Outline Construction Environmental Management Plan (OCEMP)

FOR

SHD RESIDENTIAL DEVELOPMENT

AT

BALSCADDEN, HOWTH,

CO. DUBLIN

MARCH 2022

ON BEHALF OF

Balscadden GP3 Ltd.

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1 INTRODUCTION

This Outline Construction Environmental Management Plan (hereinafter OCEMP) has been prepared by Enviroguide Consulting on behalf of Balscadden GP3 Ltd. (the Applicant) for the Proposed Development at Balscadden, Howth, Co. Dublin (the Site).

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

The OCEMP is an integral part of the Project's Health, Safety, Environmental and Quality Management System (HSEQMS). The OCEMP 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 including EIAR screening.

1.1 Objective and Purpose

The purpose of this OCEMP 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 OCEMP

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

Compliance with the OCEMP, 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 OCEMP 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 1.43 hectares (ha) within Howth Village. Howth is in the Electoral Division of Howth ED 1901, in the Civil Parish of Howth, in the Barony of Coolock, in the County of Dublin. The location of the Site is presented in Figure 2-1.

The Site of the Proposed Development was originally three separate plots which have been consolidated into a single entity under one landowner.

The largest plot of land, on Balscadden Road, south of the Martello tower, was formerly the EDROS centre, comprising a community hall and tennis courts. The Site is undeveloped, overgrown, and fenced off. It offers no visual or physical amenity to Howth and provides a poor setting for the Martello Tower. It is a relatively flat site, surrounded on 3 sides by steep embankments. A right-of-way from Abbey Street to Balscadden Road exists along the bottom of the mound but this pathway is isolated from neighbouring properties. South of the Balscadden site are the 'Cluxton' lands, which are also overgrown with grass and shrubs. The site slopes steeply upwards to the Asgard Park estate on the southern boundary, c. 15m higher than the Balscadden plateau. The third plot of land is the former Baily Court Hotel, which has been closed since circa 2007. The rear of the hotel backs directly onto the Cluxton lands.

The Site of the Proposed Development is bounded to the east by the Balscadden Road, to the west by residential and commercial buildings fronting onto Main Street and Abbey Street, and to the north by Martello Tower and Tower Hill, and to the south by rear gardens to residential properties. Of particular importance with respect to the Site of the Proposed Development are:

- The protected Martello Tower & Tower Hill of historical importance
- Howth Head Special Area of Conservation (SAC)
- Howth Head proposed Natural Heritage Area (pNHA)
- Historical Howth Sewer Tunnel that traverses the site
- Existing embankments and slopes stability conditions adjacent to the site.

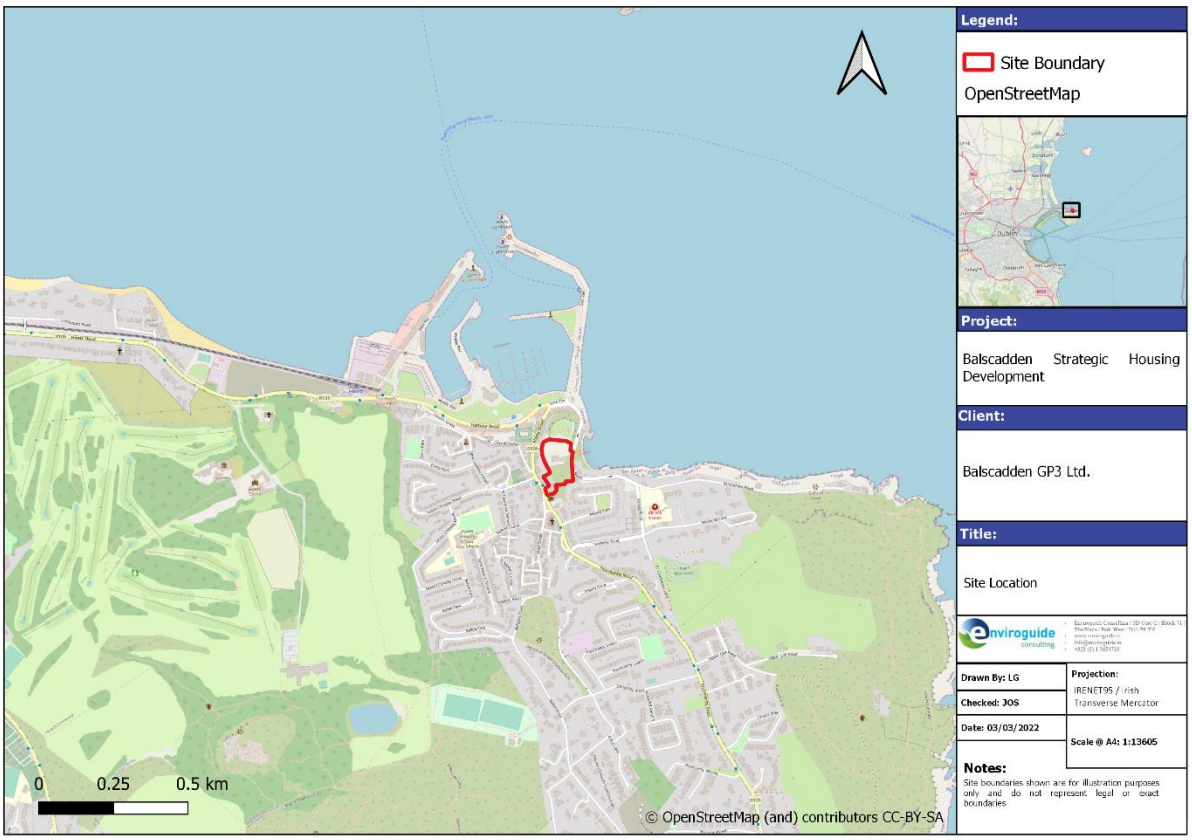

Figure 2-1: Site Location

2.2 Proposed Development

The Proposed Development relates to lands located to the south of the Martello Tower on Balscadden Road & the former Baily Court Hotel, Main Street, Howth, County Dublin. The Proposed Development will consist of the demolition of existing structures on the Proposed Site including the disused sports building and the former Baily Court Hotel buildings and the construction of a residential development set out in 4 no. residential blocks, ranging in height from 2 to 5 storeys to accommodate 180 no. apartments with associated internal residential tenant amenity and external courtyards and roof terraces, 1 no. retail unit and 2 no. café/retail units. The Site will accommodate car parking spaces at basement level and bicycle parking spaces at basement and surface level. Landscaping will include new linear plaza which will create a new pedestrian link between Main St and Balscadden Rd to include the creation of an additional 2 no. new public plazas and also maintains and upgrades the pedestrian link from Abbey Street to Balscadden Road below the Martello Tower.

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

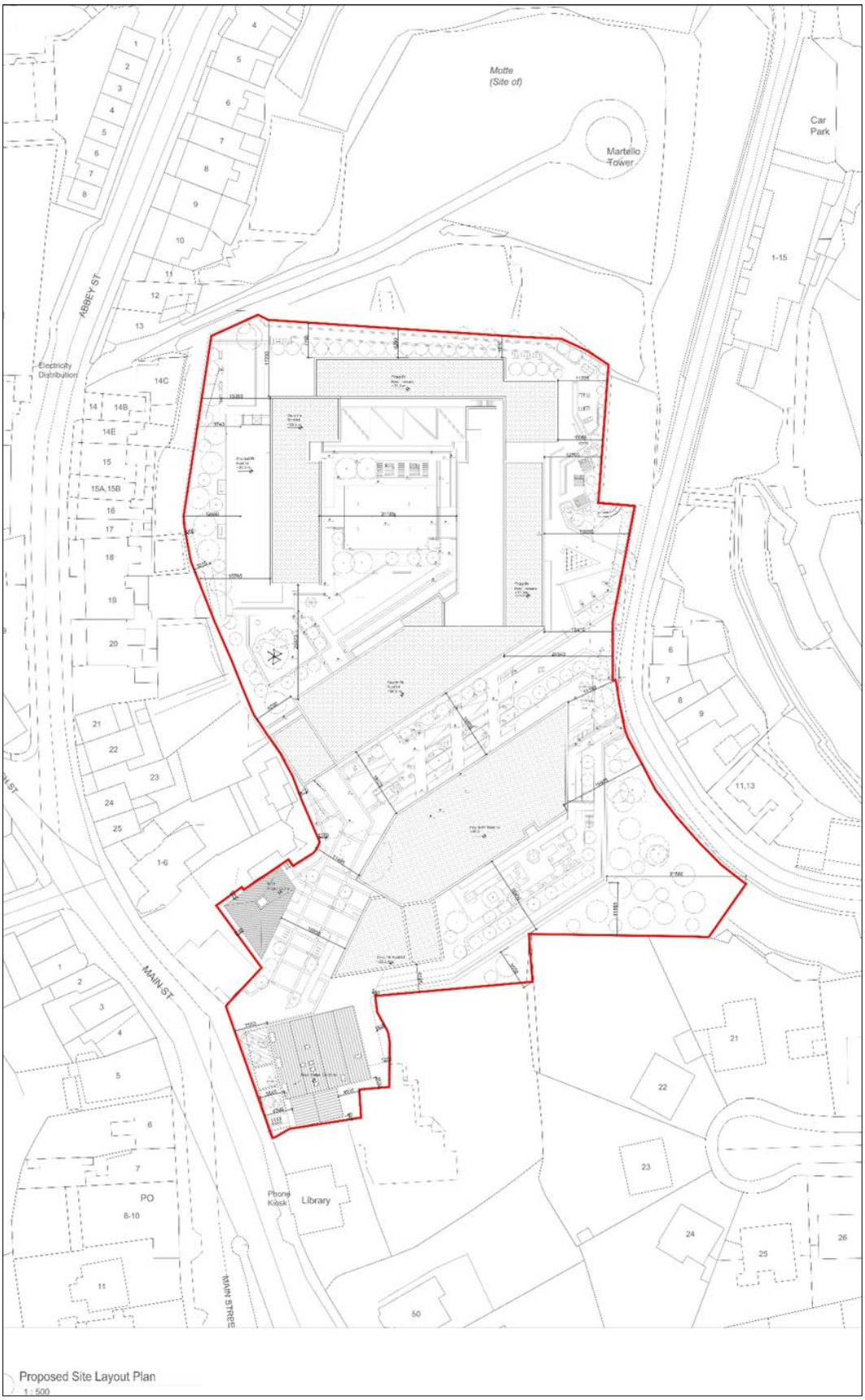

Figure 2-2: Proposed Site Layout (Plus Architecture)

3 CONSTRUCTION SCHEDULE AND WORKS MANAGEMENT

3.1 Programme

The construction programme duration will be approximately 3 years and will take place in the following sequence of works (*Outline Construction and Demolition Management Plan, Waterman Moylan, 2022*):

- **Site Preparation: Site Clearance, Demolition & Enabling Work (8 weeks)**
  - Demolition of the existing EDROS Building & former Baily Court Hotel.
  - Removal of site vegetation and installation of site set-up.
  - Installation of temporary silt trench to eastern boundary to protect SAC/pNHA (as required under the Outline Environmental Management Plan)
  - Provision of a temporary piling mat and berms between levels.
- **Construction: Piled Retaining Walls**
  - Secant piled walls installed to allow for the bulk excavation and reduced level dig.
- **Construction: Bulk Excavation (12 weeks)**
  - Temporary works installed to temporarily restrain the secant piled walls during excavation.
  - Basement battered open-cut excavation to the North and East boundaries with a safe angle of repose.
- **Construction: Building Foundations & Basement (78 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**
  - 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 (24 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 less on-site waste.

3.2 Working Hours

Normal site working hours for the Construction Phase of the Proposed Development will be 08:00 and 19:00, Monday to Friday, and 08:00 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 Fingal County Council (FCC).

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 as detailed within the Outline Construction & Demolition Management Plan (Waterman Moylan, 2022). The site compound will consist of:

- Offices
- Meeting Rooms
- 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 Preliminary Construction Traffic Management Plan (Waterman Moylan, February 2022) submitted with this application.

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

a. Demolition of the existing building and removal of demolition waste off site.
b. Excavation to reduced levels including basement (approximately 67,000 cubic meters).
c. Construction of the buildings.

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 3-year construction period. The most intense stage for construction traffic movements will be the excavation works.

The Preliminary Construction Traffic Management Plan (Waterman Moylan, 2022) has calculated the daily HGV movements that will take place during the Construction Phase in order to remove the excavated material from the Site of the Proposed Development. Based on an excavated volume of 67,000 cubic meters it is predicted that truck movements will vary from 65 – 95 arrivals per day and 65 – 95 departures per day. These movements represent some 2% of the existing traffic flow of 300 – 450 vehicles per hour each way on Main Street during the same period.

It is proposed that the construction traffic will access the Proposed Development site from Abbey Street only, via an entrance on Main Street. It has been agreed with the local Balscadden residents that Balscadden Road will not be used for construction traffic due to the restrictive nature of the road. The detailed design and layout of the site access will be agreed between Fingal County Council and the appointed contractor prior to any construction works commencing on site. The emerging preferred route for construction traffic to/from the site is via Howth Head from Sutton Cross.

There will be very limited parking for construction traffic on site. Construction workers will be encouraged to use public transport. Where parking for construction staff is required, it will be the responsibility of the Main Contractor to locate suitable off-site parking, the location of which will be set out in the Mobility Management Plan and will be agreed with Fingal County Council in advance of construction commencing. The Main Contractor will be required to ensure that off-site parking is minimised and located close to public transport to facilitate easy access to the site. A shuttle service to/from the parking will be provided if required.

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

Hoarding will be required to secure the entire site boundary. This will incorporate a primary construction vehicle and pedestrian site entrance located off Main Street. Secondary pedestrian entrances and an emergency access route may be located off Balscadden Road, however, due to the restrictive nature of Balscadden Road, any access routes on Balscadden Road will not be used for construction traffic (Preliminary Construction Traffic Management Plan, Waterman Moylan, 2022). Vehicle gates with barriers will likely 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 are to 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.

Where a site access crossing is required on a pavement this will require a dedicated pedestrian management setup to ensure there are no incidents of crossovers between pedestrians and site vehicles. This may require a turtle-gate barrier in addition to with semi-

permanent barriers along the kerb edge, flagmen to control barriers and flagmen to watch truck movement and pedestrians.

In additional to the perimeter hoarding at the site, the following security measures laid out in the Outline Construction & Demolition Management Plan (Waterman Moylan, 2022) 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 and fingerprint access control will be used for site entry and exit. The Contractor will know who is on site at all times.
- There will be a site CCTV system which may be extended to cover the footpaths and roads around the site (depending on the GDPR regulations).
- Motion sensor hoarding lighting on short (1min) timers will be incorporated to increase the general illumination 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 6.4.4.3 (Protection of Bats) and Section 6.4.5 (Control of Light) of this OCEMP.
- Siting the cabins behind the hoarding 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 Project Communications Officer who will undertake any required third-party communication and liaise directly with landowners/local authorities/members of the public, and all other stakeholders as required by the project.

3.6.1 Managing Enquiries and Complaints

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

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

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

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

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

3.6.2 Advance Works Notice

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

3.7 Maintenance of Roads

The Main Contractor will ensure that the appropriate procedures are in place to ensure that all site traffic will be managed in accordance with the Preliminary Construction Traffic Management Plan (Waterman Moylan, February 2022). 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.
- Each departing vehicle will be checked by the banksman.
- Wheel wash facility at egress point and the channelling of departing vehicles through the wheel wash.
- Sweeping of public streets adjacent to egress from site.
- 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 OCEMP and appointing the following roles and responsibilities within the Construction Management Team (CMT).

4.1.1 Construction Director

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

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

4.1.2 Construction Manager

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

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

4.1.3 Environmental Officer

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

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

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

The Environmental Officer will also have the overall responsibility to oversee recording of all waste management at the site in line with the Construction and Demolition Waste Management Plan which will be developed by the Main Contractor in line with the preliminary Construction and Demolition Waste Management guidelines laid out in the Outline Construction & Demolition Management Plan (Waterman Moylan, 2022). Some of the principal duties and responsibilities of this role include:

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

4.1.4 Project Environmental Consultant (as required)

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

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

- Preparation of this OCEMP and advising the Main Contractor in the preparation of the CEMP, environmental control plans, supporting procedures.
- Advising the site management on environmental matters as appropriate.
- Carrying out environmental surveys (data logging (noise, water, dust, etc.)) as required.
- Generating reports 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.

4.1.5 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.

4.1.6 Project Ecological Clerk of Works (EcCOW) (as required)

The Project Ecologist Clerk of Works (if required) 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.

4.1.7 Project Communications Officer

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

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

The Communications Officer will report to the Construction Manager.

4.1.8 Site Supervisors

All Site Supervisors are required to:

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

4.1.9 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

Balscadden GP3 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 OCEMP.

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 OCEMP and to detail the site environmental policy.

A summary of the main points of this OCEMP (which will become the 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 OCEMP (which will become 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 OCEMP is to be read in conjunction with the relevant design drawings and reports relating to the Proposed Development.

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

6.2 Legal and Other Requirements

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

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

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

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

- Planning Conditions
- Environmental screening reports and mitigation measures.

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

6.2.1 Conditions of Planning Permission

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

6.3 Implementation of Control Measures

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

This OCEMP 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 OCEMP, 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 OCEMP.
- Approved Method Statements and Risk Assessments from Contractors which shall address all potential environmental impacts for the specific task.
- Detailed contractor plans for specific environmental aspects.
- Emergency response plans; and
- Specific induction training before commencing work.

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

6.3.1 Communication & Training - Construction Personnel

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

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

6.3.2 Keeping of Records

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

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

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

6.3.3 Monitoring, Audits, and Inspections

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

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

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

6.3.4 Non-Conformance and Corrective and Preventative Action

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

CARs may be raised as a result of:

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

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

6.4 Operation Controls

6.4.1 Control of Fuel and Chemical Storage

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

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

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

All tank, container and drum storage areas will be rendered impervious to the materials stored therein. Bunds and storage areas will be designed having regard to Enterprise Ireland BPGCS005, Oil Storage Guidelines which is in line with the requirements of EPA IPC Guidance Note 'Guidance Note on Storage and Transfer of Materials for Scheduled Activities' (EPA, 2004). All tank and drum storage areas will, as a minimum, be bunded to a volume not less than the greater of the following:

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

6.4.2 Control of Emissions to Surface Water and Drainage

6.4.2.1 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.

Surface water discharges from the Site will not be permitted onto Balscadden road nor into Howth Head SAC during the works. As such, there will be no surface water discharges to the east of the Site.

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

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.

Trenched double silt fencing will be installed along the eastern boundary of the Proposed Development Site (along the existing contours of Balscadden Road but outside the boundary of the SAC area) on the inside of the hoarding. The silt fencing will act as a temporary sediment control device to protect the SAC from sediment and potential surface water run-off from the Site. The fencing will be inspected twice daily based on Site and weather conditions for any signs of contamination or excessive silt deposits and records of these checks will be maintained. Ponded water will be pumped from the trench into a sediment tank and discharged based on site authorisations or disposed of via a permitted wastewater contractor. Under no circumstances will any wastewater generated onsite be released into nearby drains or Balscadden Road.

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 their proposed location and double handling will be avoided. Where this is not possible designated temporary material storage areas will be used.
- These temporary storage areas will be surrounded with silt fencing to filter out any suspended solids from surface water arising from these materials.
- Temporary hydrocarbon interceptor facilities will be installed and maintained where Site Works involve the discharge of drainage waters to nearby drains.
- All containment and treatment facilities will be regularly inspected and maintained.
- 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 licenced waste disposal contractor.
- Under no circumstances will any untreated wastewater generated onsite (from equipment washing, road sweeping etc.) be released into nearby drains.

6.4.2.2 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.

There will be no washdown facilities for plant and equipment on the Proposed Development Site.

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

All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to Environmental Protection Agency guidelines 'Storage and Transfer of Materials for Scheduled Activities' (2004). All tank and drum storage areas shall, as a minimum, be bunded to a volume not less than the greater of the following:

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

Concrete mixer trucks will not be permitted to wash out on Site with the exception of cleaning the chute into a container which will be removed off Site to an authorised facility.

6.4.3 Control of Emissions to Soil and Groundwater

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

- No direct untreated point discharge of construction runoff to groundwater will be permitted.
- Where a pollution incident is detected, construction works will be stopped until the source of the construction pollution has been identified and remedied.

- Groundwater may be encountered during the construction works. Where water must be pumped from the excavations, water will be managed in accordance with best practice standards (i.e., CIRIA – C750) and regulatory consents.
- Excavations and potentially contaminated stockpiled soils will be constructed/located/sheeted in a manner that ensures water is contained within the site boundary.

6.4.3.1 Control of Unstable Soil Conditions and Ground Borne Vibrations

A soil retention system comprising a secant piled retaining wall has been designed to the site-specific ground investigations and groundwater monitoring to prevent the risk of unstable soil conditions occurring during construction or ground movement causing damage to the surrounding environment.

The predicted ground movements during the ground works and Construction Phase have been established in the Byrne Looby report. The impact of these movements on adjacent structures/infrastructure has been assessed. Based on the predicted ground movements, the Northern boundary adjacent to the Martello Tower found that the works are outside the zone of sensitivity for the site. A Category 0 (Negligible) and a Category 2 (Slight) has been determined for the Southern and Western boundaries respectively. To further mitigate the risk of ground movement during the works a movement monitoring regime will be established to all boundaries. Details of the movement monitoring regime and trigger limits are outlined in the Byrne Looby report and Outline Construction Management Plan, prepared by Waterman Moylan Consulting Engineers.

Byrne Looby has carried out an assessment on the impact of the development to the underlying Howth Sewer Tunnel that shows there will only be a minor increase in stress at the location of the development that is considered appropriate with the existing form of construction.

A hydrological assessment of the Proposed Development has been undertaken by Minerex Environmental Limited. The hydrological assessment finds that the likelihood of the proposed embedded retaining walls and proposed foundations to disrupt the existing groundwater flow is low. This is further mitigated by the raised female pile toe level within the secant piled walls that terminates at formation level, thereby allowing gaps between the male and female pile to facilitate the passage of ground water.

To minimise ground borne vibrations occurring during the works, low vibration methods have been specified. A vibration monitoring regime is to be established around the site ahead of the works commencing with trigger limits outlined in the Byrne Looby report.

6.4.3.2 Control of Excavated Soil and Contaminated Soil

To reduce the quantity of soil to be removed from or imported into the site, the floor levels of the proposed buildings and roads are designed to match existing levels as closely as is feasible, to minimise the cut and fill balance. The number of vehicle movements offsite will be minimised by this optimisation. However, given the prominent location of the site on a hill, given the steep slopes on the site, and given that there is a large basement proposed, it is anticipated that there will be a surplus of soil to be removed from the site. It is currently estimated that there will be approximately 67,000m^3 of excess soil to be excavated and removed from the site.

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. The CEMP will include protocols for soil removal and will be implemented by the development's Main Contractor during the Construction Phase.

Soil samples taken from the site during the site investigations showed no evidence of contamination. However, any contaminated soils that are encountered during the works will be excavated and disposed of off-site in accordance with the Waste Management Acts, 1996-2021, and associated regulations and guidance provided in Guidelines for the Management of Waste from National Road Construction Projects published by the National Roads Authority in 2008.

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.

After implementation of the above measures, there will be no significant long term adverse effects arising from the Proposed Development. Moderate negative effects during the Construction Phase will be temporary in duration.

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

6.4.3.3 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.

6.4.4 Controls to Protect Biodiversity

6.4.4.1 Protection of Fox

Although Foxes are not afforded legal protection in Ireland, care should be taken when disturbing the den and the area around it. Foxes are protected from a variety of hunting/extermination techniques as per the Wildlife Acts 1976 to 2012; and from acts of cruelty as per the Animal Health and Welfare Act 2013.

The dens should not be disturbed during the breeding/rearing season, which typically lasts from March to June. If destroying the den at other times, care should be taken to allow the occupant to escape.

6.4.4.2 Protection of Hedgehog and Pygmy Shrew

As noted in the British Hedgehog Preservation Society's publication *Hedgehogs and development*, during the Construction Phase of the Proposed Development Hedgehogs have the potential to be impacted through the loss of suitable hibernation and nest sites in the form of piles of dead wood, vegetation and leaves. 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 clearance of vegetative areas on site can also be left in this out-of-the way location as compensatory Hedgehog habitat during the Construction Phase (refer to section 5.6.1.1 above).

Vegetation will be removed in sections working in a consistent direction to prevent entrapment of protected fauna potentially present (e.g., Hedgehog).

Hedgehogs also frequent long grass for foraging and daytime nesting sites so caution when strimming/ mowing these areas of the Site is advised.

As best-practice, all construction-related rubbish on site e.g., plastic sheeting, netting etc. should be kept in a designated area on site and kept off ground level so as to protect Hedgehogs from entrapment and death. The above measures will also act to mitigate potential negative impacts on other small mammal species potentially found on site e.g., Pygmy Shrew.

Work likely to cause disturbance during hibernation – for example removal of hibernation habitats such as log piles and dense scrub – **should not take place during November to March**.

6.4.4.3 Protection of Bats

To protect bats from lighting associated with the Construction Phase of the Proposed Development, the following have been considered when choosing luminaires and are incorporated into the lighting design where appropriate. This is taken from the most recent BCT Lighting Guidelines (BCT, 2018):

- All luminaires used will lack UV/IR elements to reduce impact.
- LED luminaires will be used due to the fact that they are highly directional, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (<2700 Kelvins will be used to reduce the blue light component of the LED spectrum).
- Luminaires will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Column heights should be carefully considered to minimise light spill. The shortest column height allowed should be used where possible.
- Only luminaires with an upward light ratio of 0% and with good optical control will be used.
- Luminaires will be mounted on the horizontal, i.e., no upward tilt.
- Any external security lighting will be set on motion-sensors and short (1min) timers.
- Accessories such as baffles, hoods or louvres will be used to reduce light spill and direct it only to where it is needed.

Any Construction Phase external lighting should strictly follow the above guidelines.

6.4.4.4 Protection of Birds

Any clearance of vegetation will be carried out outside the main breeding season, i.e. 1st March to 31st August, in compliance with the Wildlife Act 2000. Should any vegetation removal be required during this period, the NPWS will be consulted, and instruction taken from them. If

the buildings on Site are to be demolished during the breeding bird season, the buildings will be inspected for breeding birds (e.g. Herring Gull, Swallows) prior to demolition. Should nesting birds be discovered, the nest will be protected until any nesting birds have fledged and departed the site.

6.4.4.5 Protection of Common Lizard

In order to minimise the risk of site clearance and construction works disturbing, or causing the mortality of Common lizard, the following mitigation will be undertaken at the Site:

- A site-specific survey for common lizard will be undertaken prior to the Construction Phase commencing. Appropriate mitigation measures will be recommended by the surveyor, and are likely to include the following, extracted from NRA (n.d.):
    - Any habitats identified as potentially suitable for lizard (e.g., meadow or scrub habitat) will be removed during the winter period, where possible, avoiding potential Common lizard hibernacula sites (dry sites which provide frost-free conditions e.g., underground small mammal burrows, piles of dead wood or rubble)
    - where this is not possible and clearance must be undertaken during the active season (March through to September, inclusive), 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
    - potential hibernacula sites identified by the surveyor will be removed during the active season (March through to September, inclusive) under the supervision of an ecologist, when they are less likely to be in use by torpid lizards

6.4.4.6 Protection of Fish and Marine Mammals

The mitigation measures outlined in section 6.4.2 will serve to protect fish and marine mammals.

6.4.4.7 Protection of Retained Trees

An Arboricultural Method Statement and Tree Protection Plan has been prepared by The Tree File (2022) which provides guidance in respect of tree protection on a development site. This Method Statement and Tree Protection Plan will serve to protect any retained trees and trees adjacent to the Site. Refer to the Arboricultural Report accompanying this application for full details.

6.4.4.8 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 relevant structures permitted unless confirmed 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 hibernation season</u>
No clearance of vegetation or works to relevant structures permitted unless confirmed to be devoid of hibernating mammals by an ecologist.</td><td colspan="7">Vegetation clearance permissible</td><td colspan="2"><u>Mammal hibernation season</u>
No clearance of vegetation or works to relevant structures permitted unless confirmed to be devoid of hibernating mammals by an ecologist.</td></tr>
<tr><td>Bats</td><td colspan="7">Tree felling to be avoided</td><td colspan="2">Preferred period for tree-felling</td><td colspan="2">Tree felling to be avoided</td></tr>
<tr><td>Common Lizard</td><td colspan="2">Vegetation clearance permissi-ble, avoiding potential Common Lizard hibernacula sites (dry sites which provide frost-free conditions e.g., underground small mammal burrows, piles of dead wood or rubble)</td><td colspan="6">Removal of potential hibernacula sites identified by the surveyor under the supervision of an ecologist.

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 potential Common Lizard hibernacula sites (dry sites which provide frost-free conditions e.g., underground small mammal 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.

6.4.4.9 Biosecurity

Altemar (2019) detected Three Cornered Leek *Allium triquetrum* at the Site on the slopes facing the Baily Court Hotel during their Site surveys. This species is listed in Part 1 of the

Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011, as amended). No other invasive species listed on Schedule III of the above-mentioned regulations were found at the Site by Altemar (2019). No invasive alien species (IAS) listed on Schedule III of the above-mentioned regulations were detected during Site surveys undertaken on the 16th of August 2021. It is likely that Three Cornered Leek was not re-found as this species flowers early in the year with plants dying back completely by June and July[1]. It should be noted however that access to the grounds of the Baily Court Hotel was not possible during the field survey carried out. As such, as a precautionary measure, the Site will be re-surveyed for IAS prior to construction, ensuring access to the grounds of the Baily Court Hotel is possible. If any IAS are present, a suitably qualified ecologist will be consulted regarding their treatment and an IAS Management Plan prepared.

Assuming Three Cornered Leek is still at the Site in the location specified above by Altemar (2019) the following management will be undertaken:

> This species will be removed via chemical and/or mechanical means. Careful mechanical removal of bulbs followed by appropriate off-site disposal will reduce the infestation but is unlikely to destroy the seed bank. Mechanical removal may need to be repeated over a number of years to exhaust the seed bank. Herbicide application may be successful at reducing the spread of the plant. Applications of herbicide should be made in spring before flowering. However, similar to mechanical removal, multiple applications may be required due to the persistence of bulbs and of the soil seed bank. Disposal of material will be undertaken with due caution to prevent accidental spread of the plant. Waste materials containing Three cornered leek must be removed to an approved waste facility. In many cases, it is not possible to control an established stand of IAS with a single herbicide treatment. Therefore, repeated treatments over successive years is typically necessary. Where physical methods are used to control IAS, the treated area will also need to be monitored over a number of years for regrowth.
>
> Monitoring of all IAS stands treated at the Site will be carried out for 2 years following treatment by a suitably qualified ecologist. Further monitoring may be required if treatment has not been successful. A site may be considered remediated after two consecutive growing seasons with no sign of regrowth from all of the previously identified stands (Transport Infrastructure Ireland, 2020).

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.

[1] https://species.biodiversityireland.ie/profile.php?taxonId=28150&taxonDesignationGroupId=26#Species_Biology

6.4.4.10 Monitoring

Trenched double silt fencing will be installed along the eastern boundary of the Proposed Development Site (along the existing contours of Balscadden Road but outside the boundary of the SAC/pNHA area) on the inside of the hoarding. The fencing will be inspected twice daily based on Site and weather conditions for any signs of contamination or excessive silt deposits and records of these checks will be maintained.

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 PM_{10} 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.

6.4.5 Control of Light

In order to preserve the commuting potential of the treelines/hedgerows remaining and to minimise disturbance to bats utilising the site in general, the lighting and layout of the Proposed Development is designed to minimise light spill onto habitats used by the local bat population foraging or commuting.

No lighting is proposed within the area designated for biodiversity at the south-eastern corner.

According to JV Tierney and Co, the preliminary lighting design for the Proposed Development is based upon the following European/British Standards and best practice guidelines:

- Luminaires should be selected to ensure that when installed, there shall be zero direct upward light emitted to the sky (all output shall be at or below 90°to the horizontal) to help prevent sky glow from light pollution in the night sky.
- The light emitted from these fittings shall have no photo biological risk and shall be categorised as 'Exempt Group' in relation to emissions of Blue Light, Infrared and Ultraviolet Radiation in accordance with EN 62741:2008.
- All luminaires shall have a Luminous Intensity Classification of between G4 and G6 to IS EN 13201-2:2003/BS 5489-1:2013 and recommendations of Institution of Lighting Professionals and Bat Conservation Trust 'Bats and Lighting in the UK' documentation and Bat Conservation Ireland Guidance Notes for Planners, Engineers, Architects and Developers December 2010.

- Guidance note for the Reduction of Obtrusive Light GN01:2011, produced by the Institute of Lighting Professionals (ILP).
- LED technology will be utilised to ensure no UV component as recommended by Bat Conservation Ireland.
- Lighting Standards as issued by Fingal County Council.

The proposed external lighting scheme will be designed using LED fittings with high performance optics to provide visual comfort. The external lighting scheme will specifically respond to the landscape treatment and be sensitively designed to ensure minimum light pollution. Luminaires will be selected to ensure that when installed there shall be zero direct upward light emitted to the sky (all output shall be at or below 90° to the horizontal) to help prevent sky glow from light pollution in the night sky. The light emitted from these fittings shall have no photo biological risk and shall be categorised as 'Exempt Group' in relation to emissions of Blue light, Infrared and Ultra Violet Radiation in accordance with EN 62741:2008.

All luminaires shall have a Luminous Intensity Classification of between G4 and G6 to IS EN 13201- 2:2003(E)/BS 5489-1:2013 and recommendations of Institution of Lighting Professionals and Bat Conservation Trust 'Bats and Lighting in the UK' documentation and Bat Conservation Ireland Guidance Notes for Planners, Engineers, Architects and Developers December 2010. As also recommended in the above guides and standards, Variable Lighting and Part-Night Lighting shall be utilised.

6.4.6 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, including all Local Authority specific requirements for this specific site.

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 FCC 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 utilized 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’

6.4.6.1 Monitoring of Noise and Vibration

A noise and monitoring specialist will be appointed to carry out quarterly monitoring of noise and vibration, with the first monitoring commencing the first week of construction. The monitoring will be carried out at the nearest sensitive locations which are presented in Table 6-2.

***TABLE 6-2**: Sensitive Receptor Locations*

Name	Type	Coordinates		Orientation Relative to Site Boundary	Distance from the Site Boundary
Abbey Street	Residential	53.386947	-6.065419	West	20m
Abbey Street	Residential	53.386432	-6.065432	Southwest	30m
Balscadden Road	Residential	53.387290	-6.063182	Northeast	30m

Balscadden Road	Residential	53.386652	-6.063516	Southeast	20m
Asgard Park	Residential	53.385765	-6.063541	Southeast	35m

The current proposal for the method of excavation along the eastern and southern boundary include a secant piled retaining wall. The proposed method of construction of the secant piled wall will involve the continuous flight auger (CFA) method. The CFA method offers low noise and low ground borne vibration in comparison to other forms of construction. For the avoidance of doubt, impact, driven or displacement piling shall not be used.

Continuous vibration monitoring will be carried along the southern and eastern boundaries and top of the embankments.

6.4.7 Control of Air Quality and Dust

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

6.4.7.1 Dust Control Measures – General

The objective of dust control at the site is to ensure that no significant nuisance occurs at nearby sensitive receptors, including Howth Head pNHA. 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).

6.4.7.1.1 Monitoring of dust Emissions within Howth Head SAC

- Monitoring of dust within Howth Head SAC one month prior to commencement of any construction works to collate baseline data at a location approved by the project ecologist will be carried out. Monitoring of dust can be carried out by using the Bergerhoff Method. This involves placing Bergerhoff Dust Deposit Gauges at strategic locations along the Site boundaries for a period of 30 +/- 2 days. The selection of sampling point locations should be carried out in consideration of the requirements of the German Standard Method VDI 2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method German Engineering Institute) with respect to the location of the samplers relative to buildings and other obstructions, height above ground, and sample collection and analysis procedures. After the exposure period is complete, the Gauges will be removed from the Site; the dust deposits in each Gauge will then be determined gravimetrically and expressed as a dust deposition rate in mg/m^2/day in accordance with the relevant standard. Monitoring of construction dust deposition will be conducted at nearby sensitive receptors and at the Site boundary (i.e., worst-case location), including within the SAC at locations approved by the project ecologist, during the Construction phase of the Proposed Development.
- Regular inspections of the SAC adjacent to the Site will be carried out to monitor dust, records and notes on these inspections will be logged.

- The individual(s) responsible for monitoring of dust within the SAC will receive work specific induction in relation to dust minimisation measures, visual dust assessment and dust monitoring in the direct area.
- Should dust deposition be deemed to be at a rate which has the potential to cause an impact on the SAC, additional mitigation will be put in place immediately.

6.4.7.1.2 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.

6.4.7.1.3 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.

6.4.7.1.4 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.

6.4.7.1.5 Preparing and Maintaining the Site

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

6.4.7.1.6 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)

6.4.7.1.7 Operations

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

6.4.7.1.8 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.

6.4.7.1.9 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.

6.4.7.1.10 Measures Specific to Construction

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

6.4.7.1.11 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.

6.4.7.1.12 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.

6.4.8 Control of Traffic

A full Construction Environmental Management Plan (CEMP) will be prepared by the Main Contractor in order to minimise the potential impact of the Construction Phase of the Proposed Development on the safety and amenity of other users of the public road. The CEMP will consider the following aspects:

- Dust and dirt control measures.
- Noise assessment and control measures
- Routes to be used by vehicles
- Working hours of the site
- Details of construction traffic forecasts
- Time when vehicle movements and deliveries will be made to the site
- Facilities for loading and unloading
- Facilities for parking cars and other vehicles

Further to the above, a full 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.

6.4.8.1.1 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

6.4.9 Control of Waste and Waste Management

Waste management during the Construction Phase will be managed in accordance with the Outline Construction & Demolition Management Plan (OCDWMP) prepared by Waterman Moylan (February 2022) 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.

In the event that hazardous soil, or historically deposited waste is encountered during the site bulk excavation phase, the contractor will notify FCC 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). Removal of asbestos or ACMs will be carried out by a suitably qualified contractor and ACM's will only be removed from site by a suitably permitted/licenced waste contractor. in accordance with S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010. All material will be taken to a suitably licensed or permitted facility. Based on a review of facilities in Dublin (refer to Figure 12-10) and surrounding counties permitted/licenced to accept construction and demolition waste, and the permitted/licenced capacity of each, there is sufficient capacity to accept the construction and demolition from the permitted developments and Proposed Development, subject to acceptance agreements.

6.4.9.1 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.

6.4.10 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.

6.4.10.1 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 Outline Construction Management Plan and the control measures outlined in Section 6.4 of this OCEMP.

8 EMERGENCY PLANNING AND RESPONSE

The purpose of the OCEMP is to address the potential emissions from the site, implementing any necessary mitigation measures as discussed in Section 6.3 and Section 6.4 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 6.4 of this OCEMP, once correctly implemented, will reduce the likelihood of the occurrence of an environmental incident (emergency) as identified in Section 5.2 of this OCEMP.

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 OCEMP, 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 con-trolled 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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