Outline Construction Environmental Management Plan (CEMP)

FOR

PROPOSED RESIDENTIAL DEVELOPMENT

AT

CASTLE STREET,

BRAY, CO. WICKLOW

April 2022

ON BEHALF OF

SILVERBOW LTD.

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1 INTRODUCTION

This Outline Construction Environmental Management Plan (hereinafter CEMP) has been prepared by Enviroguide Consulting on behalf of Silverbow Ltd. (The Applicant) for the Proposed Strategic Housing Development (the Proposed Development) at Castle Street, Bray, Co. Wicklow (the Site).

This CEMP describes the proposed works and defines the measures that shall be implemented during the construction phase of the Proposed Development to manage, minimise, or mitigate potential environmental impacts that may arise from the construction phase of the Proposed Development at the Site.

A detailed description of the Proposed Development is provided in Section 2.

This CEMP is produced in support of the planning application. It is intended that this will be updated to include more site-specific information once the Construction Management Team (CMT) is appointed.

The CEMP is an integral part of the Project's Health, Safety, Environmental and Quality Management System (HSEQMS). The CEMP is subject to the requirements of the Site Quality Management System (QMS) with respect to documentation control, records control, and other relevant measures.

The primary distribution list for this document includes the following personnel.

- Construction Director;
- Construction Manager;
- Construction Management Team (CMT);
- Environmental Officer;
- Site Supervisors; and,
- Other Relevant Personnel;

1.1 Objective

The purpose of this CEMP is to provide effective, site-specific procedures and mitigation measures to monitor and control environmental impacts throughout the construction phase of the project and ensure that construction activities so far as is practical do not adversely impact the environment. The objective of this document is to set out and communicate the procedures, standards, management responsibilities and key environmental obligations that apply to the Main Contractor and sub-contractors to address and prevent environmental effects that may arise from the construction phase of the Proposed Development.

1.2 Scope of CEMP

This CEMP defines the approach to environmental management during implementation and roll-out of the construction phase of the project.

Compliance with the CEMP, procedures, work practices and controls is mandatory and must be adhered to by all personnel and contractors employed on the construction phase of the

Proposed Development. This CEMP seeks to promote best environmental practices on-site for the duration of the Construction Phase.

This CEMP will:

- Comply with all relevant legislative and statutory obligations ;
- Provide a plan for achieving and implementing construction related measures identified in but not limited to the following documents:

  -Design Statement

  -Outline Construction and Demolition Waste Plan

  -Site Specific Flood Risk Assessment

  -Landscape Design Report

  -Archaeological Assessment Report

  -Ecological Impact Assessment and associated survey reports

  -Environmental Impact Assessment Screening Report

  -Planning Stage Acoustic Design Statement

  -Appropriate Assessment Screening Report

- Promote best environmental on-site practices for the duration of the Construction Phase.

1.3 'Live document'

This CEMP is considered a 'live' document and as such will be reviewed on a regular basis. Updates to this CEMP may be necessary to address changes in environmental management practices and/or contractors. In addition to include further mitigation measures that may be identified as part of detailed design and review in terms of Environmental Impacts.

The procedures described in this CEMP will be audited throughout the project construction phase to ensure compliance. All documentation required by this CEMP such as plans, programmes and operating procedures will, once received by the Main Contractor, be appended to this document, and reviewed and updated as part of the overall CEMP for the Proposed Development.

2 PROPOSED DEVELOPMENT DESCRIPTION

2.1 Site Location and Description

The Site of the Proposed Development is located in Bray, County Wicklow. The Site is located to the north of Caste Street, and to the west of Dwyer Park. An area of scrub borders the Site at the northern and north-western boundary. North Wicklow Educate Together Secondary School is located to the north of the Site.

The location of the Site and boundary areas are presented in Figure 2-1.

Figure 2-1: Site Location

2.2 Proposed Development

The proposed development is an apartment type development based on a density of c.162 units per hectare realising a total number of 139 apartments. The scheme will also include a creche and a limited amount of commercial area. The accommodation is proposed in two blocks with undercroft parking, secure cycle parking and bin storage. There are also a limited number of drop-off car parking spaces and visitor cycle parking at surface level. The scheme includes a high level of landscape proposals for the development

The Proposed Development will also consist of the installation of a stormwater attenuation system and system for treatment of water quality designed taking cognisance of sustainable drainage system (SuDs) principles and all ancillary site development and landscaping works.

The layout of the Site is presented in *Figure 2-2*.

Figure 2-2: Proposed Development Layout (NMP Landscape Architecture, Feb 2021)

3 CONSTRUCTION SCHEDULE AND WORKS MANAGEMENT

3.1 Programme

The construction programme duration is estimated to be up to 24 months.

3.2 Working Hours

Normal site working hours will apply to the construction phase of the project.

No works are envisaged to be carried out on Sundays or Bank Holidays.

Should there be a need to work Sundays/Bank Holidays, a written submission seeking authorisation will be made to Wicklow County Council.

Works will take account of any restrictions identified in the grant of planning.

3.3 Site Construction Compound

All construction support related activities including office facilities, welfare facilities such as toilets and canteen will be contained within the site compound. The site compound will be located within the site boundary in a location appropriate to the development phase. Materials handling and storage including waste will be contained within the boundary of the Site.

All waste storage areas will be identified by clear legible signage and recorded on a site layout drawing which will be maintained on-site.

Information notices located at the site entry, site compound and appropriate locations throughout the site will identify the site-specific PPE requirements and the potential risks associated with entering a live construction environment.

3.4 Traffic

The main construction traffic generating activity will be associated with the export of demolition waste materials from the demolition of existing buildings and surplus soil and stone arising from ground works and the import of construction materials.

There will be no deliveries to the site or removal of materials outside of normal site hours.

All construction traffic will be managed in accordance with the traffic management plans outlined in the Outline Construction Management Plan and the Transportation Assessment Report for the Proposed Development.

The Outline Construction Management Plan produced by Corrigan Hodnett Consulting Civil & Structural Engineers (2021a) outlines the proposed traffic and pedestrian management for the construction works. NRB Consulting Engineers have prepared the Transportation Assessment Report (July 2021) (incl. Preliminary Travel Plan & Independent Stage 1 Road Safety Audit). These plans detail all information regarding the traffic management required to complete the project works, inclusive of:

- Traffic management plans;
- Erection, supervision and removal details;
- Implementation phases of the project; and
- Risk assessment for the works.

All traffic management measures will be implemented, maintained and removed by competent personnel holding CSCS Signing, Lighting and Guarding certification.

A gate attendant with the designated title “flag / banksman” with appropriate training and qualifications will be appointed to control manoeuvres and traffic flows at Site gates.

3.5 Site Security, Public Health and Safety and Site Access and Egress

The Proposed Development site has existing boundaries that prevent access and egress to the Proposed Development. A site compound and car parking facility will be established prior to the commencement of construction work onsite. The site entrances and boundaries will be appropriately secured with lockable gates, supplemental hoarding/fencing will be erected as required to ensure the security of the site. Regular inspections of the gates/fencing/hoarding will be undertaken to ensure the integrity of the site security and safety measures.

Site access for all personnel and visitors will be controlled and all visitors will report to the site offices prior to entering the construction area.

Information notices located at the site entry, site compound and appropriate locations throughout the site will identify the site-specific PPE requirements and the potential risks associated with entering a live construction environment.

3.6 Communication & Consultation

The Main Contractor should prepare a Project Communications Management Plan and assign a member of the CMT as the Project Communications Officer who will undertake any required third party communication and liaise directly with local authorities, members of the public, etc. as required by the project. Including the following:

3.6.1 Advance Works Notice

The Communications Management Plan will specify any requirements in relation to regular consultation and public communications activities if required during the construction works and will include all contact details for relevant project personnel, public bodies and emergency services.

3.6.2 Managing Enquiries and Complaints

All complaints and requests for information from members of the public will be handled appropriately, efficiently in compliance with the complaints and corrective action procedures to be developed by the Main Contractor. All follow up actions on the construction Site will be managed by the Project Communications Officer and CMT.

A record will be maintained on site of all complaints detailing the following as a minimum:

- Name and address of complainant (if provided).
- Time and date the complaint was made.
- Date, time, and duration of incident.
- Nature of the complaint (e.g., noise nuisance, dust nuisance etc.).
- Characteristics, such as rumble, clatters, intermittent, etc.
- Likely cause or source of incident.
- Weather conditions, such as wind speed and direction.

- Investigative and follow -up actions; and
- Root cause analysis and preventive actions.

All personnel working on the Proposed Development Site will be inducted into the complaints handling procedure and will be aware that complaints are to be directed immediately to the CMT.

All enquiries and complaints received will be investigated by the CMT. Where appropriate corrective and preventative actions will be implemented as required to ensure that the complaint is effectively dealt with and to prevent a recurrence of the incident which led to the complaint being received. Staff will be informed by toolbox talk of corrective and preventative actions implemented as relevant to their role or overall operations.

3.7 Maintenance of Roads

The Main Contractor will ensure that the appropriate procedures are in place to ensure that all site traffic will be managed in accordance with the Construction Management Plan. The Main Contractor will ensure that measures are in place to prevent any nuisance and debris on public roads adjoining the site associated with the construction works. The following measures may be considered where appropriate:

- Internal site access routes and set down areas for site vehicles to be paved with clean stone or similar to prevent tracking of debris from works areas on site vehicles
- Surface water runoff will be contained onsite and runoff from the Site to public roads will be prevented.
- A sufficient number of wheel wash facilities or alternative suitable measures will be considered if required and provided at each egress point from the site for site vehicles (e.g. hauliers removing surplus soil during bulk excavations) for all vehicles to pass through prior to exit from the Site.
- Road sweepers (vacuum type) will be available for use on public roads where required for the duration of the construction works.
- Maintenance of road gullies/drains immediately adjoining the Site will be the responsibility of the Contractor where required for the during of the construction works.

4 PROJECT ROLES AND RESPONSIBILITIES

The Main Contractor appointed to the project will have overall responsibility for the implementation of the CEMP and appointing the following roles and responsibilities within the Construction Management Team (CMT).

4.1.1 Construction Director

The Construction Director will have an overall responsibility for the organisation and execution of all related environmental activities as appropriate, in accordance with regulatory and project environmental requirements. The principal duties and responsibilities of the Construction Director will include:

- Overall responsibility for the development and implementation of the CEMP.
- Ensuring adequate resources are available to ensure the implementation of the CEMP.
- Responsibility for the management review of the CEMP for suitability, adequateness, and effectiveness; and
- Setting out the focus of environmental policy, objectives, and targets for the Contractor.

4.1.2 Construction Manager

The Construction Manager is directly responsible to the Construction Director for the successful execution of the project. The principal duties and responsibilities of this position will include:

- Reporting to the Construction Director on the on-going performance of the CEMP.
- Discharging his/her responsibilities as outlined in the CEMP.
- Supporting the CMT and the Environmental Officer through the provision of adequate resources and facilities to ensure the implementation of the CEMP.
- Give Contractors precise instructions as to their responsibility to ensure correct working methods where risk of environmental damage exists.
- Where appropriate, ensure Contractor's method statements include correct waste disposal methods; and
- Co-ordinate environmental planning of CMT activities to comply with environmental authorities' requirements and with minimum risk to the environment.

4.1.3 Environmental Officer

The Environmental Officer will be responsible to the Construction Manager for, but not limited to, the following activities:

- Ensuring that the requirements of the CEMP are developed and environmental system elements (including procedures, method statements and work instructions) are implemented and adhered to with respect to environmental requirements.
- Reviewing the Environmental responsibilities of all sub-contractors in scoping their work and during their contract tenure.
- Ensuring that advice, guidance, and instruction on all CEMP matters is provided to all managers, employees, construction contractors and visitors on site.

- Reporting to the Construction Manager on the environmental performance of Line Management, Supervisory Staff, Employees and Contractors; and
- Advising site management on environmental matters.
- Be aware of any potential environmental risks relating to the Contractors and bring these to the notice of the appropriate management.
- Ensure materials/waste register is completed; and
- Maintenance of all environmental related documentation.

The Environmental Officer will also have the overall responsibility to oversee recording of all waste management at the site in line with the Construction and Demolition Waste Management Plan (C&DWMP). Some of the principal duties and responsibilities of this role include:

- Report to Project Manager on the management of waste at the site.
- Delegate responsibility to sub-contractors, where necessary.
- Coordinate with suppliers, service providers and sub-contractors.
- Prioritise waste prevention and salvage.
- Maintain a record of each load of waste materials being transported off-site; and
- Maintain a record of all necessary documentation including contractor waste collection permits, waste destination consents, waste transfer documents and waste management facility gate receipts in the waste management file.

4.1.4 Project Environmental Consultant (as required)

An Environmental Consultant will be engaged on an ad-hoc basis where required. The appointed Environmental Consultant will be competent, qualified, and experienced in the field of environmental management; with expertise in the areas of contaminated land, water and waste management and will be responsible for producing all environmental reporting procedures.

The Project Environmental Consultant will be responsible to the Environmental Officer for, but not limited to, the following activities:

- Preparation of the CEMP, environmental control plans, supporting procedures.
- Advising the site management on environmental matters as appropriate.
- Carrying out environmental surveys (data logging (noise, water, dust, etc.)) as required.
- Generating reports as required to show environmental data trends and incidents.
- Advising on the production of written method statements and site environmental rules and on the arrangements to bring these to the attention of the workforce as required; and
- Investigating incidents of significant, potential, or actual environmental damage, ensure corrective actions are carried out and recommend means to prevent recurrence.

4.1.5 Project Communications Officer

The Project Communications Officer is responsible for conducting all public liaison associated with the construction phase of the project. The responsibilities and duties of the Project Communications Officer include the following:

- Responding to any concerns or complaints raised by the public in relation to the construction phase of the project.
- To liaise with the Environmental Officer on community concerns relating to the environment.
- Ensure the Environmental Officer is informed of any complaints relating to the environment; and
- Keep the public informed of project progress and any construction activities that may cause inconvenience to the local community.

The Communications Officer will report to the Construction Manager.

4.1.6 Site Supervisors

All Site Supervisors are required to:

- Read, understand, and implement the CEMP.
- Have knowledge of the requirements of the relevant law in environmental matters and take whatever action is necessary to achieve compliance. Where necessary seek the advice of the contracted Environmental Officer.
- Ensure that environmental matters are considered at all times.
- Be aware of any potential environmental risks relating to the site, plant, or materials to be used on the premises and bring these to the notice of the appropriate management; and
- Ensure that any plant is environmentally suited to the task in hand.

4.1.7 Site Personnel

All Contractors, and other site personnel, on the project will adhere to the following principal duties and responsibilities:

- To co-operate fully with the CMT and the Environmental Officer in the implementation and development of the CEMP at the site.
- To conduct all their activities in a manner consistent with regulatory and best environmental practice.
- To participate fully in the environmental training programme and provide management with any necessary feedback to ensure effective environmental management at the site; and
- Adhere fully to the requirements of the site environmental rules.

5 PROJECT ENVIRONMENTAL POLICY

The Applicant recognises and seeks to minimise the impacts of its business on the environment. The appointed contractor will be obliged to:

- Carry out the Project in full compliance with all applicable environmental regulations and to other requirements to which we subscribe.
- Implement good environmental practice as part of designs, e.g., carry out design reviews, risk assessments, etc. on all relevant projects.
- Prevent pollution from activities through a system of operational controls that include written instructions and staff training appropriate to the environmental requirements of their work.
- Continually improve Project environmental performance by setting objectives and targets and implementing them through an environmental programme.
- Informing all project employees about Environmental Policy and explaining what they are required to do to protect the environment; and
- Implement this Policy through the successful operation of the CEMP.

This policy will be reviewed periodically, considering current and potential future business issues.

5.1 Site Environmental Awareness

The following general Site Environmental Rules will apply. These general rules will be communicated to all site personnel via the site induction training and they will be posted across the Site at strategic locations, such as the Site entrance, canteen and near the entrances to buildings.

5.1.1 General Site Environmental Rules

- Report any signs of pollution or environmental damage to the construction manager, environmental officer, or site supervisor no matter how small.
- Report any spills, incidents or near misses that occur on site immediately to the site supervisor.
- Refuel using bunded mobile bowsers or static bunded tanks in designated, impermeable areas equipped with spill kits.
- Where possible carry out any oil or lubricant changes and maintenance offsite.
- All waste must be sent to the designated site waste management areas for interim storage pending compliant removal from site. Do not dispose of anything into a drain, watercourse or onto land.
- Do not throw litter, all waste must be sent to site waste management Contractor.
- As best-practice, all construction-related waste on site e.g., plastic sheeting, netting etc. should be kept in a designated area on site and kept off ground level to protect fauna from entrapment and death.
- Do not drive plant or machinery outside the authorised working boundaries of the site; and

- IF IN DOUBT, ASK THE CONTRACTED SITE SUPERVISOR AND/OR ENVIRONMENTAL OFFICER FOR FURTHER INFORMATION.

The CMT will develop Environmental Procedures to control the potential impacts from the construction phase of the development. These procedures together with the site Environmental Policy are to be made available in the main offices and in the main EHS information points at the site.

The training of site construction staff is the responsibility of the CMT. All personnel working on site will be trained in pollution incident control response. An environmental training programme will be organised for onsite personal to outline the CEMP and to detail the site environmental policy.

A summary of the main points of this CEMP will be incorporated into the site induction course.

Contractors shall verify the competency of all plant and equipment operators including those employed by sub-contractors.

An environmental audit and inspection programme will be developed by the contractor to ensure compliance with the compliance measures identified in the CEMP.

5.2 Managing Environmental Incidents

All environmental incidents and complaints from members of the public / third parties will be handled appropriately, efficiently in compliance with the incidents and corrective action procedures to be developed by the Main Contractor. All follow up actions on the construction Site will be managed by the CMT.

An environmental incident may include but is not limited to the following:

- Spillage of chemical, fuel or oil
- Fire
- Release of any contaminant to surface water, groundwater, air or soil
- Exceedance of noise limits
- Exceedance of dust limits

A record will be maintained on site of all incidents detailing the following as a minimum:

- Date, time, and duration of incident.
- Nature of the complaint/ incident (e.g., noise nuisance, dust nuisance etc.).
- Characteristics .
- Likely cause or source of incident.
- Weather conditions, such as wind speed and direction.
- Investigative and follow -up actions; and
- Root cause analysis and preventive actions.

All incidents will be investigated by the Environmental Officer and reported to the Construction Manager. Corrective and preventative actions will be implemented as required to ensure that the incident is effectively dealt with and to prevent a recurrence of the incident. Staff will be

informed by toolbox talk of corrective and preventative actions implemented as relevant to their role or overall operations.

6 ENVIRONMENTAL IMPACTS AND CONTROLS

The environmental control measures that will be implemented during the construction phase are detailed in the following sections.

6.1 Potential Impacts of the Development

The CEMP is designed to implement mitigation measures to control impacts relating to:

- Air
- Water
- Soil and Geology
- Noise and vibration
- Biodiversity; and
- Archaeology

This CEMP is to be read in conjunction with the relevant design drawings and reports relating to the Proposed Development.

The CEMP outlines the measures that will be implemented to prevent and mitigate any potential environmental issues that may arise during the construction phase.

6.2 Legal and Other Requirements

This CEMP will be updated as required throughout the works and submitted should there be any amendments to any of the following:

- Project specific construction requirements
- Legislative requirements
- The company CEMP and/or EMS

Where relevant obligations are identified, these will be adopted into the procedures, forms, plans etc. of the CEMP.

For construction sites, any additional requirements of planning consents, statutory authorities and the client are identified and documented in the CEMP.

Where compliance obligations have been assessed and recorded, they will be re-reviewed when personnel become aware of relevant changes that impact directly on operations, or as a minimum quarterly where obligations have changed or where there have been significant changes in work type.

The CEMP is regulated by a number of documents as:

- Planning Conditions
- Environmental screening reports and mitigation measures.

As with the CEMP, these documents specify the particular requirements that will be fulfilled during the construction of the project. All contractors involved in the project must comply with these documents.

6.2.1 Conditions of Planning Permission

Compliance with environmental conditions and the control measures set out in the planning permission will be included in the CEMP once these planning conditions are known.

6.2.2 Environmental Assessments and Reports

It will be the responsibility of the Main Contractor to ensure the implementation of all environmental and ecological control and mitigation measures identified in the CEMP. The Main Contractor will also be required to ensure implementation of control measures identified in the following documents which will be included in the live CEMP:

Construction Management Plan

Construction and Demolition and Waste Management Plan

Engineering Services Report for Planning

Outline Construction and Demolition Waste Plan

Site Specific Flood Risk Assessment

Landscape Design Report

Archaeological Assessment Report

Ecological Impact Assessment

Environmental Impact Assessment Screening Report

Planning Stage Acoustic Design Statement

Appropriate Assessment Screening Report

6.3 Implementation of Control Measures

The CMT will be responsible for the implementation of control measures as identified in Section 6.4. The Main Contractor and all sub-contractors will comply with the requirements of the CEMP to document and seek approval for Method Statements, Permits and other site-generated documentation as requested.

This CEMP will form part of tender and contract documentation for each works contract. Requirements and responsibilities will be reviewed with each Contractor at inception meetings and at weekly progress update meetings.

Any Contractor submitting a tender for the project must declare any legal proceedings with a regulatory authority, including the Environmental Protection Agency (EPA) or environmental agencies or competent authorities from other jurisdictions.

The Main Contractor shall ensure that all sub-contractors are supplied with a copy of the CEMP, receive sufficient environmental training and are aware of the environmental obligations of the project.

Environmental requirements will be controlled as follows:

- Procedures and control measures as set out in this CEMP.
- Approved Method Statements and Risk Assessments from Contractors which shall address all potential environmental impacts for the specific task.

- Detailed contractor plans for specific environmental aspects.
- Emergency response plans; and
- Specific induction training before commencing work.

In summary, it is expected that all contractors will follow good environmental practice throughout all activities.

6.3.1 Communication & Training - Construction Personnel

In addition to the site induction provided by the Main Contractor toolbox talks will be used by the CMT to communicate changes to process, identify potential areas of concern and inform staff of corrective and preventative actions implemented.

Details of all safety meetings / toolbox talks, including topics and attendees must be submitted to the CMT for inclusion in the project's HSEQMS records.

6.3.2 Keeping of Records

Records pertaining to all aspects of the construction environmental management procedures outlined in this document will be maintained in the onsite Environmental Management File. Information stored in the Environmental Management File will include.

- Records of induction training for operatives, drivers, workers, and visitors.
- Attendance by site personnel and visitor logs
- The location of waste storage areas on site.
- The details of environmental incidents and near misses including incident investigation and corrective and preventative measures implemented.
- Records of environmental inspections completed during the construction phase to ensure compliance with the CEMP control measures.
- Copies of Safety Data Sheets (SDS)
- Complaints register.
- Records of the movement and recovery/disposal of all waste generated during the construction phase of the project to include date removed from site, waste type, quantities, waste carrier and off-site destination.

6.3.3 Monitoring, Audits, and Inspections

Regular inspection and monitoring of construction activities to ensure that the recommended mitigation measures are being correctly implemented will support environmental protection by identifying potential environmental issues at an early stage will reduce the likelihood of significant effects on human health or the environment.

Inspections by the CMT will address environmental issues including dust, litter, noise, traffic, surface water, waste management and general housekeeping. These will be carried out on both scheduled and random intervals. The findings of these inspections will be recorded.

The specific environmental monitoring requirements relating to the control of potential impacts are detailed in the Operation Controls section (Section 6.5) of the CEMP.

6.3.4 Non-Conformance and Corrective and Preventative Action

Corrective Action Requests (CARs) will be issued by the CMT to those responsible for the implementation of corrective and preventative actions to ensure effective resolution of deviations from the CEMP requirements or to address environmental issues identified.

CARs may be raised as a result of:

- An internal or external communication such as a complaint.
- Internal audit.
- A regulatory audit or inspection.
- A suggestion for improvement; and
- An incident or near miss.

All corrective action requests will be numbered and logged and tracked to ensure completion.

6.4 Operation Controls

6.4.1 Control of Fuel and Chemical Storage

Appropriate storage facilities will be provided on site. Areas of high risk include:

- Fuel and chemical storage.
- Refuelling Areas.
- Site Compound; and
- Waste storage areas.

If required, fuel, oils and chemicals will be stored on an impervious base within a bund remote from any surface water drains or water courses.

All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds and storage areas shall be designed having regard to EPA Guidelines.

6.4.2 Control of Emissions to Surface Water and Drainage

As part of the overall construction methodology, sediment and water pollution control risks arising from construction-related surface water discharges will be considered.

All works carried out as part of the Proposed Development will comply with all Statutory Legislation including the Local Government (Water Pollution) acts, 1977 and 1990 and the contractor will cooperate fully with Wicklow County Council and other stakeholders in this regard.

Personnel working on the Site will be trained in the implementation of environmental control and emergency procedures. The CEMP and the relevant documents produced will be formulated in consideration of standard best international practice including but not limited to:

- CIRIA, (2001), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors.
- Construction Industry Research and Information Association (CIRIA) Environmental Good Practice on Site (C650), 2005.
- Enterprise Ireland BPGCS005, Oil Storage Guidelines.

- UK Pollution Prevention Guidelines (PPG) UK Environment Agency, 2004.
- Construction Industry Research and Information Association CIRIA C648: Control of water pollution from linear construction projects: Technical guidance (Murnane et al. 2006).
- CIRIA C648: Control of water pollution from linear construction projects: Site guide (Murnane et al. 2006); and
- National Road Authority (NRA - now Transport Infrastructure Ireland (TII)): Guidelines for the Creation, Implementation and Maintenance of an Environmental Operating Plan' (NRA, 2007);
- Inland Fisheries Ireland (2016). Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters.

The following standard operational measures will protect surface waters during the Construction Phase of the Proposed Development:

- There will be no direct discharge to surface water courses or drains during the construction works. There are no open surface water courses at the Site and the closest watercourse is the River Dargle approximately 150m to the southwest.
- Run-off from the working site or any areas of exposed must be channelled and intercepted at regular intervals for discharge to silt-traps or lagoons. Surface water run-off will be treated using silt trays/settlement ponds and temporary interceptors and traps will be installed to treat water until such time as permanent drainage infrastructure is constructed.
- Any discharge of water to public surface water sewer or foul sewer will be under consent from Wicklow County Council or Irish Water as appropriate.
- Pumping of concrete will be monitored to ensure that there is no accidental discharge.
- There will be no mixer washings or excess concrete discharged on site. All excess concrete is to be removed from Site and all washout of concrete chutes to be captured in a tank which shall be removed offsite for disposal at an authorised waste facility.
- If cast-in-place concrete is required, all work must be carried out in the dry and effectively isolated from any water courses, drainage and groundwater.
- If dewatering where shallow groundwater is encountered in excavations is required, water will not be discharged to open water courses. Water will be discharge to sewer under consent from Wicklow County Council or Irish Water as appropriate.
- A regular review of weather forecasts of extreme heavy rainfall will be conducted, and a contingency plan will be prepared for before and after such events to minimise any potential nuisances. As the risk of the break-out of silt laden run-off is higher during these weather conditions, no work will be carried out during such periods where possible.
- Any imported materials will be placed on site in designated locations and double handling will be avoided. Where this is not possible, designated temporary material storage areas will be used.

- Temporary storage areas will be located at least 10m away from any open drains which will be protected for the duration of the works or temporary diversion put in place.
- All containment and treatment facilities will be regularly inspected and maintained.
- Refuelling of plant and machinery on site will take place in a designated, impermeable area with appropriate containment in place.
- Refuelling of plant during the Construction Phase will only be carried out at designated refuelling station. This station will be fully equipped for spill response and a specially trained and dedicated Environmental and Emergency Spill Response team will be appointed before the commencement of works on site.
- Where possible any oil and lubricant changes and maintenance will take place offsite.
- Only emergency breakdown maintenance will be carried out on site. Drip trays and spill kits will be available on site to ensure that any spills from vehicles are contained and removed off site.
- All personnel working on site will be trained in pollution incident control response. Emergency silt control & spillage response procedures contained within the CEMP will ensure that appropriate information will be available on site outlining the spillage response procedures and a contingency plan to contain silt during an incident.
- Any other diesel, fuel or hydraulic oils stored on site will be stored in bunded storage tanks- the bunded area will have a volume of at least 110% of the volume of the stored materials as per best practice guidelines (Enterprise Ireland, BPGCS005).
- Portaloos and/or containerised toilets and welfare units will be used to provide facilities for site personnel. All associated waste will be removed from site by a licensed waste disposal contractor and records will be maintained. Where feasible and if agreed with Irish Water a temporary connection to the mains sewer may be considered.
- In the unlikely event that material becomes contaminated for example by a fuel spill onsite or a burst / leaking hydraulic hose, a documented procedure for contaminated material will be prepared and adopted by the appointed contractor prior to excavation works commencing on site. These documents will detail how contaminated material will be appropriately handled during the excavation phase.
- Any wastewater generated on-site during the Construction Phase will be stored and disposed of appropriately by discharge to foul sewer or by tankering off site. Under no circumstances will any untreated wastewater generated onsite (from equipment washing, road sweeping etc.) be released into any watercourses.
- Groundwater may be encountered during the construction works. Where water must be pumped from the excavations, water will be managed in accordance with best practice standards (i.e., CIRIA – C750) and regulatory consents.
- Excavations and stockpiled soils will be constructed/located/stored in a manner that ensures runoff water is contained within the site boundary.
- Any surface /storm water gullies onsite or immediately adjoining the site entrance will be protected to ensure discharge from the site does not enter the surface water drainage network.

6.4.3 Control of Emissions to Ground and Groundwater

As part of the overall construction methodology, sediment and water pollution control risks arising from construction-related surface water discharges will be considered.

All works carried out as part of the Proposed Development will comply with all Statutory Legislation including the Local Government (Water Pollution) acts, 1977 and 1990 and the contractor will cooperate fully with Wicklow County Council and other stakeholders in this regard.

Personnel working on the site will be trained in the implementation of environmental control and emergency procedures. The CEMP and the relevant documents produced will be formulated in consideration of standard best international practice including but not limited to:

- CIRIA, (2001), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors.
- Construction Industry Research and Information Association (CIRIA) Environmental Good Practice on Site (C650), 2005.
- Enterprise Ireland BPGCS005, Oil Storage Guidelines.
- CIRIA 697, The SUDS Manual, 2007.
- UK Pollution Prevention Guidelines (PPG) UK Environment Agency, 2004.
- Construction Industry Research and Information Association CIRIA C648: Control of water pollution from linear construction projects: Technical guidance (Murnane et al. 2006).
- CIRIA C648: Control of water pollution from linear construction projects: Site guide (Murnane et al. 2006); and
- Inland Fisheries Ireland (2016). Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters.

The following standard operational measures will protect surface waters during the Construction Phase of the Proposed Development:

- Shallow groundwater may be encountered during the construction works. Where water must be pumped from the excavations, water will be managed in accordance with best practice standards (i.e. CIRIA – C750) and regulatory consents.
- Measures set out in Section 6.4.1 Control Fuel and Chemical Storage, will serve to protect soil and groundwater.
- As part of their works the contractor will allow for working in the wet, as well as dewatering of all excavations to allow continual progression of works. This will encompass the construction of a secant pile wall around the basement excavation to allow dewatering and dry excavation.
- The piling method employed by the contractor will prevent any potential impact to soil and groundwater. The piling methodology will include the use of water compatible grout to avoid any contamination of groundwater where encountered

- All ready-mixed concrete shall be delivered to the Site by truck. Concrete mixer trucks will not be permitted to wash out on-site with the exception of cleaning the chute into a container which will then be emptied into a tank to be removed from site.
- A suitable risk assessment for wet concreting will be completed prior to works being carried out.
- The Main Contractor is to ensure that no contaminated water/liquids leave the site as surface water run-off or enter the local storm drainage system. Excavations and potentially contaminated stockpiled soils will be constructed/located/sheeted in a manner that ensures contaminated water generation is prevented.
- Disposal to foul sewer will require a Discharge Licence issued under Section 16 of the Local Government (Water Pollution) Acts and Regulations and must be obtained from Irish Water.
- If a dewatering plan is required, it will be prepared by the contractor for the project and all dewatering will be undertaken in strict compliance with the conditions of the discharge licence from Irish Water (if granted) for the project.

6.4.3.1 Control of Potentially Contaminated Soil and other Materials

The Contractor will undertake all ground works to ensure appropriate measures for dealing with any potentially contaminated soil are implemented where required including the following measures.

- The removal of all surplus and waste materials including soil will be supervised by a competent and qualified Environmental Consultant.
- All surplus soil from groundworks including potentially contaminated soil excavation will be handled in accordance with the procedures outlined in the C&DWMP and appropriate statutory requirements.
- Records will be maintained according to the waste records procedures set out in the C&DWMP.
- An excavation plan will be established by the contractor prior to the commencement of any excavation. The plan shall take into account where required, site investigation and materials / waste classification results.
- The procedures for stockpile management outlined in this CEMP will be implemented for the management of excavated materials in order to protect ground and surface water and minimise airborne dust.
- The importation of aggregates or topsoil shall be subject to control procedures which shall include off-site assessment for suitability for use prior to acceptance for use at the site.
- Contract and procurement procedures will be in place to ensure that all aggregates and fill material required for the development are sourced from reputable suppliers operating in a sustainable manner and in accordance with industry conformity/compliance standards and statutory obligations.
- Any unsuitable material identified prior to unloading / placement on-site shall be rejected and removed from the site.

6.4.3.2 Control of Stockpiles

Measures specific to the management and control of stockpiles are set out in Section 6.5.8 Control of Air Quality and Dust.

6.4.4 Controls to Protect Biodiversity

The following construction mitigation measures and those outlined in the Ecological Impact Assessment report ((Enviroguide Consulting, July 2021) will be implemented in relation to the protection of biodiversity (habitats and sensitive species and other key ecological receptors), where the predicted impact of dust deposition, noise and emissions to ground or surface water and soils can be further reduced by mitigation implementation.

- **noise and dust** control measures as detailed in this plan.
- areas for demolition and excavation will be clearly delineated to avoid accidental excavation or demolition.
- a project ecologist and environmental consultant shall be appointed as appropriate throughout the construction phase of the development.
- **Surface water** management measures to address construction-related surface water discharges in order to control release of hydrocarbons, polluting chemicals, sediment/silt and contaminated waters i.e. temporary control and interceptor facilities, silt traps, silt fences, silt curtains, settlement ponds and filter materials, provision of exclusion zones and barriers, inspection and maintenance (as outlined in Section 6.5.2 Control of emissions to surface water).
- **Dewatering** of perched water or groundwater at the Site if required during groundworks will be carried out in accordance with the Outline Construction Management Plan (Corrigan Hodnett Consulting, 2021a) and all water removed from site to be either tankered offsite for authorised disposal or discharged to foul sewer under a discharge licence from Irish Water.
- **Bats:** A bat roost was identified at the Site and where potential impacts on bats are identified, measures to reduce impacts on bats related to lighting, tree removal and demolition works are outlined in detail in the bat survey report. Key items that will be addressed include and will include:
    - lighting plan designed in accordance with current bat guidelines
    - the demolition of the building identified as a bat roost will take place under the direction of a Bat Ecologist in accordance with a NPWS derogation licence.
- **Nesting Birds:** Vegetation clearance will take place outside the breeding bird season (i.e. start of September to end of February, inclusive) under the supervision of an ecologist to avoid any potential impact on breeding birds. Where this seasonal restriction cannot be observed, a check for active nests will be carried out immediately prior to any site clearance and repeated as required to ensure compliance to Irish wildlife law.

  The only bird species found nesting in the warehouses and buildings at the Site were Feral Pigeons. Little activity and a low diversity of species in and over lands was recorded on the day of survey. There were no species recorded breeding on site which are on the Red List of the Birds of Conservation Concern in Ireland (Gilbert et al. 2021).

Two amber-listed species, House Sparrow and Starling may be breeding within the Site.

- **Invasive Species:** Invasive species identified at the site prior to demolition and construction works will be managed in accordance with the measures outlined in any invasive species survey carried out. Any invasive species will be removed by a qualified contractor in accordance with NPWS guidelines prior to clearance and excavation works to prevent uncontrolled transportation and dispersion of invasive species from the Site.
- **Frogs:** There is no evidence of Common Frog or Smooth Newt within the pond at the Site. No frog spawn was observed during surveys within the pond, despite the ecological survey being with the optimal period.

6.4.5 Control of Light

The working hours set out in Section 3.2 will ensure that no excess night-time light emissions will be generated at the site of the Proposed Development, thereby causing no nuisances to sensitive receptors in the vicinity.

No lighting shall be left illuminated overnight except that which is necessary to ensure the security of the site.

6.4.6 Control of Noise and Vibration

To minimise the potential effect of noise and vibration from the construction phase, the development shall comply with British Standard 5228 'Noise Control on Construction and open sites Part 1. Code of practice for basic information and procedures for noise control. Guidance on best practice control measures from construction sites for noise and vibration from the following documents:

- BS 5228 (2009 +A1 2014) Code of Practice for Noise and Vibration Control on Construction and Open Sites Parts 1 and 2.
- Guidelines for the Treatment of Noise & Vibration in National Road Schemes, National Roads Authority, Revision 1, 25th October 2004.
- British Standard BS 7385: 1993: Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration.

6.4.6.1 Control of Noise

Short-term increases in disturbance levels as a direct result of human activity and through increased generation of noise during the Construction Phase can have a range of impacts depending upon the sensitivity of the ecological receptor, the nature and duration of the disturbance and its timing.

Noise generated during the Construction Phase of the Proposed Development could cause temporary disturbance to a number of faunal species in the vicinity of the Site of the Proposed Development. To mitigate this disturbance, the following measures will be implemented:

Noise mitigation measures will include where deemed necessary, but not be limited to:

- Establish channels of communication between the Contactor, local authority, and other stakeholders where appropriate.

- Limiting the hours during which site activities likely to create high levels of noise are permitted.
- Erection of site hoarding if required.
- No plant used on site will be permitted to cause an ongoing 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.
- Selection of plant with low inherent potential for generating noise. It is recommended that these units be supplied with manufacturers' proprietary acoustic enclosures.
- Assessment of any item of plant to generate noise will be assessed prior to the item being brought onto the site with regard to the following:
    - Consideration of Alternatives.
    - Information to be submitted by the Contractor; and
    - In-situ Noise Measurement.
- Use of alternative reversing alarm systems on plant machinery.
- Siting of plant as far away from sensitive receptors as permitted by site constraints.
- Avoidance of unnecessary revving of engines and switch off plant items when not required.
- Identification of dedicated delivery areas.
- Keep vehicles adequately maintained and serviced.
- Keep internal routes well maintained and avoid steep gradients.
- Appointing a site representative responsible for matters relating to noise; and
- Noise monitoring if required during critical activities and times of potential increased noise generating activities and during critical periods and at sensitive locations (e.g., rock breaking or demolition of the existing buildings).
- Appointing a site representative responsible for matters relating to noise; and
- Monitoring typical levels of noise during critical periods and at sensitive locations.

All construction works will be required to operate within the Construction Noise Limits outlined in *Table 6-1* as follows:

Table 6-1: Maximum Permissible Noise Levels at the Facade of Dwellings during Construction

Days and Times	Noise Levels (dB re. $2x10^{-5}$ Pa)	
	$L_{Aeq(1hr)}$	L_{Amax}
Monday to Friday 07:00 to 19:00hrs	70	80
*Monday to Friday 19:00 to 22:00hrs	60*	65*

Saturdays 08:00 to 16:30hrs	65	75
*Sundays & Bank Holidays 08:00 to 16:30hrs	60*	65*
*Construction activity at these marked times, other than that required in respect of emergency works, will normally require the explicit permission of the relevant local authority. Source: National Roads Authority Guidelines for the Treatment of Noise and Vibration in National Road Schemes, 2004		

The Contractor will be required to take specific noise abatement measures where deemed necessary, and to comply with the recommendations of BS 5228-1:2009+A1:2014.

6.4.6.2 Control of Vibration

All construction works will be required to comply with the vibration mitigation measures defined in the CEMP and the recommendations of BS 5228-1:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites – Noise and the European Communities (Noise Emission by Equipment for Use Outdoors) Regulations, 2001.

The following measures will be taken to ensure that no significant vibration levels occur, and that all appropriate steps are taken to assist in effective vibration level management:

- Vehicle engines shall be switched off when not in use.
- Machines will be fitted with suitable silencers.
- If appropriate, acoustic screens will be deployed.
- In method statement/risk assessment the contractor will highlight any activity that may cause significant vibration levels and include measures in helping to mitigate these emission levels.
- Equipment is to be task-specific; and
- Best practice noise and vibration control measures will be employed by the contractor and screening provided to adjoining properties.

6.4.6.3 Monitoring for Noise and Vibration

Noise and vibration monitoring should be undertaken during critical activities as required by the planning conditions (once known). Monitoring will be carried out by a specialist sub-contractor engaged by the Contractor to monitor, collate and report on noise vibration results for the duration of critical work activities as outlined in the CMP.

6.4.6.4 Liaison with the Public

The Environmental Officer will act as the designated noise liaison officer and liaison will be carried out in accordance with a Communication Management Plan (refer to Section 3.6). Any noise complaints will be managed in accordance with the complaints procedure, reported to the designated sub-contractor as applicable, and followed up in a prompt fashion. In addition, prior to particularly noisy construction activity, e.g., demolition, breaking, etc., the designated Contractor will inform the nearest noise sensitive locations of the time and expected duration of the noisy works.

6.4.6.5 Noise and Vibration Control Inspections

Noise control inspections will be conducted at regular intervals through the construction phase of the Proposed Development.

The purpose of the inspections will be to ensure that all appropriate steps are being taken to control construction noise emissions. To this end, consideration will be given to issues such as the following:

- Hours of operation being correctly observed.
- Opportunities for noise control 'at source'.
- Optimum siting of plant items.
- Plant items being left to run unnecessarily.
- Correct use of proprietary noise control measures.
- Materials handling.
- Poor maintenance; and
- Correct use of screening provided and opportunities for provision of additional screening.

6.4.7 Control of Air Quality and Dust

In order to sufficiently mitigate any likely air quality impact, a schedule of air control measures has been formulated for the construction phase associated with the Proposed Development set out in the following sections.

6.4.7.1 Dust Control Measures -General

The aim is to ensure good site management by avoiding dust becoming airborne at source.

At the Construction Phase , the siting of construction activities and storage piles will take note of the location of sensitive receptors and prevailing wind directions in order to minimise the potential for significant dust nuisance. In addition, good site management will include the ability to respond to adverse weather conditions (e.g. wind) by either restricting operations on-site or using effective control measures quickly before the potential for nuisance occurs:

- During working hours, technical staff shall be on site and available to implement dust control methods as appropriate;
- Complaint registers will be maintained on site detailing all telephone calls and letters of complaint received in connection with construction activities, together with details of any remedial actions carried out;
- It will be the responsibility of the contractor at all times to demonstrate full compliance with the dust control conditions. Regular Toolbox Talks / briefings will be given to construction staff, subcontractors and operatives to raise awareness of the need to minimise dust. The implementation of dust suppression will be monitored, reviewed and any actions required addressed on an ongoing basis; and
- At all times, the procedures put in place will be strictly monitored and assessed.

The dust minimisation measures shall be reviewed at regular intervals during the construction phase to ensure the effectiveness of the procedures in place and to maintain the goal of

minimisation of dust through the use of best practise and procedures. In the event of dust nuisance occurring outside the site boundary, site activities will be reviewed and satisfactory procedures implemented to rectify the problem. Specific dust control measures to be employed are highlighted below.

6.4.7.2 Dust Control -Preparing and Maintaining the Site

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.
- Fully enclose specific operations where there is a high potential for dust production and the site is active for an extensive period.
- Avoid site runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.
- Cover, seed or fence stockpiles to prevent wind whipping.

6.4.7.3 Dust Control – Site Roads

Site access road could be a significant source of fugitive dust from the construction site if control measures are not in place. The most effective means of suppressing dust emissions is to apply speed restrictions. Studies show that these measures can have a control efficiency ranging from 25 to 80%.

- A speed restriction of 15 km/hr will be applied as an effective control measure for dust for on-site vehicles.
- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.
- Avoid dry sweeping of large areas.
- Vehicles entering and leaving the site will be covered to prevent escape of materials during transport.
- On-site haul route will be inspected for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
- All inspections of the haul route will be inspected and any subsequent action in a site log book.
- Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
- A wheel washing system will be implemented (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).

- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.
- Access gates to be located at least 10 m from receptors where possible.

Bowsers will be available during periods of dry weather throughout the construction period. Research has found that the effect of watering is to reduce dust emissions by 50%. The bowser will be used during dry periods to ensure that unpaved areas are kept moist. The required application frequency will vary according to soil type, weather conditions and vehicular use; and any hard surface roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only.

6.4.7.4 Dust Control – Public Roads

Spillage and blow-off of debris, aggregates and fine material onto public roads should be reduced to a minimum by employing the following measures:

- Vehicles transporting material with potential for dust emissions to an off-site location shall be enclosed or covered with a tarpaulin at all times to restrict the escape of dust;
- Public roads outside the site shall be regularly inspected for cleanliness, as a minimum on a daily basis, and cleaned as necessary. A road sweeper will be deployed to ensure that public roads are kept free of debris; and
- The wheels of all Lorries will be washed / cleaned prior to leaving the site so that traffic leaving the site compound will not generate dust or cause the build-up of aggregates and fine material in the public domain.

6.4.7.5 Dust Control -Operating Vehicles / Machinery and Sustainable Travel

- Ensure all vehicles switch off engines when stationary - no idling vehicles.
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.
- Impose and signpost a maximum-speed-limit of 20 kph haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).
- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.
- Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking etc.).

6.4.7.6 Dust Control -Operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.

- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
- Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

6.4.7.7 Dust Control -Waste Management

- Bonfires and burning of waste materials are prohibited.

6.4.7.8 Dust Control -Measures Specific to Demolition

- Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
- Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.
- Avoid explosive blasting, using appropriate manual or mechanical alternatives.
- Bag and remove any biological debris or damp down such material before demolition.
- If asbestos or ACMs are identified on the Site, appropriate measures for control and management of asbestos and ACMs in accordance with an asbestos management plan by a specialist contractor prior to the commencement of demolition.
-

6.4.7.9 Dust Control -Measures Specific to Earthworks / Groundworks

Land clearing / earth-moving during periods of high winds and dry weather conditions can be a significant source of dust.

- During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will be used to ensure moisture content is high enough to increase the stability of the soil and thus suppress dust.
- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.
- Only remove the cover in small areas during work and not all at once.

- During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will operate to ensure moisture content is high enough to increase the stability of the soil and thus suppress dust.

6.4.7.10 Dust Control – Stockpiles

Stockpiling of excavated soils and imported materials (e.g. quarry stone, sand) will be avoided where possible. However, should stockpiling of materials be required on site during the development, the location and moisture content of stockpiles are important factors which determine their potential for dust emissions. The following dust control measures will be employed as best practice where stockpiling of materials is required:

- Overburden material will be protected from exposure to wind by storing the material in sheltered regions of the site; and
- Where materials are required to be stockpiled for longer periods of time during the development, regular watering will take place to ensure the moisture content is high enough to increase the stability of the soil and thus suppress dust. The regular watering of stockpiles has been found to have an 80% control efficiency.

6.4.7.11 Dust Control -Measures Specific to Construction

- Avoid scabbling (roughening of concrete surfaces) if possible.
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.
- For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.

6.4.7.12 Dust Control -Site Management

- Regular inspections of the site and boundary should be carried out to monitor dust, records and notes on these inspections should be logged.
- Records will be kept of all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
- Make the complaints log available to the local authority when asked.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook.
- Regular liaison meetings will be held with other high risk construction sites within 500 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.

6.4.7.13 Dust Monitoring

Daily on-site and off-site inspections will be carried out, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This will include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary.

Where required dust monitoring will be carried out at the site during critical activities. If deemed necessary dust monitoring will be conducted using the Bergerhoff method in accordance with the requirements of the German Standard VDI 2119. The Bergerhoff Gauge consists of a collecting vessel and a stand with a protecting gauge. The collecting vessel is secured to the stand with the opening of the collecting vessel located approximately 2m above ground level. The TA Luft limit value is 350 mg/(m2*day) during the monitoring period between 28-32 days.

6.4.7.14 Dust Management Summary

The proactive control of fugitive dust it is necessary to ensure that the prevention of significant emissions, rather than an inefficient attempt to control them once they have been released, will contribute towards the achievement of no dust nuisance occurring during the construction phase. The key features with respect to control of dust emissions and nuisance dust will be:

- The implementation of a DMP which sets out a number of practical measures to control fugitive dust;
- The specification of a site policy on dust and the identification of the site management responsibilities for dust issues;
- The development of a documented system for managing site practices with regard to dust control;
- The development of a means by which the performance of the DMP can be monitored and assessed; and
- The specification of the measures to be taken to control dust emissions before it occurs and effective measures to deal with any complaints received.

6.4.8 Control of Waste and Waste Management

Waste management during the construction phase will be managed in accordance with the project specific Construction & Demolition Waste Management Plan (C&DWMP) prepared by Corrigan Hodnett Consulting (2021b) for the Proposed Development.

Waste will be managed in compliance with the Waste Management Act 2006 (as amended) and all subordinate legislation.

Measures to minimise waste generation, promote re-use and recycling and recovery of wastes will be implemented throughout the construction phase.

Waste will be stored onsite in such a manner as to:

- Prevent environmental pollution.
- Minimise nuisance generation such as dust.
- Maximise waste segregation to minimise potential cross contamination of waste streams and facilitate subsequent re-use, recycling, and recovery.

6.4.9 Control of Impacts on Archaeology and Heritage

There are no immediate archaeological or heritage concerns on the Proposed Development Site. Should any concerns arise during excavation in relation to the discovery of potential archaeological or cultural items or areas, a project archaeologist will be engaged to assess the excavation and determine if works should be suspended pending archaeological investigations.

7 SITE TIDINESS & HOUSEKEEPING

Further to measures described in the previous sections, the following measures shall be implemented to maintain site tidiness.

- Construction works will be carried out according to a defined schedule agreed with CMT. Any delays or extensions required will be notified at the earliest opportunity to CMT.
- Contractors will ensure that road edges and footpaths are swept on a regular basis.
- All Contractors shall be responsible for the clearance of their plant, equipment, and any temporary buildings upon completion of construction.

The Site will be left in a safe condition.

8 EMERGENCY PLANNING AND RESPONSE

The purpose of the CEMP is to address the potential emissions from the site, implementing any necessary mitigation measures as discussed in Section 6.3 and Section 6.5 to ensure that there will be no negative impact on the receiving environment. The Main Contractor will ensure that all works are carried out consistent with existing emergency response plans and procedures.

8.1 Emergency Response

The control measures identified in the CEMP if correctly implemented will reduce the likelihood of the occurrence of an environmental incident or emergency. The emergency response procedure will ensure that all countermeasures proceed in a controlled manner so that greater damages are avoided and the possible effects upon persons, the environment and property are avoided or limited. These procedures are as follows and will be developed by the Main Contractor:

- Emergency preparedness and response procedure.
- Incident investigation procedure.
- Nonconformity, Corrective Action and Preventative Action.
- Spillage Containment Procedure; and
- Pollution Prevention Programme

The general required emergency response actions will be posted at strategic locations, such as the site entrance, canteen and near the entrances to buildings.

Once the incident has been responded to the processes identified in the incident investigation and non-conformity, corrective and preventative action procedures will be adhered to with all details pertaining to the incident recorded in the site environmental register.

9 ENVIRONMENTAL REGULATORY REQUIREMENTS

This site environmental legal register will record regulatory and legal requirements and summarise applicable environmental legislation, (as well as other requirements) that the project must adhere to. The legal register will be available through the construction manager's office on site. This register will be a controlled document, and as such will be reviewed and updated on a minimum six-monthly basis.

A typical register of environmental legislation is divided into a number of categories, which include:

- General Environmental Legislation.
- Flora & Fauna.
- Emissions to Air.
- Emissions to Water & Groundwater.
- Waste Management; and
- Noise & Vibration.

For each piece of legislation, the following information is provided:

- Index Number.
- Title of Legislation.
- Summary of Legislation; and
- Relevance.

All legislation included in the Register can be readily accessed on http://www.irishstatutebook.ie or will be available through the construction manager's office.

The Register of Legislation will be reviewed and updated on a minimum six-monthly basis. This is a controlled document and as such will comply with all the requirements of the Contractor document control procedures.

10 REFERENCES

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