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# CEMP CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)

FOR

RESIDENTIAL DEVELOPMENT

AT

ST. TERESA'S GARDENS, DONORE AVENUE, DUBLIN 8.


December 2022

ON BEHALF OF

**The Land Development Agency (LDA)**

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## 1 INTRODUCTION

This Construction Environmental Management Plan (hereinafter CEMP) has been prepared by Enviroguide Consulting on behalf of The Land Development Agency (LDA) (the Applicant) for the Proposed Development on lands at the former St. Teresa's Gardens, Donore Avenue, Dublin 8 (the Site).

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

A detailed description of the Proposed Development is provided in Section 3.

This CEMP is produced in support of the planning application. This is a live document, and it is intended that this will be updated to include more site-specific information once the Construction Management Team (CMT) is appointed. Any conditions of planning permission will be included in this CEMP, once granted. Any further updates will be technical in nature and will not change the scope of the permission.

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

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

- Construction Director;
- Construction Manager;
- Construction Management Team (CMT);
- Environmental/ Waste Manager;
- 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 CEMP is to provide effective, site-specific procedures and mitigation measures to monitor and control environmental impacts throughout the Construction Phase of the project and ensure that construction activities do not adversely impact the environment. The objective of this document is to set out and communicate the procedures, standards, management responsibilities and key environmental obligations that apply to the Main Contractor and sub-contractors to address and prevent environmental effects that may arise from the Construction Phase of the Proposed Development.

### 1.2 Scope of CEMP

This CEMP defines the approach to environmental management during implementation and

roll-out of the Construction Phase of the project.

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

### **1.3 Live document'**

This CEMP is considered a 'live' document and as such will be reviewed on a regular basis. Updates to this CEMP may be necessary to address changes in environmental management practices. In addition to include further mitigation measures that may be identified as part of ongoing reviews.

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

## 2 RELEVANT GUIDELINES AND LEGISLATION

The following guidelines and legislation have been considered in the preparation of this Construction Environmental Management Plan (CEMP):

- EPA Best practice guidelines for the preparation of resource & waste management plans for construction & demolition projects
- IEMA's latest Impact Assessment Guidance, 'A New Perspective on Land and Soil in Environmental Impact Assessment' (Feb 2022)
- Construction Industry Research and Information Association (CIRIA), Control of Water Pollution from Construction Sites - Guidance for Consultants and Contractors, 2001.
- Construction Industry Research and Information Association (CIRIA), Environmental Good Practice on Site (C650), 2005.
- Construction Industry Research and Information Association (CIRIA), Control of water pollution from linear construction projects: Technical guidance (Murnane et al. 2006) (C648), 2006.
- Construction Industry Research and Information Association (CIRIA), The SUDS Manual (C697), 2007.
- Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery and amending Directive 95/16/EC (recast) (Text with EEA relevance) (October 2019).
- Dublin City Development Plan (DCDP) 2016-2022, 2016.
- Dublin City Development Plan (DCDP) 2022-2028, 2022.
- Enterprise Ireland, Best Practice Guidelines (BPG CS005) Oil Storage Guidelines.
- Environmental Protection Agency, IPC Guidance Note - Guidance Note on Storage and Transfer of Materials for Scheduled Activities as amended by supporting documents, 2004.
- Environment Agency, UK Pollution Prevention for Businesses, 2022.
- Environmental Protection Agency, Best practice guidelines for the preparation of resource & waste management plans for construction & demolition projects, 2021.
- European Commission, EU Construction & Demolition Waste Management Protocol, September 2016.
- European Communities (Waste Directive) Regulations 2011, S.I. No. 126/2011, 2011.
- Institute of Environmental Management & Assessment (IEMA) Guide, A New Perspective on Land and Soil in Environmental Impact Assessment, February 2022.
- National Roads Authority, Guidelines for the Treatment of Noise and Vibration in National Road Schemes, 2004.
- Transport Infrastructure Ireland, The Management of Invasive Alien Plant Species on National Roads – Standard. GE-ENV-01104, 2020.



### 3 PROPOSED DEVELOPMENT DESCRIPTION

#### 3.1 Site Location

The Proposed Development is located at a site on the former St. Teresa's Gardens, Donore Avenue, Dublin 8. The site is bound by Donore Avenue to the north-east, Margaret Kennedy Road to the north-west, The Coombe Women and Infants University Hospital to the west, the former Bailey Gibson factory buildings to the south-west, and the former Player Wills factory to the south-east.

#### 3.2 Project Overview

The Proposed Development, the planning application for which is accompanied by an EIAR, will consist of the construction of a residential scheme of 543 no. apartments on an overall site of 3.26 ha (GFA of c. 53,227 sqm) containing the following mix of apartments:

- 225 No. 1 bedroom apartments (36 no. 1-person & 189 no. 2-person)
- 274 No. 2 bedroom apartments (including 52 No. 2 bed 3 person apartments and 222 No. 2 bed 4 person apartments)
- 44 No. 3 bedroom 5-person apartments
- A retail/café unit (168 sq.m.), mobility hub (52 sq.m.) and 952 sq.m. of community, artist workspace, arts, and cultural space, including a creche, set out in 4 No. blocks.

The breakdown of each block will contain the following apartments:

- Block DCC 1 comprises 111 No. apartments in a block of 6-7 storeys;
- Block DCC 3 comprises 247 No. apartments in a block of 6-15 storeys;
- Block DCC 5 comprises 132 No. apartments in a block of 2-7 storeys;
- Block DCC 6 comprises 53 No. apartments in a block of 7 storeys;

The Proposed Development will also provide for public open space of 3,408 sqm, communal amenity space of 4,417 sqm and an outdoor play space associated with the creche. Provision of private open space in the form of balconies or terraces is provided to all individual apartments.

The Proposed Development will provide 906 no. residential bicycle parking spaces which are located within secure bicycle stores. 5% of these are over-sized spaces which are for large bicycles, cargo bicycles and other non-standard bicycles. In addition, 138 spaces for visitors are distributed throughout the site.

A total of 79 no. car parking spaces are provided at undercroft level. Six of these are mobility impaired spaces (2 in each of DCC1, DCC3 & DCC5). 50% of standard spaces will be EV fitted. Up to 30 of the spaces will be reserved for car sharing (resident use only). A further 15 no. on-street spaces are proposed consisting of:

- 1 no. accessible bay (between DCC5 & DCC6)
- 1 no. short stay bay (between DCC5 & DCC6)
- 1 no. crèche set down / loading bay (between DCC5 & DCC6)
- 1 no. set-down / loading bay (northern side of DCC5)
- 1 no. set-down/loading bay (northern side of DCC 3)

- 10 no. short stay spaces (north-east of DCC1)

In addition, 4 no. motorcycle spaces are also to be provided.

Vehicular, pedestrian and cyclist access routes are provided from a new entrance to the north-west from Margaret Kennedy Road. Provision for further vehicular, pedestrian and cyclist access points have been made to facilitate connections to the planned residential schemes on the Bailey Gibson & Player Wills sites for which there are extant permissions (Ref. No.'s ABP-307221-20 & ABP-308917-20).

The development will also provide for all associated ancillary site development infrastructure including site clearance and demolition of boundary wall along Margaret Kennedy Road and playing pitch on eastern side of site and associated fencing/lighting, the construction of foundations, ESB substations, switch room, water tank rooms, storage room, meter room, sprinkler tank room, comms room, bin storage, bicycle stores, green roofs, hard and soft landscaping, play equipment, boundary walls, attenuation area and all associated works and infrastructure to facilitate the development including connection to foul and surface water drainage and water supply.

Figure 3-1 and Figure 3-2 detail the Site Location and the Proposed Site Layout Plan, respectively.

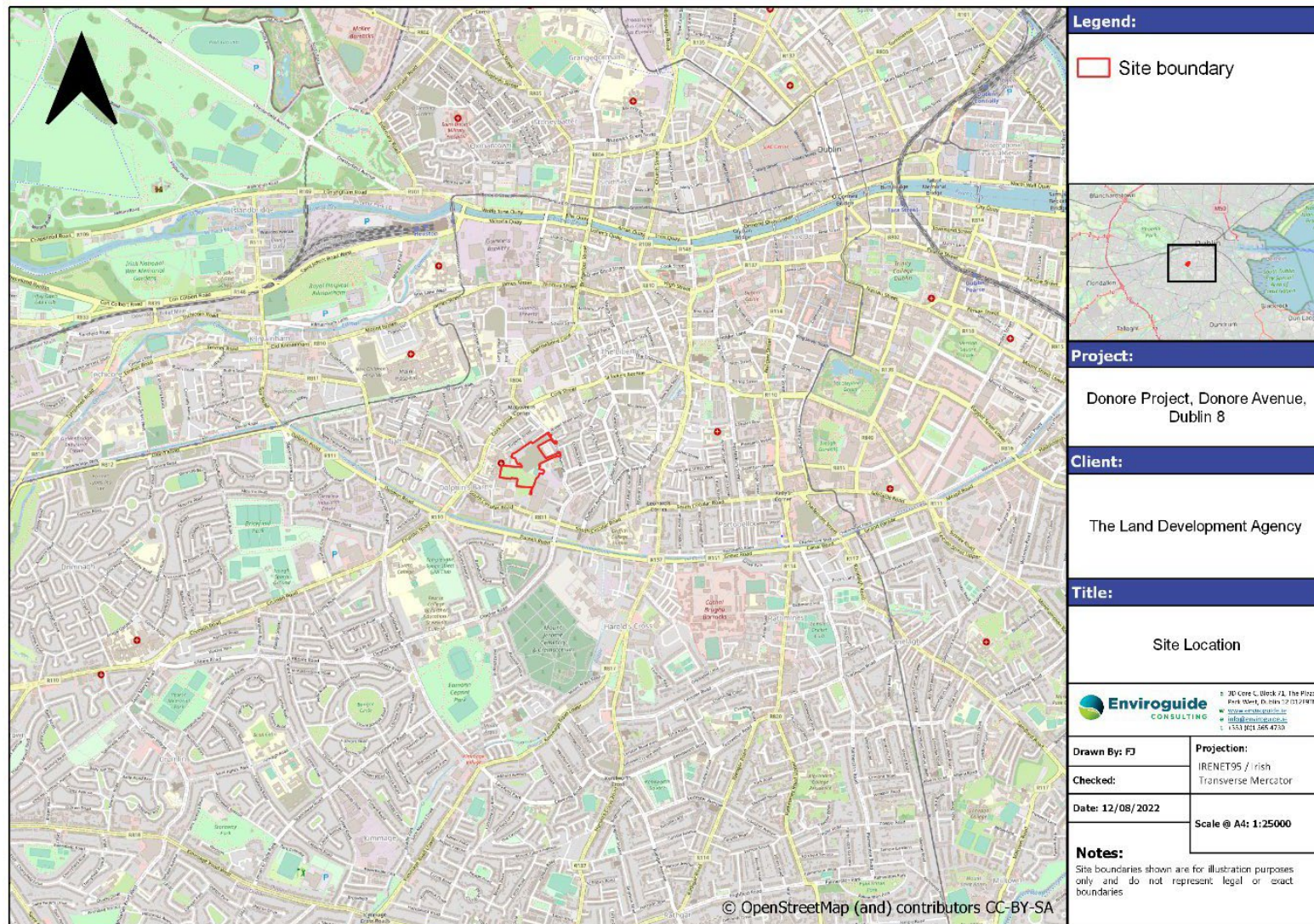


Figure 3-1 Site Location Map



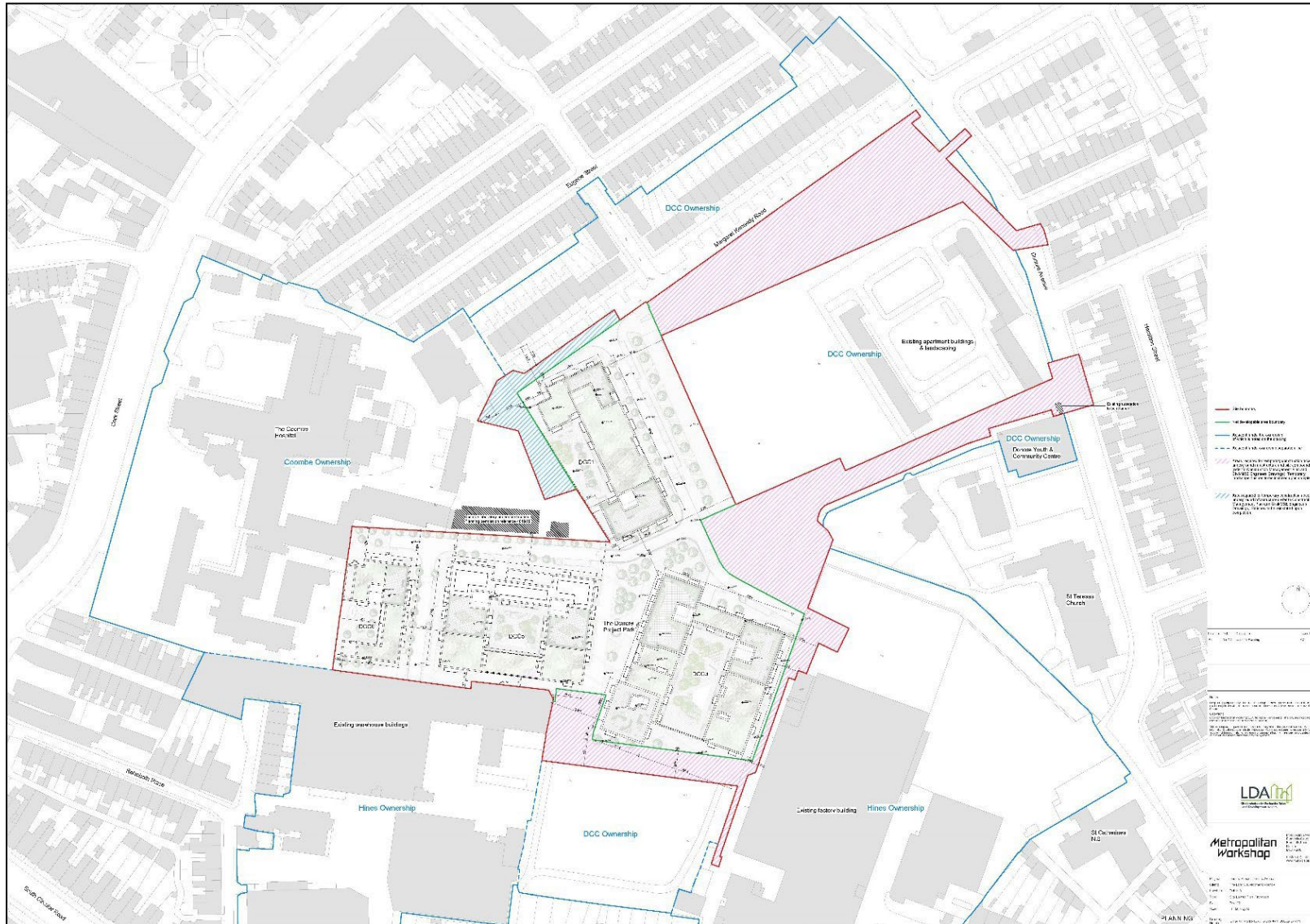


Figure 3-2 Proposed Site Layout Plan (Drawing number STG-MW-S1b-00-XX-DR-A-1100002-Site Layout Plan\_Proposed-S4-P1, Metropolitan Workshop)

## 4 CONSTRUCTION SCHEDULE AND WORKS MANAGEMENT

### 4.1 Programme

The total duration for the construction phase for the Proposed Development is 35 months with development set out in two phases as shown in Table 4-1 and Figure 4-1.

Table 4-1 Proposed Construction Programme

	Stage	Start Date	Finish Date
Phase 1	Enabling Works (site-setup, site strip, cut and fill) (Duration 3 months)	2024	2024
	Piling (Duration 18 weeks)	2024	2025
	DCC3	2024	2027
	DCC6	2024	2026
	DCC5	2025	2026
Phase 2	Enabling Works	2025	2025
	Piling (Duration 6 weeks)	2025	2025
	DCC1	2025	2027

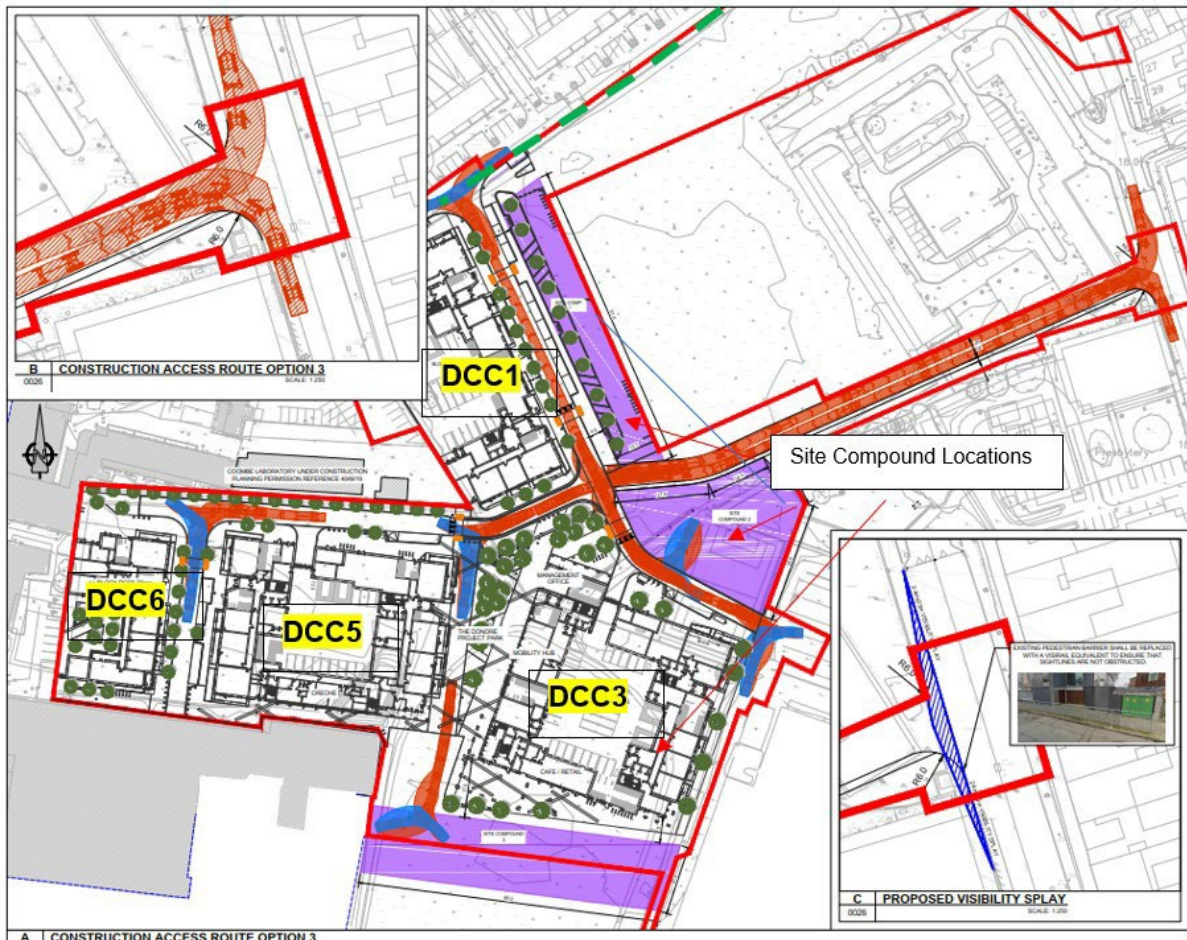


Figure 4-1 Phasing of Development and Proposed Construction Access

## **4.2 Working Hours**

Normal site working hours for the Construction Phase of the Proposed Development will be 08:00 to 19:00, Monday to Friday, and 08:00 to 14:00 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 Dublin City Council (DCC).

Works will adhere to any conditions in the grant of planning.



### 4.3 Site Construction Compound

All construction support related activities (including the storage of materials, plant, and equipment) will be contained within the site compound which 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.

A temporary connection is required to facilitate on-site works for all housing developments. Commencement of construction will therefore result in a net increase in the wastewater produced at the Site of the Proposed Development. It will be the Main Contractor's responsibility to apply to Irish Water (IW) for connections to the foul water drains to service the site toilets and canteen facilities during the Construction Phase.

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. The Main Contractor will have a Health and Safety plan in place, which will include compliance with the Machinery Directive 2006/42/EC Edition 2.2 – October 2019 (Update of 2nd Edition).

### 4.4 Traffic

The traffic for the Construction Phase will be managed in accordance with the details specified in the Outline Construction Traffic Management Plan (AECOM Ireland Limited, 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. Site Clearance, Demolition, and Excavation works
- b. Enabling works
- 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 35-month construction period.

The Outline Construction Traffic Management Plan (AECOM Ireland Limited, 2022) has calculated the daily HGV and staff vehicles movements that will take place during the Construction Phase in Figure 4-2.

	AM		PM	
	In	Out	In	Out
<b>Staff Vehicles / Day</b>	19	0	0	19
<b>HGVs / Hour</b>	4	4	4	4

Figure 4-2 Hourly Construction Trip Generation (Source: AECOM Construction Access Presentation)

The site will be accessed from the Donore Avenue. A temporary haul road during the period of construction will be taken directly from Donore Avenue to the northeast of the site at a point next to the Donore Community Centre. Figure 4-3 details the construction vehicles traffic route.

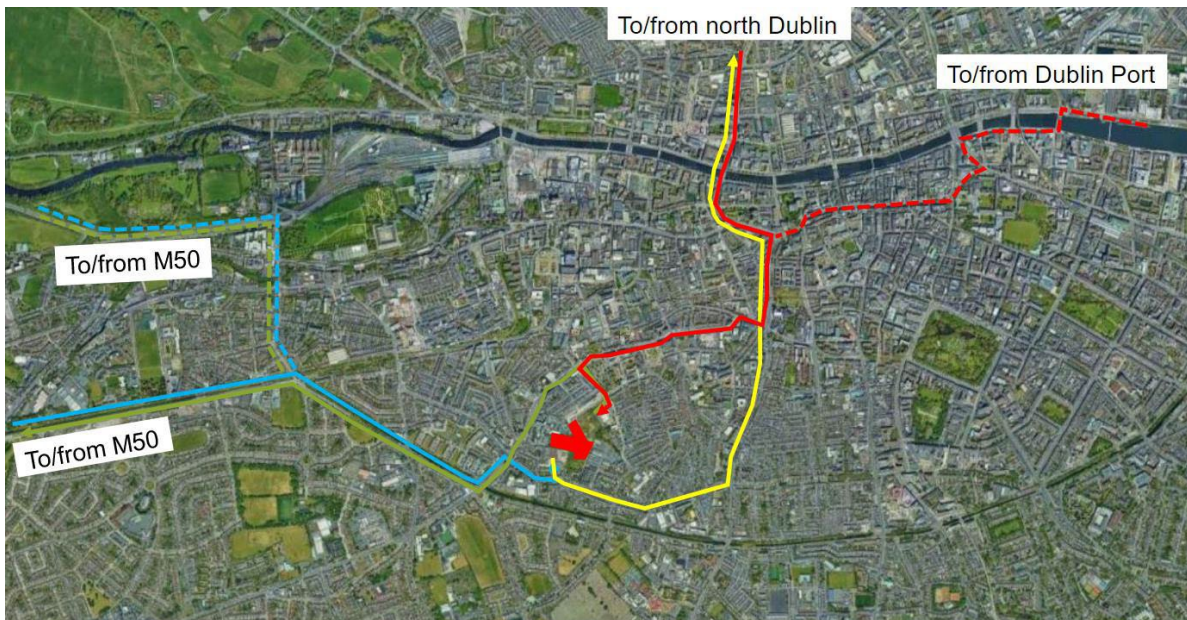


Figure 4-3 Proposed Construction Route (Source: AECOM Construction Access Presentation)

It is proposed that all contractor vehicles will park within the development site area. It will be the responsibility of the Main Contractor to assign an area within the confines of the site dedicated to operative car parking. There will be no parking permitted on the surrounding



road network or estate roads by the Main Contractor or site operatives (Outline Construction Traffic Management Plan, AECOM Ireland Limited, 2022).

#### **4.5 Site Security, Public Health and Safety and Site Access and Egress**

The site will be accessed from the Donore Avenue. A temporary haul road during the period of construction will be taken directly from Donore Avenue to the northeast of the site at a point next to the Donore Community Centre. Vehicle gates with barriers will be accommodated at a security hut combined with a secure turnstile to control pedestrian and vehicle access.

Safety and ease of access to the site 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 and has been considered in the design of the layout of the site infrastructure and access points.

Safe and secure pedestrian facilities are to be provided where construction works obscure any existing pedestrian footways. Alternative pedestrian facilities will be provided in these instances, supported by physical barriers to segregate traffic and pedestrian movements, and to be identified by appropriate signage. Pedestrian facilities will cater for vulnerable users including mobility impaired persons (Outline Construction Traffic Management Plan, AECOM Ireland Limited, 2022).

Site Security will be the responsibility of the Main Contractor, but at a minimum will include a dedicated site security team, the installation of site security fencing, and the implementation of good practice measures in terms of on-site security practices.

#### **4.6 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.

##### **4.6.1 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 and communications procedures and will be aware that complaints and communications are to be directed immediately to the CMT and handled by 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.

#### **4.6.2 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.

#### **4.7 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 Outline Construction Traffic Management Plan (AECOM, 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 following operational control measures will be implemented:

- 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.

## 5 PROJECT ROLES AND RESPONSIBILITIES

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

### 5.1 Construction Director

The Construction Director will have 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 updating and implementation of the CEMP;
- Ensuring adequate resources are available to ensure the implementation of the CEMP;
- Responsibility for the management review of the CEMP for suitability, adequateness, and effectiveness; and
- Setting out the focus of environmental policy, objectives, and targets for the Main Contractor.

### 5.2 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 CEMP;
- Discharging his/her responsibilities as outlined in the CEMP;
- Supporting the CMT and the Environmental/ Waste Manager through the provision of adequate resources and facilities to ensure the implementation of the CEMP;
- Give Contractors precise instructions as to their responsibility to ensure correct working methods where risk of environmental damage exists;
- Where appropriate, ensure Contractor's method statements include correct waste disposal methods;
- Co-ordinate environmental planning of CMT activities to comply with environmental authorities' requirements and with minimum risk to the environment; and
- Creation of a Pollution Prevention Programme and to carry out at least daily checks to ensure compliance. A record of these checks will be maintained.

### 5.3 Environmental / Waste Manager

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

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

- managers, employees, construction contractors and visitors on site;
- Reporting to the Construction Manager on the environmental performance of Line Management, Supervisory Staff, Employees and Contractors;
- Advising site management on environmental matters;
- 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/ Waste Manager 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 (AECOM, 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;
- 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; and
- Carry out daily inspections of the Site to ensure adherence to the CEMP and to identify if any Environmental nuisances are occurring and taking appropriate corrective and preventive action if nuisances are detected.

#### **5.4 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/ Waste Manager for, but not limited to, the following activities:

- 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. These reports will be made available to all relevant parties as required and will be maintained in accordance with the planning grant.
- 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.

## **5.5 Project Archaeologist Clerk of Works (as required)**

The Project Archaeologist Clerk of Works (if required) will report to the Environmental/ Waste Manager 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 Dublin City Council archaeologist as required.

## **5.6 Project Ecologist**

The Project Ecologist will report to the Environmental/ Waste Manager 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;
- To oversee works from prior to commencement of works on site to the completion of all drainage and landscape elements;
- Provision of specialist advice on ecological monitoring and site inspections and surveys as required;
- Liaison with the National Parks and Wildlife Service (NPWS) and other relevant stakeholders if required.

## **5.7 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/ Waste Manager on community concerns relating to the environment;
- Ensure the Environmental/ Waste Manager 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.

## **5.8 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/ Waste Manager;
- 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.

## **5.9 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/ Waste Manager 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; and
- Adhere fully to the requirements of the General Site Environmental Rules (See section 6.1.1 for General Site Environmental Rules).

## 6 PROJECT ENVIRONMENTAL POLICY

The Land Development Agency (LDA) recognises and seeks to minimise the impacts of its business on the environment. The appointed contractor will be obliged to:

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

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

### 6.1 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.

#### 6.1.1 General Site Environmental Rules

- Report any signs of pollution or environmental damage, no matter how small, to the construction manager, Environmental/ Waste Manager, 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/ WASTE MANAGER 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 Site Compounds and in the Main Offices (See Figure 4-1 for location of site compound areas).

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

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

Contractors shall verify the competency of all plant and equipment operators including those employed by sub-contractors. Plant and equipment to be used during works, will be in good working order, fit for purpose, regularly serviced/maintained and have no evidence of leaks or drips.

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

## 6.2 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/ Waste Manager 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.



## **7 ENVIRONMENTAL IMPACTS AND CONTROLS**

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

### **7.1 Potential Impacts of the Development**

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

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

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

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

### **7.2 Legal and Other Requirements**

All relevant obligations have been identified in this CEMP, and have been adopted into the procedures, forms, plans etc. If any additional requirements or obligations are required (such as following the final grant of permission), this CEMP will be updated by the Main Contractor.

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 will be regulated by the final grant of permission (including any conditions that are attached) and must adhere to any mitigation measures identified in the Environmental Impact Assessment Report. As with the CEMP, these documents specify the particular requirements that will be fulfilled during the construction of the project.

All contractors involved in the project must comply with these documents.

#### **7.2.1 Conditions of Planning Permission**

On grant of planning, this CEMP will be updated to ensure compliance with all environmental conditions and the control measures detailed in the planning permission. These updates will be completed by the Main Contractor once these planning conditions are known.

### **7.3 Implementation of Control Measures**

The CMT will be responsible for the implementation of control measures as identified in

Section 7.4. The Main Contractor and all sub-contractors will comply with the requirements of the CEMP to document and seek approval for Method Statements, Permits and other site-generated documentation as requested.

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

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

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

Environmental requirements will be controlled as follows:

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

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

### **7.3.1 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.

### **7.3.2 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 and will be made available to all relevant parties as required and requested. Requests for information made by members of the public will be handled by the Projects Communications Officer. 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.

### **7.3.3 Monitoring, Audits, and Inspections**

Daily 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.

Regular 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 7.4) of this CEMP.

### **7.3.4 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.

## **7.4 Operation Controls**

### **7.4.1 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 will be stored in a clearly marked, designated bunded area, or in fuel bowsers located in the proposed compound location (remote from any surface water drains or water courses).

Fuel bowsers shall be double skinned and equipped with certificates of conformity or integrity tested, in good condition and have no signs of leaks or spillages. Temporary oil interceptors will be installed for period of the construction phase.

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.

Emergency response procedures will be put in place by the Main Contractor (Once Appointed), in the unlikely event of spillages of fuels or lubricants.

In the event of a leak or spill from equipment in the instance of a mechanical breakdown during operation, any contaminated soil will be removed from the Site and compliantly disposed of off-site. Residual soil will be tested to validate that all potentially contaminated material has been removed. This procedure will be undertaken in accordance with current industry best practice procedures and EPA guidelines.

Site staff will be familiar with emergency procedures in the event of accidental fuel spillages and all staff on-site will be fully trained on the use of equipment to be used on-site.

Refuelling of plant and vehicles during the Construction Phase will only be permitted at designated refuelling station locations onsite and will be from a road tanker brought to site as required. Each station will be fully contained and equipped for spill response and a specially trained and dedicated Environmental and Emergency Spill Response team will be appointed by the contractor before the commencement of works onsite (Chapter 7 of the EIAR, Hydrology and Hydrogeology, Enviroguide Consulting, 2022).

## **7.4.2 Control of Emissions to Surface Water and Drainage**

### **7.4.2.1 General Protection Measures**

The construction works will be managed in accordance with all statutory obligations and regulations and with standard international best practice; good construction management practices will minimise the risk of pollution from construction activities at the site 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;
- EPA (2004) IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities;
- CIRIA 697, The SuDS Manual, 2007;
- UK Pollution Prevention Guidelines (PPG) UK Environment Agency, 2004; and

- Construction Industry Research and Information Association CIRIA C649: Control of water pollution from linear construction projects: Technical guidance (Murnane et al. 2006).

To prevent fugitive runoff from the Site the following will be implemented:

- Silt traps, silt fences 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 stage;
- Where localised shallow water is encountered in excavations during 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;
- Onsite water treatment system will be used if required to remove suspended solids and hydrocarbons;
- All ready-mixed concrete will be delivered to the Proposed Development Site by truck. Concrete mixer trucks will not be permitted to wash out on-site with the exception of cleaning the chute into a container which will then be emptied into a skip for appropriate compliant removal offsite.
- All sludges and other waste from wheel-wash and water treatment infrastructure will be removed from the Site by the approved contractor in accordance with all legislative requirements.

Where possible precast concrete will be used where required during construction. However, where cast-in-place concrete is required (i.e. foundations, footpaths), all work will be carried out to avoid any contamination of the receiving soil and geological environment through the use of appropriate design and methods implemented by the Contractor and in accordance with industry standards.

There will be no direct discharges from construction activities to groundwater or surface water during the Construction Phase other than clean rainfall on ground. The Contractor will ensure that no contaminated water/ liquids leave the Proposed Development Site (as surface water and run-off or otherwise) and enter the existing drainage at the Site or local drainage gullies on the adjoining roads including Margaret Kennedy Road and Donore Avenue.

There may be a requirement for localised dewatering or sump pumping on a temporary basis during excavation and management of water from these excavations will include control of surface water runoff and pumping of water from excavations.

Where necessary the water will be treated onsite to remove sediment or other potentially contaminating compounds. The treated water will be tankered offsite or discharged to foul sewer only under licence from Irish Water as appropriate.

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.

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 storm water 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. There will be Petrochemical interceptors and bunds in refuelling area.
- Plant and equipment to be used during works, will be in good working order, fit for purpose, regularly serviced/maintained and have no evidence of leaks or drips;
- 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. The spill containment equipment shall be replenished if used and shall be checked on a scheduled basis.
- All personnel working on site will be trained in pollution incident control response.
- All oils, fuels and other hazardous liquid materials shall be clearly labelled and stored in an upright position in an enclosed bunded area within the proposed development site compound. The capacity of the bunded area shall conform with EPA Guidelines (Enterprise Ireland, BPGCS005) – hold 110% of the contents or 110% of the largest container whichever is greater.
- Smaller quantities of fuel may be carried/stored in clearly labelled metal Jeri cans. Green for diesel and red for petrol and mixes. The Jeri cans shall be in good condition and have secure lockable lids. The Jeri cans shall be stored in a drip tray when not in use.
- Drip trays will be turned upside down if not in use to prevent the collection of rainwater.
- If portaloos and/or containerised toilets and welfare units will be used to provide facilities for site personnel, all associated waste will be removed from site by a licensed waste disposal contractor.



- Under no circumstances will any untreated wastewater generated onsite (from equipment washing, road sweeping etc.) be released into nearby drains.
- No entry of solids to the associated stream or drainage network during the connection of pipework to the public water system
- Maintenance of any drainage structures (e.g. de-silting operations) will not result in the release of contaminated water to the surface water network.

All personnel working on the Site will be trained in the implementation of environmental control and emergency procedures.

### **7.4.3 Control of Emissions to Soil and Groundwater**

Measures set out in Section 7.4.2 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 from Irish Water.
- Excavations and potentially contaminated stockpiled soils will be constructed/ located/ sheeted in a manner that ensures water is contained within the site boundary.
- Stockpiles and runoff areas following clearance will have suitable barriers to prevent runoff of fines into the drainage system and watercourses.
- Stockpiling of loose materials will be kept to a minimum of 20m from drains
- Stockpiles will not be located near Site boundaries or sensitive receptors and a set-back of 10m will be maintained from any boundary with offsite receptors
- Soil stockpiles will be sealed to prevent run-off from the stockpiled material generation and/or the generation of dust;
- Any waste that will be temporarily stored / stockpiled will be stored on impermeable surface high-grade polythene sheeting, hardstand areas or skips to prevent cross-contamination of the soil below or cross contamination with soil;
- Overburden material will be protected from exposure to wind by storing the material in sheltered regions of the Site;

#### **7.4.3.1 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.

The removal offsite of the existing stockpiled soils and surplus soil and stone from the Proposed Development will be reused as a by-product under Article 27 by-product notification or sent for recovery at a suitable authorised facility. It will be the contractor's responsibility to engage a specialist waste service contractor (s) who will possess the requisite authorisations, for the collection and movement of by-product / waste materials

offsite. Material will be brought to an authorised facility which currently holds an appropriate waste facility permit or licence for the specified waste types.

Under the Waste Management (Collection Permit) Regulations 2007, as amended, a collection permit to transport waste, must be held by each waste collection contractor.

The reuse of excavated soil and stone for the Proposed Development (i.e. topsoil for landscaping) will be subject to assessment of the suitability for use in accordance with engineering and environmental specifications for the Proposed Development.

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 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.

Channels will be prepared on site, in the vicinity of future access roads. Within these channels silt fences/barriers will be placed and will consist of woven/terram style material of suitable density to remove the majority of silt from runoff. These will be maintained throughout the construction phase to ensure efficiency, prior to the installation of the permanent drainage network.

Silt traps, silt fences and tailing ponds will be provided by the Main Contractor to prevent silts and soils being washed away by heavy rains during the course of the Construction Phase. During the construction works silt traps will be put in place in the vicinity of all runoff channels to prevent sediment entering the public network, and around all open excavations, stockpiles and any activities that may have runoff and connections to storm drainage.

There may be a requirement for localised dewatering or sump pumping on a temporary basis during excavation and management of water from these excavations will include control of surface water runoff and pumping of water from excavations. Prior to discharge of water from excavations adequate filtration will be provided to ensure no deterioration of water quality.

Where necessary the water will be treated onsite to remove sediment or other potentially contaminating compounds. The treated water will be tankered offsite or discharged to foul sewer only under licence from Irish Water as appropriate.

#### **7.4.3.2 Control of Imported Soil and Aggregates**

In order to minimise the requirement to import virgin quarried materials, recycled aggregates and soil will be used where available and subject to meeting specified design requirements and all construction and environmental legislation. This will include where suitable, by-products that meet the legislative requirements of Article 27 of the European Communities (Waste Directive) Regulations, 2011 and other applicable statutory requirements.

Contract and procurement procedures will ensure that all imported aggregates required for the Proposed Development will be sourced from reputable suppliers operating in a sustainable manner and in accordance with industry conformity/compliance standards and statutory obligations. The importation of aggregates will be subject to management and control procedures which will include testing for contaminants, invasive species and other anthropogenic inclusions and assessment of the suitability for use in accordance with engineering and environmental specifications for the Proposed Development. Therefore, any unsuitable material will be identified prior to unloading / placement onsite

#### **7.4.3.3 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.

#### **7.4.3.4 Monitoring**

During the construction phase the following monitoring measures will be considered:

- The Contractor will carry out inspections and monitoring of general site conditions during excavations, piling and other groundworks to ensure that measures protective of water quality outlined in the EIAR, CEMP and CDWMP are fully implemented and effective;
- Groundwater monitoring will be undertaken by a competent person appointed by the Contractor prior to construction commencing and for the duration of the Construction Phase to verify that there is no impact on the groundwater beneath the Site and downgradient receptors; and
- Daily monitoring and inspections during refuelling, concrete works to ensure no impacts and compliance with ameliorative, remedial and reductive measures.
- Materials management and waste audits will be carried out at regular intervals by the appointed contractor.

#### **7.4.4 Controls to Protect Biodiversity**

##### **7.4.4.1 Protection of Bats**

A bat detector and emergent survey was carried out by Bryan Deegan, Altemar Ltd, on the 27th of August 2021 and 7th of July 2022, during which foraging activity was noted. No roosting bats were noted on site (Chapter 5 of the EIAR, Biodiversity, Enviroguide Consulting, 2022).

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):

- Lighting at all construction stages will be done sensitively on site with no direct lighting of site boundaries and lands to the south of the Proposed Development.
- 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).
- Lighting during operation will be controlled and spill in to the site to the south of the site
- 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.

#### **7.4.4.2 Protection of Birds**

A winter bird survey was conducted at Saint Teresa's Gardens, in Dublin City Centre in March 2022, Altamar Ltd. 21 bird species were recorded from observations made at the St Teresa's site. Results from the surveys suggest that the site is not an ex-situ foraging or roosting site for species of qualifying interest from nearby Special protection areas (SPA's). Results also suggest that the site is not a regular flightline path for such species like Brent Geese or other species of significant interest, checks on data bases (Irishbirding.com for example) suggest this part of the city has no history of foraging Geese or other significant species with the closest known sites being Crumlin farther to the south (Appendix G of the EIAR, Enviroguide December 2022, which has been submitted as a standalone document as a part of this planning application).

Site clearance could impact on bird nesting (Chapter 5 of the EIAR, Biodiversity, Enviroguide Consulting, 2022). Any clearance of vegetation will be carried out outside the main breeding season, i.e. 1<sup>st</sup> March to 31<sup>st</sup> August, in compliance with the Wildlife (Amendment) Act 2000. Should any vegetation removal be required during this period, the NPWS will be consulted, and instruction taken from them.

Relevant guidelines and legislation (Section 40 of the Wildlife Acts, 1976 to 2012) in relation to bird nesting will be complied with. Should this not be possible, a pre-works check by a qualified ecologist should be undertaken to ensure nesting birds are absent.

#### **7.4.4.3 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

- o 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

#### 7.4.4.4 Protection of Fish and Marine Mammals

The mitigation measures outlined in section 7.4.2 will serve to protect fish and marine mammals.

#### 7.4.4.5 Timing of vegetation clearance

Table 7-1 provides guidance for when vegetation clearance and instream works are permissible.

Table 7-1 Seasonal restrictions on vegetation removal. Red boxes indicate periods when clearance/works are not permissible.

Ecological Feature	January	February	March	April	May	June	July	August	September	October	November	December
<b>Breeding Birds</b>	Vegetation clearance permissible	<b>Nesting bird season</b> No clearance of vegetation or works to relevant structures permitted unless confirmed to be devoid of nesting birds by an ecologist.						Vegetation clearance permissible				
<b>Hibernating mammals (namely Hedgehog, excluding bats)</b>	<b>Mammal hibernation season</b> No clearance of vegetation or works to relevant structures permitted unless confirmed to be devoid of hibernating mammals by an ecologist.		Vegetation clearance permissible						<b>Mammal hibernation season</b> No clearance of vegetation or works to relevant structures permitted unless confirmed to be devoid of hibernating mammals by an ecologist.			
<b>Bats</b>	Tree felling to be avoided							Preferred period for tree-felling	Tree felling to be avoided			

<p><b>Common Lizard</b></p>	<p>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)</p>	<p>Removal of potential hibernacula sites identified by the surveyor under the supervision of an ecologist.</p> <p>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.</p>	<p>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)</p>
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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.

#### 7.4.4.6 Biosecurity

No invasive plant species that could hinder removal of soil from the site during groundworks, such were noted on site (Natura Impact Statement, Biodiversity, Altemar, 2022).

Should any Third Schedule invasive species be identified at any time during the course of the project, an invasive species survey and Management Plan will be carried out by an appropriately qualified surveyor, and all findings and recommendations will be adhered to.

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.
- Machinery will not enter or cross site drainage channels.

Below details the general mitigation measures for some common invasive species that may be encountered.

#### Japanese Knotweed

##### Origin

A native of Japan, Korea, Taiwan and China where both male and female plants are known. This species is now widespread in many parts of Europe, including the Republic of Ireland.

### Habitat

Found in a wide range of conditions, including full shade, high temperatures, high salinity and drought. It is found near water sources, such as along river banks, low-lying and disturbed areas. It can colonize coastal shores and islands

### Description

A relatively large plant that can grow up to 2 – 3 m in height and can dominate an area to the exclusion of most other plants. It can form an extensive network of rhizomes (roots) which cause problems when managing this species. Small pieces of rhizomes are capable of rejuvenating the plant. The rhizomes also allow the plant to survive over winter when the over ground conspicuous leafy part of the plant dies back to a brown wasted stem. The leaves are shield or heart shaped usually with a pale stripe down the middle. Flowers are creamy and arise from the tips of stems

### Identification



### Impacts

F. japonica is a threat in open and riparian areas where it spreads rapidly to form dense stands, excluding native vegetation and prohibiting regeneration. This reduces species diversity and alters habitat for wildlife. Once stands become established, they are extremely persistent and difficult to remove. Japanese Knotweed is also of concern to developers and private citizens. This plant has the ability to grow through tarmac and concrete, although only if a weakness already exists and therefore must be cleared completely before starting to build or lay roads.

### Control Measures

- If Japanese Knotweed is suspected to be on site or in close proximity to planned works, contact the HSEQ Advisor to carry out a formal identification.
- If confirmed, an Invasive Management plan must be produced (Template plan available in the IW document Schedule 12 Appendix 2 – Japanese Knotweed Guidance).

## **Giant Hogweed**

### Origin

Native to Asia but is now invasive in North America and Europe, including Republic of Ireland.



### Habitat

Found in waste land and river banks (riparian zones) and can produce a dense colony growing up to 5m high as well as producing 30 to 50,000 viable seeds per year. It can easily disperse seeds downstream and spread the growth quickly along the length of a watercourse.

### Description

The tall stem, which can grow up to 5mtrs high, is rigid and hollow, up to 10cm in diameter with purple blotches on the surface. The leaves are deeply lobed and sharply pointed with soft hairs appearing on the under surface. Flowers are white and borne in clusters on a large umbrella shaped head.

### Identification



### Impacts

This species represents a public health hazard. The toxins in giant hogweeds sap react with sunlight/UV rays. When the sap produced comes in direct contact with the skin can cause the skin to blister.

### Control Measures

- If Giant Hogweed is identified on site, contact the HSEQ Advisor
- Avoid contact, it can cause blistering if it comes into contact with skin
- Works in close proximity should be avoided but if necessary, full PPE must be worn as identified in a specific risk assessment

## **7.4.5 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 will be designed to minimise light spill onto habitats used by the local bat population foraging or commuting.

The lighting design for the Proposed Development will be 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 Dublin City 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.

#### **7.4.6 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 as amended, Safety, Health and Welfare at Work Acts 2005 to 2014, 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, and the following management and mitigation measures will be followed, as outlined in Chapter 9 of the EIAR, Noise (Enviroguide Consulting, 2022);

- A Site Representative will be appointed for matters related to noise and vibration.
- Any complaints received will be thoroughly investigated.
- A written complaints log will be maintained by the Site Representative. This will, at a



minimum, record complainant's details (where agreed) the date and time of the complaint, details of the complaint including where the effect was observed, corrective and preventative actions taken and any close-out communications. This will ensure that the concerns of local residents who may be affected by site activities are considered during the management of activities at the site.

- Noise monitoring with capability for real-time review both on-site and remotely will be conducted at nearby NSLs listed earlier in this chapter.
- In the event of meeting or exceedance of the threshold values at NSLs, works will cease and measures implemented immediately to ensure that the limits are complied with.
- The Site Representative will also liaise with the Site Representatives on other active construction sites in the immediate vicinity. In particular, liaison will be required when noisy activities are planned to ensure that cumulative noise levels do not meet or exceed the threshold values through measures such as timing of works. As noise monitoring will have capability for remote viewing, all Site Representatives can have access to monitoring data.
- According to BS5228-1, bored piles can be constructed by means of a rotary piling rig or by impact boring. The associated noise characteristics are normally steady unless it is necessary to insert steel casings for part of the depth which could result in intermittent high peaks which can be more disturbing and result in higher noise levels. Continuous flight auger (CFA) piling, as proposed, is a means of bored piling that does not need a temporary casing thus eliminating intermittent high peaks. CFA piling is considered one of the quietest methods of piling available. Bored piling methods are often considered as a reduced noise alternative to driven piles. Driven piles also have more potential for vibratory impact. Therefore, the use of CFA piling is a mitigating factor incorporated into the design. CFA in particular is recommended on sensitive sites. Due to the urban nature and the presence of potentially sensitive equipment in the Coombe Women and Infants University Hospital labs, CFA piling is the most suitable choice of bored piling type.
- Temporary acoustic screening will be placed along the boundaries with NSL2 at Margaret Kennedy Road and additional hoarding at NSL4 above the existing wall to further mitigate HGV movement noise on the access route. As a general rule of thumb, it is recommended that temporary screening break the "line of sight" from the sources to the lower windows of the nearest NSLs where possible.
- Low noise plant and/or the use of enclosures will be chosen to minimise construction noise impact.
- The operation of certain pieces of equipment, where substitution, enclosure etc. cannot be carried out will be managed through monitoring and timing of use to ensure that noise levels remain below the threshold values/criteria specified.
- During the construction phase all equipment will be required to comply with noise limits set out in EC Directive 2000/14/EC and the 2005/88/EC amendment on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors. The directive covers equipment such as compressors, welding generators, excavators, dozers, loaders and dump trucks.

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’

It is anticipated that construction traffic accessing the proposed works will have a minor short-term effect on NSLs off Donore Ave and at NSL4. This will be mitigated through the use additional hoarding.

#### 7.4.6.1 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 location of the Noise Monitoring Points is presented in Table 7-2.

Table 7-2 Noise Monitoring Points

Location	Grid Ref.	Description
NMP1	314171E; 232906N	Site boundary with the Coombe Women and Infants University Hospital. Within the portion of the development site currently used as the construction compound for the new National Cervical Screening Laboratory. This location was chosen to assess the noise exposure risk for future residents.
NMP2	314303E; 232956N	50m from Donore Youth and Community Centre (now closed) and 130m approx. from completed residential development on Margaret Kennedy Road. Representative of noise levels at new apartments on Margaret Kennedy Road facing into the site (NSL2) and also 2-storey house on church grounds (NSL4).
NMP3	314233E; 232788N	Western boundary with old Player’s factory. Existing 2-storey residential 50m to south (NSL3).

Figure 7-1 detail the locations of the existing Noise Sensitive Locations (NSLs) and Noise Monitoring Points.



Figure 7-1 Locations of Noise Monitoring Points (NMPs), NSLs and closest VSLs (Blue boxes represent new buildings not shown on aerial photography)

Bored piling is proposed for the Site, using 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.

As a precautionary measure and as part of good practice, vibration monitoring will be carried out where works are in close proximity to VSLs 1, 2 and 3 and at NSLs 2 and 4 during piling and other activities such as compacting of roads using rollers. As a precautionary measure, test monitoring will be completed at NSL2 in relation to HGV pass-bys to ensure that there is no vibration impact due to construction traffic. With regards to piling, test monitoring will be conducted with the equipment on at low levels before increasing incrementally to operational levels, if deemed necessary. Works will be ceased, and mitigation measures implemented where monitoring detects vibration levels associated with the works above the manufacturer’s guidelines for the lab equipment in-situ.

#### 7.4.7 Air Quality and Dust Control Measures

The primary sources of dust from the Proposed Development will include soil excavation works, demolition, bulk material transportation, loading and unloading, stockpiling materials, cutting and filling, and vehicular movements (HGVs and on-site machinery) (Chapter 8 from the EIAR, Air Quality and Climate, Enviroguide Consulting, 2022).

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).

#### **7.4.7.1 General Monitoring**

The monitoring of construction dust during the Construction Phase of the Proposed Development will be carried out to ensure that impacts are not experienced beyond the site boundary. Monitoring of dust will be carried out by using the Bergerhoff Method and will be undertaken at nominated boundary locations to ensure that dust levels comply with the TA Lift limit value of 350mg/(m<sup>2</sup>/day) based on a 30-day average using Bergerhoff gauges (Limits to be agreed with local authority). 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 *VDI 2119* 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 should 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<sup>2</sup>/day in accordance with the relevant standard.

#### **7.4.7.2 Site Management**

- The Main Contractor will allocate suitably qualified and experienced personnel to be responsible for ensuring the generation of dust is minimised and effectively controlled.
- The Main Contractor will be required to appoint a senior member of its site management team to act as the liaison with third parties in respect of complaints regarding dust and or site activities.
- 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.
- Prior to commencement, the Main Contractor will identify the construction operations which are likely to generate dust and to draw up action plans to minimise emissions.
- Monitoring of dust deposition will be undertaken at nominated boundary locations to ensure that dust levels comply with the TA Lift limit value of 350mg/(m<sup>2</sup>/day) based on a 30-day average using Bergerhoff gauges (Limits to be agreed with local authority).

#### **7.4.7.3 Preparing and Maintaining the Site**

- Plan site layout so that machinery and dust causing activities are located away from



receptors, as far as is possible.

- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on Site.
- 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.
- No bonfires or burning of waste materials to be permitted on site.
- Netting is to be provided to enclose scaffolding to mitigate escape of air borne dust from the existing buildings.
- Keep Site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have a potential to produce dust from Site as soon as possible, unless being re-used on Site. If they are being re-used on-site cover as described below.
- Cover, seed or fence stockpiles to prevent wind whipping.
- Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic.
- Any road that has the potential to give rise to fugitive dust will be regularly watered, as appropriate, during dry and/or windy conditions.

#### **7.4.7.4 Operating Vehicles / Machinery and Sustainable Travel**

- Ensure all vehicles switch off engines when stationary - no idling vehicles.
- Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable.
- Engines and exhaust systems will be maintained so that exhaust emissions do not breach stationary emission limits set for the vehicle / equipment type and mode of operation.
- Impose and signpost a maximum-speed-limit of 15 km/hr 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.
- An Outline Construction Traffic Management Plan (OCTMP) (Outline Construction Traffic Management Plan, AECOM Ireland Limited, 2022) has been prepared by AECOM. and will be submitted in support of this application that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).

#### **7.4.7.5 Operations**

- Only use cutting, grinding, or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g., suitable local exhaust ventilation systems.
- Ensure an adequate water supply on the site for effective dust/ particulate matter suppression/ mitigation, using non-potable water where possible and appropriate.
- Dust emission over the site boundary will be minimised using static sprinklers or other watering methods as necessary.
- 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.

#### **7.4.7.6 Measures Specific to Demolition**

- Demolition waste will be removed from site as quickly as possible to minimise risk of dust generation and any fine material will be covered with a tarpaulin or similar material and tied down.

#### **7.4.7.7 Measures Specific to Earthworks**

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.
- Only remove the cover in small areas during work and not all at once.
- During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will operate to ensure moisture content is high enough to increase the stability of the soil and thus suppress dust.
- The Contractor will be required to consult with an ecologist prior to the beginning of works to identify any additional measures that may be appropriate and/or required.

#### **7.4.7.8 Measures Specific to Construction**

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

#### **7.4.7.9 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 and to avoid dust emissions along the haulage routes..
- 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.

#### **7.4.7.10 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 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.

#### **7.4.7.11 Monitoring**

The monitoring of construction dust during the Construction Phase of the Proposed Development will be carried out to ensure that impacts are not experienced beyond the site boundary. Monitoring of dust will 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 *VDI 2119* 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 should 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<sup>2</sup>/day in accordance with the relevant standard.

#### **7.4.8 Control of Traffic**

The following potential impacts in respect of traffic during the construction phase have been identified:

- Additional HGV traffic along the proposed designated haul route which will have a slight short-term adverse effect on the local road network during the construction

works. Traffic will be greatest will be during the bulk excavation works and concrete pours of the basement levels.

- Additional construction personnel car / light vehicle movements which will have an insignificant short-term adverse effect on the local road network during the construction works.

An Outline Construction Traffic Management Plan (OCTMP) (Outline Construction Traffic Management Plan, AECOM Ireland Limited, 2022) has been prepared by AECOM. A Final Construction Traffic Management Plan will be developed by the Main Contractor (once appointed) prior to the commencement of works, in consultation with Dublin City Council and the local Gardai. This Plan will include the following agreements:

- Suitable haulage routes for all HGV's to/from site
- Appropriate locations for marshalling of delivery vehicles
- The locations for site entry/exit
- A materials delivery schedule
- Predicted peak traffic flows

Road closures and any impacts on residents or business operations along with outline measures to prevent inappropriate parking and access in unauthorized areas will also be arranged. Signposting and illumination will be put in place to ensure safe conditions for the adjacent properties along with public and construction personnel and traffic. Appropriate directional & speed limit signage will be displayed for all construction traffic outside the site footprint area. At no time will there be queuing of vehicles associated with the works onto the public road. This will be managed by banksman and by co-ordinating deliveries to and collections from the site by the CMT. All abnormal load deliveries will be arranged in advance and pre-approved in order to facilitate appropriate arrangements to ensure that abnormal load deliveries do not result in traffic hazard or impede the public road.

In the unlikely case of the closure of any public road or footpath during the course of site development works, vehicles and pedestrians will be provided with signposted diversion routes which will allow them to bypass effected section or public road or pathway. Where stop/go systems are required, these will be provided by the Construction Management Team.

Construction site vehicle incidents can and will be prevented by the effective management of transport operations throughout the construction process. By creating two crane off-loading areas within the site boundary all offloading will be possible in a manner which will minimize any risk to the public. The gate person will then assist in the entry and leaving from the site.

- Key issues in dealing with traffic management on site are:
- Keeping pedestrians and vehicles apart;
- Minimising vehicle movements;
- People on site;
- Turning vehicles;
- Visibility; and
- Signs and instructions.

It is proposed that all contractor vehicles will park within the development site area. It will be the responsibility of the Main Contractor to assign an area within the confines of the site dedicated to operative car parking. There will be no parking permitted on the surrounding road network or estate roads by the Main Contractor or site operatives (Outline Construction Traffic Management Plan, AECOM Ireland Limited, 2022).

#### **7.4.8.1 Keeping Pedestrians and Vehicles Apart/ Minimising Vehicle Movements**

Inadequate planning and control are the root causes of many construction vehicle accidents. The majority of construction transport accidents result from the inadequate separation of pedestrians and vehicles. This will be avoided by careful planning, particularly at the design stage, and by controlling vehicle operations during construction work. The following actions will help be taken to keep pedestrians and vehicles apart:

- Entrances and exits - separate entry and exit gateways will be provided for pedestrians and vehicles with a gate attendant employed to interface with the traffic and public to facilitate safe access and egress of vehicles;
- Walkways - firm, level, well-drained pedestrian walkways will be provided where possible;
- Crossings - where walkways cross roadways, a clearly signed and lit crossing point will be provided where drivers and pedestrians can see each other clearly;
- Visibility – the site operator will ensure that drivers driving out onto public roads can see both ways along the footway before they move on to it;
- Obstructions – walkways will be maintained free of obstructions; and
- Barriers - a barrier will be installed between the roadway and walkway.
- No plant used shall cause a public nuisance due to fumes, noise, and leakage or by causing an obstruction;

#### **7.4.8.2 People on Site**

The below measures will ensure that all workers are fit and competent to operate the vehicles, machines and attachments they use on site.

- Checks when recruiting drivers/operators or hiring contractors;
- Training drivers and operators; and
- Managing the activities of visiting drivers.

#### **7.4.8.3 Turning Vehicles/Visibility**

Any person in charge of directing vehicle movements will be trained and authorized to do so. The below measures will be implemented:

- Aids for drivers - Mirrors, CCTV cameras or reversing alarms will be provided that can help drivers can see movement all-round the vehicle;
- A gate attendant will be appointed to control manoeuvres and who are trained in the task;
- Lighting – the site will be properly lit so that drivers and pedestrians on shared routes can see each other easily. Lighting may be needed after sunset or in bad weather; and

- Clothing - Pedestrians on site will be compelled to wear high visibility clothing.

#### **7.4.8.4 Signs and instructions**

All drivers and pedestrians will be trained to understand the routes and traffic rules on site. All standard road signs will be used where appropriate. Induction training for drivers, workers, and visitors will be implemented.

#### **7.4.8.5 Monitoring**

During the Construction Phase monitoring will be carried out by the appointed site manager and regular progress reports will be prepared. The manager will ensure the mitigation measures outlined will be implemented and adhered to. 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.

Through the implementation of the CEMP and Outline Construction Traffic Management Plan, AECOM 2022, it is anticipated that the effect of traffic during the Construction Phase will have a slight effect on the surrounding road network for duration of the Construction phase.

All recommendations and mitigation methods outlined in the CTMP (once prepared following the appointment of the Main Contractor and prior to any works) will be added to the live CEMP and adhered during the construction phase.

#### **7.4.9 Control of Waste and Waste Management**

Waste management during the Construction Phase will be managed in accordance with the Construction & Demolition Waste Management Plan (CDWMP) prepared by AECOM (2022) for the Proposed Development. The CDWMP will have taken into consideration the EPA Best practice guidelines for the preparation of resource & waste management plans for construction & demolition projects (2021). Waste will be managed in compliance with the Waste Management Act 1996 (as amended), The EU Construction & Demolition Waste Management Protocol (September 2016), 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 DCC 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 Asbestos Containing Materials (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.

Additionally, a Construction Environmental Management Plan will be in effect for the full duration of works. The Health and Safety Authority's "Code of Practice for Avoiding Danger from Underground Services" (2010) will be followed during construction and excavation activities, and all underground and overhead utilities and public services will be identified and protected during the Construction Phase.

#### **7.4.9.1 Monitoring**

The monitoring of C&D waste during the Construction Phase of the Proposed Development is recommended to ensure that impacts are not experienced beyond the site boundary. The Resource and Waste Manager will be responsible for monitoring and record keeping in respect of waste leaving the facility and ensuring that these records will be maintained on site.

#### **7.4.10 Control of Impacts on Archaeology and Cultural Heritage**

Subsoil cut linear features of possible archaeological significance were noted in two areas – Archaeological Areas 1 and 2 (AA1-2). AA1 was located within the northern extent of the Proposed Development site, encompassing Trenches 1-3 and the northern extent of Trench 4. Ten linear features with maximum widths of 1.25m and depths of 0.6m were uncovered.

The potential archaeological features uncovered in AA1 and AA2 should be resolved through archaeological excavation.

The previous archaeological trenching regime (2021) was specifically situated to target the area where the former line of the watercourse (DU018-04304) and laundry stream were located whilst also investigating the general archaeological potential of the Proposed Development site. This exercise was limited due to access restrictions, with the result that areas of the Proposed Development site remained untested and could contain unrecorded archaeological features. Similarly, the eastern extents of the Proposed Development site leading to Donore Avenue remain untested.

Given these conditions, it is proposed that these areas (above) are subject to archaeological testing at pre-construction phase. This testing would most likely take the form of test trenching. Any archaeological features uncovered should be resolved through archaeological excavation.

All archaeological works will be agreed by the Archaeological Consultant and the National Monuments Service (NMS) and will be carried out in compliance with the National Monuments Acts 1930 – 2014 and Policy and Guidelines on Archaeological Excavation (Department of Arts, Heritage Gaeltacht and the Islands, 1999).

A suitably qualified and licensed Archaeological Contractor will be appointed to carry out the archaeological fieldwork. Relevant licenses will be acquired from the DoCHG/NMS and the National Museum of Ireland (NMI) for all archaeological works, which will be carried out in accordance with an Overarching Method Statement for Archaeological Works prepared by

the Archaeological Consultant and agreed with the NMS. It is anticipated that all archaeological works will be completed pre-construction (Chapter 11 of the EIAR, Archaeology and Cultural Heritage, Enviroguide Consulting, 2022).

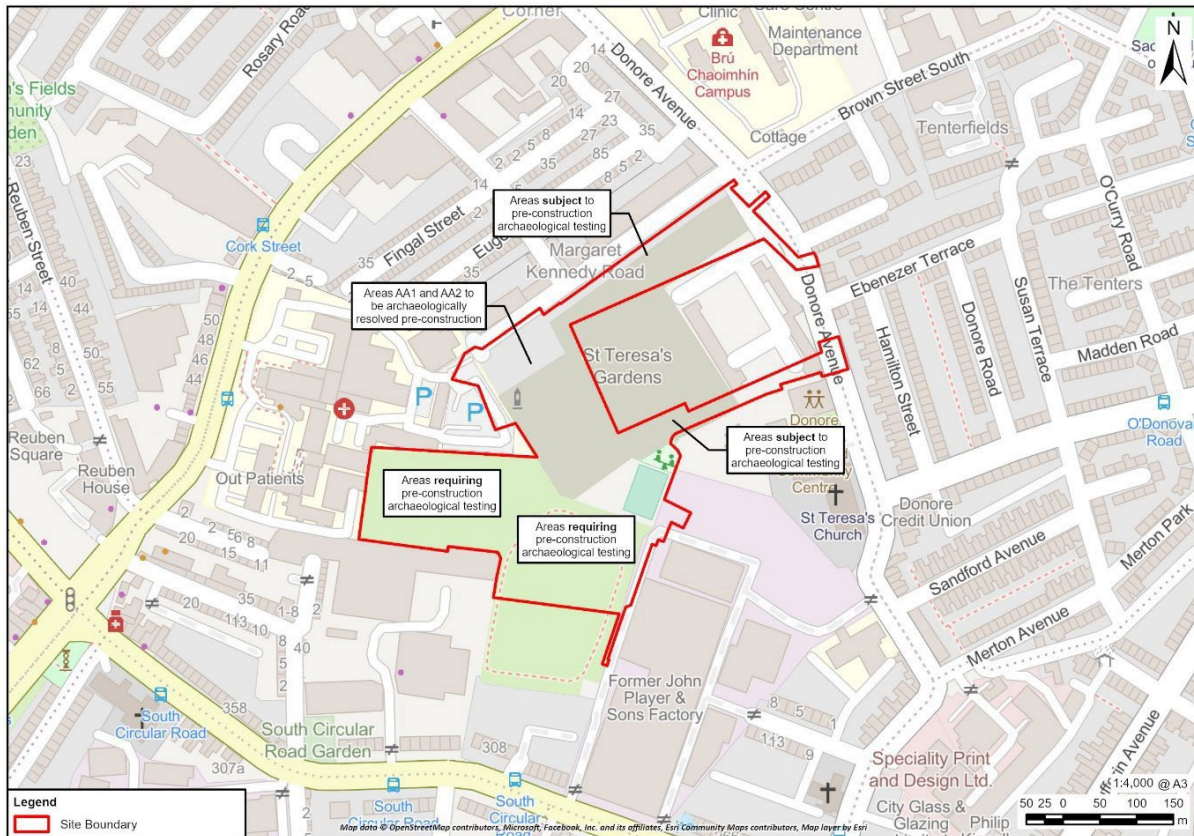


Figure 7-2 Proposed Archaeological Mitigation

#### 7.4.10.1 Monitoring

It is anticipated that all archaeological testing and excavation will be carried out at pre-construction stage in areas identified where the Proposed Development has the potential to impact upon archaeological remains (Refer to EIAR Section 11.6.1).

If unexpected archaeological remains or artefacts are discovered during construction work, work in that area will cease and the area will be protected. An unexpected finds procedure will be included in the Overarching Method Statement for Archaeological Works. The Archaeological Consultant and the National Monument Service will be notified, and the unexpected finds procedure will be implemented, whereby the archaeological remains will be investigated by the licensed Archaeological Contractor and resolved to ensure minimal delay to the construction programme

## 8 SITE TIDINESS & HOUSEKEEPING

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

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

The Site will be left in a safe condition and site security will be managed in accordance with the details specified in the Construction Management Plan and the control measures outlined in Section 7.4 of this CEMP.

## 9 EMERGENCY PLANNING AND RESPONSE

The purpose of the CEMP is to address the potential emissions from the site, implementing any necessary mitigation measures as discussed in Section 7.3 and Section 7.4 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.

### 9.1 Environmental Emergency Preparedness and Response

The control measures identified in Section 7.4 of this CEMP, once correctly implemented, will reduce the likelihood of the occurrence of an environmental incident (emergency) as identified in Section 6.2 of this CEMP.

A procedure for Environmental Emergency Preparedness and Response will be developed prior to the commencement of the Construction Phase and will be implemented by the CMT. The Environmental Emergency Preparedness and Response will ensure that all countermeasures proceed in a controlled manner so that greater damages are avoided and the possible effects upon persons, the environment and property are avoided or limited.

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

As per Sections 6.2 of this CEMP, once an environmental incident has been responded to the processes identified in the incident investigation and non-conformity, corrective and preventative action procedures will be adhered to with all details pertaining to the incident recorded in the site environmental register.

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

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

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

Once the situation has been rectified, full details about the incident and remedial actions undertaken will be provided to the local authority and all other relevant authorities and recorded in the site environmental register. This site environmental register will be a register of regulatory, legal and other requirements, and this will be developed to summarise the environmental legislation, (as well as other requirements) that the project must adhere to. This legislation will be available through the construction manager's office on site. This register will be a controlled document, and as such will be reviewed and updated on a minimum six-monthly basis.



## 10 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 Waste Manager. This register will be made available for review by regulatory authorities.

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.

## 11 REFERENCES

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