SDCC Rathcoole Housing Development

Outline Construction Environmental Management Plan (oCEMP)

South Dublin County Council (SDCC)

October 2026

Quality information

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1 Introduction

South Dublin County Council (SDCC) has appointed AECOM to prepare an Outline Construction and Environmental Management Plan (oCEMP) for a proposed housing development on land adjacent to the Rathcoole Village, within County Dublin, hereafter referred to as the 'Proposed Development'. The Proposed Development comprises a greenfield site, consisting of an area of approximately 11.4 hectares (ha), situated to the south and south-east of Rathcoole Village (refer to Figure 1-1).

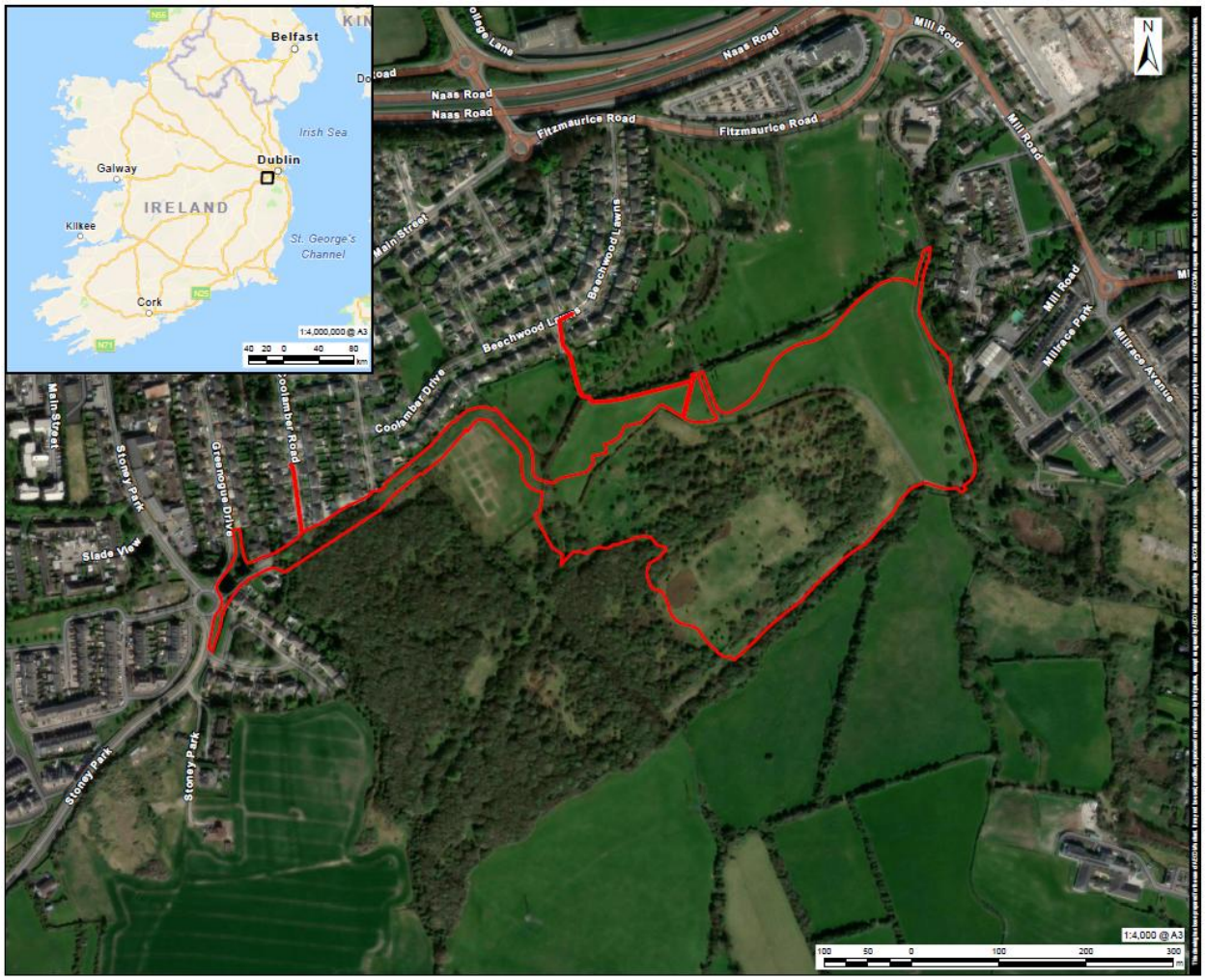


Figure 1-1: Proposed Development Site and Surrounding Environs

This oCEMP has been prepared to accompany the planning application for the Proposed Development. This oCEMP should be read in conjunction with the Environmental Impact Assessment Report (EIAR) prepared for the Proposed Development. A detailed construction-stage Construction Environmental Management Plan (CEMP) will be prepared by the appointed Contractor prior to commencement of the works onsite (referred to herein as the 'Contractor's CEMP'), taking account of this oCEMP, the mitigation measures and monitoring requirements as detailed in the EIAR, and any relevant conditions of the planning permission.

1.1 Background

This oCEMP has been prepared for the Proposed Development and will inform the preparation of the Contractor's CEMP. This document presents the construction sequencing, responsibilities and specific

measures for management, control, and supervision of the construction phases of the Proposed Development.

This oCEMP is intended to inform the Contract Documents for the construction stage and the preparation of the Contractor's CEMP. Construction methodologies and other relevant information presented herein may be further developed and refined following the appointment of the Contractor and as the Proposed Development design progresses. Any such refinements shall remain consistent with the planning permission (following award), the EIAR and the environmental mitigation and monitoring commitments identified therein.

The oCEMP shall be updated into a Contractor's CEMP by the appointed Contractor. The Contractor's CEMP will be maintained as a live document throughout the Proposed Development construction phase and updated, where necessary, to reflect the detailed construction methodology, relevant planning conditions and other project requirements. Any updates shall remain consistent with the environmental commitments identified in the EIAR.

1.2 Objectives

The objectives of a CEMP are to:

- Act as a continuous link and reference document for environmental issues between the design, construction, testing and commissioning stages of the project.
- Demonstrate how construction activities and supporting design shall properly integrate the requirements of environmental legislation, planning consent conditions, policy, good practice, and those of the environmental regulatory authorities and third parties.
- Record environmental risks and identify how they shall be managed during the construction period.
- Record the environmental objectives, commitments, mitigation and monitoring measures to be implemented, including those identified in the EIAR, together with programme and responsibility for their implementation.
- Identify key staff structures and responsibilities associated with the delivery of the Proposed Development, and environmental control and communication and training requirements, as necessary.
- Describe the Contractor's proposals for ensuring that the requirements of the environmental design are achieved, or are in the process of being achieved, during the Contract Period.
- Act as a vehicle for transferring key environmental information at handover to the body responsible for operational management. This shall include details of the asset, short and long-term management requirements, and any monitoring or other environmental commitments.
- Provide a review, monitoring, and audit mechanism to determine effectiveness of, and compliance with, environmental control measures and how any necessary corrective action shall take place.

1.3 Scope

The scope of this oCEMP relates to the Proposed Development – refer to Section 2.

The spatial scope of the Proposed Development covers the following:

- Site boundary.
- Any additional working areas required to facilitate construction of the Proposed Development.
- Access to and egress from Proposed Development site (referred to as 'the Site' herein).

This oCEMP considers the following subject areas as appropriate for the proposed works:

- Environmental Management.
- General Site Management.
- Population and Human Health.

- Biodiversity.
- Land, Soils and Geology.
- Water and Hydrology.
- Air Quality.
- Climate.
- Noise and Vibration.
- Landscape and Visual.
- Archaeology and Cultural Heritage.
- Major Accidents and Disasters.
- Material Assets (Traffic).
- Material Assets (Utilities).
- Material Assets (Resource and Waste Management).

The Contractor's CEMP shall be developed from this oCEMP and updated, as appropriate, to reflect the final construction methodology, any relevant design refinements, the requirements of the planning permission and associated conditions, and the findings and requirements of any additional pre-construction surveys or reports. The Contractor's CEMP shall incorporate the relevant environmental mitigation and monitoring commitments identified in the EIAR and shall be maintained and updated, as necessary, throughout the construction phase.

2 Project Description

The **Proposed Development** will consist of:

- **130 residential homes**, comprising: 43 two-storey houses (39 three-bedroom and 4 four-bedroom units) arranged in 12 terraced rows; 16 duplex apartments (8 one-bedroom and 8 three-bedroom units) within 2 three-storey blocks; 11 age-friendly homes including 4 age-friendly duplex apartments (2 one-bedroom and 2 two-bedroom units) within 1 two-storey block, 7 age-friendly single-storey houses and 1 age-friendly consultation room; and 60 apartments (17 one-bedroom and 43 two-bedroom units) within 4 four to five-storey blocks. 4 Traveller Accommodation units are included within the proposed unit mix.

- **Playing pitches and open space amenity** comprising: a park pavilion building with a gross floor area of 137.26 sq.m; 2 GAA sized senior grass pitches with a combined area of approximately 20,800 sq.m; 1 GAA sized junior grass pitch measuring approximately 6,240 sq.m; site levelling, reprofiling and drainage works associated with the pitch area, including the reuse of existing topsoil on site and the importation of sand.

- **Car and bicycle parking,** comprising: 143 residential car parking spaces, including 24 EV spaces, 4 accessible spaces and 15 combined EV-accessible spaces; 169 residential bicycle parking spaces; and 43 car parking spaces and 12 bicycle parking spaces allocated to open space use and access.

- **A new vehicular entrance, access road and active travel infrastructure**, including: a new pedestrian and cycle access from Mullally's Lane; widening works along Mullally's Lane to include SDCC held lands and third party lands which will be subject to a separate statutory process including use of rights conferred on the local authority to acquire lands to support the delivery of housing under relevant legislation; cycle path from entrance to development connecting to existing bike lane at Stoney Park; a new T-junction with vehicular and pedestrian access from Greenogue Drive and associated upgrade of access to existing adjoining roundabout including upgrade and modification of existing roundabout to reduce the number of vehicular arms from five to four; pedestrian and cycle access from Coolamber Drive and Coolamber Road; an internal access road connecting the new junction, the approved school development (Reg. Ref. SD23A/0336) and the residential area of the site, including boundary treatments; and a single-span precast concrete portal structure crossing the Coolmine Stream.

- **Associated site services**, including ESB substations and switch rooms, public lighting, site drainage works, water supply and foul drainage infrastructure, including a pumping station, Sustainable Drainage Systems (SuDS) features, and all associated site development works above and below ground.

- In addition to the above playing facilities **landscaping works**, including: 11,763 sq.m of public open space incorporating formal and informal play areas; pedestrian and cycle routes throughout the development connecting to existing routes within the park and adjoining links; 1,040 sq.m of communal open space; private open space serving the proposed residential units; implementation of protection measures of existing ecology set out in appended woodland management plan, and EIAR. Landscaping will also include replacement planting, enhancements to riparian corridors and all protection and mitigation measures set out in the proposal and associated boundary treatments.

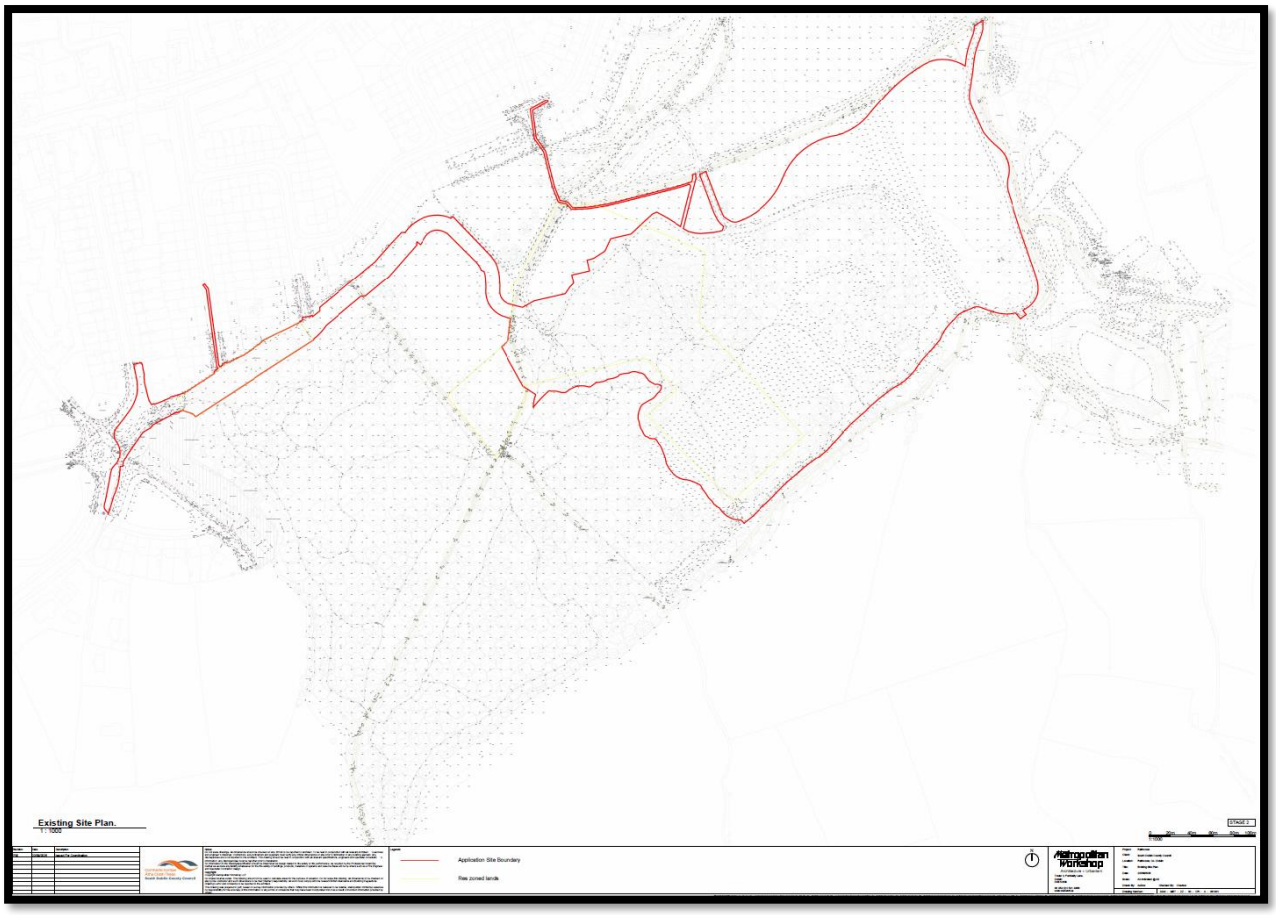


Figure 2-1: Site Layout (Source: Metropolitan Workshop)

3 Construction Phase

This section describes the construction phase of the Proposed Development and should be read in conjunction with the outline Construction Traffic Management Plan (oCTMP) submitted with the planning application. The details set out below are preliminary and are provided for the purposes of the environmental assessment. A refined CEMP will be prepared by the appointed Contractor to implement the mitigation measures set out in this document, within which these details will be confirmed and updated as required prior to works commencing on Site.

3.1 Construction Programme

It is envisaged that the construction phase will span approximately two years, from June 2027 to May 2029. On-site construction is expected to begin in January 2028 and to complete in May 2029, with handover expected to be completed in 2030. The construction programme is expected to require up to two years to complete from occupation of the site.

Given the nature of the project and the need for flexibility to respond to external factors the development phases are indicative.

3.2 Construction Compounds

The site establishment works will be carried out by the appointed Contractor. The Main Contractor will identify a suitable location, of sufficient size and suitable for the majority of the works, for a site compound upon appointment and will construct the compound as part of the enabling works. The compound may be used as material staging areas, temporary car parking for construction workers, site offices and huts, welfare facilities for workers (including changing rooms and lockers), and/or the storage of plant and equipment. These locations are indicative and may be subject to change as the scheme is built out.

The Main Contractor will propose a designated parking area to cater for the cars and vans of staff in order to minimise disruption to local amenities and parking facilities, and a safe and secure pedestrian walkway will be provided from the car park to the site compound.

Temporary hoarding and fencing will be installed to secure the site and, where required, to minimise nuisance effects such as noise emissions, visual impact and dust. Hoarding will be established around the site construction area, where required, before any significant construction activity takes place in accordance with the required specifications as defined by the Main Contractor.

3.3 Working Hours/Periods

For the duration of the construction programme, the working hours will likely be restricted to times as follows, although these are subject to approval:

- Monday to Fridays – 07:00 to 19:00.
- Saturday – 08:00 to 17:00.
- Sunday and Public Holidays – no activity onsite.

Working outside the normal hours would require advance agreement between the Contractor and SDCC. The advanced consent should include what activity is being applied for, how long it will take and what equipment will be used. This should be submitted a minimum of five working days in advance of the works taking place. Night-time works are not generally envisaged.

3.4 Construction Traffic

All construction activities will be governed by a Construction Traffic Management Plan (CTMP) developed by the Main Contractor, the details of which will be agreed with SDCC's Roads Department prior to the commencement of the construction phase. The principal objective of the CTMP is to ensure that the impacts of all building activities generated during the construction phase are fully considered and proactively managed and programmed. This plan will contain details of the intended construction practice for the development, including:

- The location of the site and materials compound(s), including area(s) identified for the storage of construction refuse.
- The location of areas for construction site offices and staff facilities.
- Details of site security fencing and hoardings.
- Details of on-site car parking facilities for site workers during the course of construction.
- Details of the timing and routing of construction traffic to and from the construction site and associated directional signage.
- Measures to prevent the spillage or deposit of clay, rubble or other debris on the public road network.
- Details of appropriate mitigation measures for noise, dust and vibration, and the monitoring of such levels.
- No parking, unloading or blockages on access routes, with any such vehicles immediately requested to move to avoid impeding works.
- Adherence by on-site contractors to the overall traffic management measures for the internal road network, from the preferred construction traffic entrance road to their site.

An oCTMP has been prepared and provides preliminary information regarding the management of construction traffic for the Proposed Development.

3.5 Resource Waste Management Plan

A Planning Stage Resource and Waste Management Plan (Planning RWMP) has been prepared as part of the planning application. The Contractor's RWMP will be developed by the appointed Contractor into a detailed Resource and Waste Management Plan (RWMP) prior to the commencement of construction. The document has been prepared in accordance with best practice guidelines. As a predominantly greenfield site, the Proposed Development will give rise principally to construction waste, together with excavated material arising from site clearance and earthworks. Given the scale of the development and the volumes of material that will be generated during construction, it is imperative that waste management at the site is tightly controlled and has the least possible impact on the surrounding environment, which comprises established residential neighbourhoods, Rathcoole Park and the adjoining school lands.

The purpose of the RWMP is to ensure that the storage and movement of waste within the development takes place in a manner that complies with relevant legislation and has a minimal impact on nearby residential and amenity areas, and to ensure that, where prevention is not possible, the maximum reuse, recycling and recovery of waste is achieved, with diversion from landfill wherever possible. All construction waste materials will be managed and stored in accordance with the provisions of the RWMP.

As a primary measure, waste generation will be avoided where possible by ensuring that an excess supply of building materials is not delivered to the site and that only the minimum materials required to meet the construction schedule are held on-site. Consistent with the earthworks strategy for the Proposed Development, suitable excavated material will be reused on-site where practicable for backfill, regrading and landscaping, while surplus material will be managed in accordance with the Contractor's RWMP. Topsoil will be retained and reused on-site where suitable.

3.6 Construction Health and Safety

The Main Contractor is required to provide a best practice working environment for all employees involved in the construction of the Proposed Development. This includes a responsibility to take into account all relevant statutory laws and guidelines.

The primary aim of planning for safety on this site is to ensure the safety of people involved in and affected by the development. This includes pedestrians, road users, neighbouring residents, site staff and visitors to the site. All Contractors must progress their works with reasonable skill, care and diligence and must, at all times, proactively manage the works in a manner most likely to ensure the safety, health and welfare of those carrying out the construction works. Contractors are further required to ensure that, as a minimum, all aspects of their works and project facilities comply with legislation, good industry practice and all necessary consents.

Health and safety requirements will be further expanded and developed within the Contractor's CEMP, which is required to be prepared prior to the commencement of works on site.

4 Survey and Monitoring Requirements

It will be the Contractor's responsibility to ensure a hierarchy of environmental impact protection, reduction and mitigation is applied and adhered to on-site throughout the Proposed Development construction phase.

4.1 Surveys

Pre-construction surveys for protected species will be undertaken by a suitably experienced Ecologist no more than 3 months before construction works (including vegetation clearance or creation of compounds) commence, or, where relevant, within the appropriate preceding season. Surveys will include badger and checks for Irish hare, Irish stoat, pygmy shrew and hedgehog.

The Contractor shall ensure all required pre-construction surveys are carried out prior to commencement of works and that the Contractor's CEMP is updated with any mitigation or monitoring measures identified within the survey report.

4.2 Monitoring

It will be the responsibility of the Contractor to prepare and implement a monitoring schedule throughout the construction phase, as specified in the planning conditions.

The monitoring schedule will incorporate the monitoring requirements identified in the EIAR and relevant environmental management plans, including, as applicable, ecological monitoring, surface water quality and groundwater monitoring, dust, noise and vibration monitoring, and monitoring associated with the management of soils, waste and invasive species.

5 Site Logistics

The Contractor will be responsible for the overall site management during the proposed works. The Contractor will be required to submit a site layout plan that will indicate the site perimeter, the proposed details of site hoarding, site security, and gate system along with the proposed location of the site compound, storage areas, etc.

This section sets out a number of areas which the Contractor will be required to address during the works.

5.1 Site Security and Hoarding

The Contractor will be responsible for site security and will ensure that the site and site compound are adequately secured at all times.

All personnel/visitors will be required to sign-in and sign-out at the Contractor's site office. It will be the responsibility of the Contractor to ensure that a full, intact, and impenetrable site boundary is maintained at all times, and that all people entering and exiting the site do so with expressed and recorded granted permission.

The Contractor will be required to apply adequate security measures on this project to exclude unauthorised persons from the site, including members of the public.

Site hoarding and barriers will prevent unauthorised access to each works area. A minimum 2.4 m high hoarding is to be provided around working areas. Heras type fencing will be used on short term site boundaries where appropriate to suit the works. The site compound area will be fenced to deter unauthorised access. The Contractor must regularly inspect and maintain the condition of the hoarding throughout the duration of the contract.

Controlled access points to the site, in the form of gates or doors/turnstiles, will be kept locked at any time that these areas are not monitored (e.g. outside of working hours). During working hours, access to the site will be controlled by the Contractor. Only authorised personnel are to be permitted on site. All personnel working on site must have a valid Safe Pass card and be inducted by the Contractor with regard to site-specific information.

The external hoarding and walkways must be maintained in good condition during the construction period. The external hoardings and walkways must not obstruct any drainage, surface water channels or traffic signals, signs, or lights.

5.2 Signage

The Contractor will be responsible for the erection of all appropriate site, safety, road and traffic signage including:

- General warnings, keep out and safety signage to be displayed externally onsite boundary.
- General site warnings and safety signage to be displayed within the site boundary.
- Identification of vehicle and pedestrian access points.
- Location and direction of site parking, site offices, first aid boxes and equipment.
- Construction site and traffic warning signage on public roads approaching the site entrance.

All signage used will meet the requirements of the Safety, Health & Welfare at Work (General Applications) Regulations 2007 to 2020 and Chapter 8 Traffic Signs Manual.

5.3 Site Safety

The Contractor will be required to apply safety measures and provide safety awareness training to ensure the safe construction, access, and egress of the site. All construction works will be carried out under appropriate supervision. Works will be carried out by experienced contractors using appropriate and established safe methods of construction. All requirements arising from statutory obligations including the Safety, Health and Welfare at Work Act and associated regulations will be met in full. The Contractor must also comply with all SDCC guidelines and procedures.

The Contractor shall ensure the health, safety and welfare of all personnel and members of the public is protected and adequate safety measures are in place.

5.4 Site Lighting

During the winter months, temporary site lighting may be necessary so that construction works can be carried out in a safe manner. Any use of site lighting will be designed to prevent any nuisance to neighbouring residents or road traffic and used primarily for reasons of health and safety or security. Site lighting should be located and aligned so as not to intrude into neighbouring or residential properties, on sensitive areas, or constitute a road hazard.

The Contractor will ensure that:

- Nearby resident's welfare is not adversely affected by light pollution from the site.
- Lighting will be minimised wherever possible in terms of number and power (lux level) of lights to reduce light spill onto vegetation, retained habitats and other ecologically sensitive areas.
- An energy efficient lighting approach is adopted.
- Lighting does not pose a hazard.
- Plant which is not in use is switched off and that lighting is used only when necessary (such as through the use of timers and sensors).

5.5 Site Set-up

A construction site compound will be utilised throughout the duration of the proposed works. The Main Contractor will identify a suitable location for the site compound upon appointment and will submit a site layout plan detailing its proposed location and layout.

The compound will consist of the following elements:

- Site office/Cabins/Contractor personnel and welfare facilities (canteen and temporary toilets/ sanitary facilities):
  - The site compound and access road will be formed on compacted engineering stone fill for the duration of the works. Once the works are completed, the engineered stone fill will be removed, and the land will be reinstated to its original condition or as per the works requirements (e.g. as per landscaping plan if applicable in the location of the compound).
  - Any discharges from temporary welfare facilities will be connected to a sealed holding tank to be emptied and disposed of off-site by a licenced contractor to an approved facility, located in the wider South Dublin area. Alternatively, a temporary connection may be made to the existing foul sewer subject to Uisce Éireann agreement.
  - Permanent water supply infrastructure will be provided as part of the Proposed Development through new watermain connections to the existing public water supply network, as described in Chapter 02: Description of Development of the EIAR. Temporary water supply arrangements for the construction compound will be confirmed by the appointed Contractor prior to commencement of construction and incorporated into the Contractor's CEMP.

- Access and parking - All construction workers/site staff/visitors will be required to use the designated access/egress routes only.
- Security lighting will be directional and cowled. The Contractor will regularly review security lighting in this regard, to inform adaptive management if necessary and report the monitoring findings regularly to SDCC.
- Laydown and contractor storage/stockpile/plant and fuel depot area - storage of fuel and refuelling will be undertaken within bunded areas.

5.6 Site Housekeeping

Good housekeeping is an important part of good environmental practice and helps to maintain a more efficient and safer site. The site should be tidy, secure, and have clear access routes that are well signposted. The appearance of a tidy, well-managed site can reduce the likelihood of theft, vandalism, complaints, and nuisance or hazards affecting surrounding residents, amenity areas and other sensitive receptors.

As outlined in the fifth edition of Construction Industry Research and Information Associations (CIRIA's) *'Environmental Good Practice on Site Guide' (C811)* when considering good housekeeping, the following steps can be implemented:

- Adequately plan the site with designated areas for materials and waste storage.
- Segregate and label different types of waste as it is produced and arrange frequent removal.
- Keep the site tidy and clean.
- Ensure that no wind-blown litter or debris leaves the site, use covered skips to prevent wind-blown litter.
- Keep hoarding tidy – repair and repaint when necessary, removing any fly posting or graffiti.
- Frequently brush-clean wheel washing facilities (where applicable) and keep the site entrances/ access route to the site clean from site-derived materials.
- Keep roads free from mud by using a road sweeper.
- Ensure the site is secure.

6 Environmental Management

The Contractor will be required to implement an appropriate Environmental Management System for the construction works and mitigate the impact of the construction works on the environment.

6.1 Overview

A detailed Contractor's CEMP will be prepared by the Contractor prior to works commencing and submitted to SDCC in accordance with the requirements of the planning permission. It shall be prepared in sufficient detail to describe the framework of the Contractor's proposed management, control, and mitigation strategy for each environmental aspect with the consideration of relevant adjacent developments. The Contractor's CEMP should include, where required, specific Method Statements for specific works (e.g. working in or near watercourses) and these should be included in an Appendix to the CEMP.

The Contractor's CEMP shall be developed/updated as necessary prior to commencement of works on site and periodically during construction as directed by the Client or the Client's Agent.

It is the Contractor's responsibility to ensure all the relevant current legislation and guidance is adhered to during construction.

6.2 Roles and Responsibilities

The Contractor's CEMP will specify environmental responsibilities for the Proposed Development construction based upon the details presented in Table 6-1.

Table 6-1: Indicative Key Contractor Team Roles & Responsibilities (to be updated by the Contractor)

Role	Responsibilities
Contractor's Project Director	• Assign specific environmental duties to competent members of the Contractor's Team. • Identify the environmental training needs of personnel under their control and arrange appropriate training programmes and ensure records are being maintained. • Ensure that significant environmental aspects identified for the Project are managed. • Promote the continual improvement of environmental performance.
Contractor's Environmental Manager (CEM)	• Develop, maintain, and audit the CEMP (and supporting documents/plans) to ensure all aspects, impacts and statutory requirements etc. are reflected in the CEMP. • Develop and implement a programme of regular project environmental inspections, monitoring, recording, and reporting in accordance with procedures set out in the CEMP. • Ensure that the works are constructed in line with the CEMP. • Liaise with statutory authorities. • Attend regular construction meetings to ensure environmental issues are discussed and addressed by the Contractor's Team. • Liaise with relevant authorities/environmental bodies and the local community as required. • Comply with duties under relevant legislation and company procedures in relation to environmental incident investigation and reporting. • Provide support and training to the workforce with regard to understanding environmental aspects, impacts, regulatory requirements, best practice, constraints, and methods of working. • Appoint environmental specialists as required. • Ensure identified environmental specialists are in attendance onsite as required by the CEMP. • Review environmental non-conformance reports to identify any underlying issues or patterns to identify suitable ameliorative measures.
Contractor's Project Manager	• Ensure that the CEMP is produced, maintained, implemented, and distributed to all relevant parties. • Provide an on-call 24hr resource as a first point of contact for environmental issues / incidents. • Monitor the completion of corrective actions by the Site Manager and act as required to expedite completion. • Provide regular reports to the Client and relevant authorities (where required) on environmental performance, including details of any identified incidents or non-conformances and corrective actions. • Ensure that all personnel for whom they are responsible are aware of the CEMP and implement the relevant requirements.

Role	Responsibilities
	• Evaluate the competence of all subcontractors and suppliers and ensure that they are made aware of and comply with the CEMP and associated procedures. • Establish a consultation and communication system with all relevant stakeholders and interested parties associated with the Proposed Development, including employees, partners, sub-contractors, designers and third parties, etc., where relevant.
Site Manager	• Ensure that all personnel undergo suitable and sufficient environmental induction before starting work on the project, and periodic refresher environmental awareness training throughout the construction phase. • Ensure staff attend the appropriate environmental courses that are organised by the CEM. Ensure the CEM is maintaining records of training delivered to site staff. • Monitor the performance of personnel and activities under their control and ensure arrangements are in place so that all personnel can work in a manner which minimises risks to them and to the environment. • Undertake a programme of regular environmental inspections in liaison with the CEM. • Complete any corrective actions identified by the CEM and provide status reports as required to the Client and the Council. • Assist and support the CEM and statutory bodies in the investigation of any incidents. • Notify the CEM of all environmental issues or incidents arising over the course of operations.
Appointed Ecological and Environmental Specialists	• Attend site as required to monitor the protection of assets in accordance with the requirements of relevant legislation, planning conditions, the construction contract, and the CEMP. • Identify potential risks to wildlife and develop suitable control measures. • Provide status reports and updates to the CEM in the completion of their activities. • Provide advice about ecological and environmental and issues during the construction of a development including advice on protected species, pollution, surface water management, material management, air quality, and noise.

6.3 Environmental Training

Personnel and sub-contractors working on environmentally sensitive sites shall be provided with environmental training to achieve a level of awareness and competence appropriate to their assigned activities. Targeted environmental awareness training may be provided to individuals or groups of workers with a specific authority or responsibility for environmental management or those undertaking an activity with a high risk of environmental impact. Environmental training will be recorded, and the records shall be available for inspection upon request.

Table 6-2 summarises the environmental training that will be required to be undertaken as a minimum as part of the works.

Table 6-2: Summary of Training Requirements

Training	Target	Frequency	Record
Site Induction	All Site Personnel	Prior to working on-site	Induction record form
Daily Pre-working Briefings	All Site Personnel	Prior to commencing daily works	Daily Pre-working Briefings Attendance Form
Toolbox Talk	Personnel relevant to the topic	As required prior to specific work activity potentially affecting an environmental receptor	Toolbox Record Form
Spill Response Training	All Site Personnel	Monthly	Meeting Minutes Record
Project Management meeting	Project Managers, Engineers and Site Supervisor	Monthly	Meeting Minutes Record
Environmental Training	Personnel relevant to the activity	Quarterly or more frequently as required prior to specific work activity potentially affecting an environmental receptor	Training Attendance Form
Environmental Bulletin	All company and project personnel	As required	Environmental Bulletin Form

6.3.1 Site Inductions

A site induction shall be attended by all personnel working on the project. Such personnel attending will also complete a site induction record acknowledging attendance and confirming that they understand and agree to comply with the requirements of the site. Furthermore, certificates of competency, licences and other qualifications as deemed necessary by the Contractor shall be copied and documented. The environmental induction will run concurrently with the site induction and safety awareness training.

The induction shall include the following information as a minimum:

- Overview of the objectives of the CEMP.
- Awareness in relation to the environmental risk associated with the project and methods of avoiding environmental risks as identified within the CEMP, the planning conditions, and any other relevant plans, documents, or reports.
- Awareness of roles and individual responsibilities and environmental constraints to specific jobs.
- Location of any sensitive receptors on or adjacent to the site.
- Location of habitats and species to be protected during construction, how activities may affect them and methods necessary to avoid impacts, controls to minimise noise and the importance of pollution prevention measures to protect any nearby sensitive receptors.
- Environmental Emergency Response Procedures, the storage locations of items such as spill kits onsite and key contact persons for environmental incident reporting.

6.3.2 Daily Pre-work Briefings, Toolbox Talks and Training

Daily briefings are required to be carried out at the commencement of each shift by all supervisors to ensure environmental issues specific to the work being performed are being addressed. All personnel involved with site works must be briefed and signed onto the daily briefing form prior to commencing activities.

Toolbox talks may be conducted prior to the start of specific work elements where there is a substantial environmental risk or when required to reinforce ongoing environmental issues. Any toolbox talk training conducted will ensure that relevant information is communicated to the workforce and that feedback can be provided on issues of interest or concern.

6.4 Environmental Emergency Response Procedures

The Contractor's CEMP will include site-specific Environmental Emergency Response Procedures. These will include a Pollution Incident Response Plan (PIRP) setting out the actions to be taken in the event of a leak or spill, and an Environmental Emergency Plan (ERP) setting out the actions to be taken in the event of a flood, in accordance with the mitigation requirements identified in Chapter 07: Land, Soils and Geology and Chapter 08: Water and Hydrology of the EIAR. This shall cover topics such as pollution prevention, environmental incident actions and procedures, reporting requirements, key contact persons, site evacuation procedures, types of response equipment (e.g. spill kits) and their correct use and disposal.

6.5 Consents and Licences

All statutory consents and licences required to commence onsite construction activities shall be obtained ahead of works commencing, allowing for the appropriate notice period. It shall be the responsibility of the Contractor to ensure all consents and licences required are in place prior to the start of construction.

These shall include, but are not limited to:

- Site notices.
- Construction commencement notices.
- Abstraction and/or discharge licenses, where required.

- Road opening/closure licences.

These may also include licences from the National Parks & Wildlife Service (NPWS) such as Disturbance/Derogation Licences, if required.

6.6 Monitoring and Inspections

Environmental monitoring and inspection activities relevant to the construction phase shall be carried out throughout the construction works. The frequency of these monitoring and inspection activities shall be agreed in advance of construction with the Client and should be in line with planning conditions. Additional monitoring and inspection shall take place outside of the agreed frequency where an incident occurs or where activities that can have a significant environmental impact are occurring.

Regular site inspections shall be undertaken by the CEM to monitor compliance with the CEMP and record inspection results. It is anticipated that a daily visual check and a detailed weekly check shall be carried out and these records will be available to Client upon request.

During the construction phase the monitoring measures specified in this oCEMP shall be implemented and may include the following:

- Regular inspection of surface water run-off and sediments controls.
- Regular inspection of construction/mitigation measures shall be undertaken, e.g. concrete pouring, refuelling etc.
- Dust monitoring and monitoring of dust control measures.
- Surface water monitoring as required by Chapter 08: Water and Hydrology of the EIAR.
- Daily monitoring of general housekeeping onsite.

6.7 Environmental Auditing

Planned and documented audits (including waste and environmental audits) aimed at evaluating the conformance of the Proposed Development shall be carried out throughout the Proposed Development construction phase. The personnel proposed to undertake and, the frequency of the audits shall be agreed in advance with the Client. As a minimum this will include:

- Site walkover with results presented at the Contractors' regular meetings with the Client.
- Dedicated waste audits shall be regularly carried out during the works. All waste types and records would be available for review upon request. (Also see the standalone Outline Resource and Waste Management Plan prepared for the project).
- The Contractor's CEMP shall be reviewed every six months at a minimum and updated in line with current guidance and legislation.

6.8 Complaints

A Complaints Register for internal communication and for receiving, documenting, and responding to environmental complaints from external parties shall be established and will be maintained.

The following information must be taken as a minimum when a complaint is received (telephone calls, emails, and letters of complaint etc.):

- Date and time of the complaint.
- Name of complainant (if provided).
- Nature of complaint.
- Details of any remediation actions taken.

All complaints received from external sources and incidents must be reported to the CEMP Coordinator and the appropriate site personnel (e.g. Senior Management). Complaints must be dealt with in a timely manner and reported to the Client.

7 Environmental Considerations and Mitigation

7.1 Population and Human Health

This section prescribes the mitigation measures necessary for the Contractor to minimise impacts upon the local community, residents and landowners directly affected by the Proposed Development.

7.1.1 Mitigation Measures

In order to protect the amenities enjoyed by nearby residents, premises and employees, the Contractor will prepare and implement a project and site-specific CEMP prior to the commencement of construction. Construction traffic will be managed in accordance with the Contractor's detailed CTMP, developed from the oCTMP submitted with the planning application. Construction resource and waste management will be undertaken in accordance with the Contractor's RWMP, developed from the oRWMP submitted with the planning application. These measures, together with the topic-specific mitigation measures identified in the EIAR and incorporated into this oCEMP, will minimise construction-related disturbance, nuisance, severance and traffic-related effects on the local population.

7.2 Biodiversity

7.2.1 Mitigation Measures

7.2.2.1 Habitats

Habitat Compensation

The Proposed Development includes approximately 1.47ha of new planting, in addition to retention of existing vegetation including some of the Lowland Meadow, hedgerows, and vegetation along the Camac corridor. The approximate proposed landscape areas are detailed in Table 7-2.

Table 7-2: Approximate Proposed Landscape Areas

Landscape Area	Details
Protected hay meadow to be retained	0.65 ha
Existing hedgerows to be retained	0.09 ha
Existing Camac corridor	0.01 ha
Existing riparian vegetation	0.13 ha
Amenity lawn	5.01 ha
Meadow	0.63 ha
Mown grass strip	0.21 ha
Rain garden (SUDS)	0.20 ha
Attenuation pond (SUDS)	0.02 ha
Swales (SUDS)	0.42 ha
Green roofs (SUDS)	
Privacy planting	0.06 ha
Open space planting (shrubs and groundcover)	0.13 ha
Raised planters to communal gardens	<0.01 ha
Native hedgerow to house boundary	0.37 km

Landscape Area	Details
Native hedge with post and panel fence	0.49 km
Existing trees to be retained	11 no.
Proposed parkland trees	171 no.
Proposed street trees	71 no.
Proposed feature trees	90 no.

The proposed landscape areas comprise a range of types of that could provide ecological value including meadow planting, SUDS, shrubs, hedgerows, and trees. It is proposed that all species used are of local provenance, i.e. sourced from the island of Ireland. It is recommended that in general, cultivars and ornamental species are avoided in semi-natural planting, and reputable supplies should be used.

Where areas of Annex I Lowland Meadow are lost, it is proposed that grassland is saved as sods/turves that can be translocated to new meadow areas, however it is acknowledged that this may not be appropriate depending on the timescales between grassland removal and new meadow planting. However, this will be done for the construction of the pipeline required through the existing meadow north of the Site. The existing Lowland Meadow has a species-rich seedbank, notably containing several species of orchids which require specific soil conditions (e.g. mycorrhizal fungi in the soil). Sod translocation is an effective method for establishing species-rich grassland, whereby the uppermost soil layer (which contains vascular plants, ground mosses and lichens, microorganisms, and soil biota) is transferred to new receptor sites (Magnes and Sendl, 2016). Alternatively, dependent on time of year, it may also be possible to harvest seeds from existing areas before they are lost, to also be reused in the new areas.

During excavation of the trench for the pipeline, works will be carried out in such a way to ensure maximum habitat retention. This will comprise excavation of sods/turfs, which shall be cut, set aside, and reinstated. Trenching will be carried out in small sections, therefore, reinstatement of sods/turfs will take place on the same or next day. Appropriate implementation of cutting sods/turfs will ensure that habitat damage related to the pipeline construction is minimised, however, it is anticipated that habitat damage during these works will be minimal and that habitat will not suffer permanent damage.

For translocation of sods into the new meadows, sods will be stored in an appropriate area of the Site until they are ready to be reinstated. Appropriate management will be required, for example, keeping unrolled and watered. Following translocation, provided an appropriate management regime is followed, it is anticipated that transplanted vegetation would begin to spread to the surrounding grassland.

It is recommended that meadow/grassland habitats within the Site are managed in an ecologically sensitive way, ideally in a similar way to existing Lowland Meadow. Inclusion of yellow-rattle can reduce the dominance of grass species and increase the abundance of wildflowers. Again, if needed, seeds of perennial species that are locally sourced should be used, and annual seed mixes should be avoided. However, where soils are reused from the Site, seeding may not be needed as part of long-term management.

Habitat Protection

During construction, the Environmental Clerk of Works (ECoW) will ensure that all site personnel are made aware of the various habitats present onsite and how construction can be adapted to reduce impacts. This may be included as part of toolbox talks during site inductions. In addition, the ECoW will ensure site personnel are aware of any relevant mitigation and ensure that mitigation is carried out appropriately.

Whilst there is a range of measures within the CEMP for protection of habitats, it is prudent to ensure that the retained Annex I Alluvial Woodland and Lowland Meadow habitats are appropriately protected during construction works. Although the removal of small areas of Annex I habitats Alluvial Woodland and Lowland Meadow are required to facilitate the Proposed Development, clearance of sensitive habitats will be kept to a minimum within the site as far as possible, to ensure the minimum required area is lost. Otherwise, construction works (including movement of plant, storage of plant and materials, and haulage) will not take place within any parcel of Annex I habitat. For the avoidance of doubt, the boundaries of these habitats will be delimited (fenced off and signposted) prior to the commencement of construction, and the presence of the Annex I habitats, along with proactive avoidance, will be incorporated into construction toolbox talks.

Potential impacts related to spread of invasive species to and within the site during construction will be mitigated by the implementation of an Invasive Species Management Plan (ISMP). In addition, a programme of long-term management of invasive species will be implemented, to ensure no spread into habitats (and particularly sensitive habitats) in the future.

7.2.2.2 Invasive Species

Due to the presence of Japanese knotweed, a Scheduled invasive species, and presence of several other non-Scheduled invasive species, such as cherry laurel, a non-Scheduled invasive species of High risk of impact within the site, an ISMP will be produced by the ECoW/ EnCoW to mitigate risks and prevent spread of invasive species. The appointed ECoW will oversee implementation of appropriate mitigation which is likely to include exclusion zones. Reference to the ISMP, including associated roles and responsibilities, will be clearly detailed in the final CEMP prepared by the appointed Contractor.

There are no major construction works required in proximity to Japanese knotweed. The Japanese knotweed is adjacent to the well-worn trail along the southern site boundary, which is proposed to be formalised by installing a resin bound path. As this may include small amounts of excavation to prepare the path, it is considered the most likely actions for Japanese knotweed will be prevention of spread, i.e. the implementation of biosecurity measures, and detailed method statements for works within 4 m of both stands. 4 m is a precautionary buffer to account for Japanese knotweed rhizome in the soils, though less than 2.5 m is more a more usual extent (Fennell *et al*. 2018).

Full details of management actions for Japanese knotweed will be determined as part of the ISMP, once all the specific details of construction are known. The following measures will be included in the ISMP as a minimum:

- All Contractors on site will receive training in Japanese knotweed identification and appropriate site practices for biosecurity. This will include their legal obligations, including in relation to prevention of spread. Training will be given on Day 1 and will be included in the site induction. This will be repeated as necessary during the construction phase, e.g. for new personnel. Posters highlighting the key features of the plants should be displayed in all communal areas, if appropriate.
- Exclusion zones around both stands of Japanese knotweed will be set up. These may require to be retained during the construction phase:
  - Isolate both stands and delimit an exclusion zone with secure fencing and warning signs. The exclusion zones should comprise at least 4 m from each stand.
  - The condition and upkeep of exclusion areas, including fencing, will be checked and repaired, if necessary, during the construction phase and fencing will be removed upon completion of construction. N.B. Appropriate signage should be retained post-construction to warn recreational site users and (if relevant) maintenance staff of the presence of Japanese knotweed.
- All new topsoil and materials brought onto site will be checked prior to accepting. There will be no stockpiling or storage of equipment, plant, or materials within 10 m of any stand of Japanese knotweed.
- If relevant, and unless otherwise agreed, no soil contaminated with invasive plant material will be removed from site. Contaminated soil will not be used for any construction activities.

In addition to biosecurity, a programme of herbicide treatment should be implemented, both during construction and operation. Application of a glyphosate-based herbicide is recommended for the construction phase treatment of Japanese knotweed. Foliar application (spot spray) is recommended as it has a targeted effect. Spot spraying, given the size of the infestations, rather than a more generalised spraying technique, has been proposed to reduce the effects of application on the surrounding environment. Glyphosate-based herbicides are non-selective and therefore generalised spraying will compromise other vegetation in the locality, negatively impacting other grasses and forbs of benefit to wildlife and reducing biodiversity.

The most effective time to apply glyphosate is from August / September (but can be applied earlier and later). Both stands should be treated in August / September annually for the duration of construction, and under suitable weather conditions. Treatment of Japanese knotweed must be carried out by a suitably experienced Contractor who holds the appropriate qualifications. In addition, treatment should be supervised by the appointed ECoW or other suitably experienced ecologist, who can advise on reducing damage to non-target species, and advise target species for treatment actions.

7.2.2.3 Construction Phase Lighting

All faunal species, particularly nocturnal mammals such as bats and badgers, can be negatively affected by artificial lighting. The extent or requirement for artificial lighting during construction is currently unknown. Whilst there may be limited or no requirement for lighting based on the proposed working hours of 07:00-19:00, the following mitigation will be implemented on a precautionary basis, and for the avoidance of doubt, to safeguard faunal species from the negative effects of lighting during the construction phase of the Proposed Development. These measures have been determined with reference to Guidance Note GN08/23 Bats and Artificial Lighting at Night (ILP and BCT, 2023).

- Any artificial lighting that may be required for construction works will be directional to avoid or minimise light spill beyond immediate works areas.
- Light spill must be minimised on linear or habitat features (e.g. woodland, hedgerows, trees, boundary vegetation and watercourses) and should not be subject to light spill greater than one lux on such habitat features.
- Lighting must be minimised wherever possible in terms of number of lights and the power of the lights (lux level).
- All luminaires should lack UV elements when manufactured. Metal halide compact fluorescent sources should not be used.
- Light-Emitting Diode (LED) luminaires will be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability. LED lighting should comprise a warm white light source (2700K or lower), to reduce blue light component.
- Any bat roost boxes that may be erected as enhancement will not be placed where they would be illuminated by new lighting.
- Directional lighting, facing away from surrounding vegetation should be used. Accessories such as baffles, hoods, or louvres can be used to further reduce light spill and direct light only where it is required. However, it must be noted that due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely.
- Lighting will be turned off when not in use except to meet the minimum requirements for Health and Safety.

7.2.2.4 Bat Roost Boxes

To enhance the site for roosting bats, artificial refugia are proposed. It is proposed that 6 bat roost boxes are mounted on mature trees or incorporated into suitable buildings, within dark areas of that site that will not be subject to light spill, for example, along the east or southern boundaries. Bat boxes should be positioned to face south, southeast, or southwest and at heights no less than 4 m above ground level. Erection should be supervised by the ECoW or other appropriately experienced bat ecologist. Models suitable for pipistrelle species are recommended; specific models should be determined based on availability at the time of purchase.

7.2.2.5 Badger Setts

National Roads Authority (NRA) (2005) guidance for badger setts advise that badger tunnels can extend over 20 m from a sett entrance, and as such the following distances are relevant:

- No heavy machinery should be used within 30 m of badger setts (unless carried out under licence).
- Lighter machinery (generally wheeled vehicles) should not be used within 20 m of a sett entrance.
- Light work, such as digging by hand or scrub clearance should not take place within 10 m of sett entrances.
- During the breeding season (December to June inclusive), none of the above works should be undertaken within 50 m of active setts.

Setts B01, B02, and B05 are all within 15 m of the site boundary and could therefore be impacted during the works required to construct the GAA and soccer pitches and the new path along the site boundary. Therefore, it is likely that there could be impacts to these three setts.

None of these setts had any recent evidence of badger use. It is considered likely that these setts will require closure (very likely to be temporary) whilst construction works are ongoing within 30 m of the entrances. The requirements for how the setts are closed (including the requirements for derogation licensing) will depend on the results of preconstruction surveys, which will advise if recent occupation by badger is evident. All sett closure works will be carried out by the ECoW (or suitably experienced ecologist), which will include (where necessary) licence applications, and will follow NRA (2005) guidance.

7.2.2.6 Mammal Preconstruction Surveys

Even where the effects on protected species are predicted to be Not Significant, the refuges of protected species (including those which have potential to become present in the interim), and the animals themselves, are nevertheless subject to legal protection regardless of the importance of individual refuges or populations. Additionally, protected species may well have established new refuges and/or the distribution of the species within the site and likely Zone of Influence (ZoI) of the Proposed Development may have changed in the interim between the baseline surveys and construction commencing.

To comply with protected species legislation, policy and best practice, preconstruction protected species surveys will be carried out no more than three months before construction works (including vegetation clearance or creation of compounds) commence (or if relevant, within the appropriate preceding season), to avoid project delays in the event that derogation licensing and additional associated mitigation is required (should protected species refuges be found that would be subject to damage, disturbance or obstruction by the works).

The surveys would cover protected species known to occur in the vicinity of the site, or for which there is a reasonable possibility of such species moving into this vicinity. This would comprise surveys for badger and checks for Irish hare, Irish stoat, pygmy shrew, and hedgehog. These surveys would follow standard guidance and would take place within the survey buffers as described in the Appendix A6-1 Relevant Supporting Information. Survey results will be reported and submitted to SDCC, the appointed Contractor, and any other relevant stakeholders.

All surveys will be carried out by a suitably experienced ecologist. This may be the appointed ECoW for the construction phase, if appropriate.

7.3 Land, Soils and Geology

7.3.1 Mitigation Measures

7.3.2.1 General Management

All project stakeholders have a responsibility to protect the environment. The appointed Contractor will comply with all national laws and regulations controlling pollution of the environment. Necessary precautions to prevent contamination of soil and groundwater with fuels, oils, bitumen, chemicals, or other harmful materials will be taken. All required permits and licences will be identified and planned before the start of the construction works.

All construction materials will be responsibly sourced, with assurances provided that goods and services are legitimately secured from legal and well-managed sources and from suppliers and contractors who can demonstrate responsible sourcing of their materials.

Periodic inspections of the construction works will be conducted to address issues including dust, litter, surface water, waste management and general housekeeping. These inspections will be conducted by the appointed contractor/dedicated environmental manager and will be documented and provided to the SDCC monthly. SDCC, or its appointed consultants, will also reserve the right to carry out audits, inspections, monitoring and/or spot checks of the works and any systems being implemented both on-site and off-site in connection with the works to ascertain whether they comply with the Contractor's CEMP. Audit findings in the form of Corrective Action Requests will be recorded and actioned.

All environmental observations, incidents and near-misses will be recorded and reported to the necessary stakeholders within 24-hours and the timeframe for close-out agreed at the outset of the Proposed Development between the Applicant and the contractor. Good practices will also be recorded.

7.3.2.2 Excavation, Stockpiling and Infilling

ExcavationThe Proposed Development will incorporate the reduce, reuse and recycle approach in terms of soil excavations on-site. Excavation earthworks will be limited to the removal of topsoil and shallow subsoils for the construction of foundations for buildings within the Site and for access roads. The absence of mapped outcrops of the Pollaphuca Formation within 1 km of the Site means that excavation of bedrock is not anticipated. Infill earthworks will be required for the importation and compaction of acceptable fill material to achieve the required engineering design and grades.

The extent of exposed ground will be minimised during construction to that necessary to facilitate progress of works, and any stockpiles will be covered to prevent the creation of contaminated run-off or dust.

Stockpiling

Temporary storage of excavated soil and imported soil/stone materials will be carefully managed in such a way as to prevent potential adverse effect on the receiving environment. Handling of materials, such as soils, will be kept to a minimum and materials will be stockpiled at minimum practicable height.

For reusable topsoil, a 2 m height limit will be used to prevent the soil compressing under its own weight. Other excavated materials of lower engineering quality can be stored in higher stockpiles.

Spoil and temporary stockpiles will be positioned in locations which are distant from drainage systems and away from areas subject to flooding, so as not to cause potential run off to soil and groundwater receptors. Where required, silt fencing will be deployed at the base of stockpiles when storing fine material, to prevent fine sediment runoff outside the designated area.

Excavated soil and stone that is surplus to requirements will be managed through the contractor's Resource and Waste Management Plan. The excavated soil will be tested for potential contaminants and waste acceptance criteria to determine whether it can be stockpiled on Site for future reuse; sent to a soil recovery facility; or disposed as inert, non-hazardous or hazardous waste to an appropriately-licensed waste facility.

Infilling

Where possible and where supported by analytical data confirming the absence of contamination, material excavated from the site will be reused to minimise the volume of imported fill required.

Where imported fill is required, the source will be carefully selected and vetted to ensure that it is of a reputable origin and that it is 'clean' (i.e. will not introduce contamination to the environment). Procurement procedures will be developed to ensure that aggregates are sourced from reputable suppliers who are vetted for their environmental management status, as well as regulatory and legal compliance.

If recycled aggregate is used as imported fill, rigorous chemical testing will be undertaken to confirm that it is 'clean' (i.e. will not introduce new contamination to the environment).

7.3.2.3 Dewatering

If, during the excavation works, either groundwater or surface water run-off enters the excavation, there will be a requirement to dewater the excavation. This will be achieved by pumping water from the excavation following silt mitigation measures either to the nearest watercourse or drain or to artificial recharge (re-infiltration) subject to monitoring of sediment, the contamination status of the water, compliance with the CEMP and an agreement with SDCC.

7.3.2.4 Accidental Spills and Leaks

To prevent spillages to ground of fuels or other liquid chemicals, and to prevent consequent soil or groundwater quality impacts, it will be necessary to adopt the following mitigation measures during the construction phase:

- Pollution prevention will be achieved with both physical and procedural measures. The Contractor shall comply with all national laws and regulations controlling pollution of the environment. Necessary precautions to prevent pollution occurring to ground of fuels, oils, chemicals, or other harmful materials shall be taken.

- The locations of refuelling, storage of oil/fuel, concrete mixing and washing areas are to be restricted to impermeable bunded areas with a minimum of 110% storage capacity and away from surface water. The location of the compound is not confirmed in the oCEMP - the Contractor will be required to submit a site layout plan which will detail the proposed location of the compound.
- Oil and fuel storage tanks will be bunded to the greater volume of either 110% of the capacity of the largest tank/container within the bunded area or to a volume of 25% of the total capacity of all the containers in a single bund. Drainage from the bunded area will be diverted for collection, monitoring and safe disposal.
- All containers within the bunded storage area will be clearly labelled, so that appropriate remedial action can be taken in the event of a spillage. When moving drums from the bunded storage area to locations within the site, a suitably sized spill pallet will be used for containing any spillages during transit.
- A spill response kit will be available onsite and accessible to all to control pollution incidents. These spill kits will contain absorbent pads, absorbent granules and methods of disposal of materials and used kit. These kits will be located at appropriate points around the project site which are considered to be at a higher risk of pollution (e.g. refuelling area and next to fuel tanks). Further spill kits and supplies will be in the stores within the sites, where replacements for used kits will be found. The spill kits will need to be regularly inspected and immediately replaced if used. Any used spill kit materials will be disposed of using a licensed hazardous waste contractor in accordance with relevant legalisation.
- Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles will be conducted by appropriately trained personnel and take place in designated areas, which will be away from surface water gullies or drains. There will be no refuelling allowed within 50 m of a watercourse.
- Where mobile fuel bowsers are used on the site, in the event of a machine requiring refuelling outside of the designated area, fuel will be transported in a mobile double skinned tank. Any flexible pipe, tap or valve will be fitted with a lock where it leaves the container and be locked shut when not in use. Each bowser will carry a spill kit, and each bowser operator will have spill response training.
- Pumps and generators used on the site will have integral drip trays where possible. All items of plant without an integral drip tray shall be stored over a portable drip tray. Drip trays shall be inspected and kept free of accumulated rainwater as necessary. Any oily water shall be disposed of at an appropriate licensed facility. Any cleaning/arisings from drip trays etc. to be disposed of as hazardous waste in accordance with EPA guidance and legislation.
- All plant and equipment shall be checked for leaks of fuel and lubricants before being allowed onto the site. The Contractor will allow for regular checks and maintenance as required.
- No discharge to existing infrastructure/watercourses/ground shall be permitted to take place without the appropriate consents or approvals.
- The Contractor will provide suitable pumps, settlement tanks and filters to filter all water being pumped/ discharged from excavations into existing drains. The Contractor will also take measures to ensure that runoff from open excavations does not enter the surrounding drainage system without being treated.
- Ditches and water streams will be clearly identified onsite and shown on method statements and site plans. The Contractor carrying out the works shall identify all watercourses, drains and potential conduits for silt-laden run-off and, where necessary, measures shall be taken to minimise direct sediment run-off from the working site into watercourses.

7.3.2.5 Use of Concrete and Lime

The risks from concrete works when constructing the Proposed Development will be managed and mitigated by the Contractor. A suitable risk assessment for wet concreting will be completed prior to works being carried out, which will include measures to prevent discharge of alkaline wastewaters or wash-water to the surface water drainage system or to the underlying subsoil, including:

- No concrete is laid during wet weather, if achievable, so that there is no risk of concrete being washed off the Site and into the surface water drains or nearest watercourse.

- Ready-mixed concrete will be brought to the Site by truck. A suitable risk assessment for wet concreting will be completed prior to the works being carried out which will include measures to prevent discharge of alkaline wastewaters or contaminated water to the underlying subsoil and groundwater.
- The pouring of concrete will take place within a designated area protected to prevent concrete runoff into the soil/groundwater media.
- Washout of concrete transporting vehicles will take place at an appropriate facility, off-site where possible. Alternatively, where wash out takes place onsite, it will be carried out in carefully managed on-site wash-out areas.

7.4 Water and Hydrology

7.4.1 Mitigation Measures

7.4.2.1 General Management

All project stakeholders have a responsibility to protect the environment. Periodic inspections of the construction works will be conducted to address issues including dust, litter, surface water, waste management and general housekeeping. These inspections will be conducted by the appointed Contractor/ dedicated environmental manager and shall be documented and provided to the SDCC on a monthly basis. SDCC, or its appointed consultants, shall also reserve the right to carry out audits, inspections, monitoring and/or spot checks of the works and any systems being implemented both on-site and off-site in connection with the works to ascertain whether they comply with the Contractor's CEMP.

General mitigation measures and good practice are detailed below (and to be included in the Contractor's CEMP):

- All environmental observations, incidents and near-misses shall be recorded and reported to the necessary stakeholders within 24-hours and the timeframe for close-out agreed at the outset of the project between the Applicant and the Contractor. Good practices will also be recorded.
- General surface water management measures will have regard for CIRIA's *The SuDS Manual* (2015), *Environmental Good Practice on Site Guide* (2023), *Control of water pollution from construction sites: guidance for consultants and contractors (2001)* and Transport Infrastructure Ireland (TII)'s *Road Drainage and the Water Environment* (TII, 2015) and Standards for Highways' DMRB LA 113, *Road drainage and the water environment* (Standard for Highways, 2020).
- Audit findings in the form of Corrective Action Requests will be recorded and actioned.
- The construction of the Proposed Development will be phased such that there is no reduction in the total available storage volume of existing systems for either clean or polluted surface water runoff at any point during the project.
- The extent of exposed ground will be minimised at all times during construction and any stockpiles outside areas specifically designed for the purpose will be covered to prevent the creation of any contaminated runoff.
- Areas where stockpiles are located will be positively drained through a grit trap where silt will be collected before water is discharged. Wheel-wash down areas will also be drained through a grit trap.
- The locations of refuelling, storage of oil/fuel, concrete mixing and washing areas will be established where practicable to be situated off site at a designated location coordinated with the Contractor. If these are to be provided within the proposed project boundary, then a buffer zone of at least 10 m between this and any excavations will be provided (CIRIA, C811).
- Pollution prevention will be achieved with both physical and procedural measures such as; temporary sediment forebays within a designated attenuation basin during construction, suitable interceptors within the permanent and temporary surface water drainage networks and suitable storage of construction materials.

- Periodic inspections of the construction works will be conducted to address surface and ground water contamination.
- No discharge to existing infrastructure/watercourses/ground shall be permitted to take place without the appropriate consents or approvals.
- The appointed Contractor will identify, and risk assess existing drainage systems and put in place measures to prevent possible contamination from surface runoff emanating from the works.
- The appointed Contractor shall comply with all national laws and regulations controlling pollution of the environment. Necessary precautions to prevent pollution of streams, lakes, ponds, and reservoirs with fuels, oils, bitumens, chemicals, or other harmful materials shall be taken.
- Ditches and water streams will be clearly identified on site and shown on method statements and site plans.
- Topsoil and subsoil will not be stored directly adjacent to the watercourse but will be stored a minimum of 20 m from the watercourse, with additional mitigation such as silt fences installed if there is a risk of sediment entering the watercourse. No topsoil or subsoil will be stored within a surface water flooding area unless supported by a risk assessment (i.e. consideration of weather forecast and duration of storage) and additional mitigation (i.e. drainage bypass channel for overland flow). Where site constraints mean that it is not possible to maintain a 20 m buffer from a waterbody, additional mitigation measures will be implemented to provide an adequate barrier between the potential source of contaminated runoff and the receptor.
- Foul sewage arising from temporary toilets and sanitary facilities on the site will initially be discharged to an on-site receptacle which will be emptied by tanker on a regular basis for disposal. As this control measure will be incorporated into the site set-up, additional specific mitigation measures are therefore not required to address foul sewage during the construction phase.

7.4.2.2 Temporary Construction Areas and Construction Compounds

Construction compounds and temporary areas will be installed to provide controlled zones for fuel storage, refuelling, plant maintenance, and material handling, ensuring that all higher-risk activities are managed within contained and supervised environments. These areas will incorporate pollution-prevention measures such as bunded storage, designated refuelling points, drip trays, and watercourse booms to minimise risks to land, soils, and water quality.

7.4.2.3 Water Management Plan

A Water Management Plan (WMP) will be prepared as part of the Contractor's CEMP. The scope of the water quality monitoring programme will be developed at a post-consent stage and in consultation with relevant stakeholders. The plan will need to be informed by, or updated by, any conditions imposed by the Environmental Protection Agency (EPA) and SDCC in respect of any environmental permits, licences or consents that have to be obtained in the future.

Water quality monitoring will be required of all potentially affected water features and may include daily visual and olfactory observations or after heavy or prolonged rainfall, in situ monitoring using a calibrated hand-held probe, and potentially grab samples on a regular or *ad hoc* basis for analysis at an accredited laboratory.

To ensure that monitoring during construction is effective, a pre-construction baseline will be determined at appropriate locations along the Proposed Development, for 6 months minimum to establish the baseline. Water quality monitoring will continue throughout the construction period for as long as there are activities ongoing that have the potential to result in a significant water pollution incident. The WMP will also detail pre-construction and construction groundwater level and quality monitoring to be undertaken as there is close interaction between groundwater and surface water across the site. The scope of the monitoring will be discussed with the EPA and SDCC by the Contractor. Groundwater level and quality monitoring will continue throughout the construction period for as long as there are below ground activities ongoing that have the potential to result in a significant impact on the groundwater level or quality.

7.4.2.4 Sedimentation of Surface Waters

Due to the proximity of the construction work to waterbodies, care must be taken to prevent the mobilisation of sediment to nearby watercourses. The following mitigation measures would be implemented to reduce the potential for sedimentation during the construction phase:

- Excavations will only remain open for the shortest possible time to reduce groundwater ingress. Silt traps will be placed around the site to reduce silt loss, and these will be inspected and cleaned or replaced regularly.
- Runoff from spoil heaps will be prevented from entering watercourses by diverting it through settlement ponds and removing material off-site as soon as possible to designated storage areas.
- Silt traps will be placed at any crossing points to avoid siltation of drainage channels and, if the need arises, silt fences will be used during the course of works in order to reduce the potential for pollution of watercourses. These will be maintained and cleaned regularly throughout the construction phase.
- Good construction practices will also be used during the construction phase, such as wheel washers and dust suppression on-site roads and at the site access points.
- Surface water run-off from working areas will not be allowed to discharge directly to any surface waterbodies. To achieve this, the drainage system will be constructed prior to the commencement of major site works. All design and construction will be carried out in accordance with CIRIA C532 "*Control of Water Pollution from Construction Sites Guidance for Consultants and Contractors and C811 Environmental Good Practice on Site Guide"*.

7.4.2.5 Control of Concrete and Lime

The following mitigation measures will be designed to ensure that no concrete and lime sediment contamination will enter watercourses:

- All ready-mixed concrete will be brought to site by truck. A suitable risk assessment for wet concreting will be completed prior to works being carried out, which will include measures to prevent discharge of alkaline wastewaters or wash-water to the surface water drainage system or to the underlying subsoil.
- Wash down and washout of concrete transporting vehicles will take place at an appropriate bunded area and direct discharge of wash-water to surface waters will be strictly prohibited.
- The appointed contractor will be required to manage and mitigate concrete works ensuring that no concrete is laid during wet weather, so no concrete will be washed off the site and into the surface water drains or water bodies.
- Other mitigation measures include the use of barriers, avoiding the use of lean mix concrete near surface water features, keeping records of quantities of concrete used and monitoring pH levels in surface water features if necessary.

7.4.2.6 Fuel and Chemical Handling

It will be necessary to adopt the following mitigation measures at the site in order to prevent spillages to ground and drains of fuels, and to prevent any consequent surface water impacts:

- Fuel will be stored and used in accordance with the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001 and relevant fire safety, environmental, and Health and Safety Authority (HSA) codes of practice.
- Designate a bunded storage area at the Contractor's compound(s) and away from surface water gullies or drains for oils, solvents and paints used during construction. The fuel storage tanks will be bunded to a volume of 110% of the capacity of the largest tank/container within the bunded area, which includes 10% more capacity than is needed.
- Drainage from the bunded area will be diverted for collection and safe disposal. All containers within the storage area will be clearly labelled so that appropriate remedial action can be taken in the event of a spillage. When moving drums from the bunded storage area to locations within the site, a suitably sized spill pallet will be used for containing any spillages during transit.

- Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles, will take place in designated impermeable refuelling areas isolated from surface water drains. Spill kit facilities will be provided at the fuelling area in order to provide for any accidental releases or spillages in and around the area. Any used spill kit materials should be disposed of via a hazardous waste contractor. Only construction equipment and vehicles free of all oil/fuel leaks will be permitted on the site.
- All washing down of vehicles and equipment will take place in designated areas and wash water will be prevented from passing untreated into watercourses.
- Where mobile fuel bowsers are used on the site in the event of a machine requiring refuelling outside of the designated area, fuel will be transported in a mobile double skinned tank. Any flexible pipe, tap or valve must be fitted with a safety lock where it leaves the container and locked shut when not in use. Each bowser should carry a spill kit and each bowser operator must have spill response training. No refuelling will be allowed within 50 m of a watercourse.
- Adequate stocks of hydrocarbon absorbent materials (e.g. spill-kits and/or booms) will be held on-site in order to facilitate response to accidental spills. Spill response materials will also be stored on all construction vehicles.
- Concrete washout is prohibited within a minimum of 20 m of any body of water, including ditches and ponds, or surface water drains, and within 5 m of a foul drain. Where practical, this will increase to 50 m.

The Contractor shall describe in a Pollution Incident Response Plan (PIRP) the actions taken in the case of a possible leak or spill event, and in an Environmental Emergency Plan (ERP) the actions taken in the case of a flood event. These actions will be hierarchal meaning that as the risk increases the Contractor will implement more stringent protection measures. This is important to ensure all workers, the construction site and third-party land, property and people are adequately protected from flooding during the construction phase.

7.4.2.7 Watercourse Crossings

One watercourse crossing (a portal structure) is proposed across a branch of Coolmine Stream (also known as Fitzmaurice Stream). A second crossing is proposed at an existing location (around INGR: O 02714 26678), and it is assumed no modifications will be made to this structure. The following mitigation measures would prevent any consequent surface water impacts:

- Open span bridges would require an environmentally sensitive design, e.g. abutments would be an appropriate size for the flow.
- The proposed structure will maximise the use of precast elements to minimise environmental impact and construction time on the site.
- Temporary silt fencing will be erected which is required to protect the watercourse.
- Excavations will only remain open for the shortest possible time to reduce groundwater ingress. Silt traps will be placed to reduce silt loss.
- To minimise habitat loss, vegetation will be removed in a controlled manner and stored in hessian lined containers to preserve before reinstating.
- Restoration of the bank material following construction. All excavated materials will be recycled on site and used for backfill, surplus materials will be stockpiled, tested for contamination and sent to relevant land fill.
- Imported materials will be minimised where possible to avoid cross-contamination.
- Locating stockpiles on hard-standing and visqueen sheeting.
- Undertaking concrete work in dry conditions and preventing site wastewater from being discharged to gullies.
- Relevant guidance from Inland Fisheries Ireland (2026). ‘Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters’ should be applied.

7.4.2.8 Outfalls

Two outfalls are proposed to be installed along a branch of Coolmine Stream / Fitzmaurice Stream. The design of the proposed outfalls is subject to further design, in the absence of design, it is assumed the headwall is a maximum width of 2 m as a worst-case scenario. The following mitigation measures would prevent any consequent surface water impacts:

- Excavations will remain open for the shortest possible period of time and the bank material and vegetation will be reinstated as possible.
- Imported materials will be minimised where possible to avoid cross-contamination.
- Use of concrete will be in dry conditions and wastewater from works will be managed in accordance with other surface waters according to the CEMP.
- Measures reported in Inland Fisheries Ireland (2026). 'Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters'.
- Scour protection to minimise the risk of erosion.
- Locating stockpiles on hard-standing and visqueen sheeting.

7.4.2.8 Groundwater Control and Dewatering

The localised control or removal of groundwater may be required to enable the construction of the Proposed Development, particularly for element of the SuDS drainage network and foul water drainage network, where excavations may extend to depths greater than 3 m bgl.

Prior to the commencement of construction, the need for temporary dewatering will be reviewed following completion of a ground investigation and any associated baseline groundwater monitoring. Where groundwater is encountered within excavations and dewatering is considered necessary, the Contractor will minimise the impact of any groundwater control activities during construction on the water receptors and will prepare a Construction Groundwater Control Strategy at the detailed design stage, in consideration of CIRIA 'Groundwater Control: Design and Practice, Second Editions' (CIRIA, 2016). Furthermore, best practice mitigation measures will be followed to avoid and or minimise impact on groundwater and will be included in the Contractor's CEMP.

The strategy will outline such best practice mitigation measures as, but not limited, to the following:

- A sump hole will be created, and pumps will be installed and used to remove the groundwater from the excavation. The groundwater will be pumped to an outfall area with silt mitigation measures, as advised by the relevant consenting requirements.
- Groundwater control measures will be selected through the Groundwater Control Strategy, based on the actual groundwater conditions encountered during the works and the sensitivity of nearby water receptors. Appropriate measures may include the installation of a physical cut-off barrier (such as a temporary cut-off wall or sheet piles) between the sump hole and any nearby water receptors requiring protection, artificial recharge of groundwater or surface water, or the controlled discharge of a portion of the pumped water directly to a suitable water receptor. Where discharge is proposed, the chemistry and sediment content of the discharge water will be monitored to ensure that it does not adversely affect the receiving water receptor.
- If discharging water to a nearby watercourse, the rate of discharge will need to be agreed with the SDCC to ensure that there is no unacceptable increase in flood risk or risk of scour. Any discharge will need to be undertaken with the agreement of the relevant statutory regulator and will need to comply with the pollution prevention requirements set out in the Contractor's CEMP.
- An outfall area will be created using silt bags on the hoses with a silt fence or a combination of two silt mitigation measures. The outfall area will be set up away from any watercourse crossings so the pumped water can naturally disperse into the surrounding area.
- Once the outfall has been set up, will be inspected prior to pumping. During this process, the outfall area will be monitored, and water quality of the discharge will also be regularly monitored.

- In addition, the Contractor's CEMP will include a WMP outlining a programme of groundwater level and quality monitoring at ground investigation monitoring boreholes at the Site, and adjacent to sensitive water bodies, wetlands and controlled discharge of water abstracted during dewatering.
- Managing the risk from groundwater flooding through appropriate working practices (during excavations) and with adequate plans and equipment in place for dewatering to ensure safe dry working environments.

7.4.2.9 Flood Risk

To minimise the impact of flood risk during construction on the water receptors, it will be necessary to adopt the following mitigation measures at the site:

- During the construction phase, the Contractor will monitor the weather forecasts daily and review the weekly and monthly weather forecasts each week, and plan works accordingly. For example, works in the channel of any watercourses will be avoided or halted were there to be a significant risk of high flows or flooding;
- The Contractor will sign up to flood warning alerts and describe in the Emergency Response Plan the actions it will take in the event of a possible flood event. These actions will be hierarchal, meaning that as the risk increases the Contractor will implement more stringent protection measures. This is important to ensure all workers, the construction site and third-party land, property and people are adequately protected from flooding during the construction phase;
- The Contractor will be required to produce an Emergency Response Plan as part of the detailed CEMP which will provide detail of the response to an impending flood event and include:
    - A 24-hour ability to mobilise staff in the event of a flood warning;
    - The removal of all plant, machinery and material capable of being mobilised in a flood for the duration of any holiday close down period where there is a forecast risk that the Site may be flooded;
    - Details of the evacuation and site closedown procedures;
    - Arrangements for removing any potentially hazardous material and implement more stringent protection measures;
    - If water is encountered during below ground construction, suitable de-watering methods would be used; and
    - Safe egress and exits are to be maintained at all times when working in excavations. When working in excavations a banksman is to be present at all times.

7.5 Air Quality

7.5.1 Mitigation Measures

The Contractor will be required to implement measures to minimise the dust, emissions, and odour produced during the proposed works.

Determining site-specific mitigation measures corresponds to Step 3 of the construction dust impact assessment methodology (IAQM, 2024).

A number of mitigation measures can be adopted to reduce the production and/or dispersal of dust to lessen the harm to amenity and limit human health impacts. Ideally dust should be controlled at the source as once airborne it is more difficult to suppress.

Appropriate mitigation measures are provided in the IAQM 'Guidance on the Assessment of Dust from Demolition and Construction' (IAQM, 2024).

According to the IAQM Guidance (IAQM, 2024), the dust risk for each of the activities determined in Step 2C should be used to define the appropriate site-specific mitigation measures to be adopted. Where a negligible risk of dust effects was determined, no mitigation measures, beyond those required by legislation are required. However, mitigation measures may be applied as part as good practice.

The following mitigation measures (recommended by the IAQM for the dust risk level identified for the Proposed Development) must be implemented by the Contractor.

7.5.2.1 Communication

- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary.
- Display the head or regional office contact information.
- Develop and implement a Dust Management Plan (DMP).
- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.

7.5.2.2 Site Management

- Record 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 off site and the action taken to resolve the situation in the log book.

7.5.2.3 Monitoring

- Undertake daily on-site and off-site inspections, where receptors (including roads) are nearby, to monitor dust, record inspection results and make the log available to the local authority when asked.
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
- Carry out regular site inspections to monitor compliance with the DMP, record inspection results and make an inspection log available to the local authority when asked.

7.5.2.4 Preparing and Maintaining the Site

- Plan site layout so that machinery and dust causing activities are located away from receptors as far as possible.
- Erect solid screens or barriers around dusty activities that are at least as high as any stockpiles on site.
- Avoid site run-off of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site.
- Cover, seed or fence stockpiles to prevent wind whipping.

7.5.2.5 Operating Vehicle/Machinery and Sustainable Travel

- Ensure all vehicles switch off engines when stationary – no idling vehicles.
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.
- Impose and signpost a maximum speed limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work area.

7.5.2.6 Operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/ mitigation.
- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights.

7.5.2.7 Waste Management

Avoid bonfires and burning of waste materials.

7.5.2.8 Earthworks

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.
- Only remove the cover in small areas during work and not all at once.

7.5.2.9 Construction

- For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.
- Avoid scabbling, if possible.
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out.

7.5.2.10 Track out

- Use water assisted dust sweeper(s) on the access and local roads, to remove, as necessary any material tracked out of the site.
- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving the site are covered to prevent escape of materials during transport.
- Implement a wheel washing system.

7.6 Climate

7.6.1 Mitigation Measures

7.6.2.1 Greenhouse Gas Mitigation

Due to the methodology employed to estimate the GHG emissions associated with the Proposed Development it is not possible to determine the specific materials or activities responsible for carbon hotspots within the assessment or recommend additional measures to mitigate the overall carbon impact.

7.6.2.2 Climate Change Risk Mitigation

A number of further mitigation measures in the construction phase were identified when undertaking the Climate Change Risk Assessment (CCRA). Measures include:

- A water pump for the areas with critical infrastructure and a key part of construction operations should be installed. This will help increase the sites surface drainage capacity and reduce the risk associated with fluvial and pluvial flooding.

- Raise critical infrastructure to be above Probable Maximum Flood (PMF) limits to reduce the consequence of impact for potential flood events.
- Undertake regular monitoring of trees and vegetation in the area, pruning as necessary to avoid damage to the construction site or blocking access roads, in the event of a storm with high wind speed.
- Installing additional attenuation storage tanks at key locations or identified flood risk areas, to increase the proposed developments drainage capacity.
- Construction materials and equipment with superior properties that offer increased tolerance to fluctuating temperatures, heavy precipitation and other extreme weather events such as storms, should be used, where feasible, e.g. construction equipment that can withstand conditions greater than 40°C.
- Provide all outdoor construction workers access to indoor facilities, air conditioning, breaks in shaded areas and water breaks to ensure suitable working conditions.
- Cease outdoor and non-essential work if working conditions are too dangerous and could result in injury to workers and damage to equipment.
- Employ adequate cooling and ventilation systems in the design of temporary office buildings and construction worker facilities, that's sufficient to deal with projected increases in extreme temperatures.

7.7 Noise and Vibration

7.7.1 Mitigation Measures

To minimise noise and vibration emissions, as far as practicable, the following mitigation measures will be implemented:

- All construction plant and equipment will comply with European Union (EU) noise emission limits.
- Proper use of plant with respect to minimising noise emissions and regular maintenance. All vehicles and mechanical plant used for the purpose of the works will be fitted with effective exhaust silencers and will be maintained in good efficient working order.
- Selection of inherently quiet plant where appropriate. All major compressors will be ‘sound reduced’ models fitted with properly lined and sealed acoustic covers which should be kept closed whenever the machines are in use and all ancillary pneumatic percussive tools will be fitted with mufflers or silencers of the type recommended by the manufacturers.
- Machines in intermittent use will be shut down in the intervening periods between work or throttled down to a minimum.
- Plant and equipment such as flatbed lorries, skips and chutes will be lined with noise attenuating materials. Materials will be handled with care and be placed, not dropped. Materials will be delivered during normal working hours only.
- All ancillary plant such as generators, compressors and pumps will be positioned so as to cause minimum noise disturbance, i.e. furthest from receptors or behind close boarded noise barriers. If necessary, acoustic enclosures will be provided and/or acoustic shielding.
- Where ground compaction works are required, vibration-generating plant such as rollers and vibro compaction equipment will be operated in low-vibration modes (e.g. dead rolling) in the vicinity of sensitive receptors. These operational controls are well-established mitigation measures that are effective in reducing ground-borne vibration to acceptable levels.
- The appointed Contractor will be required to adhere to the codes of practice for construction working given in BS 5228:2009 and the guidance given therein regarding minimising noise emissions from the site.
- If the developers intend to have a compound on site for material deliveries, then they will locate this away from noise sensitive properties.

Following the appointment of the Contractor, a detailed review of the noise and vibration mitigation requirements will be undertaken, as necessary, to reflect the final construction methodology. A commitment is made to implement the mitigation measures outlined above, together with any additional measures identified during the detailed construction planning process, to minimise construction noise and vibration and maintain emissions within acceptable limits. The implementation of these measures will be managed through the Contractor's CEMP. A proportionate noise and vibration monitoring programme will be implemented where required to demonstrate the effectiveness of the mitigation measures.

7.8 Landscape and Visual

7.8.1 Mitigation Measures

During the construction phase, mitigation will focus on confining activity to the defined site boundary and preventing unnecessary disturbance to adjacent vegetation and soils. All mature hedgerows and tree lines will be retained where practicable, maintaining the current overall character of the surroundings. Retained vegetation will be safeguarded through the use of protective fencing and root-protection zones in accordance with BS 5837:2012 - Trees in Relation to Design, Demolition and Construction, ensuring that root systems and canopies remain undisturbed through the works. Additionally, mixed native hedgerow is proposed in the open spaces to mitigate the removal of hedgerow during site construction. On completion of construction, any temporary ground disturbance will be reinstated promptly using locally sourced topsoil and appropriate seed mixes to stabilise soils and support rapid vegetation recovery.

7.9 Archaeology and Cultural Heritage

7.9.1 Mitigation Measures

The following mitigation measures are recommended:

- Due to sections of the site being located within greenfield land with noted archaeological potential, it is recommended that a scheme of archaeological testing will be carried out at the pre-construction phase across the identified area of the Proposed Development. Particular attention will be paid to the location of the cropmark (CH1).
- The detail and scope of all archaeological works will be agreed with the National Monuments Service (NMS) and carried out in compliance with the National Monuments Acts 1930 – 2014; and Policy and Guidelines on Archaeological Excavation (Department of Arts, Heritage Gaeltacht and the Islands, 1999).
- The archaeological works will require a licence from the National Monuments Service on behalf of the Minister for Culture, Heritage and the Gaeltacht, in consultation with the National Museum of Ireland, all in accordance with the Provisions of the National Monuments Acts 1930–2014. It will be the responsibility of the Archaeological Contractor appointed to prepare a method statement and submit a licence application to the Minister. Due allowance will be made for this in the project programme.The programme of pre-construction archaeological testing will consist of the mechanical excavation of test trenches, down to sterile glacial tills and bedrock by means of a smooth toothless bucket, at specified locations within the Proposed Development focussing on the footprint of the Proposed Development. The appointed archaeologist will undertake full-time monitoring of the excavation of the test trenches and where appropriate, carry out investigation of any features uncovered.
- Should archaeological material/features be encountered during archaeological testing, all works in the affected area shall cease immediately. Further archaeological investigation (by hand) shall be carried out by the licensed archaeologist to determine the nature, extent and significance of the remains, in consultation with the National Monuments Service (NMS), as appropriate. Construction works in the affected area shall not recommence until an appropriate mitigation strategy has been agreed. Archaeological deposits shall not be removed as part of the assessment process unless otherwise agreed as part of the approved mitigation strategy. The testing will be undertaken in advance of construction to allow adequate time to evaluate, record and, where necessary, mitigate any archaeological features that may be revealed. In the event that any archaeological features are uncovered during construction, the appointed Archaeologist and the National Monuments

Service (NMS) will be consulted to determine the appropriate mitigation measures which may include preservation in situ, or preservation by record, through systematic archaeological excavation and/or monitoring of specific construction activities during the construction phase.

7.10 Material Assets (Traffic)

7.10.1 Mitigation Measures

The following traffic management measures will be implemented during the Proposed Development's construction phase to manage potential construction traffic impacts. These measures are set out in this document and will be further developed, as appropriate, in the detailed Construction Traffic Management Plan (CTMP) to be prepared by the appointed Contractor prior to construction.

- Warning signs/ advanced warning signs will be installed at appropriate locations in advance of the construction access locations.
- Construction and delivery vehicles will be instructed to use only the approved and agreed means of access; and movement of construction vehicles will be restricted to these designated routes.
- Appropriate vehicles will be used to minimise environmental impacts from transporting construction material, for example the use of dust covers on trucks carrying dust producing material.
- Speed limits of construction vehicles to be managed by appropriate signage, to promote low vehicular speeds within the site.
- Parking of site vehicles will be managed and will not be permitted on public road, unless proposed within a designated area that is subject to traffic management measures and agreed with SDCC.
- A road sweeper will be employed to clean the public roads adjacent to the site of any residual debris that may be deposited on the public roads leading away from the construction works.
- On site wheel washing will be undertaken for construction trucks and vehicles to remove any debris prior to leaving the site, to remove any potential debris on the local roads.
- All vehicles will be suitably serviced and maintained to avoid any leaks or spillage of oil, petrol or diesel. Spill kits will be available on site. All scheduled maintenance carried out off-site will not be carried out on the public highway.
- Safe and secure pedestrian facilities are to be provided where construction works obscure any existing pedestrian footways. Alternative pedestrian facilities will be provided in these instances, supported by physical barriers to segregate traffic and pedestrian movements, and to be identified by appropriate signage.
- Pedestrian facilities will cater for vulnerable users including mobility impaired persons.

HGV trips are anticipated to arrive and depart the site at a uniform rate throughout the day, to avoid pressure on the morning and evening peak hour periods and will be required to follow designated haul routes as set out in this document. The mitigation measures will ensure that the presence of construction traffic will not lead to any significant environmental degradation or safety concerns in the vicinity of the proposed works. Furthermore, it is in the interests of the construction programme that deliveries, particularly concrete deliveries are not unduly hampered by traffic congestion, and as a result continuous review of haulage routes, delivery timings and access arrangements will be undertaken as construction progresses to ensure smooth operation.

7.11 Major Accidents and Disasters

7.11.1 Mitigation Measures

The design and construction of the Proposed Development will be in accordance with relevant international, national and established industry codes, standards and practice, such as:

- Designing and building any structure to the appropriate EN design standards such as the relevant Building Regulation Technical and Safety standards.
- Compliance with material specification standards for buildings materials such as concrete, blockwork and timber.
- Construction activities will be undertaken in accordance with the Contractor's CEMP and relevant method statements and risk assessments. Appropriate controls will be implemented for the storage and handling of fuels, chemicals and other potentially hazardous substances, together with emergency response procedures for incidents arising during construction.

7.12 Material Assets (Utilities)

7.12.1 Mitigation Measures

The following best practice measures will be included in the Contractor's CEMP and implemented during the Proposed Development's construction phase:

- All proper steps will be taken to minimise any interference with existing gas, electrical, surface water drainage, foul and potable water infrastructure and existing telecommunication infrastructure located within the adjacent existing developments (namely the Rathcoole & Saggart villages).
- Where service diversions and/or infrastructure realignment are required, or where new connections are proposed, the works shall be carried out in accordance with the requirements of the relevant service provider/authority (for example, ESB and UE).
- Prior to the commissioning of the Proposed Development, new connections will be tested by a suitably qualified person using an appropriate methodology approved by the relevant service provider.
- In the event of accidental damage to existing built services or utility infrastructure during construction, works in the immediate vicinity of the affected infrastructure will cease, where necessary, and the relevant service provider and/or authority will be notified. Appropriate measures will be agreed with the relevant service provider and/or authority before works recommence in the affected area.
- Prior to commencement of works that could affect existing utilities, the location of relevant existing built services and utility infrastructure will be verified through available utility records, consultation with relevant service providers and/or appropriate site-specific investigations, as required.
- Suitable cable- and pipe-locating devices shall be used in conjunction with any available plans and drawings identifying underground built services, in order to determine their position as accurately as possible. These devices will be checked regularly and maintained in good working order.
- Safe digging practices will be undertaken in accordance with the Health and Safety Authority's 'Code of Practice for Avoiding Danger from Underground Services' (2016).
- Construction staff will be adequately trained and instructed on appropriate work methods, including, where relevant, Safe System of Work Plans (SSWPs). Construction staff responsible for handling locating devices will be required to possess a Construction Skills Certification Scheme (CSCS) card in accordance with the Safety, Health and Welfare at Work (Construction) Regulations 2013.

Where underground built services are identified, their location will be clearly marked using an appropriate method suitable for the ground conditions and maintained for the duration of the relevant works. Markings will be removed, where appropriate, following completion of the works.

7.13 Material Assets (Waste)

7.13.1 Mitigation Measures

The Contractor will be required to prepare, implement and maintain a detailed Contractor's Resource and Waste Management Plan (RWMP), that complies with the requirements of the Outline RWMP and in accordance with the EPA's Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction and Demolition Projects (2021).

Construction waste and materials will be managed in accordance with the waste hierarchy, with priority given to the prevention and reduction of waste generation, followed by reuse, recycling and recovery, where suitable and practicable. Measures identified in the RWMP include the efficient use of materials, off-site prefabrication where feasible, segregation of waste streams, reuse of suitable excavated materials, and identification of appropriate reuse, recycling, recovery or disposal routes. The estimated quantities of construction waste and excavated materials, together with their anticipated management routes, are presented in the RWMP.

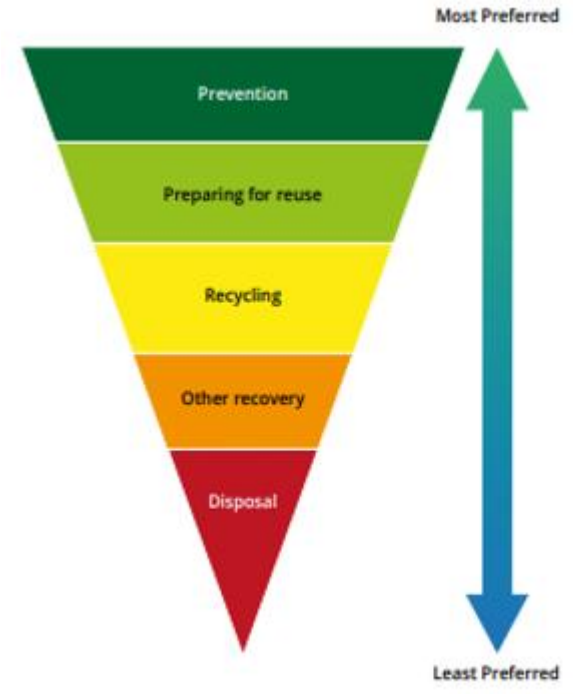


Figure 7-13: The Waste Hierarchy

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