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Construction Environmental Management Plan (CEMP)

PRESENTED TO

Capami Ltd

Bohernabreena, Oldcourt, Ballycullen, Co. Dublin

DATE

September 2024

Environmental Consultancy Services

DOCUMENT CONTROL SHEET

Client	Capami Ltd
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Document Title	Construction Environmental Management Plan (CEMP)

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1 INTRODUCTION

Enviroguide Consulting (hereafter referred to as EGC) was retained by Capami Ltd (hereafter referred to as the Client) to prepare a Construction Environmental Management Plan (hereinafter CEMP) for the proposed Large-scale Residential Development at Bohernabreena, Oldcourt, Ballycullen, Co. Dublin (hereafter referred to as the Site). This CEMP is produced in support of a planning application.

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

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

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

The CEMP defines the measures that shall be implemented during the works to manage, minimise, or mitigate potential environmental impacts that may arise from the construction phase of the Proposed Guesthouse Accommodation at the site.

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

- Construction Director;
- Construction Manager;
- Construction Management Team (CMT);
- Environmental Officer;
- Site Supervisors; and
- Other Relevant Personnel including authors of reports submitted with the planning application.

1.1 Objective and Purpose

The purpose of this CEMP is to provide effective, site-specific procedures and mitigation measures to monitor and control environmental impacts throughout the Construction Phase of the project and ensure that construction activities do not adversely impact the environment.

The objective of this document is to set out and communicate the procedures, standards, management responsibilities and key environmental obligations that apply to the Main Contractor and sub-contractors to address and prevent environmental effects that may arise from the Construction Phase of the Proposed Development.

1.2 Scope of CEMP

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

Compliance with the CEMP, procedures, work practices and controls is mandatory and must be adhered to by all personnel and contractors employed on the Construction Phase of the Proposed Development. This CEMP seeks to promote best environmental practices on-site for the duration of the Construction Phase.

This CEMP will provide a framework to:

- Comply with current environmental and waste legislation, codes of best practice and guidelines;
- Comply with all relevant conditions attached to the future grant of planning permission;
- Provide a plan for achieving and implementing construction related measures identified in design drawings and documents
- Ensure that environmental risks are identified and will be appropriately mitigated to ensure any adverse effects are minimised during construction and
- Outline the procedures for reporting and communicating on environmental aspects of the Project.

1.3 Live document

This is a ‘live’ document which will be continually reviewed and updated throughout the Construction Phase by the Construction Management Team (CMT). Updates to this CEMP may be necessary due to any changes in environmental management practices and/or contractors. Any further mitigation measures that may be identified as part of detailed design will be included. Any conditions of planning permission will be included in this CEMP, once granted.

As detailed in the later sections, the procedures agreed in this CEMP will be audited throughout the project roll-out phase to ensure compliance.

2 PROJECT DESCRIPTION

2.1 Site Location and Description

The Development Site is located to the east of Bohernabreena Road, north and east of Bohernabreena cemetery, south and south-east of St. Anne's GAA club, south and south-west of the Dodderbrook residential estate, west of the Ballycullen Gate residential development (currently under construction) and west of Oldcourt Road (the R113).

The Site measures 19.8 hectares and is primarily under agricultural use (there is a small commercial development at the western boundary). The lands north and east of the Site are developed (primarily residential). The western boundary adjoins Bohernabreena Cemetery. The lands south of the Site are under agricultural use.

See Figure 2-1 for Site Location.

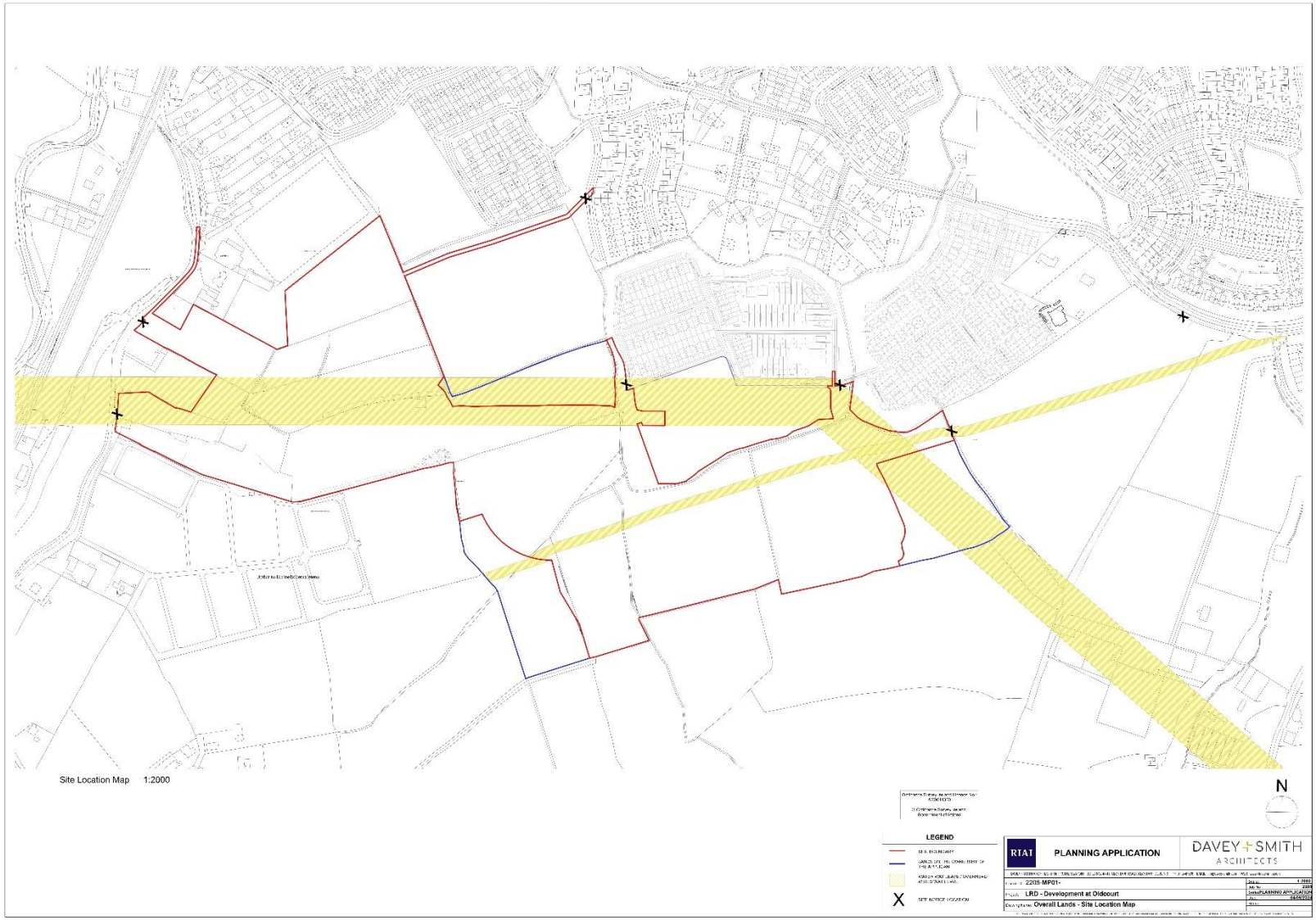

Figure 2-1: Site Location

2.2 Proposed Development

The Proposed Development consists of 523 no. dwellings, comprised of (i) 319 no. two and three storey, detached, semi-detached, and terraced houses (i.e. 53 no. two-bed, 180 no. three-bed, 5 no. two / three bed, and 34 no. four-bed units), (ii) 142 no. two and three bed apartment and duplex units in 10 no. three storey duplex blocks, 62 no. one and three bed apartment and duplex units in 31 no. three storey "E" type houses, and (iii) 44 no. apartments (8 no. one bed, 19 no. two bed, and 17 no. three bed units) in 7 no. two / three storey apartment blocks, along with a childcare facility of approximately 320 sq.m located on the ground floor of proposed apartment block C.

Private amenity space for the residential units is provided in the form of rear gardens for houses and ground floor terraces / upper floor balconies for apartment and duplex units. The proposed development provides for c.5.68 hectares of public open space and c.3,425 sq.m of communal open space associated with proposed residential units.

Vehicular access to the development will be via 4 no. access points, as follows: (i) from the west of the site via 2 no. accesses located off Bohernabreena Road, (ii) from the north of the site via 1 no. access at Dodderbrook Place, and (iii) from Oldcourt Road (the R113) to the east, via adjoining residential development at Ballycullen Gate. The proposed development includes for pedestrian and cyclist connections and accesses throughout the proposed development and to adjoining lands to the north at Dodderbrook Avenue and to the north-west into St. Anne's GAA club.

The Proposed Development includes for a total of 783 no. surface car parking spaces, provided in the form of on-street and on-curtilage parking, and a total of 642 no. bicycle parking spaces, provided in designated bicycle storage areas and in the form of short-term visitor spaces.

The proposed development includes the demolition of all existing structures on site, including 2 no. single storey dwellings and outbuildings/sheds (total demolition area: c. 4,152.06m²), hard and soft landscaping works, boundary treatments, SuDs features, drainage infrastructure, services infrastructure, bin stores, bicycle stores, car parking (including EV parking facilities), public lighting etc. and all associated site development works.

The Proposed Development provides for (i) all associated site development works above and below ground, including surface water attenuation & an underground foul sewerage pumping station in the northern part of the site, (ii) public open spaces (c. 3Ha), (iii) communal open spaces (c. 6,392m²), (iv) hard and soft landscaping and boundary treatments, (v) surface car parking (783 no. car parking spaces, including EV parking), (vi) bicycle parking (642 no. bicycle parking spaces), (vii) bin & bicycle storage, (viii) public lighting, and (ix), plant (M&E), utility services & 5 no. ESB sub-stations, all on an overall application site area of 18.3ha.

See Figure 2-2 for Site Layout.

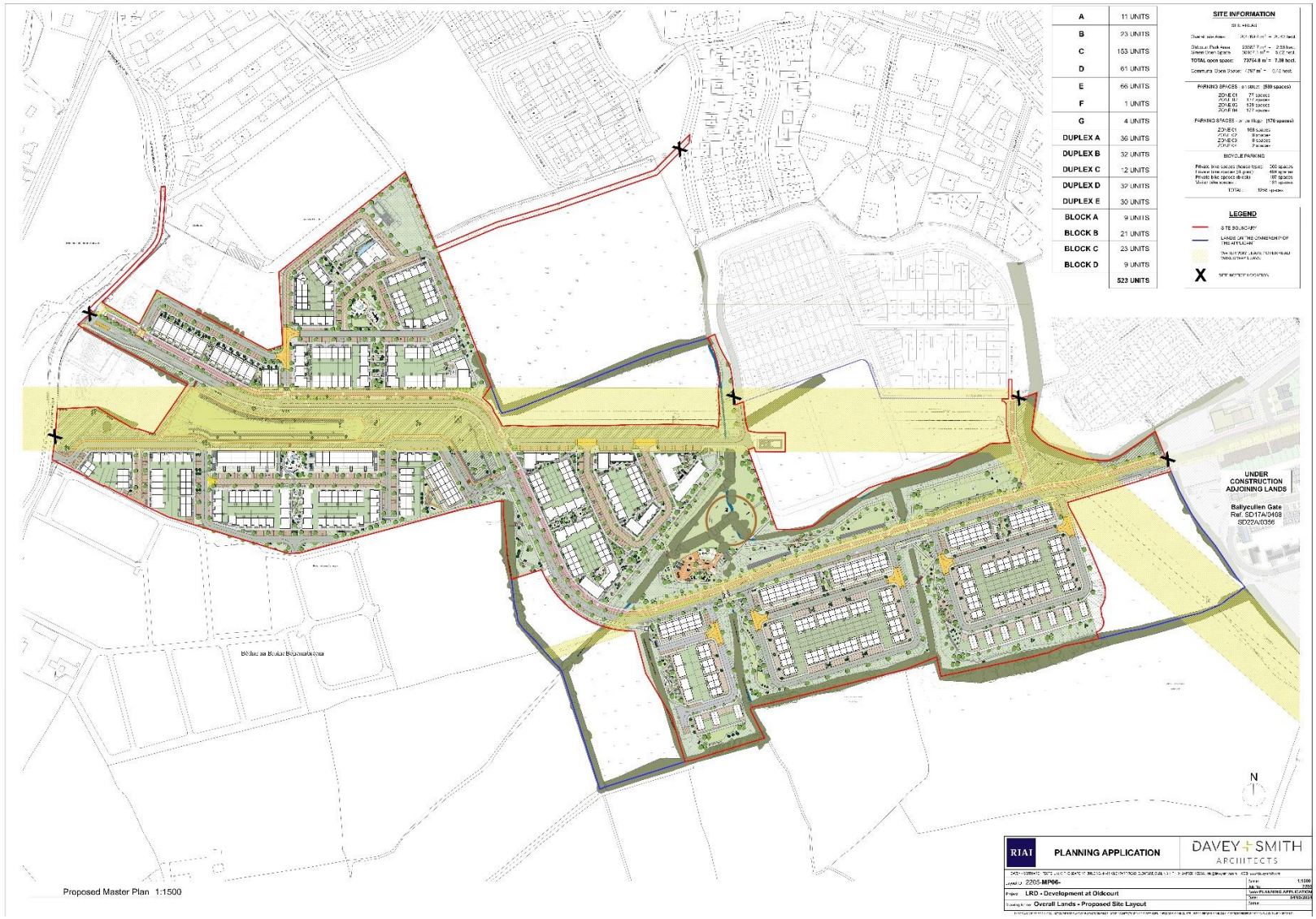

Figure 2-2: Site Layout

3 CONSTRUCTION SCHEDULE AND WORKS MANAGEMENT

3.1 Construction Programme

The duration of the construction programme will be 7 years.

It is likely that the proposed development will be completed over six phases, the details of which are as follows:

Phase 1: will commence at the south-eastern end of the application site, in Neighbourhood Zone 1, delivering:

(i) Part of the east-west link road, continuing on from what is currently under construction to the immediate east at Ballycullen Gate,

(ii) associated public open space, including the construction of "Oldcourt Park",

(iii) and approximately 94 no. dwellings.

Note: the proposed 94 no. dwellings to be delivered in Phase 1 are comprised of:

- 2 no. A type duplex blocks – 24 no. 2 & 3 bed duplex units,
- 2 no. B type duplex blocks – 32 no. 2 & 3 bed duplex units,
- 8 x A type 4 bedroom houses,
- 12 x B type 4 bedroom houses,
- 18 x C type 3 bedroom houses,

Phase 2: will consist of the completion of Neighbourhood Zone 1, to the immediate west of Phase 1, delivering:

(i) Continuation of the east-west link road, continuing on from what is currently under construction to the immediate east at Ballycullen Gate,

(ii) associated public open space, including completion of "Oldcourt Park" and opening of same to the public;

(iii) delivery of proposed pedestrian and cycle links from Neighbourhood Zone 1 to Dodderbrook to the north (at Dodderbrook Avenue),

(iv) and approximately 62 no. dwellings.

Note: the proposed 62 no. dwellings to be delivered in Phase 2 are comprised of:

- 1 no. A type duplex block – 12 no. 2 & 3 bed duplex units,
- 3 x A type 4-bedroom houses,

- 11 x B type 4-bedroom houses,
- 32 x C type 3-bedroom houses,
- 4 x G type 3-bedroom houses

Phase 3: will be in the north-western part of the site, in the western part of Neighbourhood Zone 3 and will deliver:

(i) Northern most access off the Bohernabreena Road and part of the east-west link road,

(ii) Crèche,

(iii) associated public open space;

(iv) associated infrastructural services including drainage outfalls through third party lands (upon agreement),

(v) and approximately 86 no. dwellings

Note: the proposed 86 no. dwellings to be delivered in Phase 3 are comprised of:

- 3 no. E type duplex blocks – 30 no. 2 & 3 bed duplex units,
- 28 x Urban Duplex Units – 28 no. 1, 2 & 3 bed duplex units
- 16 x C type 3-bedroom houses,
- 11 x D type 2-bedroom houses
- 1 x F type 3-bedroom house

Phase 4: will be in the north-western part of the site, consisting of the completion of Neighbourhood Zone 3 and commencement of Neighbourhood Zone 4, and will deliver:

(i) Continuation of the northern most access off the Bohernabreena Road and part of east-west link road,

(ii) associated public open space;

(iii) and approximately 112 no. dwellings

Note: the proposed 112 no. dwellings to be delivered in Phase 4 are comprised of:

- Apartment Block D – 9 no. 1 & 2 bed units
- 1 no. C type duplex block – 12 no. 2 & 3 bed duplex units,
- 1 no. D type duplex block – 16 no. 2 & 3 bed duplex units,
- 14 x Urban Duplex Units – 14 no. 1, 2 & 3 bed duplex units

- 36 x C type 3-bedroom houses,
- 24 x D type 2-bedroom houses
- 1 x E5 type 3-bedroom house

Phase 5: will be in the centre of the site, in Neighbourhood Zone 2 and will deliver:

(i) Central piece of east-west link road, thus completing same,

(ii) associated public open space,

(iii) vehicular, cycle and pedestrian links from Neighbourhood Zone 2 to Dodderbrook to the north

(iv) (at Dodderbrook Place),

(v) and approximately 101 no. dwellings.

Note: the proposed 101 no. dwellings to be delivered in Phase 5 are comprised of:

- 16 x Urban Duplex Units – 16 no. 1 & 3 bed duplex units,
- 26 x C type 3-bedroom houses,
- 6 x D type 2-bedroom houses,
- Apartment Block A – 9 no. units 1, 2 & 3 bed units,
- 2 no. Apartment Blocks B1 – 14 no. units 1 & 2 bed units,
- Apartment Block B2 – 7 no. units 1, 2 & 3 bed units,
- Apartment Block C – 23 no. units 1 & 2 bed units,

Phase 6: will be the final phase, in the western part of the site, adjacent to Phase 4 and completing Neighbourhood Zone 4, and will deliver:

(i) The southern most access off the Bohernabreena Road,

(ii) associated public open space

(iii) and approximately 68 no. dwellings

Note: the proposed 68 no. dwellings to be delivered in Phase 6 are comprised of:

- 1 no. D type duplex block – 16 no. 2 & 3 bed duplex units,
- 6 x Urban Duplex Units – 6 no. 1 & 3 bed duplex units
- 25 x C type 3 bedroom houses,

- 20 x D type 2 bedroom houses
- 1 x E5 type 3 bedroom house

See Figure 3-1 for the Project Phasing Map:

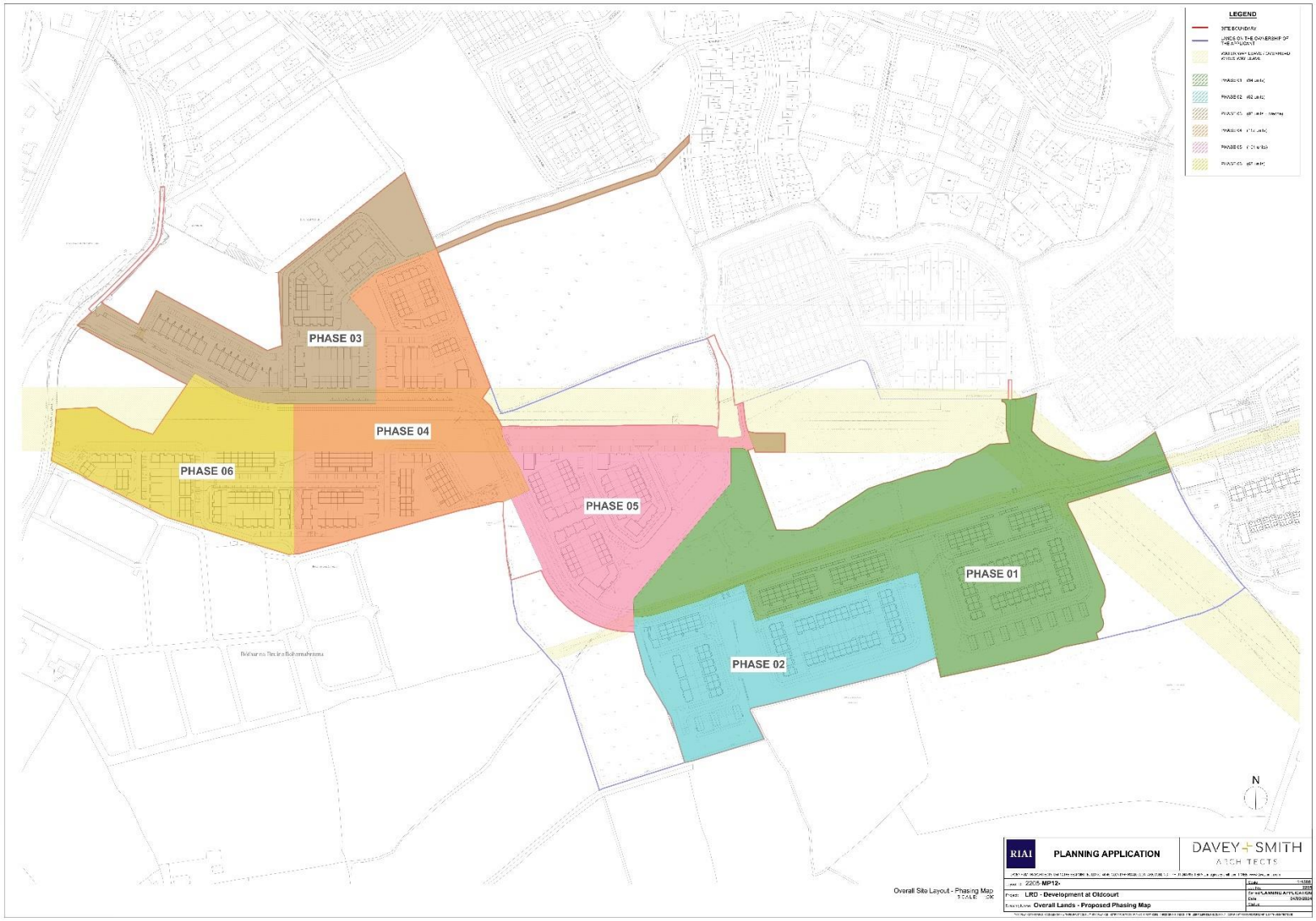

Figure 3-1: Project Phasing Plan

3.1.1 Preliminary works

Prior to any site works commencing, the Main Contractor will investigate/ identify the exact location of and tag all existing services and utilities around and through the site with the assistance of the relevant technical divisions of South Dublin County Council (SDCC) and utility companies.

The Health and Safety Authority's (HSA) Code of Practice for Avoiding Danger from Underground Services will be adhered to during excavation work, and when any other work involving underground services, is carried out. The Code of Practice aims to reduce the incidence of damage to underground services. Electricity cables, gas pipes, water pipes and sewers, if damaged, may pose a direct danger to personnel who are working on the site, and may also pose a pollution risk to the surrounding environment. If an electricity cable, telecommunications cable, gas pipeline or water main suffers any impact or any damage, however slight, the incident must be reported to the network operator without any undue delay (HSA, 2016).

3.2 Working Hours

The hours of operation shall be restricted to the following:

- Monday to Friday 0700 to 1900 (7.00am to 7.00pm)
- Saturday 0800 to 1300 (8.00am to 1.00pm)
- Sunday No Construction Work Permitted
- Bank Holidays No Construction Work Permitted

In addition, the following shall be strictly adhered to in the operation of the site:

(i) No activity, which could be reasonably expected to cause annoyance to residents in the vicinity, shall take place on site between the hours of 7.00pm to 7.00am on any given day.

(ii) No deliveries of material, plant or machinery shall take place before 7.00am in the morning or after 7.00pm in the evening on any given day.

(iii) If there is any occasion when work must be carried on outside daytime hours which is likely to affect local residents and businesses in the area, by noise from the proposed works, then notification shall be advertised and/or issued in advance of the works to the affected parties. In addition, the Air Pollution & Noise Control Unit of South Dublin County Council shall be notified in advance.
Notification shall contain the following information:
- Name, address and telephone number of the Company carrying out the works;
- Nature of, and reason for the works;
- Duration times of the works.

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

3.3 Site Construction Compound

All construction support related activities will be contained within the site compound. The site compound will consist of:

- Offices
- Meeting Rooms
- Toilet / Shower Rooms
- Drying Rooms
- Canteens
- Storage Containers

All cabins will be brought to site in good condition and will be maintained in good order throughout the project. Double stacking of cabins may be required, with safe stairs and walkways provided to the upper levels of offices.

A power supply from ESB Networks to power both the compound and the construction site will be applied for by the Main Contractor. The size of supply will be calculated to ensure it is sufficient to power both the site compound and construction site activities. In the event of any delays securing the required power supply to power offices and cranes, generators may be required. Diesel generators will have sound enclosures and will be regularly serviced to prevent noise and odour pollution, and setup in a spill tray to prevent any spillage contaminating the ground. Temporary site lighting will be installed to provide safe and well-lighted walkways around the site compounds, and task lighting to the construction sites.

Water and drainage will be required to service the site toilets and canteen facilities. The Main Contractor will carry out a site survey to identify the locations of the water and foul drainage connections to the site. It will be the Main Contractor's responsibility to apply to Uisce Éireann for connections to the water main and foul drain, ideally utilising existing connections.

Materials handling and storage areas, including waste segregation and storage areas, will be contained within the boundary of the Site. The required size for the site compound and waste storage areas will be specified by the Main Contractor. All waste storage areas will be identified by clear legible signage and recorded on a site layout drawing which will be maintained on-site.

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

3.4 Traffic

During the Construction Phase for the Proposed Development, there will be a number of high activity periods where construction related traffic will be significant. The most intensive of these periods are likely to be:

- Demolition Phase
- Excavation Phase
- Construction Phase.

The nature of the construction process is such that the traffic generated will comprise of short periods of intense activity interspersed with longer periods with relatively low level of truck movements into and out of the site over the Construction Phase.

A Construction Traffic Management Plan (CTMP) has been prepared by Pinnacle Consulting Engineers which will be adhered to for the duration of construction works.

There are 2 No. proposed site access points, as shown in Figure 9 of the CTMP, to/from Oldcourt Road and Bohernabreena Road. No construction traffic or operative parking will be permitted on Oldcourt Road, the Link Street or Bohernabreena Road to ensure the environment within the locality is not impacted by the construction activities.

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

Warning signs will illustrate the required PPE and risks associated when entering the construction site.

The boundaries of the site shall be adequately secured to prevent access and casual trespass onto the site. During the hours of operation of the construction works site security shall control the only access to the site at the main site entrance gate. This gate shall be locked and secured outside of the site operating hours.

As the site is operating in a suburban location with adjoining residential dwellings, but not as an exclusively private location, Capami Ltd. has identified that control measures must be implemented to exclude the public, particularly children, from being exposed to the construction site risks.

Capami Ltd. shall implement the following measures to provide this protective control:

- Erect and maintain the site hoarding, which must be erected on the boundary of the site.
- The gate will be monitored during all construction activity. On evenings and other non-work hours, the front gates shall be kept closed, unless equipment is being delivered and access is required.
- The site supervisor will monitor and document the condition and placement of the fence during site inspections.
- Clearly display signs on the boundary hoarding that describes the site as being a construction site, accessible to worker and authorized personnel only, i.e. “Construction Site – Do Not Enter – Authorised Personnel Only”.
- A banksman will guide vehicles or equipment reversing onto or off the site, so that workers aren’t driving blindly into areas where there may be fast approaching vehicular traffic.
- The speed limit on the public roadway leading up to the site shall be strictly controlled by the placement of warning signage and enforcement.

3.6 Communication & Consultation

The Main Contractor will appoint a Project Communications Officer who will undertake any required third-party communication and liaise directly with landowners/ local authorities/ members of the public, and all other stakeholders as required by the project.

3.6.1 Managing Enquiries and Complaints

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

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

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

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

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

3.6.2 Advance Works Notice

The CMT will be responsible for regular consultation and public communications activities required during the construction works and will include all contact details for relevant project personnel, public bodies and emergency services.

3.7 Maintenance of Roads

The Main Contractor will ensure that on-site control measures will be established and maintained at the Site to prevent any nuisance and debris associated with the construction works on public roads adjoining the Site. The main consideration will be to combat mud and dust at source so as not to let it adversely affect the surrounding areas. The objective will be to contain any mud or dust within the site, which is large enough for comprehensive control measures. This issue will be controlled by the following designated and operational

measures:

- Site managers must ensure that all roads are dust dampened during dry spells
- Designated hard routes through the Site.
- Each departing vehicle will be checked by the banksman.
- Wheel wash facility at egress point and the channelling of departing vehicles through the wheel wash.
- Sweeping of public streets adjacent to egress from site, as necessary.
- Provision and facilities to cover lorry contents, as necessary.
- Where applicable, controlled loading of excavated material to minimise risk of spillage of contents.
- Facility to clean local roads if mud or spillage occurs.
- Ongoing monitoring during working hours.
- Where a site shares approach roads with an occupied residential area the movement of plant and deliveries through the area should be controlled to minimize the nuisance caused to residents. Muck on the road must be kept to a minimum and roads must be cleaned by 18.30 hrs. each day.

4 PROJECT ROLES AND RESPONSIBILITIES

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

Role	Responsibilities
Construction Director	• Overall responsibility for the implementation of the CEMP • Ensuring adequate resources are available to ensure the implementation of the CEMP • Management review of the CEMP for suitability, adequateness, and effectiveness • Setting out the focus of environmental policy, objectives, and targets for the Main Contractor
Construction Manager	• Reporting to the Construction Director on the on-going performance of the CEMP • Discharging his/her responsibilities as outlined in the CEMP • Supporting the CMT and the Environmental Officer through the provision of adequate resources and facilities to ensure the implementation of the CEMP • Providing Contractors with precise instructions as to their responsibility to ensure correct working methods where risk of environmental damage exists • Where appropriate, ensuring Contractor's method statements include correct waste disposal methods • Co-ordinating of environmental planning of CMT activities to comply with environmental authorities' requirements and with minimum risk to the environment
Environmental Officer	• Ensuring that the requirements of the CEMP are developed and environmental system elements (including procedures, method statements and work instructions) are implemented and adhered to with respect to environmental requirements • Reviewing the Environmental responsibilities of all sub-contractors in scoping their work and during their contract tenure • Ensuring that advice, guidance, and instruction on all CEMP matters is provided to all managers, employees, construction contractors and visitors on site • Reporting to the Construction Manager on the environmental performance of Line Management, Supervisory Staff, Employees and Contractors • Advising site management on environmental matters and delegating responsibility to sub-contractors, where necessary • Being aware of any potential environmental risks relating to the Contractors and bring these to the notice of the appropriate management; • Ensuring that all waste is managed accordingly, is recorded, and the materials/waste register is completed • Maintenance of records of all necessary documentation including contractor waste collection permits, waste destination consents, waste transfer documents and waste management facility gate receipts in the waste management file and any environmental related documentation
Project Communications Officer	• Conducting all public liaison associated with the Construction Phase of the project • Responding to any concerns or complaints raised by the public in relation to the Construction Phase of the project • Liaising with the Environmental Officer on community concerns relating to the environment • Ensuring the Environmental Officer is informed of any complaints relating to the environment • Keeping the public informed of project progress and any construction activities that may cause inconvenience to the local community
Site Supervisors	• Implementation of the CEMP • Being knowledgeable of the requirements of the relevant law in environmental matters and take whatever action is necessary to achieve compliance

	• Ensuring that environmental matters are considered at all times • Being aware of any potential environmental risks relating to the site, plant, or materials to be used on the premises and bring these to the notice of the appropriate management • Ensuring that any plant is environmentally suited to the task in hand
Site Personnel	• Co-operation with the CMT and the Environmental Officer in the implementation of the CEMP at the site • To conduct all their activities in a manner consistent with regulatory and best environmental practice • To participate fully in the environmental training programme and provide management with any necessary feedback to ensure effective environmental management at the site • Adhere fully to the requirements of the site environmental rules
Project Environmental Consultant (as required)	An Environmental Consultant may be engaged on an ad-hoc basis if required. The appointed Environmental Consultant will be competent, qualified, and experienced in the field of environmental management; with expertise in the areas of contaminated land, water and waste management and will be responsible for producing all environmental reporting procedures. • Preparation of any environmental control plans and supporting procedures • Advising the site management on environmental matters as appropriate • Carrying out environmental surveys (data logging (noise, water, dust, etc.)) as required • Generating reports when required to show environmental data trends and incidents • Advising on the production of written method statements and site environmental rules and on the arrangements to bring these to the attention of the workforce as required • Investigating incidents of significant, potential, or actual environmental damage, ensure corrective actions are carried out and recommend means to prevent recurrence
Project Archaeologist Clerk of Works (as required)	A Project Archaeologist Clerk of Works may be engaged on an ad-hoc basis if required. The appointed Project Archaeologist Clerk of Works will be competent, qualified, and experienced. • Advising on all archaeological monitoring activities, conducting watching briefs and distributing information relevant to monitoring. • Monitoring of all ground disturbance works associated with the construction of the development • Ensuring the appropriate course of action is taken in the event that archaeological material is discovered during the works • Liaison with the CMT throughout the Construction Phase of the project • Liaison with the Department Applications Unit, National Monuments Service, Department of Arts, Heritage and Gaeltacht and the Local Authority archaeologist as required.
Project Ecological Clerk of Works (EcCOW) (as required)	A Project Ecological Clerk of Works (EcCOW) may be engaged on an ad-hoc basis if required. The appointed Project EcCOW will be competent, qualified, and experienced. • Ensuring the protection of sensitive habitats and species encountered during the Construction Phase of the project. • Provision of specialist input and supervision where necessary of critical construction activities in relation to habitats and species and any specified protection measures • Provision of specialist advice on ecological monitoring and site inspections and surveys as required • Liaison with the National Parks and Wildlife Service (NPWS) and other relevant stakeholders if required.

5 PROJECT ENVIRONMENTAL POLICY

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

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

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

5.1 Site Environmental Awareness

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

5.1.1 General Site Environmental Rules

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

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

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

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

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

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

5.2 Managing Environmental Incidents

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

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

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

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

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

All incidents will be investigated by the Environmental Officer and reported to the Construction Manager. Corrective and preventative actions will be implemented as required to ensure that the incident is effectively dealt with and to prevent a recurrence of the incident. Staff will be informed by toolbox talk of corrective and preventative actions implemented as relevant to their role or overall operations.

6 ENVIRONMENTAL IMPACTS AND CONTROLS

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

6.1 Potential Impacts of the Development

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

- Biodiversity
- Land, Soil and Geology
- Hydrology and Hydrogeology
- Air Quality and Climate
- Noise and Vibration
- Landscape and Visual
- Archaeology and Cultural heritage
- Material Assets: Waste, Utilities and Traffic

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

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

6.2 Legal and Other Requirements

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

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

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

The CEMP prepared by the Main Contractor is regulated by a number of documents:

- Any future planning conditions
- Resource Waste Management Plan (RWMP)
- Environmental Impact Assessment Report (EIAR)
- Natura Impact Statement (NIS)
- Construction Traffic Management Plan (CTMP)
- Construction Management Plan (CMT)

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

6.2.1 Conditions of Planning Permission

This CEMP will be updated with any conditions of planning once granted.

6.3 Implementation of Control Measures

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

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

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

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

Environmental requirements will be controlled as follows:

- Procedures and control measures as set out in this CEMP.
- Approved Method Statements and Risk Assessments from Contractors which shall address all potential environmental impacts for the specific task.
- Detailed contractor plans for specific environmental aspects.
- Emergency response plans; and
- Specific induction training before commencing work.

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

6.3.1 Communication & Training - Construction Personnel

In addition to Contractor provided site induction, CMT are obliged to conduct safety meetings / toolbox talks on relevant Environmental Health and Saftey EHS topics for all employees in their care on a weekly basis. Details of all safety meetings / toolbox talks, including topics and attendees must be submitted to the CMT.

6.3.2 Keeping of Records

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

- Records of induction training for operatives, drivers, workers, and visitors.

- Attendance by site personnel and visitor logs
- The location of waste storage areas on site.
- The details of environmental incidents and near misses including incident investigation and corrective and preventative measures implemented.
- Records of environmental inspections completed during the Construction Phase to ensure compliance with the CEMP control measures.
- Copies of Safety Data Sheets (SDS)
- Complaints register.

- Records of the movement and recovery/disposal of all waste generated during the Construction Phase of the project to include date removed from site, waste type, quantities, waste carrier and off-site destination.

All records will be made available to Client and if requested, SDCC and the EPA.

6.3.3 Monitoring, Audits, and Inspections

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

The appointed Contractor will undertake inspections to address environmental issues including groundwater, surface water, dust, litter, noise, traffic, waste management and general housekeeping. These will be carried out on both scheduled and random intervals as agreed with the Client.

Monitoring required as a condition of any consent for discharges or water supply will be the responsibility of the appointed Contractor. The appointed Contractor will also be responsible for any additional monitoring that may be required by the Client.

The Client and/or an independent auditing consultants may undertake environmental audits at random intervals to ensure that all procedures, monitoring and recording/ reporting are being undertaken by the appointed Contractor as outlined in the CEMP. The findings of these audits, inspections and monitoring results will also be recorded in the CEMP.

6.3.4 Non-Conformance and Corrective and Preventative Action

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

CARs may be raised as a result of:

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

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

6.4 Operation Controls

6.4.1 Biodiversity

All works will be undertaken in accordance with the procedures outlined in this CEMP to ensure the protection of local ecology or on any designated nature conservation sites associated with the Construction Phase of the Proposed Development.

The following construction mitigation measures, as outlined within the Biodiversity Chapter of the EIAR will be implemented in relation to the protection of biodiversity (habitats and sensitive species and other key ecological receptors):

6.4.1.1 Protection of Habitats and Flora

6.4.1.1.1 Mitigation 1: Surface water protection

While best practice development standards have been included in Section 6.4.3, further details are outlined in the Biodiversity Chapter of the EIAR to ensure the ecology of the eastern boundary ditch and any downstream watercourses is not adversely impacted. With regards to protecting the existing water features, the following advice from Inland Fisheries Ireland (2016) will be taken into consideration:

- Silt traps/ponds will not be positioned adjacent to the ditches or streams within and adjacent to the Site.
- A buffer zone should remain between any silt trap and any water features (ditches and streams), with natural vegetation left intact.
- Where natural vegetation within the buffer zone is not an option, imported materials such as terram, straw bales, or coarse to fine gravel should be used either separately or in combination as appropriate.

Additionally, it is recommended that a method statement is prepared in consultation with SDCC and agreed ahead of any works within the ditch to facilitate the construction of the headwall. Pre-cast concrete should be preferred over poured concrete to minimise risks. Any instream works should take place between July-September to avoid any potential risks to downstream fisheries habitats.

6.4.1.1.2 Mitigation 2: Biosecurity

The following best practice site hygiene and biosecurity measures will be in place to avoid spread of the invasive flora identified at the Site into the surrounding areas during Construction Phase and to limit the potential for spread of Japanese knotweed and butterfly bush and other invasive species at the Site:

- Fencing and signage will be erected to identify and cordon off the areas containing invasive species, until such a time that they are effectively removed.

- All soils/materials being introduced to the Site will be sourced from a certified invasive flora-free source site, to ensure no introduction of invasive plant materials to the Site occurs.
- Personnel working on or between sites will ensure their clothing and footwear are cleaned, ensuring they are visually free from soil and organic debris, in order to prevent inadvertent spread of invasive plant material.
- Where possible tracked vehicles should not be used within an area of infestation.
- All vehicles leaving the Site and/or transporting infested soil/materials must be thoroughly pressure-washed in a designated wash-down area before being used for other work. Mud and organic debris will not be allowed accumulate on tyres, wheels or under wheel arches.
- All vehicles containing invasive plant materials for transportation and disposal offsite will be suitably secured with tarpaulins etc., to ensure no inadvertent dissemination of invasive materials enroute.
- Works should be planned to avoid double handling of infected plants materials/soils as far as possible to reduce the risk of spread.
- All vehicles entering or leaving the Site will have been suitably checked and pressure-washed to ensure no introduction of invasive flora to and from the Site. Measures such as a drive through hygiene bath or footbaths will be considered where appropriate.
- Designated wash-down area to be located away from sensitive receptors such as watercourses, ditches, drains etc.
- Material/water left after vehicles have been pressure-washed must be contained, collected and disposed of appropriately (These waters **must not** under any circumstances be discharged to drains or the eastern ditch).
- All chemicals used for the control of non-native species should be stored and used in a responsible manner.

A comprehensive Invasive Species Management Plan shall be prepared prior to beginning of construction to limit the potential for spread of Japanese knotweed and butterfly bush within and outside of the Site. This will involve an updated botanical survey of the Site to ensure accurate mapping of the current extent of any invasive species at the Site.

6.4.1.1.3 Mitigation 3: Tree Protection Measures

Protective tree fencing in compliance with BS 5837:2012 ‘Trees in relation to design, demolition and construction – Recommendations’ will be erected prior to any Construction works being undertaken to prevent damage to the canopy and root protection areas of existing trees and hedgerows to be retained at the Site.

The fencing will be signed off by a qualified arborist prior to Construction to ensure it has been properly erected. No ground clearance, earthworks, stockpiling or machinery movement will be undertaken within these areas.

The project Arborist will be instructed **prior to commencement on Site**; to ensure that appropriate tree protection measures are in place. These measures will entail robust fencing around the root protection zones of all trees and hedgerows being retained on Site. An adequate level of signage will also be provided to highlight ‘no work zones’ and ensure that Site creep and damage to retained habitats does not occur.

6.4.1.1.4 Mitigation 4: Construction Phase Lighting

Any night-time lighting required during the Construction Phase for security etc., will be directed away from the boundary vegetation at the Site (i.e., away from hedgerows), and will not be directed skyward. Lighting will be focused into the centre of the Site and only on equipment and machinery that needs to be illuminated.

The Project Ecologist acting as ECoW for the project will review the Construction Phase lighting with the Contractor regularly during their site visits and make recommendations as required to ensure the lighting is maintained as bat friendly for the duration of the works.

6.4.1.2 Protection of Fauna

6.4.1.2.1 Mitigation 5: Bat Precautions when Felling Trees

Although all trees on Site earmarked for felling have been assessed and confirmed to be of low-negligible bat roost suitability, harm to individual bats is possible should bats be present during the felling process. It is also possible that trees can become damaged in the time between the original potential bat roost assessment (PBRA) survey and the tree felling taking place, and this can sometimes increase the bat roost suitability of a tree, providing new roost features e.g., cracks, holes etc.

As such, a pre-felling check will be conducted by a suitably qualified Ecologist of all trees to be felled at the Site prior to felling taking place; to ensure that no changes have occurred and that no individual bats will be harmed. In the unlikely event that a roosting bat is found, no felling of the tree in question will take place and a derogation licence will be obtained from the NPWS to proceed. The area around the tree will be protected with an appropriate buffer to prevent disturbance of the bat.

It is important to note that permission for the Proposed Development can be granted without any reliance on the potential grant of a derogation licence, and that any references to the potential need to obtain a licence are purely precautionary, as detailed above, and therefore not integral to the decision on whether to grant permission.

6.4.1.2.2 Mitigation 6: Vegetation Clearance

As a precaution, a pre-construction badger survey of the Site will be conducted by a suitably qualified Ecologist prior to any clearance of scrub, cutting back of hedgerows taking place; to confirm whether badger have occupied the Site between the time of the mammal survey that informed this Chapter and the commencement of works on Site.

Any demolition works or clearance of vegetation will be carried **out outside the main breeding / nesting season**, **i.e., outside of period: 1st March to 31st August,** in compliance with the Wildlife Act 2000. Should any demolition/ vegetation removal be required during this period, these areas to be affected will be checked for birds and nests by a suitable qualified Ecologist, and if any are noted during this evaluation prior to removal, the nest will be protected until the young have fledged as confirmed by the Ecologist, after which time the inactive nest can be destroyed.

Table 6-1 provides guidance for when vegetation clearance is permissible. Information sources include British Hedgehog Preservation Society's *Hedgehogs and Development* and *The Wildlife (Amendment) Act, 2000*.

The preferred period for vegetation clearance is **within the months of September and October**. Vegetation will be removed in sections working in a consistent direction to prevent entrapment of protected fauna potentially present (e.g., hedgehog). Where this seasonal restriction cannot be observed, a check will be carried out immediately prior to any Site clearance by an appropriately qualified ecologist and repeated as required to ensure compliance with legislative requirements.

Table 6-1:Seasonal restrictions on habitat/vegetation removal for relevant KER species. Red boxes indicate periods when clearance/works are not permissible.

<table>
<tr><th rowspan="2">Ecological Feature</th><th colspan="12">Month</th></tr>
<tr><th>January</th><th>February</th><th>March</th><th>April</th><th>May</th><th>June</th><th>July</th><th>August</th><th>September</th><th>October</th><th>November</th><th>December</th></tr>
<tr><td>Breeding Birds</td><td colspan="2">Vegetation clearance permissible (Sept - Feb)</td><td colspan="6">Nesting bird season.
No clearance of vegetation unless confirmed to be devoid of nesting birds by an ecologist. (Mar - Aug)</td><td colspan="4">Vegetation clearance permissible (Sept - Feb)</td></tr>
<tr><td>Bats</td><td colspan="8">Tree felling to be avoided unless confirmed to be devoid of bats by an ecologist (Jan – Aug)</td><td colspan="2">Preferred period for tree-felling (late Sept to Nov)</td><td colspan="2">Tree felling to be avoided unless confirmed to be devoid of bats by an ecologist (Nov-Dec)</td></tr>
<tr><td>Common Lizard</td><td colspan="3">Lizard Hibernation Season
No habitat clearance permissible (Jan – Mar)</td><td colspan="7">Active period
Habitat (scrub, tall sward grass) clearance permissible (Apr – Oct)</td><td colspan="2">Lizard Hibernation Season
No habitat clearance permissible (Nov – Dec)</td></tr>
<tr><td>Hibernating mammals (e.g., Hedgehog)</td><td colspan="3">Mammal hibernation season.
No clearance of vegetation unless confirmed to be devoid of hibernating mammals by an ecologist. (Jan - Mar)</td><td colspan="7">Vegetation clearance permissible (Apr - Oct)</td><td colspan="2">Mammal hibernation season.
No clearance of vegetation unless confirmed to be devoid of hibernating mammals by an ecologist. (Nov - Dec)</td></tr>
</table>

6.4.1.2.3 Mitigation 7: Construction Site Management for Fauna

As best practice all construction-related rubbish on Site e.g., plastic sheeting, netting etc. will be kept in a designated area and kept off ground level so as to prevent small mammals such as hedgehogs from entrapment and death.

Trenches/pits must be either covered at the end of each working day or include a means of escape for any animal falling in e.g., a plank or objects placed in the corner of an excavation (Species such as badgers will continue to use established paths across a site even when construction work has started).

Any temporarily exposed open pipe system will be capped in such a way as to prevent animals gaining access as may happen when contractors are off Site

6.4.1.3 Natura Impact Statement

A Natura Impact Statement (NIS) has been prepared for the Proposed Development (Enviroguide, 2024) and details the findings of the Stage 2 Appropriate Assessment conducted to further examine the potential direct and indirect impacts of the Proposed LRD at Bohernabreena, Oldcourt, Ballycullen, Co. Dublin, on the following European Sites:

- Glenasmole Valley SAC (001209)
- Wicklow Mountains SAC (002122)

The above sites were identified by a screening exercise that assessed likely significant effects of a range of impacts that have the potential to arise from the Proposed Development. The Appropriate Assessment investigated the potential direct and indirect effects of the proposed works, both during construction and operation, on the integrity and qualifying interests of the above European sites, alone and in combination with other plans and projects, taking into account the site's structure, function and conservation objectives.

Where potentially significant effects were identified, a range of mitigation and avoidance measures have been suggested to avoid them. The NIS has concluded that, once the avoidance and mitigation measures are implemented as proposed, the Proposed Development will not have an adverse effect on the integrity of the above European sites, individually or in combination with other plans and projects. Where applicable, a suite of monitoring surveys has been proposed to confirm the efficacy of said measures in relation to ensuring no adverse impacts on the habitats of the relevant European sites have occurred.

The mitigation measures to be implemented throughout the duration of the Construction Phase, as outlined within the NIS, are as follows:

6.4.1.3.1 Mitigation 1: Preparation of an Invasive Species Management Plan

A comprehensive Invasive Species Management Plan (ISMP) shall be prepared prior to beginning of construction to limit the potential for spread of Japanese knotweed and butterfly bush within and outside of the Site. Due to the dynamic nature and relatively fast spread of the invasive floral species found at the Site, this measure is included as a mitigation measure

in the NIS in anticipation of any time delays between a grant of permission and commencement of works.

Should the commencement of works be delayed beyond 2025, the preparation of the ISMP will require an updated botanical survey of the Site during the botanical growing season, to ensure the current extent of any invasive species at the Site is accurately mapped to inform the ISMP. Should works commence prior to this, it is assumed that the extent of the invasive species would be accurate based on the existing survey data.

The ISMP shall be prepared by suitably qualified ecologist/botanist and signed off by SDCC prior to commencement of works. The ISMP should at minimum contain the following features:

- Current extent of invasive species on Site;
- Suitable removal methods for each invasive species encountered on Site; and
- Appropriate management of each invasive species encountered on Site.

6.4.1.3.2 Mitigation 2: Biosecurity Measures

All biosecurity measures as detailed in Section 6.4.1.1.2 of this CEMP.

6.4.1.3.3 Mitigation 3: Site-specific Surface Water Mitigation Measures

While best practice development standards have been included in Section 6.4.3 of this CEMP, further details are outlined in this section to ensure the ecology of internal ditches and streams, as well as any downstream watercourses such as the Dodder River are not adversely impacted.

With regards to protecting the existing water features and the water quality of the Dodder, the following measures are recommended following the latest guidance on Construction works in or adjacent to watercourses (Inland Fisheries Ireland, 2016):

- Silt traps/ponds will not be positioned directly adjacent to the ditches or streams within and adjacent to the Site.
- A buffer zone should remain between any silt trap and any water features (ditches and streams), with natural vegetation left intact. Where natural vegetation within the buffer zone is not an option, imported materials such as terram, straw bales, or coarse to fine gravel should be used either separately or in combination as appropriate.
- Silt fencing will be positioned where required to prevent overland surface water flows over sloped lands to the existing streams and ditches.
- Pre-cast concrete should be preferred over poured concrete to minimise risks for the construction of any headwall features and culverts.
- Any instream works should take place between July-September to avoid any potential risks to downstream fisheries habitats.
- Where temporary storage of imported materials or excavated soils is required on Site, these temporary storage areas will be surrounded with silt fencing to filter out any suspended solids from surface water arising from these materials.
- Under no circumstances will any untreated wastewater generated onsite (from equipment washing, road sweeping etc.) be released into nearby drains.

In addition, the following will be considered when designing fuel, oil and other chemical storage at the Site for the Construction Phase:

- The storage area for fuels, oils and other chemicals will be located as far away from the existing drainage ditches and stream as feasible. This is likely to be located at the northwest area of the Site to minimize potential for any overland flows to existing ditches and streams at the Site or immediately adjacent.

Once the above details are implemented in full together with the best practice measures detailed in Section 6.4.3, it is considered that there will be no significant adverse impacts on the water quality of the Dodder.

6.4.2 Land, Soil and Geology

6.4.2.1 Control of Excavated Soil and Contaminated Soil

In accordance with the Resource Waste Management Plan (AWN Consulting, 2024), it is anticipated that 79% excavated material will be reused on site. It is anticipated that 21% (c. 15,284m^3) of excavated material will need to be removed offsite for appropriate reuse, recovery and/or disposal. If material is removed off-site, it could be reused as a by-product (and not as a waste). If this is done, it will be done in accordance with Regulation 27 of the European Communities (Waste Directive) Regulations 2011, as amended, which requires that certain conditions are met and that by-product notifications are made to the EPA via their online notification form. Excavated material should not be removed from site until approval from the EPA has been received. The potential to reuse material as a by-product will be confirmed during the course of the excavation works, with the objective of eliminating any unnecessary disposal of material.

The next option (beneficial reuse) may be appropriate for the excavated material, pending environmental testing to classify the material as hazardous or non-hazardous in accordance with the EPA Waste Classification–List of Waste & Determining if Waste is Hazardous or Non-Hazardous publication. Clean inert material may be used as fill material in other construction projects or engineering fill for waste licensed sites. Beneficial reuse of surplus excavation material as engineering fill may be subject to further testing to determine if materials meet the specific engineering standards for their proposed end use.

Any nearby sites requiring clean fill/capping material will be contacted to investigate reuse opportunities for clean and inert material. If any of the material is to be reused on another site as a by-product (and not as a waste), this will be done in accordance withRegulation27. Similarly, if any soils/stones are imported onto the site from another construction site as a by-product, this will also be done in accordance with Regulation 27. Regulation 27 will be investigated to see if the material can be imported onto this site for beneficial reuse instead of using virgin materials.

If the material is deemed to be a waste, then removal and reuse/recovery/disposal of the material will be carried out in accordance with the Waste Management Act 1996 as amended, the Waste Management (Collection Permit) Regulations 2007 as amended and the Waste Management (Facility Permit & Registration) Regulations 2007as amended. Once all available beneficial reuse options have been exhausted, the options of recycling and recovery at waste permitted and licensed sites will be considered. In the event that contaminated material is encountered and subsequently classified as hazardous, this material will be stored separately

to any non-hazardous material. It will require off-site treatment at a suitable facility or disposal abroad via Transfrontier Shipment of Wastes (TFS)

Measures laid out in Section 6.4.3.1 (Control of Fuel and Chemical Storage) will serve to prevent contamination of the soil from any potential oil and petrol leakages.

6.4.3 Hydrology and Hydrogeology

6.4.3.1 Control of Fuel and Chemical Storage

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

If small quantities of oils and chemicals oils are required at the Site, the use of these will be strictly controlled in accordance with procedures outlined in this CEMP and storage will be avoided where possible. All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds and storage areas shall be designed having regard to Environmental Protection Agency guidelines 'Storage and Transfer of Materials for Scheduled Activities' (EPA, 2004) and Enterprise Ireland Best Practice Guidelines (BPGCS005). All tank and drum storage areas shall, as a minimum, be bunded to a volume not less than the greater of the following:

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

Any fuels retained on drip trays, mobile bunds, etc., will be emptied into a secure bunded waste oil drum to await appropriate disposal offsite.

Refuelling of plant during the Construction Phase will be carried out in accordance with standard best practice. Refuelling will only be carried out at the designated, impermeable refuelling station location onsite with appropriate containment in place. This station will be fully equipped for spill response and a specially trained and dedicated Environmental and Emergency Spill Response Team will be appointed before the commencement of works at the Proposed Development Site.

Where possible any oil and lubricant changes and maintenance will take place offsite. Only emergency breakdown maintenance will be carried out on site. Drip trays and spill kits will be available on site to ensure that any spills from vehicles are contained and removed offsite.

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

Provided that these requirements are adhered to, and site crew are trained in the appropriate refuelling techniques, it is not expected that there will be any fuel/oil wastage at the Site.

6.4.3.2 Control of Emissions to Surface Water and Drainage

Works carried out as part of the Proposed Development will comply with all Statutory Legislation including the Local Government (Water Pollution) acts, 1977 and 1990.

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

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

Silt traps, and silt fences will be provided by the contractor where necessary to prevent silts and soils being washed away by heavy rains during the course of the Construction Phase. Surface water runoff and water pumped from the excavation works will be discharged via a silt trap / settlement pond to the existing foul drainage network.

In addition, the following general measures will be undertaken:

- Where required, designated impermeable cement washout areas will be provided.
- Run-off from the working site or any areas of exposed soil will be channeled and intercepted at regular intervals for discharge to silt-traps or lagoons with over-flows directed to land rather than to a drain.
- Silty water generated on site will be treated using silt traps/settlement ponds and temporary interceptors and traps will be installed until such time as permanent facilities are constructed.
- Storm drain inlets which could receive stormwater from the project will be protected throughout the Construction Phase.
- A regular review of weather forecasts of heavy rainfall will be conducted, and a contingency plan will be prepared for before and after such events to minimise any potential nuisances. As the risk of the break-out of silt laden run-off is higher during these weather conditions, no work will be carried out during such periods where possible.
- Any imported materials will, as much as possible, be placed on Site in their proposed location and double handling will be avoided. Where this is not possible designated temporary material storage areas will be used.
- These temporary storage areas will be surrounded with silt fencing to filter out any suspended solids from surface water arising from these materials.
- Temporary hydrocarbon interceptor facilities will be installed and maintained where Site Works involve the discharge of drainage waters to nearby drains.

- All containment and treatment facilities will be regularly inspected and maintained.
- All personnel working on site will be trained in pollution incident control response.
- If portaloos and/ or containerised toilets and welfare units will be used to provide facilities for site personnel, all associated waste will be removed from site by a licensed waste disposal contractor.

Under no circumstances will any untreated wastewater generated onsite (from equipment washing, road sweeping etc.) be released into nearby drains.

6.4.3.3 Control of Emissions to Soil and Groundwater

Measures set out in Section 6.4.2 will also serve to protect soil and groundwater. In addition,

- No direct untreated point discharge of construction runoff to groundwater will be permitted.
- Where a pollution incident is detected, construction works will be stopped until the source of the construction pollution has been identified and remedied.
- Groundwater may be encountered during the construction works. Where water must be pumped from the excavations, water will be managed in accordance with best practice standards (i.e., CIRIA – C750) and regulatory consents.
- Any excavated and potentially contaminated stockpiled soils will be constructed/ located/ sheeted in a manner that ensures water is contained within the site boundary.

6.4.3.4 Foul Water Drainage

In order to reduce the risk of defective or leaking foul sewers, the following remedial measures will be implemented:

- All new foul sewers will be tested by means of an approved air test during the Construction Phase in accordance with Uisce Éireann's (formerly Irish Water) Code of Practice and Standard Details.
- All private drainage will be inspected and signed off by the design Engineer in accordance with the Building Regulations Part H and BCAR requirements.
- Foul sewers will be surveyed by CCTV to identify possible physical defects.
- The connection of the new foul sewers to the public sewer will be carried out under the supervision of Uisce Éireann and will be checked prior to commissioning.
- Prior to commencement of excavations in public areas, all utilities and public services will be identified and checked, to ensure that adequate protection measures are implemented during the Construction Phase.

6.4.4 Dust

According to the Air Quality Chapter of the EIAR (AWN Consulting, 2024), the Proposed Development has been assessed as having a medium risk of dust soiling impacts and a low risk of dust related human health impacts during the construction phase as a result of earthworks, construction and trackout activities. Therefore, the following dust mitigation measures shall be implemented during the Construction Phase of the Proposed Development. These measures are appropriate for sites with a medium risk of dust impacts and aim to ensure that no significant nuisance occurs at nearby sensitive receptors. The mitigation measures

draw on best practice guidance from Ireland (DCC, 2018), the UK (IAQM (2024), BRE (2003), The Scottish Office (1996), UK ODPM (2002)) and the USA (USEPA, 1997). The measures are divided into different categories for different activities.

6.4.4.1 Communications

- Develop and implement a stakeholder communications plan that includes community engagement before works commence on site. Community engagement includes explaining the nature and duration of the works to local residents and businesses.
- The name and contact details of a person to contact regarding air quality and dust issues shall be displayed on the site boundary, this notice board should also include head/regional office contact details.

6.4.4.2 Site Management

- During working hours, dust control methods will be monitored as appropriate, depending on the prevailing meteorological conditions. Dry and windy conditions are favourable to dust suspension therefore mitigations must be implemented if undertaking dust generating activities during these weather conditions.
- A complaints register will be kept on site detailing all telephone calls and letters of complaint received in connection with dust nuisance or air quality concerns, together with details of any remedial actions carried out.
- 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.
- Hold regular liaison meetings with other high risk construction sites within 250 m of the site boundary where feasible, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.

6.4.4.3 Preparing and Maintaining the Site

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

6.4.4.4 Operating Vehicles / Machinery and Sustainable Travel

- Ensure all vehicles switch off engines when stationary - no idling vehicles.
- Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable.

- Impose and signpost a maximum-speed-limit of 15 kph haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).
- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.
- Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing)

6.4.4.5 Operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g., suitable local exhaust ventilation systems.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
- Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

6.4.4.6 Waste Management

- No bonfires or burning of waste materials.

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

6.4.4.8 Measures Specific to Construction

- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.

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

6.4.4.9 Measures Specific to Trackout

- A speed restriction of 15 kph will be applied as an effective control measure for dust for on-site vehicles.
- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
- Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
- Record all inspections of haul routes and any subsequent action in a site log book.
- Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).
- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.
- Access gates to be located at least 10 m from receptors where possible.

6.4.4.10 Monitoring

- Undertake daily on-site and off-site inspections, where receptors (including roads) are nearby, to monitor dust, record inspection results in the site inspection log. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary.
- 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.
- Monitoring of construction dust deposition along the site boundary to nearby sensitive receptors during the construction phase of the proposed development is recommended to ensure mitigation measures are working satisfactorily. This can be carried out using the Bergerhoff method in accordance with the requirements of the German Standard VDI 2119. The Bergerhoff Gauge consists of a collecting vessel and a stand with a protecting gauge. The collecting vessel is secured to the stand with the opening of the collecting vessel located approximately 2m above ground level. The TA Luft limit value is 350 mg/m^2/day during the monitoring period of 30 days (+/- 2 days).

6.4.5 Noise

6.4.5.1 Noise Limits

According to the Noise and Vibrations Chapter of the EIAR (AWN Consulting, 2024), there is no published statutory Irish guidance relating to the maximum permissible noise level that may be generated during the construction phase of a project. Local authorities typically control construction activities by imposing limits on the hours of operation and consider noise limits at their discretion.

In the absence of specific noise limits, appropriate criteria relating to permissible construction noise levels for a development of this scale may be found in the British Standard BS 5228 – 1: 2009+A1:2014: Code of practice for noise and vibration control on construction and open sites – Noise.

6.4.5.1.1 ABC Method

The approach adopted here calls for the designation of a noise sensitive location into a specific category (A, B or C) based on existing ambient noise levels in the absence of construction noise. This then sets a threshold noise value that, if exceeded at this location, indicates a significant noise impact is associated with the construction activities, depending on context.

BS 5228-1:2009+A1:2014 sets out guidance on permissible noise levels relative to the existing noise environment. Table 6-2 sets out the values which, when exceeded, signify a significant effect at the facades of residential receptors.

Table 6-2: Example Threshold of Significant Effect at Dwellings

Assessment category and threshold value period (L_{Aeq})	Threshold value, in decibels (dB)		
	Category A [A]	Category B [B]	Category C [C]
Daytime (07:00 – 19:00) and Saturdays (07:00 – 13:00)	65	70	75
Evenings and weekends D	55	60	65
Night-time (23:00 to 07:00hrs)	45	50	55

A. Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are less than these values.

B. Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are the same as category A values.

C. Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are higher than category A values.

D. 19:00 – 23:00 weekdays, 13:00 – 23:00 Saturdays and 07:00 – 23:00 Sundays.

For the appropriate assessment period (i.e. daytime in this instance) the ambient noise level is determined and rounded to the nearest 5dB. If the construction noise exceeds the appropriate category value, then a significant effect is deemed to occur. It should be noted that this assessment method is only valid for residential properties and if applied to commercial premises without consideration of other factors may result in an excessively onerous thresholds being set.

The closest neighbouring noise sensitive properties to the proposed development are some 20m to the nearest areas of general construction at the southwest of the proposed development site.

6.4.5.1.2 Proposed Threshold Noise Levels

Taking into account the proposed documents outlined above and making reference to the baseline noise environment monitored around the development site (see Section 10.3 of the

Noise and Vibration Chapter), BS 5228-1:2009+A1:2014 has been used to inform the assessment approach for construction.

The following Construction Noise Threshold (CNT) levels are proposed for the construction stage of this development: -

- For residential and cemetery NSLs it is considered appropriate to adopt 65 dB(A) CNT depending on location. Given the baseline monitoring carried out, it would indicate that Category A values are appropriate using the ABC method.

6.4.5.1.3 Interpretation of the CNT

In order to assist with interpretation of CNTs, Table 6-3 includes guidance as to the likely magnitude of impact associated with construction activities, relative to the CNT. This guidance is derived from *Table 3.16 of DMRB: Noise and Vibration* and adapted to include the relevant significance effects from the *EPA Guidelines* (EPA 2017).

Table 6-3: Construction Noise Significance Ratings

Guidelines for Noise Impact Assessment Significance (DMRB)	CNT per Period	EPA EIAR Significance Effects	Determination
Negligible	Below or equal to baseline noise level	Not Significant	Depending on CNT, duration & baseline noise level
Minor	Above baseline noise level and below or equal to CNT	Slight to Moderate	
Moderate	Above CNT and below or equal to CNT +5 dB	Moderate to Significant	
Major	Above CNT +5 to +15 dB	Significant, to Very Significant	
	Above CNT +15 dB	Very Significant to Profound	

The contract documents will clearly specify the construction noise criteria included in the Noise and Vibration chapter which the construction works must operate within. The Contractor undertaking the construction of the works will be obliged to take specific noise abatement measures and comply with the recommendations of BS 5228-1:2009+A1:2014 *Code of Practice for Noise and Vibration Control on Construction and Open Sites – Noise* and the *European Communities (Noise Emission by Equipment for Use Outdoors) Regulations, 2001*. These measures will ensure that: -

- No plant used on site will be permitted to cause an ongoing public nuisance due to noise.
- The best means practicable, including proper maintenance of plant, will be employed to minimise the noise produced by on site operations.
- All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the contract.
- Compressors will be attenuated models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers.
- Machinery that is used intermittently will be shut down or throttled back to a minimum during periods when not in use;

- Any plant, such as generators or pumps that is required to operate outside of normal permitted working hours will be surrounded by an acoustic enclosure or portable screen.

BS 5228 -1:2009+A1 2014 includes guidance on several aspects of construction site practices, which include, but are not limited to: -

- selection of quiet plant;
- noise control at source;
- screening;
- liaison with the public, and;
- monitoring.

Detailed comment is offered on these items in the following paragraphs. Noise control measures that will be considered include the selection of quiet plant, enclosures and screens around noise sources, limiting the hours of work and noise and vibration monitoring, where required.

6.4.5.2 Selection of Quiet Plant

This practice is recommended in relation to static plant such as compressors and generators. It is recommended that these units be supplied with manufacturers' proprietary acoustic enclosures. The potential for any item of plant to generate noise will be assessed prior to the item being brought onto the site. The least noisy item should be selected wherever possible. Should a particular item of plant already on the site be found to generate high noise levels, the first action should be to identify whether or not said item can be replaced with a quieter alternative.

6.4.5.3 Noise Control at Source

If replacing a noisy item of plant is not a viable or practical option, consideration will be given to noise control "at source". This refers to the modification of an item of plant or the application of improved sound reduction methods in consultation with the supplier. For example, resonance effects in panel work or cover plates can be reduced through stiffening or application of damping compounds; rattling and grinding noises can often be controlled by fixing resilient materials in between the surfaces in contact.

Referring to the potential noise generating sources for the works under consideration, the following best practice migration measures should be considered:

- Where practical, site compounds will be located in excess of 30m from noise sensitive receptors within the site constraints. The use lifting bulky items, dropping and loading of materials within these areas should be restricted to normal working hours.
- For mobile plant items such as dump trucks, excavators and loaders, the installation of an acoustic exhaust and or maintaining enclosure panels closed during operation can reduce noise levels by up to 10 dB. Mobile plant should be switched off when not in use and not left idling.
- For concrete mixers, control measures should be employed during cleaning to ensure no impulsive hammering is undertaken at the mixer drum.
- For all materials handling ensure that materials are not dropped from excessive heights, lining drops chutes and dump trucks with resilient materials.

- For compressors, generators and pumps, these can be surrounded by acoustic lagging or enclosed within acoustic enclosures providing air ventilation.
- Demountable enclosures can also be used to screen operatives using hand tools and will be moved around site as necessary.
- All items of plant should be subject to regular maintenance. Such maintenance can prevent unnecessary increases in plant noise and can serve to prolong the effectiveness of noise control measures.

6.4.5.4 Screening

Screening is an effective method of reducing the noise level at a receiver location and can be used successfully as an additional measure to all other forms of noise control. Construction site hoarding will be constructed around the site boundaries as standard. The hoarding will be constructed of a material with a mass per unit of surface area greater than 7 kg/m^2 to provide adequate sound insulation.

In addition, careful planning of the site layout will also be considered. The placement of site buildings such as offices and stores will be used, where feasible, to provide noise screening when placed between the source and the receiver.

6.4.5.5 Liaison with the Public

A designated environmental liaison officer will be appointed to site during construction works. Any noise complaints should be logged and followed up in a prompt fashion by the liaison officer. In addition, where a particularly noisy construction activity is planned or other works with the potential to generate high levels of noise, or where noisy works are expected to operate outside of normal working hours etc., the liaison officer will inform the nearest noise sensitive locations of the time and expected duration of the noisy works.

6.4.5.6 Monitoring

Where required, construction noise monitoring will be undertaken at periodic sample periods at the nearest noise sensitive locations to the development works to check compliance with the construction noise criterion.

Noise monitoring should be conducted in accordance with the International Standard ISO 1996: 2017: *Acoustics – Description, measurement and assessment of environmental noise*.

6.4.5.7 Project Programme

The phasing programme will be arranged so as to control the amount of disturbance in noise and vibration sensitive areas at times that are considered of greatest sensitivity. During excavation/ demolition or other high noise generating works are in progress on a site at the same time as other works of construction that themselves may generate significant noise and vibration, the working programme will be phased so as to prevent unacceptable disturbance at any time.

6.4.6 Vibration

The vibration from construction activities will be limited to the values set out in the following sections. According to the Noise and Vibrations Chapter of the EIAR (AWN Consulting, 2024), magnitudes of vibration slightly greater than those in the table are normally unlikely to cause cosmetic damage, but construction work creating such magnitudes should proceed with caution. Limit values have been provided for soundly constructed residential and commercial properties.

6.4.6.1 Vibration Limit Values

Vibration standards address two aspects: those dealing with cosmetic or structural damage to buildings and those with human comfort. For the purpose of this scheme, the range of relevant criteria used for surface construction works for both building protection and human comfort are expressed in terms of Peak Particle Velocity (PPV) in mm/s.

6.4.6.1.1 Building Damage

With respect to vibration, British Standard BS 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Vibration recommends that, for soundly constructed residential property and similar structures that are generally in good repair, a threshold for minor or cosmetic (i.e. non-structural) damage should be taken as a peak component particle velocity (in frequency range of predominant pulse) of 15mm/s at 4Hz increasing to 20mm/s at 15Hz and 50mm/s at 40Hz and above. The standard also notes that below 12.5 mm/s PPV the risk of damage tends to zero. It is therefore common, on a cautious basis to use this lower value. Taking the above into consideration the vibration criteria in Table 6-4 are recommended.

Table 6-4: Recommended Vibration Criteria During Construction Phase

Allowable vibration (in terms of peak particle velocity) at the closest part of sensitive property to the source of vibration, at a frequency of:		
Less than 15Hz	15 to 40Hz	40Hz and above
12 mm/s	20 mm/s	50 mm/s

6.4.6.1.2 Human Perception

People are sensitive to vibration stimuli at levels orders of magnitude below those which have the potential to cause any cosmetic damage to buildings. There are no current standards which provide guidance on typical ranges of human response to vibration in terms of PPV for continuous or intermittent vibration sources.

BS5228-2:2009+A1:2014, provides a useful guide relating to the assessment of human response to vibration in terms of the PPV. Whilst the guide values are used to compare typical human response to construction works, they tend to relate closely to general levels of vibration perception from other general sources.

Table 6-5 overleaf summarises the range of vibration values and the associated potential effects on humans.

Table 6-5: Guidance on Effects of Human Response to PPV Magnitudes

Vibration Level, PPV	Effect
0.140mm/s	Vibration might be just perceptible in the most sensitive situations for most vibration frequencies. At lower frequencies people are less sensitive to vibration.
0.3mm/s	Vibration might be just perceptible in residential environments.
1mm/s	It is likely that a vibration level of this magnitude in residential environments will cause complaint.

Vibration typically becomes perceptible at around 0.15 to 0.3 mm/s and may become disturbing or annoying at higher magnitudes. However, higher levels of vibration are typically tolerated for single events or events of short-term duration, particularly during construction projects and when the origin and or the duration of vibration is known. For example, groundbreaking can typically be tolerated at vibration levels up to 2.5 mm/s if adequate public relations are in place and timeframes are known. These values refer to the day-time periods only.

During surface construction works (demolition and groundbreaking etc.) the vibration limits set within Table 6-5 would be perceptible to building occupants and have the potential to cause subjective effects. The level of effect is, however, greatly reduced when the origin and time frame of the works are known and limit values relating to structural integrity are adequately communicated. In this regard, the use of clear communication and information circulars relating to planned works, their duration and vibration monitoring can significantly reduce vibration effects to the neighbouring properties.

6.4.6.1.2.1 Interpretation of the Human Response to Vibration

In order to assist with interpretation of vibration thresholds, Table 6-6 presents the significance table relating to potential impacts to building occupants during construction based on guidance from BS5228-2:2009+A1:2014.

Table 6-6: Human Response Vibration Significance Ratings

Criteria	Impact Magnitude	Significance Rating
≥10 mm/s PPV	Very High	Very Significant
≥1 mm/s PPV	High	Moderate to Significant
≥0.3 mm/s PPV	Medium	Slight to Moderate
≥0.14 mm/s PPV	Low	Not significant to Slight
Less than 0.14 mm/s PPV	Very Low	Imperceptible to Not significant

6.4.7 Archaeology and Cultural heritage

It is possible that excavation works associated with the Proposed Development may have an adverse impact on small or isolated previously unrecorded archaeological features or deposits that have the potential to survive beneath the current ground level. If any archaeological remains are discovered during this project, all works will cease, and an expert archaeologist will be brought to site and all future works will be carried out under the supervision of the archaeologist.

6.4.7.1 Monitoring

No specific monitoring measures are required in relation to archaeology and cultural heritage given the fact that it is not predicted that the Proposed Development will have any adverse impacts on any archaeological features or deposits.

6.4.8 Material Assets: Traffic and Waste

6.4.8.1 Control of Traffic

A Construction Traffic Management Plan (CTMP) has been prepared by Pinnacle Consulting Engineers. This plan outlines the proposals in relation to construction traffic and associated construction activities that impact the surrounding roads network.

Care will be taken to ensure existing pedestrian and cycling routes are suitably maintained or appropriately diverted as necessary during the construction period, and temporary car parking is provided for contractor's vehicles. It is likely that construction will have an imperceptible impact on pedestrian and cycle infrastructure.

Through the implementation of the CEMP and CTMP, it is anticipated that the effect of traffic during the Construction Phase will have a slight effect on the surrounding road network for short-term period.

6.4.8.1.1 Monitoring

During the Construction Phase the following monitoring is advised:

- Construction vehicles routes and parking
- Internal and external road conditions
- Construction activities hours of work

The specific compliance exercises to be undertaken in relation to the range of measures detailed in the final construction management plan will be agreed with the planning authority.

6.4.8.2 Control of Waste and Waste Management

The following mitigation measures, as outlined within Chapter 13 Material Assets, Resource and Waste Management of the EIAR will be implemented during the construction phase of the proposed development:

A project specific Resource Waste Management Plan (RWMP) (AWN Consulting, 2024) has been prepared in line with the requirements of the requirements of the '*Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction & Demolition Projects*' (EPA, 2021). The mitigation measures outlined in the RWMP will be implemented in full and form part of the mitigation strategy for the site. The mitigation measures presented in the RWMP will ensure effective waste management and minimisation, reuse, recycling, recovery and disposal of waste material generated during the excavation and construction phases of the proposed development.

- Prior to commencement, the appointed Contractor(s) will be required to refine / update the RWMP in agreement with SDCC and in compliance with any planning conditions, or submit an addendum to the RWMP to SDCC, detailing specific measures to minimise waste generation and resource consumption, and provide details of the proposed waste contractors and destinations of each waste stream.
- The Contractor will implement the RWMP throughout the duration of the proposed excavation and construction phases.

A quantity of topsoil and sub soil will need to be excavated to facilitate the proposed development. The project engineers (Pinnacle) have estimated that the majority excavated material will need to be removed off-site. Correct classification and segregation of the excavated material is required to ensure that any potentially contaminated materials are identified and handled in a way that will not impact negatively on workers as well as on water and soil environments, both on and off-site.

In addition, the following mitigation measures will be implemented:

- Building materials will be chosen to 'design out waste';
- On-site segregation of waste materials will be carried out to increase opportunities for off-site reuse, recycling and recovery. The following waste types, at a minimum, will be segregated:
    - Concrete rubble (including ceramics, tiles and bricks);
    - Plasterboard;
    - Metals;
    - Glass; and
    - Timber.
- Left over materials (e.g. timber off-cuts, broken concrete blocks / bricks) and any suitable construction materials shall be re-used on-site, where possible; (alternatively, the waste will be sorted for recycling, recovery or disposal);
- All waste materials will be stored in skips or other suitable receptacles in designated areas of the site;
- Any hazardous wastes generated (such as chemicals, solvents, glues, fuels, oils) will also be segregated and will be stored in appropriate receptacles (in suitably bunded areas, where required);
- A Resource Manager will be appointed by the main Contractor(s) to ensure effective management of waste during the excavation and construction works;
- All construction staff will be provided with training regarding the waste management procedures;
- All waste leaving site will be reused, recycled or recovered, where possible, to avoid material designated for disposal;
- All waste leaving the site will be transported by suitably permitted contractors and taken to suitably registered, permitted or licenced facilities; and
- All waste leaving the site will be recorded and copies of relevant documentation maintained.

Nearby sites requiring clean fill material will be contacted to investigate reuse opportunities for clean and inert material, if required. If any of the material is to be reused on another site as by-product (and not as a waste), this will be done in accordance with Regulation 27 (By-products), as amended, European Union (Waste Directive) Regulations 2011-2020. EPA approval will be obtained prior to moving material as a by-product.

These mitigation measures will ensure that the waste arising from the construction phase of the proposed development is dealt with in compliance with the provisions of the Waste Management Act 1996, as amended, associated Regulations and the Litter Pollution Act 1997 and the National Waste Management Plan for a Circular Economy 2024 - 2030 (NWMPCE). It will also ensure optimum levels of waste reduction, reuse, recycling and recovery are achieved and will promote more sustainable consumption of resources.

7 SITE TIDINESS & HOUSEKEEPING

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

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

The Site will be left in a safe condition and site security will be managed in accordance with the details specified in the Construction and Demolition Waste Management Plan and the control measures outlined in Section 6.4 of this CEMP.

8 EMERGENCY PLANNING AND RESPONSE

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

8.1 Environmental Emergency Preparedness and Response

The control measures identified in this CEMP, once correctly implemented, will reduce the likelihood of the occurrence of an environmental incident (emergency).

A procedure for Environmental Emergency Preparedness and Response will be developed prior to the commencement of the Construction Phase and will be implemented by the CMT.

The Environmental Emergency Preparedness and Response Procedure will ensure that all countermeasures proceed in a controlled manner so that greater damages are avoided and the possible effects upon persons, the environment and property are avoided or limited.

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

As per Sections 5.2 and 6.3 of this CEMP, once an environmental incident has been responded to, the processes identified in the incident investigation, and the non-conformity, corrective, and preventative action procedures will be adhered to with all details pertaining to the incident recorded in the site environmental register.

As an example of emergency response actions required, in the event of a spillage, the following procedure shall be followed:

1. IF SAFE (USE PPE), stop the source of the spill and raise the alarm to alert people working in the vicinity of any potential dangers.

2. IF SAFE (USE PPE), contain the spill using the absorbent spills material provided. Do not spread or flush away the spill.

3. Cover or bund off any vulnerable areas where appropriate.

4. If possible, clean up as much as possible using the absorbent spills materials.

5. Do not hose the spillage down or use any detergents.

6. Contain any used absorbent material so that further contamination is limited.

7. Notify the Environmental Officer so that used absorbent material can be disposed of using a licensed waste contractor.

8. An accident investigation should be performed in accordance with procedures and the report sent to the Environmental Officer.

In the event of spillages or other incidents, steps will be taken to prevent environmental pollution. For example, through the protection of drains by use of drain covers or booms, use of absorbent granules following an oil / chemical spill and turning off equipment or other sources of noise or dust.

Once the situation has been rectified, full details about the incident and remedial actions undertaken will be provided to the local authority and all other relevant authorities and recorded in the site environmental register.

9 ENVIRONMENTAL REGULATORY REQUIREMENTS

This site environmental legal register will record regulatory and legal requirements, and summarise applicable environmental legislation, (as well as other requirements) that the project must adhere to. The legal register will be available through the construction manager's office on site.

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

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

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

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

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

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

10 REFERENCES

Construction Industry Research and Information Association (CIRIA), 2001. Control of Water Pollution from Construction Sites - Guidance for Consultants and Contractors.

Construction Industry Research and Information Association (CIRIA), 2005. Environmental Good Practice on Site (C650).

Construction Industry Research and Information Association (CIRIA), 2006. Control of water pollution from linear construction projects: Technical guidance (Murnane et al. 2006) (C648).

Construction Industry Research and Information Association (CIRIA), 2007. The SUDS Manual (C697).

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