAF Marine Craft Unit for many years and then sold by public tender into private ownership during the 1990's. Since then it has changed hands several times and fallen into complete disrepair.

This building is most noticeable for its setting on the headland and its historic connections with the breakwater construction project. Architecturally it is unremarkable, more valuable as an iconic historic landmark on the headland. It is important that this building is preserved and its setting protected as part of the historic fabric of the town.

PORTH Y FELIN HOUSE: SOLDIERS POINT HEADLAND

Soldiers Point House is the most prominent historic building on the headland overlooking the marina site. It is a listed grade II castellated house circa 1849 built for use by Mr Rigby the contractor of Holyhead breakwater. Again it is the setting and historic connection with the breakwater project which makes this building an integral part of the historic fabric of this harbour. The main house is two storey with white rendered elevations. There are turrets and towers with castellated parapets and machicolation to the service courtyard walls. While it could be described as a Victorian folly the overall impression on the headland is of particular value. Sadly since its use as an hotel in the latter part of the 20th century it has deteriorated almost beyond repair due to neglect and vandalism. It is important that developments proposed in and around this headland secure the setting and iconic status of this historic building.

SOLDIERS POINT HEADLAND

13.3 ARCHAEOLOGY

As a busy historical maritime settlement Holyhead harbour has served fleets of coasters, fishing vessels, ocean going sailing ships and recreational craft for many years. Before the great breakwater was built this area of the coastline was a small natural harbour offering a degree of protection from the prevailing south westerlies. Vessels would take on water from the stream outlets in Porth-y-Felin and anchor under the cover of the Soldiers Point headland and the natural rocky outcrops which now form the foundation of the root of the great breakwater. It is entirely possible that hundreds of years of maritime use has left the seabed littered with artefacts, anchors, moorings and goods dropped overboard. Most will have sunk into the mud and will be lost forever. There are no registered historic wrecks in this area but undoubtedly there will be remnants of small wooden boats and historical artefacts buried deep in the seabed mud.

As the new rubble mound breakwater will be a permanent structure with a significant footprint on the seabed it is important that there is an understanding of the possibility that artefacts of marine archaeological significance or historic quayside structures could be disturbed during construction. Geophysical surveys referred to elsewhere in this report together with careful monitoring during the construction phase will inform the scope of studies necessary to ensure that marine archaeological artefacts are not lost. Consultation with CADW and the Gwynedd Archaeological Trust will inform the scope of work required based on historic records and an understanding of past human activities in the area.

13.4 LANDSCAPE/SEASCAPE

The area of the new marina and its sea defences are within Holyhead Seascape Character Area SCA11 identified and defined by the County Councils seascape assessment of 2013. This area is characterised by the established urban development around the harbour and its infrastructure with the contrasting backdrop of Holyhead Mountain.

The new rubble harbour wall will certainly have an impact on the visual setting of the locality although this should be balanced against the visual impact of what existed prior to the marina's destruction in March 2018. Holyhead Marina presented a constantly changing impression depending on the height of the tide and the range of vessels berthed in and around it. The time of day and the weather conditions prevailing also influenced the visual impression. The visual impact was considerable – colour, light, activity, reflection – but interesting, and beneficial to the attractiveness associated with a busy harbour.

The most significant impact of the new proposals will come from the permanence of the new rubble breakwater which will have different visual impacts depending on the height of the tide. The 6.5 metre tidal range will expose large elevations of rock armoured revetments at low water springs, less so at neaps. Intertidal weed growth will reduce the impact as the revetments become established marine habitats presenting similarities with the natural rocky coastline of the surrounding area.

It is important that the visual effects of the new harbour wall are properly considered in relation to the landscape/seascape character of the area. There will be changes to the views of the great breakwater in this corner of the harbour when viewed from the Newry waterfront. There will be changes to the visual setting when viewed from the mountain and the coastal path. These changes will be significant but not necessarily detrimental. Harbours are formed from practical engineering principles – form and function are dictated by the engineering requirements of sea defences and as such become part of the fabric of the coastal landscape.

Consultation with the County's Planning Officers and CADW will be undertaken to inform the level of EIA required. It is likely that a full Landscape and Visual Impact Assessment would be appropriate and detailed consultation will dictate the level and detail required.

14 COASTAL PROCESSES

The western sector of the great harbour in the area of the proposed marina is characterised along its south western shoreline by rocky outcrops interspersed with sandy bays adjacent to and along the Soldiers Point headland. To the south is the man made promontory or spit out into the deeper water adjacent to the original Perch Rock (marina bridgehead). The boatyard area south of the marina courtyard is largely reclaimed land characterised with rock armoured revetments along the original line of mean low water. North West of the marina lease area is the root of the great breakwater forming Soldiers Quay which is a commercial vertical drying wall. The great breakwater runs North East from Soldiers Quay and curves due east roughly parallel with the Newry waterfront. Soldiers Quay is a wide platform which sets back where the trunk of the breakwater begins. This corner dries at low tide and there is a triangle of placed rock armour in the corner which protects the structure from breaking waves during north easterly, easterly and south easterly winds.

The marina seabed lease area is largely beyond the 2 metre depth contour line with depths below chart datum ranging from about 2.1 metres up to 5.5 metres in its northernmost extremity. The seabed in the southern part within the 3 metre contour is rock or gravel covered with about 500mm of mud. North of this the seabed is rock or gravel covered with between 1 and 2 metres of mud.

There are two stream outfalls to the south west, one adjacent to Porth- y- Felin House slipway and one culverted through the marina boatyard from Beach Road.

The normal tidal range is 6.3 metres. Chart Datum, LAT is 3.05 below Ordnance Datum (Newlyn). The flood tide beyond the breakwater runs east, the ebb west. Tidal stream velocities range from 0.1 to 1.4 knots at springs, 0.1 to 0.7 knots at neaps. The tide floods in a clockwise direction around Penrhos Bay and ebbs anti-clockwise. There is very little tidal current within the great harbour but it is open to a 5.5 km fetch to the north east which generates a substantial wave during extreme north east and east winds. Holyhead Marina relied on 20 x 4 metre 70 tonne concrete breakwaters to protect the berthing area from waves arriving from this direction. Both the north/south breakwater and the east/west breakwater consisted of nine units each providing a floating sea wall 180 metres long on the east and north sides. Propeller wash and extreme north easterly winds can cause turbidity due to disturbance of the seabed sediment in this area of the harbour but generally the water is clear of suspended sediment and can be remarkably clear.

FLOATING BREAKWATERS DURING A NORTH EASTERLY BREEZE

The construction of some 500 metres of solid rubble mound harbour wall in this sector of the great harbour has the potential to affect the wave climate and tidal current direction both of which drive sediment transport and patterns of erosion and deposition. Harbour engineers will be commissioned to assess in detail the likely effects this may have on marine ecology. During construction there are likely to be short term increases in suspended sediment concentrations. During operation there are likely to be changes in sediment transport and deposition within the immediate locality and changes in flushing rates which could influence intertidal ecology.

Consultants will prepare flow and wave modelling information informed by marine geotechnical survey and submarine topography. Hydraulic wave disturbance modelling will provide data for the detailed design of the breakwater taking account of other fixed structures in the harbour area. This will inform the methodology likely to be adopted, provide data for the design and tethering of floating elements of the marina and specify input required for the hydraulic section of the EIA.

Information will also be required to allow for future sea level rises related to climate change/global warming so that the new permanent sea defences can cope with or be easily adapted to cope with climate projections.

15 HYDROLOGY, HYDROGEOLOGY, GEOLOGY AND SOILS

The Porth-y Felin is a river which discharges into the harbour between the Boathouse Hotel and Porth- y- Felin House. There is also a small stream outfall which flows under Beach Road and is culverted through the existing boatyard. These outfalls discharge significant quantities of fresh water into the harbour south of the marina site. There are also various drainage ditches and storm water outfalls in the locality.

There are no features of geological significance within the area of the proposed marina but it is noteworthy that Holy Island Coast SSSI is of special interest for its geological features which include the sedimentary rocks exposed in the cliffs around South Stack.

It is important that changes in tidal currents, deposition, salinity, flushing and the like are considered in the EIA process so that impacts on geology, ground stability and water quality can be considered and assessed. Potential impacts during construction may include threats to the status of the groundwater waterbody and ground instability during construction of the rubble mound breakwater. During operation there may be threats due to changes in tidal currents and exposure of intertidal/foreshore areas affecting geological features or deposition/erosion of geological features. Potential impacts to hydrology and hydrogeology will be considered as part of the WFD compliance assessment.

There is an historic landfill site south west of the marina site beyond the high level roadway leading to the Breakwater Country Park. This was originally a town rubbish dump terminated probably in the 1960's and the Porth-y-Felin river/stream is culverted through it. There will be detailed consultation with NRW in this regard.

Sources of the materials for the construction of the rubble mound breakwater are yet to be established. The hard-core fill and rock armour may be sourced locally or imported depending on the detailed methodology adopted, costs and timescales. This would be managed under the Waste (England and Wales) Regulations and Environmental Permitting (England and Wales) Regulations and detailed consultation with NRW.

16 MARINE WATER AND SEDIMENT QUALITY

Since the completion of Holyhead's sewage treatment plant adjacent to the Penrhos Industrial Estate in 2007 raw sewage outfalls into the harbour have been terminated. Treated effluent now discharges beyond the outer harbour North West of Holyhead at Ynys Wellt. There is a pumping station adjacent to the Boathouse Hotel opposite the Porth-y-Felin House slipway on Beach Road.

The outer harbour is now free from sewage pollution and offers clean bathing water and a thriving marine habitat. Holyhead Marina complies with specified environmental management practices guided by British Marine and the Yacht Harbour Association's environmental guidance (The Green Blue) and the area is monitored by NRW's Water Framework Directive's commitments. The marina shore base development, the Holyhead Sailing Club and the RNLI discharge via an adoptable

standard pumping station in the Trinity boatyard and connect to the town sewage system in Beach Road via a rising main with all easement and legal rights in place.

The marina shore base has a consented storm water outfall on the western side of the marina car park via a concrete headwall and apron in the revetment. There is an alarmed oil interceptor prior to the outfall.

There is a consented culverted stream outfall in the revetment of the south western part of the Trinity Boatyard running from Beach Road where it is culverted under the road.

Compliance with the Water Framework Directive needs to be considered in the planning of all developments in the marine environment. Natural Resources Wales is the competent authority for the implementation of the WFD in Wales and monitor water quality in fresh, transitional and coastal waters. Holyhead Port is within the Holyhead Bay coastal waterbody.

Sediment quality in the benthic zone needs to be considered in the aftermath of Storm Emma and the consequent destruction of the marina leading to the sinking/beaching of some eighty vessels, release of oils and chemicals and the remnants of wreckage or marina structure likely to remain on the seabed.

There are risks associated with the release of suspended sediments during construction and there are risks during the operational phase if changes in flushing rates lead to unacceptable impacts on the seabed environment. Water quality data from the relevant NRW monitoring sites will be used to inform the baseline environment to be considered in relation to sediment plume modelling and likely impacts on the benthic environment. NRW will be consulted for guidance on sampling and methodology. Geotechnical and geo-environmental surveys will inform this process in consultation with NRW.

17 MARINE ECOLOGY

The seabed in the area of the marina generally within the 2 metre contour line is largely rock or gravel covered with approximately 500mm of mud. Beyond the 3 metre contour the seabed is rock covered with between 1000 – 2000mm of mud. Detailed surveys of the seabed and benthic habitats will inform the EIA of the baseline conditions and assess likely impacts of the project on sensitive species within the footprint of the project and its immediate proximity. There are risks associated with smothering of species, contaminated sediment, changes to the intertidal environment and the possible spread of invasive non-native species.

In order to determine potential impacts it will be necessary to assess the benthic ecology in the immediate footprint and adjacent to the site to inform the EIA under the guidance of NRW regarding the scope of the benthic ecological survey and the extent of assessment.

18 FISH, SHELFISH AND MARINE MAMMALS

The scope of this element of the EIA will be guided by NRW and the Welsh Government Marine and Fisheries Division. There are potential risks to fish and shellfish resources in the vicinity of the project. There are a number of shellfish species of interest to fishermen in the area including crabs, lobsters and mussels. There may also be risks to threatened species and species of commercial importance in the wider area caused by smothering, suspended sediments and disturbance during construction. During operation there could be loss or changes to fish spawning/nursery grounds due to changes in hydrodynamic and sedimentary regimes.

There is an active mussel fishery located south east of Holyhead Port in Penrhos Bay adjacent to the Valley Cob where seed stocks are laid before transfer to the mussel beds in the Menai Straits. There is also a planned oyster/clam/mussel area to the east of the Port. The threat of smothering by non-native species (Didemnum vexillum) is of paramount concern not only to these localised fisheries but also in the wider context throughout the aquatic environment. There is also the threat of smothering or disruption from suspended sediments during construction or long term effects as a result of changes in coastal processes.

There are potential threats but also opportunities to create new habitats compatible with the existing environment e.g. the creation of habitats within the rock armoured revetments of the new rubble mound breakwater where species can and do establish themselves and thrive. This has been proven by the established revetments where the line of mean high water is characterised by seaweed growth in the intertidal zone and the presence of feeding birds, fish and mammals.

Marine mammals must be considered in the EIA due to the proximity of an important grey seal pupping area around the North Stack coastline and the Skerries. Also there are harbour porpoise and bottlenose dolphins often seen off the North West coast of Anglesey. Other species like the common dolphin and harbour seals also have the potential to be in the general area.

Potential threats include noise from construction works, increased risks of collision, increased risks from suspended sediments causing changes in prey available and general disturbance from increasing vessel movements to and from the marina site. However Holyhead is already a busy port with many vessel movements and it is not considered likely that there will be long term impacts on marine mammals in the immediate or general area and there may be opportunities to improve habitats for harbour seals which are occasionally seen in the marina area and are generally welcomed as a sign of a healthy marine environment.

Commercial fishing in the waters around Holyhead Port is primarily based around potting for shellfish. Holyhead Port is an active fishing harbour largely landing queen scallops, whelks, king scallops and lobsters fished in inshore waters. Dredging for scallops is not allowed within 1 nm from the coast.

The Fish Dock previously leased to and managed by the County Council no longer exists in the inner harbour. There is no longer an ice plant or a bunkering facility for the fishing fleet. Holyhead Marina is restricted in the berthing of registered commercial fishing vessels by the terms of its Harbour lease. The importance of Holyhead Port in relation to the local fishing industry requires careful consideration both in the context of sustainable fish stocks and in the context of facilities for the local fishing fleet. There may be opportunities within Holyhead Marina's re-build strategy to facilitate some elements of this industry. Detailed consultation with NRW, WG Fisheries and local fishermen will inform the scope of any assessment in this regard.

19 BIRDS

This Irish Sea around the Anglesey coastline is used by a number of seabird species including coastal and offshore species. The marina site is frequented by a range of sea and coastal species and is close to a number of designated sites of special ornithological interest. Prior to the Storm the marina sustained a healthy relationship with a range of bird species, some of particular interest to the regular stream of keen ornithologists often seen on Holyhead's waterfront.

Potential threats during construction of the new harbour infrastructure include disturbance of breeding birds due to noise, light pollution and vessel movements. Release of fine sediments could

also affect prey available. During operation there may be unacceptable changes to aquatic and benthic habitats which may influence prey resources in the longer term.

Consultation with RSPB will be carried out as part of the EIA process and will guide the scope of work required to ascertain threats and opportunities to local bird life and possible effects on designated sites of special interest particularly the RSPB Reserve west of the marina around South Stack Cliffs.

20 TERRESTRIAL AND INTERTIDAL ECOLOGY

The construction of a fixed rubble mound breakwater around the marina site will create a new habitat in the intertidal zone as evidenced by the existing marina access spit and the existing reclaimed land area which has had, in parts, nearly 20 years to establish itself. This zone is clearly going to be a new habitat of some significance given that there are going to be some 500 metres of new breakwater wall with revetments on both sides amounting to a total of one kilometre of revetment. There are similarities to the natural coastal character in the area consisting of exposed rocky shores and coastal cliffs interspersed with beaches of moderately coarse sediment. It has been noticeable how quickly the aquatic environment adopts and adapts to establish habitats amongst the rocky revetments and the intertidal zone quickly establishes and thrives. Nevertheless despite the fact that it appears to be a complementary habitat it may be that the creation of such a large new habitat will generate imbalances or artificially favour certain species to the disadvantage of others.

There are potential threats to the intertidal zone both during construction and operation primarily from the risk of smothering caused by suspended sediments, noise, general disturbance, vessel movements, wash and the like. However there does appear to be a natural resilience in this area and it is noticeable how quickly the intertidal zone re-establishes itself.

With regard to the spread of non-native invasive species, research has concluded that the carpet sea-squirt (Didemnum vexillum) only appears to establish itself on structures which rise and fall with the tide eg floating pontoons, ropes, chains and wires. It is of less concern in the fixed structures of the harbour but nevertheless awareness of the way the species spreads and mitigation of the risks are of paramount importance. This matter is dealt with in more detail in the specific section on D.vex in this scoping report.

The land based natural ecology in the locality is characterised by the natural rocky coastline and headland around Soldiers Point and the largely urban/man-made waterfront promenade, greens, gardens and rock armoured revetments. The proposals are unlikely to have any significant impact on protected species such as badgers or bats. There are established populations of rats, rabbits and urban foxes occasionally seen on the foreshore. These do not appear to be dependent on man-made food sources from refuse bins but rather from naturally occurring food sources on the foreshore including shellfish, crabs, worms and the like.

21 DIDEMNUM VEXILLUM AND BIO SECURITY

Holyhead Marina has been involved in matters of bio-security for many years in association with researchers from NRW and the School of Ocean Sciences at Bangor University. Additionally the disaster of Storm Emma has re-focussed significant attention on the potential for the spread of INNS (Invasive non-native species) as one of the major threats to biodiversity.

Many national and international initiatives have been developed to try to prevent (where possible) the establishment of INNS or control their expansion. Recent liaison with the Intertidal and Coastal Ecosystems Team of Natural Resources Wales demonstrates the historical and current level of

cooperation and awareness of this issue. It is important that this project continues at the forefront of awareness in these matters and builds in physical and management systems to control the spread of INNS and raises awareness of the environmental threats.

Early involvement of NRW included survey and monitoring of the spread of D.vex in Holyhead Marina leading to a major project to eliminate the carpet sea squirt by bagging the pontoon floats and tethers followed by various experiments using chemicals to eradicate the infestation. Monitoring and observations have continued.

The School of Ocean Sciences at Bangor University developed an in-water quarantine system as part of a Welsh biosecurity plan for marine non-native species (report dated February 2017) in association with Holyhead Marina. The report concluded that biofouling has few compulsory management options other than good management practices which places many constraints on effective biosecurity measures. The report made the following recommendations:-

1. Implement a regime of regular vessel inspections to identify high risk vessels, based on a combination of rapid assessment surveys and inspection of biofouling record books.
2. Develop guidelines for in-water cleaning technologies e.g. collection of waste, use of anti-fouling paints.
3. Ensure that dedicated areas are available at marinas with appropriate resources to tackle immediate biosecurity risks e.g. land-based or appropriate in-water cleaning facility.
4. Develop communication initiatives which are directed to 1) recreational boat owners to raise awareness of INNS, highlight biosecurity risks and suggest appropriate mitigation techniques and 2) marina staff to develop and implement bio-management plans, training in rapid assessment techniques and steps to take in the event of an invasive species being identified.

Holyhead Marina has also been working with the Marine Ecosystem Advisor of the Marine Strategic Planning Energy and Advice Team at NRW with regard to D.vex issues at Holyhead. Also there have been preliminary consultations with NRW Marine Licensing in Cardiff to discuss screening/scoping for EIA in the re-build strategy and how it cross references to a Harbour Revision Order under section 14 of the Harbours Act 1964 administered by the Planning Inspectorate. Locally NRW Officers are fully briefed on the clean-up, waste management and plans going forward.

Researchers from NRW Intertidal and Coastal Ecosystems Team have been asked to compile a report on the impact of Storm Emma on Holyhead Marina particularly looking at lessons learnt in the Emma disaster. The aim of this report will be to look at the incident itself and the post incident clean up to see what lessons could be learned from this, specifically looking at suggestions to reduce the potential for escape of non-native species and improve biosecurity in similar incidents in the future. Holyhead Marina is already responding to and working with NRW and will submit a proper consultation report as part of the EIA process.

The following is an extract from a letter to the NRW Intertidal and Coastal Ecosystems Team dated 5th Feb 2019 summarising some of Holyhead Marina's responses to the enquiry:-

……You will also be aware that we have been working closely with Bangor University and Dr Kate Griffith (Marine Eco-system Advisor, Marine Strategic Planning Energy and Advice Team NRW) with regard to the D.Vex issue at Holyhead.

In response to your specific questions please see my responses below:

1. Co-Director of Holyhead Marina Ltd involved in direct management of the incident. Initial Chair of Emergency Response Committee before responsibility for Control and Command was handed to the Harbour Master of the Statutory Harbour Authority on the instructions of the Control of Pollution Office of the MRCA. Actively involved in reporting to the Control and Command Group as the clean-up/salvage operation proceeded.

2. Fully aware of D.vex for many years having worked with NRW and Bangor University in attempts to study and eliminate the species by "bagging" the marina structures and treating the water with various chemicals. Holyhead Marina allowed full access for divers and scientists to use the pontoons to research the problem. We were also involved with a prototype quarantine berth and continue to assist in any way possible to eliminate/understand the problem and inform vessel owners of the importance of regular hull cleaning and appropriate anti-foul particularly if moving from port to port regularly.

3. N/A

4. The primary containment and clean-up operation was carried out by the Statutory Harbour Authority's Tier 2 Responders – Adler and Allan – who boomed off the area and commenced retrieval and clean-up of the foreshores. This particular system of continuous float walkway pontoons relied on polystyrene flotation bonded to heavy concrete decks ideally suited to this site. Each pier contributed to the dampening effect of wave movement in the marina combined with a tethering system which acted like a dampening spring (chain/rope/chain). However once the 70 tonne floating breakwater units parted at the joints (an inevitable result due to the unprecedented wave height) the entire structure was exposed to the storm wave. Despite the effectiveness of the tethering system, surface disturbance lead to failure of the top connections and many pontoons were dashed on the rocks and beaches to the west of the marina site. The following sea compounded the break up, grinding the polystyrene into granules which peppered the foreshore and drifted on the surface. Larger blocks, some partly coated with "hyperlast" fibre reinforced compound, broke off in irregular chunks and were able to drift off. Some of the hyperlast compound had weed growth below the original waterline and therefore could have spread any invasive species had it drifted any distance. Most of the visibly obvious chunks were not a threat to navigation because of the pliable nature of the outer protective coating and were easily contained by the booms or retrieved by small vessels. However the proprietary finger berth floats and "D" Pier walkway floats were the original GRC (glass reinforced concrete) coated EPS (expanded polystyrene) filled units. These units all had weed growth below and at the waterline and were more difficult to handle because the GRC added weight, had sharp corners and jagged edges. Some drifted to the north west foreshore of the Anglesey coastline and could, if they were contaminated with D.vex., have caused spread of the invasive species. However most of these blocks were retrieved and pulled up the foreshore for disposal. Once in air it is known that D.vex will not survive.

5. Polystyrene granules in these quantities behave in a similar way to any lightweight material floating on the surface of the sea. Wind is the most influential factor and often large quantities gathered like snow drifts and were blown around in all directions. The Tier 2 Responders experimented with leaf blowers and large suction hoses. The material behaved differently when wet. There were clogging problems, separation problems etc but in the end the basic clean up relied on nets, buckets and shovels. There was a raised awareness of dangers and risks – eg chemicals and pyrotechnics – but D.vex did not appear to be high on the list of matters to be considered in the clean-up.

6. Raised awareness of the pollutant/litter in the aquatic environment was mainly motivated by public concern over plastic waste in the oceans and visible nuisance rather than the spread of invasive species (which few people understand). However there were environmentally aware kayakers and the like who gathered floats jammed into rocky crevices away from the sandy beaches – and these volunteers did appear to be aware that weed covered floats/debris could have environmental implications. Also – through the advice given by NRW Officers, the message to get debris above the high water mark was widely adopted as necessary not only to avoid navigational hazard but also to kill any D.vex which may have been attached to the debris.

7. It is clear that D.vex thrives on marine structures which rise and fall with the tide so in theory all marinas are at risk. Whether the species establishes itself and thrives seems to depend on location. Tidal estuaries and salinity seem to be relevant. Most vessels owners look after their vessels below the waterline simply to improve speed and performance and therefore the vast majority are not a threat to the spread of species. However neglected old vessels moving from port to port could be a threat but this can be managed and it is very unusual to see much fouled vessels actually on passage. With regard to contingency planning to mitigate further similar disasters it will be important to ensure that containment is carefully considered in any new schemes. Break up of floating structures in ever increasing severe weather systems relating to climate change/global warming should be included in all emergency plans. Most harbours are naturally contained by sills, lock gates and harbour walls. More open harbours should be designed to ensure that the outer pontoons are strongly reinforced to act as containment booms to retain floating debris should extreme weather cause destruction and pollution. Polystyrene is the basic flotation material used in marinas but there are other products which are buoyant but behave differently. The marina industry needs to look at alternatives but there should not be an overreaction against the use of polystyrene. Most contained marinas are perfectly safe so long as there is awareness of the consequences and appropriate contingency planning. Information and education is important. Most sailors are environmentally aware. Campaigns like BMF's Green Blue and NRW information sheets are very useful. Marina Control Office reception areas and Sailing Clubs are ideal places for the display and exchange of information.

I hope this information is of use and answers the questions you have asked. We are still assimilating all the information relevant to the disaster of Storm Emma and the re-build strategy. Much more will come to light as we progress with EIA scoping/screening with the consenting authorities. Please feel free to make contact if we can be of further assistance at this stage…….

The School of Ocean Sciences, Bangor University, continues to monitor the growth of D.vex on the remaining pontoons and more recently has established a further experiment to investigate the effect of artificial light on INNS.

SCIMITAR BEACH SOLDIERS POINT IN THE AFTERMATH OF STORM EMMA

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22 COMMERCIAL AND RECREATIONAL NAVIGATION

Holyhead is a busy ferry port with both Stena Line and Irish Ferries operating the principal passenger and freight links to and from Dublin. The Statutory Harbour Authority is Stena Line Ports Ltd who own and manage the Port. There are some 8,000 ferry movements annually and some 500 other movements including bulk carriers, cruise liners, coasters and other large fishing vessels. There is also a local fishing fleet and a steady flow of work boats, lifeboats, survey vessels and windfarm support vessels.

Holyhead Marina had 350 berths before the destruction of the marina during Storm Emma. As the only true tidally unrestricted 24 hour facility in this sector of the Irish Sea visitor berthing was a substantial part of the marina's income. Holyhead is strategically located with excellent transport links to the major population centres, easy day sail destinations to a number of prime locations and the shortest sea crossing to Dublin.

Up to 1000 visitor boat nights in a single summer month have been recorded and this represents substantial cash flow directly into the local economy. Contract berth holders, both annual and six month licence holders, made up the larger proportion of the marina's income and even in winter the marina regularly accommodated between 80 and 150 vessels who chose to remain in the water all the year round.

The marina hosted many events such as the OGA Traditional Boat Festival, regular hosting of ISORA Racing Fleets, Cruising Associations, Round the World Clipper Fleets and occasional super yachts and tall ships on passage. These events generated substantial footfall in the locality particularly for parades of sail and RNLI open days for which this harbour is particularly well suited offering deep water within a few metres of the promenade at high water – a facility almost unique in the region.

As an established fully consented and operational marina, navigational information for yachts on passage was informed by regular liaison with the Hydrographic Office, Nautical Almanacs and Marina Guides. Nautical Charts show the position of the marina in the harbour, the navigational lights approved by the Harbour Authority and Trinity House and the depths on the approaches to the pontoon berthing facility.

Since the destruction of the marina the Harbour Authority has placed two special marks on the periphery of the marina area to warn approaching vessels of hazards during recovery and salvage operations. The marina still has some 100 metres of heavy breakwater pontoon running north from the bridgehead to form a temporary landing stage during fair weather. This facility is serviced and available for yachts on passage and will remain available pending commencement of the re-build. The Hydrographic Office is fully briefed and the yachting fraternity is well informed via cruising associations, local pilots and the like.

The new marina and its harbour wall will be subject to detailed design by experts to establish the most efficient layout for wave attenuation, access and safety of navigation. This process will be guided by detailed consultation with the Statutory Harbour Authority and Trinity House who will advise on signage, signals and navigational lights to guide vessels safely at night. Additionally there will be detailed consultation with regard to the commercial requirements of the Soldiers Quay area to ensure that the harbour's commercial activities can continue safely. The original requirement under the terms of the existing seabed lease was to maintain a clear 100 metres between any part of the marina and the vertical quay wall at the root of the great breakwater.

The new marina will be approached in a different way to the original in that there will no longer be berthing along the outside on what were previously floating breakwaters. Vessels will approach from the east and enter the marina from the west. Plans, maps and navigational lights will be agreed and confirmed with the Hydrographic Office for inclusion on nautical charts.

There will also be changes in procedures and communications. Established communications and procedures with Port Control, MRCA and Customs will be developed to comply with current practices. It is likely that the new marina will no longer operate on VHF Channel 37 and will change to International Marina Channel 80. Detailed consultation with the Harbour Master and Port Control will inform the yachting fraternity and all approaching vessels of operational procedures, shipping movements, approaches, pilotage, speed limits and emergency procedures. Harbour Bye-Laws will be re-visited and integrated with the new marina's terms and conditions to ensure compliance with the Harbour Authority's requirements.

There will be disruption during the construction of the new marina. There will be a construction management plan agreed prior to commencement in order to inform vessels of likely hazards and navigational obstructions. Risk Assessments prepared in full consultation with the Harbour Authority will supplement permits to work issued by the Harbour Master particularly with regard to dive operations and heavy engineering works.

During operation it will take some time for the new arrangements to be assimilated into the hierarchy of information presented to the maritime fraternity with chart up-dates, local pilots and nautical almanacs. Early consultation with the Yacht harbour Association (TYHA), the Royal Yachting Association (RYA) and British Marine will inform and prepare the customer base and ensure that the new berthing facility complies with the latest codes and standards.

23 TRAFFIC AND TRANSPORT

Holyhead is the second busiest Ro-Ro ferry port in the UK dealing with millions of tonnes of freight served by the A55 Expressway and the North Wales Coastline Railway. The port deals with some two million passengers, 400,000 cars and 10,000 coaches per year. The cruise liner business is expanding and there are plans to improve the inner harbour area east of Salt Island to improve cruise liner berthing. The Port is operating at full capacity and needs more hardstanding for the increasing volume of freight passing through Holyhead. There are plans to extend Salt Island eastwards to create hardstanding and quay walls. Currently there is confusion over Brexit and there are potential issues to be addressed should customs checks cause delays and backlogs. There have been long standing issues with how ferry traffic enters and leaves the port which is slightly detached from the end of the A55 and has to weave itself through traffic lights and tortuous bends causing regular tailbacks and nuisance to the day to day traffic of Holyhead town.

Recent projects like the Road King Truck Stop at Parc Cybi and a new 80 bedroomed Premier Inn Hotel have been welcomed to alleviate some pressure and serve the increasing demand on this busy town. There are other projects specifically aimed at serving this demand eg a new budget hotel project in Market Street accessible from the port area adjacent to the new pedestrian bridge linking the town centre with the railway and port terminals.

Holyhead Marina is a consented and operating business with all its shore side infrastructure in place. The development was designed for a 500 berth marina with boatyard and support businesses, already established on the site. Car parking standards and sanitary amenities are designed under the relevant codes issued by the Yacht Harbour Association and British Marine. Traffic flow to and from the site has been managed and established for many years based on actual demand and while there are expected complications during peak periods, good weather, Bank Holidays, festivals and maritime events it is unlikely that the re-build of the marina will surcharge the traffic infrastructure during the operational phase of this project although other developments in the town need to be taken into consideration for their cumulative impact on the long term traffic infrastructure.

However there are likely to be traffic related issues in the construction phase relating to increased demand from construction workers, heavy plant and machinery arriving by road, deliveries of materials, components and the like. Of key significance is the methodology in the construction of the rubble mound harbour wall which will involve large volumes of controlled hard-core fill and thousands of tonnes of rock armour for the revetments. This methodology has yet to be established by harbour engineers and much depends on the source of the materials and the method of construction. Lorries carrying these sorts of volumes of hard-core and rock armour driving through the town and along the promenade could have a significant impact on the highways in the locality and there could be damage, wear, pollution, noise and safety issues to be assessed.

There have been discussions around the prospect of importing stone by ship from Scotland or even Norway and transferring to dump barges for placement but the costs involved are likely to be prohibitive. Nevertheless there are advantages which may outweigh the impacts of large fleets of lorry movements and this needs to be assessed and informed by detailed design and consultation with the Highways Authority.

Initial research informed by actual experience of building the original access spit indicates that the most economical method of construction is end tipping locally sourced controlled fill with less than 10% fines to minimise sediment plumes. Local quarries have the resources to supply the stone and because the depth of the harbour is limited there are no major obstacles to this construction method using long reach excavators supplied by a well-managed fleet of delivery trucks.

Stena Line Ports Ltd also have plans for a major project in the inner harbour extending Salt Island hardstandings, creating vertical quay walls and re-claiming the old fish dock and Pellam Patch. It

would appear that this project intends to use dredgings to provide the core materials behind vertical sea walls although truck deliveries are also likely to be utilised for some elements. The cumulative traffic impact must be considered should these construction projects coincide.

Estimates of lorry movements to service an end tip construction project using locally sourced materials are in the region of one 20 tonne lorry every 15-20 minutes or so during normal working hours. In the first instance consultation with the local Highways Authority will be informed by reference to Guidelines for the Environmental Assessment of Road Traffic (GEART) and contractual conditions for managing the transportation of construction materials to be agreed with the Highways Authority. These will include operational conditions such as wheel cleaning, prevention of spillage, avoidance of rush hour times, avoidance of clashes with ferry movements, parking and waiting rules, out of hours working rules – and the like. The County Highways Department will determine whether a Traffic Impact Assessment will be required for the construction phase.

24 AIR QUALITY, NOISE AND VIBRATION

As a busy commercial port and railway with proximity to RAF Valley, noise and air pollution are already matters of concern. This project will impact on the most sensitive receptors particularly the residential areas south of the marina. Noise, vibration, dust and exhaust emissions generated by construction plant will have short term impacts and account must also be taken of the cumulative impact of these operations which may run in parallel with other construction projects in the locality. Potential impacts may also include disturbance to terrestrial and marine species.

Air pollution, noise and vibration are less likely to be of concern during the operational phase of this project even though there are likely to be more vessel movements, greater traffic flows and more deliveries to satellite enterprises. This locality is already exposed to the various sources of noise and disturbance associated with busy boatyard operations during normal working hours as well as harbour operations generally, ship movements, military aircraft, SAR helicopters, fog horns and sound signals.

The scope of assessment of this element of the scheme will depend on the methodology adopted guided by the consultant's detailed design. Hard-core and rock armour handling can generate considerable noise and dust during the construction phase of projects of this nature and measures may be required to mitigate these impacts.

It is noteworthy that the most sensitive receptors – the residential areas south of the marina beyond the top promenade and greens – are set well away from the marina site on higher ground. Prevailing south and west winds will, in general, dissipate noise and air pollution.

25 COASTAL DEFENCE AND FLOOD RISK

Holyhead Port and the surrounding coastline are within the NRW flood risk map and this project must be assessed with regard to projected sea level rises and climate change. The C2 Flood Zone Map indicates possible future flooding in the area of Porth- y- Felin adjacent to stream and river outfalls south of the marina site should sea levels rise.

DAMAGED REVETMENT DUE TO VIOLENT OVERTOPPING DURING STORM EMMA

The main breakwater protects a large proportion of the port and its coastal surroundings. Further defences include the promenade sea wall, groynes and quay walls. Without these defences Holyhead Harbour would be subjected to coastal flooding, storm surges and open coastal erosion so it is vital that these defences are maintained to cope with projected sea level rises and climate change. The new marina infrastructure could influence changes in wave heights and patterns of wave energy reflection within the great harbour and surrounding coastline that could alter the performance of existing coastal defences.

INNER FACE OF GREAT BREAKWATER DAMAGED DURING STORM EMMA

During Storm Emma the existing sea defences were subjected to unprecedented sea conditions and were damaged not only along the Newry promenade sea wall but also on the inner face of the great breakwater adjacent to the first steps north east beyond Soldiers Quay. Additionally the Storm damaged the marina's rock armour revetments on the east side of the access bridge as a result of violent over-topping. Surging waves even reached the slipway revetments on the western side of the boatyard demonstrating the destructive power of violent seas, tidal surges and hurricane force winds from the north east. Clearly the new harbour infrastructure will need to be designed to cater for these unprecedented conditions and projected climate change.

STORM EMMA: DAMAGE TO THE PROMENADE SEA WALL ON NEWRY WATERFRONT

Detailed design data for the new harbour infrastructure will be informed by the wave and flow modelling and coastal processes assessment using projected sea level rises and climate change data. Consultants will build this into the detailed design to ensure that the new harbour wall can cater for storm surges and sea level rises in the future.

Developments within Holyhead Port and its surrounding coastline lie within Flood Zone C2 and therefore it is likely that a Flood Consequence Assessment will be required in accordance with Planning Policy Wales TAN 15 – Development and Flood Risk. The detail and extent of the FCA will be informed by detailed consultation with Natural Resources Wales.

26 TOURISM AND RECREATION

Anglesey is a popular tourist destination primarily for its coastal resorts, beaches and scenery. The customer base is largely drawn from the major population centres around Manchester and Liverpool and of course from the two million or so passengers passing through the port every year travelling to or from Dublin. Also the Cruise Liner business is expanding – bringing thousands of tourists through Holyhead often with large numbers choosing to remain in Holyhead for their visit rather than choosing excursions to tourist attractions elsewhere in North Wales.

The marina site has proved to be a major attraction on Holyhead's waterfront. It is a link between the town itself and the Breakwater Country Park within the AONB. The mountain scenery and coastal path attract visitors throughout the year. The Isle of Anglesey Coastal Path is a public right of way running along the promenade around the heritage coastline towards South Stack, the RSPB Reserve and Breakwater Country Park with its information centre, café and public facilities.

People are drawn to the water's edge attracted by the hustle and bustle of the marine environment. The marina courtyard offers services and amenities with toilets, a café, restaurant and a chandlery. Boats attract people and the marina draws people from the town – passing the Maritime Museum at one end of the promenade – and a hub of colour and activity focussed on the boatyard, the RNLI Lifeboat shore base and the Sailing Club. The marina control office serves as a tourist information centre open seven days a week offering tourist guides, navigational and weather information as well as a meeting facility for those involved in marine activities.

Lifeboat open days, traditional boat festivals, regattas and parades of sail are focussed on the marina berthing facility drawing thousands to the promenade during festivals of sail. Visitors on passage staying for a few days account for substantial cash injections into the local economy. Records have confirmed up to 1000 visitor boat nights in a single busy summer month. The marina and boatyard contribute significantly to the visual impact of the harbour from both land and sea. The forest of masts and the ensemble of colour make a popular, vibrant destination.

Visitors arriving by boat are usually on passage using Holyhead as a perfect stopover en route to or from Ireland, the Isle of Man and the Scottish Islands. This customer group is international bringing large numbers of French, Swedish, German, Dutch and Irish sailors into the town. There are also noticeably more American and Canadian vessels on passage and more recently a marked rise in Polish and Eastern European vessels. The yachting fraternity is extremely well informed of the benefits of a tidally unrestricted harbour like Holyhead and serves to promote the facilities throughout the sailing world.

Holyhead Sailing Club and Holyhead Marina have been working together for many years jointly sponsoring sailing events and the OGA Traditional Boat Festival. The Club uses the pontoon to disembark passengers from their moorings area in certain weather conditions and the marina berths the Club launches free of charge. The Club regularly hosts Regattas and Cruises in Company bringing many people to the marina site.

OGA TRADITIONAL BOAT FESTIVAL AT HOLYHEAD MARINA

The destruction of the marina has disadvantaged Holyhead as a host harbour for many events. In particular the Irish Sea Offshore Racing Association (ISORA) has lost a significant facility for its racing fleets which previously started or finished in Holyhead. Fleets in excess of 30 vessels with respective entourage would regularly visit Holyhead. A recent article in "Ireland Afloat" stated:-

ISORA ambitions hang on repair of Welsh "central hub". It's been nine months since Storm Emma left Holyhead's waterfront "in bits" and despite government recovery funds, the marina's operator still alerts online visitors to the fact that it's "currently not in a position to offer all of its normal services".

All of which means that ISORA's ambitious 16-race calendar for 2019 remains a "draft "for the time being. Chairman Peter Ryan today tells Afloat's David O'Brien that he "underestimated Holyhead as a central hub for us on the Irish Sea", and plans for fleet growth depends on the 450 berth "nursery" getting up and running again…….

The loss of the marina has also lead to the cancellation of the OGA Traditional Boat Festival for the time being. Holyhead is the perfect sailing ship harbour for this event which draws thousands for the mock sea battles and parades of sail within metres of the Newry promenade. Shore side maritime activities, folk music and displays add to the event which has been running in Holyhead Harbour for over 10 years. Organisers are reviewing this event which Holyhead Marina sponsored by way of offering free berthing to traditional vessels attending the festival.

Angling vessels operate from the marina offering harbour tours, fishing trips and dive support for recreational divers. Bird watchers, anglers, climbers, walkers, kayakers, windsurfers and dinghy sailors frequent the waterfront in ever increasing numbers taking advantage of the shore side amenities and the safe clean water of the outer harbour.

Sailing Schools from Conwy, Pwllheli and the Menai Straits regularly use Holyhead Marina as a primary destination because of its unrestricted access. RYA approved sailing school vessels are major users of the port bringing enthusiastic learners to the safe water of the area via challenging tidal gates, perfect for training exercises. Additionally the generous fairways allow these training yachts to practice berthing techniques – a facility not readily available in the more crowded “locked in” marinas in the area.

During construction there may well be impacts on tourism with increased construction traffic, more vessel movements, noise, disturbance and visual disruption. However during the operational phase there is likely to be significant beneficial impact on tourism in the locality. The creation of a rubble mound harbour wall could effectively extend Holyhead’s waterfront experience by extending the promenade allowing pedestrians to experience the great harbour. Public access is considered to be one of the most significant advantages of a harbour of this type. There will of course be a significant change to the visual experience in this corner of the harbour and this has to be assessed in relation to the landscape/seascape impact and potential effects on the historical maritime infrastructure of the harbour and its setting.

There will be a substantial opportunity to increase the tourism offer in this locality not only with the raised demand, increased potential to host maritime events and improved waterfront experience but also to compound the European and International interest in this regionally significant harbour amongst the international yachting fraternity.

Holyhead Marina markets itself as the *Gateway to North Wales Sailing* and it is often overlooked that large numbers of international sailors only arrive by sea. The impression of Holyhead when approached from the sea often surprises visitors compared to the impression of the town when approached by road or rail. As a gateway into North Wales this project has the potential to make a significant difference to the tourism offer in this region and the perception of Holyhead as a tourist destination.

Visit Wales has taken over the functions of the former Wales Tourist board, an Assembly sponsored public body. The role of Visit Wales is to support the Welsh tourism industry, improve tourism in Wales and provide a strategic framework within which private enterprise can achieve sustainable growth and success, so improving the social and economic well-being of Wales. The mission of Visit Wales is to maximise tourism's contribution to the economic, social and cultural prosperity of Wales.

In 2015 the Welsh Government announced a 3 year plan, driven by Visit Wales, to promote Wales based on a series of annual themes. 2018 was the Year of the Sea. These themed years aim to grow a stronger, more defined brand for tourism in Wales, focus investment and innovation in tourism and drive an increase in visitor volume and value to Wales each year.

The new marina and permanent harbour wall will offer a significant opportunity to enhance what is already a popular destination. However it is important that there are no conflicts or detrimental impacts on the town's tourist offer and detailed consultation with Visit Wales will ensure that current and future facilities are balanced; and that resources do not create conflicts or negative impacts. Consultation will assist the assessment, identify the main issues and suggest mitigation.

In particular the Marina Company has identified the increasing demand for Tourist Information on the site. The marina reception has been acting as a major centre for tourist information for many years and the demand from passing tourists is increasing especially when cruise liners are visiting the town. Also there is an increasing demand for public toilets, disabled facilities and baby change amenities. These services have been provided by the Marina Company free of charge but there is a financial burden which could be alleviated by public support and improvements would improve the tourist offer in this locality.

27 INCLUSIVE ACCESS

The Welsh Government is committed to promoting social inclusion and enabling independent living for disabled people. Inclusive access ensures that everyone can get to, into and around developments, and take part in activities and services provided. Inclusive access is the end result of inclusive design combined with management, operation and maintenance: and positive well-trained staff.

Planners have a professional duty to act in the public interest, and that includes disabled people. Planning Authorities are required to promote inclusive access under the Equality Act as well as specifically in Planning requirements where they should consider the issue of accessibility for all, including the needs of people with sensory impairments, people with learning difficulties and people with mobility impairments such as wheelchair users, elderly people and people with young children, at an early stage in the design process. Planning Policy Wales states that planning should foster social inclusion by ensuring that full advantage is taken of the opportunities to secure a more accessible environment for everyone that the development of land and buildings provides.

The re-build of the marina pontoon berthing system behind the rubble mound harbour wall is required to cater for the disabled not just out of an obligation to comply with legislation but as an enterprise wishing to cater for a group of customers who will be active participants in boating and sailing. In this regard there will be detailed consultation with the RYA (Royal Yachting Association)

Wales with reference to the “All Afloat” campaign and the type of facilities necessary to cater for this user group. Detailed design will consider assisted access equipment, visual impairment, the elderly and a raft of possible design considerations which will make the marina a versatile platform for inclusive access to sailing activities.

The new rubble mound harbour wall itself is intended to allow full public access into the great harbour to maximise the waterside experience for all users. Security onto the marina pontoons will be managed by coded electronic gates at the bridgeheads allowing pedestrians to meander at will in reasonably safe surroundings to enjoy the waterside experience, fish or birdwatch, spectate or simply view the surroundings. This harbour wall will not only protect the marina from the increasing number of violent north easterly storms but will also provide an opportunity for the creation of a 500 metre extension of the promenade experience on the Holyhead waterfront.

Engagement with access and disability groups is considered to be an important part of the consultation and design process from the outset of this project. A full Design and Access Statement will be prepared based on feedback from such groups and consultation with the Planning Department of Anglesey County Council. Consultation feedback will allow disabled members of the local community to draw on personal experience of the area and suggest how the proposed development might affect potential users. Technical experts representing access and disability groups will be able to comment on best practice guidelines and raise awareness of any particular issues relating to the existing situation and the new proposals. Reference to the Good Practice Guidance Toolkit from the “Way to Go” project (Disability Wales) will be an essential guide in this process.

28 CONSULTATIONS AND PRESENTATIONS

There will be a number of formal consultations in the HRO application process including the following Consultees:-

- Natural Resources Wales
- Maritime and Coastguard Agency
- Trinity House – General Lighthouse Authority
- Marine Policy Branch (Welsh Government)
- Crown Estate
- Local Planning Authority
- Local Highways Authority
- Local Community Groups
- The Statutory Harbour Authority
- The Health and Safety Executive
- Marine Conservation Society
- Royal Society for the Protection of Birds
- The Centre for Environment, Fisheries and Aquaculture Science
- Inshore Fisheries Conservation Society
- Royal Yachting Association

- British Ports Association
- UK Major Ports Group
- UK Chamber of Shipping

Based on recommendations in the procedural guidance for Wales there have been a number of preliminary informal consultations which are outlined below together with a summary of the preliminary responses:-

1. WG PLANNING INSPECTORATE - Informal preliminary meeting with the Planning Inspectorate, Welsh Government – 5th December 2018 – coordinated by Gareth Harvey, Quality and Specialist Casework Manager and attended by Robert Sparey (Planning and Environment Manager), Isabel Nethell (Head of Service), Teresa Davies (Head of Decisions Branch Planning Directorate), Alan Groves (Decisions Branch, Planning Directorate) to discuss the general approach to HRO and the processes involved and exchange information on the current situation with regard to Stena Line Ports Ltd (the Statutory Harbour Authority) and their associated partners Conygar (Holyhead) Ltd. General discussion about the consenting process which has recently been devolved to Welsh Government so this application is likely to be one of the first in Wales. Query regarding whether or not the Marina had a "substantial interest" to warrant an HRO application. This was later confirmed by Mr Matt Edwards – Ports and Freight Policy Manager – that it would appear that the Marina would qualify under the "substantial interest" criteria set out in section 14 of the Harbours Act 1964 but this was an informal view subject to legal advice – but in outline the marina appears to qualify.
2. NATURAL RESOURCES WALES: MARINE LICENSING – exchange of letters December 2018 discussing a joint approach to EIA and issue of a single screening and scoping response to support a single ES. If a joint screening and scoping opinion from the Marine Licensing team under the Marine Works (EIA) Regulations as well as the Inspectorate under the Harbour Works (EIA) Regulations….. the marina will need to submit a screening and scoping request to both consenting authorities separately at the same time so that NRW can discuss whether collaboration possible at this stage due to potential variations in processes.
3. ANGLESEY COUNTY COUNCIL PLANNING DEPARTMENT - Informal preliminary discussions with the Chief Planning Officer, Isle of Anglesey County Council in the Council Offices, Llangefni on 21st November 2018. General discussion regarding the implications of an HRO, a Marine Construction Permit and a Planning application to build a solid harbour wall to protect Holyhead Marina from worsening weather systems. Sketches were presented and there was some discussion about formal pre-application procedures and EIA. Also in attendance area Planning Officer David Pryce Jones and Mr Dewi Lloyd – Regeneration Manager. Flood Risk Map discussed. Some discussion as to whether or not planning consent required as the project is mainly in the Harbour Authority's jurisdiction and also was pre-existing but the consensus was agreed that the harbour wall would effectively be an extension of the County of Anglesey and therefore Planning Consent required. With regard to cumulative impacts later exchange of letters (Feb 2019) with Chief Planning Officer discussing the status of the Outline Planning Consent granted to Conygar which has yet to address Reserved Matters and is almost time lapsed. The Chief Planning Officer is of the opinion that planning permission ref 19C1046A/EIA/ECON does not expire until Feb 2021 and advised that a section 73 application could be submitted effectively extending the permission and therefore cumulative impacts, in the opinion of the Chief Planning Officer, will need to be taken into account.

4. CONSULTATION PRESENTATION TO HOLYHEAD TOWN COUNCIL: 4TH FEBRUARY 2019 – preliminary presentation to Holyhead Town Council including a handout with sketch visuals for the purposes of informing the local community and obtaining feedback on the proposals. The following text was distributed to Members and the Town Clerk recorded the general content in the minutes: -

The purpose of this short presentation to the Town Council today is to inform local elected representatives of our community about the plans to re-build Holyhead Marina after its destruction last March by Storm Emma. As you are well aware this unprecedented weather system seriously damaged the promenade, the outer breakwater and the marina pontoons leading to the loss of some 80 vessels, release of polystyrene into the aquatic environment and causing a major economic setback for the local economy. Fortunately nobody was killed or injured in the disaster but the aftermath has been difficult despite positive support from the Welsh Government, the County Council and our elected representatives in Cardiff and Westminster.

The loss of the marina has seriously affected the local economy. Holyhead is the only true tidally unrestricted harbour in the region and demand for berthing is extremely high. Holyhead is strategically positioned with excellent transport links and perfect location to serve vessels on passage in the Irish Sea.

After the Storm the Company commissioned harbour experts to analyse the weather system which destroyed the pontoons. The conclusions were clear – global warming/climate change has caused an increase in extreme weather systems and it will not be possible to re-build the marina using floating breakwaters which cannot survive a repeat of such a storm. The harbour experts recommend that the only feasible way forward is to protect the marina lease area with a solid rubble mound harbour wall.

Holyhead Marina is still very much in business through its boatyard facility and temporary pontoon landing stage which will serve visitor demands while the re-build is organised. All the shore side infrastructure remains in place including car parking, showers, toilets, reception offices and marina amenities. The re-build plans represent a multi-million pound investment in the harbour and is eagerly awaited by an established customer base and the nationwide yachting fraternity.

This project looks ahead to a permanent safe harbour for Holyhead but the consenting process is complicated requiring a Harbour Revision Order from the Welsh Ministers, marine construction permits from Natural Resources Wales and a Planning permission from the County. All will require detailed assessment of the environmental implications of this type of permanent construction in the harbour and this process requires a consultation process not only with statutory consultees like the Harbour Authority and Trinity House but also with local community groups and elected local representatives.

Holyhead Town Council is considered to be the most important first consultee and it is for this reason that we are making this presentation today. We are aware of the blight and uncertainty caused by various speculative proposals on Holyhead's waterfront and around the Soldiers Point headland. These proposals are consented in Outline but nothing has happened in the many years of the Landlord's involvement with the harbour owners, Stena Line Ports Ltd. It has not been possible to encourage a more "joined up" approach by all the harbour users so it is Holyhead Marina's mission to proceed independently and with determination to re-build the marina within its established lease boundaries and build a 400 – 500 berth marina regardless of any other projects apparently on the table at this time.

What we would like to do today is to gauge Members' responses to our proposals and listen to any comments which can be integrated with the detail of our scheme as we progress the complicated consenting process.

We would ask that the Town Clerk minutes the general content of this consultation which will form part of a report to be submitted to the Welsh Ministers. It is therefore important that you speak freely and express any concerns you may have about our plans. For example if you hold strong views on whether or not public access should be allowed as an extension of the promenade, please say so. Also if you have any concerns about what the new harbour might look like against a backdrop of historical

assets and protected areas of natural beauty – please say so. Of equal importance is the natural environment – do you have any concerns about birds, marine mammals or fisheries?

We will circulate this presentation along with some maps, photographs and sketch impressions. Our policy will be openness and transparency so we will endeavour to answer any queries as best we can. We want to embark on this process with a view to making Holyhead Marina the premier destination in this sector of the Irish Sea, we want to protect and expand our business to create and protect jobs and we want businesses to prosper around us. Please feel free to help us develop the right sort of project for Holyhead without destroying existing assets and without unduly affecting the natural environment.

As representatives of the local community any comments, representations or ideas will be gratefully received and carefully considered in this process. Please see our contact details below.

The proposals were received warmly and the prospect of creating a publicly accessible extension of the promenade was welcomed. There was a general recognition of the economic importance of the facility on the local economy and the Council supported the principle of a re-build behind a permanent harbour wall. The meeting minutes are a matter of public record.

5. HOLYHEAD PORT USER GROUP – This group was established by, and is jointly chaired by both the Member of Parliament and the Assembly Member for Anglesey post Storm Emma. The Group has been meeting at approximately six month intervals to represent all port users in Holyhead. The purpose of the Group is to discuss initiatives, share information and make representations regarding the Port of Holyhead. The Port User Group includes both Town and County Council representatives, Holyhead Group, the Sailing Club, the Maritime Museum, Menter Mon, Morlais and Minesto tidal energy projects, shipping agents, angling businesses, the RNLI and the Harbour owners – Stena Line Ports Ltd and their partners – Conygar(Holyhead) Ltd. The meetings have focussed on port developments, wind and tidal energy projects and the aftermath of Storm Emma. Holyhead Marina has been part of this initiative since inception and continues to report and present progress in the re-build strategy taking on board the concerns and ambitions of all Port users.

6. WATERFRONT ACTION GROUP – This organisation was established to protect and preserve the Newry Beach waterfront against the landlord's proposals to build residential and commercial property along the waterfront of the Conservation Area and infill into the harbour to create a 500 berth marina displacing the beaches, promenade and Sailing Club moorings area. The Group has also expressed concerns about the loss of public amenity and the neglect of iconic listed buildings on the Soldiers Point headland owned by Conygar. Initial informal consultations with senior coordinators of this Group indicate a general level of support for the re-establishment of Holyhead Marina which existed in harmony with the established shore side development, the boatyard and the Sailing Club for many years. This organisation attempted to establish the Newry Waterfront as a "town/village green" but failed on technical and legal grounds. Nevertheless this Group is still active and firmly set to campaign against the waterfront development on behalf of the local community.

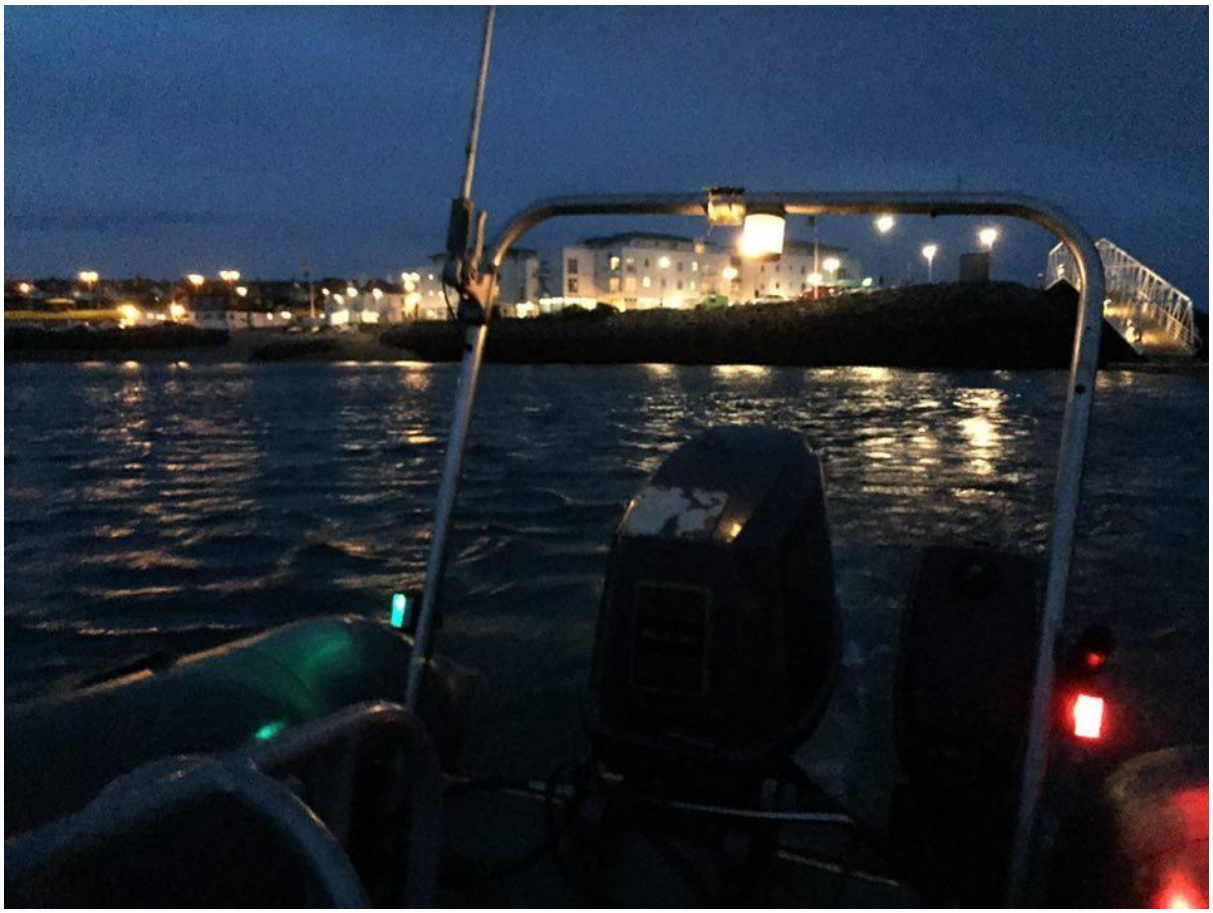
7. ROYAL NATIONAL LIFEBOAT INSTITUTION – Holyhead Marina and the RNLI have been working together for many years and share the old Trinity House site occupying the old lighthouse control house and ancillary building now used as the main crew station and inshore lifeboat house. Negotiations at an early stage in the development of Holyhead Marina lead to permanent property arrangements, shared fuel facilities and a permanent lifeboat pen on the marina for the Severn afloat lifeboat. Unfortunately the lifeboat pen was destroyed during Storm Emma but the operational boat had already been removed to the inner harbour for safety and continues to operate from the inner harbour albeit with difficulty due to its remoteness from the crew station and difficulties passing through port security. In June 2018 a meeting with the Senior Property Counsel of the RNLI resulted in temporary agreements for the disposal of broken pontoons from the lifeboat pen and agreements regarding the shared fuel tank. Later discussions confirmed RNLI interest in a continued relationship with Holyhead Marina for the afloat lifeboat qualified by the RNLI's latest property policy regarding infrastructure for lifeboats. The first is that the RNLI have long term security of tenure either by freehold of long lease. The second is that the RNLI have independence, meaning that the infrastructure is not physically dependent on others as it was in the original facility whereby the pen was an integral part of the F pier walkway. In other words the RNLI would probably require a separate pontoon with its own gangway so that they could operate independently (and privately) from the rest of the marina. Detailed design should be able to find a solution to this requirement and Holyhead Marina intends to continue this dialogue to find a long term solution for the RNLI afloat lifeboat adjacent to their established freehold crew station, souvenir shop and ILB base on the Trinity site.

8. SCHOOL OF OCEAN SCIENCES BANGOR UNIVERSITY – research continues into the presence of D.Vex growing on the remaining floating pontoon breakwaters and other structures within the harbour area. Scientists have suspended experimental plates below some of the pontoons and continue to monitor growth on a regular basis. Holyhead Marina has been formally approached for access to continue with this research and assist with access, radio communications and facilities for the research staff to safely carry out their work. The latest research project is to study the effect of light on the growth of D.Vex. Researchers are fixing apparatus onto one of the damaged breakwater pontoons powered by a solar panel. They will monitor and report the results of this experiment. Artificial light can influence the growth of some species and the feeding habits of fish like mullet which proliferate in marinas. It is possible that, for example, extended periods of fish feeding will influence the proliferation of INNS or even control it. Results may influence the design of artificial lighting used in marinas and docks. Research continues.

29 LIGHT POLLUTION

Light pollution is a significant problem when approaching harbours at night relying on navigational lights, leading lights and light signals. The backdrop of street lighting can present a confusing vista to navigators entering a port. Also street lighting uses energy, destroys night vision and can artificially confuse wildlife.

Clearly it is important that lighting design on the marina pontoons provides illumination sufficient to safely guide users to and from their vessels and this is a matter for careful detailed design in accordance with the latest recommendations in the various Codes of Practice. This will be a matter for engineers as the detail of the marina layout evolves using the latest energy saving techniques to provide glare free appropriate levels of light. There are also opportunities to use wind and solar energy.



Street lighting on the marina shore base car park (which will form the root of the new rubble mound breakwater) is already illuminated with street lights providing a general illumination for safe pedestrian access. The matter of public access along the roadway of the new rubble breakwater is likely to require some illumination particularly at bridgeheads and this needs careful consideration so that illumination is directed sensibly over the areas required. However the prospect of a line of street lights all along the length of the new breakwater roadway is likely to be unduly intrusive and confusing to approaching vessels. This would also be visually intrusive on the outlooks and vistas from the shore.

It is likely that consultations with disabled access groups will conclude that this matter should be given careful consideration so that visually impaired and able users can safely access the breakwater pathway at all reasonable times but without requiring constant bright lighting along its entire length. Apart from the obvious needs for specific directional lighting at gangways, notice boards and navigational lights there is no need for continuous lighting and users can safely rely on night vision to navigate the pathway safely given that there will be no shear drops on either side.

The Marina has been looking into photo luminescent products to mark pathways. These products gain solar charge during the day and glow through the night marking pedestrian routes. There are also products which mark tactile surfaces, step nosings, cycle tracks and evacuation routes. Photo luminescent polymers are encapsulated around glass beads to maximise solar charging and glow in the dark emission. Careful design should result in a safe and accessible pathway without creating a disturbing visual impact at night.

The School of Ocean Sciences continues its research into the effect of artificial light on the growth of invasive species and the feeding habits of fish using the remaining floating breakwater pontoons as a platform for solar powered apparatus to research the experiment – refer to the section on D.Vex in this report.

Light pollution issues will be addressed as part of the visual impact assessment which will be required by the consenting authorities.

30 CUMULATIVE AND IN-COMBINATION IMPACTS

This section addresses the need to consider other projects in the vicinity of the marina site which may have a combined impact. This assessment will be limited to plans and projects where there is sufficient information to consider the cumulative effects.

The approach to a Cumulative Impact Assessment will be agreed through consultation with the Planning Inspectorate, NRW and the County's Planning Department. The following projects are considered to be relevant in this process.

30.1 HOLYHEAD PORT EXPANSION: STENAL LINE PORTS LTD

Holyhead Port Expansion is a project to expand the Port through the reclamation of three areas to provide new berths and shore-side hardstanding on the eastern side of Salt Island and in the inner harbour. This project has three parts and a significant approach channel dredge.

Area A - comprises of a 340 metre quay wall and some 70,000 square metres of new port land on the east side of Salt Island. The vertical quay wall will contain the fill material which will be pumped from the dredge operation.

Area B - comprises of a 280 metre quay wall between the marine yard and Salt Island to contain some 25,000 square metres of new hardstanding formed by dredgings from the approach channel. This will involve a new culvert running under Salt Island Bridge, and a re-alignment of the roadway.

Area C - comprises of a new multi-purpose berth and wharf retaining some 17,000 square metres of new port land formed by dredgings pumped from the approach channel.

Approach Channel Dredge – an approach channel dredge to 9 metres below chart datum to create the appropriate depth for ferries and cruise liners.

This project is in the consenting stage for an HRO and Marine Construction Permit under the direction of consultants Royal Haskoning DHV who have presented an Environmental Scoping Report. While the environmental issues are extensive, especially in connection with marine ecology relating to the possible environmental impacts of the proposed dredge channel, it is unlikely to have any significant bearing on the proposal to re-build Holyhead Marina in the western sector of the outer harbour.

However there are matters which may need to be addressed if the construction projects coincide particularly relating to traffic movements in the town. Increased vessel movements and dredging activities at sea will be controlled by normal maritime operational measures – lights, signals, warnings, standard procedures and Notices to Mariners issued by Port Control in the day to day management of the port and its approaches.

30.2 HOLYHEAD WATERFRONT REGENERATION: CONYGAR (HOLYHEAD) LTD AND STENA LINE PORTS

This was originally a joint venture project between Stena Line Ports Ltd and Conygar Investment Company (now solely Conygar Ltd) who are proposing to build a mixed use marina development along the Newry waterfront and around the Soldiers Point headland overlooking Holyhead Marina. The Outline Planning permission dated 14/02/2014 refers to some 325 dwellings, a 500 berth marina and some 4,600 square metres of marine related retail, leisure and commercial space. The applicants have not yet submitted Reserved Matters information or made applications for Marine Permits or a Harbour Revision Order. However the permission does not expire until 14th February 2021 and the applicant could seek to submit an application under Section 73 of the 1990 Act. If granted under a Section 73 application this will effectively grant a new planning permission. Section 73 applications can extend the time limit of an existing permission, allow minor material

amendments or allow variation/removal of planning conditions. It is the Chief Planning Officer's view that cumulative impacts need to be taken into account.

Published Illustrative plans and supporting documents indicate the type of development envisaged with multi-storey apartment blocks along the Newry Waterfront and substantial reclaimed land extending into the harbour and around the Soldiers Point headland. The marina appears to be protected behind a solid breakwater wall, a part of which projects into the harbour adjacent to Mackenzie Pier with multi-storey apartments built along its length.

As this development has been approved in principle by the County Council it must be assessed for its cumulative impacts in relation to the rebuild of Holyhead Marina. However as previously stated, Conygar (Holyhead) Ltd do not yet appear to be in a position to provide detail apart from the illustrative drawings noted above. In correspondence with the Landlord's representative in August 2018, they stated that '[Holyhead Marina] should work with your consultant to ascertain the best solution for your marina which can then be put forward to the Landlords for review…Our client (Conygar Holyhead Ltd) will then provide your marina information to their consultants to ensure the future development is done in a way which is sympathetic to your existing development.'

There clearly are matters between the two projects that will need to be considered for their cumulative impact including infrastructure support, visual impact and impacts on the sea defences, habitats and waterfront amenities. Holyhead Marina will continue to engage with the Landlord through this development to ensure that any information that becomes available is considered.

30.3 HOLYHEAD BREAKWATER REFURBISHMENT SCHEME

In March 2019, consultants Royal Haskoning DHV held a public event in Holyhead Town Hall to gather public feedback on proposals to repair the great breakwater.

In 2017 the Isle of Anglesey County Council with the support of Welsh Government and Stena Line Ports Ltd undertook an Outline Business Case to develop options for the refurbishment of the breakwater.

The consultation refers to the need for maintenance of the rubble mound foundation which could lead to undermining within 15 years resulting in total failure. A cost effective sustainable solution is sought and the public are being asked for input.

This has been a controversial issue in this town for many years. This listed structure is a vital sea defence and it clearly belongs to and is the responsibility of Stena Line Ports Ltd – the harbour owners and the Statutory Harbour Authority. The inner face of the breakwater was damaged during Storm Emma and has since been repaired. However there are signs of undermining, hollowing and bowing probably relating to undermining due to lack of maintenance on the seaward side which should have been constantly protected by the placing of rock armour on the rubble mound revetment. British Rail used to have a constant maintenance programme placing rock armour on the seaward revetment. While some maintenance has been carried out the scale of maintenance operations since the sale of the port has clearly been inadequate.

It is important that the new proposals to protect Holyhead Marina do not jeopardise plans for the proper maintenance and continued performance of the great breakwater. There will need to be an assessment of the planned maintenance/improvement taking account of the marina's rubble mound structure. It is likely that the new structure will assist with the dissipation of reflected wave energy in the proximity of Soldiers Quay but engineers will need to model this to ensure that this assumption is correct. In this regard there will be detailed consultation with Royal Haskoning and the Statutory Harbour Authority as the detail of both projects evolves.

30.4 WEST ANGLESEY TIDAL DEMONSTRATION ZONE – MORLAIS

Morlais is a Menter Mon project which aims to benefit local communities, the economy and the environment through low carbon electricity generation. An area of some 35 square kilometres immediately west of Holy Island known as the West Anglesey Demonstration Zone has been allocated for the purposes of research and development in the field of tidal energy generation. This project is in the consenting and public consultation stage.

Subject to consents there will be tidal energy converters, seabed cables and hubs connecting groups of tidal energy converters together into arrays. Onshore there will be a landfall substation, underground power cables and a connection the national grid.

This project could have a significant impact on Holyhead harbour in that there will be demand for support vessels and harbour resources during the construction and operation of these tidal generators. It is therefore important that there is detailed consultation with Morlais Marine Energy to identify conflicts, impacts and requirements for support vessels so that the opportunities in the tidal energy sector fully benefit the local economy.

30.5 MINESTO

This is a prototype tidal energy project already underway and Holyhead Marina is already providing services for the support vessel *Lynas Shuttle* which works from the marina's landing stage during fair weather and then returns to its home port of Amlwch when non-operational.

In June 2014 Minesto was awarded an Agreement for Lease by the Crown Estate for a 10MW installation in Holyhead Deep. Holyhead Deep is the name of a large depression in the seabed located west of Anglesey. The tidal streams here are perfect for this project and Holyhead port can offer support.

Prototype testing and EIA scoping is underway. Minesto is collaborating with Morlais Marine Energy, manager of the West Anglesey Demonstration Zone nearby to jointly develop grid and cable infrastructure.

The vision of the Holyhead Deep project is to contribute to the transition from fossil fuels to renewable energy, making Wales and the UK a global leader in sustainable resources. The investment linked to building, commissioning and operating the first commercial Deep Green array will also make a significant contribution to local employment opportunities and long-term growth in Anglesey. Holyhead Marina is already serving this project in a small way but there are increasing opportunities to support this project offering berthing and shore side amenities for support vessels.

MINESTO TIDAL ENERGY WORKS ON SOLDIERS QUAY

31 CONCLUSIONS

This report has attempted to summarise the relevant matters which need to be addressed in the re-building of Holyhead Marina following its destruction in March 2018. The report emphasises the economic and strategic importance of a permanent tidally unrestricted harbour for recreational and small commercial vessels in this important harbour. The report also emphasises the opportunities to compound and improve the significant tourism offer already established and proven over some 18 years of successful operation. The re-build will create a significant gateway into North Wales, it will integrate well with the existing fabric of the town and it will generate substantial economic opportunities for satellite businesses.

This proposal accepts the importance of a sustainable and environmentally harmonious re-build strategy respecting the aquatic and terrestrial environment around it, adding to the cultural richness of the locality and catering for the wellbeing of future generations by adapting to the challenges of climate change.

With a policy of openness and transparency, albeit somewhat hindered by the commercial pressures of running a small business within a privately owned harbour, this project looks beyond this small business tenancy to a permanent safe refuge within Holyhead's great harbour for the benefit of the local community and the region generally. A re-built marina protected by a solid harbour wall will become one of the most desirable berthing locations in the Irish Sea and, based on feedback already filtering through the yachting fraternity, can expect a year round occupancy rate of 75 – 80%. The business model is sound but time sensitive. The Consenting Authorities are urged to consider this in their assessment of the scope of work required to authorise this project.

G.C.Garrod Architect on behalf of Holyhead Marina Ltd

June 2019