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2025

# Construction Environmental Management Plan (CEMP) – Residential Development, Boreen Bradach, Kinnegad, Co. Westmeath

**Construction Environmental Management Plan (CEMP)**

**Residential Development, Boreen Bradach, Kinnegad, Co. Westmeath**

## Document Control Sheet

| | |
|---|---|
| **Client:** | Corcom Enterprises Partners |
| **Document No:** | 241139-ORS-XX-XX-RP-EN-13d-002 |

| Revision | Status | Author: | Reviewed by: | Approved By: | Issue Date |
|---|---|---|---|---|---|
| **P01** | **DRAFT** | **AN** | **JW** | | **15/11/2024** |
| **P02** | **FINAL** | **AN** | **LM** | **JB** | **22/11/2024** |
| **P03** | **REVIEW** | **AN** | **NK** | **LM** | **21/03/2025** |
| **P04** | **FINAL** | **AN** | **NK** | **LM** | **28/03/2025** |
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# LRD Opinion response

The below summarises opinions raised by Westmeath County Council (WMCC) after the LRD Stage 2 meeting and our response to these items

| Opinion / Recommendation | ORS Response |
|---|---|
| **7.EIA and AA** | |
| An EIAR Screening Report and Appropriate Assessment Screening Report with Natura Impact Statement, if required, to accompany any future planning application. | Both documents have been prepared and are submitted with this planning application as:<br>• EIA Screening Report.pdf (Ref: 241139-ORS-XX-XX-RP-EN-13d-001), and<br>• AA Screening Assessment.pdf (Ref: 241139-ORS-XX-XX-RP-EN-13d-008.pdf). |
| **8.Other Matters** | |
| Applicant to submit details in respect of the following: | |
| (i) All survey reports as noted in the Ecological impact Assessment such as the Bat Survey, Invasive Species, etc. | The Ecological Impact Assessment (EcIA.pdf - Ref: 241139-ORS-XX-XX-RP-EN-13d-007) addresses the detailed surveys conducted on the site as presented in Section 4 - Results. Invasive Species Suvey can be found in the Section 4.3.1, page 23 of the EcIA, and the Preliminary Bat Roost Potential survey had it results included in Appendix B of the EcIA report. |
| (ii) A Construction and Environmental Management Plan (CEMP) to include a full tabled list of mitigation measures. Mitigation measures identified in the Ecological Impact Assessment, Invasive Species Report and any other reports submitted with any future application should be included in the CEMP. | The Construction and Environmental Management Plan (CEMP.pdf) has been prepared by ORS, 2025 (Ref: 241139-ORS-XX-XX-RP-EN-13d-002) for the construction phase of the development. Section 4 - Environmental Management Plan summarises the mitigation measures and incorporates the proposed measures contained in the following reports:<br>• Arboricultural Impact Assessment, by John Morris Arboricultural Consultancy Ltd, 2025 (Ref: 24-398-04)<br>• Invasive Species Survey Report, by ORS - 2025 (Ref: 241139-ORS-XX-XX-RP-EN-13d-005)<br>• Noise Impact Assessment, by Amplitude Acoustics, 2025 (Ref: D240912RP1)<br>• Ecological Impact Assessment, by ORS - 2025 (EcIA.pdf - Ref: 241139-ORS-XX-XX-RP-EN-13d-007)<br>• Archaeological Assessment Report, by IAC, 2025 (Ref: IAC Project J4402.pdf)<br>Appendix B of the CEMP presents the Schedule of Mitigation Measures |
| (iii) A Noise Impact Assessment Report which assess the existing noise impact (mainly traffic) on the | Amplitude Acoustics were commissioned to undertake a Noise Impact Assessment for the proposed development, resulting in a report NIA.pdf (Ref: D240912RP1) which accompanies this planning application. The report takes into account the Westmeath Noise |

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|---|---|
| proposed residential development. Reference should be made to the Westmeath County Council Noise Action Plan 2024-2028 and the World Health Organisation Guidelines. | Action Plan 2024-2028 and the WHO Guidelines for noise impacts at construction stage. |
| (iv) A Construction and Demolition Resource Waste Management Plan for the proposed development. | A RWMP was carried out by ORS, 2025 (Ref: 241139-ORS-XX-XX-RP-EN-13d-003) and accompanies this planning application |
| (v) An Operational Waste Management Plan for the proposed development . | An OWMP has been prepared by ORS - 2025 - for the operational phase of the proposed development - OWMP.pdf (ref: 241139-ORS-XX-XX-RP-EN-13d-004) and accompanies this planning application. It also includes details and drawings of a 3-bin waste/compost/recycling facility for the Creche site. |
| (vi) A Site-Specific Flood Risk Assessment. | ORS 2025 has produced a Site-Specific Flood Risk Assessment - SSFRA.pdf (Ref: 241139-ORS-XX-XX-RP-EN-13d-009) for the development and is presented within the documentation which accompanies this planning application. It concludes that the Site is classified as Flood Zone C, and, therefore no justification test is required and it is not expected that its construction will increase the area flood risk. The proposed development is not exposed to any flood risk. |
| (vii) An updated Ecological report which considers all boundaries, trees and hedgerows located on site. | An updated Ecological Impact Assessment (EcIA.pdf - Ref: 241139-ORS-XX-XX-RP-EN-13d-007) is submitted with the planning application documentation and takes into account all boundaries, trees and hedgerows on the site. |

# 1 Introduction

This report has been prepared in support of an application for planning permission for a Large-Scale Residential Development (LRD) in Boreen Bradach, Kinnegad, Co. Westmeath.

The proposed development (herein “the Development”) will comprise a Large-Scale Residential Development (LRD) on a site at Boreen Bradach, Kinnegad, Co. Westmeath. The development will comprise 129 no. houses (1 bed, 2 beds, 3 beds and 4 beds) and the provision of a crèche facility. Provision of car, cycle and motorbike parking. Provision of a new vehicular access and additional pedestrian/cyclist access from L-5014 (Boreen Bradach Road) and associated upgrades to the local road. All associated site development works and services provision, bin stores, residential private open space, public open space, substation, boundary treatments, landscaping and all associated site development works.

## 1.1 Objective of Construction Environmental Management Plan

The CEMP is an outline document of the proposed approach to ensure that construction activities have the least impact on the surrounding environment. Below is an outline of the CEMP objectives, which will be required to be implemented, as a minimum, for the duration of the construction phase:

- Standard measures to avoid nuisance emissions of noise, vibration and dust, as set out in established guidelines, such as CIRIA and British Standard guidelines.
- Discharges to surface/groundwater receptors will be controlled at greenfield runoff rates, as per standard drainage discharge requirements.
- Dewatering on site will be completed following standard approaches to dewatering that will comprise onsite settlement and attenuation prior to discharge.
- Minimise the impact on local traffic conditions resulting from construction activities.
- Outline how the measures proposed above shall be implemented.

This CEMP has been prepared for the planning phase of the development to outline the general considerations of the works, from initial enabling works to sub-structure and superstructure construction with regards to waste and the environment.

Note the measures and approach in the CEMP represent industry standard best practice approaches and do not in and of themselves provide mitigation

A contractor is yet to be appointed to the construction of this development. This document will be revised upon appointment of an experienced and competent contractor, and the development will be constructed in accordance with the environmental management measures contained herein.

Due to the structure and nature of the CEMP, it will also require constant updating and revision throughout the construction period. Therefore, this is a working document and will be developed further prior to and during construction.

This CEMP is a document that forms part of the development planning application. It should be

read in conjunction with all drawings, reports, specifications, and information related to the development application.

## 1.2 Responsibility

A contractor has not yet been appointed to carry out the proposed project. Once appointed it will be the responsibility of the contractor to maintain and update the construction stage CEMP throughout the work and this updated document will be issued to Westmeath County Council.

# 2 Site Details

## 2.1 Site Description

The Proposed Development Site (hereafter “the Site”) is located to the north of the urban area of Kinnegad, in a Consolidation Site zoned land. The Site is facing the L5014 (Boreen Bradach Road), which connects the Killucan Road to the Kinnegad’s Main St (R161). The North side of the Site is occupied by Agricultural land and there are a number of dwellings adjacent to this side, in the Northeast limit of the Site. The Correllstown River. occurs *ca.* 1.0km NE of the site. Some housing estates occurs along the eastern site boundary. To the East, *ca.* 450m, there is a wastewater treatment plant adjacent to the Kinnegad River. The southern Side of the site is adjacent to urban lands and a variety of buildings including Church of the Assumption, a hotel, a commercial complex, some dwellings, and a primary school. All of these buildings face Main Street and the St Etchen’s Court. In this direction, Kinnegad River is *ca.* 250m SE of the Development boundary. To the west there is the aforementioned primary school. A complex of football courts is *ca.* 300m NW from the Site. Additional housing estates occur after *ca.* 215m to the West.

The Site location can be seen in **Figure 2.1** below.

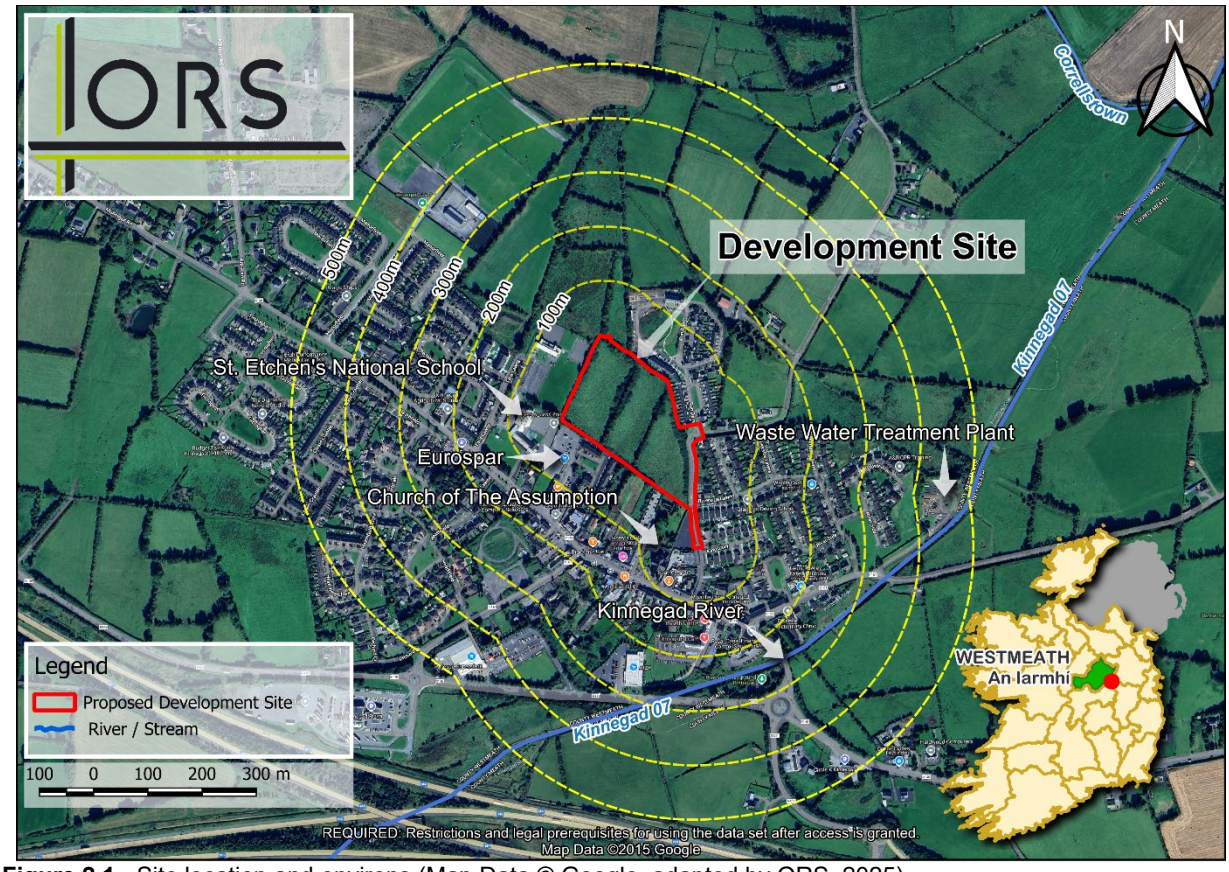



**Figure 2.1 -** Site location and environs (Map Data © Google, adapted by ORS, 2025)

## 2.2 Site Environmental Considerations

### 2.2.1 Topography

The Site is characterised as being a “Very gently sloping”, as per the Slope Gradient Classes from the Food and Agriculture Organization of The United Nations (FAO, 2006). A peak in the site topography, *ca*. 77.5 m AOD, is situated at the westernmost corner of the Site, at the boundary next to the area of a retail business (Eurospar) with a gradual gradient northeastward, to a low of ca. 73.04m AOD at the northern boundary next to an adjoining existing housing estate, where there is an existing drain also.

Based on this survey, the terrain has an overall gradient of *ca*.3.35 m over a distance of ca. 170m, resulting in a slope of *ca*. 2.0%, towards to the existing drain, the nearest receptor.

The GL on which the development is to be located has a minimum level of 73.004m AOD.

### 2.2.2 Hydrology

The Site is located within the Boyne Catchment (07), Boyne_SC_030 Sub Basin, KINNEGAD_030 Sub Catchment, Hydrometric Area 07 (Boyne).

The principal hydrological feature within the vicinity of the site consists of the Kinnegad River (EPA name: KINNEGAD_020) which runs from south to north *ca*. 250m Southeast of the proposed site. The Correllstown River is located *ca*. 950m North of the site and the Royal Canal Greenway is located *ca*. 3.5km Northeast of the site.

The Water Framework Directive aims to achieve good status for all rivers, lakes and transitional and coastal waters in the EU. Achieving good ecological status for surface waters is critical to this. According to the EPA maps, the Kinnegad River has a WFD status classified as “POOR” (3) immediately upstream Kinnegad’s urban area (Station RS07K010070) and “MODERATE” (3-4) downstream, after the bridge of the road R161 over the river and *ca*. 200m after the wastewater treatment plant (Stations RS07K010100 and RS07K010200). This indicates that the river is not in accordance with the WFD ecological status and chemical status.

EPA Maps were consulted to determine if any WFD River Network Routes designated as Designated Salmonid Waters under S.I. No. 293/1988 - European Communities (Quality of Salmonid Waters) Regulations 1988 existed in the surrounding areas of the site. None of the aforementioned riverine waterbodies were included in the register, therefore no adverse impacts from the site are envisioned for salmonid habitats.

Taking the scale and nature of the Development into consideration, only waterbodies within a 1km radius of the site were considered as potential receptors, and as such, only these waterbodies were included in this analysis. A summary of the nearest waterbodies can be found in **Table 2.1**.

**Table 2.1** - Waterbodies in Proximity to Site

| Waterbody | WFD Sub-basin Name | Code | Distance from Site | Direction from Site |
|---|---|---|---|---|
| Kinnegad River | Boyne_SC_030 | IE_EA_07K010200 | *ca.* 250m | SE |
| Correllstown Stream | Boyne_SC_030 | IE_EA_07K010200 | *ca.* 950m | N |

### 2.2.3 Geology & Hydrogeology

The current surface of the site is covered of Agricultura Areas, Pastures (Corine 2018). Teagasc soil mapping indicates that the surface / quaternary sediments at the site are classified as derived from mainly calcareous parent materials, as the Geological Survey of Ireland (GSI) defines it as Till derived from limestones (TLs) and according to the latest soil classification, the site presents the soil type known as Elton (1000a), constituted by a fine loamy drift with limestones.

The GSI bedrock database indicates that soils of the proposed site are underlain at depth by the Lucan Formation, which consists of beds of dark grey-black, fine-grained limestone with interbedded calcareous shale.

According to GSI groundwater maps, the site overlies a regionally important aquifer. The groundwater vulnerability index of the site is described as moderate to high. The hydrogeological setting at the site is described as a moderate permeability subsoil overlain by well-drained soil.

No groundwater source protection zones or protected hydrological features such as holy wells or springs are located within the boundaries of the of the proposed site. The nearest source protection zone is the Longwood Borehole (Longwood Water Supply Scheme) located *ca.* 13km west of the development.

A Ground Investigation was carried out by SIL and noted that the series of strata encountered during investigation was consistent across the site and was generally comprised of topsoil (to a max. depth of 0.30m BGL) and firm ground becoming stiff brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. During trial excavations, groundwater was not encountered. The findings are summarised in the **Table 2.2** and **Table 2.3**.

**Table 2.2** - SIL Soakway Test findings

| | From (mBGL) | To (mBGL) | |
|---|---|---|---|
| **SA01** | 0.00 | 0.30 | TOPSOIL |
| | 0.30 | 1.10 | Firm brown sandy slightly gravelly silty CLAY with medium cobble content. |
| | 1.10 | 2.10 | Firm becoming stiff brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content |
| **SA02** | 0.00 | 0.30 | TOPSOIL |
| | 0.30 | 2.10 | Firm becoming stiff brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. |
| **SA03** | 0.00 | 0.30 | TOPSOIL |
| | 0.30 | 2.10 | Firm becoming stiff brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. |
| **SA04** | 0.00 | 0.30 | TOPSOIL |
| | 0.30 | 2.10 | Firm becoming stiff brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. |
| **SA05** | 0.00 | 0.30 | TOPSOIL |
| | 0.30 | 2.10 | Firm becoming stiff brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. |
| **SA06** | 0.00 | 0.30 | TOPSOIL |
| | 0.30 | 2.10 | Firm becoming stiff brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. |

**Table 2.3 - SIL Trial Pit Logs summarised**

| Trial Pit | Depth (mBGL) | Stratum Description |
|---|---|---|
| **TP01** | 0.5 | Topsoil |
| | 1.5 | Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone |
| | 3.5 | Firm brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 250mm diameter). |
| | 3.5 | Pit terminated due to pit wall instability at the base. |
| **TP02** | 0.4 | Topsoil |
| | 3.4 | Firm becoming stiff brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 250mm diameter). |
| | 3.4 | Pit terminated due to pit wall instability at the base. |
| **TP03** | 0.3 | Topsoil |
| | 3.5 | Firm becoming stiff brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 250mm diameter). |
| | 3.5 | Pit terminated due to pit wall instability at the base. |
| **TP04** | 0.3 | Topsoil |
| | 3.6 | Firm becoming stiff brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 250mm diameter). |
| | 3.6 | Pit terminated due to pit wall instability at the base. |
| **TP05** | 0.3 | Topsoil |
| | 3.3 | Firm becoming stiff brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 250mm diameter). |
| | 3.3 | Pit terminated due to pit wall instability at the base. |


**Figure 2.2** - Location of the Trial Pits on Site

There are no geological heritage features located within, or in the immediate environs of the subject development site. The nearest geological heritage sites consist of Ballykane Hill located *ca.* 7.5km southeast of the site.

There are no Karstic landforms occurring in the vicinity of the Site.

### 2.2.4 Flood Risk

OPW Flood maps indicate 0.1%, 1% and 10% AEP flood extents are not predicted to occur within the boundary of the site. OPW Flood maps indicate no risk of groundwater flooding within the boundary of the site. OPW maps indicate that 1 no. past flood events have occurred within a 1.5km radius of the site, which was located at Corkhill *ca.* 1.2Km west of the site.

The source of the flood waters was described as run off (and the cause was Infiltration of runoff into combined sewer. The flooding occurred in the Boyne catchment, on the Kinnegad river, this flooding event started on 18th August 2008 and 19th November 2009.

Moreover, the site is not located within benefitting land associated with the Arterial Drainage and District Drainage Schemes.

A Site-Specific Flood Risk Assessment was submitted as part of the Planning Application (Ref: **241139-ORS-XX-XX-RP-EN-13d-009**.pdf)

### 2.2.5 Archaeology & Architectural Heritage

There is no archaeological heritage features located within the site boundary. The closest ones are listed in **Table 2.4** as follows:

**Table 2.4 -** Archaeological Heritage Sites in Proximity to Site

| Name | Code | Distance & Direction from Site |
|---|---|---|
| Ringfort - rath : KINNEGAD | WM027-070 | *Ca.* 660m SW |
| Bridge : ROSSAN | ME046-019 | 323m SE |
| Bridge : KINNEGAD | WM028-003 | 323m SE |

There are some zones of architectural importance close to the Site, as listed in 0below.

**Table 2.5 -** Architectural Heritage Sites in Proximity to the Site

| Name | Code | Distance & Direction from Site |
|---|---|---|
| House | 15316009 | *ca.* 100m S |
| Catholic Church of the Assumption: Church / Chapel | 15316005 | *ca.* 110m S |
| Catholic Church of the Assumption: presbytery/parochial/curate's house | 15316006 | *ca.* 88m S |
| House | 15316012 | *ca.* 178m E |
| Kinnegad National School: school | 15316004 | *ca.* 155m S |
| Kinnegad National School: school master's house | 15316003 | *ca.* 110m S |
| Graveyard/cemetery | 15316002 | *ca.* 125m S |
| House | 15316007 | *ca.* 177m S |
| House | 15316008 | *ca.* 192m S |
| J.C. Donnelly: house | 15316011 | *ca.* 230m SE |
| Kinnegad Bridge: bridge | 15316013 | *ca.* 330m SE |

It's important to note that the top three listed in the table above have their land adjacent to the boundary of the Site, but their buildings are outside of the boundary, as the table above shows.

Maeve Tobin of IAC Archaeology carried out, in March (2025), an assessment on behalf of Corcom, to study the impact, if any, on the archaeological and historical resource of the Large-scale Residential Development at Boreen Bradach, Kinnegad, Co. Westmeath (ITM 659760, 745600).

IAC has not identified any features of archaeological potential within the Development area. However, an early medieval enclosed settlement and burial ground was previously identified *ca*. 30m to the north and preserved *in situ*. It is possible that archaeological features associated with this settlement may extend within the Site, surviving as sub-surface remains. If present, groundworks associated with the Development may have a direct negative effect on any such surviving remains that have the potential to survive beneath the current ground level.

To ensure that no archaeological resources can be affected adversely, **Section 4.8** of this CEMP summarise the mitigation strategies from the IAC Archaeological Assessment Report (Ref: **IAC Project J4402**.pdf).

Overall, the archaeological/architectural sensitivity of the area in immediate proximity to the proposed site is considered to be low.

### 2.2.6 Ecological Receptors

There are no Special Protection Areas (SPAs) located within or in the immediate vicinity the Site boundary. With regards to Special Areas of Conservation (SACs) Natural Heritage Areas (NHAs), there are 4 no. designated sites located within 5km of the subject site. Their locations relative to the works is shown in **Figure 2.3** and are summarised in **Table 2.6**. A full description of the sites can be read on the website of the National Parks and Wildlife Service (www.npws.ie).

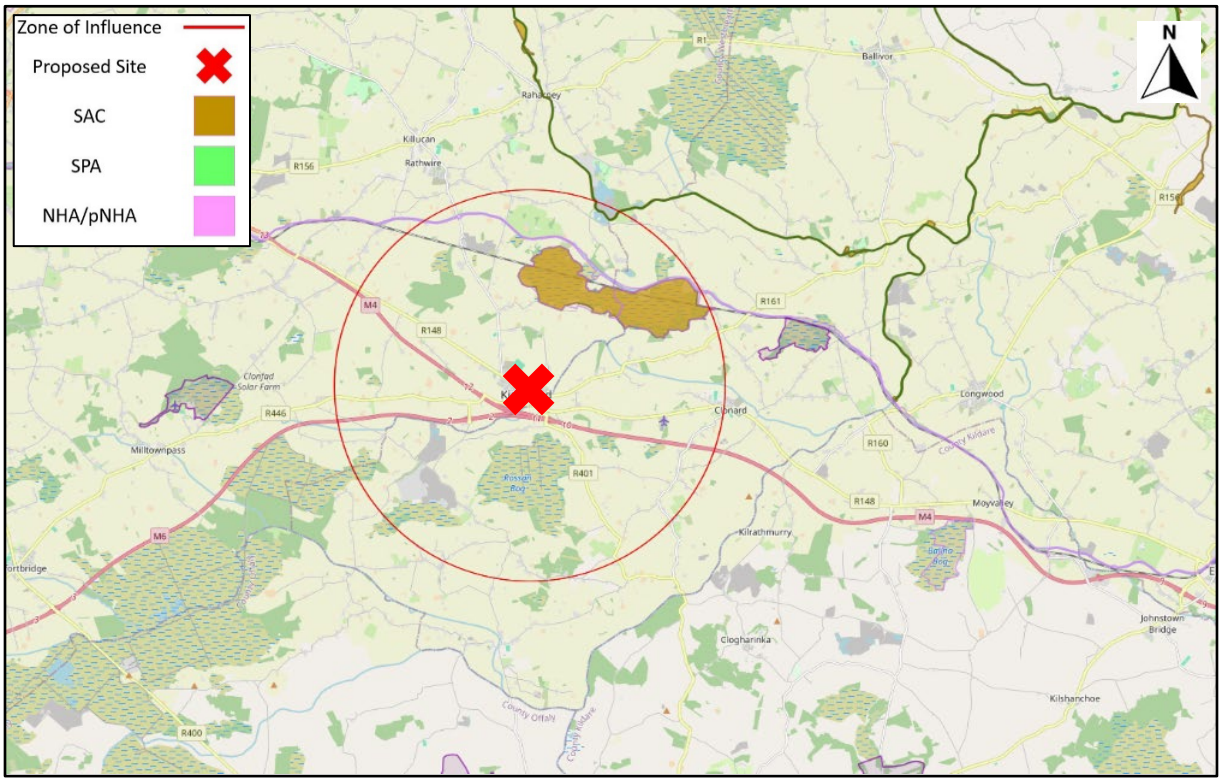



**Figure 2.3** - Protected sites within a 5km Zone of Influence of the Development.

| **Table 2.6** - Natura 2000 and Natural Heritage Areas within 5km of Subject Site | | | |
|---|---|---|---|
| **Site & Code** | **Location** | **Qualifying Interests** | **Screened In/Out** |
| Mount Hevey Bog SAC/pNHA, 002342/001584 | Located *ca.* 2.0km NE from site. | Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Depressions on peat substrates of the Rhynchosporion [7150] | **Screened Out**: The Kinnegad River flows in the direction of this SAC/pNHA however the Kilwarden River flowing from the designated site flows in the opposite direction. This means that a direct hydrological connection between the proposed site and the aforementioned designated site is not established. It is not foreseen that the proposed development will negatively affect the conservation objectives of this designated site. |
| Royal Canal pNHA, 002103 | Located *ca.* 3.2km NE from site. | N/A | **Screened Out**: A hydrological connection to this designated site is established via the Kinnegad River which connects to the Royal Canal *ca.* 9.2km east of the proposed site after connecting with the River Boyne. Despite this, it is not reasonably expected that potential contaminants arising from the proposed site could reasonably travel over 9km via surface water to reach this receptor in the presence of best practice construction methods. The proposed site lies sufficient distance from the Kinnegad River and the Royal Canal watercourse for significant negative effects to be considered unlikely. |
| River Boyne and River Blackwater SAC, 002299 | Located *ca.* 4.6km NE from site. | Alkaline fens [7230] Alluvial forests with *Alnus glutinosa* and Fraxinus excelsior (*Alno-Padion, Alnion incanae, Salicion albae*) [91E0] *Lampetra fluviatilis* (River Lamprey) [1099] *Salmo salar* (Salmon) [1106] *Lutra lutra* (Otter) [1355] | **Screened Out**: There are no direct hydrological links to this designated site nor is it reasonably expected that potential contaminants arising from the proposed site could travel over 4km to reach this sensitive receptor. It is not foreseen that the proposed development will have significant effects on the conservation objectives of this designated site. |
| River Boyne and River Blackwater SPA, 004232 | Located *ca.* 4.6km NE from site. | Kingfisher (*Alcedo atthis*) [A229] | **Screened Out**: There are no direct hydrological links to this designated site nor is it reasonably expected that potential contaminants arising from the proposed site could travel over 4km to reach this sensitive receptor. It is not foreseen that the proposed development will have significant effects on the conservation objectives of this designated site. |

Based on the conclusions shown in the AA Screening Report, on the basis of objective information provided to the Development, individually or in combination with other plans or projects, will not have a significant effect on any designated sites.

### 2.2.7 Invasive Species Survey

*ORS* carried out an Invasive Species Survey on the Site based upon a thorough site investigation carried out on the 14th August 2024, and as result, an Invasive Species Survey Report was issued with this planning application (Ref: **241139-ORS-XX-XX-RP-EN-13d-005**.pdf), providing an assessment of the site conditions with regards to the presence of invasive species and outlines measures for the management of any INNS encountered on site.

Invasive non-native species (INNS) pose a significant threat to biodiversity, and can cause economic, environmental, and human health problems. Defined by their introduction outside their natural range and subsequent harm, INNS often exhibit rapid growth, prolific reproduction, and resistance to standard control methods. Unmanaged, they can displace native vegetation, damage infrastructure, cause soil erosion, degrade landscapes, and compromise road safety. Regulations exist to restrict certain INNS.

The main INNS occurring in Ireland that require special measures and that have been assessed to ensure that they don't occur in the site include, among others, the following species and subspecies; Japanese Knotweed (*Fallopia japonica*), Giant Hogweed (*Heracleum mantegazzianum*), Giant Rhubarb (*Gunnera tinctoria*), and Indian Balsam (*Impatiens glandulifera*).

In conclusion, a detailed site survey revealed no presence of invasive non-native species (INNS) at the time of assessment. However, adherence to best practice measures for preventing the introduction and spread of INNS remains crucial throughout the development process.

Invasive species management and mitigation measures to prevent the translocation of invasive species to and from site are outlined in the ISS report and have been incorporated into **Section 4.6** of this CEMP.

### 2.2.8 Historical Land Use

The GeoHive Historic map viewer was consulted to assess previous land uses or developments within or in the vicinity of the proposed site boundaries. According to the First Edition 6” maps (1829-1841) and the 25” map (1890-1930), it has been shown that the ancient occupation of the proposed development location consisted of agricultural lands, as its surroundings, except for the southern boundary, already demonstrated the urban organization similar to today. The 25” map (1890-1930) doesn’t show any noticeable change in the use of the lands in the proposed development and its surroundings.

The Black and white aerial survey maps generated in 1995 along with the one generated for the period of 1996-2000 show some residential developments underway and already established in Kinnegad, however there wasn’t any change in the proposed development.

Aerial survey maps spanning from 2001-2005 show more residential units established to the southeast and northwest of the Site, and to the south of Kinnegad's main street showing that Kinnegad has seen important growth during the period. The Site was kept as it was, as agricultural land during this period. The 2006-2018 maps reveal some new residential developments to the east, and the proposed development site showed no change. From the date of this last imagery to now, the site remains as agricultural land.

### 2.2.9 Noise Pollution

Under the Environmental Noise Directive (END) 2002/49/EC, members are required to develop strategic noise maps and noise management action plans for transport noise sources every 5 years. These strategic noise maps can be accessed via the EPA website. **Figure 2.4** below outlines the modelled noise extents of the roads in the vicinity of the site undertaken by the EPA. As can be seen the site is contained within the modelled noise extents which occur along M4 Motorway located *ca.* 600m South of the site and R148 road, located *ca.* 345m South of the site. The highest concentration of noise generation currently occurs along M4 Motorway, but the noise concentration generated on R148 road is not negligible. Noise levels along the motorway and the road are greater than 75dB.

From the noise maps available on the EPA website, the noise range in the area of the proposed development site is between 55 and 59 dB.

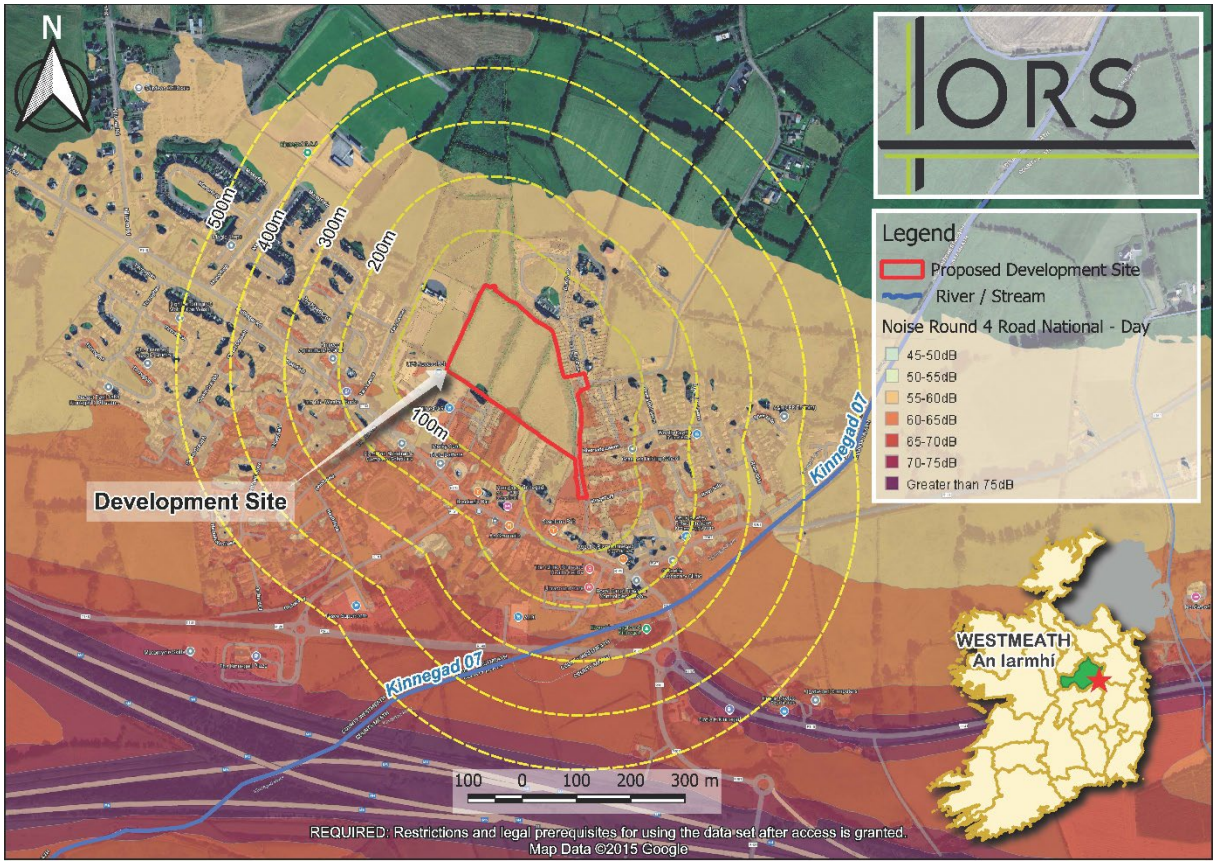



**Figure 2.4** - EPA Strategic Noise Map Noise Round 4 Road National – Lden (Source: epa.ie Map Viewer)

Amplitude Acoustics have been engaged to conduct a Noise Impact Assessment (March, 2025) for the Development. A noise and vibration impact assessment of the likely construction activities for the site was undertaken in general accordance with the methodology detailed in BS 5228-1:2009+A1: 2014 Code of practice for noise and vibration control on construction and open sites: Part 1 – Noise (BS 5228-1), 2014.

Attended and unattended noise surveys were conducted on 14th to 19th November 2024, in accordance with the guidance of *ISO 1996-2:2017 Acoustics — Description, measurement and assessment of environmental noise — Part 2: Determination of sound pressure levels* to assess the noise levels incident on the site. Using the measured noise levels, the daytime $L_{Aeq}$ (07:00 – 23:00) and night-time $L_{Aeq}$(23:00 – 07:00) were determined.

The noise sources included within the development have been used to conduct an operational noise impact assessment with regards to environmental noise standards BS4142, EPA NG4 and Westmeath Noise Action Plan, and the existing background noise levels.

The assessment has shown that there is an **insignificant** noise impact at the nearby residential locations due to the proposed development in place.

Construction noise mitigation measures are provided in **Section 4.2.**

# 3 Development Description

## 3.1 Phasing of the Development

This Construction Environmental Management Plan (CEMP) will outline the intended sequence of works. A construction program of 36 months serves as the agreed estimated timeline for the project. A layout plan of the development is detailed in **0**below.

The proposed works associated with the development contain a total net area of *ca.* 3.774 ha (Net), within a site with total area of 4.279 ha (gross), and consist of the following:

- Removal of the current gate and rearrangement of the site entrance to provide a new vehicular access and a new pedestrian access to the east of the site.
- Provision of 129 No. residential units consisting of residential dwellings, made up of 1 bed, 2 beds, 3 beds and 4 beds
- Provision of 1 No. crèche facility units.
- car and bicycle parking, bin stores, residential private open space, public open space, substation, boundary treatments, landscaping and all associated site development works.

**Figure 3.1** and **Figure 3.2** shows the proposed site plan.


**Figure 3.1** - Proposed Architectural Site Layout (Drawing: KIN-MCORM-AR-00-DR-P4-XX-CA1-1002.pdf - MCORM Architecture and Urban Design, adapted by ORS 2025)

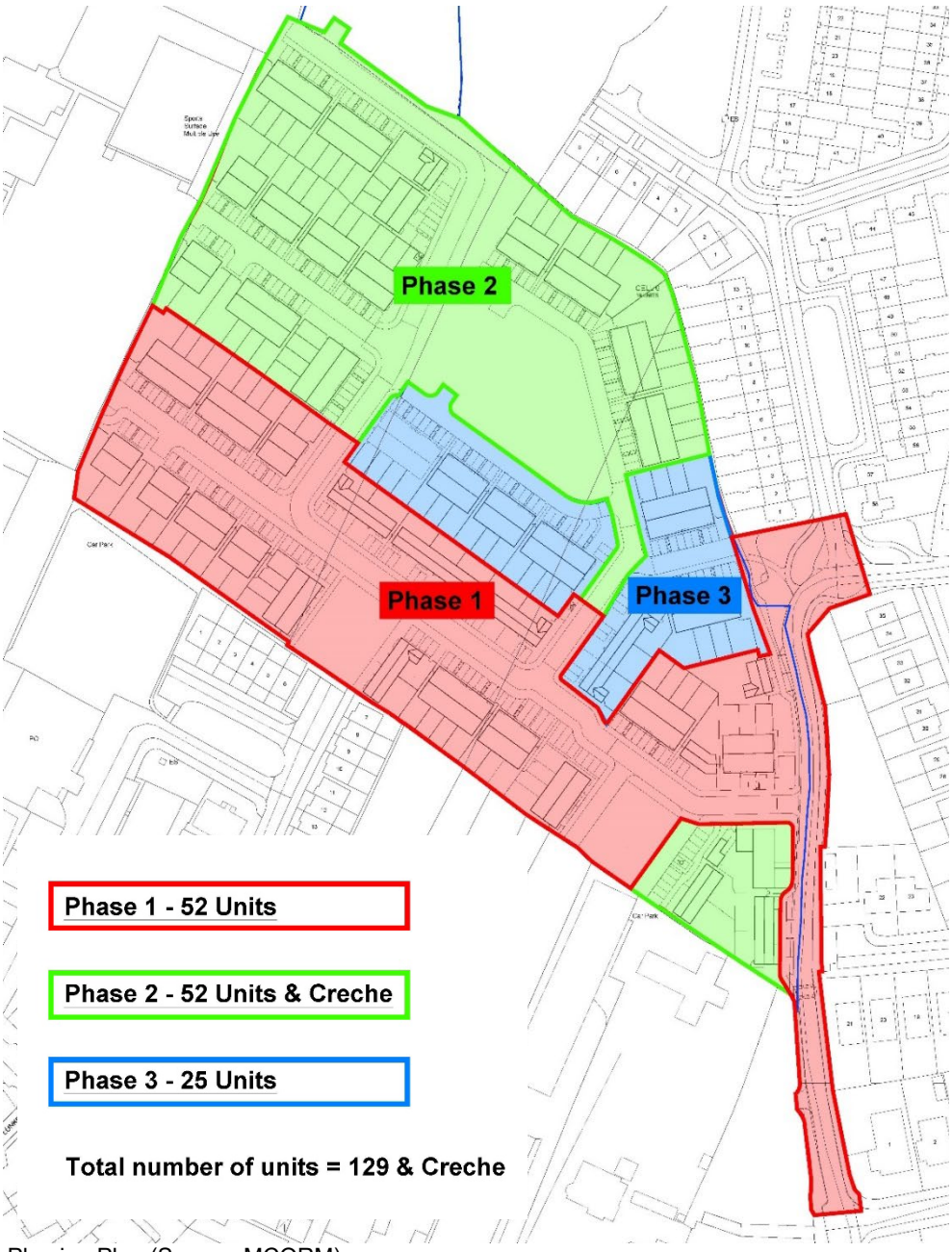



**Figure 3.2 -** Phasing Plan (Source: MCORM)

The project is to be divided into several distinct phases as follows:

**Pre-Construction Phase** – Site clearance and preliminary works

- Cleaning of the site, removal of internal hedgerows and vegetation which are not selected to be retained.
- Removal of any existing debris to a suitably licenced facility to facilitate the works.
- Site set-up, temporary services, site hoarding / fencing, staff welfare facilities.
- Ground works and landscaping.

**Construction Phase**

Provision of 129 No. residential units in phases, as follows:

- 19 - 4 Bed Two Storey houses
- 97 - 3 Bed Two Storey houses
- 11 - 2 Bed Two Storey houses
- 2 - 1 Bed Single Storey houses

**Ancillary works**

- Sustainable Drainage System (SuDS).
- Surface water and foul sewer network and associated attenuation.
- Bicycle parking spaces.
- Surface car parking, landscaping, all associated site services, and structures.
- Electrical and telecom services.
- Mains water supply connections.
- Wastewater drainage connections.
- Pedestrian access routes.
- Asphalt installation and road markings.
- Landscaping of public open areas.

## 3.2 Pre-Construction Activities

The main contractor will conduct enabling works for soil removal, establish site setup, appropriate signing, hoarding, security fencing and welfare facilities.

## 3.3 Waste Management

An Outline Resource & Waste Management Plan – RWMP accompanies this planning application (**Ref: 241139-ORS-XX-XX-RP-EN-13d-003**.pdf) and outlines strategies to minimize waste generation, promote resource recovery, and improve the overall management of waste during a construction or demolition project. It is a crucial tool for ensuring environmental sustainability and compliance with relevant regulations.

- Prevention.
- Reuse.
- Recycling.
- Green Procurement Principles.
- Off-Site Construction.
- Materials Optimisation.
- Flexibility and Deconstruction.

The developer, through the contractor to be named, will implement and document these activities in the recommended manner, which will evolve as the project progresses from design through to construction.

As this CEMP, the RWMP will be reviewed regularly throughout the construction phase of the development to ensure that opportunities to maximise waste reduction/efficiency are taken throughout and that data is collected on an ongoing basis to ensure it is as accurate as possible.

The RWMP is referred to throughout this document where relevant.

### 3.3.1 Environmental Induction

The Environmental Induction will be integrated into the general site induction on a case-by-case basis for each member of staff employed on-site depending on their assigned roles and responsibilities on site. Where necessary, the Environmental Induction will as a minimum include:

- An outline of the CEMP and RWMP structure and discussion of the key environmental risks and constraints;
- A discussion of the applicable Works Method Statement;
- The roles and responsibilities of staff, including contractors, in relation to environmental management.

### 3.3.2 Site Set-Up and Hoarding

Perimeter hoarding will be provided around the site to provide a barrier against unauthorized access from the public areas. Controlled access points to the site, in the form of gates or doors, will be kept locked at any time that these areas are not monitored (e.g. outside working hours).

The hoarding will be well-maintained and may be painted. Any hoardings may contain graphics portraying project information. The site hoarding may be branded using the appointed Contractors logos, etc. Some marketing images or information boards may also be placed on the hoarding. Access to site will be controlled and monitored outside of site working hours. All personnel working on site must have a valid Safe Pass card and the relevant CSCS cards.

A suitably secure site compound will be set up, wherever the restricted confines of the site will allow and will facilitate the efficient delivery of materials and personnel to the site. This compound is to include material storage, site office and meeting room, and staff welfare facilities. The site compound location will be specified by the main contractor once this is appointed. It is typically necessary to move the location of the compound as development progresses.

Generators or connection to electricity and water services will be set up to facilitate site works.

## 3.4 Construction Sequence of New Structures

The exact construction specifications of the proposed Large-Scale Residential Development (LRD) house units and associated infrastructure are yet to be finalised. This section of the CEMP will be updated once a main contractor is appointed and a definitive construction program is established, in advance of the commencement of the project.

A summary of operations for the construction phase is listed in **Table 3.1** below.

**Table 3.1** - Summary of Operations Expected

| **External envelope will or may require the following operations:** | **Internal work will or may require the following operations:** |
|---|---|
| • Blockwork/Brickwork<br>• Sand & cement rendering<br>• Windows & doors<br>• Roof Coverings – Slate and Tile | • Electrical installation<br>• Fireproofing<br>• Partitions and ceilings<br>• Painting<br>• Plastering<br>• Stairs<br>• Joinery<br>• Tiling<br>• Metal Work<br>• Sanitary-ware installation<br>• Vanity units<br>• Reinforcement works<br>• Insulation<br>• Plumbing<br>• Concreting/ floor slab<br>• Carpet installation<br>• Timber floors<br>• Roofing |
| **Above ground external operations:** | |
| • Landscaping<br>• Installation of manholes<br>• Lamp posts<br>• Tarmac/ surfacing<br>• Signs | |
| **Below ground operations:** | |
| • Foul sewer, surface water, rainwater, and potable water networks<br>• Attenuation tank<br>• Electrical ducting | |

## 3.5 Site Working Hours

Construction operations on site will generally be subject to planning permission and conditions. However, it may be necessary for some construction operations to be undertaken outside these times, for example, service diversions and connections, concrete finishing and fit-out works, etc.

Deliveries of materials to site will generally be between the hours of 07:00 – 18:00 Monday to Friday, and 08:00 to 13:00 on Saturdays, or as specified by the Westmeath County Council. There may be occasions where it is necessary to make certain deliveries outside these times, for example, where large loads are limited to road usage outside peak times.

# 4 Environmental Management Plan

## 4.1 Background

A preliminary risk assessment was carried out for the Site in accordance with the Air Quality Monitoring and Noise Control Unit's Good Practice Guide for Construction and Demolition, produced by the London Authorities Noise Action Forum, July 2016. This assessment took into account factors relating to the proximity of the site to sensitive receptors and rated the levels of nuisance and disruption anticipated with scheduled work practices.

Following the completion of this risk assessment, available in **Appendix A**, the Development was determined to be a **High** risk site. This section outlines suitable measures to minimise nuisance noise and dust emissions in order to minimise any impact of the proposed developments on surrounding receptors.

**Appendix B**: Schedule of Mitigation Measures presents a list of mitigation measures summarising the procedures that the contractor shall implement during, as minimum, the whole construction phase, including the measures provided in the Ecological Report and Invasive Species Report.

This section outlines the overall plans to mitigate the potential effects of the construction works regarding Noise, Dust and Air Quality, Surface Water and Groundwater Protection, and the Protection of Ecological Receptors.

## 4.2 Noise

Noise and vibration levels generated by construction activities have the potential to impact upon nearby noise sensitive receptors; however, the magnitude of the potential impact depends upon a number of variables, including type of activity; periods of operation; source to receiver distance; ground absorption and reflections.

The potential exists for adverse noise and vibration effects from construction works on sensitive receptors in the surrounding area and therefore the levels of expected construction noise are further assessed below.

The nearest noise sensitive receptors are considered to be the residential dwellings east and south of the site as well as the school to the west, as indicated in the **Figure 4.1**.


**Figure 4.1** - Nearest Noise Sensitive Receptors/Locations (Image: Map Data ©2015 Google - Amplitude Acoustics, 2025 – adapted by ORS 2025)

According to the ABC method for assessing the significant effects from construction noise, in BS5228 "Code of practice for noise and vibration control on construction and open sites – Part 1: Noise", states that "a potential significant effect is indicated if the $L_{Aeq}$ noise level arising from the site exceeds the threshold level for the category appropriate to the ambient noise level."

Based on the results of the noise survey the ambient noise levels at the nearest noise sensitive receivers are expected to fall within Category A, which provides the following threshold values, and the Contractor shall aim to restrict noise levels to the following levels (measured from nearest noise sensitive location):

- Daytime (07:00 to 19:00 hrs) – 65dB $L_{Aeq}$
- Evening (19:00 to 23:00 hrs) and Weekends – 55dB $L_{Aeq}$
- Night-time (23:00 to 07:00 hrs) – 45dB $L_{Aeq}$

Noise predictions and baseline measurements have been used to provide an estimate of the construction noise emissions from the site during the daytime construction works at the nearest receptor. From these predictions it has been possible to determine whether the adopted daytime target noise criterion of 65 dBA $L_{eq,10hrs}$ is likely to be met during the works. The magnitude of any impact has then been determined and the requirement for further mitigation measures considered.

Mitigation Measures from the Noise Impact Assessment prepared by Amplitude Acoustics were incorporated into this CEMP, as follows:

- **General** - The following general mitigation measures are recommendations from BS5228 and should be employed on this site.
    - Avoid unnecessary revving of engines and switch off equipment when not required;
    - Keep internal haul routes well maintained and avoid steep gradients;
    - Use rubber linings in, for example, chutes and dumpers to reduce impact noise;
    - Minimize drop height of materials;
    - Start plant and vehicles sequentially rather than all together;
    - Use alternative methods

- **Community Relations** - BS5228 suggests the following with respect to community relations:
  *"Good relations with people living and working in the vicinity of site operations are of paramount importance. Early establishment and maintenance of these relations throughout the carrying out of site operations will go some way towards allaying people's fears.*

  *It is suggested that good relations can be developed by keeping people informed of progress and by treating complaints fairly and expeditiously. The person, company or organization carrying out work on site should appoint a responsible person to liaise with the public. The formation of liaison committees with members of the public can be considered for longer term projects when relatively large numbers of people are involved."*

  With vibration, the fear of building damage can be exacerbated where people are unsure of the levels of vibration it would take to impact upon their property, and therefore good communication can help to alleviate fears beforehand.

- **Specification and Substitution** - All plant specifications must be reviewed to ensure they are the quietest available for the required purpose; this is in accordance with best practicable means
- **Modification of Plant and Equipment** - The following extract from BS5228 sets out how plant noise may be reduced by modification.
  *"Noise from existing plant and equipment can often be reduced by modification or by the application of improved sound reduction methods, but this should only be carried out after consultation with the manufacturer. Suppliers of plant will often have ready-made kits available and will often have experience of reducing noise from their plant. For steady continuous noise, such as that caused by diesel engines, it might be possible to reduce the noise emitted by fitting a more effective exhaust silencer system or by designing an acoustic canopy to replace the normal engine cover. Any such project should be carried out in consultation with the original equipment manufacturer and with a specialist in noise reduction techniques. The replacement canopy should not cause the engine to overheat nor interfere excessively with routine maintenance operations.*

  *It might be possible in certain circumstances to substitute electric motors for diesel engines, with consequent reduction in noise. On-site generators supplying electricity for electric*

*motors should be suitably enclosed and appropriately located. Noise caused by resonance of body panels and cover plates can be reduced by stiffening with additional ribs or by increasing the damping effect with a surface coating of special resonance damping material. Rattling noises can be controlled by tightening loose parts and by fixing resilient materials between the surfaces in contact; this is generally a maintenance issue."*

The following table contains suggested methods for reducing noise levels from construction plant specific to this site. These measures should be implemented wherever possible.

**Table 4.1** - Noise Impact Assessment Recommended Mitigation Measures

| Plant Type | Source of Noise | Proposed Mitigation | Potential Sound Reduction dBA |
|---|---|---|---|
| Earth moving equipment | Engine | Fit more efficient exhaust sound reduction equipment Manufacturers' enclosure panels need to be kept closed | 5 – 10 |
| Breaker | Tool Bit | Fit suitably designed muffler or sound reduction equipment to reduce noise without impairing machine efficiency Ensure all leaks in airline are sealed | Up to 15 |
| | | Use dampened bit to eliminate ringing | |
| | Total Machine | Erect acoustic screen between compressor or generator and noise-sensitive area. When possible, line of sight between top of machine and reception point needs to be obscured | Up to 10 |
| Concrete Pump | Engine Pushing | Use machine inside acoustic enclosure with allowance for engine cooling and exhaust | Up to 20 |
| Concrete Mixers | Cleaning | Do not hammer the drum | n/a |
| Materials Handling | Impact of Material | Do not drop materials from excessive heights. Screen dropping zones, especially on conveyor systems. Line chutes and dump trucks with a resilient material | Up to 15 |

- **Enclosures** - The significant sources of plant noise should be enclosed where possible. The close proximity of the nearest sensitive receptors means that all practicable means to reduce noise must be employed wherever possible.

  The concrete pump is a significant noise source which could potentially be enclosed. Covers should enclose the plant as fully as possible, should be of sufficient mass (17kg/m2 minimum), and should be lined inside with an acoustically absorbent material with minimum 25mm thickness. A maximum of 20dBA sound reduction can be expected from a suitably designed enclosure with openings. An example of the enclosure design is shown in the **Figure 4.2**.

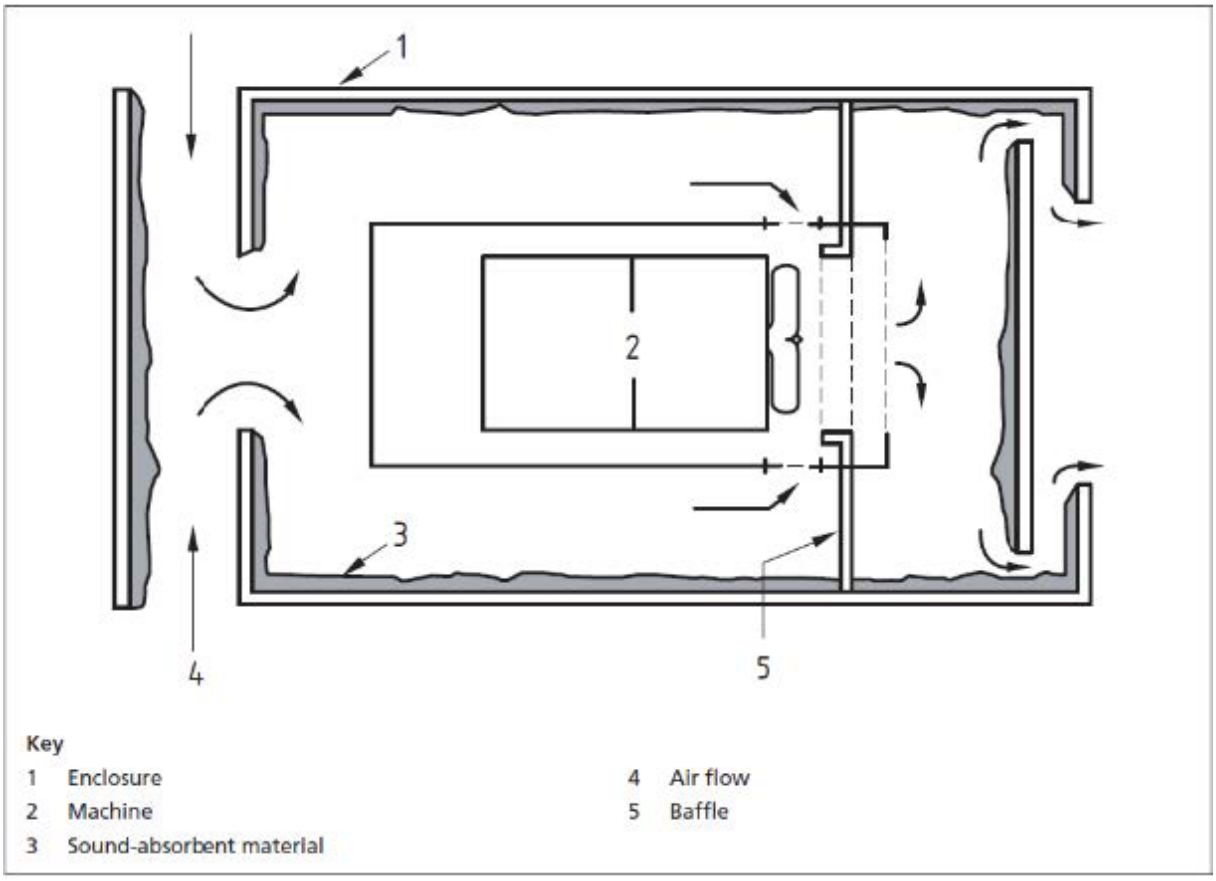



**Figure 4.2** - Example Plant Enclosure

- **Use and Siting of Equipment** - All plant should be used in accordance with manufacturers' instructions.
- **Use and Siting of Equipment** - Plant should be located away from noise-sensitive areas where possible; loading and unloading should not be carried out next to the sensitive receptors. The concrete pump and drum should be located at least 25m from the nearest sensitive receptors wherever possible.
- **Use and Siting of Equipment** - The plant used intermittently, should be shut down or throttled down to a minimum between work periods.
- **Use and Siting of Equipment** - Acoustic convers to engines must be kept closed when the plant is in use or idling; compressors should have effective enclosures and should not be operated with access panels open.
    - The following advice is taken from BS5228:

      *"Materials should be lowered whenever practicable and should not be dropped. The surfaces on to which the materials are being moved should be covered by resilient material.*

      *When a site is in a residential environment, lorries should not arrive at or depart from the site at a time inconvenient to residents."*

- **Maintenance** - Noise caused by vibrating machinery having rotating parts can be reduced by attention to proper balancing. Frictional noise from the cutting action of tools and saws can be reduced if the tools are kept sharp. Noises caused by friction in conveyor rollers, trolleys and other machines can be reduced by proper lubrication."
- **Screening** - It is recommended that a high mass site hoarding is used along the West, North and East site boundaries to protect the worst-case noise level impact. This barrier should be as tall as is reasonably practical.

**Complementary Measures**

To minimise noise from construction operations, no heavy construction equipment/ machinery (to include pneumatic drills, construction vehicles, generators, etc.) shall be operated on or adjacent to the construction site before 07:00 or after 18:00, Monday to Friday, and before 08:00 or after 13:00 on Saturdays. No activities shall take place on site on Sundays or Bank Holidays, unless authorised by the Council in writing, at least 3 working days in advance. No activity, which would reasonably be expected to cause annoyance to residents in the vicinity, shall take place on site between the hours of 19:00 and 07:00am.

The proposed development will be obliged to comply with BS 5228 "*Noise Control on Construction and open sites Part 1*". The contractor shall implement the following measures to eliminate or reduce noise levels where possible:

- No plant used on site will be permitted to cause an on-going public nuisance due to noise.
- The best means practicable, including proper maintenance of plant, will be employed to minimise the noise produced by on site operations.
- All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working for the duration of the contract.
- Compressors will be attenuated models, fitted with properly lines and sealed acoustic convers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers.
- Machinery that is used intermittently will be shut down or throttled back to a minimum during periods when not in use.
- Any plant, such as generators or pumps, which is required to operate before 7am or after 6pm will be surrounded by an acoustic enclosure or portable screen.
- During the construction programme, supervision of the works will be include ensuring compliance with noise limits, using methods outlined in *BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites* – Noise.
- The hours of construction activity will be limited to avoid unsociable hours where possible. Construction operations shall generally be restricted to between 7am and 6pm on weekdays and between 8am and 1pm on Saturdays. However, any necessary or emergency out of hours working will be agreed in advance with the local Planning Authority.
- All site staff shall be briefed on noise mitigation measures and the application of best practicable means to be employed to control noise.
- All staff should be briefed on the complaints procedure, the mitigation requirement and their

responsibilities to register and escalate complaints received.

- Good Quality 2.4m high (minimum height) site hoarding shall to be erected to maximise the reduction in noise levels. Hoarding to be painted & maintained for duration of works. Hoarding to be designed to withstand wind loading for that area hoarding to mitigate excessive noise pollution to neighbouring estates and sensitive receptors.
- Contact details of the contractor and Construction Project Manager shall be displayed to the public, together with the permitted operating hours.
- Material and plant loading and unloading shall only take place during normal working hours.
- Ensure that each item of plant and equipment complies with the noise limits quoted in the relevant European Commission Directive 2000/14/EC.
- Use all plant and equipment only for the tasks for which it has been designed.
- Locate movable plant away from noise sensitive receptors.
- Avoid the transfer of noise and vibration from demolition activities to adjoining occupied buildings through cutting any vibration transmission path or by structural separation of buildings.
- Ensure written confirmation is received from Westmeath County Council Planning Department when applying for extensions to normal working hours. No out of hours work to be undertaken unless permission to do so has been granted.
- In the event that excessive noise levels are deemed necessary, Westmeath County Council Planning Department and local residents, must be suitably notified in advance of said works.

### 4.3 Dust and Air Quality

Dust prevention measures will be put in place for any particulate pollution. The extent of dust generation under construction activities being carried out is dependent on environmental factors such as rainfall, wind speed and wind direction. The most likely sources of dust generation at this site include the demolition of the existing structure, the soil stripping and excavation of foundations for the buildings and the sawing of wood and concrete throughout the duration of the project. Dust can also be dispersed by excessive vehicular movement around the site during dry periods. Control Measures are outlined as follows:

- Soil will not be exposed until a replacing capping layer is almost ready to be placed. This is to ensure that soil is left exposed for the minimum amount of time possible.
- Material stockpiles will be strategically placed to reduce wind exposure. Materials will be ordered on an ‘’as needed’’ basis to reduce excessive storage.
- The contractor will spray water on the surface of all roads in the vicinity of the site if required in order to minimise dust generation from the construction activities.
- Appropriate dust suppression will be employed to prevent fugitive emissions affecting those occupying neighbouring properties or pathways.
- Restrict vehicle speeds to 15 kmph as high vehicle speeds cause dust to rise.
- Covers or dampening of soil and material stockpiles when high wind and dry weather are encountered, if required.
- During the course of construction, the contractor shall provide on site a covered skip or

other such receptacle for the deposit therein of all rubbish, litter, packaging, rubble and other such materials arising from the works. The contractor shall ensure that the site and its environs are maintained at all times in a clean and tidy condition.

- All consignments containing material with the potential to cause air pollution being transported by skips, lorries, trucks or tippers shall be covered during transit on and off site.
- Street and footpath cleaning shall be undertaken during the ground works phase to minimise dust emissions, if deemed necessary.
- A road sweeper with vacuuming capabilities will operate along construction traffic routes throughout the development cycle to alleviate excessive material deposition along transport routes in the vicinity of the site, when deemed necessary.
- Wet cut concrete saws are only to be used on site. Tools with dust extraction filters are to be used when and where possible.
- Additionally, a wheel wash system may be installed during the works if the Construction Project Manager or Resident Engineer deems it necessary to reduce dust and dirt on the public roads along the construction routes.
- Wet cut concrete saws are only to be used on site. Tools with dust extraction filters are to be used when and where possible.
- No materials shall be burned on-site.
- During any demolition phase, water hoses with appropriate mist heads, or equivalent, are to be used to dampen structures prior to and during demolition, to limit dust generation.

## 4.4 Surface Water and Groundwater Protection

Surface water drainage from the Site from internal roadways, pedestrian footpaths, roofs and hardstanding areas will be collected via a gravity drainage network integrated into the existing surface water drainage network.

The main pollutants with the potential to impact water receptors are silt, fuel/oil, concrete and chemicals. The steps outlined below aim to eliminate contamination of site surface water runoff. The recommendations are advised with reference to the Inland Fisheries Board recommendations for protection of adjacent water courses during the construction phase. They are also intended to contain groundwater contamination, which requires extra caution given the aquifer's high vulnerability.

By default, no refuelling and fuel/oil storage shall take place within the Site. In the event of activities related to refuelling or fuel/oil storage within the Site exceptionally arises, or if this measure is determined to be unfeasible, mitigation measures are outlined and must be adhered to. Exceptions to this rule must be duly justified, registered, and communicated to the Westmeath Co. Co. Planning Department in a timely manner. Furthermore, all such activities must be carried out in full compliance with the measures outlined in this Section.

- Harmful materials such as fuels, oils, greases, paints and hydraulic fluids must be stored in bunded compounds well away from storm water drains and gullies. Refuelling of machinery should only take place at petrol stations or, if this is not practicable and refuelling must take place on site, as in the case of equipment such as generators, pumps, compressors, or

even construction machinery and vehicles, this should be done using drip trays.

- All manholes and gullies will be covered with silt fencing material and sandbags to limit silt and chemical run-off into surface water.
- Refuelling will not be permitted within 10m of surface drains, with the exception of pumps for dewatering purposes, which are to be stored on portable spill bunds.
- Runoff from machine service and concrete/grout mixing areas must not enter storm water drains and gullies leading off-site.
- No direct discharges to be made to waters where there is potential for cement/ residues/ oils/ chemicals in discharges.
- Stockpile areas for sands and gravel should be kept to minimum size, well away from storm water drains and gullies leading off-site.
- Open excavations to be backfilled immediately following installation of services, etc.
- Earthworks and the movement of plant on soil surfaces will be avoided during periods of extensive rainfall to limit silt laden runoff and damage to soil structure.
- Pre-cast concrete should be used wherever possible. When this is not possible, any works using cast-in-place (poured) concrete must be done in the dry and effectively isolated from any flowing water or drains for a sufficient period to ensure no leachate from the concrete.
- Following heavy rainfall events, it is important to mitigate excessive outflow of silt and particulates to the surrounding surface water drainage system. During the pre-construction & construction phase, silt outflows to surface water drainage infrastructure (gullies, drains, etc.) along the access road may be mitigated using sandbags or silt fencing, where suitable. During the construction phase, once site-specific surface water drainage infrastructure has been developed, silt chambers should be blocked off following high rainfall events to prevent excessive silt outflows to the surface water drainage system.
- All storage tanks areas and drum storage areas shall be rendered impervious to materials stored therein. In addition, storage tank areas shall be bunded, either locally or remotely, to a volume equal to 110% of the sum of the volumes of the largest five drums likely to be stored therein. The height of the bund for any drum storage area shall be not less than 300 millimetres
- The contractor shall clean any spillages on the public roads arising from the development, as the need arises or when requested to do so by the Planning Authority.
- Containment of all construction-related fuel and oil within specially constructed bunds to ensure that fuel spillages are fully contained. Such bunds shall be roofed to exclude rainwater.

## 4.5 Arboricultural Method Statements

An Arboricultural Impact Assessment was carried out by John Morris Arboricultural Consultancy Ltd, 2025 (ref: 24-398-04), which proposed an Arboricultural Method Statement outlining a system of working to ensure retained trees are protected at all times during construction. It should be read in conjunction with the Tree Impact & Protection Plan (TIPP) – (Ref: 24-398-03).

**Pre-Commencement Meeting**

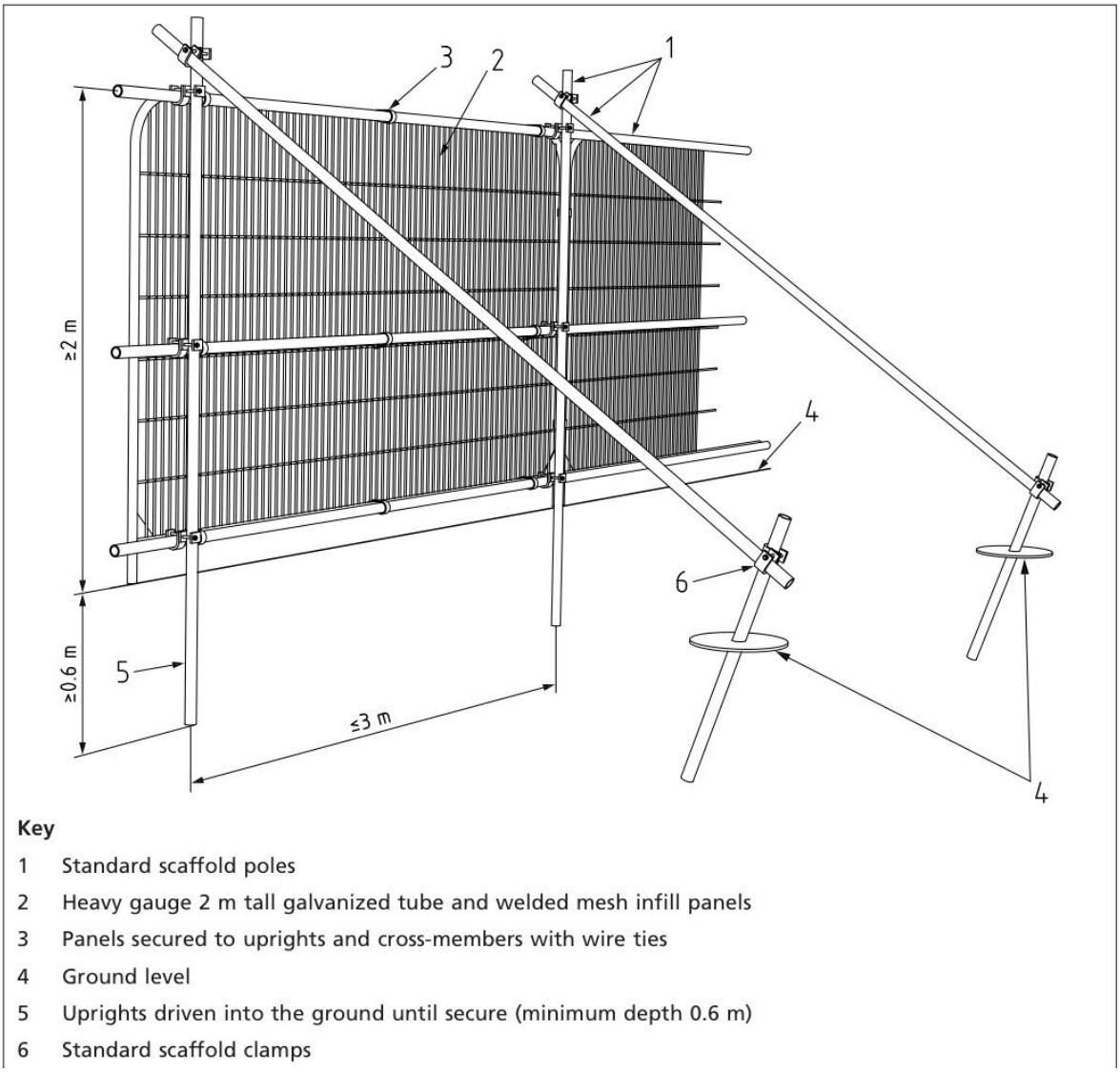
- A pre-commencement meeting will be held prior to commencement of any demolition or construction works on site. The pre-commencement meeting may require the attendance of:
    - The Main Works Contractor;
    - Landscape Architect;
    - Structural/Civil Engineer;
    - Project Arboriculturist; and
    - Any other parties as required.
- The purpose of this meeting will be to agree the details of the tree protection measures and ensure that all aspects of tree protection are understood. The Project Arboriculturist and Main Works Contractor will agree and mark the location of the tree protective fencing and temporary ground protection and any other specific tree protection measures, as required.

**Key Responsibilities**

- It is the responsibility of the main contractor to ensure that all site personnel fully understand the protection measures on the site, that tree protection measures are adhered to at all times, and that the project arboriculturist is contacted if there are any issues related to trees.

**Tree Protective Fencing**

- A protective fence will be erected around retained trees, prior to the commencement of materials or machinery being brought onto site, removal of soil or any form of construction. The area within this fencing will form the construction exclusion zone (CEZ) and it will be afforded protection at all times. No works will be undertaken within this zone that causes compaction to the soil, severance of tree roots or damage to tree canopies.
- The fence is to be sited in accordance with the Tree Impact & Protection Plan (Ref: 24-398-03) attached to the Arboricultural Impact Assessment report.
- Details of the minimum distance for fencing from trees can be found in the Tree Schedule attached to this Arboricultural Impact Assessment report.
- The fence will have signs attached to it stating that it defines a CEZ and that no works are permitted beyond it.
- The precise form of fencing can vary provided it is fit for purpose and prevents damaging activities within the CEZ. For a proposal of this nature the Heras 151 system of fencing will afford the necessary level of protection, as indicated in **Figure 4.3**.




**Key**

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

**Figure 4.3** – Default Specification for Protective Barrier

- The protective fencing may only be removed following completion of all construction works.
- The following principles will be adopted by site personnel within the CEZ during construction, to ensure protection of retained trees:
    - No level changes.
    - No excavations.
    - No fires.
    - No use of herbicides.
    - No storage of materials, machinery or access for construction workers.

- An example of a tree protection sign is provided in **Figure 4.4**.


**Figure 4.4** - Example of Tree Protective Signs

### Site Compounds & Facilities

- Site compounds and facilities will be located outside of all RPAs and CEZs as identified on the Tree Impact & Protection Plan (Ref: 24-398-03).

### Site Cranes, Piling Rigs and Machinery

- The location of all site cranes, piling rigs and other machinery should be sited outside of RPAs to avoid soil compaction.

### Pollution Control

- Any storage or mixing station located outside of the construction exclusion zone will be located in a place that minimises the risk of contaminated runoff entering to prevent adverse physiological impacts on trees that may result from contact with rooting environments. This may be achieved by using a non-permeable membrane on the ground, surrounded by sandbags or sawdust to contain any spillage.

### Temporary Ground Protection

- Where it is not practical to protect RPAs by use of protective fencing, BS5837 allows for the

fencing to be set back and the soil shielded by ground protection. A range of methods can be used including retaining existing hard surfaces or structures that already protect the soil, installing new temporary surfaces, or a combination of both. Whatever the choice of method, the end result must be that the underlying soil remains undisturbed and retains the capacity to support existing and new roots.

- If fences are to be set back on a temporary the following specifications are recommended for use as temporary ground protection to protect roots and soil.
- For pedestrian traffic, a plywood board with a minimum thickness of 40mm should be laid on a minimum of 100mm deep woodchip, with geotextile membrane beneath.
- For small plant machinery with a gross weight of up to 2 tonne, interlinking aluminium or composite tracks with sufficient load bearing capacity should be laid on a minimum of 150mm deep woodchip, with geotextile membrane beneath.
- For heavy machinery with a gross weight of up to 3.5tonne, interlinking aluminium or composite track with sufficient load bearing capacity should be laid over a minimum layer of 200mm deep woodchip, with a geotextile membrane beneath.
- Any temporary protective surfaces must remain in place until all construction activity is finished.
- Upon completion of construction works, the temporary ground protective measures should be removed working backwards from on top of the system. This will need to be done carefully ensure that there is no excavation or compaction of the original surface or change in ground levels.
- Once this material has been removed vehicular access to this part of the site will not be permitted.
- The location of where temporary ground protection is to be located and at what stage of development is illustrated on the TIPP attached to this report.

**Excavations and Removal of Existing Surfaces**

- All excavation must be carried out carefully using spades, forks and trowels, taking care not to damage the bark and wood of any roots. Specialist tools for removing soil around roots using compressed air such as an Air Spade may be an appropriate alternative to hand digging, if available.
- All soil removal must be undertaken with care to minimise the disturbance of roots beyond the
- immediate area of excavation. Where possible, flexible clumps of small roots, including fibrous roots, should be retained if they can be displaced temporarily or permanently beyond the excavation without damage.
- If digging by hand, a fork should be used to loosen the soil and help locate any substantial roots. Once the roots have been located the trowel should be used to clear the soil away from them without damaging the bark. Exposed roots that are to be removed should be cut cleanly with a sharp saw or secateurs 100-200mm behind the final face of the excavation.
- Roots temporarily exposed must be protected from direct sunlight, drying out and extreme temperatures by appropriate covering. Roots greater than 25mm in diameter should only be cut in exceptional circumstances. Roots greater than 100mm in diameter should only be cut

after consultation with the project arboriculturist.

**Upgrading Existing Surfaces**

- Where upgrading of existing hard surfaces is required, the preferred option will be to leave the surface in place and install the new surface specification on top.
- If the retained surface is impermeable, it may be appropriate to remove or puncture sections to create a more favourable environment for roots beneath, before the new surface is laid, through consultation with the project arboriculturist.
- Where the existing surface is to be removed or upgraded, the surface layer should be excavated down the existing subbase and the new surface specification installed on top, to prevent any damage to roots beneath.
- It is recommended that where possible, new and upgraded hard surfaces should be porous (e.g. permeable brick paving, porous resin bound aggregate or tarmac) to allow the flow or water and oxygen to roots. Wet concrete should only be poured if an impermeable geotextile fabric has first been installed to prevent soil contamination from toxic leachate.
- New surfaces and upgraded surfaces should be set back from the base of stems by a minimum of 500mm to allow space for future growth and minimise the risk of distortion with new surface.

**Installation of Services**

- All services and utilities should be installed within existing service routes and where possible outside of RPAs.
- Where installation of utilities or services is required within RPAs, working practices will be adopted in accordance with the National Joint Utilities (NJUG) 10, Vol 4, Issue 2, 2007 ‘Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees’.
- In accordance with 4.1.3 of NJUG 10 2007, acceptable techniques in order of preference include:
- Trenchless; b) Broken Trench; and c) Continuous Trench. Trenchless methods involve the use of thrust boring machinery, whilst broken and continuous trench methods require that excavations within RPAs are carried out using hand tools only.
- For a proposal of this nature, broken or continuous trench methods are the most appropriate and should be undertaken as per NJUG 10, to prevent any damage to tree roots or disruption to soil rooting environments.

**Installation of Railings, Lighting Columns or Street Furniture**

- The erection of a new railings, lighting columns or street furniture will require ‘hand-digging’ in the location where any foundations or posts are required within RPAs, to prevent damage to tree roots.
- Any soil removal during excavations must be undertaken with care to minimise root disturbance and avoid any damage to root bark.
- Exposed roots that are to be removed should be cut cleanly with a sharp saw or secateurs 10-20mm behind the final face of the excavation.

- Roots greater than 25mm diameter should only be cut in exceptional circumstances and following approval by the project arboriculturist.
- Fibrous clumps of roots must be retained where possible, with any exposed roots protected from desiccation by covering them with a damp hessian sack or damp sharp sand (builders' sand must not be used).
- Prior to backfilling, roots must be surrounded with topsoil or sharp sand before the excavated earth is replaced. The soil must be free of contaminates and any foreign objects that may be potentially harmful to roots.

**Soft Landscaping**

- To avoid damage to existing tree roots and prevent soil compact, any machinery used to remove existing surfaces and ground vegetation for purposes of soft landscaping (e.g. seeding new lawns or laying turf) should be sited outside of RPAs. If this is not possible, hand tools must be used.
- The removal of the surface layer within RPAs must not exceed 50mm, to prevent exposure and damage of tree roots beneath.
- Soft landscaping works must not involve raising or lowering of the existing ground level within any RPA as this can starve roots of oxygen and cause irreversible physiological damage to trees.
- The use of rotavators within RPAs is prohibited.
- Any level changes outside RPAs must be graded to marry existing soil levels within RPAs.

## 4.6 Invasive Species Management & Mitigation

General measures for the management of non-native species are outlined in the guidance document 'Field Guide to Invasive Species in Ireland' published by Invasive Species Ireland. The general steps for invasive species management and mitigation follow a process of Inspect-Remove-Clean-Dispose-Report as outlined below:

1. ***Inspect:*** *all equipment that has been in a waterbody (boats, trailers, engines, outboards, dredgers, weed cutting or harvesting boats, cruisers or even clothing) or terrestrial site for attached vegetation, contaminated soil or obvious animal life before moving to another waterway, catchment or site.*
2. ***Remove:*** *any adhering plant, soil or animal material from your equipment before relocating to another watercourse, section of waterway or site. Ensure that all water is drained from your boat and equipment before transportation to another site and all soil is removed from machinery, as this may contain seed or plant fragments.*
3. ***Clean:*** *power hose all equipment. Use hot water (>60 degrees centigrade) where possible.*
4. ***Dispose:*** *of all plant material and animal material appropriately. This material should be contained in sealed bags or containers prior to removal. Do not throw them back into the water or leave them lying at the water's edge.*
5. ***Report:*** *Report any sightings of an invasive species on the www.invasivespeciesireland.com website in the 'Alienwatch' section.*

With regards to the subject site, no invasive species were observed following site survey. Despite this, best practice measures for the prevention of translocation of invasive species are recommended as follows:

- All machinery and equipment used during the construction works will be inspected and will be completely dry prior to entering site to prevent the risk of invasive species translocation. A 'Check, Clean, Dry' protocol will be undertaken with all equipment, machinery and vehicles entering and leaving the Site.
- It is recommended that construction traffic follows predetermined haul routes to ensure that threat of invasive species translocation is minimised. Pre-set haul routes should be adhered to as often as possible.
- Prior to commencement of works, staff should be made aware of the risk and impacts of introducing INNS on to site.

## 4.7 Ecological Receptors Effects Mitigation Measures

This section incorporates the pre-construction and construction mitigation measures outlined in the Ecological Impact Assessment (EcIA) report prepared for the development, which accompanies this planning application.

### 4.7.1 Pre-Construction Phase

- Site preparation and construction must be confined to the Site only. Work areas should be kept to the minimum area required to carry out the proposed works and this area should be clearly marked out in advance of the proposed works.
- Measures to mitigate emissions of dust and fuels/chemicals should be clearly outlined to mitigate the risk of pollutants potentially reaching the underlying aquifer or migrating from site via ground surfaces.
- Consultation with an arboriculturist is recommended prior to tree removal and groundworks commencing on site.

### 4.7.2 Construction Phase

The nearest designated site consists of the Mount Hevey Bog SAC/pNHA located to the north of the Site. There are no direct hydrological links to this designated site arising from the Development. The groundwater vulnerability of the site is classed as 'high' and as such, the following mitigation measures for protection of watercourses/waterbodies should be implemented onsite to prevent any undue impacts to this potential receptor during the construction phase:

- Intrusive site works should be avoided during periods of heavy rainfall.
- During construction re-fuelling of equipment and machinery must be done off site. If this is not possible, then a dedicated re-fuelling location must be established on site away from ground clearance activities or surface water drains or gullies.
- Spill kits stations must be provided at the fuelling location for the duration of the works.
- Staff must be provided with training on spill control and the use of spill kits.
- All fuel storage containers must be appropriately bunded, roofed and protected from vehicle movements. These bunds will provide added protection in the event of a flood event on site.
- All chemicals must be stored as per manufacturer's instructions. A dedicated chemical store within a building must be provided on site if chemicals are to be stored on site.
- Procedures and contingency plans must be established on site to address cleaning up

small spillages as well as dealing with an emergency incident. A stock of absorbent materials such as sand, spill granules, absorbent pads and booms should be kept on site, on plant working near the water and at the refuelling area.

- Daily plant inspections will be completed by all plant operators on site to ensure that all plant is maintained in good working order. Where leaks are noted on these inspection sheets, the applicant must remove the plant from operations for repairs.
- All personnel shall observe standard precautions for handling of materials as outlined in the Safety Data Sheets (SDS) for each material, including the use of PPE. Where conditions warrant, emergency spill containment supplies should be available for immediate use.
- Concrete Washout Skip: Chutes of concrete trucks are only to be washed out into an impermeable lined (polythene) skip. The washout water is to be removed off-site for treatment.
- Best practice in bulk-liquid concrete management should be employed on site, addressing pouring and handling, secure shuttering, adequate curing times etc.
- Stockpile areas for sands and gravel must be kept to a minimum size, well away from drains on site.
- Activities which result in the creation of cement dust should be controlled by dampening down the areas.
- Raw and uncured waste concrete should be disposed of by removal from the site.

Measures to protect undue impacts to surrounding habitats and wildlife during the construction phase include:

- The use of herbicides within the proposed development site should be minimised. The clearance of vegetation around the site boundary, where necessary, should be done by hand if possible. Where spraying is necessary, it should be done with a knapsack sprayed to minimise spray and target required areas only.
- All rodenticides used on the proposed development site, if any, should be in accordance with the Campaign for Responsible Rodenticide use.
- It is recommended that a suitably qualified arboriculturist be consulted to assess the existing treeline on site prior to removal.
- Treeline and hedgerow cover to the north of the site should be maintained and undisturbed where possible to minimise impacts to nesting/foraging wildlife such as birds and mammals.
- Muffled equipment should be utilised, and generators should operate with doors closed to prevent excessive noise emanating from site.
- Where scrub/hedgerow/treeline habitat is to be removed, this should be done so outside of the bird nesting season (March to August).

## 4.8 Archaeological, Architectural and Cultural Heritage Mitigation Measures

To ensure that no archaeological resources can be affected adversely, the mitigation strategies from the IAC Archaeological Assessment Report (Ref: **IAC Project J4402**.pdf) are summarised bellow.

- It is recommended that a programme of test trenching be carried by a suitably qualified archaeologist under licence from the National Monuments Service to investigate the potential for previously unidentified sub-surface archaeological remains. If any such remains are identified further archaeological mitigation may be required, such as preservation in situ or by record. Any further mitigation will require approval from the National Monuments Service.
- It is also recommended that all ground disturbances associated with the proposed development, including further site investigations and enabling works, be monitored by a suitably qualified archaeologist. If any features of archaeological potential are discovered during the course of the works further archaeological mitigation may be required, such as preservation in situ or by record. Any further mitigation will require approval from the National Monuments Service.

# 5 Construction Waste Management Plan

Construction and demolition waste constitutes a significant portion of the EU's total waste, necessitating robust management strategies aligned with a circular economy. This involves minimizing virgin resource use, maximizing material lifespan, preserving material quality, and reducing hazardous substances.

To address this, *ORS* were commissioned by *Corcom Development Partners* to carry out a construction Resource & Waste Management Plan (RWMP) (Ref: **241139-ORS-XX-XX-RP-EN-13d-003**.pdf) in support of an application for planning permission for the Development, encompassing detailed analysis of waste generation, methods for waste prevention, reuse, and recycling, standardized waste handling, storage, and disposal procedures, comprehensive waste auditing, and meticulous record-keeping, all documented in a Waste Register.

For construction waste management, the RWMP, which is included in the planning application, is fully integrated and must be read in conjunction with this CEMP.

# 6 Outline Construction Traffic Management Plan

## 6.1 Background

This Outline Construction Traffic Management Plan (OCTMP) is designed to facilitate access to the site by plant, machinery, and work vehicles during collections/ deliveries; and to minimise traffic impacts of construction to residents and amenities in the vicinity of the site. The site is located at Boreen Bradach, Kinnegad, Co. Westmeath, which is designated as a consolidation site with a total area of 4.279 hectares (gross), of which the development occupies an area of *ca.* 3.774 hectares (net). The surroundings are a mix of residential and commercial units, agricultural lands, and greenfield sites. As such this Outline Construction Traffic Management Plan aims to provide options for the routing of construction traffic that will avoid built-up areas and reduce impact on sensitive receptors (schools, healthcare facilities, public amenity areas). **Section 6.5** provides an outline of alternative routes that avoid travel through Kinnegad Town Centre.

## 6.2 Outline Construction Traffic Management Plan

The construction phase OCTMP has been prepared in accordance with the following best practices publications and demonstrates compliance with the requirements of the Health and Safety Authority:

1. Chapter 8 of the Traffic Signs Manual and the Safety, Health & Welfare at Work (Construction) Regulations – Department of Transport
2. Temporary Traffic Management Design Guidance – Department of transport, Tourism and Spot.

The main contractor will be required to implement monitoring measures to confirm the effectiveness of the mitigation measures outlined in the OCTMP. The OCTMP shall address the following issues:

- Site Access & Egress
- Traffic Management Signage
- Routing of Construction Traffic/ Road Closures
- Timings of Material Deliveries to Site
- Traffic Management Speed Limits
- Road Cleaning
- Road Condition
- Road Closures
- Enforcement of Construction Traffic Management Plan
- Details of Working Hours and Days
- Details of Emergency plan
- Communication
- Construction Methodologies
- Construction Impacts

The main contractor will be responsible for identifying and carrying out any improvements to this management plan whenever possible and feasible, reporting to the Westmeath County Council, when necessary, regarding any changes or enhancements to be carried out.

## 6.3 Construction Entrance and Construction Traffic Control

### 6.3.1 Access in

Access to the development is proposed along the Boreen Bradach road (L5014) which connects Kinnegad's main street to Killucan Road, located at the eastern boundary of the Site. Currently, one gate provides access to the site, next to the southeastern boundary corner, however, this will be demolished. A better and more conveniently located entrance on the eastern boundary will be constructed to serve the new development.

Construction traffic will approach the Site entrance from the North and South and the entrance will be manned by a banksman during deliveries, who will direct traffic safely into the construction site and facilitate the safe navigation of larger construction vehicles as required. The site existing entry/ exit point is detailed in **Figure 6.1** - **Figure 6.4**.


**Figure 6.1** - Current access to the Site – view from the access road to the Site (Source: ©Google Street View)

**Figure 6.2 -** Current access to the Site – view from the Site to the access road (ORS, 2024)


**Figure 6.3** - View of the Site entrance from the Boreen Bradach road towards the Kinnegad's main street (Source: ©Google Street View)

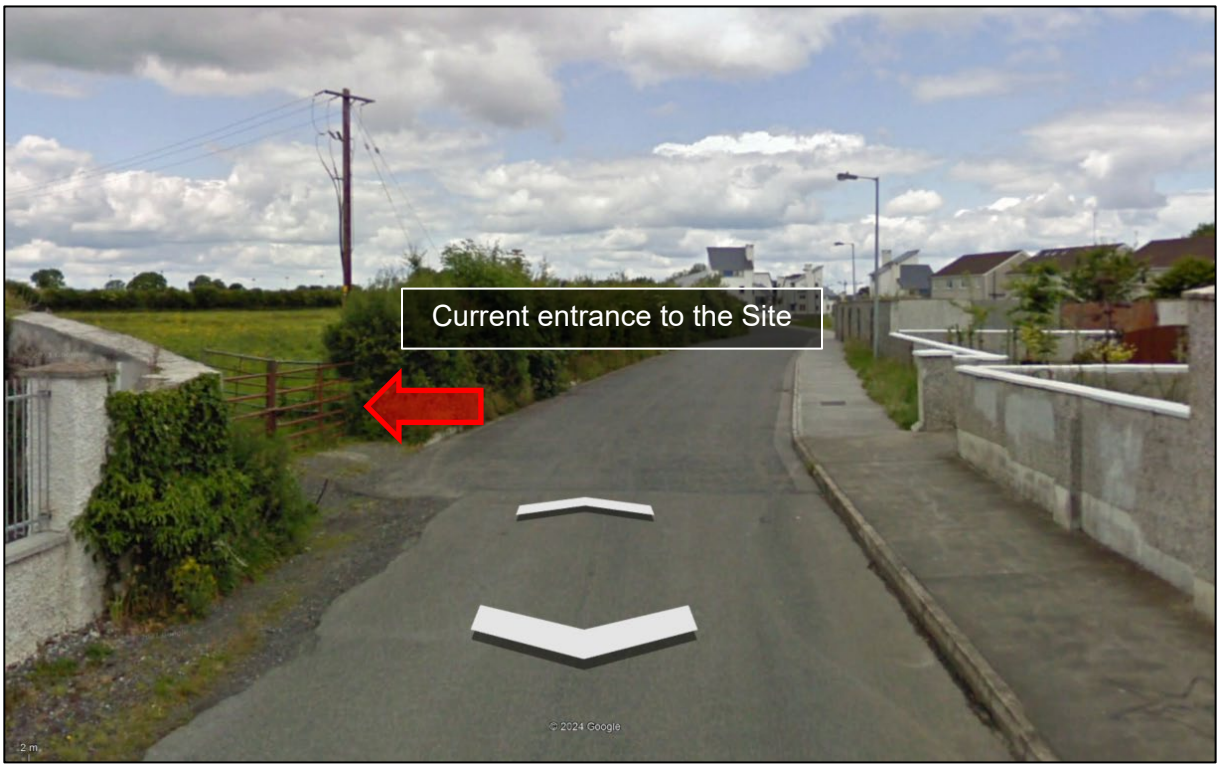



**Figure 6.4 -** View of the Site entrance from the access road coming from Kinnegad's main street (Source: Google Street View)

The future entrance shall be located within the boundaries of the site and will prevent incoming vehicles from causing obstruction to local traffic on the access road. Given the size of the entrance, at most one HGV may enter/ exit the site at a time. Strong lines of communication with haulers, strict delivery schedules and just-in-time delivery methods will be in operation to ensure no more than two trucks will visit the site at any one time. It is envisaged that strict adherence to these protocols will ensure that no queuing will occur on the access road.

### 6.3.2 Access Out

When vehicles are due to depart from the site the banksman will ensure the roadway is safe to proceed and will communicate with the driver in the cab. The proposed construction exit from the site will be the same as that used for entrance to the site.

The main contractor is required to ensure the provision of adequate guarding and lighting appropriate to the circumstances. Traffic signs should be placed in advance of the works area on both sides to ensure adequate warning to the general public and maintained, when necessary, they should be operated as reasonably required for the safe guidance or direction of the public with regard to the needs of people with disabilities. The main contractor will comply with Regulation 97 of the Safety, Health, and Welfare at Work (Construction) Regulations 2013.

Access to the construction site will only be to authorised persons. During afterhours, security will be employed by the main contractors to ensure no unauthorised access.

## 6.4 Deliveries to Site / Site Access

The site entrance will be gated with access only permitted for site vehicles and plant movements when necessary.

Deliveries of materials to site will be planned and programmed to ensure that the materials are only delivered when required by adopting a 'just in time', lean construction management approach. There will be periods where multiple vehicle deliveries will be required, e.g., site fill material, houses and landscape areas, pre-cast concrete and large concrete pours. These will be planned well in advance and no queuing of vehicles will be allowed on the public road at the entrance to the site. Supply chain to be directed as not to travel in convoys greater than three at any time.

All off-loading of material will take place within the site, remote from the public road and access via the agreed access construction point only. Bulk deliveries are to take place outside of peak traffic hours within a six-day week as to minimise impact on the existing road network.

**Access control:** The site entrance will always be controlled by a banksman during deliveries. The contractor will carry out a visitor induction briefing for all visitors or other persons who need access to the construction area. All visitors to the site will be required to have current 'Safe Pass' cards.

**Material delivery:** Material deliveries to the site will be coordinated as to avoid peak traffic hours associated with the neighbouring proprieties which could be expected around regular commuting times in the morning and evening.

**Sign management:** Signs are to comply with statutory requirements on public roads. Other construction sites may be carrying out construction activity at the same time as the subject site. It is therefore imperative that directions to each site are distinctly identifiable.

## 6.5 Routing of Construction Traffic

There are three possible predicted routes to get to the Site. From the North, following Kullican Road and then taking the Boreen Bradach Road (L5014), going eastwards. The route from West will travel along the M4 Motorway. The M4 Motorway also serves as the route from East. All of the alternatives are considered, to avoid increasing traffic on Kinnegad's main street as much as possible, taking in consideration the condition of the buildings and the presence of more sensitive receptors there than the other parts of the town, such as churches, schools, and other amenities.

Traffic on the main street will not be entirely avoided, as the main routes to serve the development are expected to come from the east and west, however traffic has been limited to the first 280m stretch of the existing roundabout adjoining the R148. After approximately 200 m, the site entrance will be on the left. See **Figure 6.5** for the suggested construction traffic routes.

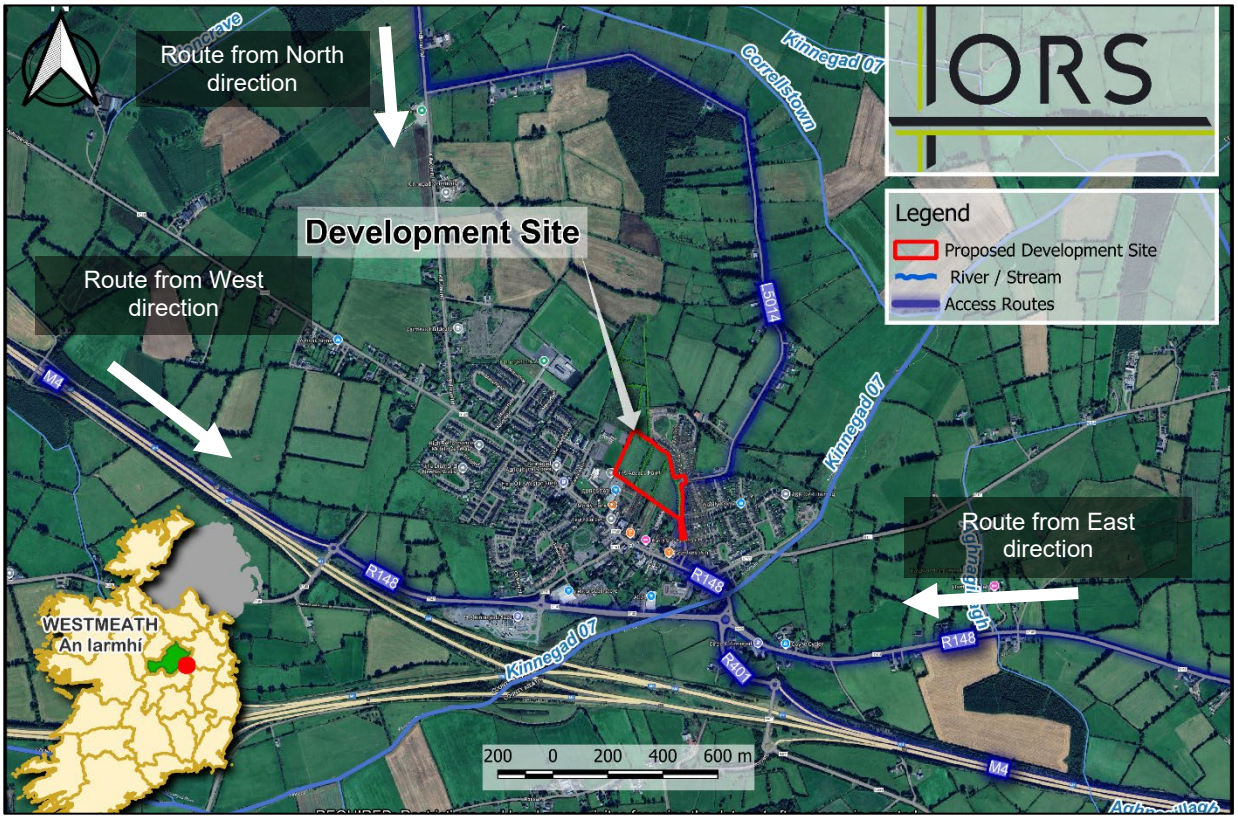



**Figure 6.5 -** Traffic routes to proposed site (Map Data ©2015 Google, adapted by ORS 2025).

## 6.6 Traffic Management Speed Limits

Adherence to posted/ legal speed limits will be emphasised to all contractors and sub-contractors during induction training.

Drivers of construction vehicles/ HGVs will be advised that vehicular movements in locations, such as local community areas, shall be restricted to 50 km/h. Special speed limits of 30 km/h shall be implemented for construction traffic in sensitive areas such as residential. Such recommended speed limits will only apply to construction traffic and shall not apply to general traffic.

## 6.7 Road Cleaning

A manned power washer facility will be provided prior to the exit of the site when required throughout the various stages of construction on-site, in particularly during demolition and groundworks. Additionally, a wheel wash system may be installed during the works if the Construction Project Manager or Resident Engineer deems it necessary to reduce dust and dirt on the public roads along the construction routes. This is to ensure that minimal suspended solids reach nearby waterbodies or surface water drainage systems, and that minimal road sweeping will be required on the public roads. Although a requirement for road sweeping cannot be eliminated entirely, control measures within site are aimed at limiting the need for road sweepers.

Road sweeping operations to remove any project related dirt and material deposited on the

road network by construction/ delivery vehicles will be utilised as required. It is recommended that road sweepers used have a vacuum function that can remove fine silt and dust from nearby surfaces effectively and prevent them from entering nearby waterbodies and drainage systems. All material collected will be disposed of to a licensed waste facility.

The following additional measures will be taken to ensure that the site, public roads and surroundings are kept clean and tidy:

- A regular program of site tidying will be established to ensure a safe and orderly site.
- Food waste will be strictly controlled on all parts of the site.
- Mud spillages on roads and footpaths outside the site will be cleaned regularly and will not be allowed to accumulate. This process is pertinent in cases of heavy rainfall where sediments can more easily reach nearby waterbodies and drainage systems.
- The contractor shall clean any spillages on the public roads arising from the development, as the need arises or when requested to do so by the Planning Authority.

## 6.8 Road Condition

The increase in the volume of heavy vehicle traffic movements and the nature of the payload may create problems for the local road network in terms of:

- Fugitive losses from wheels, trailers, or tailgates.
- Localised areas of subgrade and wearing surface failure.

The main contractors shall ensure that:

- Loads of materials leaving each site will be evaluated and covered if considered necessary to minimise potential dust impacts during transportation.
- The transportation contractor shall take all reasonable measures while transporting waste or any other materials likely to cause fugitive loses from a vehicle during transportation to and from site, including but not limited to:
    - Covering of all waste or material with suitably secured tarpaulin/ covers to prevent loss.
    - Utilisation of enclosed units to prevent loss.
- Roads forming part of the haul routes will be monitored visually throughout the construction period and a truck mounted vacuum mechanical sweeper will be assigned to roads along the haul route as required.

## 6.9 Enforcement of OCTMP

The traffic management plan will be enforced by both the Construction Project Manager or an equivalent assigned individual.

All project staff and material suppliers will be informed of the measures proposed by the OCTMP during site induction and will be required to adhere to the final CTMP. As outlined above, the contractor shall agree and implement monitoring measures to confirm the effectiveness of the OCTMP.

## 6.10 Working Hours

Deliveries of materials to site will generally be between the hours of 07:00 and 18:00 Monday to Friday, and 08:00 to 13:00 on Saturdays (or as per hours agreed with Westmeath County Council). No deliveries will be scheduled for Sundays or Bank Holidays.

## 6.11 Emergency Procedures

The main contractor shall ensure that unobstructed access is provided to all emergency vehicles along all routes and site accesses. The contractor shall provide to the local authorities and emergency services, contact details of the contractor's personnel responsible for construction traffic management. In the case of an emergency the following procedure shall be followed:

- Emergency Services will be contacted immediately by dialling 112.
- Exact details of the emergency/ incident will be given by the caller to the emergency line operator to allow them to assess the situation and respond in an adequate manner.
- The emergency will then be reported to the Site Team Supervisors and the Safety Officer.
- All construction traffic shall be notified of the incident (where such occurs off site).
- Where required, appointed site first aiders will attend the emergency immediately.
- The Safety Officer will ensure that the emergency services are on their way.

## 6.12 Communication

The main contractor shall ensure that close communication with Westmeath County Council and emergency services is maintained throughout the construction phase. Such communications shall include:

- Submissions of proposed traffic management measures/ closures for comment and approval.
- Ongoing reporting relating to the condition of the road network and updates to construction programming.
- Information relating to local and community events that could conflict with proposed traffic management measures and construction traffic aimed towards implementing alternative measures to avoid such conflicts.
- The contractor shall also ensure that the local community is informed of any proposed traffic management measures in advance of their implementation. Such information shall be disseminated by posting advertisements in local newspapers and delivering leaflets to houses in the affected areas. Such information shall contain contact information for members of the public to obtain additional information and to provide additional knowledge such as local events, sports fixtures, etc., which may conflict with proposed traffic management measures.
- During pre-construction, particularly soil disturbance, clear communication with local authorities and residents is crucial to mitigate potential disruptions from continuous construction traffic.

# 7 Implementation

## 7.1 Role and Responsibilities

Due to the scale and nature of this development, the appointment of a full-time environmental manager is deemed surplus to requirements for the duration of the project. The Construction Project Manager will be responsible for the day-to-day implementation of the measures outlined in the project CEMP. The Construction Project Manager will be supported by an Environmental Consultant who will be involved in the project on an ad-hoc basis should unforeseen or significant environmental incidents arise.

### 7.1.1 Construction Project Manager

The Construction Project Manager will have the overall responsibility of ensuring the measures outlined in the Project CEMP are adhered to for the duration of the construction phase. The primary responsibilities of the Construction Project Manager are as follows:

- Promotion of awareness of environmental issues associated with each project phase.
- Ensure adherence with all environmental and traffic management standards listed in the Project CEMP.
- Facilitate environmental audits and site visits.
- Monitor the impact of construction traffic on local traffic conditions.
- Awareness and implementation of relevant legislation, codes of practice, guidance notes as stated in the CEMP.
- Conduct regular site inspections to facilitate the timely identification of environmental risks or incidents.
- Ensure all construction activities are carried out with minimal risk to the environment.
- Report environmental incidents in a timely manner to the project Environmental Consultant and the relevant authorities.

### 7.1.2 Construction Project Manager Contact Details

Contact details of the project manager are pending until a contractor has been appointed.

### 7.1.3 Project Environmental Consultant

As mentioned above the Construction Project Manager will assume the role of Project Environmental Consultant. Should any issues or impacts arise throughout the project then a suitable Environmental Contractor will be contacted. The primary responsibilities of the Project Environmental Consultant are as follows:

- Quality assurance of the Project CEMP.
- Update of the Project CEMP as required paying particular attention to site-specific environmental hazards or changes in legislation.
- Ensuring compliance of Project CEMP with the conditions of the Planning Permission.

- Provide expertise to the Construction Project Manager on environmental concerns.
- Conduct the various specialist environmental monitoring tasks outlined within the Project CEMP (noise, dust, surface water monitoring etc.).
- Prompt response to environmental issues if they arise.

### 7.1.4 Resident Engineer

Typically, the Resident Engineer's primary role involves assurance that the construction work of a project is carried out according to the quality, time, and cost requirements of the contract. A significant degree of cross-over can usually be anticipated between the roles of a Resident Engineer, a Construction Project Manager, and an Environmental Consultant. With respect to the Project CEMP, the Resident Engineer is expected to play a crucial role in the Traffic Management Plan (TMP) along with the following responsibilities:

- Performing or coordinating site inductions.
- Monitoring the performance of subcontractors.
- Monitoring the performance of the traffic management plan.
- Managing and supervising less experienced site engineers and operatives.
- Ensuring that work activities have been carried out in accordance with the plans, specifications, and industry standards.
- Ensuring that tests and inspections are performed.
- Liaising with construction management to remove any hazards associated with work activities.
- Ensuring that delivered materials meet specifications and established quality standards.
- Initiating and maintaining records, back-charge procedures, progress reports etc.

## 7.2 Awareness and Training

### 7.2.1 Environmental Induction

The key environmental topics outlined in the Project CEMP will be summarised and integrated into the general site induction. Site-specific concerns and best work practices will be outlined to all contractors and sub-contractors due to carry out work at the site. As a minimum this will include:

- The roles and responsibilities of the Construction Project Manager, the Environmental Consultant and the Resident Engineer along with the responsibilities of contractors/sub-contractors themselves.
- Incident and complaints procedure.
- Outline of the CEMP structure.
- Site-specific environmental concerns.
- Best work practices.

### 7.2.2 Toolbox Talks

Daily toolbox talks will be conducted by the Construction Project Manager as standard practice. It is the duty of the Construction Project Manager to liaise with the Project Environmental Consultant and Resident Engineer to assess site operations for environmental concerns particularly as the project advances and new activities commence. Appropriate mitigation measures will be devised and communicated to the relevant personnel prior to the commencement of any such activities.

## 7.3 Environmental Incidents and Complaints Procedure

The Construction Project Manager will maintain a register of environmental incidents which will document the nature, scale and severity of any environmental incident or complaint which arises due to site activities. In the event of an environmental incident the following steps must be followed:

- The Project Environmental Consultant is notified immediately.
- The Project Environmental Consultant will liaise with the competent authority if necessary.
- The details of the incident will be recorded on an Environmental Incident Form which will record the following details:

1. Cause of the incident.
2. Extent of the incident.
3. Immediate actions.
4. Remedial measures.
5. Recommendations made to avoid reoccurrence.

- The Project Environmental Consultant and Construction Project Manager will fully cooperate with any investigations conducted by the competent authority.

# 8 Conclusion

This Construction Environmental Management Plan (CEMP) will form part of the construction contract and is designed to mitigate potential impacts during the construction phase of the Development.

The Development will be constructed and developed to minimise the generation of construction waste. During the construction phase, construction waste will be stored and segregated in dedicated waste storage areas which will optimise the potential for off-site reuse and recycling. All construction waste materials shall be exported off-site by an appropriately permitted waste contractor. Measures and policies for proper waste management during this project are outlined in the **Resource Wate Management Plan (RWMP) (REF: 241139-ORS-XX-XX-RP-EN-13d-003)** which should be read in conjunction with this report.

Extensive measures will be implemented to prevent uncontrolled emissions to drains and gullies leading off-site. Particular caution should be taken to prevent any material deposition directly on the soil, especially hazardous materials, given the high groundwater vulnerability on the site. Several measures have been outlined to ensure adequate dust suppression, noise mitigation, and to avoid groundwater contamination throughout the project. Noise and dust monitoring shall be carried out at various stages throughout the project to ensure compliance with the relevant standards.

Suitably qualified personnel including a Construction Project Manager, Project Environmental Consultant and Resident Engineer will be appointed to implement the procedures and protocols relevant to their profession as outlined in this CEMP.

The Client shall be responsible for ensuring that The Contractor manages the construction activities in accordance with this Construction Environmental Management Plan and shall ensure that any conditions of planning are incorporated into the final Construction Environmental Management Plan prepared by the appointed works contract.

# Appendix A: Risk Assessment as per Air Quality Monitoring and Noise Control Unit's Good Practice Guide for Construction and Demolition

**Risk Assessment A** – Locality/Site Information

| | Low | Medium | High |
|---|---|---|---|
| **Expected duration of work** | | | |
| Less than 6 months | | | |
| 6 months to 12 months | | | |
| Over 12 months | | | X |
| **Proximity of nearest sensitive receptors** | | | |
| Greater than 50 metres from site | | | |
| Between 25m and 50m | | | |
| Less than 25 metres | | | |
| Hospital or school within 100 metres | | | X |
| **Day time ambient noise levels** | | | |
| High ambient noise levels (>65dB(A)) | | | |
| Medium ambient noise levels (55-65dB(A) | | X | |
| Low ambient noise levels (<55dB(A) | | | |
| **Working Hours** | | | |
| 8am – 6pm Mon-Fri; 9am-1pm Sat | X | | |
| Some extended evening or weekend work | | | |
| Some night-time working, including likelihood of concrete power floating at night | | | |
| **SUBTOTAL A** | **1** | **1** | **2** |

**Risk Assessment B** – Works Information

| | Low | Medium | High |
|---|---|---|---|
| **Location of works** | | | |
| Majority within existing building | | | |
| Majority External | | | X |
| **External Demolition** | | | |
| Limited to two weeks | | | |
| Between 2 weeks and 3 months | | | |
| Over three months | | | |
| **Ground Works** | | | |
| Basement level planned | | | |
| Non-percussive methods only | X | | |
| Percussive methods for less than 3 months | | | |
| Percussive methods for more than 3 months | | | |
| **Piling** | | | |
| Limited to one week | | | |
| Bored Piling Only | | | |
| Impact or vibratory piling | | | |
| **Vibration generating activities** | | | |
| Limited to less than 1 week | | | |
| Between 1 week and 1 month | | X | |
| Greater than 1 month | | | |
| **SUBTOTAL B** | **1** | **1** | **1** |

**Total Risk Assessment**

| | Low | Medium | High |
|---|---|---|---|
| **Risk Assessment A** | **1** | **1** | **2** |
| **Risk Assessment B** | **1** | **1** | **1** |
| **Total** | **2** | **2** | **3** |

The site is assessed as an overall **High** risk as per air quality and noise effects.

# Appendix B: Schedule of Mitigation Measures

# Construction Environmental Management Plan - Schedule of Mitigation

| Schedule of Mitigation - Construction Environmental Management Plan | | | | |
|---|---|---|---|---|
| **CEMP Section** | **Mitigation Ref.** | **CEMP Section Ref** | **Summary of the Mitigation Description / Monitoring measure** | |
| **4.2 Noise** | **NOISE 1** | | Contractor shall aim to restrict noise levels to the following levels (measured from nearest noise sensitive location):<br>•Daytime (07:00 to 19:00 hrs) – 65dB LAeq<br>•Evening (19:00 to 23:00 hrs) and Weekends – 55dB LAeq<br>•Night-time (23:00 to 07:00 hrs) – 45dB LAeq | To ensure to not cause any nuisance to the vicinity and to assess the effectiveness of the mitigation measures |
| | **NOISE 2** | **4.2.1** | **General -** The following general mitigation measures are recommendations from BS5228 and should be employed on this site. | To ensure to not cause any nuisance to the vicinity and to assess the effectiveness of the mitigation measures |
| | | **4.2.1.1** | Avoid unnecessary revving of engines and switch off equipment when not required; | |
| | | **4.2.1.2** | Keep internal haul routes well maintained and avoid steep gradients; | |
| | | **4.2.1.3** | Use rubber linings in, for example, chutes and dumpers to reduce impact noise; | |
| | | **4.2.1.4** | Minimize drop height of materials; | |
| | | **4.2.1.5** | Start plant and vehicles sequentially rather than all together; | |
| | | **4.2.1.6** | Use alternative methods | |
| | **NOISE 3** | **4.2.2** | **Community Relations -** BS5228 suggests the following with respect to community relations:<br>Early establishment and maintenance of these relations throughout the carrying out of site operations will go some way towards allaying people's fears. The person, company or organization carrying out work on site should appoint a responsible person to liaise with the public. The formation of liaison committees with members of the public can be | With vibration, the fear of building damage can be exacerbated where people are unsure of the levels of vibration it would take to impact upon their property, and therefore good communication can help to alleviate fears beforehand. |
| | **NOISE 4** | **4.2.3** | **Specification and Substitution -** All plant specifications must be reviewed to ensure they are the quietest available for the required purpose; this is in accordance with best | Noise from existing plant and equipment can often be reduced by modification or by the application of improved sound reduction methods, but this should only be carried out after consultation with the manufacturer. Suppliers of plant will often have ready-made kits available and will often have experience of reducing noise from their plant. For steady continuous noise, such as that caused by diesel engines, it might be possible to reduce the noise emitted by fitting a more effective exhaust silencer system or by designing an acoustic canopy to replace the normal engine cover. Any such project should be carried out in consultation with the original equipment manufacturer and with a specialist in noise reduction techniques. The replacement canopy should not cause the engine to overheat nor interfere excessively with routine maintenance operations.<br>It might be possible in certain circumstances to substitute electric motors for diesel engines, with consequent reduction in noise. On-site generators supplying electricity for electric motors should be suitably enclosed and appropriately located. Noise caused by resonance of body panels and cover plates can be reduced by stiffening with additional ribs or by increasing the damping effect with a surface coating of special resonance damping material. Rattling noises can be controlled by tightening loose parts and by fixing resilient materials between the surfaces in contact; this is generally a maintenance issue. |
| | **NOISE 5** | **4.2.4** | **Modification of Plant and Equipment** | |

| Plant Type | Source of Noise | Proposed Mitigation | Potential Sound Reduction dBA |
|---|---|---|---|
| Earth moving equipment | Engine | Fit more efficient exhaust sound reduction equipment Manufacturers' enclosure panels need to be kept closed | 5 – 10 |
| Breaker | Tool Bit | Fit suitably designed muffler or sound reduction equipment to reduce noise without impairing machine efficiency Ensure all leaks in airline are sealed | Up to 15 |
| | | Use dampened bit to eliminate ringing | |
| | Total Machine | Erect acoustic screen between compressor or generator and noise-sensitive area. When possible, line of sight between top of machine and reception point needs to be obscured | Up to 10 |
| Concrete Pump | Engine Pushing | Use machine inside acoustic enclosure with allowance for engine cooling and exhaust | Up to 20 |
| Concrete Mixers | Cleaning | Do not hammer the drum | n/a |
| Materials Handling | Impact of Material | Do not drop materials from excessive heights. Screen dropping zones, especially on conveyor systems. Line chutes and dump trucks with a resilient material | Up to 15 |

| | | | |
|---|---|---|---|
| **NOISE 6** | **4.2.6** | Enclosures - Covers should enclose the plant as fully as possible, should be of sufficient mass (17kg/m2 minimum), and should be lined inside with an acoustically absorbent material with minimum 25mm thickness. A maximum of 20dBA sound reduction can be expected from a suitably designed enclosure with openings. | The significant sources of plant noise should be enclosed where possible. The close proximity of the nearest sensitive receptors means that all practicable means to reduce noise must be employed wherever possible.<br>The concrete pump is a significant noise source which could potentially be enclosed. |
| **NOISE 7** | **4.2.7** | **Use and Siting of Equipment** | To reduce noise and vibration to minimum |
| | **4.2.7.1** | All plant should be used in accordance with manufacturers' instructions. | |
| | **4.2.7.2** | Plant should be located away from noise-sensitive areas where possible; loading and unloading should not be carried out next to the sensitive receptors. The concrete pump and drum should be located at least 25m from the nearest sensitive receptors wherever possible. | |
| | **4.2.7.3** | The plant used intermittently, should be shut down or throttled down to a minimum between work periods. | |
| | **4.2.7.4** | Acoustic convers to engines must be kept closed when the plant is in use or idling; compressors should have effective enclosures and should not be operated with access panels | |
| | **4.2.7.5** | "Materials should be lowered whenever practicable and should not be dropped. The surfaces on to which the materials are being moved should be covered by resilient material. When a site is in a residential environment, lorries should not arrive at or depart from the site at a time inconvenient to residents." | |
| **NOISE 8** | **4.2.8** | **Maintenance** - Noise caused by vibrating machinery having rotating parts can be reduced by attention to proper balancing. Frictional noise from the cutting action of tools and saws can be reduced if the tools are kept sharp. Noises caused by friction in conveyor rollers, trolleys and other machines can be reduced by proper lubrication." | |
| **NOISE 9** | **4.2.9** | **Screening -** It is recommended that a high mass site hoarding is used along the West, North and East site boundaries to protect the worst-case noise level impact. This barrier should be as tall as is reasonably practical. | |
| **NOISE 10** | **4.2.10** | No heavy construction equipment/ machinery (to include pneumatic drills, construction vehicles, generators, etc.) shall be operated on or adjacent to the construction site before 07:00 or after 18:00, Monday to Friday, and before 08:00 or after 13:00 on Saturdays | To minimise noise from construction operations |
| **NOISE 11** | **4.2.11** | No activities shall take place on site on Sundays or Bank Holidays, unless authorised by the Council in writing, at least 3 working days in advance. | |
| **NOISE 12** | **4.2.12** | No activity, which would reasonably be expected to cause annoyance to residents in the vicinity, shall take place on site between the hours of 19:00 and 07:00am | |
| **NOISE 13** | **4.2.13** | No plant used on site will be permitted to cause an on-going public nuisance due to noise. | To eliminate or reduce noise levels where possible |
| **NOISE 14** | **4.2.14** | The best means practicable, including proper maintenance of plant, will be employed to minimise the noise produced by on site operations. | |
| **NOISE 15** | **4.2.15** | All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working for the duration of the contract. | |
| **NOISE 16** | **4.2.16** | Compressors will be attenuated models, fitted with properly lines and sealed acoustic convers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers. | |
| **NOISE 17** | **4.2.17** | Machinery that is used intermittently will be shut down or throttled back to a minimum during periods when not in use. | |
| **NOISE 18** | **4.2.18** | Any plant, such as generators or pumps, which is required to operate before 7am or after 6pm will be surrounded by an acoustic enclosure or portable screen. | |
| **NOISE 19** | **4.2.19** | During the construction programme, supervision of the works will be include ensuring compliance with noise limits, using methods outlined in BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Noise. | |
| **NOISE 20** | **4.2.20** | The hours of construction activity will be limited to avoid unsociable hours where possible. Construction operations shall generally be restricted to between 7am and 6pm on weekdays and between 8am and 1pm on Saturdays. However, any necessary or emergency out of hours working will be agreed in advance with the local Planning Authority. | |
| **NOISE 21** | **4.2.21** | All site staff shall be briefed on noise mitigation measures and the application of best practicable means to be employed to control noise. | |
| **NOISE 22** | **4.2.22** | All staff should be briefed on the complaints procedure, the mitigation requirement and their responsibilities to register and escalate complaints received. | |

| | | | | |
|---|---|---|---|---|
| | **NOISE 23** | **4.2.23** | Good Quality 2.4m high (minimum height) site hoarding shall to be erected to maximise the reduction in noise levels. Hoarding to be painted & maintained for duration of works. Hoarding to be designed to withstand wind loading for that area hoarding to mitigate excessive noise pollution to neighbouring estates and sensitive receptors. | |
| | **NOISE 24** | **4.2.24** | Contact details of the contractor and Construction Project Manager shall be displayed to the public, together with the permitted operating hours. | |
| | **NOISE 25** | **4.2.25** | Material and plant loading and unloading shall only take place during normal working hours. | |
| | **NOISE 26** | **4.2.26** | Ensure that each item of plant and equipment complies with the noise limits quoted in the relevant European Commission Directive 2000/14/EC. | |
| | **NOISE 27** | **4.2.27** | Use all plant and equipment only for the tasks for which it has been designed. | |
| | **NOISE 28** | **4.2.28** | Locate movable plant away from noise sensitive receptors. | |
| | **NOISE 29** | **4.2.29** | Avoid the transfer of noise and vibration from demolition activities to adjoining occupied buildings through cutting any vibration transmission path or by structural separation of | |
| | **NOISE 30** | **4.2.30** | Ensure written confirmation is received from Westmeath County Council Planning Department when applying for extensions to normal working hours. No out of hours work to be undertaken unless permission to do so has been granted. | |
| | **NOISE 31** | **4.2.31** | In the event that excessive noise levels are deemed necessary, Westmeath County Council Planning Department and local residents, must be suitably notified in advance of said | |
| **4.3 Dust and Air Quality** | **DUST 1** | **4.3.1** | Soil will not be exposed until a replacing capping layer is almost ready to be placed. | This is to ensure that the soil is exposed for the minimum amount of time and is not dispersed by the wind. |
| | **DUST 2** | **4.3.2** | Material stockpiles will be strategically placed to reduce wind exposure. Materials will be ordered on an ''as needed'' basis to reduce excessive storage. | |
| | **DUST 3** | **4.3.3** | The contractor will spray water on the surface of all roads in the vicinity of the site if required in order to minimise dust generation from the construction activities. | |
| | **DUST 4** | **4.3.4** | Appropriate dust suppression will be employed to prevent fugitive emissions affecting those occupying neighbouring properties or pathways. | |
| | **DUST 5** | **4.3.5** | Restrict vehicle speeds to 15 kmph as high vehicle speeds cause dust to rise. | |
| | **DUST 6** | **4.3.6** | Covers or dampening of soil and material stockpiles when high wind and dry weather are encountered, if required. | |
| | **DUST 7** | **4.3.7** | During the course of construction, the contractor shall provide on site a covered skip or other such receptacle for the deposit therein of all rubbish, litter, packaging, rubble and other such materials arising from the works. The contractor shall ensure that the site and its environs are maintained at all times in a clean and tidy condition. | |
| | **DUST 8** | **4.3.8** | All consignments containing material with the potential to cause air pollution being transported by skips, lorries, trucks or tippers shall be covered during transit on and off site. | |
| | **DUST 9** | **4.3.9** | Street and footpath cleaning shall be undertaken during the ground works phase, if deemed necessary. | To minimise dust emissions |
| | **DUST 10** | **4.3.10** | A road sweeper with vacuuming capabilities will operate along construction traffic routes throughout the development cycle to alleviate excessive material deposition along transport routes in the vicinity of the site, when deemed necessary. | |
| | **DUST 11** | **4.3.11** | Wet cut concrete saws are only to be used on site. Tools with dust extraction filters are to be used when and where possible. | |
| | **DUST 12** | **4.3.12** | A wheel wash system may be installed during the works if the Construction Project Manager or Resident Engineer deems it necessary | To reduce dust and dirt on the public roads along the construction routes. |
| | **DUST 13** | **4.3.13** | Wet cut concrete saws are only to be used on site. Tools with dust extraction filters are to be used when and where possible. | To minimise dust emissions |
| | **DUST 14** | **4.3.14** | No materials shall be burned on-site. | No emission of smoke, ash, toxic gases or dust. |
| | **DUST 15** | **4.3.15** | During any demolition phase, water hoses with appropriate mist heads, or equivalent, are to be used to dampen structures prior to and during demolition | To limit dust generation. |
| **4.4 Surface Water and Groundwater Protection** | **SGWP 1** | **4.4.1** | By default, no refuelling and fuel/oil storage shall take place within the Site. In the event of activities related to refuelling or fuel/oil storage within the Site exceptionally arises, or if this measure is determined to be unfeasible, mitigation measures are outlined and must be adhered to. Exceptions to this rule must be duly justified, registered, and communicated to the Westmeath Co. Co. Planning Department in a timely manner. | To ensure the most effective measure to avoid soil, water and groundwater contamination by fuel and oils |
| | **SGWP 2** | **4.4.2** | Harmful materials such as fuels, oils, greases, paints and hydraulic fluids must be stored in bunded compounds well away from storm water drains and gullies. Refuelling of | To minimise the risk of accidental spillage or leakage into the drainage system. |
| | **SGWP 3** | **4.4.3** | All manholes and gullies will be covered with silt fencing material and sandbags to limit silt and chemical run-off into surface water. | |
| | **SGWP 4** | **4.4.4** | Refuelling will not be permitted within 10m of surface drains, with the exception of pumps for dewatering purposes, which are to be stored on portable spill bunds. | |
| | **SGWP 5** | **4.4.5** | Runoff from machine service and concrete/grout mixing areas must not enter storm water drains and gullies leading off-site. | |
| | **SGWP 6** | **4.4.6** | No direct discharges to be made to waters where there is potential for cement/ residues/ oils/ chemicals in discharges. | To not cause any negative effect to surface / groundwater |
| | **SGWP 7** | **4.4.7** | Stockpile areas for sands and gravel should be kept to minimum size, well away from storm water drains and gullies leading off-site. | To minimise the risk of accidental spillage or leakage into the drainage system. |
| | **SGWP 8** | **4.4.8** | Open excavations to be backfilled immediately following installation of services, etc. | To reduce the exposing of groundwater to any contamination |
| | **SGWP 9** | **4.4.9** | Earthworks and the movement of plant on soil surfaces will be avoided during periods of extensive rainfall | To limit silt laden runoff and damage to soil structure. |
| | **SGWP 10** | **4.4.10** | Pre-cast concrete should be used wherever possible. When this is not possible, any works using cast-in-place (poured) concrete must be done in the dry and effectively isolated from any flowing water or drains for a sufficient period | To ensure no leachate from the concrete. |
| | **SGWP 11** | **4.4.11** | Following heavy rainfall events, it is important to mitigate excessive outflow of silt and particulates to the surrounding surface water drainage system. During the pre-construction & construction phase, silt outflows to surface water drainage infrastructure (gullies, drains, etc.) along the access road may be mitigated using sandbags or silt fencing, where suitable. During the construction phase, once site-specific surface water drainage infrastructure has been developed, silt chambers should be blocked off following high rainfall events. | To prevent excessive silt outflows to the surface water drainage system |
| | **SGWP 12** | **4.4.12** | All storage tanks areas and drum storage areas shall be rendered impervious to materials stored therein. In addition, storage tank areas shall be bunded, either locally or remotely, to a volume equal to 110% of the sum of the volumes of the largest five drums likely to be stored therein. The height of the bund for any drum storage area shall be not less than 300 millimetres | To prevent spills and leaks |
| | **SGWP 13** | **4.4.13** | The contractor shall clean any spillages on the public roads arising from the development, as the need arises or when requested to do so by the Planning Authority. | To minimise soil, surface and groundwater to potencial contamination. |
| | **SGWP 14** | **4.4.14** | Containment of all construction-related fuel and oil within specially constructed bunds | To ensure that fuel spillages are fully contained. Such bunds shall be roofed to exclude rainwater. |
| **4.5 Arboricultural Method Statements** | **TREE 1** | **4.5.1** | **Pre-Commencement Meeting** | |
| | | | A pre-commencement meeting will be held prior to commencement of any demolition or construction works on site. The pre-commencement meeting may require the attendance | |
| | | | The Main Works Contractor; | |
| | | | Landscape Architect; | |
| | | | Structural/Civil Engineer; | |
| | | | Project Arboriculturist; and | |
| | | | Any other parties as required. | |
| | | | The purpose of this meeting will be to agree the details of the tree protection measures and ensure that all aspects of tree protection are understood. The Project Arboriculturist | |
| | **TREE 2** | 4.5.2 | **Key Responsibilities** | |
| | | | It is the responsibility of the main contractor to ensure that all site personnel fully understand the protection measures on the site, that tree protection measures are adhered to at | |
| | **TREE 3** | 4.5.3 | **Tree Protective Fencing** | |
| | **TREE 4** | 4.5.3.1 | A protective fence will be erected around retained trees, prior to the commencement of materials or machinery being brought onto site, removal of soil or any form of | |
| | **TREE 5** | 4.5.3.2 | The fence is to be sited in accordance with the Tree Impact & Protection Plan (Ref: 24-398-03) attached to the Arboricultural Impact Assessment report. | |
| | **TREE 6** | 4.5.3.3 | Details of the minimum distance for fencing from trees can be found in the Tree Schedule attached to this Arboricultural Impact Assessment report. | |
| | **TREE 7** | 4.5.3.4 | The fence will have signs attached to it stating that it defines a CEZ and that no works are permitted beyond it. | |
| | **TREE 8** | 4.5.3.5 | The precise form of fencing can vary provided it is fit for purpose and prevents damaging activities within the CEZ. For a proposal of this nature the Heras 151 system of fencing | |
| | **TREE 9** | 4.5.3.6 | The protective fencing may only be removed following completion of all construction works. | |
| | **TREE 10** | 4.5.3.7 | The following principles will be adopted by site personnel within the CEZ during construction, to ensure protection of retained trees: | |
| | | | No level changes. | |
| | | | No excavations. | |
| | | | No fires. | |
| | | | No use of herbicides. | |
| | | | No storage of materials, machinery or access for construction workers. | |

| | | | | |
|---|---|---|---|---|
| | **TREE 11** | 4.5.3.8 | An example of a tree protection sign is provided in Figure 4.4. | |
| | **TREE 12** | 4.5.4 | **Site Compounds & Facilities** | |
| | | | Site compounds and facilities will be located outside of all RPAs and CEZs as identified on the Tree Impact & Protection Plan (Ref: 24-398-03). | |
| | **TREE 13** | 4.5.5 | **Site Cranes, Piling Rigs and Machinery** | |
| | | | The location of all site cranes, piling rigs and other machinery should be sited outside of RPAs to avoid soil compaction. | |
| | **TREE 14** | 4.5.6 | **Pollution Control** | |
| | | | Any storage or mixing station located outside of the construction exclusion zone will be located in a place that minimises the risk of contaminated runoff entering to prevent | |
| | **TREE 15** | 4.5.6 | **Temporary Ground Protection** | |
| | **TREE 16** | 4.5.6.1 | Where it is not practical to protect RPAs by use of protective fencing, BS5837 allows for the fencing to be set back and the soil shielded by ground protection. A range of | |
| | **TREE 17** | 4.5.6.2 | If fences are to be set back on a temporary the following specifications are recommended for use as temporary ground protection to protect roots and soil. | |
| | **TREE 18** | 4.5.6.3 | For pedestrian traffic, a plywood board with a minimum thickness of 40mm should be laid on a minimum of 100mm deep woodchip, with geotextile membrane beneath. | |
| | **TREE 19** | 4.5.6.4 | For small plant machinery with a gross weight of up to 2 tonne, interlinking aluminium or composite tracks with sufficient load bearing capacity should be laid on a minimum of 150mm deep woodchip, with geotextile membrane beneath. | |
| | **TREE 20** | 4.5.6.5 | For heavy machinery with a gross weight of up to 3.5tonne, interlinking aluminium or composite track with sufficient load bearing capacity should be laid over a minimum layer of 200mm deep woodchip, with a geotextile membrane beneath. | |
| | **TREE 21** | 4.5.6.6 | Any temporary protective surfaces must remain in place until all construction activity is finished. | To ensure protection to trees to be retained |
| | **TREE 22** | 4.5.6.7 | Upon completion of construction works, the temporary ground protective measures should be removed working backwards from on top of the system. This will need to be done | |
| | **TREE 23** | 4.5.6.8 | Once this material has been removed vehicular access to this part of the site will not be permitted. | |
| | **TREE 24** | 4.5.6.9 | The location of where temporary ground protection is to be located and at what stage of development is illustrated on the TIPP attached to this report. | |
| | **TREE 25** | 4.5.7 | **Excavations and Removal of Existing Surfaces** | |
| | **TREE 26** | 4.5.7.1 | All excavation must be carried out carefully using spades, forks and trowels, taking care not to damage the bark and wood of any roots. Specialist tools for removing soil around | |
| | **TREE 27** | 4.5.7.2 | All soil removal must be undertaken with care to minimise the disturbance of roots beyond the | |
| | **TREE 28** | 4.5.7.3 | immediate area of excavation. Where possible, flexible clumps of small roots, including fibrous roots, should be retained if they can be displaced temporarily or permanently | |
| | **TREE 29** | 4.5.7.4 | If digging by hand, a fork should be used to loosen the soil and help locate any substantial roots. Once the roots have been located the trowel should be used to clear the soil | |
| | **TREE 30** | 4.5.7.5 | Roots temporarily exposed must be protected from direct sunlight, drying out and extreme temperatures by appropriate covering. Roots greater than 25mm in diameter should | |
| | **TREE 31** | 4.5.8 | **Upgrading Existing Surfaces** | |
| | **TREE 32** | 4.5.8.1 | Where upgrading of existing hard surfaces is required, the preferred option will be to leave the surface in place and install the new surface specification on top. | |
| | **TREE 33** | 4.5.8.2 | If the retained surface is impermeable, it may be appropriate to remove or puncture sections to create a more favourable environment for roots beneath, before the new surface is laid, through consultation with the project arboriculturist. | |
| | **TREE 34** | 4.5.8.3 | Where the existing surface is to be removed or upgraded, the surface layer should be excavated down the existing subbase and the new surface specification installed on top, to prevent any damage to roots beneath. | |
| | **TREE 35** | 4.5.8.4 | It is recommended that where possible, new and upgraded hard surfaces should be porous (e.g. permeable brick paving, porous resin bound aggregate or tarmac) to allow the flow or water and oxygen to roots. Wet concrete should only be poured if an impermeable geotextile fabric has first been installed to prevent soil contamination from toxic leachate. | |
| | **TREE 36** | 4.5.8.5 | New surfaces and upgraded surfaces should be set back from the base of stems by a minimum of 500mm to allow space for future growth and minimise the risk of distortion with new surface. | |
| | **TREE 37** | 4.5.9 | **Installation of Services** | |
| | **TREE 38** | 4.5.9.1 | All services and utilities should be installed within existing service routes and where possible outside of RPAs. | |
| | **TREE 39** | 4.5.9.2 | Where installation of utilities or services is required within RPAs, working practices will be adopted in accordance with the National Joint Utilities (NJUG) 10, Vol 4, Issue 2, 2007 | |
| | **TREE 40** | 4.5.9.3 | In accordance with 4.1.3 of NJUG 10 2007, acceptable techniques in order of preference include: | |
| | **TREE 41** | 4.5.9.4 | Trenchless; b) Broken Trench; and c) Continuous Trench. Trenchless methods involve the use of thrust boring machinery, whilst broken and continuous trench methods require | |
| | **TREE 42** | 4.5.9.5 | For a proposal of this nature, broken or continuous trench methods are the most appropriate and should be undertaken as per NJUG 10, to prevent any damage to tree roots or | |
| | **TREE 43** | 4.5.10 | **Installation of Railings, Lighting Columns or Street Furniture** | |
| | **TREE 44** | 4.5.10.1 | The erection of a new railings, lighting columns or street furniture will require 'hand-digging' in the location where any foundations or posts are required within RPAs, to prevent | |
| | **TREE 45** | 4.5.10.2 | Any soil removal during excavations must be undertaken with care to minimise root disturbance and avoid any damage to root bark. | |
| | **TREE 46** | 4.5.10.3 | Exposed roots that are to be removed should be cut cleanly with a sharp saw or secateurs 10-20mm behind the final face of the excavation. | |
| | **TREE 47** | 4.5.10.4 | Roots greater than 25mm diameter should only be cut in exceptional circumstances and following approval by the project arboriculturist. | |
| | **TREE 48** | 4.5.10.5 | Fibrous clumps of roots must be retained where possible, with any exposed roots protected from desiccation by covering them with a damp hessian sack or damp sharp sand | |
| | **TREE 49** | 4.5.10.6 | Prior to backfilling, roots must be surrounded with topsoil or sharp sand before the excavated earth is replaced. The soil must be free of contaminates and any foreign objects | |
| | **TREE 50** | 4.5.11 | **Soft Landscaping** | |
| | **TREE 51** | 4.5.11.1 | To avoid damage to existing tree roots and prevent soil compact, any machinery used to remove existing surfaces and ground vegetation for purposes of soft landscaping (e.g. | |
| | **TREE 52** | 4.5.11.2 | The removal of the surface layer within RPAs must not exceed 50mm, to prevent exposure and damage of tree roots beneath. | |
| | **TREE 53** | 4.5.11.3 | Soft landscaping works must not involve raising or lowering of the existing ground level within any RPA as this can starve roots of oxygen and cause irreversible physiological | |
| | **TREE 54** | 4.5.11.4 | The use of rotavators within RPAs is prohibited. | |
| | **TREE 55** | 4.5.11.5 | Any level changes outside RPAs must be graded to marry existing soil levels within RPAs. | |
| **4.6 Invasive Species Management & Mitigation** | **INNS 1** | **4.6.1** | Inspect: all equipment that has been in a waterbody (boats, trailers, engines, outboards, dredgers, weed cutting or harvesting boats, cruisers or even clothing) or terrestrial site for attached vegetation, contaminated soil or obvious animal life before moving to another waterway, catchment or site. | To ensure that the spread of invasive species is not facilitated within the site and across transport routes. |
| | **INNS 2** | **4.6.2** | Remove: any adhering plant, soil or animal material from your equipment before relocating to another watercourse, section of waterway or site. Ensure that all water is drained from your boat and equipment before transportation to another site and all soil is removed from machinery, as this may contain seed or plant fragments. | |
| | **INNS 3** | **4.6.3** | Clean: power hose all equipment. Use hot water (>60 degrees centigrade) where possible. | |
| | **INNS 4** | **4.6.4** | Dispose: of all plant material and animal material appropriately. This material should be contained in sealed bags or containers prior to removal. Do not throw them back into the water or leave them lying at the water's edge. | |
| | **INNS 5** | **4.6.5** | Report: Report any sightings of an invasive species on the www.invasivespeciesireland.com website in the 'Alienwatch' section. | |
| | **INNS 6** | **4.6.6** | All machinery and equipment used during the construction works will be inspected and will be completely dry prior to entering site to prevent the risk of invasive species translocation. A 'Check, Clean, Dry' protocol will be undertaken with all equipment, machinery and vehicles entering and leaving the Site | |
| | **INNS 7** | **4.6.7** | It is recommended that construction traffic follows predetermined haul routes to ensure that threat of invasive species translocation is minimised. Pre-set haul routes should be adhered to as often as possible. | |
| | **INNS 8** | **4.6.8** | Prior to commencement of works, staff should be made aware of the risk and impacts of introducing INNS on to site. | |
| **4.7 Ecological Receptors Effects Mitigation Measures** | **ECOL 1** | **4.7.1.1** | **Pre-Construction Phase -** Site preparation and construction must be confined to the Site only. Work areas should be kept to the minimum area required to carry out the proposed works and this area should be clearly marked out in advance of the proposed works. | To reduce the area under effect and facilitate the management |
| | **ECOL 2** | **4.7.1.2** | **Pre-Construction Phase -** Measures to mitigate emissions of dust and fuels/chemicals should be clearly outlined | To mitigate the risk of pollutants potentially reaching the underlying aquifer or migrating from site via ground surfaces. |
| | **ECOL 3** | **4.7.1.3** | **Pre-Construction Phase -** Consultation with an arboriculturist is recommended prior to tree removal and groundworks commencing on site. | To ensure good practices regarding Tree Management are in place |
| | **ECOL 4** | **4.7.2.1** | Intrusive site works should be avoided during periods of heavy rainfall. | |
| | **ECOL 5** | **4.7.2.2** | During construction re-fuelling of equipment and machinery must be done off site. If this is not possible, then a dedicated re-fuelling location must be established on site away from ground clearance activities or surface water drains or gullies. | |
| | **ECOL 6** | **4.7.2.3** | Spill kits stations must be provided at the fuelling location for the duration of the works. | |

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| | **ECOL 7** | **4.7.2.4** | Staff must be provided with training on spill control and the use of spill kits. | To not cause any negative effect to soil, surface / groundwater. |
| | **ECOL 8** | **4.7.2.5** | All fuel storage containers must be appropriately bunded, roofed and protected from vehicle movements. These bunds will provide added protection in the event of a flood event on site. | |
| | **ECOL 9** | **4.7.2.6** | All chemicals must be stored as per manufacturer's instructions. A dedicated chemical store within a building must be provided on site if chemicals are to be stored on site. | |
| | **ECOL 10** | **4.7.2.7** | Procedures and contingency plans must be established on site to address cleaning up small spillages as well as dealing with an emergency incident. A stock of absorbent materials such as sand, spill granules, absorbent pads and booms should be kept on site, on plant working near the water and at the refuelling area. | |
| | **ECOL 11** | **4.7.2.8** | Daily plant inspections will be completed by all plant operators on site to ensure that all plant is maintained in good working order. Where leaks are noted on these inspection sheets, the applicant must remove the plant from operations for repairs. | |
| | **ECOL 12** | **4.7.2.9** | All personnel shall observe standard precautions for handling of materials as outlined in the Safety Data Sheets (SDS) for each material, including the use of PPE. Where conditions warrant, emergency spill containment supplies should be available for immediate use. | |
| | **ECOL 13** | **4.7.2.10** | Concrete Washout Skip: Chutes of concrete trucks are only to be washed out into an impermeable lined (polythene) skip. The washout water is to be removed off-site for treatment. | |
| | **ECOL 14** | **4.7.2.11** | Best practice in bulk-liquid concrete management should be employed on site, addressing pouring and handling, secure shuttering, adequate curing times etc. | |
| | **ECOL 15** | **4.7.2.12** | Stockpile areas for sands and gravel must be kept to a minimum size, well away from drains on site. | To prevent dust being dispersed by the wind and to solids be carried into drainage and surface water |
| | **ECOL 16** | **4.7.2.13** | Activities which result in the creation of cement dust should be controlled by dampening down the areas. | To prevent any negative effect to soil, surface / groundwater. |
| | **ECOL 17** | **4.7.2.14** | Raw and uncured waste concrete should be disposed of by removal from the site. | |
| | **ECOL 18** | **4.7.2.15** | The use of herbicides within the proposed development site should be minimised. The clearance of vegetation around the site boundary, where necessary, should be done by hand if possible. Where spraying is necessary, it should be done with a knapsack sprayed to minimise spray and target required areas only. | |
| | **ECOL 19** | **4.7.2.16** | All rodenticides used on the proposed development site, if any, should be in accordance with the Campaign for Responsible Rodenticide use. | |
| | **ECOL 20** | **4.7.2.17** | It is recommended that a suitably qualified arboriculturist be consulted to assess the existing treeline on site prior to removal. | To ensure good practices regarding Tree Management are in place |
| | **ECOL 21** | **4.7.2.18** | Treeline and hedgerow cover to the north of the site should be maintained and undisturbed where possible | To minimise impacts to nesting/foraging wildlife such as birds and mammals. |
| | **ECOL 22** | **4.7.2.19** | Muffled equipment should be utilised, and generators should operate with doors closed | To prevent excessive noise emanating from site. |
| | **ECOL 23** | **4.7.2.20** | Where scrub/hedgerow/treeline habitat is to be removed, this should be done so outside of the bird nesting season (March to August). | To minimise impacts to birds nesting |
| **4.8 Archaeological, Architectural and Cultural Heritage** | **AACH 1** | **4.8.1** | It is recommended that a programme of test trenching be carried by a suitably qualified archaeologist under licence from the National Monuments Service to investigate the potential for previously unidentified sub-surface archaeological remains. If any such remains are identified further archaeological mitigation may be required, such as preservation in situ or by record. Any further mitigation will require approval from the National Monuments Service. | To ensure no undiscovered relevant value feature be damaged during the work |
| | **AACH 2** | **4.8.2** | It is also recommended that all ground disturbances associated with the proposed development, including further site investigations and enabling works, be monitored by a suitably qualified archaeologist. If any features of archaeological potential are discovered during the course of the works further archaeological mitigation may be required, such as preservation in situ or by record. Any further mitigation will require approval from the National Monuments Service. | |
| **6.6 Traffic Management Speed Limits** | **Road 1** | **6.6** | Traffic Management Speed Limits - Adherence to posted/ legal speed limits will be emphasised to all contractors and sub-contractors during induction training.<br>Drivers of construction vehicles/ HGVs will be advised that vehicular movements in locations, such as local community areas, shall be restricted to 50 km/h. Special speed limits of 30 km/h shall be implemented for construction traffic in sensitive areas such as residential. Such recommended speed limits will only apply to construction traffic and shall not apply to general traffic | To minimise risks to the road users, vibration and dispersion of dust . |
| **6.7 Road Cleaning** | **Road 2** | **6.7** | A manned power washer facility will be provided prior to exit of the site when required throughout the various stages of construction on-site, in particularly during groundworks. | To ensure that minimal suspended solids reach nearby waterbodies or surface water drainage systems, and that minimal road sweeping will be required on the public roads. Although a requirement for road sweeping cannot be eliminated entirely, control measures within site are aimed at limiting the need for road sweepers. |
| | **Road 3** | | Road sweeping operations to remove any project related dirt and material deposited on the road network by construction/ delivery vehicles will be utilised as required. It is recommended that road sweepers used have a vacuum function that can remove fine silt and dust from nearby surfaces effectively and prevent them from entering nearby waterbodies and drainage systems. All material collected will be disposed of to a licensed waste facility. | |
| | **Road 4** | | A regular program of site tidying will be established to ensure a safe and orderly site. | Additional measures will be taken to ensure that the site, public roads and surroundings are kept clean and tidy |
| | **Road 5** | | Food waste will be strictly controlled on all parts of the site. | |
| | **Road 6** | | Mud spillages on roads and footpaths outside the site will be cleaned regularly and will not be allowed to accumulate. This process is pertinent in cases of heavy rainfall where sediments can more easily reach nearby waterbodies and drainage systems. | |
| **6.8 Road Condition** | **Road 7** | **6.8.1** | Loads of materials leaving each site will be evaluated and covered if considered necessary to minimise potential dust impacts during transportation. | To minimise the negative effetcts on the local road network caused by the increase in heavy vehicle movements and the nature of the payload. |
| | **Road 4** | **6.8.2** | The transportation contractor shall take all reasonable measures while transporting waste or any other materials likely to cause fugitive loses from a vehicle during transportation to and from site, including but not limited to: | |
| | | | Covering of all waste or material with suitably secured tarpaulin/ covers to prevent loss. | |
| | | | Utilisation of enclosed units to prevent loss. | |
| | **Road 5** | **6.8.3** | Roads forming part of the haul routes will be monitored visually throughout the construction period and a truck mounted vacuum mechanical sweeper will be assigned to roads along the haul route as required. | |

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