LARGE-SCALE RESIDENTIAL DEVELOPMENT ON LANDS AT BOHERBOY, SAGGART, CO. DUBLIN

Construction Environmental Management Plan (CEMP)

Evara Developments Ltd and Kelland Homes

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1 Introduction

DNV was retained by Evara Developments Ltd and Kelland Homes (hereafter referred to as the Client) to prepare this Construction and Environmental Management Plan (CEMP) for the construction works of the of the Proposed Large-Scale Residential Development (LRD) (hereafter referred to as the 'Proposed Development') on Lands at Boherboy, Saggart, Co. Dublin (hereafter referred as the 'Site').

A description of the Proposed Development is provided in Section 2.0 of this report.

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 Manager.
- Site Supervisors.
- Other relevant personnel including authors of reports submitted with the planning application.

1.1 Objective and Purpose of this CEMP

The CEMP defines the measures that will be implemented during the works to manage, minimise, or mitigate potential environmental impacts that may arise from the Construction Phase of the Proposed Development.

The objective of this CEMP is to set out and communicate the procedures, standards, management responsibilities and key environmental obligations that apply to the Main Contractor (once appointed), their sub-contractors and employees, in order to address and prevent environmental effects that may arise throughout the Construction Phase of the Proposed Development.

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 Proposed Development and ensure that construction activities, so far as is practical do not adversely impact the environment. Furthermore, this CEMP provides the information necessary to ensure that the management of all activities associated with Construction Phase of the Proposed Development are carried out in accordance with all statutory requirements.

The CEMP will be updated by the Main Contractor (once appointed) in advance of construction works commencing onsite.

1.2 Scope of CEMP

This CEMP defines the approach to environmental management during implementation and roll-out of the Construction Phase of the Proposed Development.

Compliance with the CEMP, procedures, work practices and controls is mandatory and must be adhered to by all personnel and contractors employed during 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 provide a framework to:

Comply with current environmental legislation, codes of best practice and guidelines (refer to Section 3.0).

Comply with all relevant conditions attached to the Grant of Planning from South Dublin County Council (SDCC) (once issued) (refer to Section 3.2).

- Provide a plan for achieving and implementing construction related mitigation measures including those identified in the particulars submitted with the planning application (refer to Section 3.3).
- Identify the roles and responsibilities of contractor organisations, their sub-contractors and employees to the roles specific to environmental management.
- Ensure that environmental risks are identified and will be appropriately mitigated to ensure any adverse effects are minimised during the Construction Phase of the Proposed Development.
- Promote best environmental on-site practices for the duration of the Construction Phase of the Proposed Development; and
- Outline the procedures for reporting and communicating on environmental aspects of the Construction Phase of the Proposed Development.

1.3 'Live Document'

The CEMP is considered a 'live' document and as such will be reviewed on a regular basis.

This CEMP will be updated by the Main Contractor (once appointed) in advance of construction works commencing onsite.

Updates to the CEMP may also be necessary to address changes in environmental management practices and to include further mitigation measures that may be identified as part of ongoing reviews.

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

2 Description Of the Proposed Development

2.1 Site location and Description

Evara Developments Ltd and Kelland Homes intend to apply for permission for an LRD at a site located at Boherboy, Saggart, County Dublin. The site of the Proposed Development consists of open fields used for agriculture. To the immediate north of the site is the Carrigmore residential estate, to the west are agricultural lands and a single dwelling, to the east is the Corbally residential estate and Carrigmore Park, while to the south is the Boherboy Road. The location of the Site is presented in Figure 2-1.

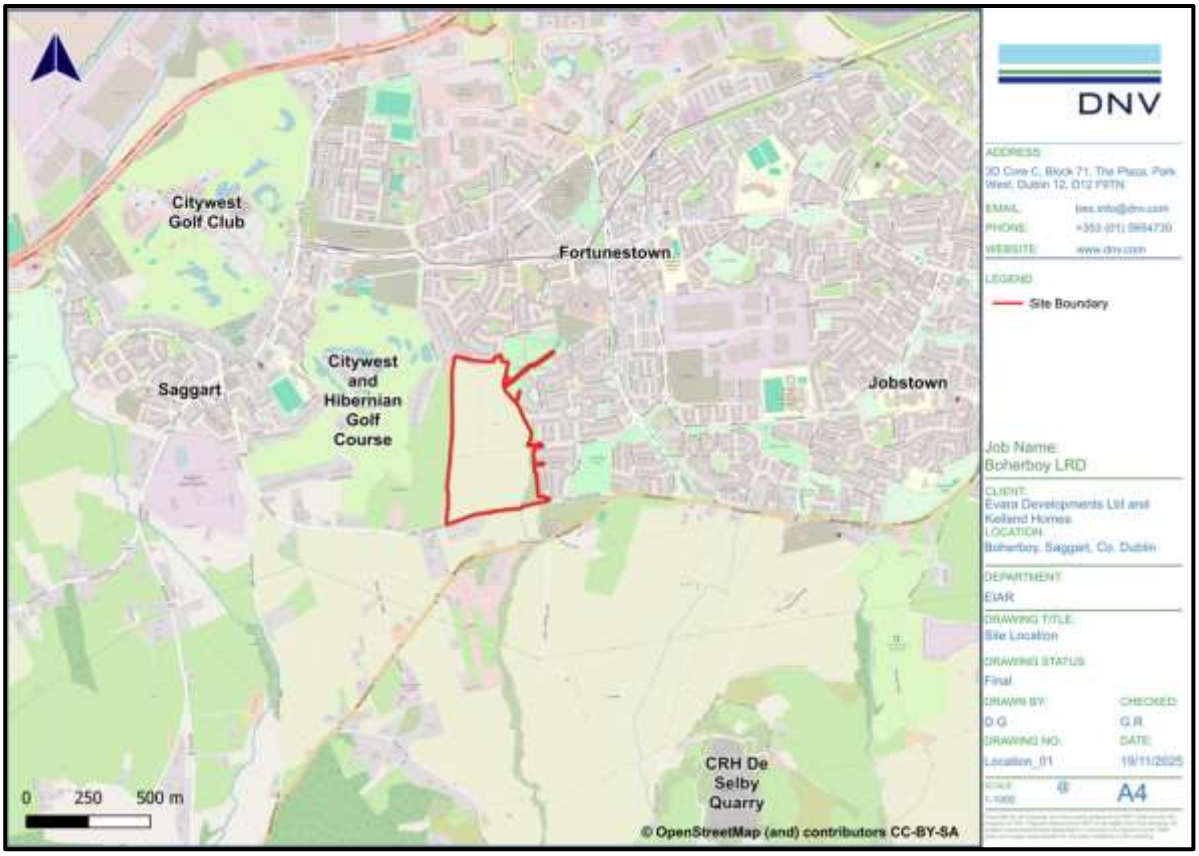

Figure 2-1 Site Location

2.2 Proposed Development

The Proposed Development will consist of the construction of a new large scale residential development of 627 no residential units and provision of a crèche facility with associated car parking, bicycle parking, public open spaces, and all ancillary works on a site area of 18.6 hectares.
The Proposed Development site will consist of:

a) The construction of 627 no. residential dwellings which will consist of:
- 306 no. 2,3 and 4 bed, 2 and 3 storey, detached, semi-detached and terraced houses;
- 133 no. 1,2, and 3 bed duplex units in 12 no. 2-3 storey blocks;
- 188 no. 1,2 and 3 bed apartments in 5 no. buildings ranging in height from 4-5 and 5 storeys; and
- A 2-storey crèche (c. 630m²).

The Proposed Development provides for (i) all associated site development works above and below ground, including surface water attenuation & an underground foul sewerage pumping station at the northern end of the site, (ii) public open spaces (c. 2.38Ha), (ii) communal open spaces (c. 4,176m²), (iii) hard & soft landscaping and boundary treatments, (iv) surface car parking, (v) bicycle parking, (vi) bin & bicycle storage, (vii) public lighting, and (ix), plant (M&E), utility services & ESB sub-stations, all on an overall application site area of 18.5Hha. In accordance with the Fortunestown Local Area Plan (2012), an area of c. 1.4Ha within the site is reserved as a future school site. In accordance with the South Dublin County Development Plan (2022-2028), an area of c. 1Ha within the site is reserved as a future school site.

Access to the Proposed Development will by via one no. new vehicular access point from the Boherboy Road, along with vehicular, pedestrian and cyclist connections to adjoining developments at Corbally Heath and Corbally Glade to the east and Carrigmore Green to the north, and pedestrian/cyclist access into Carrigmore Park to the east.

Foundation design will be finalised at detailed design stage. However, it is anticipated that foundation design will consist of traditional strip foundations.

The Ground Investigation Report for Boherboy, Saggart, Co. Dublin, conducted by Ground Investigations Ireland in 2013 (GII, 2014; appended to the Roger Mullarkey & Associates, 2025 Drainage and Water Infrastructure Engineering Report), provides a comprehensive analysis of the subsurface conditions and recommendations for the Proposed Development. The investigation revealed the presence of topsoil, cohesive deposits, and granular deposits, with groundwater generally encountered as slow seepage at depths between 2.0m and 3.0m below ground level. Soakaway tests indicated that the ground conditions are not favourable for soakaway design at most test locations. The report recommends that foundations should be taken to firm to stiff cohesive deposits or medium dense granular deposits at a depth of 2.0m below ground level, with an allowable bearing capacity of 70kN/m². Additionally, earthworks and a retaining wall are proposed in the southwest corner of the site to make it more accessible and suitable for construction.

The Proposed Development Site layout is presented in Figure 2-2.

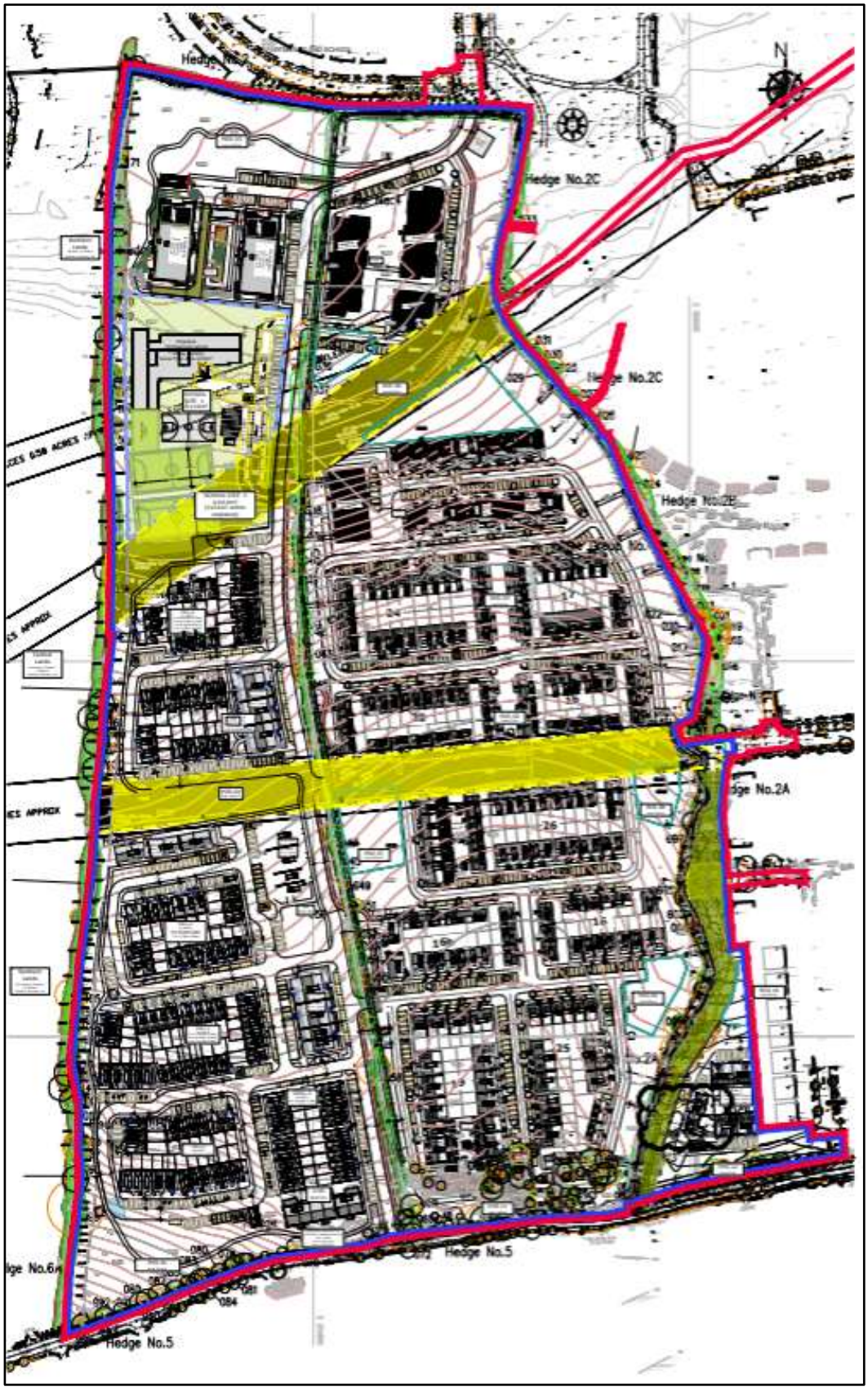

Figure 2-2. Proposed Development Site Layout (MCORM, 2025)

3 Environmental Regulatory and Other Requirements

The CEMP provides a framework for compliance with current environmental and other regulatory obligations for the Construction Phase of the Proposed Development.

This CEMP will be updated as required throughout the Construction Phase of the Proposed Development should there be any amendments to any of the following:

- Project specific construction requirements; and
- Legislative requirements.

Where compliance obligations have been assessed and recorded, they will be reviewed on an ongoing basis, when personnel become aware of relevant changes that impact directly on operations, where obligations have changed or where there have been significant changes in work type. All contractors involved in the Construction Phase of the Proposed Development must comply with these documents and specific requirements of the CEMP.

3.1 Environmental Legal Register

The 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 environmental legal register will be maintained onsite and will be made available through the Construction Environmental Site Manager's (refer to Section 4.1) office onsite. The environmental legal register will be a controlled document and will be updated and reviewed on an ongoing basis.

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

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

For each piece of legislation, the following information should be provided:

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

All legislation included in the environmental legal register can be readily accessed on http://www.irishstatutebook.ie and will be made available onsite by the Main Contractor.

3.2 Conditions of Planning Permission

The Main Contractor (once issued) will ensure that the implementation of all required environmental conditions and the control measures set out in the Grant of Planning from SDCC (once issued) will be strictly adhered to for the duration of the Construction Phase of the Proposed Development once these planning conditions are known.

3.3 Environmental Assessments and Reports

All environmental and ecological control and mitigation measures identified in the CEMP and the documents outlined below will be implemented for the duration of Construction Phase of the Proposed Development.

- DNV, 2025. Hydrological Risk Assessment for Proposed Large Residential Development at the lands of Boherboy, Saggart, Co. Dublin.
- DNV, 2025. Operational Waste Management Plan for Proposed Large Residential Development at the lands of Boherboy, Saggart, Co. Dublin.
- DNV, 2025. Resource Waste Management Plan for Proposed Large Residential Development at the lands of Boherboy, Saggart, Co. Dublin.
- DNV, 2025. Environmental Impact Assessment Report for Proposed Large Residential Development at the lands of Boherboy, Saggart, Co. Dublin.
- Ground Investigations Ireland Ltd, 2014. Boherboy Saggart Ground Investigation Report

4 CONSTRUCTION ENVIRONMENTAL MANAGEMENT TEAM

4.1 Project Roles and Responsibilities

The roles and responsibilities of personnel and the lines of communication specific to Environmental Management are outlined in the following sections.

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

The roles and responsibilities are indicative and may be amended over the course of the project.

The project organogram will be provided by the Main Contractor (once appointed) and included in the live CEMP. It is noted that the project organogram may be updated throughout the Construction Phase of the Proposed Development.

The key responsibilities are set out in Table 4-1.

Table 4-1 Construction Environmental Management Team – Key Responsibilities

Responsible Party	Responsibility
The Developer	Appointment of competent Main Contractor
	Responsibility of environmental and waste management including documentation of same
Main Contractor	Implementation of the CEMP
	Appoint competent and authorised waste management contractor(s)
	Appoint trained, competent Project Manager and Construction Environmental Manager.
Construction Director	Overall responsibility for the implementation of the CEMP;
	Allocating the correct resources in order to ensure the successful implementation of the CEMP; and
	Assist in the management review of the CEMP for suitability and effectiveness.
Project Manager	To report to the Construction Director on the on-going performance and development of the CEMP;
	To discharge his/her responsibilities as per the CEMP; and
	To support and augment the Construction Management Team (CMT) through the provision of adequate resources and facilities for the duration of the implementation of the CEMP.
	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
Construction Environmental Site Manager	Ensuring that the requirements of the CEMP are reviewed 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 onsite;
	Reporting to the Project Manager / Construction Director on the environmental performance of Line Management, Supervisory Staff, Employees and Contractors;
	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.
	Training of all Site staff in the requirements of the CEMP including environmental controls, waste management and the approved process for communications/complaints handling.
Environmental Operative	Assisting with the implementation, monitoring and record keeping requirements of the detailed CEMP with respect to environmental, and material and waste management requirements
	Ensuring commitment, operational efficiency and accountability during the Construction Phase of the Proposed Development in line with the CEMP.
	Selecting a waste team if required, i.e., members of the Site crew that will aid them in the organisation, operation and recording of the waste management system implemented onsite.
	Overseeing, recording and providing feedback to the Construction Director everyday waste management at the Site.

Responsible Party	Responsibility
	Delegating responsibility to sub-contractors, where necessary, and to coordinate with suppliers, service providers and sub-contractors to prioritise waste prevention and material salvage.
	Conducting waste audits, maintaining a record system, and establishing targets for waste management at the Site during the Construction Phase of the Proposed Development.
Project Communications Officer	Responding to any concerns or complaints raised by the public in relation to the construction phase of the Proposed Development.
	To liaise with the Construction Environmental Site Manager on community concerns relating to the environment.
	Ensure the Environmental Officer is informed of any complaints relating to the environment.
	Keep the public informed of project progress and any construction activities that may cause inconvenience to the local community.
Site Personnel	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.
Sub-contractors	Comply with CEMP where relevant
Project Environmental Consultant(s)	If required, the Main Contractor will engage with a Project Environmental Consultant(s) to provide specialist environmental inputs and act in the roles of Environmental Clerk of Works (including Contaminated Land Consultant) (ECoW), and Ecological Clerk of Works (EcCoW) as required. The key responsibilities of the Project Environmental Consultant are summarised as follows:
	Updating of the CEMP and advising the Main Contractor in the updating of the CEMP, environmental control plans and 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 when 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.
	Provision of specialist input and supervision where necessary, of construction activities in relation to habitats and species and any specified protection measures in accordance with the conditions of the Grant of Planning and those identified in the particulars submitted with the planning application for the Construction Phase of the Proposed Development
Project Archaeologist (if required)	Undertaking archaeological assessments (and impact assessments) of the Proposed Development, including all temporary and enabling works, geotechnical investigations (e.g., boreholes, engineering test pits, etc.).
	Making appropriate recommendations for mitigation including watching briefs and detailed surveys as necessary.
	Undertaking archaeological monitoring, and if necessary archaeological excavation and/or the preservation in situ of archaeological remains, which may negate the facilitation of all, or part of any basement.
	Supervision of all sub-surface works;
	Liaising with MCC and other relevant bodies including the National Monuments Services Section of the Department of Culture, Heritage and the Gaeltacht as required.
	Submission of reports containing the results of archaeological investigations and assessment, where required.
Arboriculturist	The Arboriculturist will advise and supervise all works associated or in proximity to the existing trees to ensure their retention and condition.
	Making appropriate recommendations for mitigation, where necessary, including protection fence beyond the branch spread, with no construction work or storage carried out within the protective barrier.
	Preparation of Arboricultural Impact Assessment and Method Statements report,
Landscape Architect	Advising the Site management on the implementation of the landscape scheme.
	Making appropriate recommendations, where necessary, for boundary treatments either proposed, retained or enhanced.
	Preparation of Landscape Completion Report.

4.2 Training Provisions

The Main Contractor will document and maintain all training records, safety meetings and toolbox talks, including topics and attendees, in the Project HSEQMS (Health, Safety and Environmental Quality Management System) records.

4.2.1 Construction Environmental Site Manager

The Construction Environmental Site Manager will keep up to date with environmental legislation, codes of practice and other policies and legislation.

The Construction Environmental Site Manager will be responsible for:

- Ensuring that Environmental Induction Training is carried out for all the Contractor's site personnel. The induction training may be carried out in conjunction with Safety Induction Training;
- Providing toolbox talks on Environmental Control Measures associated with Site-specific Method Statements to those who will undertake the work;
- Communicating changes to process, identify potential areas of concern and inform staff of corrective and preventative actions implemented; and
- Setting up and maintaining record keeping systems and to assist with audits.

The Construction Environmental Site Manager will also assist with the environmental management training requirements, and subsequent training for all levels of employees on the project.

4.2.2 Environmental Operative

The Environmental Operative will be trained in how to set up and maintain a record keeping system and to assist with audits.

4.2.3 Site Personnel Training

A basic awareness briefing will be held for all site crew to outline the environmental management practices for the Site. This may be incorporated with other site training needs such as general site induction, health and safety awareness and manual handling.

This basic briefing will describe the describe specific environmental requirements, procedures for the segregation of materials, waste storage methods and the location of the designated storage areas. Where required, a sub-section on any hazardous wastes onsite will be incorporated into the briefing and the particular dangers of each hazardous waste will be explained.

The sub-contractors will be instructed to comply with the CEMP and will be audited by the Construction Environmental Site Manager as required to ensure compliance with the CEMP.

5 CONSTRUCTION SCHEDULE AND WORKS MANAGEMENT

5.1 Programme and Phasing

The programme duration and proposed sequence of construction will be developed by the Main Contractor (once appointed) in advance of construction works commencing onsite and will be agreed with the Client. The project programme, which may be amended over the course of the project, will be included in the live CEMP. See Figure 5-1 for the Site Phasing Plan.

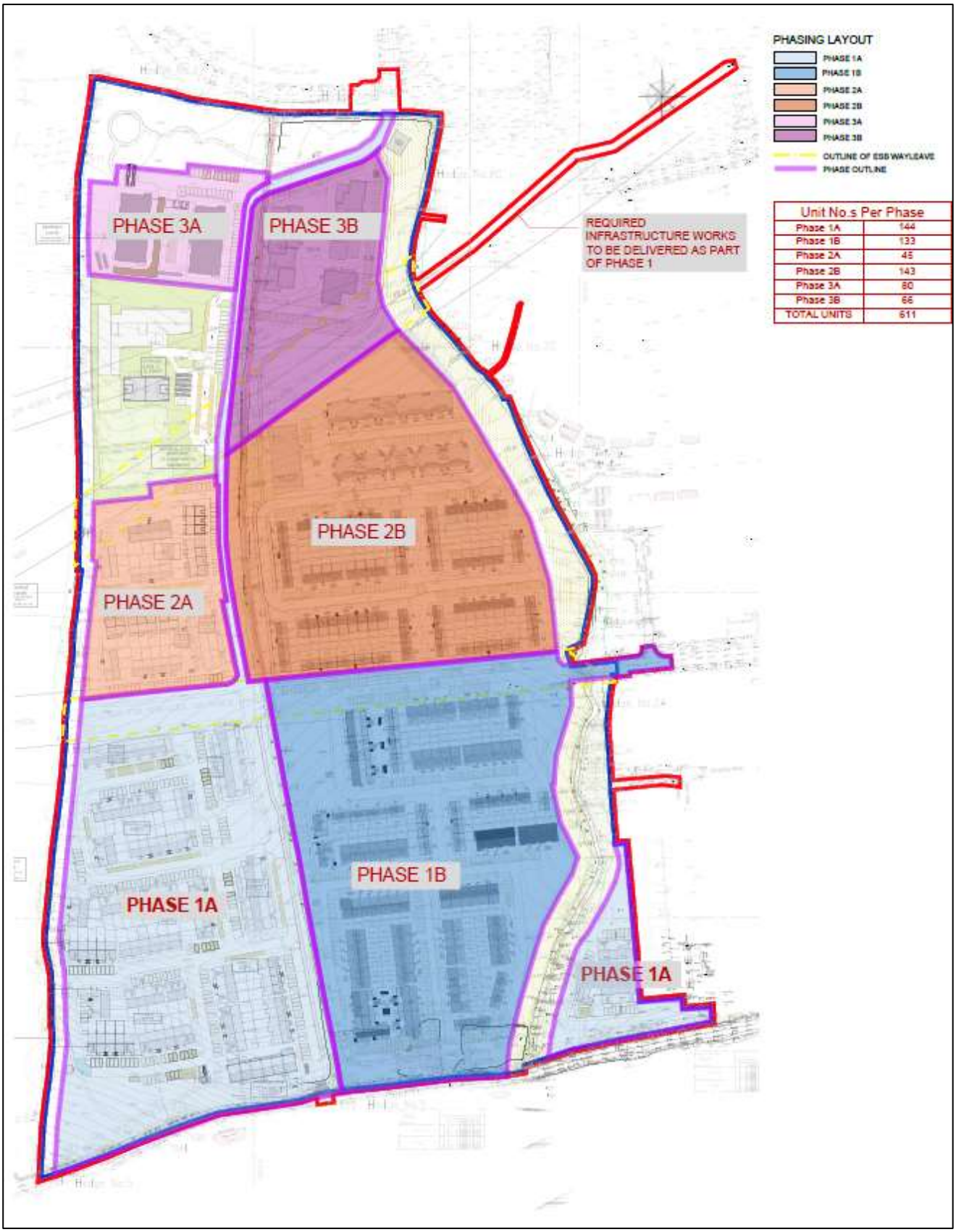

Figure 5-1 Site Phasing Plan (MCORM, 2025)

5.2 Working Hours

Site working hours will be undertaken in accordance with the requirements of the Grant of Planning from SDCC (once issued). However, it is anticipated that normal site working hours will apply to the Construction Phase of the Proposed Development (07:00 to 19:00 Monday to Friday (excluding bank holidays) and 07:00 to 14:00 Saturdays)

No works are envisaged to be carried out on Sundays or Bank Holidays. However, should there be a need to work on Sundays, Bank Holidays or outside the specified normal working hours, a written submission, with compelling reasons for the proposed deviation, seeking authorisation will be made by the Main Contractor (once appointed) to SDCC. The Main Contractor (once appointed) must give the times and dates of the proposed work, and the mitigation measures that are to be used to minimise noise/disturbance.

Any such approval from SDCC may be subject to conditions pertaining to the particular circumstances being set by SDCC. It is noted that any breaches of Proposed working hours or proposed extended working hours or developers or subcontractors not carrying out their requirements under this protocol may lead to enforcement action and may also result in the withdrawal of any extension of hours of works for a period that will be at the discretion of SDCC.

5.3 Site Construction Compound

The Main Contractor (once appointed) will be required to set up a designated site compound area. All construction support related activities including office facilities, welfare facilities such as toilets and canteen and car parking facilities will be contained within the designated site compound area.

The layout of the site compound area will be developed by the Main Contractor (once appointed) and included in the live CEMP. It is noted that amendments to the layout of the designated site compound / designated storage areas may be required as works progress and will be maintained in the onsite live CEMP files.

Materials handling and plant storage including waste shall be contained within the Site boundary.

Designated storage areas will be maintained within the boundary of the site for materials handling, waste segregation and temporary storage of soils (e.g., of skips or stockpiled material until a viable load is available or if pending waste classification). The designated storage areas will house all bins and skips for the storage of segregated construction waste generated. All designated storage areas will be identified by clear legible signage and recorded on the site layout drawings which will be maintained onsite. All containers will be marked with clear signage which will identify which waste types are to be placed into each container.

The compound area will be secured from the construction site by means of surrounding Heras fencing. 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.

Figure 5-2. Site Construction Compound Layout (MCORM, 2025)

5.4 Traffic

All construction vehicles / delivery vehicles shall access & egress the site via the construction entrance that will be located off Boherboy Road.

Access and egress for deliveries and removal of materials will be planned, scheduled and coordinated by the Construction Manager or appointed delegate. All vehicle movements both on and around the site will be controlled by a competent and certified banksman. Deliveries to site will be booked in advance using a delivery schedule, so as to prevent lorry congestion on the road networks surrounding the site. Deliveries and machinery brought to site shall be offloaded inside the site boundary in designated location.

Due care will be taken by all site personnel / drivers when entering / exiting the construction site. Access to the works area shall be restricted to site personnel only. Reversing on site is to be avoided where possible and all vehicles reversing or leaving the site must be assisted by a banksman/spotter to ensure the safety of members of the public. All machinery on-site is to have flashing beacons and sounders incorporated.

Traffic management during the construction phase of the permitted development will be undertaken in accordance with the Construction Traffic Management Plan (CTMP) developed as part of health and safety documentation to highlight the procedures for access and deliveries to site. It is noted that amendments to the CTMP may be required as works progress. All site personnel will receive a briefing on this Traffic Management Plan during site induction prior to commencement of work onsite. This Traffic Management Plan highlights the proposed site layout in relation to Traffic Management, that highlights location of access points, storage areas, security and compound / welfare facilities.

All traffic management measures will be designed and implemented in accordance with the Department of Transport's Traffic Signs Manual "Chapter 8 Temporary Traffic Measures and Signs for Roadworks" and "Guidance for the Control and Management of Traffic at Roads Works - 2nd Edition" (2010). Furthermore, all traffic management measures will be implemented, maintained, and removed by competent personnel holding CSCS (Construction Skills Certification Scheme) Signing, Lighting and Guarding certification.

Applications will be made to South Dublin County Council, as required throughout the construction phase of the Proposed Development, for permits and approval for road restrictions including relevant road opening licenses and abnormal load licenses. Where required, the Main Contractor will update the CTMP to identify the potential impacts and procedures for traffic management during construction work on, across or along public roads.

A gate attendant with appropriate training and qualifications will be appointed to control manoeuvres and traffic flows at the site. 'Way finding signage will be provided to route staff / deliveries into the site and to designated compound / construction areas.

Contractor’s parking will be provided inside the site boundary at designated location to ensure that parked cars cannot create blind spots or additional congestion on the adjacent public road.

Deliveries and machinery brought to site shall be offloaded inside the site boundary in designated location. There will be no deliveries to the site or removal of materials outside of normal site hours (refer to Section 5.2). Deliveries to site will be coordinated and planned to avoid high volume periods and minimise traffic impact. Therefore, the number of HGVs travelling during the peak hours will be relatively low. Queuing of material delivery vehicles will not be permitted on the public roads adjacent to the site.

Separation of vehicular and heavy plant traffic from pedestrians and operatives will be implemented as far as is practical. Where a site access crossing is required over a pavement, a dedicated pedestrian management setup will ensure there are no incidents of crossovers between pedestrians and site vehicles. This may require a turtle-gate barrier in addition to semi-permanent barriers along the kerb edge, flagmen to control barriers and flagmen to watch truck movement and pedestrians.

Waste/soil removal shall be carried out in a manner that does not put local traffic users or site personnel at risk.

Where required the roadway external to the entrance and routeways around site shall be subject to cleaning / sweeping. A general condition survey of the roads and infrastructure in the area prior to any work being carried out on the site. Where required, all costs incurred by South Dublin County Council, including any repairs to the public road and services necessary as a result of the construction phase of the permitted development (e.g., the transportation of materials and equipment to or from the site), will be at the expense of the Main Contractor.

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

A temporary site compound and car parking facility will be established by the Main Contractor (once appointed) prior to the commencement of construction work onsite.

Prevention of unauthorised access to the site is a very high priority and will be vigorously managed throughout the construction period. The Main Contractor (once issued) will ensure that the site entrances and boundaries are appropriately secured with lockable gates and supplemental hoarding/fencing which will be erected as required to ensure the security of the Proposed Development 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.

All visitors will sign into the Site Visitor Logbook and will be accompanied by an authorised person who has been fully inducted and aware of the current site conditions.

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.

5.6 Communication & Consultation

All project related communications will be undertaken in accordance with the Project Communications Management Plan developed as part of health and safety documentation. The Construction Environmental Site Manager / Project Communications Officer (refer to Section 4.1) will undertake any required third-party communication and liaise directly with local authorities, members of the public, as required throughout the Construction Phase of the Proposed Development. A copy of this plan will be provided to SDCC Planning Department upon request.

5.6.1 Advance Works Notice

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

5.6.2 Managing Enquiries and Complaints

All complaints and requests for information from members of the public will be handled appropriately and efficiently and in line with Project Communications Management Plan. All follow up actions on the construction site will be managed by the Environmental Officer / Project Communications Officer and supported by the Construction Management Team (CMT).

All enquiries and complaints will be recorded on the Communications Log / Complaints Register which will be included in the live CEMP and maintained onsite in the Construction Site Manager's office. The Communications Log will be made available to SDCC upon request. The Communications Log will detail 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, odour nuisance, dust nuisance, traffic or any other environmental nuisance).
- Characteristics, such as rumble, clatters, intermittent.
- 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 (i.e., measures taken to address the complaint and prevent repetition of the complaint).

All personnel working on the Site will be inducted into the complaints handling procedure and mitigation requirements and will be aware that complaints are to be directed immediately to the Environmental Officer / Project Communications Officer.

All enquiries and complaints received will be investigated by the Environmental Officer / Project Communications Officer with support from the CMT. A reply will be issued to the complainant within three (3No.) hours of receipt of the complaint.

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.

5.7 Site Contact Details

The Main Contractor (once appointed) will ensure that the contact details for the Project Manager / Construction Environmental Site Manager / Project Communications Officer and the Environmental Officer will be displayed on the Site hoarding at appropriate locations across the Site and will be included in in the live CEMP.

The contact details of the Project Manager / Construction Environmental Site Manager / Project Communications Officer and the Environmental Officer will also be displayed to the public at the Site entrance, together with the Proposed operating hours, including any special permissions given for out of hours work.

5.8 Consultation With Relevant Bodies

5.8.1 Local Authority

The local authority, South Dublin County Council (SDCC), will be consulted as required throughout the Construction Phase of the Proposed Development.

6 PROJECT ENVIRONMENTAL POLICY

The Client recognises and seeks to minimise the impacts of its business on the environment. The Main Contractor (once appointed) 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
- Actively work to reduce greenhouse gas emissions by optimising energy efficiency, minimising water use, using low-carbon materials, and promoting sustainable construction practices.
- Where possible, we will incorporate renewable energy sources and low-carbon technologies into site operations.
- Climate resilience measures will be integrated into this construction project to address the risks posed by extreme weather events and changing environmental conditions.
- Construction activities will be planned to avoid disruption to local ecosystems and biodiversity, with habitat restoration measures implemented where necessary.
- Implement this Policy through the successful operation of the CEMP.

This policy will be reviewed on an ongoing basis, considering current and potential future business issues.

6.1 Site Environmental Awareness

The following general site environmental rules will apply for the duration of the Construction Phase of the Proposed Development. 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 construction compound.

- 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 onsite 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 waste management area within the Site construction compound (refer to Section 5.3) for segregation and interim storage pending compliant removal offsite.
- 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, packaging) 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 Proposed Development Site; and
- IF IN DOUBT, ASK THE CONTRACTED SITE SUPERVISOR AND/OR CONSTRUCTION ENVIRONMENTAL SITE MANAGER FOR FURTHER INFORMATION.

The Main Contractor (once appointed) and CMT will develop Environmental Procedures to control the potential impacts from the Construction Phase of the Proposed 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 Environmental Officer. 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.

All contractors will 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 (refer to Section 8.2).

7 ENVIRONMENTAL MANAGEMENT CONTROLS

The environmental control measures that will be implemented during the Construction Phase of the Proposed Development are detailed in the following sections.

7.1 Potential Impacts of the Development

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

- Fuel and Oil Storage.
- Water.
- Soil and Geology.
- Waste and Waste Management.
- Biodiversity
- Noise and vibration.
- Air Quality.
- Climate Change
- 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 of the Proposed Development. These measures will be updated by the Main Contractor (once appointed) to take account of the Grant of Planning from SDCC (once issued), and the construction related mitigation measures identified in the particulars submitted with the planning application (refer to Section 3.3).

7.2 Implementation of Control Measures

The Construction Environmental Site Manager / CMT will be responsible for the implementation of control measures as identified in Section 7.3. The Main Contractor (once appointed) 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 contract documentation for each works contract. Requirements and responsibilities will be reviewed with each contractor at inception meetings and at weekly progress update meetings.

The Main Contractor (once appointed) will ensure that all appointed 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.

7.3 Operation Controls

7.3.1 Control of Fuel and Chemical Storage

The storage and use of fuel and oils will be kept to a minimum at the Site.

The storage of fuels and refuelling of plant and machinery onsite will be undertaken at the Site in strict accordance with procedures outlined below. Records shall be maintained for fuel consumption, fuel cost and fuel type.

Small quantities of fuel, oils and chemicals will be strictly controlled in accordance with procedures outlined in the CEMP and will be stored on an impervious base within a bund remote from any surface water drains. All tank, container and drum storage areas will be rendered impervious to the materials stored therein and will be rooved to exclude rainwater. Bunds will be designed having regard to the EPA guidelines on the 'Storage and Transfer of Materials for Scheduled Activities' (EPA, 2013) and Enterprise Ireland Best Practice Guidelines (BPGCS005). All tank and drum storage areas will, as a minimum, be bunded to a volume not less than the greater of the following:

- 110% of the capacity of the largest tank or drum within the bunded area; or
- 25% of the total volume of substance that could be stored within the bunded area.

Any fuels retained on drip trays, mobile bunds, etc., will be emptied into a secure bunded waste oil drum to await appropriate disposal offsite in accordance with all relevant waste management legislation.

Refuelling of plant during the Construction Phase will be carried out in accordance with standard best practice. Onsite refuelling will not be undertaken within 50m of any open drains in the vicinity of the Site which will be protected / temporary diversion put in place (i.e., sandbags) as required. Onsite refuelling will only be carried out at the designated, impermeable refuelling station location onsite with appropriate containment in place. The refuelling 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 at the Permitted Development Site.

Daily checks of machinery will be carried out to ensure it is in good working order. Where possible any oil and lubricant changes and maintenance will take place offsite. Only emergency breakdown maintenance will be carried out onsite. Drip trays and spill kits will be available on site to ensure that any spills from vehicles are contained and removed offsite.

All personnel working onsite will be trained in pollution incident control response. Emergency silt control and spillage response procedures contained within the CEMP will ensure that appropriate information will be available onsite outlining the spillage response procedures and a contingency plan to contain silt during an incident.

7.3.2 Control and Management of Water

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

Personnel working at the Site of the Proposed Development 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:

- Construction Industry Research and Information Association (CIRIA), 2001. Control of Water Pollution from Construction Sites – Guidance for Consultants and Contractors.
- Construction Industry Research and Information Association (CIRIA), 2006. Control of Water Pollution from Linear Construction Projects: Technical Guidance (C648).
- Construction Industry Research and Information Association (CIRIA), 2015. Environmental Good Practice onsite Guide. 4th edition (C741).
- Environmental Protection Agency, 2013. Storage and Transfer of Materials for Scheduled Activities.
- Enterprise Ireland BPGCS005, Oil Storage Guidelines.
- UK Environment Agency, 2004. UK Pollution Prevention Guidelines (PPG); 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 the receiving surface water and groundwater environment during the Construction Phase of the Proposed Development:

- There will be no direct discharge of water to ground and there will be no requirement for dewatering of groundwater during the Construction Phase of the Proposed Development.
- The appointed Contractor will be responsible for implementing appropriate measures to protect the local foul drainage / surface water drainage gullies / nearby water courses from run-off from the working site area or temporary diversion put in place (i.e., sandbags).
- Where required, all public sewers along local roads will be protected to ensure that any untreated wastewater generated onsite enters the public sewers.
- A general operational set-back of 20m will be maintained from any open water course or drainage channels
- Under no circumstances will any untreated wastewater generated onsite (from equipment washing, road sweeping etc.) be released to ground, open watercourses or to drainage channels.
- The appointed Contractor will ensure that any run-off from the Site or any areas of exposed soil will be managed as required with temporary pumping and following appropriate treatment (e.g., settlement or hydrocarbon interceptor).
- All containment and treatment facilities will be regularly inspected and maintained.
- Where required, shallow groundwater (where encountered) and surface water runoff from the working site or any areas of exposed soil will be channelled and intercepted at regular intervals for discharge to silt-traps or lagoons with over-flows directed to land or temporary diversion / pumping to Intermediate Bulk Containers (IBCs) for tankering offsite in accordance with all statutory obligations including waste management legislation rather than to a watercourse. However, in the event that discharges to groundwater, surface water or sewer are required, the Main Contractor will obtaining the necessary discharge licences issued by Irish Water under Section 16 of the Local Government (Water Pollution) Acts and Regulations for any water discharges to sewer or from DCC under Section 4 of the Local Government (Water Pollution) Act 1977, as amended in 1990 for discharges to surface water or groundwater.
- Pumping of concrete will be monitored to ensure that there is no accidental discharge. All work will be carried out in the dry and effectively isolated from any drains and nearby water courses. A suitable risk assessment for wet concreting will be completed prior to works being carried out.

- There will be no mixer washings or excess concrete discharged onsite. 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.
- A regular review of weather forecasts of extreme weather (i.e., 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 (i.e., aggregate 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 stockpiled materials will be managed in accordance with the procedures outlined in Section 7.3.3.1 in order to prevent runoff generation and wind-whipping of dust and placement of stockpiles on impermeable areas.
- Refuelling of plant and machinery onsite will take place in accordance with the with the refuelling procedures outlined in Section 7.3.1.
- Emergency procedures will be developed by the appointed Contractor in advance of works commencing and spillage kits will be available onsite including in vehicles operating onsite. Remedial action will be immediately implemented to address any potential effects in accordance with industry standards and legislative requirements, which will ensure minimal risk to the receiving hydrological and hydrogeological environment associated with the construction phase of the Proposed Development. The following mitigation measures will be adhered to as follows:
    - Any required emergency vehicle or equipment maintenance work will take place in a designated impermeable area within the Proposed Development site;
    - Emergency response procedures and contingency plans will be put in place, in the unlikely event of emergency accidents (i.e., spillages of fuels or lubricants);
    - Spill kits, including oil absorbent material, will be provided and available onsite, so that any spillage of fuels, lubricants or hydraulic oils will be immediately contained;
    - In the event of a leak or spill from equipment in the instance of a mechanical breakdown during operation, any contaminated soil will be removed from the Proposed Development site and compliantly disposed offsit.. Residual soil will be tested to validate that all potentially contaminated material has been removed. This procedure will be undertaken in accordance with industry best practice procedures, standards and EPA guidelines;
    - All site staff (i.e., construction staff) will be briefed as part of site inductions/toolbox talks and will be familiar with the emergency procedures in the event of accidental fuel spillages; and
    - All construction works staff onsite will be fully trained on the use of equipment.
- This procedure will be undertaken in accordance with industry best practice procedures and standards. These measures will ensure that there is minimal risk to the receiving land, soil and geological environment associated with the construction phase of the Proposed Development.
- 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 Main Contractor prior to works commencing onsite.
- Foul drainage from temporary welfare facilities during the Demolition Phase and Construction Phase of the Proposed Development will be discharged to temporary holding tank(s) the contents of which will periodically be tankered off site to a licensed facility. All waste from welfare facilities will be managed in accordance with the relevant statutory obligations by tankering of waste offsite by an appropriately authorised contractor. Any connection to the public foul drainage network during the Construction Phase of the Proposed Development will be undertaken in accordance with the necessary temporary discharge licences issued by UE.

7.3.3 Control and Management of Soil (including Contaminated) and Other Materials

In the unlikely event soil becomes contaminated, by for example a fuel spill onsite or a burst / leaking hydraulic hose, the Main Contractor will ensure that the management of contaminated material is undertaken in accordance with the procedures outlined in Section 9.

Where required, the Main Contractor will instruct the Project Environmental Consultant to attend the Site and complete an environmental site assessment in accordance with BS 10175:2011+A2:2017 Investigation of Potentially Contaminated Sites – Code of Practice and the requirements set out in Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous, (EPA, 2018).The removal of contaminated materials onsite, if encountered, will be undertaken under supervision of the Project Environmental Consultant.

Any imported materials will, as much as possible, be placed on site in their proposed location and double handling will be avoided. Where this is not possible, the procedures outlined in Section 7.3.3.1 will be implemented.

7.3.3.1 Control of Stockpiles

The Main Contractor (once appointed) will ensure that the stockpiling of excavated materials, other C&D waste materials generated at the Site or construction materials (e.g., imported aggregates, pipework etc.) will be kept to a minimum. However, in the event that the stockpiling of materials at the Site is necessary (i.e., pending the results of waste classification), the Main Contractor (once appointed) will ensure that stockpiles are managed as follows:

- A designated temporary storage area will be identified and clearly marked on site.
- All stockpiles will be assigned a unique stockpile identification number for traceability.

- Materials will be segregated by type and destination, including those identified for reuse on site, reuse off site, and waste. All segregation, storage, and stockpiling locations will be clearly delineated on site drawings.
- Soil stockpiles will be covered to prevent surface water run-off and the generation of windblown dust.
- Topsoil will not be stored in piles exceeding 2 metres in height to prevent degradation of the soil structure. It will be kept as dry as practicable and reused as soon as possible to minimise deterioration from prolonged storage or excessive handling.
- Any waste materials temporarily stored or stockpiled will be placed on impermeable surfaces, such as high-grade polythene sheeting, hardstand areas, or in skips, to prevent cross-contamination with underlying soils or other materials.
- Regular watering will be undertaken to maintain adequate moisture content in exposed soils, enhancing stability and suppressing dust emissions.
- Stockpile volumes will be kept to a minimum and, where feasible, located away from sensitive receptors such as residential areas.
- Where necessary, stockpiles will be sheeted or dampened to further control dust and erosion.
- Earthworks and excavations will be kept damp where necessary and reasonably practicable, particularly during dry or windy conditions.
- All stockpiles will be located a minimum of 20 metres from any watercourse, where practicable, to reduce the risk of sediment run-off and protect surface water quality.

All surplus materials and any waste generated from construction activities will be stored onsite in such a manner as to:

- Prevent environmental pollution (bunded and/or covered storage, minimise noise generation and implement dust/odour control measures, as may be required).
- Maximise waste segregation to minimise potential cross contamination of waste streams and facilitate subsequent reuse, recycling and recovery.
- Prevent hazards to site workers and the general public during the construction phase (largely noise, vibration and dust).

7.3.3.2 Reuse of Soil

Soil and subsoil materials to be reused within the Proposed Development (i.e., for engineering fill and landscaping) will be subject to assessment of suitability for use in accordance with engineering and environmental specification for the Proposed Development. This will include:

- Defining the criteria by which the suitability of the soils for reuse will be assessed (e.g., analytical parameters and limits, the engineering requirements such as geotechnical parameters for the material to be used within the works).
- Delineation of areas where excavated soil is intended for disposal offsite as waste, and where it is intended for reuse onsite.
- Identification and recording of the location from where the soil will be excavated and its proposed reuse location and function.
- Engineering assessment to confirm its suitability for reuse.
- Any proposed treatment or processing required to enable its reuse, as well as any associated treatment permits, or licences required.

7.3.3.3 Soil Structure

To mitigate potential impacts on soil structure during construction, the following measures will be implemented:

- The extent of the required work area and the bulk excavation footprint will be minimised where practicable to avoid unnecessary disturbance of soil. This includes reducing tracking over undisturbed soil and subsoil outside designated excavation zones, thereby limiting compaction and rutting from construction traffic.

- Topsoil and subsoil will be segregated and stored separately in accordance with best practice to preserve their structure and quality, ensuring suitability for reuse on site.

- Disturbed subsoil layers will be stabilised as soon as practicable, through activities such as backfilling of service trenches, construction of road capping layers, building foundations, and landscaping. The duration of exposure of subsoil will be minimised to reduce the risk of degradation from weathering (e.g. drying, erosion, or waterlogging).

- Stockpiles of excavated soil and subsoil will be protected for the duration of the works and strategically located to minimise double handling. Topsoil and subsoil stockpiles will be clearly separated and identified.

- These measures are designed to maintain the physical integrity, fertility, and drainage characteristics of the soil, supporting its reuse and minimising environmental impact in line with good construction and environmental management practices.

6.6.1.6 Export of Resource (Soil and Subsoil) and Waste

- It will be the contractor's responsibility to either; obtain a waste collection permit or, to engage specialist waste service contractors who will possess the requisite authorisations for the collection and movement of waste offsite.

- Where appropriate, excavated soil and material intended for recovery or disposal offsite will require appropriate waste classification in order to select an appropriate receiving facility. Assessment of the excavated material will be carried out with due regard to the following guidance and legislation:
    - Environmental Protection Agency document entitled Waste Classification; List of waste and determining if waste is Hazardous or Non-Hazardous.
    - EU Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive 1999/31/EC (2002).
    - Environmental Protection Agency documented entitled Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities.
    - Environment Agency, 2018. Technical Guidance WM3: Guidance on the classification and assessment of waste.
    - Any other guidance or legislation that might be applicable or relevant at the time of disposal.
- The re-use of soil and subsoil offsite will be undertaken in accordance with all statutory requirements and obligations including where appropriate re-use as by-product in accordance with Article 27 of the European Communities (Waste Directive) Regulations 2011 (SI No. 126 of 2011) as amended.
- Any surplus material not suitable for re-use as a by-product and other waste materials arising from the construction phase will be removed offsite by an authorised contractor and sent to the appropriately authorised (licensed/permitted) receiving waste facilities. As only authorised facilities will be used, the potential impacts at any authorised receiving facility sites will have been adequately assessed and mitigated as part of the statutory consent procedures.
- Any waste soils will be transported under a valid waste collection permit issued under the Waste Management (Collection Permit) Regulations 2007, as amended and will be delivered to an appropriately authorised waste management facility.
- Waste bins, containers, skip containers and storage areas will be clearly labelled with waste types which they should contain including photographs as appropriate.
- Materials and waste will be documented prior to leaving the site. All information will be entered into a waste management register kept onsite. Waste collection permits for registered hauliers and certs of registration/ licenses/permits for authorised waste facilities will be kept on file at the head office.
- All site personnel and sub-contractors will be instructed about the objectives of the CDWMP and informed of their responsibilities as a consequence of its provisions.
- Vehicles transporting material with potential for dust emissions to an offsite location shall be enclosed or covered with a tarpaulin at all times to restrict the escape of dust.
- Public roads outside the site will be regularly inspected for cleanliness and cleaned as necessary. The main contractor will carry out road sweeping operations, employing a suction sweeper or similar appropriate method, to remove any project related dirt and/or material deposited on the road by construction/ delivery vehicles. Vehicles exiting the site shall make use of a wheel wash facility where appropriate, prior to entering onto public roads.

7.3.3.4 Concrete Works

The use of cementitious grout during the construction phase of the Proposed Development will be managed to avoid any risk of ground contamination, through the implementation of appropriate design measures and construction methods by the appointed contractor.

The following mitigation measures will be adhered to when using concrete and cement-based materials:

- All ready-mixed concrete will be delivered to the site by truck.
- Concrete batching will take place off-site only.
- Wash-down and wash-out of concrete trucks will occur in a controlled, bunded area, with wash water collected in a container and disposed of via a licensed waste contractor, in accordance with relevant waste management legislation.
- Excess concrete will not be disposed of on-site under any circumstances.
- Pouring of cement-based materials will only be carried out in dry conditions, and pumped concrete will be actively monitored to prevent accidental discharge.
- A site-specific risk assessment for wet concreting will be completed prior to works commencing.
- Concrete pouring will not be permitted within 50 metres of any watercourse during adverse weather conditions, to prevent potential contamination of surface waters.

Weathering forecasting should be utilised to plan dry days for concrete pours. Prior to pours, the designated area of the site shall be free of standing water and plastic covers will be ready in the case of sudden rainfall event.

7.3.3.5 Handling of Fuels, Chemicals and Materials

Fuelling and lubrication of equipment will be carried out in a designated area of the site away from any watercourses and drains (where not possible to carry out such activities offsite) and contained within constructed impermeable and bunded areas.
Any diesel, fuel or hydraulic oils stored onsite will be stored in designated areas. These areas will be located within a designated area placed furthest away from adjacent watercourses / drains and contained within constructed bunded areas
Bunds will have regard to current best practice for oil storage (Enterprise Ireland, BPGCS005) and Environmental Protection Agency guidelines 'Amendment to IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities' (EPA, 2013).
All tank and drum storage areas will, as a minimum, be bunded to a volume not less than the greater of the following:

- 110% of the capacity of the largest tank or drum within the bunded area; or
- 25% of the total volume of substance that could be stored within the bunded area.

Environmentally friendly materials will be used during the construction process including the use of biodegradable lubricants and hydraulic fluids for machinery and equipment.

Strict supervision of contractors will be adhered to in order to ensure that all plant and equipment utilised onsite is in good working condition. Any equipment not meeting the required standard will not be permitted for use within the site. Only emergency breakdown maintenance will be carried out onsite. Drip trays and spill kits will be available onsite to ensure that any spills from vehicles are contained and removed offsite.

There may also be the requirement for use of portable generators or similar fuel containing equipment during the construction phase of the Proposed Development, which will be placed on suitable drip trays. Regular monitoring of drip tray content will be undertaken to ensure sufficient capacity is maintained at all times.

The appointed contractor will maintain an emergency response action plan and emergency procedures will be developed by the appointed contractor in advance of any works commencing. Construction staff will be familiar with the emergency response plan.

Spill kits will be made available onsite and identified with signage for use in the event of an environmental spill or leak. A spill kit will be kept in close proximity to the fuel storage area for use in the event of any incident during refuelling or maintenance works. Heavy machinery used on the site will also be equipped with its own spill kit.

7.3.3.6 Welfare Facilities

Welfare facilities have the potential, if not managed appropriately, to release organic and other contaminants to ground or surface water courses. Foul drainage from temporary welfare facilities during the construction phase of the Proposed Development will be discharged to temporary holding tank(s) the contents of which will periodically be tankered offsite to a licensed facility. All waste from welfare facilities will be managed in accordance with the relevant statutory obligations by an appropriately authorised contractor.

Any connection to the public foul drainage network during the construction phase of the Proposed Development will be undertaken in accordance with the necessary temporary discharge licences issued by Uisce Eireann (UE).

7.3.4 Control and Management of Materials and Waste

7.3.4.1 Waste Classification

The waste classification of inert C&D materials generated throughout the Construction Phase of the Permitted Development including structural concrete, metal, timber, cladding, plastics, cardboard, and tiles will also be based on visual observations by the Construction Environmental Site Manager or appointed delegate (i.e., Environmental and Waste Officer).

The design for construction of the Permitted Development will require excavation of approximately 184,422m^3 of soil and subsoil for the construction of building foundations, surface water and foul water drainage infrastructure. Where possible, it is intended to reuse suitable excavated soil and subsoil for landscaping and engineering use (total fill requirement of approximately 249,228m^3). However, it is anticipated that approximately 103,689m^3 of surplus materials will require removal offsite in accordance with all statutory consents and approvals. Where applicable, the offsite re-use of soil including under an Article 27 By-product Notification in accordance with Article 27 of the European Communities (Waste Directive) Regulations 2011 (S.I. No 126 of 2011) will be prioritised. Material will only be removed under an Article 27 By-product notification when it can be robustly demonstrated that all tests for Article 27 By-product are met.

In the event that soil is deemed to be unsuitable for re-use or does not meet the requirements of Article 27 By-product Notification, the removal of surplus soils and materials off-site for disposal will be undertaken in accordance with with the Waste Management Act 1996 and as amended, S.I. No. 820/2007 - Waste Management (Collection Permit) Regulations 2007 and as amended and S.I. No. 821/2007 - Waste Management (Facility Permit and Registration) Regulations 2007 and as amended.

Where sampling and assessment of soil and materials is required to ensure that the materials are managed and removed offsite in accordance with waste management legislation or where the material is not suitable for re-use and considered a waste, the waste classification of sample results will be based on the following method:

- Soil sample collection and analysis in accordance with relevant industry standards including but not limited to:
    - EPA guidance document 'List of Waste & Determining if Waste is Hazardous or Non-hazardous and Waste Classification' (EPA, 2018); and

- BS 10175:2011 Investigation of potentially contaminated sites - Code of practice (BSI, 2011).
- Assessment of results to determine if the sample is a hazardous or non-hazardous waste and assigning a List of Waste (LoW) Code to the sampled material in accordance with EPA guidance 'Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous' (EPA, 2018); and
- The material will also be assessed to determine if the material meets the waste acceptance criteria for authorised landfills and soil recovery facilities as follows:
  - Screening the sample analytical results against the waste acceptance criteria (Landfill WAC) set out in the adopted EU Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive 1999/31/EC (2002); and
  - Screening the sample analytical results against the Maximum Concentrations and/or Soil Trigger Levels set out in the Environmental Protection Agency (2020) "Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities" (SRF WAC).

7.3.4.2 Segregation of Waste

Surplus materials / waste will be segregated on-site for the appropriate waste stream and disposal destination. The Construction Environmental Site Manager or appointed delegate will ensure waste streams are adequately identified. The segregation and management of materials / waste storage and stockpiling will be routinely inspected and audited by the Environmental Officer and audit findings recorded in the waste management records.

7.3.4.3 Storage of Materials and Waste Policy

Materials / waste storage, fuel storage and stockpiling and movement are to be undertaken with a view to protecting the underlying soils and groundwater. Materials / waste will be stored onsite, including non-hazardous soil and stone and inert C&D materials, in such a manner as to:

- Prevent environmental pollution (bunded and/or covered storage, minimise noise generation and implement dust/odour control measures, as may be required);
- Maximise material / waste segregation to minimise potential cross contamination of waste streams and facilitate subsequent re-use, recycling, and recovery; and
- Prevent hazards to Site workers and the public during construction phase (largely noise, vibration and dust.

7.3.4.4 Materials and Waste Management

All surplus materials and waste will be documented prior to leaving the Site. Surplus materials and waste will be weighed or logged by the contractor, either by weighing mechanism on the truck or at the receiving facility. These material / waste records will be maintained onsite by the Construction Environmental Site Manager.

Prior to any removal of surplus materials / waste from the Site, written confirmation should be obtained from the receiving waste facility, that acceptance of the waste will be in accordance with all statutory legislation and the conditions of the receiving waste facility licence or permit. A copy of the waste acceptance letters will be included in Appendix E.

If the material / waste is being transported to another site, a copy of the Local Authority waste Certificate of Registration (COR) or permit, or EPA Licence for that site will be provided to the Construction Environmental Site Manager.

If any soil is to be removed from the site under an Article 27 By-product notification of the European Communities (Waste Directive) Regulations 2011 (as amended), a separate assessment will be required to verify that all statutory requirements of the Article 27 By-product notification are met to the satisfaction of the EPA.

If the waste is being shipped abroad, a copy of the Transfrontier Shipping (TFS) notification document will be obtained from the National Transfrontier Shipment of Waste Office (NTFSO) (as the relevant authority on behalf of all local authorities in Ireland) and kept onsite along with details of the final destination. A receipt from the final destination facility of the material will be kept as part of the onsite waste management records. The Construction Waste Manager will undertake regular audits of waste paperwork to ensure traceability of all loads offsite to the final authorised destination facility.

Records should be maintained for the mode of transport being used for transporting of materials to/from the construction site and the total distance travelled to determine the embodied carbon miles.

All surplus materials and waste that will require transport offsite for further treatment or disposal will be undertaken in compliance with all statutory legislation and all materials / waste will only be transferred to appropriately permitted or licensed waste management facilities. Details of the nominated waste facilities proposed for each specified waste type will be provided to SDCC once appointed by the Main Contractor in advance of construction works commencing onsite.

Only carriers/hauliers with a valid NWCPO issued Waste Collection Permit which authorises the transport of the applicable List of Waste (LoW) Code and delivery to the receiving facility will be appointed to transport the surplus materials and waste from the Site. Details of the nominated carriers/hauliers proposed for each specified waste type will be provided to SDCC once appointed by the Main Contractor in advance of construction works commencing onsite.

The Construction Environmental Site Manager will be required to maintain a detailed register of the nominated waste facilities (i.e., facility location, waste facility permit / licence number and expiry / renewal date) and waste haulage contractors (i.e., haulage

contractor name, address, waste collection permit / skip operator licence number and expiry date) proposed for each specified waste type and to obtain a copy of all waste facility licences/permits which will be retained within the waste management file.

The expiry dates on all licences and permits will be reviewed routinely as part of the waste audits. The Construction Environmental Site Manager will ensure that only haulage contractors with a valid permit will be retained for offsite removal of waste.

7.3.4.5 Importation of Materials

Where required, the importation of aggregates will be subject to control procedures which will 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 that may be required for the Proposed 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 will be rejected and removed off-site.

7.3.5 Controls to Protect Biodiversity

The Main Contractor will engage with the Project Environmental Consultant and the Project Ecological Clerk of Works (ECoW), as required throughout the Construction Phase of the Proposed Development, to ensure all relevant legislation is adhered and to ensure that all relevant conditions of the Grant of Planning (once issued) and all the recommended control measures identified in the particulars submitted with the planning application (refer to Section 3.3) are complied with.

The following construction mitigation measures 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.

- **Surface Water:** Control measures outlined in Section 7.3.1 and Section 7.3.2 will be strictly implemented to protect the receiving surface water and groundwater environment during the Construction Phase of the Proposed Development.
- **Noise:** Control measures as outlined in Section **Error! Reference source not found.** will be adhered to, in order to protect potential noise sensitive receptors during the Construction Phase of the Proposed Development.
- **Dust:** Control measures as outlined in Section 7.3.7 will be adhered to, in order to minimise emissions during the Construction Phase of the Proposed Development.
- **Badgers:** The mitigation measures described below follow the recommendations set out in the Guidelines for the Treatment of badgers during the Construction of National Road Schemes (National Roads Authority, 2006). These guidelines set out the best practice approach in considering and mitigating impacts on badgers during construction works.
  A pre-construction check of all suitable habitat within the proposed development boundary will be required within 12 months of any constructions works commencing. Any new badger setts present will be afforded protection in line with the requirements set out in the TII/NRA guidance document as follows:
  - Badger setts will be clearly marked and the extent of bounds prohibited for vehicles clearly marked by fencing and signage
  - No heavy machinery shall be used within 30m of badger setts; lighter machinery (generally wheeled vehicles) shall not be used within 20m of a sett entrance; light work, such as digging by hand or scrub clearance shall not take place within 10m of sett entrances
  - During the breeding season (December to June inclusive), none of the above works shall be undertaken within 50m of active setts, nor blasting or pile driving within 150m of active setts
  - Works can be undertaken within these zones following consultation with, the approval of and, if required, under the supervision of a badger ecologist
  - As the proposed development will not result in the permanent loss of any badger setts, there is no requirement to construct any artificial setts as part of the mitigation strategy.
- **Bats:** The following mitigation measures are proposed in relation to trees identified as having potential to support roosting bats. Bats could occupy suitable roosting features at any time prior to the commencement of works. Therefore, there is an inherent risk that bats could be affected by the proposed felling works. The following mitigation procedures will be followed:
  - Where possible, felling of confirmed or high suitability potential tree roosts will be undertaken during the periods April – May or September – October as during this period bats are capable of flight and may avoid the risks from tree felling if proper measures are undertaken, but also are neither breeding nor in hibernation. Pre-felling checks of potential roost features to determine if bats are present.
  - In advance of felling, a bat emergence survey should be undertaken to confirm absence of roosting bats on the night immediately preceding the feeling operation to determine if bats are present. Use of detectors alone may not be sufficient to record bat emergence and re-entry in darkness. Therefore, the emergence survey will be carried out using infra-red illumination and video camera(s) and bat detectors.
  - Where it is safe and appropriate to do so for both bats and humans, such trees may be felled using heavy plant to push over the tree. In order to ensure the optimum warning for any roosting bats that may still be present, the tree will be pushed lightly two to three times, with a pause of approximately 30 seconds between each nudge to allow bats to become active. The tree should then be pushed to the ground slowly and should remain in place until it is inspected by a bat specialist
  - Trees should only be felled “in section” where the sections can be rigged to avoid sudden movements or jarring of the sections

- Where remedial works (e.g. pruning of limbs) is to be undertaken to trees deemed to be suitable for bats, the affected sections of the tree will be checked by a bat specialist (using endoscope under a separate derogation licence held by that individual) for potential roost features before removal. For limbs containing potential roost features high in the tree canopy, this will necessitate the rigging and lowering of the limb to the ground (with the potential roost feature intact) for inspection by the bat specialist before it is cut up or mulched. If bats are found to be present, they will be removed by a bat specialist licenced to handle bats and released in the area in the evening following capture
- If any bat tree roosts are confirmed, and will be removed by the proposed felling works, then a derogation licence will be required from the NPWS and appropriate alternative roosting sites will be provided in the form of bat boxes.

- **Birds:** Any clearance of vegetation will be carried out outside the main breeding season (i.e., 1st March to 31st August), to avoid impacts on nesting birds, in compliance with the Wildlife Act 2000 and in consultation with the Project EcCoW. Where this seasonal restriction cannot be, a check for active nests will be carried out by the Project EcCoW immediately prior to any site clearance and if identified, a derogation licence will be required from the NPWS. Similarly, a derogation licence will be required for the removal of nests if found during the pre-clearance survey. This would note the section of habitat that is a nest site, the precise location within the hedgerow/trees, the species of bird present; and also elaborate the means by which the birds would be protected prior to nest removal. If eggs have been laid, the nest will be protected until the young have fledged after which time the nest could be destroyed (under licence from the NPWS only). This would also require further compensatory measures including nesting sites for birds if practicable**.**
- **Amphibians:** If works to clear any of the habitat features suitable to support amphibian species are to begin during the season where frogspawn or tadpoles may be present (February – mid-summer), or where breeding adult newts, their eggs or larvae may be present (mid-March – September), a pre-construction survey will be undertaken to determine whether breeding amphibians are present.
  - In the case of common frog, any frog spawn, tadpoles, juvenile or adult frogs present will be captured and removed from affected habitat by hand net and translocated to the nearest area of available suitable habitat beyond the ZoI of the proposed development by a suitably licensed individual.
  - In the case of smooth newt, individuals will be captured and removed from affected habitat either by hand net or by trapping and translocated to the nearest area of available suitable habitat, beyond the ZoI of the proposed development by a suitably licensed individual. If used, the type and design of traps shall be approved by the NPWS. This is a standard and proven method of catching and translocating smooth nest.
- If the size or depth of the habitat feature is such that it cannot be determined whether all amphibians have been captured, it will be drained under the supervision of a suitably experienced ecologist to confirm that no amphibian species remain before it is destroyed or infilled. Any mechanical pumps used to drain the habitat feature will have a screen fitted, and be sited, such that no amphibian species can be sucked into the pump mechanism.
- Any capture and translocation works shall be undertaken immediately in advance of site clearance/construction works commencing.
- **Light:** The Main Contractor (once appointed) will comply with the working hours set out in Section 5.2 to ensure that no excess night-time light emissions will be generated during construction works at the site, 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.
- During construction, any external lighting to be installed, including facilitating night-time working or security lighting, on the site shall be sensitive to the presence of bats in the area, downlighting, and time limited where possible. Lighting of sensitive wildlife areas and primary ecological corridors (e.g. along the central hedgerow/watercourse, and hedgerow boundaries of the site) and light pollution in general should be avoided.
- Lighting of the site during construction is designed in accordance with the following guidance:
  - Guidance Notes for the Reduction of Obtrusive Light GN01 (Institute of Lighting Professionals, 2020)
  - Guidance Note Bats and Artificial Lighting at Night GN08 (Institute of Lighting Professionals, 2023)
  - Bats & Lighting - Guidance Notes for Planners, Engineers, Architects and Developers (Bat Conservation Ireland, December 2010)
  - Bats and Lighting in the UK – Bats and the Built Environment Series (Bat Conservation Trust UK, January 2008).
- **Trees / Hedgerows**: An Arboricultural Assessment was carried out by Arborist Associates Ltd in 2025, to assess the condition of trees and hedge vegetation within the site.

  The survey identified a total of 187 individual trees and six hedges, categorised under British Standard BS 5837:2012 –as follows:

  - Category U (- Those trees in such a condition that any existing value would be lost within 10 years. Most of these will be recommended for removal for reasons of sound Arboricultural practice): 56 trees
  - Category B (moderate quality): 23 trees
  - Category C (low quality): 108 trees + 6 hedges
  - Category A (high quality): 0 trees

To facilitate the proposed development and associated management works, 66 trees (35.3% of surveyed trees) and approximately 353 linear metres of hedging (16.2% of total hedgerow length) will be removed. The breakdown of removals is:

- Category U: 38 trees (including 19 due to condition and 19 due to location in high-target areas)
- Category B: 8 trees
- Category C: 20 trees
- Hedging: Sections of Hedge Nos. 2, 3, 4, and 5

All remaining trees and hedgerows will be retained and protected in accordance with BS 5837:2012

Tree and Hedge Protection Measures

- Protective fencing will be erected along the points identified in the Tree Protection Plan prior to any soil disturbance and excavation work starting on site.
- The fencing is to be of a strong robust build capable of withstanding the works that are proposed within its vicinity. Where it is expected that there will be a high concentration of construction works, the fencing will need to be 2.3m high and constructed in accordance with figure 2 of BS 5837 2012.
- Fencing will remain in place until heavy building and landscaping work have finished, and its removal is authorised by the project Arboriculturist.
- Where workspace between building lines and protective fence lines is limited, alternative work methods will be considered to reduce soil and root damage.
- For light access works within the work exclusion zone, suitable ground protection such as scaffold boards, woodchip mulch or specialist ground protection mats may be acceptable, subject to review by the project Arboriculturist.
- Care will need to be taken when planning site operations to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Such contact can result in serious damage to them and might make their safe retention impossible.
- Materials, which can contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings, cannot be discharged within 10m of a tree stem. Fires cannot be lit in a position where their flames can extend to within 5 m of foliage, branches or trunk. This will depend on the size of the fire and the wind direction.
- Notice boards, wires and such like cannot be attached to any trees.
- Site offices, material storage and contractor parking will need to be located outside the work exclusion zones of the tree and hedge vegetation being retained.
- All tree works (felling and pruning) will be carried out by a competent tree surgery firm in accordance with BS3998:2010 before any construction work commences.

Additional Construction Stage Requirements in relation to tree and hedge protection measures:

- Protective fencing and all other tree protection measures must be kept in place, in good order and remain upright, rigid and complete at all times. They must be checked daily by the main contractor/foreman and any damage noted must be fixed immediately.
- If works need to take place inside the protective fence lines, the project Arboriculturist must be informed in advance and mitigation measures agreed. These works must be supervised by the project Arboriculturist.
- Excavation works are only to commence once protective fencing and all other protection measures are in place. Excavations must be reviewed on site with the project manager, site foreman and Arboriculturist before starting.
- Where roots of retained trees are exposed during excavation, they must be assessed by the Arboriculturist and pruned back beyond damaged material. The excavated face must be covered with soil or Hessian sacking to prevent drying out, and kept moist during dry periods.
- If works within the Root Protection Area (RPA) are unavoidable, they must be agreed with the Arboriculturist and carried out manually. Root pruning must be undertaken by an Arboriculturist using proprietary cutting tools such as secateurs or hand pruning saw.
- Existing ground levels within RPAs must be retained. Where level changes occur, they must start outside the RPA or use retaining walls. All landscaping within RPAs must be manual, and surfaces must be porous to allow air and moisture movement.
- Prohibited activities within RPAs include:
    1. Storage of equipment, fuel, construction material, or stockpiling of soil or rubble.
    2. Burning rubbish.
    3. Washing machinery.
    4. Attaching notice boards, cables or other services to any part of the tree.
    5. Using neighbouring trees as anchor points.
    6. Operating machinery such as Tele-porters or cranes close to trees without care to avoid crown damage.
- **Marsh Habitat Translocation:** Marsh habitat requiring translocation to a designated receptor site in line with the Marsh Translocation Report (Gannon & Associates, 2025) and supervised by a suitably qualified ecologist .Prior to works commencing, a detailed Ecology Site Management Plan (ESMP) specific to the contract programme shall be prepared by a suitably qualified ecologist with reference to the construction programme as detailed hereunder:

- The management plan will be issued to the site contractor and the team involved in the translocation works.
- The ESMP will include a site-specific method statement outlining step-by-step actions for the site contractor to implement within a specified timescale.
- All actions will be carried out under the supervision and advice of the ecologist.
- The ESMP will include a checklist of conditions to be assessed by the ecologist at the receptor site during ecological monitoring.
- Ecological monitoring will be carried out prior to, during and post-translocation works.
- Engineering solutions will be implemented as required to complement the site's existing hydrological and hydrogeological regime to create an appropriate degree of waterlogging at the receptor site to allow for habitat establishment and long-term persistence on site. These solutions will include diversion of subsurface drains into the receptor site area and/or creating areas of low elevation or depressions that can be flooded and retain water and/or excavating to the depth of the seasonal water-table
- The receptor site will be prepared in conjunction with any required engineering solutions through the removal of surface vegetation and the creation of suitable hollows/depressions to receive the translocated vegetation.
- Once the receptor site has been suitably prepared, translocation will involve the removal of turves, soil and/or plant species from the impacted donor site to the new receptor site.
- Turves of habitat will be carefully removed from the chosen donor site using a suitable excavator with adequate capacity to remove the intact turve. The excavated turves will be temporarily stored in standing water.
- Under-lying soils will be excavated and used to line the receptor site hollow.
  Due to the wetness of soils associated with the habitat, it is recommended that soils and turves are translocated immediately from the donor site to the receptor site where possible. Where immediate translocation is not feasible, the duration of storage shall be kept to a minimum. Soil translocation will introduce chemically and physically suitable substrate for the growth of target plant species, together with soil organisms such as bacteria, fungi, invertebrates, and wetland vegetation propagules (seeds, tubers or rhizomes).
  Turves should be translocated into the receptor site in early spring, at the end of dormancy and prior to full growth.
- In addition to turves excavated from the existing marsh habitat, supplemental landscape planting on and around the translocated turves of suitable species reflecting those recorded on site and typical of marsh may be implemented during the establishment phase as monitoring identifies areas where vegetation is locally slow to establish.

- **Invasive Species:** A pre-construction invasive alien species survey will be undertaken to ensure that any invasive plants species within the works area are identified and to ensure the appropriate management measures are implemented. Any Third schedule invasive species (*Allium triquetrum* and *Hyacinthoides hispanica*) must be removed from the proposed development site in advance of construction works.

  - During advance works and prior to commencement of construction, any areas where Third Schedule non-native invasive species have been recorded must be clearly fenced off (in order to avoid spreading seeds or plant fragments around or from the site) prior to their excavation and removal off-site to a licenced facility for invasive species by an appointed invasive species management (ISM) contractor which shall be completed prior to the commencement of construction works. Earthworks or machinery movement must be avoided in any areas where non-native invasive species have been identified during the pre-construction surveys, until the relevant stands have been eradicated, by the ISM contractor and/or under the supervision of the ISM contractor.
  - All equipment and machinery will be cleaned prior to entry into the proposed development site as biosecurity measures to avoid transfer of invasive species on equipment and machinery which may have been used elsewhere.
  - Erection of clear signage will be undertaken at the construction compound (and any discrete construction areas) and inclusion of detail during tool-box talks or similar (environmental induction) for construction staff in respect of the management of Third Schedule non-native invasive species. The signage and notification should be easily understood so that users are aware of the measures to be taken for the locations of non-native invasive species on site
  - In consultation with the ISM contractor, identify dedicated access points into and out of fenced off areas. These shall not be breached until such time that the ISM contractor, 1) has confirmed eradication / removal of non-native invasive species, or 2) is present to supervise works to commence the treatment / eradication process;
  - Where possible, the locations of dedicated footwear and wheel wash facilities should be identified and updated by the ISM contractor. Where a dedicated / bespoke wheel wash cannot be installed owing to space limitations, the ISM contractor shall, in conjunction with the appointed contractor, ensure that no excavated loose material is allowed offsite from within an exclusion zone. Similarly, where plant that is used to excavate soils, it shall be visually checked for loose soil before movement to another part of site (where possible, the movements of tracked machinery should remain outside the non-native invasive species exclusion zone as defined by the ISM contractor or strictly supervised by the ISM contractor where unavoidable). Loose soil shall be scraped off and the material double-bagged and brought to a clearly demarcated and dedicated quarantine area for disposal to an authorised facility, and a solution of Virkon© (or similar approved disinfectant) applied to machinery to ensure that no obscured seed/root material remains viable.

- Vehicular movements within any exclusion area shall be minimised as far as is practical.
- Machinery which has been used for the transport and / or excavation of infected / suspected infected vector material shall be thoroughly washed down, and the washings captured in a quarantined bunded container for disposal. All such machinery / plant shall not be permitted to commence work elsewhere on or off-site until written confirmation of clearance of vector material has been undertaken.;
- Dedicated wash down and solution capture should be set up in the construction compound. All washings should be stored in a quarantined bunded container that is rated for such storage until such time that they are removed offsite for disposal and a facility that is authorised to accept such waste;
- Except in very particular circumstances, under the guidance of the ISM contractor, there shall be no temporary storage of infected / suspected infected soils on-site;
- Where small volumes e.g., volume capable of being double bagged in quarantine bags such as cut plants, bulbs or loose soil occur, it may be practical to bag and/or containerise the material and bring it to a clearly demarcated and dedicated quarantine area within the construction compound until such time that the material is disposed of to an authorised facility, similar to the process of disposing of bulk excavated infected soil. The temporary storage of small amounts of infected material shall not occur within 50m of any watercourse and any land within an identified flood zone.
- Where the movement of any Third Schedule species is required off-site, a licence will be required from NPWS under Section 49 of the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended) in advance of any movement to a site/facility licenced to accept such waste.
- In the case of *Allium triquetrum* and *Hyacinthoides hispanica* within the site, eradication of infestations can be achieved through physical removal. Hand digging of individuals should be carried out when above-ground biomass is visible (i.e. early spring) ensuring that all biomass including bulbs collected.

7.3.6 Control of Noise and Vibration

To minimise the potential effect of noise and vibration from the construction phase of the Proposed Development, the Main Contractor will comply with the conditions of the Grant of Planning (once issued) and best practice control measures for control of noise and vibration from construction sites as documented in the following:

- British Standard, 2014. Code of Practice for Noise and Vibration Control on Construction and Open Sites Parts 1 and 2 (BS 5228: 2009 +A1 2014);
- National Roads Authority, 2004. Guidelines for the Treatment of Noise & Vibration in National Road Schemes (NRA, 2004); and
- British Standard, 1993.Evaluation and Measurement for Vibration in Buildings Part 2: Guide to Damage Levels from Ground Borne Vibration (BS 7385: 1993).

7.3.6.1 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 of the Proposed Development can have a range of impacts depending upon the sensitivity of the receptor including residential receptors, ecological receptors, the nature and duration of the disturbance and its timing.

To mitigate any potential disturbances, the following measures will be implemented:

- Establish channels of communication between the Main Contactor (once appointed), SDCC, and other stakeholders where appropriate.
- Briefing of all staff on noise mitigation measures and the application of best practicable means to be employed to control noise.
- Erection of good quality site hoarding to maximise the reduction in noise levels where noise thresholds are likely to exceed 55-65db.
- Limiting the hours during which Site activities likely to create high levels of noise are Proposed (refer to Section 5.2).
- Keep internal routes well maintained and avoid steep gradients.
- Material and plant loading and unloading will only take place during normal working hours (refer to Section 5.2) unless the requirement for extended hours is for traffic management (i.e., road closure) or health and reasons.
- Identification of dedicated delivery areas.
- Minimise drop heights for materials or ensure a resilient material underlies.
- Use rubber linings in chutes, dumpers and hoppers to reduce impact noise.
- Minimise opening and shutting of gates through good coordination of deliveries and vehicle movements.
- Ensure that each item of plant and equipment complies with the noise limits quoted in the relevant European Commission Directive 2000/14/EC (SI No 632 of 2001);
- 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 Main Contractor; and
- In-situ Noise Measurement.

- No plant used on site will be Proposed 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 onsite operations.
  - Selection of plant with low inherent potential for generating noise.
  - Fit all plant and equipment with appropriate mufflers or silencers of the type recommended by the manufacturer.
  - Where possible, employ the use of rubber/neoprene or similar non-metal lining material matting to line the inside of material transportation vehicles to avoid first drop high noise levels.
  - Where possible, power all plant by mains electricity where possible rather than generators.
  - Where noise originates from resonating body panels and cover plates, additional stiffening ribs or materials should be safely applied where appropriate.
  - Use all plant and equipment only for the tasks for which it has been designed;
  - Avoid of unnecessary revving of engines. Shut down all plant and equipment in intermittent use in the intervening periods between work or throttle down to a minimum.
  - Siting of plant as far away from sensitive receptors as Proposed by site constraints.
- Ensure all vehicle movements (onsite) occur within normal working hours (refer to Section 5.2) (other than where extension of work requiring such movements has been granted in cases of required road closures or for health and safety reasons);
- Plan deliveries and vehicle movements so that vehicles are not waiting or queuing on the public roads. If unavoidable engines should be turned off.
- Plan the site layout to ensure that reversing is kept to a minimum. Where reversing is required use broadband reverse sirens or where it is safe to do so disengage all sirens and use banksmen.
- The following noise levels will be strictly adhered to for the duration of the Construction Phase of the Proposed Development (refer to Table 7-1). Where noise levels exceed the thresholds identified in Table 7-1, the Main Contractor will undertake steps to review the works and implement additional mitigation measures where applicable.

Table 7-1. Maximum Permissible Noise Levels During Construction

Days and Times	Noise Levels (dB)** $L_{Aeq(T)}$
Monday to Friday 07:00 to 19:00hrs (Daytime)	70
Monday to Friday 19:00 to 23:00hrs (Evenings)*	60**
Monday to Friday 23.00 to 07.00hrs (Night-time)*	50**
Saturdays 08.00 to 14.00hrs (Daytime)	70
Saturdays 13.00 to 23.00hrs (Evenings)*	60**
Sundays & Bank Holidays 07.00-23.00hrs*	60**
*Construction activity at these marked times, other than that required in respect of emergency works, will require a written submission seeking authorisation to SDCC. **If the ambient noise level exceeds the threshold noise levels (i.e., the ambient noise level is higher than the above values), the maximum permissible noise levels due to site activities will be 3dB above the ambient noise level . Source: British Standard, 2014. Code of Practice for Noise and Vibration Control on Construction and Open Sites Parts 1 and 2 (BS 5228: 2009 +A1 2014).	

7.3.6.2 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.

Vibration levels will be kept below 1.0 mm/sec (PPV) for the duration of the Construction Phase of the Proposed Development. In the event that site activities are expected to exceed this value, nearby residents will be notified, and an explanation provided.

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:

- Equipment is to be task-specific; and
- Vehicle engines shall be switched off when not in use;
- Machines will be fitted with suitable and properly operating silencers;
  If appropriate, acoustic screens will be deployed;
- Siting of plant as far away from sensitive receptors as permitted by site constraints.;
- Best practice vibration control measures will be employed by the Main Contractor and screening provided to adjoining properties where required;
- In the method statement/risk assessment, the Main Contractor (once appointed) will highlight any activity that may cause significant vibration levels (e.g., demolition, piling, rock breaking etc.) and include measures in helping to mitigate these emission levels. Such measures will include:
  - Use low impact demolition methods such as non-percussive plant where practicable;

- 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;
- Consider the removal of larger sections by lifting them out and breaking them down either in an area away from sensitive receptors or off site.

7.3.6.3 Liaison with the Public

The contact details of the Project Manager, the Construction Environmental Site Manager / Project Communications Officer and the Environmental and Waste Officer will be displayed to the public at the Site entrance, together with the Proposed operating hours, including any special permissions given for out of hours work.

The Construction Environmental Site Manager / Project Communications Officer will act as the designated noise liaison officer and liaison will be carried out in accordance with the Communication Management Plan (refer to Section 5.6). Any noise complaints will be managed in accordance with the complaint's procedure, reported to the designated sub-contractor as applicable, and followed up in a prompt fashion.

7.3.6.4 Noise and Vibration Control Inspections

Noise and vibration control inspections and audits will be conducted daily through the Demolition Phase and 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 and vibration. To this end, consideration will be given to issues such as the following:

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

Noise and vibration control inspections and audits will be recorded in in the live CEMP.

7.3.6.5 Monitoring for Noise and Vibration

Where required, noise and vibration monitoring will be carried out during critical activities and times of potential increased noise generating activities and during critical periods and at sensitive locations (e.g., demolition works, piling, rock breaking etc.). Monitoring will be carried out by a specialist sub-contractor engaged by the Main Contractor (once appointed) to monitor, collate and report on noise and vibration results.

Where required, the monitoring systems will be combined with a real-time alarm system to ensure that the action level thresholds are strictly adhered to for the duration of the works. Where noise levels exceed the action level thresholds, the Main Contractor will undertake steps to review the works and implement additional mitigation measures where applicable.

7.3.7 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 duration of the Construction Phase of the Proposed Development as set out in the following sections.

The Main Contractor (once appointed) will implement a Dust Management Plan (DMP) for the duration of the Construction Phase in order to sufficiently prevent fugitive emissions affecting those occupying neighbouring properties or pathways. The DMP outlined below sets out a schedule of practical air control measures and monitoring requirements to control fugitive dust for the duration of the Construction Phase of the Proposed Development.

7.3.7.1 Dust Control Measures- General

The aim is to ensure good site management by avoiding dust becoming airborne at source.
During the Construction Phase of the Proposed Development, the siting of construction activities and temporary stockpiling of materials 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 extreme weather conditions (e.g., drought, wind and temperature extremes) by either restricting operations on-site or using effective control measures quickly before the potential for nuisance occurs:

- No demolition works take place in conditions exceeding Beaufort Wind Force 4 (11-16 kt; 13-18 mph; 20-28 km/h).
- 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.
- The Main Contractor will demonstrate full compliance with the dust control conditions at all times. Regular Toolbox Talks / briefings will be given to construction staff, sub-contractors, 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 will be reviewed at regular intervals during the Construction Phase of the Proposed Development 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.

7.3.7.2 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.
- Where required, adequate dust/debris screening will be in place at the site boundary to contain and minimise the amount of windblown dust. This will be maintained in good condition at all times. Where required, this may include:
    - Erection of solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiled materials on site.
    - Full enclosure of specific operations where there is a high potential for dust production and the site is active for an extensive period.
- Dust suppression equipment must be used when point source emissions are likely. The site will be dampened down as necessary to minimise windblown dust when necessary or during periods of dry weather. Where dust is likely to be a persistent problem a water spray system (e.g., IBC tanks fitted with hoses, bowsers fitted with spray nozzles) will be put in place from the commencement of the works where required. Hard to reach areas will be kept wet by the use of water cannons fitted to the rear of the bowsers.
- Avoid site runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Netting of scaffolding where required;
- Covering skips; and
- Remove materials that have a potential to produce dust from site as soon as possible.

7.3.7.3 Dust Control – Site Roads and Track Out

Site roads (particularly unpaved) can be a significant source of fugitive dust from construction sites if control measures are not in place. The most effective means of suppressing dust emissions from unpaved roads is to apply speed restrictions. Studies show that these measures can have a control efficiency ranging from 25 to 80%.

- A speed restriction of 20km/hr will be applied as an effective control measure for dust for on-site vehicles, in particular at site access/egress locations.
- 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 sites will be covered to prevent escape of materials during transport.
- On-site haul routes will be regularly inspected by the Construction Environmental Site Manager or appointed delegate for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
- Dust suppression equipment must be used when point source emissions are likely.
- Where required, hard surfaced haul routes will be regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned; and
- 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.

7.3.7.4 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:

- All consignments containing material with the potential to cause air pollution being transported by skips, lorries, trucks or tippers must be covered (e.g., tarpaulin or similar) during transit onsite and offsite to restrict the escape of dust.
- Public roads outside the site will be regularly inspected for cleanliness, as a minimum on a daily basis, and cleaned as necessary. Where required, a road sweeper will be deployed to ensure that public roads are kept free of debris; and

- Where required, wheel washing of vehicles will be implemented prior to exiting 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.

7.3.7.5 Dust Control - Operation Vehicles / Machinery

- 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.
- Regular servicing of machinery (including trucks, excavators, diesel generators or other plant equipment) to ensure exhaust emissions from vehicles are minimised; and
- Impose and signpost a maximum-speed-limit of 20 kph haul roads and work areas.

7.3.7.6 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; and
- 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.

7.3.7.7 Dust Control - Waste Management

- Bonfires and burning of waste materials are prohibited onsite; and
- All loads of C&D waste leaving the Site will be covered.

7.3.7.8 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; and
- For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.

7.3.7.9 Dust Control – Measures Specific to Earthworks / Groundworks

Groundworks / earthworks during periods of extreme weather conditions (e.g., drought, wind and temperature extremes) 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 tackifiers 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; and
- 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.

7.3.7.10 Dust Control – Site Management

- Regular inspections of the site and boundary will 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; and
- 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.

7.3.7.11 Dust Control – Stockpiles

Stockpiling of excavated soils (pending reuse onsite) and imported materials (e.g., quarry stone, sand) will be avoided where possible. However, should stockpiling of materials be required onsite during the Construction Phase of the Proposed 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:

- Where possible, storage stockpiles will be located down wind of sensitive receptors.
- 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.

7.3.7.12 Dust Control – Site Management

- Regular inspections of the Site and Site boundary should be carried out to monitor dust, records and notes on these inspections should be logged and recorded in Appendix H of the CEMP. This will include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100m of the site boundary, with cleaning to be provided if necessary.
- 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.
- The Main Contractor will make the complaints log, included in the live CEMP, available to the SDCC upon request; and
- Where necessary, regular liaison meetings will be held with other high risk construction sites within the vicinity of the Site, 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.

7.3.7.13 Dust Monitoring

Dust monitoring will be carried out, if deemed required, during critical activities. Dust monitoring will be carried out by a specialist sub-contractor engaged by the Main Contractor (once appointed) to monitor, collate and report on dust monitoring results. All personnel undertaking monitoring will be sufficiently competent and will be experienced in managing construction dust and particulates (PM10 and PM2.5).

Where required, dust monitoring will be conducted using the Bergerhoff method in accordance with the requirements of the German Standard VDI 2119. Dust emissions at the site boundaries will not exceed 350 mg/(m^2*day) during the monitoring period (approximately one month - 28-32 days). All laboratory analysis must be undertaken at an accredited laboratory with appropriate accreditation for each analytical method.

Where action level thresholds are exceeded, the Main Contractor (once appointed) will undertake steps to review the works and implement additional mitigation measures where applicable.

7.3.7.14 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 of the Proposed Development. The key features with respect to control of dust emissions and nuisance dust will be:

- 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 dust management 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.

7.4 Control of GHG Emissions

In order to mitigate any likely climate change impact, a schedule of control measures have been established for the duration of the Construction Phase of the Proposed Development. The following are suggested mitigations which should be considered in addition to mitigations from the EIAR which accompanies this planning application:

- **Energy-Efficient Equipment:** Use energy-efficient machinery and equipment on-site. Regular maintenance and proper operation can also help reduce fuel consumption and emissions.

- **Renewable Energy:** Incorporate renewable energy sources, such as solar panels, to power construction activities. This can significantly reduce reliance on fossil fuels

- **Reduce Idling**: Prevention of on-site or delivery vehicles from leaving engines idling, even over short periods.

- **Sustainability Awareness**: Ensure that sustainability and carbon specifically is incorporated into site team talks, construction and reporting targets. Integrate training clauses for contractors and sub-contractors to upskill their onsite

personnel including sub-contractors in low energy construction skills. Appoint sustainability champions to ensure that the project continues to perform in a sustainable manner.

- **Sustainable Transportation**: Encourage carpooling, use of public transportation, or electric vehicles for workers commuting to the site.
- **Monitoring and Reporting:** Regularly monitor and report GHG emissions from the construction site. This helps in identifying areas for improvement and ensuring compliance with environmental standards Sustainability spot checks should be added to ongoing site inspections and feedback shared with all onsite to ensure measures are being adopted.
- **Maintenance**: Ensure all plant and machinery are well maintained and inspected regularly.
- **Waste Management:** Implement a robust waste management plan to reduce, reuse, and recycle construction waste. Proper waste management can significantly cut down on emissions Minimising waste of materials due to poor timing or over ordering on site will aid to minimise the embodied carbon footprint of the site. Application of the waste hierarchy to all waste material generated.
- **Sustainable Procurement:** Sourcing low carbon materials locally where possible to reduce transport related CO2 emissions.

7.5 Control of Climate Impacts

During the construction stage specific climate resilience measures should focus on ensuring durability, water management, and energy efficiency while mitigating risks associated with extreme weather. Regarding the development's resilience to climate change, the Contractor will be required to mitigate the effects of extreme weather, such as heavy rainfall, flooding, windstorms, and temperature fluctuations, through site risk assessments and method statements.

The following measures will be implemented to mitigate climate impacts:

Foundation & Site Preparation

- Flood Resilient Foundations: Use raised foundations, elevated platforms, or piling where necessary in flood-prone areas.
- Sustainable Drainage Installation: Implement permeable surfaces, drainage channels, and attenuation tanks early in construction.
- Soil Stabilisation: Prevent erosion with silt fences, geotextiles, and retaining structures to withstand heavy rainfall.

Structural Reinforcement

- Wind-Resistant Framing: Use reinforced concrete or steel frames with proper anchoring to withstand storms.
- Secure Roof Fixings: Ensure hurricane straps, reinforced trusses, and mechanically fixed roof tiles to prevent wind damage.
- Impact-Resistant Windows & Doors: Install reinforced glass or shutters to reduce storm-related damage.

Water & Moisture Management

- Damp-Proofing Measures: Use high-quality damp-proof membranes (DPM) and damp-proof courses (DPC) in walls and floors.
- Proper Drainage on Site: Ensure temporary drainage solutions (e.g., trenches, sumps) to manage rainwater during construction.
- Weatherproofing Structures: Apply breathable but water-resistant membranes on external walls before cladding installation.

Material Selection & Handling

- Use Climate-Resilient Materials: Opt for treated timber, marine-grade plywood, concrete with low permeability, and corrosion-resistant steel.
- Storage & Protection of Materials: Keep materials covered and off the ground to prevent water damage or degradation.
- Low-Carbon Concrete & Insulation: Use alternatives like GGBS (Ground Granulated Blast-furnace Slag) concrete and eco-friendly insulation.

Energy Efficiency & Passive Design Implementation

- High-Performance Insulation Installation: Ensure proper fitting to avoid thermal bridging and moisture ingress.
- Airtightness Testing During Construction: Conduct interim blower door tests before final finishes to confirm air sealing effectiveness.
- Green Roof Base Layers: Install waterproofing and root barriers early if a green roof is part of the design.

On-Site Climate Adaptation Measures

- Construction Scheduling Considerations: Plan for extreme weather events, avoiding major excavation or external works in heavy rain seasons.
- Cold/Hot Weather Plan: Strategies such as planned road gritting, thermal protection, chemical accelerants, temporary enclosures, and alternative heating/cooling solutions enable builders to overcome these obstacles and achieve successful project outcomes.
- Temporary Wind & Rain Barriers: Use tarpaulins, scaffolding covers, and temporary roofing to protect partially built structures.

- Emergency Power Supply: Have generators or battery backups on site to maintain critical construction processes.

7.6 Control of Impacts on Archaeology

The Archaeology and Cultural Heritage Report (EIAR – Chapter 12) carried out by IAC Archaeology, documented the following findings:

The assessment revealed nine records of archaeological, cultural or built heritage significance are recorded within the 500m applied search area. In summary they comprise two recorded monuments (DU021-044, DU021-045), four NIAH records (11214010, 11214011, 11214012, 11219001), one previous excavation (License No. 18E0246), and two South Dublin Local Heritage Features (Archaeology.ie 2025).

The two recorded monuments and their associated zones of notification comprise St. Patrick's Holy Well located 319m to the west (DU021-045) and a pair of Standing Stones which are also a protected structure and are located 420m southwest-west (DU021-044, Ref. 349).

No recorded archaeological, cultural or built heritage records exist within the bounds of the Proposed Development site. However, the easternmost site boundary comprises a townland, parish and barony delineation and is therefore of historic significance. Any limited intervention points will be subject to a written and photographic record prior to construction.

While no archaeological remains have been identified within the Proposed Development site, it is possible that previously unrecorded small-scale remains survive beneath the current ground surface, outside the footprint of the excavated test trenches. If present, ground works associated with the Proposed Development may have a significant direct negative impact on any such remains.

It is recommended that all topsoil stripping be subject to archaeological monitoring by a qualified archaeologist under licence from National Monuments Service. Where possible topsoil should be stripped using a flat-edged bucket to facilitate the identification of any potential archaeological remains. This is a requirement of the National Monuments Services licencing process. Should any features of archaeological potential be identified, further mitigation may be required in consultation with the National Monuments Service of the Department of Housing, Local Government and Heritage. This may include preservation in situ or by record (excavation).

Proposed intervention points along the townland/ parish/ barony boundary forming the eastern perimeter of the site will be fully recorded by photographic and written record, including measured survey of indicative sections, prior to removal at construction phase. Any subsurface remains of the boundaries exposed during topsoil stripping/excavation will be recorded during the programme of archaeological monitoring. In addition, the proposed landscaping scheme will indicate the former alignment of the townland boundaries, where partial removal is required. Furthermore, the retained townland boundaries will be bolstered by additional planting.

It is noted that no site preparation or construction work will be carried out until after permission to proceed has been received in writing from the Planning Authority in consultation with the National Monuments Service of the Department of Housing, Local Government and Heritage.

7.7 Maintenance of Roads

The Main Contractor (once appointed) will ensure that the appropriate procedures are in place to ensure that all Site traffic will be managed in accordance with the CTMP which will be developed by the Main Contractor (once appointed) in advance of construction works commencing onsite and included in the live CEMP. The Main Contractor (once appointed) 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 Main Contractor (once appointed) will ensure that the following control measure are implemented as required throughout the Construction Phase of the Proposed Development:

- Where required, wheel washing of vehicles will be implemented prior to exiting 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. Where necessary, additional measures (e.g., hardcore/stone surfaces along haul routes to prevent dirt and debris on wheels) will also be provided for site vehicles;
- A road sweeper (vacuum type) will be available for use throughout the Construction Phase of the Proposed Development to ensure that internal roads and public roads are kept clear of mud and debris.
- Dust suppression equipment must be used when point source emissions are likely. The site will be dampened down as necessary to minimise windblown dust when necessary or during periods of dry weather. Where dust is likely to be a persistent problem a water spray system (e.g., IBC tanks fitted with hoses, bowsers fitted with spray nozzles) will be put in place from the commencement of the works where required. Hard to reach areas will be kept wet by the use of water cannons fitted to the rear of the bowsers.
- Road gullies/drains/sewers along public roads in the vicinity of the Site will be protected and maintained throughout Construction Phase of the Proposed Development; and
- All works will be carried out in such a manner as to ensure that the adjoining street(s) are kept clear of debris, soil and other material.

7.8 Site House Keeping

The Main Contractor (once appointed) will operate onsite using good housekeeping practices. Work areas will be left in a clean state by construction personnel. The site induction will communicate the requirement for site housekeeping and tidiness.

Further to measures described in the relevant sections below, the following measures will be implemented to maintain site tidiness:

- Construction works will be carried out with regard to a defined schedule and with regard to the hours of work outlined in the CEMP (refer to Section 5.2);
- The Main Contractor will ensure that road edges and footpaths are swept on a regular basis;
- The Main Contractor and appointed sub-contractors will be responsible for the clearance of their plant, equipment and any temporary buildings upon completion of construction; and

Upon completion of the Construction Phase of the Proposed Development, the Site will be left in a safe condition.

8 RECORD KEEPING, AUDITS, INSPECTIONS AND REPORTING

8.1 Record Keeping

Records pertaining to all aspects of the construction environmental management procedures outlined in this document will be maintained in the onsite live CEMP files and will include:

- Records of induction training for operatives, drivers, workers, and visitors.
- Records of fuel consumption, fuel cost and fuel type.
- Attendance by Site personnel and visitor logs.
- The location of waste storage areas onsite.
- The details of environmental incidents and near misses including incident investigation and corrective and preventative measures implemented.
- Records of environmental inspections completed during the Demolition Phase and Construction Phase to ensure compliance with the CEMP control measures.
- Records of continuous noise, vibration and dust monitoring;
- Copies of Safety Data Sheets (SDS);
- Complaints register; and
- All corrective action requests will be numbered and logged and tracked to ensure completion in accordance with the HSEQMS.

In addition, detailed records of waste classification reports and all materials and waste removed from the Site will be maintained by the Main Contractor verifying the compliant management and removal off-site of all materials and waste in accordance with all relevant waste management legislation. Similar records will be maintained onsite and available for inspection detailing all materials exported under any EPA Article 27 notifications.

A copy of the receiving waste facility permits and licences and NWCPO waste collection permits with all appendices will also be retained onsite.

All records will be made available to SDCC upon request.

8.2 Monitoring, Audits and Inspection

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 Construction Environmental Site Manager will address environmental issues including groundwater, surface water, dust, litter, traffic, waste management, GHG emissions and general housekeeping. These will be carried out on both scheduled and random intervals. The findings of these inspections will be logged and recorded on the routine site inspection log included in the live CEMP.

Noise and vibration control inspections and audits by the Construction Environmental Site Manager will also be recorded in the live CEMP and made available to SDCC upon request.

The specific environmental monitoring requirements relating to the control of potential impacts are detailed in Section 7.3.

Monitoring required as a condition of any consent for discharges or water supply will be undertaken by the Main Contractor (once appointed). The monitoring results will be compiled in the live CEMP and will be made available to SDCC and other regulatory bodies as required.

It is advisable that the Transport Infrastructure Ireland Carbon Tool be utilised for monitoring and reporting of construction phase GHG emissions. See Transport Infrastructure Ireland Carbon Tool for Road, Greenway and Light Rail Projects: User Guidance Document GE-ENV-01106 February 2024.

The Construction Environmental Site Manager or delegate will be responsible for conducting waste inspections at the Site during the Construction Phase of the Permitted Development to ensure the compliance with waste management procedures as outlined above to ensure that all procedures are strictly adhered to.

Regular site inspections will also be carried out by the by the Construction Environmental Site Manager to ensure materials are segregated onsite for the appropriate waste stream and disposal destination and to check for housekeeping, litter, and correct segregation. Where poor segregation practices are observed, littering is apparent or housekeeping falls below standard, a non-conformance will be raised with the Construction Environmental Site Manager for corrective action.

8.3 Reporting

8.3.1 Environmental Monitoring Reports

Where groundwater, surface water, noise, vibration and/or dust monitoring is undertaken, the results will be recorded in Appendix I of the CEMP and made available MCC upon request.

It is advisable that the Transport Infrastructure Ireland Carbon Tool be utilised for monitoring and reporting of construction phase GHG emissions.

8.3.2 Soil Sampling and Waste Classification Reports

Where additional soil sampling and classification of soil waste is undertaken, the Project Contaminated Land Consultant will prepare a comprehensive waste classification assessment report(s) incorporating all support documentation and drawing. The waste classification reports will be included in the live CEMP.

In the event that hazardous wastes, previously deposited wastes or previously unidentified contaminated soil are discovered onsite, that material will be segregated and stored appropriately for sampling and classification as per Section 7.3.3. A hazardous waste/soil management plan will be designed and implemented by the Project Environmental Consultant detailing the estimated volumes, mitigation measures, destinations for the authorised disposal/ treatment and the designated authorised contractors for the movement of the material. The soil management plan(s) will also be included in the live CEMP.

8.3.3 Archaeological Survey Reports

A copy of any archaeological assessment report(s) will be submitted to the SDCC and to the National Monuments Service for consideration.

No site preparation or construction work will be carried out until after permission to proceed has been received in writing from the Planning Authority in consultation with the National Monuments Service of the Department of Housing, Local Government and Heritage.

If required, report(s) on any further excavations undertaken will be compiled by the Project Archaeologist and included in the live CEMP, detailing the results of same and be illustrated with drawings, photographs and any specialist reports required, in compliance with the terms of the excavation licence.

8.4 Non-Conformance and Corrective and Preventative Action

Non-conformances may be raised through site inspection or audit, or by any site personnel by reporting a non-conformance to the Main Contractor. Non-conformances will be recorded and investigated by the Main Contractor to determine the root cause, and Corrective Action Requests (CARs) will be issued to ensure that prompt action is agreed and committed to, with a view to the effective resolution of any deviations from the CEMP requirements or any environmental issues.

CARs may be raised as a result of:

- An internal or external communication;
- An internal audit;
- A regulatory audit or inspection;
- A suggestion for improvement;
- A complaint; or
- An incident or potential incident.

All CARS will be numbered and logged, tracked and recorded in the CEMP to ensure completion. CARs will only be closed out on sign off by the Main Contractor that the required corrective actions have been completed. CARs will be compiled in Appendix J of the CEMP.

9 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 7.3 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.

9.1 Emergency Response

The accident and emergency procedures will be outlined in the Health and Safety The accident and emergency procedures, that will be outlined in the Health and Safety documentation, will ensure that emergencies such as fires, explosions, accidents, leaks, sabotage or emergencies caused by force majeure occur as little as possible; if they do, however, occur, the Emergency Response Procedure ensures that all counter-measures 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. Related procedures are as follows:

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

An environmental emergency at the site may include:

- Discovery of a fire within the site boundary.
- Uncontained spillage / leakage / loss of containment action; and
- Discharge concentration of potential pollutants in excess of environmental trigger levels.

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

All environmental incidents (including emergency situations and accidents that can have an impact on the environment) are to be managed in accordance with the following procedure. In the event of an incident, the Main Contractor will:

- Carry out an investigation to identify the nature, source and cause of the incident and any emission arising there from.
- Isolate the source of any such emission.
- Evaluate the environmental pollution, if any, caused by the incident.
- Identify and execute measures to minimise the emissions/malfunction and the effects thereof.
- Identify the date, time and place of the incident; and
- Notify all relevant authorities.

In the event of a spillage, the following procedure shall be followed:

1. IF SAFE (USE PPE), stop the source of the spill and raise the alarm to alert people working in the vicinity of any potential dangers.
2. IF SAFE (USE PPE), contain the spill using the absorbent spills material provided. Do not spread or flush away the spill.
3. Cover or bund off any vulnerable areas where appropriate.
4. If possible, clean up as much as possible using the absorbent spills materials.
5. Do not hose the spillage down or use any detergents.
6. Contain any used absorbent material so that further contamination is limited.
7. Notify the Construction Environmental Site Manager so that used absorbent material can be disposed of using a licensed waste contractor; and

An accident investigation should be performed in accordance with procedures and the report sent to the Project Manager and the Main Contractor.

9.2 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 Construction Environmental Site Manager / 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; and
- 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).
- Characteristics of the incident.
- 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 Construction Environmental Site Manager / CMT and reported to the Project 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.

9.3 Emergency Contacts

The relevant emergency contact details for essential environmental and H&S services (refer to Table 9-1) will be displayed on the Site hoarding and included within the live register of documents. These emergency contact details will be kept up to date by the Main Contractor.

Table 9-1. Emergency Contacts

Emergency Service Contact Numbers	Contact
Ambulance	999 or 112
Fire Brigade	999 or 112
South Dublin County Council	(01) 414 9000
EPA - Headquarters County Wexford	(053) 9160600
HSE – North Great George's Street	(01) 814 6197
Inland Fisheries Ireland	(01) 884 2693
ESB Emergency	1850 372 999
Gas Emergency	1850 20 50 50
First Aid Officer	Main Contractor (once appointed)
National Monuments Service, Department of the Arts, Heritage and the Gaeltacht	(01) 888 2000
National Parks & Wildlife Service - North Eastern Division	(01) 539 3175 / (01) 539 3230
Health and Safety Authority	1890 289 389
Tallaght University Hospital	(01)414 2000
Rathcoole Garda Station	(01) 666 7900

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