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Enviroguide CONSULTING

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)

FOR

RESIDENTIAL DEVELOPMENT

AT

GORDON PARK, OLD NAAS ROAD, KINGSWOOD, DUBLIN 22

August 2022

ON BEHALF OF

GREENWALK DEVELOPMENT LTD

Prepared by
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1 INTRODUCTION

This Construction Environmental Management Plan (hereinafter CEMP) has been prepared by Enviroguide Consulting on behalf of Greenwalk Development Ltd (the Applicant) for the Proposed Residential Development at Lands at Gordon Park, Old Naas Road, Kingswood, Dublin 22 (the Site).

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

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

This CEMP is produced in support of Planning Application SD21A/0327 which has been granted permission subject to conditions. This is a live document, and it is intended that it will be reviewed for suitability, adequateness and effectiveness throughout the Construction Phase.

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

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

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

2 PROPOSED DEVELOPMENT DESCRIPTION

2.1 Site Location and Description

The Site of the Proposed Development occupies an area of approximately 2.28 hectares (ha) at Gordon Park, Old Naas Road, Kingswood, Dublin 22. The location of the Site is presented in Figure 2-1.

The Site is currently occupied by Clondalkin Rugby Football Club (RFC). Clondalkin RFC have recently acquired other lands in the area to allow their club and playing facilities to expand to meet their growing requirements.

The Site, named locally as Gordon Park, is bounded by the Roadstone Group Sports Club and sports facilities to the north and east, the Silken Park Residential Development to the south and the Old Naas Road to the west. The site is relatively flat, with the ground levels falling from a level of 95.20mOD at the southwest corner of the site to a level of 92.00mOD at the existing site entrance at the northwest corner of the site.

The Fettercairn Stream, a tributary of the Camac River, abuts the eastern boundary of the site and runs northwards for a distance of approximately 80m from the south-eastern corner of the site boundary, before turning 90 degrees and heading in an easterly direction away from the site.

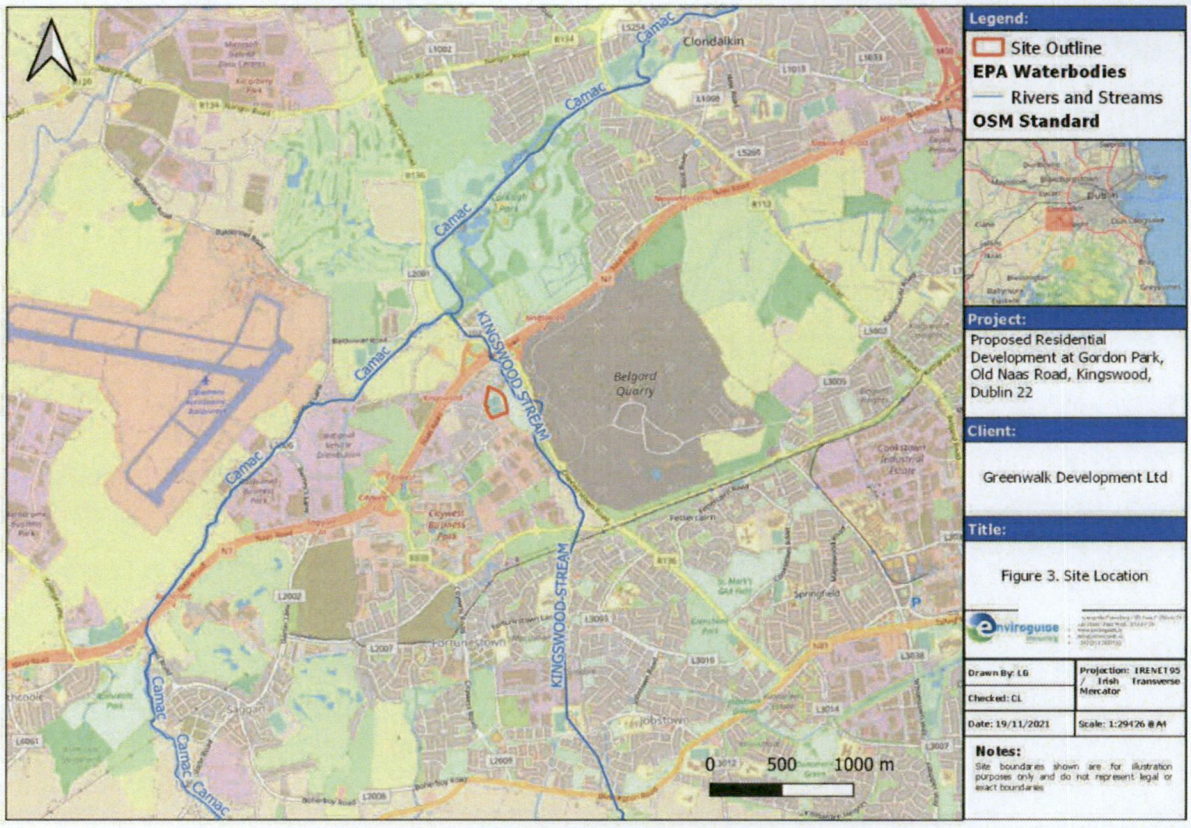

Figure 2-1: Site Location

2.2 Proposed Development

Greenwalk Development Ltd has been granted permission, subject to conditions, for a residential development on a site area of 2.28Ha, at Gordon Park, Old Naas Road, Kingswood, Dublin 22. The Proposed Development site is bounded to the west by the Old Naas Road and to the south by the Silken Park development and is located in the townland of Brownsbarn.

The Proposed Development consists of 77 no. dwellings, comprised of 63 No. 2-storey houses, and 14 No. apartments & duplex units accommodated in one 3-storey building. The proposed houses are comprised of 8 No. 2 bed houses & 55 No. 3 bed houses. The proposed apartments & duplex units are comprised of 7 No. 1 bed apartments at ground floor & 7 No. 3 bed duplex units overhead. The Proposed Development also provides for all associated site development & infrastructural works, car & bicycle parking, open spaces & landscaping, bin & bicycle storage. Access to the development will by via a new vehicular entrance at the south-west corner of the site, off the Old Naas Road. Permission is also sought to demolish the existing building on site, approx. 455m².

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

Figure 2-2: Proposed Site Layout

3 CONSTRUCTION SCHEDULE AND WORKS MANAGEMENT

3.1 Programme

The construction programme duration will be approximately 2 years and will take place in the following sequence of works:

- **Site Preparation: Site Clearance, Demolition & Enabling Work (32 weeks)**

The demolition stage will involve the demolition of an existing clubhouse building (approx. 500m^2 GFA), along with the removal of 1,800m^2 of external paved car park/hardstanding areas.

The demolition areas are identified in the planning drawings submitted as part of this application. A formal demolition plan including safety procedures will be prepared by the demolition contractor. However, in general, the following sequence of works should be followed during the demolition stage:

Check for Hazards

Prior to commencing works, buildings, and structures to be demolished will be checked for any likely hazards including asbestos, ACMs, electrical power lines or cables, gas reticulation systems, telecommunications, unsafe structures and fire / explosion hazards, e.g., combustible dust, chemical hazards, oil, fuels and contamination.

Removal of Components

All hazardous materials will be removed first. All components from within the buildings that can be salvaged will be removed next. This will primarily be comprised of metal; however, may also include timbers, doors, windows, wiring and metal ducting, etc.

Removal of Roofing

Steel roof supports, beams, etc., will be dismantled and taken away for recycling / salvage.

Excavation of Services, Demolition of Walls, and Concrete

Services will be removed from the ground and the breakdown of walls will be carried out once all salvageable or reusable materials have been taken from the buildings. Finally, any existing foundations and hard standing areas will be excavated.

- **Construction: Bulk Excavation (26 weeks)**

Excavation will be required for site levelling and services. It is anticipated that c. 4,000 m^3 of

excavated material will be taken off site.

- **Construction: Building Foundations & Basement (26 weeks)**
    - Installation of the building raft foundation and basement retaining walls.
    - Tower crane installation for the construction of the building frame.
- **Construction: Building Superstructure Frame (70 weeks)**
    - Bottom-up construction sequence of the floor slabs and vertical elements.
    - Elements of the building frame may be premanufactured off site in precast construction for speed of construction, less formworks and on-site waste.
- **Construction: Cladding & Fit-out Works (70 weeks)**
    - Temporary scaffolding may be required around each building during the construction of the building envelope.
    - Elements of the building facade may be premanufactured off site using modular construction for speed of construction and lessoard on-site waste.

3.2 Working Hours

Normal site working hours for the Construction Phase of the Proposed Development will be 07:00 and 19:00, Monday to Friday, and 09:00 to 13:00 on Saturdays.

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

Should there be a requirement, in exceptional circumstances, for works outside of the normal site working hours a written submission seeking authorisation will be made to South Dublin County Council (SDCC).

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

All cabins will be steel securi-type with steel lockable shutters on the windows and a steel lockable door. 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 Irish Water 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

The traffic for the Construction Phase will be managed in accordance with the details specified in the Traffic Management Plan. The following figure provides an outline of the Traffic Management Plan:

Figure 3-1: Traffic Management Plan

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

a. Demolition of the existing building and removal of demolition waste off site.
b. Excavation to reduced levels including basement (approximately 4,000 cubic meters).
c. Construction of the buildings and importing material.

The nature of the construction process is such that the traffic generated will comprise 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.

It is proposed that the construction traffic will access the Proposed Development site from the existing entrance on the Old Naas Road. The detailed design and layout of the site access will be agreed between South Dublin County Council and the appointed contractor prior to any construction works commencing on site. Advance warning signage for the Site entrance will be provided on the Old Naas Road at 75m and 50m from the entrance on both sides.

There will be a designated staff car park located onsite; therefore, offsite parking will be minimised.

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

Heras fencing will be required to secure the boundary of the Site where there is no permanent existing wall. The fencing will reach a height of approximately 2m and will be secure and non-climbable. No stored material will be stacked against fencing and no storage will be allowed adjacent to public trafficked areas.

Vehicle gates with barriers will be accommodated at a security hut combined with a secure turnstile to control pedestrian and vehicle access.

Safety and ease of access to the Site will be provided for by the Main Contractor when planning the works. Separation of vehicular and heavy plant traffic from pedestrians and operatives will be implemented as far as is practical when considering the layout of the site infrastructure and access points.

In additional to the perimeter fencing at the site, the following security measures will be adopted by the Main Contractor:

- A dedicated site security team with 24hr access to the site and direct contact with the local An Garda Siochana station.
- Each person on site will have been inducted.
- Motion sensor compound fencing lighting on short (1min) timers will be incorporated to increase the general illhumination levels around the site, with the exception of boundaries to residential gardens and houses. Additionally, all lighting installed at the site will comply with the controls listed in Section 6.3.4.5 of this CEMP.
- Siting the cabins behind the fencing with windows overlooking the streets will provide a greater degree of natural surveillance to the area to prevent anti-social behaviour.

3.6 Communication & Consultation

The Main Contractor will appoint a Construction Manager 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 the appropriate procedures are in place to ensure that all site traffic will be managed in accordance with the Traffic Management Plan. 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.

The main problems, which may arise during the early part of construction, will be controlled by the following designated and operational measures:

- Designated hard routes through the Site to work front.
- Sweeping of public streets adjacent to egress from site.
- Provision and facilities to cover lorry contents, as necessary.
- Controlled loading of excavated material to minimise risk of spillage of contents.
- Spraying/damping down of excavated material on site by dedicated crews.
- Facility to clean local roads if mud or spillage occurs.
- Ongoing monitoring during working hours.

4 PROJECT ROLES AND RESPONSIBILITIES

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

4.1 Development Director: Simon Walsh

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

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

4.2 Head of Construction: Tommy Canny

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

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

4.3 Environmental Officer: Pat Brangan

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

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

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

4.4 Waste Manager

A member of the construction team will be appointed as the project waste manager to ensure commitment, operational efficiency and accountability during the C&D phases of the project in line with the Construction and Demolition Waste Management Plan (AWN Consulting, 2021).

The nominated waste manager will be given responsibility and authority to select a waste team if required, i.e., members of the site crew that will aid them in the organisation, operation and recording of the waste management system implemented on site. The waste manager will have overall responsibility to oversee, record and provide feedback to the client on everyday waste management at the site. Authority will be given to the waste manager to delegate responsibility to sub-contractors, where necessary, and to coordinate with suppliers, service providers and sub-contractors to prioritise waste prevention and material salvage.

The waste manager will be trained in how to set up and maintain a record keeping system, how to perform an audit and how to establish targets for waste management on site. The waste manager will also be trained in the best methods for segregation and storage of recyclable materials, have information on the materials that can be reused on site and be knowledgeable in how to implement this C&D WMP.

The appointed Waste Manager will be responsible for conducting a waste audit at the site during the C&D phase of the proposed Project. Contact details for the nominated Waste Manager will be provided to the SDCC Waste Department after the main contractor is appointed and prior to any material being removed from site.

4.5 Project Environmental Consultant (as required)

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

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

- Updating of this CEMP and advising the Main Contractor in the updating of the CEMP, environmental control plans, supporting procedures.
- Advising the site management on environmental matters as appropriate.
- Carrying out environmental surveys (data logging (noise, water, dust, etc.)) as required.
- Generating reports when required to show environmental data trends and incidents.
- Advising on the production of written method statements and site environmental rules and on the arrangements to bring these to the attention of the workforce as required;

and

- Investigating incidents of significant, potential, or actual environmental damage, ensure corrective actions are carried out and recommend means to prevent recurrence.

4.6 Project Archaeologist Clerk of Works (as required)

The Project Archaeologist Clerk of Works (if required) will report to the Environmental Officer and is responsible for advising on all archaeological monitoring activities, conducting watching briefs and distributing information relevant to monitoring. The responsibilities and duties of the Project Archaeologist will include the following:

- Monitor all ground disturbance works associated with the construction of the development,
- Ensure 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, and
- Liaison with the Department Applications Unit, National Monuments Service, Department of Arts, Heritage and Gaeltacht and the Fingal County Council archaeologist as required.

4.7 Project Ecological Clerk of Works (ECoW)

The Project Ecologist Clerk of Works will report to the Environmental Officer and is responsible for the protection of sensitive habitats and species encountered during the Construction Phase of the project. The responsibilities and duties of the Project Ecologist will include the following:

- 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.

4.8 Project Landscape Architect: Cunnane Stratton Reynolds Land Planning & Design

The developer shall appoint and retain the services of a qualified Landscape Architect (or qualified Landscape Designer) as a Landscape Consultant, throughout the life of the construction works and shall notify the planning authority of that appointment in writing prior to commencement.

A Practical Completion Certificate is to be signed off by the Landscape Architect when all landscape works are fully completed to the satisfaction of the planning authority in accordance with the permitted landscape proposals.

Installation of attenuation tree pits shall be supervised by the project landscape architect.

4.9 Arborist: Oisin Griffin (Griffin Landscape Architecture)

An Arboricultural Assessment Report and Certificate is to be signed off by a qualified Arborist after the period of 3 years of completion of the works. Any remedial tree surgery, tree felling works recommended in that Report and Certificate shall be undertaken by the developer, under the supervision of the Arborist. The Tree Bond and Arboricultural Agreement will only be refunded upon receipt by SDCC Public Realm Section of a satisfactory post-construction arboricultural assessment, carried out by a qualified arborist and provided that the hedges/trees proposed for retention are alive, in good condition with a useful life expectancy.

4.10 Construction Manager

The Construction Manager is responsible for conducting all public liaison associated with the Construction Phase of the project. The responsibilities and duties of the Construction Manager include the following:

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

4.11 Site Supervisors

All Site Supervisors are required to:

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

4.12 Site Personnel

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

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

site; and

- Adhere fully to the requirements of the site environmental rules.

5 PROJECT ENVIRONMENTAL POLICY

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

5.1.1 General Site Environmental Rules

- Report any signs of pollution or environmental damage, 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 contractor to ensure compliance with the compliance measures identified in the CEMP.

5.2 Managing Environmental Incidents

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

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

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

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

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

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

6 ENVIRONMENTAL IMPACTS AND CONTROLS

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

6.1 Potential Impacts of the Development

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

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

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

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

6.2 Legal and Other Requirements

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

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

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

The CEMP is regulated by a number of documents:

- Planning Conditions
- Environmental screening reports and mitigation measures.

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

6.2.1 Conditions of Planning Permission

Permission has been granted for the development, subject to the following environmental conditions:

5. Ecology and Environment

***(A)** (i) Prior to commencement of development, the applicant shall submit and obtain written agreement of the Planning Authority for a site-specific Construction Environmental Management Plan. The CEMP shall identify potential impacts and mitigating measures, and a mechanism for ensuring compliance with environmental legislation, and ensure best construction practices including measures to prevent and control the introduction of pollutants and deleterious matter to surface water and measures to minimize the generation of sediment and silt. Precautions must be taken to ensure there is no entry of solids, during the connection of pipe work, or at any stage to the watercourse onsite.*

(ii) The CEMP shall identify those measures required as per the Ecological Impact Assessment (see below).

(iii) The CEMP shall be accessible at the site throughout the construction phase.

(iv) A suitably qualified Ecological Clerk of Works should be appointed to monitor and direct the implementation of both the CEMP and the mitigation measures recommended in the Ecological Impact Assessment.

***(B)** (i) The mitigation measures recommended in the Ecological Impact Assessment shall be implemented as part of the development.*

(ii) Prior to commencement of works, the applicant shall obtain the written agreement of the Planning Authority to any alterations to the scheme required as per the Ecological Impact Assessment, and to a proposal outlining how they will implement the measures required in the Ecological Impact Assessment.

The measures provided for in the Ecological Impact Assessment can be summarised as follows (please refer to pages 44 - 52 of the Ecological Impact Assessment Report for full breakdown):

1. *Construction phase surface water management measures;*

2. *Vegetation:*

   - *Careful removal of dead wood/leaves and storage in an 'out of the way' area to provide compensatory hedgehog habitat during the construction phase;*
   - *Construction materials (i.e. plastic sheeting and netting) to be stored off the ground overnight;*
   - *Removal of hibernation habitats such as logs and scrub/hedgerow should not take place between 1st November and 1st March, and it is recommended that this take place during September/October;*
   - *Removal of potential bird nesting sites (hedgerow, scrub and treelines) shall take place outside of the nesting season (1st March to 31st August);*
   - *Pre-removal surveys of vegetation to be carried out by a qualified ecologist if occurring during the nesting season, and nests/young birds protected;*
   - *Any trees to be removed in the period of late August to late October/early November in order to protect potential bat roosts;*

- *Appropriate measures for removal of any tree with 'moderate' bat roosting potential (Bat Tree Assessment, Pre-felling bat survey, derogation license from the NWPS)*
- *Specific procedures for felling trees;*

3. *Noise Control: Control of noise measures to be set out in the CEMP*

4. *Night-time lighting*

   - *Bat-friendly night-time lighting to include 25% dimming between hours of 12 midnight and 6am;*
   - *Night-time lighting of the site to be kept to a minimum during construction phase;*

5. *Habitat enhancement;*

   - *Provision of holes in walls and fences at ground level to facilitate a 'hedgehog highway' through the site;*
   - *Provide details of these features to new occupants;*
   - *Provide 5+ bat boxes through the site to provide future roosting opportunities, such as on: Eaves of taller buildings*
   - *Mature trees being retained*

All under the supervision of a qualified ecologist.

REASON: In the interest of proper planning and sustainable development of the area.

6. Street Lighting

Public Lighting and Landscaping Plan

***a)** Prior to the commencement of development, the applicant shall agree in writing an integrated public lighting scheme and Landscape Plan with the Planning Authority. Once agreed, the scheme shall be constructed/installed to taking in charge standards at the expense of the developer and to the satisfaction of South Dublin County Council Lighting Department, after consultation as necessary with the SDCC Heritage Officer and SDCC Public Realm Department.*

***b)** The Public Lighting scheme and Landscaping Plan shall be integrated and agreed with the Planning Authority.*

***c)** The site shall be landscaped in accordance with a comprehensive landscape plan, details of which shall be submitted to, and agreed in writing with, the planning authority prior to the commencement of development. This scheme shall include the following:*

A. A Landscape Masterplan to scale of not less than 1:500 showing -

i. The species, variety, number, size and locations of all proposed planting

ii: Details of Hard landscape works, specifying surface material and furniture

iii. Details of natural SuDs features

iv. Details of proposed play provision

v. Detailed Sections and Elevations

B. Specifications for mounding, leveling, cultivation and other operation associated with plant and grass establishment

C. A timescale for implementation

D. Areas to be taken in Charge

***(d)** The applicant shall submit a letter from their consulting ecologist confirming that the detail of measures described under 'Mitigation Measure 4: Night-Time Lighting' in the Ecological Impact Assessment has been adhered to in the final Public Lighting Plan.*

REASON: In the interests of public safety, biodiversity, residential amenity and visual amenity.

7. Bat and Bird Boxes.

Prior to the occupation of the buildings a scheme to provide bird boxes and bat boxes/tubes on the site shall be submitted to and approved in writing by the Planning Authority. The agreed scheme shall be implemented before the buildings are occupied and thereafter maintained.

REASON: To encourage wildlife on the site.

8. Ecology - Mitigation Measures.

The following mitigation measures shall be implemented:

***(a)** Public lighting in the scheme to shall be limited in brightness, coverage, and times of use, so as to limit or completely mitigate the impact on bats, as per the 'ideals' on p14 of the Bat Survey Report unless otherwise agreed by the Planning Authority in writing.*

***(b)** Native planting shall be used throughout the scheme where removed vegetation is being replaced, as per the recommendations on p15 of the Bat Survey Report.*

REASON: in the interest of biodiversity and to facilitate bats.

9. Implementation of Revised Landscape Masterplan

The landscaping scheme shown on the submitted Landscape Masterplan Dwg No. 21578-2- 101 (and associated detailed plans and submitted Landscape Design Statement prepared by Cunnane Stratton Reynolds) shall be implemented in full, within the first planting season following completion of the development, in addition:

***a)** All hard and soft landscape works shall be completed in full accordance with the approved Landscape Masterplan Dwg No. 21578-2-101.*

b) *All trees, shrubs and hedge plants supplied shall comply with the requirements of BS: 3936, Specification for Nursery Stock. All pre-planting site preparation, planting and post-planting maintenance works shall be carried out in accordance with the requirements of BS : 4428 (1989) Code of Practice for General Landscape Operations (excluding hard surfaces).*

c) *All new tree plantings shall be positioned in accordance with the requirements of Table 3 of BS 5837: 2012 'Trees in Relation to Design, Demolition and Construction - Recommendations'.*

d) Any trees, shrubs or hedges planted in accordance with this condition which are removed, die, become severely damaged or become seriously diseased within three years of planting shall be replaced within the next planting season by trees, shrubs or hedging plants of similar size and species to those originally required to be planted

REASON: To ensure satisfactory landscape treatment of the site which will enhance the character and appearance of the site and the area, in accordance with the policies and objectives contained within Section 8.3.0 Public Open Space Hierarchy and Landscape Setting of the CDP 2016-2022

2. Retention of Landscape Architect

i) *Prior to the commencement of any permitted development, the developer shall appoint and retain the services of a qualified Landscape Architect (or qualified Landscape Designer) as a Landscape Consultant, throughout the life of the construction works and shall notify the planning authority of that appointment in writing prior to commencement.*

ii) *A Practical Completion Certificate is to be signed off by the Landscape Architect when all landscape works are fully completed to the satisfaction of the planning authority in accordance with the permitted landscape proposals.*

iii) *Installation of attenuation tree pits shall be supervised by the project landscape architect.*

CONDITION REASON: In the interests of residential and visual amenity and to ensure full and verifiable implementation of the approved landscape design

3. Landscape Management and Maintenance

PRIOR TO COMMENCEMENT OF DEVELOPMENT a Landscape and SUDS Management Plan which includes long term design objectives, management responsibilities and maintenance schedules for all landscape areas (other than small, privately owned, domestic gardens) shall be submitted to and approved by the Local Planning Authority. The development shall be carried out in accordance with the approved Landscape and SUDS Management Plan.

CONDITION REASON: To provide for the satisfactory future maintenance of this development in the interest of visual amenity.

4. SUDS IMPLEMENTATION

Prior to the occupation of the buildings the submitted SuDS scheme shall be implemented within a timescale to be agreed and approved by the Planning Authority and thereafter managed and maintained in accordance with the approved details and submitted management and maintenance plan.

CONDITION REASON: To prevent the increased risk of flooding and to improve and protect water quality, in accordance with policies under Section 8.4.0 Sustainable Urban Drainage Systems of the CDP 2016-22 in particular GS Objective 1 and GS Objective 2.

6. Arboricultural Method Statement

The applicant shall submit a detailed Arboricultural Method Statement (AMS). The AMS shall include justification and mitigation for any tree removal proposed and details of how trees will be protected at all stages of the development. Recommendations for tree surgery works and details of any tree surgery works necessary will be required as will the method and location of tree protection measures, the phasing of protection methods where demolition or construction activities are essential within root protection areas and design solutions for all problems encountered that could adversely impact trees (e.g. hand digging or thrust-boring trenches, porous hard surfaces, use of geotextiles, location of site compounds, office, parking, site access, storage etc.). All works shall be carried out in accordance with the agreed AMS.

CONDITION REASON: To ensure that the trees on site are adequately protected, to safeguard the character and appearance of the area, in accordance with policy G2 Objective 9, G4 Objective 5, G2 Objective 13, G6 Objective 1, HCL15 Objective 3 of the CDP 2016-2022.

7. Tree and Hedgerow Protection Measures

Prior to the commencement of construction works on site, the applicant shall submit a tree protection plan for the approval of the Public Realm Section. Tree protection measures shall be shown on a layout plan accompanied by descriptive text and shall include:

a) The location of the trees to be retained and their root protection areas and canopy spreads (as defined in BS 5837: 2012 Trees in relation to design, demolition and construction);

b) The position and construction of protective fencing around the retained trees (to be in accordance with BS 5837: 2012 Trees in relation to design, demolition and construction).

c) The extent and type of ground protection, and any additional measures required to safeguard vulnerable trees and their root protection areas.

d) An arboricultural impact assessment which evaluates the direct and indirect impacts of the proposed development on the trees to be retained and proposed mitigation.

e) An arboricultural method statement to demonstrate that operations can be carried out with minimal risk of adverse impact on trees to be retained.

f) A method statement for any works proposed within the root protection areas of the trees shown to be retained.

e) A meeting with the Project Landscape Architect, Site Foremen, the appointed Arborist and a Parks Superintendent form the Public Realm Section shall take place on-site to inspect that:

i. all tree pruning & tree felling has been carried out appropriately and

ii. that the protective fencing has been erected prior as per the submitted Tree Protection Plan This fencing is to remain in place for the duration of the project.

The approved tree protection measures shall be retained in situ until the development has been completed.

CONDITION REASON: In order to ensure adequate protection for the trees and hedges on the site during the construction of development, and in the interests of the visual amenity of the area.

8. Tree Bond and Arboricultural Agreement

Prior to the commencement of any permitted development or any related construction activity or tree felling on the site, the applicant shall lodge a Tree and Hedgerow Bond to the value of €98,778.24 with the Planning Authority. This is to ensure the protection of trees on and immediately adjacent to the site to make good any damage caused during the construction period.

The bond lodgement shall be coupled with an Arboricultural Agreement, with the developer, empowering the planning authority to apply such security, or part thereof, to the satisfactory protection of any tree/hedgerow or trees/hedgerows on or immediately adjoining the site, or the appropriate and reasonable replacement of any such trees/hedgerows which die, are removed or become seriously damaged or diseased within a period of three years from the substantial completion of the development. Any replacement planting shall use large semi-mature tree size(s) and species or similar as may be stipulated by the planning authority.

An Arboricultural Assessment Report and Certificate is to be signed off by a qualified Arborist after the period of 3 years of completion of the works. Any remedial tree surgery, tree felling works recommended in that Report and Certificate shall be undertaken by the developer, under the supervision of the Arborist. The bond will only be refunded upon receipt by SDCC Public Realm Section of a satisfactory post-construction arboricultural assessment, carried out by a qualified arborist and provided that the hedges/trees proposed for retention are alive, in good condition with a useful life expectancy.

CONDITION REASON: To ensure that the trees on site are adequately protected, to safeguard the character and appearance of the area, in accordance with policies G2 Objective 9, G4 Objective 5, G2 Objective 13, G6 Objective 1, HCL15 Objective 3 of the CDP 2016-2022.

10. Bird and Bat Boxes

Prior to the occupation of the buildings a scheme to provide bird boxes and bat boxes/tubes on the site shall be submitted to and approved in writing by the Local Planning Authority. The agreed scheme shall be implemented before the buildings are occupied and thereafter maintained.

CONDITION REASON: To encourage wildlife on the site.

10. Retention of Landscape Architect.

i) *Prior to the commencement of any permitted development, the developer shall appoint and retain the services of a qualified Landscape Architect (or qualified Landscape Designer) as a Landscape Consultant, throughout the life of the construction works and shall notify the planning authority of that appointment in writing prior to commencement.*

ii) *A Practical Completion Certificate is to be signed off by the Landscape Architect when all landscape works are fully completed to the satisfaction of the planning authority in accordance with the permitted landscape proposals.*

iii) *Installation of attenuation tree pits shall be supervised by the project landscape architect.*

REASON: In the interests of residential and visual amenity and to ensure full and verifiable implementation of the approved landscape design

13. Trees.

(A) Arboricultural Method Statement.

The applicant shall submit a detailed Arboricultural Method Statement (AMS). The AMS shall include justification and mitigation for any tree removal proposed and details of how trees will be protected at all stages of the development. Recommendations for tree surgery works and details of any tree surgery works necessary will be required as will the method and location of tree protection measures, the phasing of protection methods where demolition or construction activities are essential within root protection areas and design solutions for all problems encountered that could adversely impact trees (e.g. hand digging or thrust-boring trenches, porous hard surfaces, use of geotextiles, location of site compounds, office, parking, site access, storage etc.). All works shall be carried out in accordance with the agreed AMS.

(B) *Prior to the commencement of construction works on site, the applicant shall submit a tree protection plan for the approval of the Public Realm Section. Tree protection measures shall be shown on a layout plan accompanied by descriptive text and shall include:*

I) *The location of the trees to be retained and their root protection areas and canopy spreads (as defined in BS 5837: 2012 Trees in relation to design, demolition and construction);*

II) *The position and construction of protective fencing around the retained trees (to be in accordance with BS 5837: 2012 Trees in relation to design, demolition and construction).*

III) *The extent and type of ground protection, and any additional measures required to safeguard vulnerable trees and their root protection areas.*

IV) *An arboricultural impact assessment which evaluates the direct and indirect impacts of the proposed development on the trees to be retained and proposed mitigation.*

V) *An arboricultural method statement to demonstrate that operations can be carried out with minimal risk of adverse impact on trees to be retained.*

VI) *A method statement for any works proposed within the root protection areas of the trees shown to be retained.*

VII) *A meeting with the Project Landscape Architect, Site Foremen, the appointed Arborist and a Parks Superintendent form the Public Realm Section shall take place on-site to inspect that:*

- *all tree pruning & tree felling has been carried out appropriately and*
- *that the protective fencing has been erected prior as per the submitted Tree Protection Plan*

This fencing is to remain in place for the duration of the project.

The approved tree protection measures shall be retained in situ until the development has been completed.

REASON: To ensure that the trees on site are adequately protected, to safeguard the character and appearance of the area, in accordance with policy G2 Objective 9, G4 Objective 5, G2 Objective 13, G6 Objective 1, HCL15 Objective 3 of the CDP 2016-2022.

14. Tree Bond.

Prior to the commencement of any permitted development or any related construction activity or tree felling on the site, the applicant shall lodge a Tree and Hedgerow Bond to the value of €98,778.24 with the Planning Authority. This is to ensure the protection of trees on and immediately adjacent to the site to make good any damage caused during the construction period.

The bond lodgement shall be coupled with an Arboricultural Agreement, with the developer, empowering the planning authority to apply such security, or part thereof, to the satisfactory protection of any tree/hedgerow or trees/hedgerows on or immediately adjoining the site, or the appropriate and reasonable replacement of any such trees/hedgerows which die, are removed or become seriously damaged or diseased within a period of three years from the substantial completion of the development. Any replacement planting shall use large semi-mature tree size(s) and species or similar as may be stipulated by the planning authority.

An Arboricultural Assessment Report and Certificate is to be signed off by a qualified Arborist after the period of 3 years of completion of the works. Any remedial tree surgery, tree felling works recommended in that Report and Certificate shall be undertaken by the developer, under the supervision of the Arborist. The bond will only be refunded upon receipt by SDCC Public Realm Section of a satisfactory post-construction arboricultural

assessment, carried out by a qualified arborist and provided that the hedges/trees proposed for retention are alive, in good condition with a useful life expectancy.

REASON: To ensure that the trees on site are adequately protected, to safeguard the character and appearance of the area, in accordance with policies G2 Objective 9, G4 Objective 5, G2 Objective 13, G6 Objective 1, HCL15 Objective 3 of the CDP 2016-2022.

16. Irish Water Connection Agreement.

Prior to the commencement of development the applicant or developer shall enter into water and/or wastewater connection agreement(s) with Irish Water.

REASON: In the interest of public health and to ensure adequate water/wastewater facilities.

17. Drainage - Surface Water.

The disposal of surface water shall fully comply with all of the technical requirements of the Council's Water Services Section. In this regard, prior to the commencement of development, the applicant/developer shall submit the following for the written agreement of the Planning Authority:

(a) Fully detailed foul and surface water drainage plans for the proposed development as approved showing location of all manholes, AJs etc located within the site boundary up to and including point of connection to the public sewer that fully accords with the requirements Council's Water Services Section and or Irish Water,

(b) There shall be complete separation of the foul and surface water drainage systems, both in respect of installation and use. All new precast surface water manholes shall have a minimum thickness surround of 150mm Concrete Class B.

(c) All drainage works for this development shall comply fully with the Greater Dublin Regional Code of Practice for Drainage Works.

REASON: In the interests of public health, safety, the proper planning and sustainable development of the area and in order to ensure adequate and appropriate surface water drainage provision.

19. Access, Transport and Parking.

(a) Prior to commencement of development a developed Construction & Demolition Waste Management Plan shall be agreed in writing with the Planning Authority.

(b) Prior to commencement of development a Construction Traffic Management Plan shall be agreed in writing with the Planning Authority.

(c) All items and areas for taking in charge shall be undertaken to a taking in charge standard. Prior to development the applicant shall submit construction details of all items to be taken in charge. No development shall take place until these items have been agreed.

REASON: in the interest of traffic and pedestrian safety.

27. Minimise Air Blown Dust.

During the construction and or demolition phase of the development, Best Practicable Means shall be employed to minimise air blown dust being emitted from the site. This shall include covering skips and slack-heaps, netting of scaffolding, daily washing down of pavements or other public areas, and any other precautions necessary to prevent dust nuisances. The applicant/developer shall comply with British Standard B.S. 5228 Noise Control on Construction and Open sites and British Standard B.S. 6187 Code of Practice for demolition.

REASON: In the interest of public health and to uphold the Council's policies set out in the South Dublin County Council Development Plan.

28. Construction Noise and Hours.

To control, limit and prevent the generation of unacceptable levels of Environmental Noise Pollution from occurring during construction activity, no Equipment or Machinery (to include pneumatic drills, on-site construction vehicles, generators, etc.) that could give rise to unacceptable levels of noise pollution as set out generally for evening and night-time in S.I. No. 140/2006 - Environmental Noise Regulations 2006 shall be operated on the site before 7.00 hours on weekdays and 9.00 hours on Saturdays nor after 19.00 hours on weekdays and 13.00 hours on Saturdays, nor at any time on Sundays, Bank Holidays or Public Holidays. Any construction work outside these hours that could give rise to unacceptable levels of noise pollution shall only be permitted following a written request to the Planning Authority and the subsequent receipt of the written consent of the Planning Authority, having regard to the reasonable justification and circumstances and a commitment to minimise as far as practicable any unacceptable noise outside the hours stated above. In this respect, the applicant or developer shall also comply with BS 5228:2009 Noise and Vibration Control on Construction and Open Sites and have regard to the World Health Organisation (WHO) - Guidelines for Community Noise (1999).

The applicant or developer shall also endeavour to engage in local consultation in respect of any noise sensitive location within 30 metres of the development as approved prior to construction activity commencing on site. Such noise sensitive locations should be provided with the following:

- *Schedule of works to include approximate timeframes*
- *Name and contact details of contractor responsible for managing noise complaints*
- *Hours of operation- including any scheduled times for the use of equipment likely to be the source of significant noise.*

REASON: In the interest of public health by the prevention of unacceptable levels of noise pollution which could interfere with normal sleep and rest patterns and/or when people could reasonably expect a level of quietness, the proper planning and sustainable development of the area and to uphold the Council's amenity policies set out in the South Dublin County Council Development Plan.

6.2.2 Implementation of Control Measures

The CMT will be responsible for the implementation of control measures as identified in Section 6.3. The Main Contractor and all sub-contractors will comply with the requirements of the CEMP to document and seek approval for Method Statements, Permits and other site-generated documentation as requested.

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

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

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

Environmental requirements will be controlled as follows:

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

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

6.2.3 Communication & Training - Construction Personnel

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

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

6.2.4 Keeping of Records

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

- Records of induction training for operatives, drivers, workers, and visitors.
- Attendance by site personnel and visitor logs
- The location of waste storage areas on site.
- The details of environmental incidents and near misses including incident investigation and corrective and preventative measures implemented.

- Records of environmental inspections completed during the Construction Phase to ensure compliance with the CEMP control measures.
- Copies of Safety Data Sheets (SDS)
- Complaints register.
- Records of the movement and recovery/disposal of all waste generated during the Construction Phase of the project to include date removed from site, waste type, quantities, waste carrier and off-site destination.

6.2.5 Monitoring, Audits, and Inspections

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

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

The specific environmental monitoring requirements relating to the control of potential impacts are detailed in the Operation Controls section (Section 6.3) of the CEMP.

6.2.6 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.

6.3 Operation Controls

6.3.1 Control of Fuel and Chemical Storage

Appropriate storage facilities will be provided on Site. High-risk areas include:

- Fuel and chemical storage;
- Refuelling areas;
- Site compound; and
- Waste storage areas.

The storage of fuels and hazardous substance will be carried out in line with the Outline Construction and Demolition Waste Management Plan for the Site (AWN Consulting, 2021). The fuels and oils are classed as hazardous materials, any on-site storage of fuel/oil, all storage tanks and all draw-off points will be bunded and located in a dedicated, secure area of the site. Provided that these requirements are adhered to and the site crew are trained in the appropriate refuelling techniques, it is not expected that there will be any fuel/oil waste generated at the site.

Paints, glues, adhesives and other known hazardous substances will be stored in designated areas. They will generally be present in small volumes only and associated waste volumes generated will be kept to a minimum. Wastes will be stored in appropriate receptacles pending collection by an authorised waste contractor.

6.3.2 Control of Emissions to Surface Water and Drainage

Implement all measures included in the Ecological Impact Assessment (EcIA) as follows:

6.3.2.1 Construction Phase Surface water management

To ensure that no contaminated waters containing silt, fuel, cementitious materials etc., have the potential to enter the receiving surface water network during the Construction Phase of the Proposed Development, a suite of mitigation measures will be put in place, as outlined within this CEMP, along with all other relevant measures recommended to protect environmental sensitivities during the Proposed Works.

6.3.2.1.1 Watercourse Protection

All works adjacent to the unnamed stream present along the eastern corner of the Site will be carried out in accordance with Inland Fisheries Ireland (IFI), "*Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters*" (IFI, 2016).

If deemed necessary by the Ecological Clerk of Works (ECoW), contact will be made with IFI to ensure the works comply with the provisions of the Fisheries Act and Habitats Regulations, and in accordance with any detailed operational and construction requirements issued by IFI.

To prevent elevated levels of erosion and sedimentation at the Site during the Construction Phase, surface water discharge from the Site will be managed and controlled for the duration of the construction works, until the permanent surface water drainage system (including attenuation and storage) for the Proposed Development is complete.

Direct Watercourse Protection

The construction of a surface water outfall to the stream is proposed. This will likely involve the altering of the stream channel to some degree and therefore poses a risk of sediment release to the watercourse. To minimise this risk, best practise Construction measures for works within, or in the vicinity of watercourses will also be followed as per '*Guidelines for the crossing of watercourses during the construction of national road schemes*' (TII, 2008) and '*Control of water pollution from linear construction projects - CIRIA C648*' (CIRIA, 2006). The below measures will be included in the CEMP to prevent the release of hydrocarbons, polluting chemicals, sediment/silt and contaminated waters into the receiving surface water network:

- A suitably qualified Ecological Clerk of Works (ECoW) will be present on-site during the surface water outfall construction.

- Entry to the channel of the stream by vehicles and/or personnel will not be permitted unless absolutely necessary.

- Instream machine works should be minimised, and any machines working in or near the watercourse must be protected against leakage or spillage of fuels, oils, greases and hydraulic fuels.

- Works involving the breaking of stream banks e.g., any reprofiling of the stream channel, will be carried out with suitable and effective mitigation in place to minimise/ prevent sediment release to the stream i.e., cofferdams, Silt-traps and other suitable in-stream measures for the collection/filtration of sediment e.g., straw bales.

- Every care must be taken to insure against spillage of concrete or leakage of cement grout within cofferdams.

- Suitable temporary erosion control measures will be employed where required, to prevent sedimentation/erosion arising from any newly profiled banks while new vegetation establishes e.g., jute/coir mesh blankets.

- Features such as silt fencing and/or berms, will be installed prior to the commencement of construction to ensure the protection of the stream during construction works. A silt fence set back **at least 10m** from the watercourse will be required, to be constructed of a suitable geotextile membrane to ensure water can pass through, but that silt will be retained.

- An interceptor trench will be required in front of the silt fencing. The silt fence must be capable of preventing 425µ (micron) and above sediment from passing through. It should also be resistant to damage during deformation resulting from loading by entrapped sediment.

- The silt fences will be monitored to ensure that they remain functional throughout construction of the Proposed Development. Where necessary, maintenance will be carried out on the fences to ensure that they continue to be effective. This will be particularly important after heavy rainfall events. The checks will be undertaken by a suitably qualified person nominated to act as Ecological Clerk of Works (ECoW). The frequency of monitoring will depend on the stage of works, and local environmental conditions. Daily checks may be appropriate during the initial site clearance, during works in the vicinity of the watercourse, and during and after storm events. Weekly or bi-weekly checks may be appropriate at other times.

Construction Best Practise

- Surface waters generated at the construction site will be managed using a system of temporary on-site attenuation features e.g., Stilling or settling ponds, and will be fitted with silt barrier devices such as silt fences and/or silt busters. Treated waters from the attenuation features will be directed to vegetated areas of grassland a minimum of 50m

from any watercourse. Rate of release will be controlled such that waters do not flow overland directly to the watercourse.

- Location of stilling/settling ponds will take into account groundwater vulnerability at the site and will be located in suitable areas.
- Discharge water generated during placement of concrete will be stored and removed off site for treatment and disposal.
- There will be no washing out of any concrete trucks on site.
- Specific areas for storage, delivery, loading/unloading of materials will be designated, which will have appropriate containment/spill protection measures where required.
- Leachate generation from stockpiles or waste receptacles will be prevented by using waterproof covers.
- Prolonged exposure of contaminated soils or groundwater to the atmosphere will be avoided where practical or unnecessary.
- Appropriate bunding, storage and signage arrangements for all deleterious substances will be used.
- Robust and appropriate Spill Response Plan and Environmental Emergency Plans will be included within the Contractor's CEMP and the details of which will be communicated, resourced and implemented for the duration of the works.
- Control measures and spill clean-up equipment adequate to treat spills at the Site will be available and staff will be trained and experienced in using said equipment.
- A register will be kept of all hazardous substances either used on site or expected to be present. The register shall be available at all times and shall include as a minimum: valid safety sheets; Health & Safety, environmental controls to be implemented when storing, handling, using and in the event of spillage of materials; emergency response procedures/precautions for each material; the Personal Protective Equipment (PPE) required when using the material.
- All existing services will be mapped, and a plan will be put in place to decommission/divert and manage any drains or sewers which are associated with the Site.
- A plan for dealing with any unknown drains or services which may be encountered during the works will be set out and implemented.
- Any drains or sewers which could act as pathways for contamination from the Site will be blocked where required.
- Any surface water inflow into the main areas of excavation will be minimised where possible.

The mitigation measures described above are to be implemented in full and audited as part of this CEMP.

6.3.2.2 General Protection Measures

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

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.

All private drainage will be inspected and signed off by the design Engineer in accordance with the Building Regulations Part H and Building Control (Amendment) Regulations (BCAR) requirements. This will reduce the possibility of any cross connections being constructed. The surface water network (drains, gullies, manholes, AJs, SuDS devices, attenuation system) will need to be regularly maintained and where required cleaned out. A suitable maintenance regime of inspecting and cleaning shall be incorporated into the safety file/maintenance manual for the development.

In addition, the following general measures will be undertaken:

- Designated impermeable cement washout areas will be provided.
- Run-off from the working site or any areas of exposed soil will be channelled and intercepted at regular intervals for discharge to silt-traps or lagoons with over-flows directed to land 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. Inlet protection will be installed before soil disturbing activities begin.
- 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 a designated 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.
- Refuelling of plant during the Construction Phase will only be carried out at designated refuelling station locations on site. Each station will be fully equipped for spill response and a specially trained and dedicated Environmental and Emergency Spill Response team will be appointed before the commencement of works on site.
- Only emergency breakdown maintenance will be carried out on site. Drip trays and spill kits will be available on site to ensure that any spills from vehicles are contained and removed off site.
- All personnel working on site will be trained in pollution incident control response.
- Any other diesel, fuel or hydraulic oils stored on site will be stored in bunded storage tanks- the bunded area will have a volume of at least 110% of the volume of the stored materials as per best practice guidelines (Enterprise Ireland, BPGCS005).
- 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.

6.3.2.3 Fuel and Chemical Storage

Appropriate storage facilities will be provided on Site. High-risk areas include:

- Fuel and chemical storage;
- Refuelling areas;
- Site compound; and
- Waste storage areas.

The storage of fuels and hazardous substance will be carried out in line with the Construction and Demolition Waste Management Plan for the Site (AWN Consulting, 2021). The fuels and oils are classed as hazardous materials, any on-site storage of fuel/oil, all storage tanks and all draw-off points will be bunded and located in a dedicated, secure area of the site. Provided that these requirements are adhered to and the site crew are trained in the appropriate refuelling techniques, it is not expected that there will be any fuel/oil waste generated at the site.

Paints, glues, adhesives and other known hazardous substances will be stored in designated areas. They will generally be present in small volumes only and associated waste volumes generated will be kept to a minimum. Wastes will be stored in appropriate receptacles pending collection by an authorised waste contractor.

6.3.3 Control of Emissions to Soil and Groundwater

Measures set out in Section 6.3.2 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.
- Excavations and potentially contaminated stockpiled soils will be constructed/ located/ sheeted in a manner that ensures water is contained within the site boundary.

6.3.3.1 Control of Unstable Soil Conditions and Ground Borne Vibrations

Plans for excavations will take into account the findings of the site investigation report and materials classification results. The Site is currently a greenfield site and there is no indication of made ground.

6.3.3.2 Control of Excavated Soil and Contaminated Soil

Excavation will be required for site levelling and services. Volumes of excavated material will be minimal, and it is envisaged that any excavated material will be removed off site. If any material is removed off site, it will be taken for appropriate reuse, recycling or disposal. The number of vehicle movements offsite will be minimal. The quantity of excavated material that will be generated has been estimated to be c. 11,000m^3 (topsoil and subsoil). It is expected that c. 7,000m^3 of the excavated subsoil will be re-used to raise the ground levels on site while the c. 4,000m^3 of topsoil will be taken for appropriate offsite reuse, recovery, recycling and/or disposal.

Any surplus subsoil and rock required to be removed from site will be deposited in approved fill areas or to an approved waste disposal facility. Surplus subsoil will be stockpiled on site, in such a manner as to avoid contamination with builders' waste materials, etc., and so as to preserve the materials for future use as clean fill.

Soil investigations and environmental soil testing is yet to be undertaken onsite. Site and soil investigations will take place post-demolition of the existing hard standing club house structure and prior to the removal of any excavated material from site. Site investigation results will be sent to the SDCC waste department upon request.

All excavations will be carefully monitored by a suitably qualified person to ensure that, if encountered, potentially contaminated soil is identified and segregated from clean/inert material. In the event that any potentially contaminated material is encountered, it will need to be tested and classified as either non-hazardous or hazardous in accordance with the EPA publication entitled *Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous* 14 using the *HazWasteOnline* application (or similar approved classification method). The material will then need to be classified as clean, inert, non-hazardous or hazardous in accordance with the *Decision 2003/33/EC* 15.

Prior to the removal of excess excavated material from site soil samples will be sent for environmental testing.

If asbestos or asbestos containing material (ACMs) are identified in any soil samples or during excavation, the removal will only be carried out by a suitably permitted waste contractor, in accordance with *S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010.* All asbestos will be taken to a suitably licensed or permitted facility.

In the case of topsoil, careful planning and on-site storage can ensure that this resource is reused on-site as much as possible. Any surplus of soil not reused on site can be sold. However, topsoil is quite sensitive and can be rendered useless if not stored and cared for properly. It is therefore important that topsoil is kept completely separate from all other construction waste, as any cross-contamination of the topsoil can render it useless for reuse.

It is important to ensure that topsoil is protected from all kinds of vehicle damage and kept away from site-track, delivery vehicle turning areas and site plant and vehicle storage areas.

If topsoil is stored in piles of greater than two metres in height, the soil matrix (internal structure) can be damaged beyond repair. It should also be kept as dry as possible and used as soon as possible to reduce any deterioration through lengthy storage and excess moving around the site.

Records of topsoil storage, movements and transfer from site will be kept by the C&D Waste Manager.

The provision of wheel wash facilities at the construction entrance to the development will minimise the amount of soil deposited on the surrounding road network. The adjoining road network will be cleaned on a regular basis, as required, to prevent the build-up of soils from the development site on the existing public roads. Dampening down measures with water sprays will be implemented during periods of dry weather to reduce dust levels arising from the development works.

Measures will be implemented throughout the Construction Phase to prevent contamination of the soil and adjacent watercourses from oil and petrol leakages. Suitable bunded areas will be installed for oil and petrol storage tanks. Designated fuel filling points will be put in place with appropriate oil and petrol interceptors to provide protection from accidental spills. Refuelling will be restricted to these allocated re-fuelling areas. This area is to be an impermeable bunded area designed to contain 110% of the volume of fuel stored.

During excavation works, temporary sumps will be used to collect any surface water run-off thereby avoiding standing water within the excavations. If groundwater is encountered during excavations, mechanical pumps will be required to remove the groundwater from sumps. Sumps should be carefully located and constructed to ensure that groundwater is efficiently removed from excavations and trenches.

Silt traps, silt fences and tailing ponds will need to 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. Straw bales will be used at the outfall to filter surface water to remove contaminants.

A Construction Management Plan, Traffic Management Plan, and Construction and Demolition Waste Management Plan will be implemented by the contractor during the Construction Phase to control the above remedial measures.

6.3.3.3 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 Irish Waters 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 Irish Water 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.

6.3.4 Controls to Protect Biodiversity

6.3.4.1 Controlled Vegetation Removal/ Construction Site Hygiene

6.3.4.1.1 Hedgehog

During the Construction Phase of the Proposed Development Hedgehogs in particular have the potential to be significantly impacted through the loss of suitable hibernation and nest sites in the form of piles of dead wood, vegetation and leaves on site.

This can be mitigated through the careful removal of dead wood/leaves to another part of the site where they will not be affected. Woody debris from the proposed management of hedgerow/treeline areas on site should also be left in this out-of-the way area as compensatory hedgehog habitat during the Construction Phase.

Work likely to cause disturbance during hibernation – for example removal of hibernation habitats such as log piles and dense scrub/hedgerow – should not take place during Winter i.e., 1st November to 1st March, but also must take into account the breeding bird season in order to avoid potential nest destruction and bird mortality. As such, it is recommended that any removal of the hedgerow or scrub be carried out in **September/October** where possible in order to ensure the best biodiversity outcome and to comply with the Wildlife Acts 1976 and Amendments.

Hedgehogs and other small mammals can become trapped in construction materials, such as plastic sheeting and netting, leading to suffocation and death. This will be addressed by storing materials off the ground overnight.

6.3.4.1.2 Bats

Where trees are to be removed to facilitate construction and/or in the interest of health and safety, they will first be checked for the presence of bats by an appropriately qualified, experienced, and licensed professional. In the case that trees are required to be removed to facilitate construction, works will be carried out **within the period: late August to late October/early November.** This corresponds to the season when bats are less vulnerable to disturbance, as they are not rearing young and have not yet entered hibernation.

For any trees identified as being of 'Moderate' bat roosting potential, the following measures as outlined in the Bat Report should be carried out:

- A Bat Tree Assessment of any trees that are to be removed from the treelines identified as having 'Moderate' bat roosting potential.

- A pre-felling bat survey the night before felling of any such trees to confirm the absence of bats.

- If bats are found to be using the affected trees with 'Moderate' bat potential as a roost, or are deemed highly likely to do so, then a derogation licence from the National Parks and Wildlife and Services (NPWS) will be required with tree felling postponed. Tree felling can only proceed if a licence is acquired along with justification for why each particular tree requires removal.

The following tree felling methodology should be followed:

- Felling during the winter months should be avoided as this creates the additional risk that bats may be in hibernation and thus unable to escape from a tree that is being felled. Additionally, disturbance during winter may reduce the likelihood of survival as the bats' body temperature is too low and they may have to consume too much body fat to survive.

- Tree-felling should be undertaken using heavy plant and chainsaw. There is a wide range of machinery available with the weight and stability to safely fell a tree. Normally trees are pushed over, with a need to excavate and sever roots in some cases. In order to ensure the optimum warning for any roosting bats that may still be present, the tree should be pushed lightly two to three times, with a pause of approximately 30 seconds between each nudge to allow bats to become active. The tree should then be pushed to the ground slowly and should remain in place for a period of at least 48 hours to allow bats and other wildlife to escape.

- Trees felled should never be sawn up or mulched immediately in case protected wildlife is present.

- Trees used for future landscaping planting should comprise of predominantly native Irish species.

6.3.4.1.3 Birds

In order to comply with legislation protecting birds and their nests, pruning or removal of hedgerows, scrub and treelines will be conducted outside of the breeding bird season (i.e., outside of March 1st through August 31st, inclusive).

Should any vegetation removal be required during this period, this vegetation should be checked for birds by a qualified ecologist. If any are noted during this evaluation prior to removal, the ecologist will be consulted on how best to proceed and the NPWS may need to be contacted. If eggs have been laid, the nest will be suitably protected until the young have fledged, after which time the nest can be destroyed under the supervision of a suitably qualified Ecologist.

6.3.4.2 Protection of Retained Trees

An Arboricultural Method Statement and Tree Protection Plan has been prepared by Griffin Landscape Architecture which provides guidance in respect of tree protection on a development site. The Method Statement and Tree Protection Plan evaluates the direct and indirect impacts of the Proposed Development on the trees to be retained includes justification and mitigation for any tree removal proposed and details of how trees will be protected at all stages of the development.

Refer to the Arboricultural Report accompanying this application for full details.

6.3.4.3 Timing of vegetation clearance

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

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

<table>
<tr><th>Ecological Feature</th><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>Septem-ber</th><th>October</th><th>November</th><th>December</th></tr>
<tr><td>Breeding Birds</td><td colspan="2">Vegetation clearance permissi-ble</td><td colspan="5"><u>Nesting bird season</u>
No clearance of vegetation or works to rel-evant structures permitted unless con-firmed to be devoid of nesting birds by an ecologist.</td><td colspan="4">Vegetation clearance permissible</td></tr>
<tr><td>Hibernating mammals (namely Hedgehog, excluding bats)</td><td colspan="2"><u>Mammal hiber-nation season</u>
No clearance of vegetation or works to relevant structures per-mitted unless confirmed to be devoid of hiber-nating mammals by an ecologist.</td><td colspan="7">Vegetation clearance permissible</td><td colspan="2"><u>Mammal hiber-nation season</u>
No clearance of vegetation or works to rele-vant structures permitted un-less confirmed to be devoid of hibernating mammals by an ecologist.</td></tr>
<tr><td>Bats</td><td colspan="8">Tree felling to be avoided</td><td colspan="2">Preferred pe-riod for tree-felling</td><td colspan="2">Tree felling to be avoided</td></tr>
<tr><td>Common Liz-ard</td><td colspan="2">Vegetation clearance permissi-ble, avoid-ing poten-tial Com-mon Lizard hibernacula sites (dry sites which provide frost-free conditions e.g., under-ground small mam-mal bur-rows, piles of dead wood or rubble)</td><td colspan="6">Removal of potential hibernacula sites identified by the surveyor under the supervision of an ecol-ogist.

Ideally no vegetation clearance to take place. Where this is not possible, vegetation will be cut first to approximately 15cm, and then to the ground, under supervision of an ecologist. This will allow the opportunity for lizards to be displaced by the disturbance and leave the affected area.</td><td colspan="4">Vegetation clearance permissible, avoiding po-tential Common Lizard hibernacula sites (dry sites which provide frost-free conditions e.g., un-derground small mam-mal burrows, piles of dead wood or rubble)</td></tr>
</table>

The preferred period for vegetation clearance is within the month of October. Vegetation should be removed in sections working in a consistent direction to prevent entrapment of protected fauna potentially present (e.g., Hedgehog). Vegetation clearance should take place under the supervision of an ecologist to avoid any potential impact on bats, breeding birds, common lizards or mammals.

6.3.4.4 Noise Control

A number of measures for the control of noise have been included in Section 6.3.6 of this CEMP. In order to control likely noise impacts caused by the Proposed Development, best

available technology will be employed by the appointed Main Contractor to minimise noise from the construction operations and all comply with Safety, Health and Welfare at work (construction) Regulations 2006 to 2013, Safety, Health and Welfare at Work Act 2005, BS 6187:2011 - Code of Practice for full and partial demolition, BS 5228:2009+A1:2014 Parts 1 & 2 - Code of Practice for noise and vibration control on construction and open sites – Vibration, Environmental Protection Agency Act 1992 Sections 106-108, including all Local Authority specific requirements for this specific site.

These measures will be put in place during the Construction Phase of the Proposed Development and will ensure that the level of noise caused by the proposed works will be controlled/reduced where possible so as to minimise the potential disturbance impact on local bird species or any other fauna.

6.3.4.5 Night-time lighting

It is recommended that the impact of increased night-time lighting as a result of the Proposed Development be mitigated through the incorporation of bat-friendly lighting measures into the project design and associated lighting plan.

In order to minimise disturbance to bats commuting/foraging in the vicinity of the Site, lighting will be designed to minimise light-spill onto any hedgerows or treelines to be retained or planted at the Site. This can be achieved by ensuring that the design of lighting adheres to the guidelines presented in the Bat Conservation Trust & Institute of Lighting Engineers *'Bats and Lighting in the UK - Bats and Built Environment Series',* (ILP, 2018) the Bat Conservation Trust *'Artificial Lighting and Wildlife Interim Guidance'* and the Bat Conservation Trust *'Statement on the impact and design of artificial light on bats'*. Therefore, where possible, the lighting scheme will include the following:

- The minimisation of night-time lighting emitted during both the Construction and Operational Phases of the Proposed Development (once health and safety requirements are met). Lighting will be dimmed by 25% from the hours of midnight to 6am as stated in the Lighting Design Report for this development (Redmond AMS, 2021).

- The avoidance of direct lighting of the existing hedgerow along the eastern boundary, as well as areas of proposed tree and hedge planting.

- Unnecessary light spill controlled through a combination of directional lighting and hooded / shielded luminaires.

- Areas around the perimeter should not be lit up nor lighting directed towards it. Lighting in these areas should not increase beyond existing night-time lux levels or 1 lux, whichever is the lesser. Much of the Site's boundaries are formed by the back gardens of the proposed dwellings, and as such will not be subject to public lighting. In addition, the green space in the east of the Site will remain largely unlit, forming a dark buffer along the eastern boundary

- Vertical light spill at light sources should be below 3m to avoid potential bat flight paths.

- No floodlighting will be used – this causes a large amount of light spillage into the sky significantly impacting bats. The spread of light should be kept below the horizontal.
- Hoods, louvres, shields or cowls should be fitted on the lights to reduce light spillage.
- Lights should be of low intensity. It is better to use several low intensity lights than one strong light spilling light across the entire area.
- Narrow spectrum lighting should be used with a low UV component. Glass also helps reduce the UV component emitted by lights.
- The source of light are Light Emitting Diodes (LEDs), which have a narrow beam that are highly directional and a highly energy efficient light source.

Night-time lighting across the Site of the Proposed Development will be kept to a minimum during both the Construction and Operational Phases of the Proposed Development through the reduction of light spill from the building interior via windows/entrances, and the reduction of spill/glare from outdoor lighting in place on the building exterior and throughout the Site (see **Error! Reference source not found.** below).

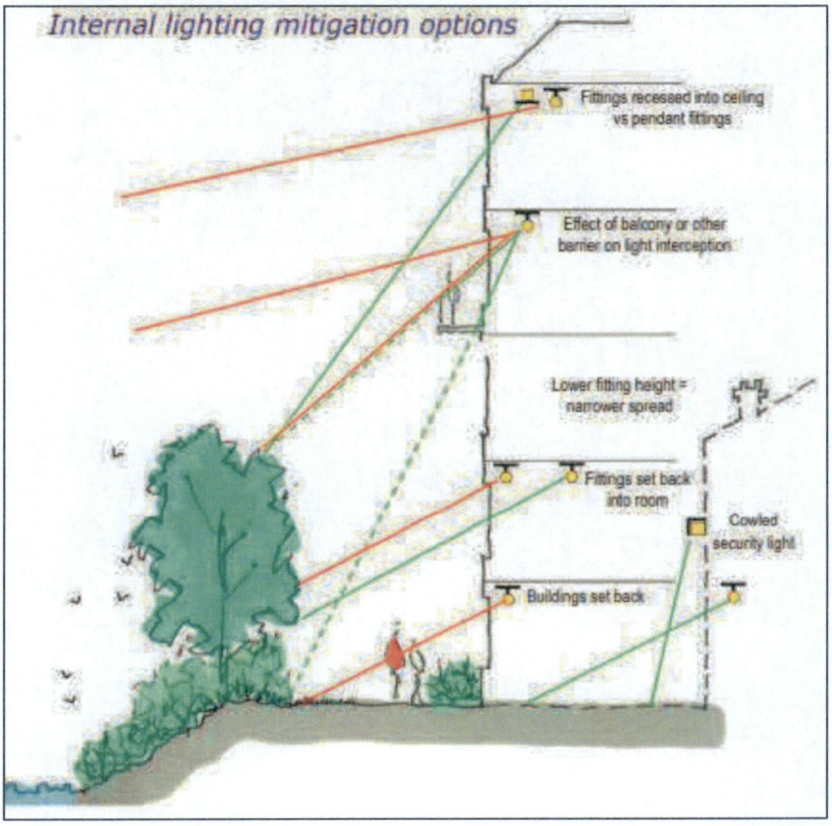

Figure 6-1: Internal Lighting Guidance Diagram adapted from ILP (2018).

6.3.4.6 Habitat Enhancement

6.3.4.6.1 Hedgehog Highways

By creating a number of separate private dwellings and gardens at a Site, the land becomes fragmented and largely inaccessible to species such as Hedgehogs, which like to roam each night in search of food (garden pests e.g., slugs). This will be mitigated by ensuring that the boundaries and barriers within and surrounding the Site i.e., garden fencing, railings and gates, are permeable for Hedgehogs. This can be done by:

- the use of fence panels with 13 x 13 cm holes at ground level (Hedgehog holes),
- leaving a sufficient gap beneath gates,
- and leaving brick spaces at the base of brick walls

Figure 6-2: Examples of 'Hedgehog highways' that can maintain habitat connectivity for Hedgehogs in residential developments (Images: BHPS Guidance document).

A variety of fence suppliers stock specific hedgehog-friendly fencing options, which can be easily incorporated at little or no additional cost. These simple measures will provide habitat connectivity at this Site for Hedgehogs and reduce the impact of the land-use change on this species.

Including details of hedgehog-friendly features in the new homeowner's welcome pack will raise awareness and prevent homeowners from reversing these features, for instance blocking fence holes.

6.3.5 Bat Habitat provision

A series of 5+ bat boxes will be erected suitable surfaces around the site to provide future roosting opportunities. The eave walls of taller buildings at the Site may be suitable, as would more mature trees. The type recommended is the 2F Schwegler Bat Box or similar durable woodcrete design. A suitably qualified ecologist should be consulted when erecting the bat boxes to maximise their chance of being successfully utilised by roosting bats.

6.3.5.1 Biosecurity

An invasive flora survey was carried out in tandem with the habitat survey of the Site on the 13th of July 2021. The timing of this survey was within the optimal range for identifying flora species, allowing confidence in the determination of presence or absence of invasive flora species at the Site. The survey focused on those high-risk species listed as Invasive Alien Plant Species in Part 1 of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011, as amended), however, other known lower risk species were also identified and noted where present.

No invasive alien plant species (Third Schedule) noted at the site at the time. It is noted that buddleja davidii is growing in the south-west of the site along the treeline. Buddleja davidii is

considered to be an invasive plant species, however it is not a Third Schedule invasive species and therefore not deemed to be of major concern.

Should any Third Schedule invasive species be found at a later date; an Invasive Species Management Plan will be prepared and will likely include a multi-pronged approach to the eradication and treatment.

In addition, the following will be adhered to, to avoid the introduction of invasive species to the Proposed Development Site.

- Any material required on the site will be sourced from a stock that has been screened for the presence of any invasive species by a suitably qualified ecologist and where it is confirmed that none are present.
- All machinery will be thoroughly cleaned and disinfected prior to arrival on site to prevent the spread of invasive species.

6.3.5.2 Monitoring

The silt fences will be monitored to ensure that they remain functional throughout construction of the Proposed Development. Where necessary, maintenance will be carried out on the fences to ensure that they continue to be effective. This will be particularly important after heavy rainfall events. The checks will be undertaken by a suitably qualified person nominated to act as Ecological Clerk of Works (ECoW). The frequency of monitoring will depend on the stage of works, and local environmental conditions. Daily checks may be appropriate during the initial site clearance, during works in the vicinity of the watercourse, and during and after storm events. Weekly or bi-weekly checks may be appropriate at other times.

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

Regular site inspections will be carried out to monitor compliance with the Dust Management Plan, inspection results will be recorded, and an inspection log will be made available to the local authority. Site inspections will be carried out more frequently when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.

Dust deposition, dust flux, or real-time PM10 continuous monitoring locations will be agreed with the Local Authority. Where possible, baseline monitoring will commence at least three months before work commences on-site or before work on a phase commences. Further guidance is provided in the UK guidance document 'Assessment of Dust from Demolition and Construction' (2014) published by the Institute of Air Quality Management on monitoring during demolition, earthworks and construction.

6.3.6 Control of Noise and Vibration

In order to control likely noise impacts caused by the Proposed Development, best available technology will be employed by the appointed Main Contractor to minimise noise from the construction operations and all comply with Safety, Health and Welfare at work (construction)

Regulations 2006 to 2013, Safety, Health and Welfare at Work Act 2005, BS 6187:2011 - Code of Practice for full and partial demolition, BS 5228:2009+A1:2014 Parts 1 & 2 - Code of Practice for noise and vibration control on construction and open sites – Vibration, Environmental Protection Agency Act 1992 Sections 106-108, the World Health Organisation (WHO) - Guidelines for Community Noise (1999), and including all Local Authority specific requirements for this specific site.

These measures will include but are not limited to:

- Selection of plant with low inherent potential for generating noise.
- Avoid unnecessary revving of engines and switch off plant items when not required.
- Keep plant machinery and vehicles adequately maintained and serviced.
- Proper balancing of plant items with rotating parts.
- Keep internal routes well maintained and avoid steep gradients.
- Minimise drop heights for materials or ensure a resilient material underlies.
- Use of alternative reversing alarm systems on plant machinery.
- Where noise becomes a source of resonating body panels and cover plates, additional stiffening ribs or materials should be safely applied where appropriate.
- Limiting the hours during which site activities likely to create high levels of noise are permitted.
- Appointing a site representative responsible for matters relating to noise.
- Monitoring typical levels of noise during critical periods and at sensitive locations.

Work methods will be implemented to ensure minimal noise and vibration are created; methods will include:

- Each item of plant used on site complies with the noise limits quoted in the relevant European Commission Directive 2000/14/EC/ [S.I. No. 632 of 2001].
- All plant and equipment liable to create noise whilst in operation will, as far as reasonably practicable, be located away from sensitive receptors and neighbouring occupied buildings.
- The use of barriers and hoarding to absorb and/or deflect noise away from noise sensitive areas will be employed where required and reasonably practicable.
- All plant, equipment and noise control measures applied to plant and equipment will be maintained in good and efficient working order and operated such that noise emissions are minimised as far as reasonably practicable. Any plant, equipment or items fitted with noise control equipment found to be defective will not be operated until repaired.
- Fixed items of construction plant will be electrically powered, where possible, in

preference to diesel or petrol driven. The Main Contractor will ensure that vehicles and mechanical plant employed for any activity associated with the construction works will, where reasonably practicable, be fitted with effective exhaust silencers.

- Machines in intermittent use will be shut down or throttled down to a minimum during periods between works. Static noise emitting equipment operating continuously will be housed within suitable acoustic enclosures, where appropriate.
- Tower cranes will be utilized instead of crawler cranes as these are electrically powered and quieter in operation.
- Noise suppression hammers and shields will be used on rock breaking equipment.
- Working hours will be confined to those stipulated in the grant of planning permission.
- Noise emitting processes such as rock breaking can be suspended during sensitive hours, to be agreed in consultation with SDCC and neighbours.
- Alternative work practices will be investigated where the noise emitted is reduced (for example prefabricating building components off site).
- Site deliveries will be confined to working hours and allocated offloading location will be utilised for all deliveries.
- The Site Manager will also continually review and monitor the noise / dust / vibration levels / risk throughout the duration of the Proposed Development and if necessary, adjust / add to the control measures to be employed to reduce nuisance.

For controlling vibration reference should be made to BS 5228:2009+A1:2014 which offers detailed guidance on the control of vibration from demolition and construction activities. In general, BS5228:2009+A1:2014 advises the following:

- Use rubber linings in, for example, chutes and dumpers to reduce impact noise.
- Minimize drop height of materials.
- Regular and effective maintenance by trained personnel should be carried out to reduce vibration from plant and machinery.
- Hand demolition, cutting of the separation joints of the buildings in advance and small robotic breakers and 'munchers'.

6.3.6.1 Local Authority Specific Requirements

To control, limit and prevent the generation of unacceptable levels of Environmental Noise Pollution from occurring during construction activity, no Equipment or Machinery (to include pneumatic drills, on-site construction vehicles, generators, etc.) that could give rise to unacceptable levels of noise pollution as set out generally for evening and night-time in S.I. No. 140/2006 - Environmental Noise Regulations 2006 shall be operated on the site before 7.00 hours on weekdays and 9.00 hours on Saturdays nor after 19.00 hours on weekdays and 13.00 hours on Saturdays, nor at any time on Sundays, Bank Holidays or Public Holidays.

Any construction work outside these hours that could give rise to unacceptable levels of noise pollution shall only be permitted following a written request to the Planning Authority and the subsequent receipt of the written consent of the Planning Authority, having regard to the reasonable justification and circumstances and a commitment to minimise as far as practicable any unacceptable noise outside the hours stated above.

The applicant or developer shall also endeavour to engage in local consultation in respect of

any noise sensitive location within 30 metres of the development as approved prior to construction activity commencing on site. Such noise sensitive locations should be provided with the following:

- Schedule of works to include approximate timeframes
- Name and contact details of contractor responsible for managing noise complaints
- Hours of operation- including any scheduled times for the use of equipment likely to be the source of significant noise.

6.3.6.2 Monitoring of Noise and Vibration

All construction works will be required to operate within the Construction Noise Limits outlined in **Error! Reference source not found.** as follows:

Table 6-2: Maximum Permissible Noise Levels

Days and Times	Noise Levels (dB re. $2x10^{-5}$ Pa)	
	$L_{Aeq(1hr)}$	L_{Amax}
Monday to Friday 07:00 to 19:00hrs	70	80
*Monday to Friday 19:00 to 22:00hrs	60*	65*
Saturdays 08:00 to 16:30hrs	65	75
*Sundays & Bank Holidays 08:00 to 16:30hrs	60*	65*
*Construction activity at these marked times, other than that required in respect of emergency works, will normally require the explicit permission of the relevant local authority. Source: National Roads Authority, 2004. Guidelines for the Treatment of Noise and Vibration in National Road Schemes.		

If deemed necessary by the Health and Safety Officer, noise and vibration monitoring will be conducted at the nearest noise sensitive locations which are presented in Table 6-3 below. Monitoring will be carried out by a specialist sub-contractor engaged by the Main Contractor to monitor, collate and report on noise and vibration results, as required.

Table 6-3: Sensitive Receptor Locations

Name	Type	Coordinates		Orientation Relative to Site Boundary	Distance from the Site Boundary
Silken Park Avenue	Residential	53.298471	-6.417412	South	Adjoining
Cheeverstown	Residential	53.298385	-6.418648	West	Ca. 12 metres
Kingswood	Residential	53.300344	-6.418279	North	Adjoining
Brownsbarn Wood	Residential	53.298987	-6.419342	West	Ca. 40 metres

6.3.7 Control of Air Quality and Dust

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

6.3.7.1 Dust Control Measures – General

The objective of dust control at the site is to ensure that no significant nuisance occurs at nearby sensitive receptors. In order to develop a workable and transparent dust control strategy, the following management plan has been formulated by drawing on best practice guidance from Ireland, the UK (BRE 2003), (The Scottish Office 1996) (UK Office of Deputy Prime Minister 2002) and the USA (USEPA 1997), (USEPA 1986).

6.3.7.1.1 General Monitoring

- Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This will include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary.
- Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked. 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.
- Agree dust deposition, dust flux, or real-time PM10 continuous monitoring locations with the Local Authority. Baseline monitoring will commence at least three months before work commences on site or before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.

6.3.7.1.2 Communications

- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.
- Display the name and contact details of person accountable for air quality and dust issues on the site boundary.
- Display the head or regional office contact information.
- Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site. The DMP may include monitoring of dust deposition, dust flux, real-time PM_{10} continuous monitoring and/or visual inspections.

6.3.7.1.3 Site Management

- Regular inspections of the Site and boundary will be carried out to monitor dust, records and notes on these inspections should be logged.
- Record all dust and air quality complaints, identify cause(s), take appropriate

measures to reduce emissions in a timely manner, and record the measures taken.

- Make the complaints log available to the local authority when asked.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook.
- Hold regular liaison meetings with other high risk construction sites within 500 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.

6.3.7.1.4 Preparing and Maintaining the Site

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on Site.
- Fully enclose specific operations where there is a high potential for dust production and the Site is active for an extensive period.
- Avoid Site runoff of water or mud.
- Keep Site fencing, barriers and scaffolding clean using wet methods.
- Netting of scaffolding.
- 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 skips and stockpiles to prevent wind whipping.
- Daily wash down of pavements or other public areas.

6.3.7.1.5 Operating Vehicles / Machinery and Sustainable Travel

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

6.3.7.1.6 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.

6.3.7.1.7 Measures Specific to Demolition

- Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
- Ensure effective water suppression is used during demolition operations. Handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.
- Avoid explosive blasting, using appropriate manual or mechanical alternatives.
- Bag and remove any biological debris or damp down such material before demolition.

6.3.7.1.8 Measures Specific to Earthworks

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
- Use Hessian or mulches 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.

6.3.7.1.9 Measures Specific to Construction

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

6.3.7.1.10 Measures Specific to Trackout

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

- A speed restriction of 15 km/hr will be applied as an effective control measure for dust for on-site vehicles.
- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as

necessary, any material tracked out of the site. This may require the sweeper being continuously in use.

- Avoid dry sweeping of large areas.
- 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 logbook.
- 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.

6.3.7.1.11 Dust Control – Public Roads

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

- Vehicles delivering material with potential for dust emissions to an off-site location shall be enclosed or covered with tarpaulin always to restrict the escape of dust.
- Public roads outside the Site shall be regularly inspected for cleanliness, as a minimum daily, and cleaned as necessary. A road sweeper will be made available to ensure that public roads are kept free of debris.
- If practicable, a wheel wash facility will be employed at the exit of the Site so that traffic leaving the Site compound will not generate dust or cause the build-up of aggregates and fine material in the public domain.

6.3.8 Control of Traffic

A Traffic Management Plan (TMP) will be prepared by the Main Contractor, which will outline proposals in relation to construction traffic and associated construction activities that impact the surrounding roads network. The document will be prepared in coordination and agreed with the local authority.

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 within the site 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 TMP, 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.

6.3.8.1 Monitoring

During the Construction Phase the following monitoring is advised. 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.

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

6.3.9 Control of Waste and Waste Management

Waste management during the Construction Phase will be managed in accordance with the Construction & Demolition Waste Management Plan (CDWMP) prepared by AWN Consulting (October 2021) for the Proposed Development. Waste will be managed in compliance with the Waste Management Act 1996 (as amended) and all subordinate legislation. Measures to minimise waste generation, promote re-use and recycling and recovery of wastes will be implemented throughout the Construction Phase.

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

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

All excavations will be carefully monitored by a suitably qualified person to ensure that, if encountered, potentially contaminated soil is identified and segregated from clean/inert material. In the event that any potentially contaminated material is encountered, it will need to be tested and classified as either non-hazardous or hazardous in accordance with the EPA publication entitled *Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous* 14 using the *HazWasteOnline* application (or similar approved classification method). The material will then need to be classified as clean, inert, non-hazardous or hazardous in accordance with the *Decision 2003/33/EC* 15.

Prior to the removal of excess excavated material from site soil samples will be sent for environmental testing.

If asbestos or asbestos containing material (ACMs) are identified in any soil samples or during excavation, the removal will only be carried out by a suitably permitted waste contractor, in accordance with *S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010.* All asbestos will be taken to a suitably licensed or permitted facility.

In the event that hazardous soil, or historically deposited waste is encountered during the site bulk excavation phase, the contractor will notify SDCC and provide a Hazardous/ Contaminated Soil Management Plan, to include estimated tonnages, description of location, any relevant mitigation, destination for disposal/treatment, in addition to information on the authorised waste collector(s).

6.3.9.1 Monitoring

The monitoring of construction and demolition waste during the Construction Phase of the Proposed Development is also recommended to ensure that impacts are not experienced beyond the Site boundary. The Main Contractor will be responsible for monitoring and record keeping in respect of waste leaving the facility and that these records will be maintained on site.

6.3.10 Control of Impacts on Archaeology and 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.

6.3.10.1 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.

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 Management Plan (once prepared) and the control measures outlined in Section 6.3 of this CEMP.

8 EMERGENCY PLANNING AND RESPONSE

The purpose of the CEMP is to address the potential emissions from the site, implementing any necessary mitigation measures as discussed in Section 6.3 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 Section 6.3 of this CEMP, once correctly implemented, will reduce the likelihood of the occurrence of an environmental incident (emergency) as identified in Section 5.2 of this CEMP.

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 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.

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

9 ENVIRONMENTAL REGULATORY REQUIREMENTS

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

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

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

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

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

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

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

10 REFERENCES

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