



REMEDIAL ENVIRONMENTAL IMPACT ASSESSMENT

Ros an Mhíl Deep Water Quay

Chapter 11 Noise and Vibration

Department of Agriculture, Food and the Marine

October 2025

Contents

11. Noise & Vibration.....	11-1
11.1 Introduction	11-1
11.1.1 Fundamentals of Noise	11-1
11.2 Methodology.....	11-1
11.2.1 Guidelines and Best Practice	11-2
11.2.2 Study Area and Noise Sensitive Locations	11-2
11.2.3 Baseline Noise Survey	11-3
11.2.4 Noise Survey Equipment and Instrumentation	11-4
11.2.5 Weather Conditions	11-5
11.2.6 Assessment Criteria.....	11-5
11.2.6.1 Significance of Effects	11-5
11.2.6.2 Sensitivity.....	11-5
11.2.6.3 Magnitude of Impacts.....	11-6
11.2.6.4 Construction Phase – Vibration Impacts.....	11-8
11.2.6.5 Operational Phase – Noise and Vibration Impacts.....	11-9
11.2.7 Statement on Limitation and Difficulties Encountered	11-9
11.3 2016 Baseline Noise Survey Results and Discussion.....	11-9
11.4 Description of Likely Effects	11-11
11.4.1 Construction Phase Activities Overview	11-11
11.4.2 Construction Phase Mitigation Measures and Monitoring.....	11-11
11.4.3 Construction Phase Effects Assessment	11-12
11.4.3.1 Construction Noise.....	11-12
11.4.3.2 Construction Road Traffic Noise.....	11-12
11.4.3.3 Construction Vibration.....	11-13
11.4.4 Current Phase Effects.....	11-15
11.5 Remedial Mitigation and Residual Effects	11-15
11.6 Cumulative Effects	11-16
11.7 Conclusion	11-16
References.....	11-17

Tables

Table 11-1 Detail on Noise Measurement Equipment Used	11-4
Table 11-2: Impact Evaluation and Determination of Significance	11-5
Table 11-3: Criteria for determining magnitude of impact – construction noise.....	11-7
Table 11-4: Magnitude of Impact – Construction Phase Traffic.....	11-7
Table 11-5: Distance at which vibration may just be perceptible	11-9
Table 11-6: Criteria for determining magnitude of impact transient vibration due to blasting	11-9
Table 11-7 Summary of Average Baseline Noise Monitoring MP2	11-10
Table 11-8 Summary of Average Baseline Noise Monitoring MP3	11-10
Table 11-9: Construction Works Noise Effect 1: Construction Works Noise Effects.....	11-12
Table 11-10 Construction Works Noise Effect 2 : Construction Traffic Noise Effects	11-13
Table 11-11: Vibration Monitoring Details	11-13
Table 11-12: Construction Works Vibration Effects	11-15
Table 11-13: Current Phase Noise and Vibration Effects	11-15
Table 11-14: Ratings of Noise and Vibration Effects Post Remedial Mitigation	11-16

Figures

Figure 11-1 Sound Pressure Scale	11-2
Figure 11-2: Baseline Noise Monitoring Locations and Weather Logging Station	11-4
Figure 11-3: Map of Vibration Monitor Locations.....	11-14

Appendices

Appendix 11A – Continuous Vibration Monitoring Report

Project No.	Doc. No.	Rev.	Date	Prepared By	Checked By	Approved By	Acceptance Code / Status
24984	6002		28/10/2025	KB	CF/MT	CF/MT	FINAL

MWP, Engineering and Environmental Consultants

Address: Reen Point, Blennerville, Tralee, Co. Kerry, V92 X2TK, Ireland

www.mwp.ie



Disclaimer: This Report, and the information contained in this Report, is Private and Confidential and is intended solely for the use of the individual or entity to which it is addressed (the “Recipient”). The Report is provided strictly on the basis of the terms and conditions contained within the Appointment between MWP and the Recipient. If you are not the Recipient you must not disclose, distribute, copy, print or rely on this Report (unless in accordance with a submission to the planning authority). MWP have prepared this Report for the Recipient using all the reasonable skill and care to be expected of an Engineering and Environmental Consultancy and MWP do not accept any responsibility or liability whatsoever for the use of this Report by any party for any purpose other than that for which the Report has been prepared and provided to the Recipient.

11. Noise & Vibration

11.1 Introduction

This chapter retrospectively examines Noise and Vibration effects associated with the works completed between January 2023 and May 2024 for the Ros an Mhíl Deep Water Quay. A full description of the project and its history are provided in **Volume II, Chapter 2** Project Description of this rEIAR. The nature effects on noise and vibration sensitive receptors arising from completed works have been assessed herein.

11.1.1 Fundamentals of Noise

Fundamentally, noise is vibrations of the air which are detectable by the ear. Sound waves radiate out spherically from a sound source in three dimensions. The human ear can detect a very wide range of pressure variations. In order to cope with this wide range, a logarithmic scale (decibel (dB) scale) is used to translate pressure values into manageable numbers from 0 dB to 140 dB. 0 dB is the threshold of hearing, and 120 dB is the threshold of pain.

Measuring in decibels means that a 3 dB increase is equivalent to a doubling of the sound energy and a 10 dB increase is a tenfold increase in energy. For broadband sounds which are very similar in all but magnitude, a change or difference in noise level of 1 dB is just perceptible under laboratory conditions, 3 dB is perceptible under most normal conditions and a 10 dB increase generally appears twice as loud.

A healthy human ear is also sensitive to a large range of frequencies (approximately 20 Hz to 20,000 Hz) and varies in sensitivity depending on the frequency. The human ear is not equally sensitive to sound at all frequencies and is less sensitive to sound at low frequencies and high frequencies. A -weighting (dB A) is the main way of adjusting measured sound pressure levels (noise) to take account of the uneven human response to frequencies.

Figure 11-1 illustrates some everyday sounds on the dB(A) scale. A quiet bedroom is around 35 dB(A), a busy office around 60dB(A) and a rock concert around 100 dB(A).

11.2 Methodology

The methodology consists of the following activities:

- As part of planning application Ref. 17/967, an environmental noise survey was undertaken at the development site to characterise the baseline noise environment (Refer to **Section 11.2.3**, and **Section 11.3**).
- A review of the most applicable standards and guidelines has been conducted in order to set a range of acceptable noise and vibration criteria for assessment (Refer to **Section 11.2.1** and **Section 11.2.6**).
- Predicted noise levels have been assessed against relevant noise limit criteria for the construction phase at the nearest sensitive receptors (Refer to **Section 11.4.4**).
- Mitigation measures which were undertaken to reduce noise and vibration effects during the construction period are detailed in **Section 11.4.2**. The potential need for remedial mitigation measures are also addressed in **Section 11.5**.

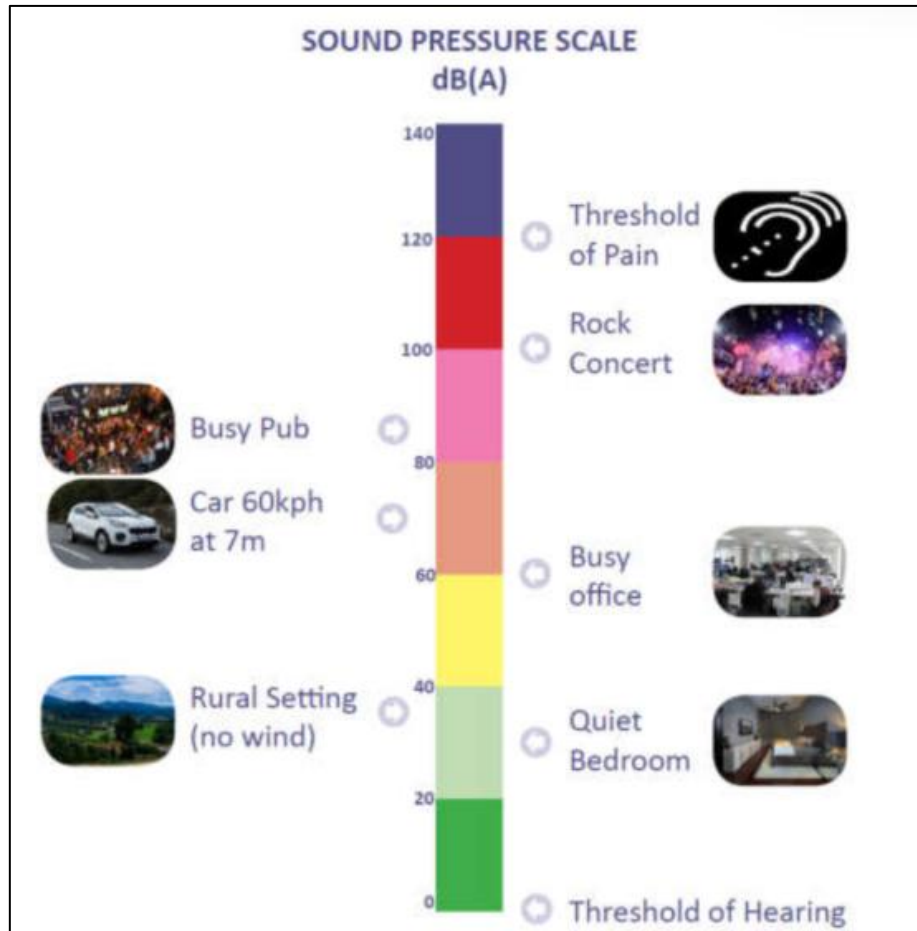


Figure 11-1 Sound Pressure Scale

11.2.1 Guidelines and Best Practice

The noise and vibration impacts assessment has been undertaken having regard to the following standards and best practise guidance documents:

- British Standard 5228 Part 1 and Part 2 Code of Practice for Noise and Vibration Control on Construction and Open Sites (2009+A1:2014) (BS 5228:2009+A1:2014);
- British Standard 8233:2014 Sound Insulation and Noise Reduction for Buildings – Code of Practice;
- British Standard 4142:2014 - Method for Rating Industrial Noise Affecting Mixed Residential and Industrial Areas;
- Environmental Protection Agency (EPA), Guidance Note for Noise: Licence Applications, Surveys, and Assessments in Relation to Scheduled Activities (NG4), January 2016); and
- World Health Organisation (WHO) - Guidelines for Community Noise.

11.2.2 Study Area and Noise Sensitive Locations

The key sensitive receptors with regards to noise and vibration impact of the development are those in the vicinity of the existing harbour.

Ros an Mhíl village is located approximately 1km on the approach to the existing harbour. A number of discrete one-off residential dwellings, a local shop, community hall and a church are located within the village.

The primary school, Scoil Naisiunta Colm Cille, is located approximately 1.7 km from the deep-water quay development adjacent to the R372. There are also a number of localised industries providing support to the harbour.

Road access to the harbour is provided by two alternative routes, R372 known as the school road, and the Ballynahown Road or Back Road. Both routes are spurs from the R336, which is the main coast road to Galway.

The closest sensitive receptor to the deep-water quay development is a dwelling owned by the Ferry Company and is approximately 590m to the north east. There are no other residential properties located within 500m of the development site boundary. There are a number of discrete one-off houses located along the Ballynahown Road. Colaiste Chamis is also located on this road.

11.2.3 Baseline Noise Survey

The baseline noise climate affecting the key sensitive receptors was informed by using the results and observations made during a noise measurement survey conducted by ICAN Acoustics in October 2016.

The noise survey comprised a combination of attended short-term measurements and an unattended measurement.

- Short-term attended measurements were undertaken at two selected locations within the study area; and;
- One unattended measurement was undertaken at a residential property located directly adjacent to the existing harbour. The description of the baseline is used within the assessment in considering the context of noise from the development, enabling a comparison of the baseline with the noise affecting sensitive receptors during construction.

Figure 11-1 shows the nearest noise sensitive locations to the development and also locations where noise monitoring took place. **Section 11.3** details results of noise monitoring.

Unattended Location MP1

A 24hr measurement period was conducted over 30-minute intervals at a property owned by the Ferry Company located at the entrance to the Ros an Mhíl Harbour between the 12th and 13th October 2016.

Attended Location MP2

Noise Measurement position MP2 was located at a property directly adjacent to the approach road (R372, School Road) into the harbour.

Attended Location MP3

Noise measurement position MP3 is located outside Colaiste Chamuis at Ros an Mhíl.



Figure 11-2: Baseline Noise Monitoring Locations and Weather Logging Station

11.2.4 Noise Survey Equipment and Instrumentation

The attended and unattended noise measurements were carried out using a digital sound level meter which has been designed to be in compliance with the requirements of the Class 1 Standard for accuracy. The sensitivity of the measurement system was checked using a sound level calibrator. The detail on the noise equipment which was used is presented in **Table 11-1**.

Table 11-1 Detail on Noise Measurement Equipment Used

Make and Model	Serial Number	Date of Calibration
XL2 Audio and Acoustic Analyser	G2P0RAE 01-GO	10 February 2016
XL2 Audio and Acoustic Analyser	A2A-12133-E0	15 September 2016
Field Calibrator B&K 4231	2499109	21 July 2016

In all cases, the sound level meter was configured to record noise level using the A-weighting frequency function. Furthermore, the sound level meter was configured to measure a range of acoustic parameters averaged over each measurement interval. The main parameters of interest are:

- LAeq dB - The A-weighted equivalent continuous noise level in decibels;

- LA90 dB- The A-weighted noise level exceeded for 90% of the measurement interval;
- LA10dB - The A-weighted noise level exceeded for 10% of the measurement interval; and
- LA(max)F dB- The A-weighted maximum sound pressure level using the fast time weighting.

The baseline noise measurements were undertaken in accordance with the guidance set out in ISO 1996 'Acoustics –Description, measurement and assessment of environmental noise – Part 2: Determination of environmental noise levels'.

11.2.5 Weather Conditions

A weather station was set up during the baseline noise survey at Ros an Mhíl Harbour, adjacent to long term unattended noise measurement positions on 12th -13th October 2016. The station was set up to record weather at 10-minute intervals throughout the noise survey for both the attended and unattended measurements. Wind speeds were relatively low for this coastal location and in all cases were below 5m/s during all measurements. No precipitation was recorded during the measurement period. Temperatures ranged 6°C to 15°C and wind speeds between 0.4m/s to 3.6m/s.

11.2.6 Assessment Criteria

11.2.6.1 Significance of Effects

Impacts will be identified, and significance will be attributed taking into account the interaction between magnitude criteria and sensitivity criteria as presented in the significance matrix in **Table 11-2**. The methodologies and scales used to assess the magnitude of impact and sensitivity for the key impacts expected during construction and operation are set out in **Table 11-2** and **Table 11-3**. Impacts considered of moderate or major significance after application of mitigation measures are highlighted as significant.

Table 11-2: Impact Evaluation and Determination of Significance

Magnitude of Impact	Sensitivity			
	Negligible	Low	Medium	High
Negligible	Not Significant	Not Significant	Not Significant	Not Significant
Minor	Not Significant	Not Significant	Minor	Minor
Moderate	Not Significant	Minor	Moderate	Moderate
Major	Not Significant	Minor	Moderate	Major

11.2.6.2 Sensitivity

The criteria for noise and vibration receptors sensitivity are provided in **Table 11-2**. The variation in the sensitivity of receptors in terms of environmental impacts is considered by applying different scales to classify magnitude of

impacts (e.g. by using different scales for daytime and night-time) rather than by varying the assignment of sensitivity to specific types of receptors.

All identified sensitive receptors in this assessment are considered to be high sensitivity, refer to **Table 11-3**. The location of selected noise sensitive receptors is indicated on **Figure 11-2** of **Section 11.2.3**.

Table 11-3: Criteria for determining Receptor Sensitivity

Category	Description/Examples
High	Residential, Educational, Institutional and healthcare and place of worship
Medium	Public Assembly and Entertainment
Low	Commercial and Light Industrial
Negligible	Heavy Industrial

11.2.6.3 Magnitude of Impacts

Construction Phase

Construction phase of a development is often the period over which any potential for noise impact is greatest. “British Standard 5228 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise” provides comprehensive guidance on construction noise including details of typical noise levels associated with various items of plant or activities, prediction methods and measures and procedures that have been found to be most effective in reducing impacts. These guidelines are considered as transferable and appropriate for construction projects in Ireland. The Standard also provides advice on good site practice in the control of noise. The contractor may be required to follow that advice under the terms of a contract.

BS5228 does not define strict criteria to determine the significance of noise impacts. However, examples of how limits of acceptability have been applied historically and some examples of assessing significance are provided within the Standard. ‘Example Method 2-5dB (A) change (Annex E ‘Significance of Noise Effects’ E.3.3) has been adopted for the assessment of effects at sensitive receptors as this approach considers the expected changes in ambient noise levels and better reflects conventional environmental assessment methodologies compared with the use of fixed/absolute noise limits.

Construction noise levels are considered as significant as set out in BS 5228, if;

- Total noise (pre-construction) baseline noise plus construction noise) exceeds the pre-construction baseline noise by 5dB or more, subject to lower cut-off values of 65dB L_{Aeq} (Daytime), 55dB L_{Aeq} (evening) and 45dB L_{Aeq} (night-time); and
- Duration of construction noise exceeds one month, unless works of a shorter duration are likely to result in a significant impact.

The daytime period is defined as 07:00 to 19:00; the evening period as 19:00 to 23:00 and the night-time period as 23:00 to 07:00 as defined in BS 5228 and magnitude criteria is detailed in **Table 11-3**.

Table 11-3: Criteria for determining magnitude of impact – construction noise

Receptor Sensitivity	Noise from Construction Alone LAeq, 1h dB			Magnitude of Impact			
	Threshold			Negligible	Minor	Moderate	Major
	Daytime	Evening-time	Night-time				
High	65	55	45	Threshold not exceeded	Threshold exceeded and total noise 5 dB less pre construction baseline for any duration	Threshold exceeded and total noise exceeds baseline noise by 5dB or more for less than one month	Threshold exceeded and total noise exceeds baseline noise by 5dB for one month or more

Source: BS5228-1

Construction Phase – Additional Traffic on Public Roads

There are no specific Irish guidance or limits relating to existing local traffic sources along the local or surrounding road network. As traffic from the development work will have made use of existing roads already carrying traffic volumes it is appropriate to assess the calculated increase in traffic noise levels that will have arisen because of vehicular movements associated with the development.

In order to assess the impact of construction traffic, the following two guidelines are referenced:

- Design Manual for Roads and Bridges (DMRB) Sustainability & Environment Appraisal LA 111 Noise and Vibration Revision 2
- EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports

Table 11-4 offers guidance on the likely impact associated with any particular change in traffic noise level.

Table 11-4: Magnitude of Impact – Construction Phase Traffic

Change in Sound Level (dB)	DMRB Magnitude of Impact	EPA Significance of Effect
Greater than or equal to 5.0	Major	Significant
Greater than or equal to 3.0 and less than 5.0	Moderate	Moderate
Greater than or equal to 1.0 and less than 3.0	Minor	Not Significant – Slight
Less than 1.0	Negligible	Imperceptible

In accordance with the LA 111 Noise and Vibration, construction noise and construction traffic noise impacts shall constitute a significant effect where it is determined that a major or moderate magnitude of impact will occur for a duration exceeding:

- Ten or more days or night in any 15 consecutive day or nights;
- A total number of days exceeding 40 in any 6 consecutive months.

11.2.6.4 Construction Phase – Vibration Impacts

There are two aspects that require consideration;

- Potential vibration effects on people; and
- Potential vibration effects on buildings.

There are no British Standards that provide a methodology for predicting levels of vibration from demolition and construction activities other than BS5228, which relates to percussive, or vibratory or piling. Vibration arising from construction activities is generally ground-borne. In the case of typical earthworks projects, it may be generated by operations such as ground compaction, piling, blasting and the movement of vehicles over irregular surfaces.

The magnitude of vibration is expressed in terms of peak velocity (ppv) in millimetres per second (mm/s).

BS 5228-2: provides guidance on the effect of vibration and the likelihood this would cause compliant and cosmetic damage to buildings BS5228-2 does not indicate whether particular vibrations are significant. The standard states:

“Vibration above these levels [0.14mm/s to 0.3mm/s] can disturb, startle, cause annoyance or interfere with work activities. At higher levels they can be described as unpleasant or even painful. In residential accommodation, vibrations can promote anxiety...”

BS5228-2 provides the following guidance on effects and perceptibility at various vibration levels:

- Vibration level of 0.14mm/s-vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction;
- Vibration level of 0.3mm/s-vibration might be just perceptible in residential environments;
- Vibration level of 1.0mm/s-it is likely that vibration of this level in residential environments would cause compliant, but can be tolerated if prior warning and explanation has been given to residents; and
- Vibration level of and over 10mm/s-vibration is likely to be intolerable for any more than a very brief exposure to this level.

BS5228-2 also considers vibration in terms of disturbance and potential cosmetic and structural damage to buildings. It states that transient levels of vibration, expressed as peak particle velocity (PPV) of 15mm/s at low frequency may cause cosmetic damage in un-reinforced or light framed structures e.g. for residential/light commercial use. However, dynamic loading due to more continuous vibration and a resonant response of the structure can give rise to dynamic magnification especially at lower frequencies. BS5228-2 advises that, in these cases, thresholds are reduced by 50% to test for the onset of damage. Therefore, sustained PPVs of 7.5 mm/s are considered to be an appropriate indicator where risks of damage become significant.

Having regard to information contained in the Standards, **Table 11-5** details the distance at which certain activities may give rise to just perceptible levels of vibration. The actual distance is dependent on a number of factors, such as vibration characteristics, underlying geology, ground conditions, distance from source to receiver and screening and duration of works.

Table 11-5: Distance at which vibration may just be perceptible

Typical Construction Activity	Indicative distance from Activity when vibration may just be perceptible (Meter)
Excavation	10-15
Continuous Flight Auger Piling	15-20
Rotary Bored Piling	20-30
Vibratory Piling	40-60

With reference to the BS 5228-2, it notes that the probability of damage tends towards zero at 12.5mm/s peak component particle velocity. Therefore, the criteria given in **Table 11-6** has been derived on the basis of the thresholds described above. The criteria in **Table 11-6** is given as a reference to inform monitoring during blasting and vibration activities. The contractor will have been obliged to adhere to these limits.

Table 11-6: Criteria for determining magnitude of impact transient vibration due to blasting

Magnitude of Impact				
	Negligible	Minor	Moderate	Major
Vibration peak particle velocity	Less than 1	1 to 7.5	More than 7.5 and less than 12.5	12.5 and above

11.2.6.5 Operational Phase – Noise and Vibration Impacts

The operational phase planned under Planning Reg. Ref. 17/967 did not occur and therefore the operational phase noise and vibrational impacts have been scoped out from further assessment.

Noise and Vibration impacts during the current phase (period since works ceased which spans from 20th May 2024- to present) are considered in **Section 11.4.4**.

11.2.7 Statement on Limitation and Difficulties Encountered

No limitations or difficulties were encountered during the preparation of this chapter.

11.3 2016 Baseline Noise Survey Results and Discussion

Unattended Location MP1

It is noted that the measured LAeq, 30mins values range from 43 dB to 59 dB. There is little variation between the evening and night-time noise levels. Based on this data, the average daytime noise level LAeq, dB was taken to be 50 dB, evening time noise level was 44dB and nighttime noise level is 42dB. The measurement position was located adjacent to the roundabout entering the Ros an Mhíl Harbour. The location was dominated by traffic noise and operational noise within the existing harbour.

Attended Location MP2

It is noted that the measured LAeq, 30mins values range from 45 dB to 60dB. The location was dominated by daytime road traffic noise from the R371 to the north of this location. Some plant noise from the nearby industrial/commercial units located to the northwest were also audible. Other sources of noise include some light wind generated noise from trees nearby. On occasion birdsong was noted within the vicinity. The recorded daytime and nighttime noise levels are noted in **Table 11-7**. Road traffic noise during the nighttime was noted as minimal. Plant noise from the nearby units was audible at night. It is noted that there is little variation in the LA90 daytime and nighttime noise levels. The average recorded daytime noise level LAeq, dB was 58 dB, and nighttime noise level was 50 dB.

Table 11-7 Summary of Average Baseline Noise Monitoring MP2

Time	LAeq, 30mins	LA10, 30 mins	LA90, 30 mins
Daytime	58	58	44
Nighttime	49.7	51	46

Attended Location MP3

The dominant noise sources noted during the measurement included bird song, some noise from domestic activity with the area and distant road traffic noise. Other sources included some light local road traffic and wind generated noise from trees nearby. It is noted that there is little variation in the LA90 daytime and nighttime noise levels. The average recorded daytime noise level LAeq, dB was 41 dB, and nighttime noise level was 36 dB.

Table 11-8 Summary of Average Baseline Noise Monitoring MP3

Time	dB LAeq, 30mins	dB LA10, 30 mins	dB LA90, 30 mins
Daytime	41	43	35
Nighttime	36	39	32

Note: A baseline noise survey was conducted by MWP on 8th April 2025 to characterise the existing acoustic environment following the cessation of construction activities. The survey results indicate that the current average ambient noise levels (LAeq) remain consistent with those measured during the pre-construction baseline survey undertaken in January 2023, suggesting no significant change in the acoustic environment.

11.4 Description of Likely Effects

11.4.1 Construction Phase Activities Overview

According to the 2017 EIS, the development construction works were expected to take 25 months in total. A total of 16 months of construction works were completed between January 2023 and the 20th May 2024.

The previous development works included:

- Mobilisation and development of the construction compound and facilities;
- Reclamation works – Rock fill material was imported to reclaim land from the sea and raise the ground level to the high water mark (+5mCD). This reclaimed land was then used as a construction surface.
- Sequential construction and movement of the 20 drilling and blasting platforms over the quay wall and berthing pocket using imported quarry rock;
- Dredging works to remove the blasted seabed and construct the protective berm around the quay wall trench;
- Installation of 75m of rock armour revetments on the northern and southern ends of the reclamation area;
- Installation of the on-site concrete batching plant;
- Installation of 48m of quay wall foundations.

Upon confirmation that the planning permission had expired and would not be extended, all construction materials, equipment and facilities were dismantled and removed from the site.

11.4.2 Construction Phase Mitigation Measures and Monitoring

The following control measures were implemented by the contractors (Ward and Burke) during the construction process to prevent any potential significant noise effects during the construction phase.

- Proper maintenance of plant and machinery to minimise the noise produced by on-site operations;
- Machines used intermittently were shut down or throttled back to a minimum during those periods when they were not in use;
- Any plant, such as generators or pumps, which were required to work outside of normal working hours, were surrounded by an acoustic enclosure; and
- Internal haul routes were kept well maintained;
- Plant was used in accordance with manufacturer's instructions. Care was taken to site equipment away from noise sensitive areas;
- Blasting and dredging activities were limited to daytime works only; and,
- Procedures were in place for handling noise and vibration complaints.

11.4.3 Construction Phase Effects Assessment

11.4.3.1 Construction Noise

Construction noise was predicted as part of the 2017 EIAR associated with Planning Reg. Ref. 17/967, produced by Mott McDonald. The main inherently noisy activities were identified as rock blasting, piling and breaking out of hard ground together with on-site operation of both fixed and mobile construction plant and equipment. Off-site movement of construction related traffic also was identified as having potential to cause significant noise generation.

All daytime construction works, including works associated with mobilisation to site, dredging works (i.e drilling, blasting, dredging), deep water quay construction were predicted to be below the construction noise thresholds of 65 dB for daytime and 55 dB for evening.

Night-time construction noise levels, associated with Dredging works (off shore Operation, Caisson Establishment Onshore) were also assessed. Construction noise was below the 45 dB threshold for all activities, except at MP1 where caisson works noise (46 dB) were predicted to exceed 45 dB threshold level. MP1 is a property owned by the Ferry Company and whilst it is unoccupied it is occasionally used by Ferry Company crew members for sleep overs.

There were no complaints of noise received during construction works to date.

Noise from the construction works completed to date will have had a negative, not significant, local and short-term effect on sensitive receptors, refer to **Table 11-9**.

Table 11-9: Construction Works Noise Effect 1: Construction Works Noise Effects

Construction Works Noise Effect 1: Construction Works Noise Effects					
	Quality Effect	Post Mitigation Significance	Spatial Extent	Duration	Other Relevant Criteria
Post -Mitigation	Negative	Not Significant	Local	Short-Term	Direct

11.4.3.2 Construction Road Traffic Noise

A traffic assessment was carried out for the development and is included **Volume II, Chapter 14** Material Assets – Traffic and Transport of this rEIAR.

During the authorised construction works period between 26th January 2023 and 10th July 2023, there was a typical daily increase of 288 vehicles per day.

During the unpermitted works period between 11th July 2023 and 20th May 2024, there was a typical daily increase of 66 vehicles.

Where the total volume of total traffic increases by 25% or reduces by 20% there is a corresponding change in noise from traffic of 1dB.

The max traffic volume increase was approximately 16.7% and therefore the noise level change was less than 1dB. Changes of 1 dB are likely to be just perceptible, resulting in a not significant effect.

In addition to above, no complaints were received from traffic noise over the course of construction works to date.

Construction works traffic noise to date will have had a negative, not significant, local and short-term effect on sensitive receptors, refer to **Table 11-10**.

Table 11-10 Construction Works Noise Effect 2 : Construction Traffic Noise Effects

Construction Works Noise Effect 2: Construction Traffic Noise Effects					
	Quality Effect	Post Mitigation Significance	Spatial Extent	Duration	Other Relevant Criteria
Post-Mitigation	Negative	Not Significant	Local	Short-Term	Direct

11.4.3.3 Construction Vibration

Blasting may cause air overpressure which is an impulsive noise event with energy within and below the audible range (concussive component). The latter propagates more readily than the audible component and can result in impulsive vibration. Blasting was carried out offshore as part of the development however there were no sensitive receptors within 900m of the blasting works area.

The original 2017 EIAR application (Planning Reg. Ref. 17/967) produced by Mott McDonald assessed the likelihood of perceptible effects from vibration to be unlikely due to the distances between the works and the closest sensitive receptors.

During the construction phase of works completed to date, vibration monitoring was undertaken by NVM Ltd. **Figure 11-3** and **Table 11-11** shows the locations where vibration monitors were placed.

Table 11-11: Vibration Monitoring Details

Location Details			Instrument Details	
Location ref	Description	Model	Serial Number	Date Installed
V1	Coast Guard Building	AvaTrace m80	11657	16 th May 2023
V2	Storage Shed (cold store)	AvaTrace m80	13045	16 th May 2023
V3	Lighthouse Signal Building	AvaTrace m80	13061	16 th May 2023
V4	House at Harbour car park	AvaTrace m80	12822	19 th May 2023
V5	Martello Tower	AvaTrace m80	3696	31 st May 2023
V6	Martello Tower	AvaTrace m80	11303	12 th Feb 2024

During monitoring, particular interest was given to the historic building, Martello Tower. Prior to the commencement of works, the tower was subject to a Pre commencement Structural Assessment (**Volume III, Appendix 10B** Pre and Post Construction Report on the Condition of the Martello Tower of this rEIAR) on 25th of January 2023. This report detailed the condition and structural integrity of the Tower.

Following completion of the pre-commencement structural assessment, a vibration monitoring device was installed at the foot of the tower and recorded peak particle velocity and frequency during the scheduled works. The recorded vibration values noted from the monitoring device were in the range of $\leq 1\text{mm/s}$ to $\leq 4\text{mm/s}$ PPV at a frequency range of 10-50 Hz, for the entire monitoring period. These values were noted as being below the

guidance threshold values provided for the project, refer to **Section 11.2.6.4** which details construction vibration criteria.

Details of the Continuous Vibration Monitoring Survey are included in **Volume III, Appendix 11A** Continuous Vibration Monitoring Report of this rEiAR.

A post structural report was completed in October 2024, the conclusion noted on “from the visual inspections which the assessor undertook, the writer concluded that the works carried out to date at the Deep Water Quay site, including the blasting, did not have any negative impact on the Martello Tower and did not cause any structural or superficial damage to the tower.” Both pre-commencement and post structural reports are included in **Volume III, Appendix 10B** Pre and Post Construction Report on the Condition of the Martello Tower of this rEiAR.

Construction works vibration during works to date will have had a neutral, not significant, local and short-term effect on sensitive receptors, refer to **Table 11-12**.



Figure 11-3: Map of Vibration Monitor Locations

Table 11-12: Construction Works Vibration Effects

Construction Works Vibration Effects					
	Quality Effect	Post Mitigation Significance	Spatial Extent	Duration	Other Relevant Criteria
Post-Mitigation	Neutral	Not Significant	Local	Short-Term	Direct

11.4.4 Current Phase Effects

The site was fully cleared of equipment, facilities, and construction materials upon cessation of works on 20th May 2024. Since that time, the area has remained inactive, with no further construction activity or ancillary operations taking place. For safety and security, the site has been fenced off and access restricted. The current condition of the site therefore reflects a dormant phase.

A baseline noise survey was undertaken by MWP on 8th April 2025 to characterise the existing acoustic environment following the cessation of construction activities. The survey results indicated that the dominant noise sources were associated with routine operations in the surrounding harbour, including vessel movements, port activity, and other background maritime sources. No notable or distinguishable noise emissions were attributable to the site itself. This demonstrates that the acoustic environment has reverted to pre-construction conditions, consistent with the baseline soundscape recorded prior to the commencement of works in January 2023.

It is confirmed that no construction works have taken place at the site between 20th May 2024 and the date of the survey. The absence of activity during this period has ensured there has been no potential for construction-related noise or vibration impacts on nearby sensitive receptors.

Overall, the effects of noise and vibration during the current phase of the development are assessed as neutral, imperceptible, local, short-term and direct in nature, refer to **Table 11-13**.

Table 11-13: Current Phase Noise and Vibration Effects

Current Phase Noise and Vibration Effects					
	Quality Effect	Post Mitigation Significance	Spatial Extent	Duration	Other Relevant Criteria
Post-Mitigation	Neutral	Imperceptible	Local	Short-Term	Direct

11.5 Remedial Mitigation and Residual Effects

There were minimal noise and vibration effects in the vicinity of construction works completed to date. As the mitigation measures outlined in **Section 11.4.2** were adhered to there is no need for any remedial mitigation measures. There are therefore no significant effects as a result of previous works carried out, refer to **Table 11-14**.

Table 11-14: Ratings of Noise and Vibration Effects Post Remedial Mitigation

Phase	Impact/Activity/Receptor	Quality of Effect	Post-Mitigation Significance Rating	Remedial Mitigation Measures	Residual Significance Rating
Construction Phase	Construction Phase Works Noise Effects	Negative	Not Significant	None	Not Significant
	Construction Phase Traffic Noise Effects	Negative	Not Significant	None	Not Significant
	Construction Phase Works Vibration Effects	Negative	Not Significant	None	Not Significant
Current Phase	Current Phase Noise and Vibration Effects	Neutral	Imperceptible	None	Imperceptible

11.6 Cumulative Effects

Based on a review of developments in proximity to construction works, there have been no significant cumulative noise and vibration effects.

11.7 Conclusion

This chapter has assessed the noise and vibration effects associated with the construction activities undertaken to date at Ros an Mhíl Harbour.

Construction works involved potentially noisy activities such as filling, drilling, blasting, dredging, quay wall foundation, and the movement of heavy vehicles. Assessment of the predicted construction noise levels showed that noise thresholds were not exceeded for most works, with a marginal exceedance (1 dB) recorded at MP1 during caisson-related night-time operations. However, this receptor is only occasionally occupied and no complaints were received. Construction traffic noise increases were well below the 1 dB threshold for perceptible changes and, similarly, no complaints were recorded. Vibration effects from blasting and other activities were also assessed as not significant due to the distances from receptors and supporting monitoring data.

Overall, noise and vibration effects from the construction works completed to date have been determined to be negative, not significant, local in spatial extent, and short-term in duration. Appropriate mitigation measures were in place and monitoring was carried out to confirm compliance. There were no recorded exceedances of significance thresholds that would indicate any unacceptable or long-term effects on the local environment or sensitive receptors. Therefore, it can be concluded that the construction phase noise and vibration impacts were effectively managed and did not result in significant adverse environmental effects.

References

BS 4142: 2014: Methods for Rating and Assessing Industrial and Commercial Sound.

BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Noise.

BS 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 2 – Vibration.

BS 6472 Guide to evaluation of human exposure to vibration in buildings (2008): Part 1 - Vibration sources other than blasting.

BS 7385-2:1993 Evaluation and measurement for vibration in buildings. Guide to damage levels from ground borne vibration.

Manual for Roads and Bridges (DMRB) Sustainability & Environment Appraisal LA 111 Noise and Vibration Revision 2 (DMRB, 2020)

Guidance Note for Noise: License Applications, Surveys and Assessments in Relation to Scheduled Activities (EPA, 2016).

ISO 1996: 2017: Acoustics – Description, measurement, and assessment of environmental noise.

British Standard 8233:2014 Sound Insulation and Noise Reduction for Buildings – Code of Practice;

World Health Organisation (WHO) - Guidelines for Community Noise