MWP

REMEDIAL ENVIRONMENTAL IMPACT ASSESSMENT Report (rEIAR)

Ros an Mhíl Deep Water Quay

Chapter 2: Project Description

Department of Agriculture, Food and the Marine

October 2025

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MWP, Engineering and Environmental Consultants
Address: Reen Point, Blennerville, Tralee, Co. Kerry, V92 X2TK, Ireland

www.mwp.ie

2. Project Description

2.1 Introduction

This chapter of the remedial Environmental Impact Assessment Report (rEIAR) describes and presents information on the development for which substitute consent is being sought (hereafter referred to as the Development). This comprises development undertaken on the Application Site from 11th July 2023 to 20th May 2024. However, for completeness the rEIAR will assess all the previous works before 10th July 2023. The purpose is to present an appropriate level of detail to form the basis for the remedial environmental impact assessment, including the cumulative impacts.

The details of the previously permitted development and the extent of same completed prior to 10th July 2023 is set out in Section 2.3.2. Details of the development which was undertaken between 11th July 2023 and 20th May 2024 is outline in Section 2.3.3.

2.2 Development Site and Location

Ros an Mhíl Harbour is located on the north-east shore of Cashla Bay near the village of Ros an Mhíl in Connemara, approximately 40 kilometres to the west of Galway city, within the functional area of Galway County Council. Ros an Mhíl is connected to Galway and the national primary road network via the regional R336 and R372 roads. The R336 / R372 provides a reasonable, albeit low capacity, highway route connecting Ros an Mhíl to Galway and the rest of the country.

Ros an Mhíl village is located approximately 1km from the harbour. A number of residential dwellings, a local shop, a school, and a church are located within the village. Throughout the surrounding area there are a few localised industries making use of the harbour facilities. These include fish processing, net repairs, boat repairs and diesel and oil supply companies. These industries are dependent on the continued operation of Ros an Mhíl Harbour.

Ros an Mhíl Harbour is primarily a fishing port and serves the Irish and foreign fishing fleet that operates off the coast of Galway. It lies between the major fishing ports of Killybegs to the north and Dingle and Castletownbere to the south. It can accommodate vessels up to approximately 5m draught.

The inner harbour is positioned on the north-east shore of upper Cashla Bay and is well sheltered. The existing harbour currently comprises two piers, known as Piers 1 and 2, along with a dedicated passenger ferry terminal and a small craft harbour. Pier 2 is the more recent development of the two piers. The disposition of these piers is such that they create an approximately rectangular shaped basin at the centre of the harbour.

Údarás na Gaeltachta have invested in basic infrastructure in the harbour area. To date the investment has taken the form of two commercial buildings; service roads, wastewater treatment plant and a slipway. The commercial units are leased to private tenants. Other employers operating in the Harbour area include Bord Iascaigh Mhara (BIM) who operate an Ice Plant; and Iasc Mara Teoranta who operate a pelagic fish (mainly mackerel and herring) processing facility.

The location of the application site within Ros an Mhíl habour is shown on Figure 2-1.

Figure 2-2 provides an aerial view of the development site prior to any work on the deep water quay being undertaken. Figure 2-3 provides an aerial view of the development site today.

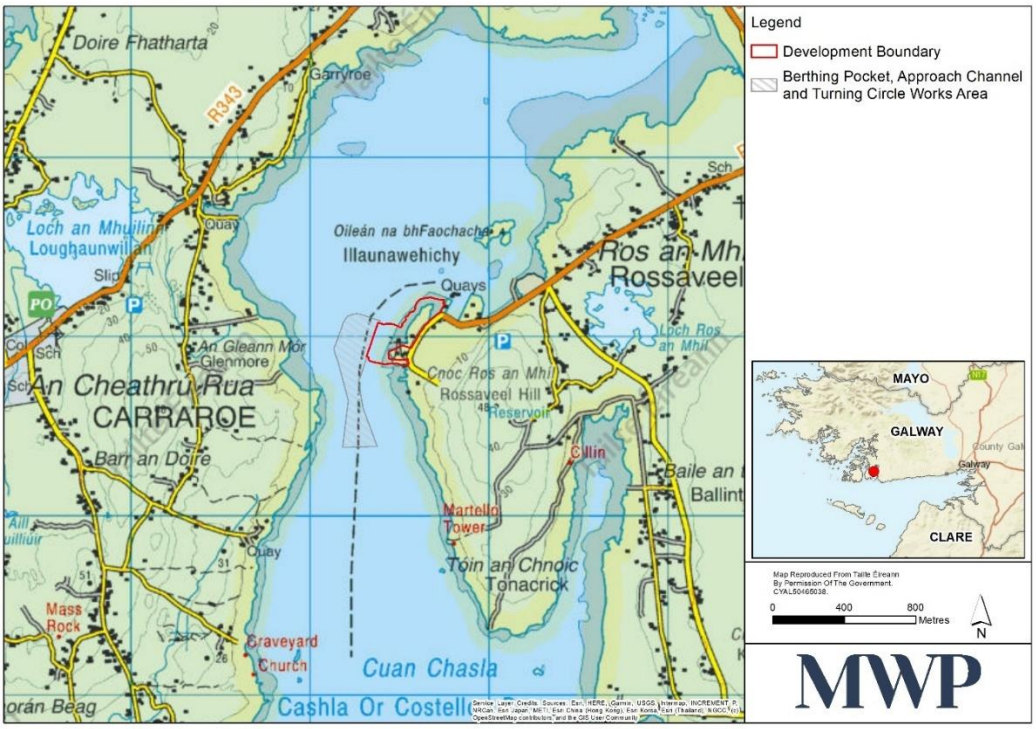


Figure 2-1: Location of the Development site at Ros an Mhíl

Figure 2-2: Photograph showing view of the development site in February 2021 (prior to any works for the Deep Water Quay Development). (Source Google Earth Pro)

Figure 2-3 Aerial View of the development site March 2025 (Source Google Earth Pro)

2.3 Project Summary

2.3.1 Permitted Development (Pl Ref 17/967)

Planning permission for a new Deep Water Quay development at Ros an Mhíl was granted by Galway County Council on 2nd April 2018. (Planning Ref 17/967). The permitted Deep Water Quay Development included the following main elements:

- Construction of a new 200m long quay wall structure, with a concrete slab finish
- Land reclamation area of circa 2.4 hectares behind the quay wall
- Low concrete sea walls and rock armour revetments along the northern and southern boundaries of the development
- Dredging of a 30m wide x 200m long berthing pocket adjacent to the new quay to a depth of -12.0m Chart Datum
- Dredging of a Navigation Channel and 200m diameter Turning Circle to a depth of -8.0m Chart Datum
- Provision of access road, lighting, drainage infrastructure, water & electrical services
- Ancillary security and access arrangements for Quay Facilities including palisade fencing, roadside guard rails, gates and traffic barrier.

The proposed deep-water quay was to comprise a vertical faced concrete structure constructed using caissons. The quay would provide 200m of outside berthing frontage, with a minimum alongside depth of -12m provided by a 30m wide x 200m long pocket directly adjacent to the quay, dredged to a depth of -12m Chart Datum (mCD).

The planning application site boundary of Planning Ref 17/967 is shown in red on **Figure 2-4** along with the temporary works area (see hatched area in **Figure 2-4**) for the approach channel, turning circle and berthing pocket. This includes all the land to be reclaimed, the proposed quay wall and berthing pocket (-12m CD dredged pocket), and the proposed vessel approach channel and turning circle of 200m diameter to be dredged to a depth of -8mCD.

The approach channel was kept relatively narrow to minimise the wave activity at the berth. With a width of just over 4.25 times the beam of the design ship, this is considered adequate for single way traffic. Because of its proximity to the turning area, two-way traffic is neither needed nor desirable. The quay location is well sheltered, and so waves are unlikely to present any problem to manoeuvres, particularly as the wave climate is minimised by the relatively narrow entrance to the turning area. The spatial dimensions of the previously permitted development, such as the quay length, dredge depth, and dredge layout (i.e. size of turning area and shape/extent of dredge channel) were established by the preliminary engineering design work for the project.

In addition, the provision of a deeper berthing pocket in front of the quay would facilitate the tidal arrival and departure of deeper draught vessels which cannot currently be accommodated in the existing harbour. The berthing frontage was planned to be suitable for vessels berthing directly alongside, though double berthing of vessels may also occur. It is envisaged that fendering on the outside berth would be arch fenders at an appropriate spacing (e.g. approx. 4.5m).

If necessary, fendering could be supplemented with removable floating fenders for occasional calls by larger vessels. The surface of the deep-water quay would be a 36m wide x 200m long open area with a concrete slab finish as is typical for quays of this nature. A 200mm high toe rail would be constructed around the perimeter of the quay. Mooring bollards would also be installed along the quay wall.

Low concrete sea walls would be constructed along the northern and southern boundaries of the development to mitigate wave overtopping of the quay surface. It is estimated that the height of the sea walls would be in the range 0.5m to 1.5m above the finished surface level of the quay.

Figure 2-5 provides a photomontage of the fully developed proposed Ros an Mhíl Deep Water Quay.

Figure 2-4: 2017 Development Application Planning Boundary (red) and approach channel, turning circle and berthing pocket

Figure 2-5: Computer Generated Image of proposed Ros an Mhíl Deep Water Quay development.

2.3.2 Overview of Works undertaken between January 2023 and 10 July 2023

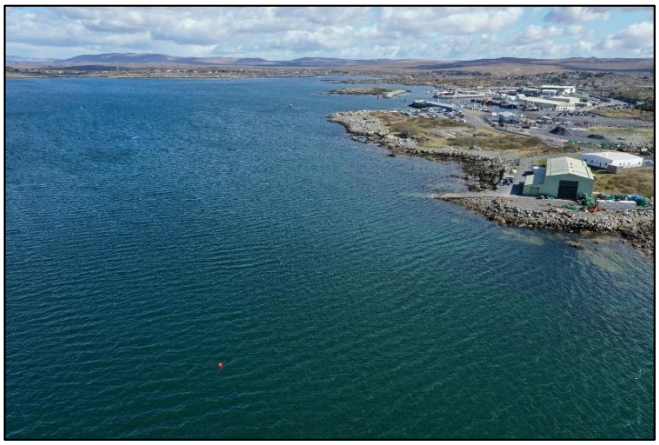
The first phase of the Deep Water Quay construction from 26th January 2023 to 10th July 2023 took place during the appropriate period of permission Planning Ref. 17/967. It included the following works:

1. Mobilisation and development of construction compound and facilities.
2. Reclamation: importing rock fill material to increase the existing ground level to the high-water level and to fill the marine area behind the proposed quay wall (east side) to create a construction surface to the level of +5mCD
3. Rock Armour for revetments (35%).
4. Drilling and blasting of 15% of the proposed quay wall trench and berthing pocket (2 blast events).
5. Off-site construction of 45 pre-cast concrete caissons.

On the basis of the foregoing, prior to the end of the appropriate period or "life" of the permission on 10th July 2023, significant works had been completed. Approximately 90% of the 2.4 hectares reclamation was complete and 15% of the rock blasting in the middle of the berthing pocket and quay wall trench was complete (see **Figure 2-5).**

The reclamation involved the use of imported engineering fill material transported from local quarries to the site, tipping from the lorries and use of excavators to place and level the material. The approximate quantity placed is 390,000 tonnes of stone.

Site Status Pre-Commencement



Site Status 10th July 2023

Figure 2-6: Photographs of development site showing status pre commencement and status on 10th July 2023

2.3.3 Overview of Works undertaken between 11th July 2023 and 20th May 2024

The works carried out between 11th July 2023 to 20th May 2024 for which substitute consent is being applied for are summarised below. As set out in **Section 1.3** of **Volume II Chapter 1** Introduction of this rEIAR, the works which took place during this period were understood by DAFM to be permitted by reason of a permission (Planning Ref. 23/218) for the extension of duration of Planning Ref. 17/967. These works were:

1. Completion of Reclamation area by placing engineering fill material into a remaining area of 0.12 ha within the middle of the reclaimed lands.
2. Creation of a temporary protective berm around the quay wall trench. This is a temporary structure needed for the construction of the quay wall.
3. Drilling and blasting of the remaining 85% (18 blast events) of quay wall trench and berthing pocket was completed along with a small circular area in the channel adjacent to the berthing pocket (See **Figure 2-6**).
4. Dredging of rock in quay wall trench (50m long).
5. Filling and dredging the blasting platforms in berthing pocket.
6. Installation of Concrete Batching plant.
7. Installation of 48m of quay wall foundations.

The area of drilling and blasting for the quay wall and berthing area undertaken is indicated in purple in **Figure 2-7**. The relevant Planning Drawings of these works are 24984-XX-DR-MWP-CE-5010, 24984-XX-DR-MWP-CE-5011, 24984-XX-DR-MWP-CE-5012 and 24984-XX-DR-MWP-CE-5013.

Figure 2-7: Map indicating the development works area, including the reclamation area, the blasting and dredging areas, the berm construction areas and rock armour placed undertaken between Jan 2023 and May 2024.

The delivery of the caissons to site at Ros an Mhíl commenced in November 2023 and by end of Jan 2024 a total of 92 units had been delivered. These units were removed from the site back to the manufacturers plant when works were suspended

A total of 121 No. L-Wall units were fabricated during this period and these are stored at Banagher Concrete, awaiting transport as and when required on site. Two were delivered to site during this period.

When works were suspended in May 2024 (see **Figure 2-8**), all the contractor's equipment, facilities and materials were removed from site. The caissons and beams that had been delivered but not installed were returned to the manufacturer. This removal process took place between 20th May – 29th Oct 2024. A photograph of the final cleared site is provided in **Figure 2-9**.

Figure 2-8: Site Status on 20th May 2024 when the works ceased.

Figure 2-9: Status of site on 29th October 2024.

2.3.4 Future Works required for completion of Deep Water Quay

In order to complete the Deep Water Quay development DAFM intends to make a further application to ACP under Section 37L of the Planning and Development Act 2000 as amended for the outstanding works necessary to complete the Deep Water Quay development. In brief these works will comprise the follows:

[1] works to complete a Deep Water Quay development as previously permitted by Galway County Council under Planning Ref 17/967 comprising**:**

(i) completion of a 200m Quay wall construction using precast beams, precast cassions and precast L-wall units to full height of the quay wall;

(ii) Dredging of a 30m wide x 200m long berthing pocket adjacent to the new quay to a depth of -10.0m CD (previously permitted to -12.0m CD);

(iii) Dredging for turning circle of 150m diameter (previously permitted at 200m diameter);

(iv) Backfilling behind the quay wall and raising ground level of reclaimed lands using rockfill up to +7mCD;

(v) Reinforced concrete deck behind the quay wall;

(vi) Surfacing of the reclaimed lands;

(vii) Asphalt roadway connecting the concrete apron at the quayside to the existing road;

(viii) Install lighting columns, underground ducts, surface water drainage, outfalls, interceptor, foul water drainage system including pumping station;

(ix) Placement of rock armour for revetments along northern and southern extent of reclaimed land;

(x) Excavation by dredging and rock blasting (if required) of the navigation channel to provide for a fully dredged navigation channel of -7m CD and minimum width of 100m (previously permitted to -8.0m CD and minimum width of 74m);

(xi) A temporary site compound for contractor personnel;

(xii) A temporary concrete batching plant to provide on-site mass concrete for the quay wall construction;

(xiii) Install palisade fencing, roadside guard rails, gates and traffic barrier around land boundary of quay area;

and

[2] Further development comprising:

(i) A wastewater pipeline to connect proposed wastewater discharge points along the proposed quay to an existing pumping station for onward discharge to an Údarás na Gaeltachta wastewater treatment network and plant at Ros an Mhíl; and

(ii) A new ESB electrical sub-station for dedicated power provision to the new deep-water quay

2.4 Description of Construction Activities

2.4.1 Reclamation:

The construction of the deep water quay as previously permitted under Planning Ref. 17/967 included the reclamation of a new area of land along the existing shoreline. This was achieved through the importation and use of engineering fill material to raise the ground level of the existing sea bed to the high-water mark (+5mCD). This involved transport of material from local quarries to the site, tipping from the lorries and use of excavators to place and level the material. The approximate quantity placed was 390,000 tonnes (or 200,000m^3) of stone.

Figure 2-10 Provides a photograph of the development site in July 2023 when Planning Ref. 17/967 expired. The reclamation work was largely completed then to a level of +5mCD (with the exception of a remaining area of 0.12ha within the centre of the reclaimed lands). Also the first three temporary blasting platforms for the quay wall trench and berthing pocket had been constructed and the drilling and blasting was completed on two of the three platforms. The only additional reclamation works undertaken during the works period for which substitute consent is being sought was the filling of the remaining hole in the centre of the reclamation area shown in Figure 2-10.

Figure 2-10: Photograph of the development site on the 10th July 2023 indicating the reclaimed area when the 2017 planning permission expired.

2.4.2 Temporary protective Rock Berm

In order to create a safe working environment for the construction of the quay wall, a temporary protective rock berm north, south and west of the proposed quay wall was constructed. Figure 2-11 provides a photograph of this temporary protective berm around the quay wall trench. The quay wall trench is located in the middle of the lagoon within the berm. The berm structure is needed temporarily to facilitate the construction of the quay wall. Imported rock from local quarries was used to construct the northern and southern berms and dredged rock from the blasting areas was used to construct the remainder (west side) of the protective berm.

Figure 2-11: Site Status on 14 May 2024 when the presumed lawful works ceased.

2.4.3 Drilling and Blasting

At the time of the 2017 planning application, the anticipated method for removing rock for the quay wall trench and berthing pocket was to use a jack-up pontoon to undertake the drilling and blasting works. However, the appointed contractor considered that the use of a Jack Up Pontoon was not the best practicable environmental option or most efficient method to use to remove the rock. An alternative method was developed. The method adopted was to fill the marine area above each section of the quay wall trench and berthing pocket with rockfill up to the high water level to create a blasting platform. The drilling and blasting of the quay wall trench was undertaken in segments (see Figure 2-12). Each segment to be blasted was first filled with rock to the high-water level and then holes at 2.5m cc were drilled into the fill material and bedrock to 2.5m below the required depth of the quay wall foundations level. These holes were then filled with casings and explosives and blasted (see Figure 2-13). The dredged rock was then removed with excavators and used to construct a platform for the next segment to be blasted.

Figure 2-12 shows the sequential process of constructing the blasting platforms, blasting and dredging the quay wall trench and berthing pocket from start to finish. Each blasting platform (finger) was c40m long and c10m wide. While the first three fingers in the middle of the trench were constructed together with imported rock, the remaining fingers were constructed individually using the rock material that was previously used as a blasting platform. To facilitate the efficient used of materials and machinery, the blasting started in the middle of the proposed quay wall (see Figure 2-14) and thereafter progressed in a sequence of constructed fingers that alternated between the north and south sides of the centre of the trench, gradually progressing to the ends of the quay wall trench (see Figures 2-15 to 2-18).

After each blast, the temporary blasting platform was removed and used to construct the next platform. Drilling was carried out using drilling rigs operating on top of the (temporary) blasting platforms (see Figure 2-19). The drilling equipment specifications was a DT145 Drilling unit: Hydraulic pressure 280 bar. The detailed best practice procedures followed in undertaking each series of blasts is outlined in section 12 of the Contractor's Method Statement (see Volume III Appendix 2A of this rEIAR).

Three (3 No.) drilling and blasting platforms (of a total 20 No.) were constructed prior to 10th July 2023, of which two (2 No.) were drilled and blasted. The remaining 18 No. drilling and blasting events which were undertaken between 11th July 2023 and 20th May 2024 comprise works for which substitute consent is sought.

Explosives were used for blasting with varying numbers of explosives required per blast as the number of blast holes varied per location. The following specifications reflect one such blast which consisted of 108 holes at average depths of 17m:

- Explosives: Kemex 70, Detonators: U500 x 21.0m, SL 17ms x 7.8ms
- Boosters 250g: SL 25ms x 7.8m, SL 42ms x 7.8m
- Estimated Blast Tonnage: 30,983t
- Total explosive charge: 5,244kg

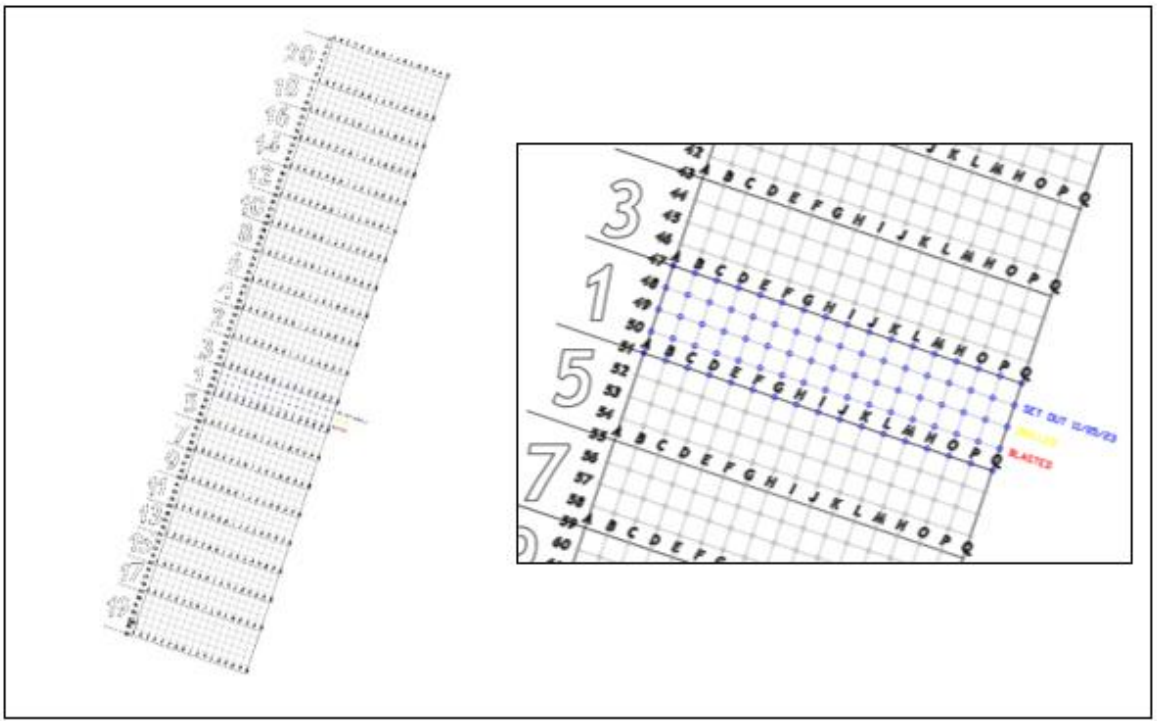


Figure 2-12: Blasting sequence for Quay wall trench and berthing pocket.

Figure 2-13: Photograph of a platform blasting event.

Figure 2-14: Southern protective berm with initial 3 blasting platforms in the middle of the quay wall trench on 12 July 2023.

Figure 2-15: Construction of blasting platform 5 on 18th July 2023.

Figure 2-16: Construction of two blasting platforms on 26th Sept 2023.

Figure 2-17: Progress with blasting platforms on 11 Oct 2023.

Figure 2-18: Quay wall trench and protective berm on 20th March 2024.

Figure 2-19: Drilling Rig used to drill the blasting holes.

2.4.4 Dredging

The dredging of the blasted rock began just after the 11th July 2023 using excavators on the platform and/or on floating pontoons. The dredged rock was used to create each new blasting platform and the protective temporary berm on the sea (west) side of the quay wall trench (see Figure 2-20). All the dredged material was rock rather than sand or silt. These works are subject of the substitute consent application.

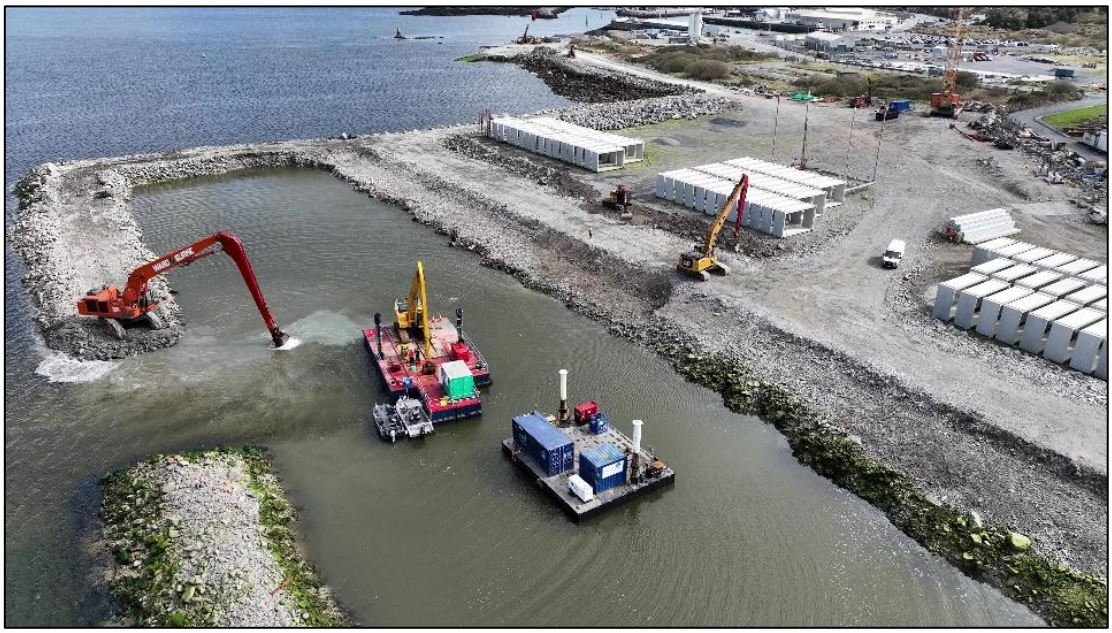


Figure 2-20: Photograph showing use of excavators on the protective berm and on floating pontoons in the constructed lagoon.

2.4.5 Construction of the Quay wall Foundations

Once the blasting of the quay wall trench was completed, the process of laying the foundations of the quay wall commenced. These works were undertaken between 11th July 2023 and 20th May 2024 and comprise development subject of the substitute consent application.

These foundations consisted of precast reinforced concrete ground beams (12m long x 0.35m wide x 0.5m high) placed along front and rear lines of the previously permitted quay wall. The pre-cast concrete beams for the quay wall had been constructed off-site and were delivered.

Figure 2-21 illustrates how caissons are placed on top of the foundation beams. The foundation beams are lowered into the quay wall trench using land-based cranes and a levelling frame designed specially to lower the beams into position. Figure 2-22 shows this lowering frame with two beams attached before it was lowered into the quay wall trench. This frame has four adjustable hydraulic legs, which, once lowered into the trench and sitting on the bed, are adjusted to level the beams and frame to the correct level for the foundations of the Quay wall. The top of the foundation beams need to be at a level of minus 10m Chart Datum on the 200m long front wall of quay and at minus 4.74mcd on the return walls of the quay. Once correctly positioned, divers direct liquid concrete delivered via a Tremie Pipe (see Figure 2-23) to surround the concrete beams to hold them in position and ensure their stability and proper bearing. Once concreted into position, and after allowing sufficient time for the concrete to cure, the frame operator releases the beams, and proceeds with the installation of the next set of beams.

During the period 11th July 2023 and 20th May 2024, 48m (24 %) of the front quay wall foundations (8 foundation beams) were installed. The rest are yet to be installed.

Figure 2-21: Photograph showing the (7m x 4mx 2m) concrete caisson boxes being positioned on precast concrete foundation beams positioned on the ground during a field trial on land.

Figure 2-22: Bespoke frame used to accurately lower and position the foundation beams for the quay wall in the trench.

Figure 2-23: Liquid concrete being delivered via Tremie Pipe and directed by underwater divers to surround and hold the foundation beams in place.

2.4.6 Mobilisation and Construction Compound and Facilities

A temporary contractors compound was located in the northern corner of the project site adjacent to the existing Ros an Mhíl harbour facilities in a surfaced area previously used for parking (see Figures 2-24 to 2-26). This site included temporary site offices (Portacabins), staff welfare facilities and car parking, and equipment lay down areas.

Office compound welfare facilities were connected to a waste-water holding tank installed for the duration of the construction works and removed thereafter. The waste water holding tank was emptied as required and effluent disposed of at a municipal WWTP.

The compound was put in place prior to the expiration of the appropriate period of Planning Ref. 17/967 and remained in place and operational during the period 11th July 2023 and 20th May 2024 and therefore falls within the scope of the substitute consent application.

Figure 2-24: Layout for the Construction Compound Facilities at the northern end of the proposed development site.

Figure 2-25: Photograph on the 14th Dec 2023 View of Compound, Concrete Batching Plant, Aggregate Storage Areas in foreground with works area in background.

Figure 2-26: Photograph of the Construction compound with offices, storage and parking areas.

2.4.7 Concrete Batching Plant

A project specific ready-mix concrete batching plant also formed part of the construction facilities provided on site (see Figure 2-27) during the substitute consent period 11th July 2023 and 20th May 2024. A concrete base for the plant was constructed in September 2023 and the batching plant was installed in October 2023. This plant

was used to provide concrete for the construction of the quay wall foundations. When the construction works ceased in May 2024, the batching plant was removed from site.

Storage areas for the construction materials and supplies for the concrete production plant were located adjacent to the construction compound (see Figure 2-28).

Figure 2-27: Photograph of the mobile Concrete Batching Plant and water storage tank.

Figure 2-28: Storage areas for the construction materials and supplies for the concrete production plant adjacent to the construction compound.

2.4.8 Material Quantities for Construction

Table 2-1 provides a summary of the quantity and volumes of materials used for the construction of the Ros an Mhíl deep water quay. This is divided up into the two construction periods, namely:

1. January to July 2023 (the previously permitted construction works)
2. July 2023 to May 2024 (the works subject of application for substitute consent)

Table 2-1: Volumes of materials used for the construction of the harbour during the two construction periods.

Materials	Jan-July 2023	July 2023 – May 2024
Pre-cast concrete Caissons	45 manufactured off site	313 manufactured and placed in storage off site 92 delivered to site and later removed to off-site storage .
Pre-cast concrete L-shaped blocks	none	All 121 manufactured and in storage off site apart from two delivered to site.
Pre-cast concrete Foundation Beams	none	48 delivered to site and 8 installed.
Rock Armour (1-2 tonne rocks)	110m 2090cum	1322cum imported and subsequently removed from site
Protective Rock Berm/Bund	none	200m and enclosing ends Total Vol of rockfill in berm is 90,000cum. 33% sourced from on-site blasting of berthing pocket and quay wall foundations. 67% imported material
Rock fill (imported)	390,000 tons (200,000m^3) imported	On-site blasted rock used, dredged and reused as fill. 2,765cum (4700 tonnes) (205 truck loads) imported
Concrete making materials (sand, gravel, cement, etc)	none	400cum imported, 210cum removed off site 190cum used
Wet concrete	none	190cum used to lock the 8 quay wall foundation beams in place
Explosives	Blasting of 12.5 % of berthing pocket plus quay wall foundations. Approx. 200 drill holes.	Blasting of 87.5 % of berthing pocket plus quay wall foundations. Approx. 1400 drill holes
Gravel for surfaces	none	none
Use of dredged rock material		For blasting platforms and protective berm/bund
Use of sand and gravel dredged material.	none	none

2.4.9 Construction Working Hours

Normal working hours during the construction period were Monday to Friday 07.00 to 19.00 hours and Saturday 07.00 to 14.00 hours.

2.4.10 Construction Personnel

During the construction phase, the number of on-site construction personnel varied for each phase of the construction works. Overall, up to 30 persons were on site during the construction phase to include site contractors, on-site vehicle and plant operators, engineers, materials delivery personnel, environmental personnel, health and safety personnel.

2.4.11 Construction Vehicles

- The number of trucks entering and leaving the site varied but the maximum number of trucks per day was 300. This was the case for a period of 3 months before the 11 July 2023.
- A total of 390,000 tons of rock were imported during the first six months (during the appropriate period of Planning Ref 17/967) of works, and another 4,700 tonnes delivered to site during the subsequent 10 months (205 truck loads) during the period subject of this substitute consent application. In addition, 2090 cum (3,553 tonnes) of rock armour was imported for the revetments during the first 6 months. 1322cum (2,247 Tonnes) of rock armour which was imported during the following 10 months was subsequently removed off site again.
- 400cum of concrete making materials (sand, gravel and cement etc) were delivered to site during the period subject of this substitute consent application. 190cum of concrete was manufactured and used on site during that time.
- The deliveries included 92 caissons during the substitute consent period (July 2023– May 2024) which were subsequently removed from site between May and October 2024 and returned to the manufacturers for storage.
- There were additional deliveries of the 2 L-shaped units and 48 foundation beams (=/- 7 trucks). 40 foundation beams were removed from site between May and October 2024 and returned to the manufacturers for storage.
- After works were suspended in May 2024, all the construction compound facilities were removed from site, including the concrete batching plant and 210 m3 of concrete making materials.
- Max of 30 personnel on site during construction.

2.4.12 Monitoring and Control

2.4.12.1 Construction Environmental Management Plan (CEMP)

A Construction Environmental Management Plan (CEMP) plan was prepared by the contractor (Ward and Burke) to manage environmental aspects of proposed works for the Ros An Mhíl Deep Water Quay project. See Volume III Appendix 2B of this rEIAR.

The implementation of the mitigation measures outlined in the CEMP and their effectiveness and completion was monitored by the contractor's Environmental Officer in an objective manner.

The monitoring undertaken during the development works included the following:

- Marine Mammal Monitoring (Volume III Appendix 8C)
- Water Quality and Turbidity Monitoring (Volume III Appendix 7A)
- Vibration Monitoring. (Volume III Appendix 11A)

A review of this data indicates that there were no significant exceedances or contraventions of the legal requirements and thresholds.

2.4.12.2 Waste Management

A Waste Management Plan/Resource Recovery Plan (WMP) was developed by the contractor for the project. The WMP outlined the methods of waste prevention and minimisation by recycling, recovery and reuse at each stage of construction of the Ros an Mhíl Deep Water Quay project.

Prior to the commencement of the development, a Construction Environmental Manager was appointed by the Contractor. The Environmental Manager was in charge of the implementation of the objectives of the plan, ensuring that all hired waste contractors had the necessary permits/licenses and authorisations and that the waste management hierarchy was adhered to. The Construction Waste Manager had the authority to ensure everyone working on the site adhered to the management plan.

2.4.12.3 Health and Safety

All works on site were carried out in compliance with all relevant legislation and work practices to ensure that the construction areas, site environs and public roads remain safe for all users. This legislation includes:

- Safety, Health and Welfare at Work (Construction) Regulations S.I. No. 291/2013 as amended;
- Safety, Health and Welfare at Work Act 2005 as amended;
- Safety, Health and Welfare at Work (General Applications) Regulations 2007 to 2023; and

The contractors developed Risk Assessment / Method Statements for numerous activities associated with the project prior to initiation of the development works including the following:

- Drilling and Blasting along the Quay
- Installation of pre-cast concrete beams
- Dredging Works

These were agreed with the relevant authorities for approval prior to commencement of the works.

Project Supervisor Construction Stage

A Project Supervisor Construction Stage (PSCS) was appointed by DAFM for the construction phase of the deep water quay. The PSCS was responsible for managing and co-ordinating the safety and health issues on site.

The PSCS developed a suitable Safety and Health Plan for the project, prior to the commencement of construction. The plan explained how the key safety and health issues were to be managed. The other responsibilities of the PSCS included the following:

- Co-ordinate the implementation of the construction regulations by contractors;
- Organise co-operation between contractors and the provision of information;
- Co-ordinate the reporting of accidents to the Health and Safety Authority;
- Notify the Health and Safety Authority before construction commences;
- Provide information to the site safety representative;
- Co-ordinate the checking of safe working procedures;
- Co-ordinate measures to restrict entry on to the site;
- Co-ordinate the provision and maintenance of welfare facilities;
- Co-ordinate arrangements to ensure that craft, general construction workers, and security workers have a Safety Awareness card, e.g. Safe Pass and a Construction Skills card where required;

- Co-ordinate the appointment of a site safety representative where there are more than 20 persons on site;
- Monitor the compliance of contractors and others and take corrective action when necessary; and
- Notify the Authority and the client of non-compliance with any written directions issued.

It is important to note that the presence of a PSCS did not relieve other contractors/employers of their obligation to comply with their statutory safety and health obligations.

Occupational Health and Safety Issues

Occupational health and safety issues during the construction of the Deep Water Quay were largely issues which are common to the construction of many large infrastructure and industrial facilities. These include, among others, exposure to dust and hazardous materials that may be present in construction materials and physical hazards associated with the use of heavy equipment or the use of explosives.

Further project specific occupational health and safety issues relevant to the Deep Water Quay primarily included the following:

- Physical hazards; and
- Chemical hazards.

Physical Hazards

The main sources of physical hazards which were present at the Deep Water Quay are associated with the use of equipment, machinery, and vehicles. Additional prevention, minimisation, and control techniques which were included are:

- Separating people from areas of vehicle traffic and making vehicle passageways one-way, to the extent practical;
- Designing handling operations to allow for a simple, linear layout and reduce the need for multiple transfer points, which can increase the potential for accidents/injuries;
- To the extent practical, locate access and transit routes to avoid situations where suspended loads pass overhead;

Chemical Hazards

Construction activities may pose potential for release of petroleum based products, such as lubricants, hydraulic fluids, or fuels during their storage, transfer, or use in equipment. These materials may also be encountered during decommissioning activities. Techniques for prevention, minimization, and control of these impacts employed at the site during construction included:

- Providing adequate secondary containment for fuel storage tanks and for the temporary storage of other fluids such as lubricating oils and hydraulic fluids;
- Using impervious surfaces for refuelling areas and other fluid transfer areas;
- Training workers on the correct transfer and handling of fuels and chemicals and the response to spills; and
- Providing portable spill containment and clean-up equipment on site and training in the equipment deployment.

Explosives Hazards

The drilled holes were loaded with explosives with blasting taking place during daylight hours only. The safety of the blasting operations depended on three factors:

Explosive materials and detonators were stored, transported, handled and used in the manner recommended by the manufacturer and in accordance with all statutory requirements or otherwise as advised by the Firearms and Explosives Unit of the Minister for Justice, Home Affairs and Migration and the Garda Síochána in advance of the commencement of drilling and blasting works.

Only persons assigned to assist in handling explosives were allowed on board the jack-up pontoon, during the transport or the presence of explosives. It was only allowed to transport the maximum carrying capacity of a licensed road van. Unloading of explosives was scheduled during daylight hours only.

Only a Contractor with a valid blaster's certificate was permitted to conduct or direct a blasting operation, and even then only if the work involved was within the scope of the valid blaster's certificate. All work within the blasting area was done under the authorisation of the designated blaster on duty responsible for that area.

The Explosives Day Box was built and operated as per the requirements of the Minister for Justice, Home Affairs and Migration. It was a custom-built steel lockable explosive day box lined with wood or equivalent. The interior of the explosives day box was kept scrupulously clean and was constructed, covered or lined to prevent the exposure of any ferrous metals or explosive residues to avoid production of sparks, self-ignition, fire etc. Any article or substance likely to cause a fire or explosion was kept out of and at a safe distance from the stored explosives. There was a separate box for explosives and detonators. A day consumption quantity was on board in the barge storage for immediate consumption

Detonators and explosives were kept in separate rooms in the explosive's magazine. Detonators and explosives were never transported together in one explosives van. At the drilling and blasting barge, detonators were stored in a detonator box separately from explosives.

It was necessary to avoid fire and explosion near storage areas of explosives. Only a day stock was on board for immediate consumption. Also, measures were taken to avoid extension of a fire or the start of an explosion nonrelated to the presence of explosives but capable to detonate the stored explosives.

Explosive materials and detonations were stored, transported, handled and used in the manner recommended by the manufacturer and in accordance with all statutory requirements or otherwise as advised by the firearms and explosives unit of the Dept.of Justice, Home Affairs and Migration and the Garda Siochána. It should be noted that these requirements were set out in a method statement which was agreed with the TOJE and the Garda Siochána in advance of the commencement of drilling and blasting works.

Only a contractor with a valid blasting certificate was permitted to conduct or direct blasting operation, and even then only if the work involved was within the scope of the valid blasters certificate all work within the blasting area was done to the authorization of the designated blaster on duty responsible for that area.

2.5 Decommissioning

All construction vehicles, plant, equipment and materials were removed from the development site in a safe and orderly manner when the works came to an end in May 2024. The removal process involved the relocation of two barges to the quayside so that all equipment thereon may be removed by crane, and the barges thereafter removed from the water for relocation. The disassembly and removal of the two large cranes was facilitated by mobile cranes that were brought to the site for that purpose. After they were dismantled, the constituent

elements of the cranes were loaded onto trucks for removal. All vehicles, plant, equipment and materials (including the caissons etc) were removed from the site by articulated trucks.

Furthermore, the concrete batching plant and site offices were removed from the site adjacent to Ros an Mhíl Harbour. Similarly, the pre-cast concrete caissons on-site were removed from the site and put into storage. Site decommission works was completed by mid-October 2024.

2.6 The Use of Natural Resources

2.6.1 Aggregate

Large amounts of aggregates and concrete were used during construction. All of the aggregate materials (rock, stone, gravel, sand) required for the construction were delivered to the site from local quarries.

It has been calculated that there was a total of approximately 30,000cum of rock blasted during the construction of the deep water quay development (both during the permitted appropriate period and the substitute consent application period). All aggregate material generated from blasting works were retained on site and reused in the construction of the temporary protective berm.

2.6.2 Water

Water needs for construction activities were limited to Concrete Manufacture, concrete truck chute washing, wheel wash, dust suppression and sanitary facilities. This water requirement was sourced from existing DAFM water supply.

2.7 The Production of Waste

2.7.1 Domestic Waste-Water Effluent

Wastewater from welfare facilities on site was drained to integrated wastewater holding tanks associated with the toilet units. The stored effluent was then collected on a regular basis from site by a permitted waste contractor and removed to a licensed/permitted waste facility for treatment and disposal.

During the construction time period, wastewater production was estimated to be 1,800 litres per day.

2.7.2 General Wastes

Construction phase waste consisted of hardcore, concrete, spare steel reinforcement, shuttering timber & unused oil, and diesel. This waste was stored in the construction compound and collected and taken off site to be reused, recycled and/or disposed of in accordance with best practice procedures at approved facilities. The containment and disposal of such oils was carried out by an approved contractor. Such operations were carried out in accordance with the Waste Management (Hazardous Waste) Regulations, 1998. Domestic type waste generated by contractors was collected on site, stored in an enclosed skip at the construction compound and disposed of at a licensed landfill facility.

2.8 Emissions and Nuisances

Residues and emissions likely to have been generated during the project works are summarised in **Table 2-2** below. These environmental effects have been identified, assessed throughout relevant chapters of this rEIAR.

Table 2-2: Emissions and Nuisances.

Phase	Aspect	Potential Emission/Nuisance	Assessment Provided
Construction	Air	The main emissions to atmosphere during the construction stage of the project is from fugitive dust associated with the following activities: • Groundworks associated with the construction of the project infrastructure; • Transportation and unloading of crushed stone around the site; • Vehicular movement over material potentially carried off site and deposited on public roads. The movement of machinery, construction vehicles and the use of generators during the construction phase also generated exhaust fumes containing predominantly carbon dioxide (CO_2), sulphur dioxide (SO_2), nitrogen oxides (NO_x), carbon monoxide (CO), and particulate matter (PM_{10}).	rEIAR **Vol II Chapter 14** Air and Climate
	Noise	Traffic flows, excavation/blasting mechanical machinery and electrical equipment used did generate noise emissions.	rEIAR **Vol II Chapter 10** Noise
	Water	Surface water runoff and discharges from construction working areas are likely to have occurred during construction,	rEIAR **Vol II Chapter 9** Water

2.9 Transboundary Effects

The location of the project is entirely in County Galway within the Republic of Ireland. Transboundary impacts relate to potential impacts on other Member States, i.e. outside of the Republic of Ireland.

Considering the nature of the project, the largely localised nature of potential impacts and the distance from any neighbouring member states, no potential for impacts on transboundary receptors to occur.

2.10 Risk of Major Accidents and Disasters

As in all construction activities, there is a wide range of potential risks of accidents and hazards associated with deep quay construction. While many risks are similar in nature to those for other industries, deep quay construction works take place in exposed windy locations and involve dredging, drilling and blasting, transport of heavy equipment.

The risk of major accidents or disasters was assessed in the EIS which formed part of the Planning Ref. 17/967 planning application. Major potential accidents for the permitted development included fire, explosions, traffic collisions, contamination and pollution. With regard to the specific focus of the current substitute consent application, none of the deep water quay development to date, including the works undertaken between 11th July 2023 and 20th May 2024, gave rise to any disasters or major accidents.

Natural disaster risks include, flooding, tsunamis, lightning strikes, hurricanes or any other extreme natural event. No such events took place during any of the works to date.

Currently the development is not operational as all works ceased on the 20th of May 2024. Upon the suspension of works, all equipment, materials and temporary facilities were removed from the site and the area was fenced off. The removal of material stockpiles, equipment and facilities avoids any potential negative effects on water quality from flooding were it to occur.

As the site is currently at +5mCD, it is currently susceptible to occasional inundation and flooding. The area has also been exposed to a number of storms since the works ceased. DAFM has reported that there was no damage to the incomplete harbour facilities as a result of storm Éowyn in January 2025. This was the most severe known storm to have hit the west coast of Ireland in living memory. Subsequent bathymetric surveys of the site have confirmed the lack of damage. The location of the harbour deep within a sheltered inlet north of the main Galway Bay provides considerable protection to the development site.

The remedial mitigation of this flooding effect would be to complete the proposed deepwater quay development.

2.10.1.1 Fire/ Fuels

The construction contractor complied with the Marine Emergency Plan that had been developed for the whole harbour area to manage a response to incidents arising from major incidents, such as fires. It details the contingency arrangements to be made in the event of any major incident within the jurisdiction of the Ros an Mhíl FHC Harbour Authority involving vessels either at sea or in port whether berthed or otherwise. Any major incident or developing major incident will be activated by the Harbour Master or a member of the harbour staff, who at the time is acting on behalf of the Harbour Master. The Controller of Operations or the On-Scene Commander where the highest risks arise from fire, toxic materials, and dangerous goods are as follows:

1) Senior Fire Brigade Officer present on shore side situations; or,
2) Designated 'On-Scene Commander' in marine situations.

In a fire, toxic materials, or dangerous goods onboard situation, the ships Master would be designated the" On Scene Commander" pending the arrival on the scene of a senior fire officer. Transfer of the function of the" On Scene Commander" shall be formally made by the Controller of Operation and both parties are to acknowledge and confirm transfer between themselves and confirm to Controller of Operations.

If the major incident is a major oil spill then the Ros An Mhíl Fishery Harbour Centre Oil Spill Contingency Plan is activated, which implements the harbour requirements under the International Convention on Oil Pollution, Preparedness, Response and Co-operation (OPRC). It is of note that Galway Harbour operates a reciprocal sharing arrangement with Ros An Mhíl Harbour and their equipment, subject to their requirements, would be available in an emergency. Such equipment is owned by Galway Harbour and the various oil companies based there. Equipment is available on a user replacement basis and at a nominal hire charge for machinery. The resources can be obtained by contacting Galway Harbour Master who would then activate their emergency call out system.