



Building a
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Housing Development at the Boylan Centre

Construction Environmental Management Plan

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1.0 Introduction

This Construction Environmental Management Plan has been prepared by as part of the Part 8 Planning application for the Proposed Community Facility & Housing Development at Sussex Street & Eblana Avenue, Dun Laoghaire, Co. Dublin

The development will comprise:

Proposed demolition of community building at 10 Eblana Avenue and demolition of community and commercial building and removal of on-street parking at 10 Sussex Street. Construction of a new community facility and housing development comprising of 39nr. 1-bed apartments, 16nr. 2-bed apartments and 4nr. 3-bedroom houses and provision of 1nr. accessible parking space, an accessible drop-off area, 66nr. cycle parking spaces and all associated site works on Sussex Street and Eblana Avenue, Dún Laoghaire, Co. Dublin

The purpose of the Plan is to identify the project management structure, roles and responsibilities, with regard to managing and reporting on the environmental impact of the construction phase.

2.0 Background

This Preliminary CEMP provides a framework to:

- a) Describe the programme for environmental management during construction.
- b) Implement the monitoring and mitigation measures
- c) Outline the principles and minimum standards required of the contractor during the development of the detailed CEMP (and associated Method Statements) and throughout construction.
- d) Identify the relevant roles and responsibilities for developing, implementing, maintaining and monitoring environmental management.
- e) Outline the procedures for communicating and reporting on environmental aspects of the proposed development throughout construction.

It is intended that this Preliminary CEMP will be expanded and updated prior to the commencement of any construction activities on site.

Following appointment, the contractor will be required to develop more specific Method Statements and submit a more detailed (bespoke, contract-specific) CEMP that is cognisant of the proposed construction activities, equipment and plant usage and environmental monitoring plan for the proposed development.

This Preliminary CEMP should not be considered a detailed Construction Method Statement as it will be the responsibility of the contractor, appointed to undertake the works, to implement appropriate procedures and progress the documentation prior to commencement of construction.

3.0 Site Description

3.1 Site Location

The proposed development site located at Sussex Street & Eblana Avenue in Dun Laoghaire, Co. Dublin. This location is less than 100 meters from George's Street Lower and Marine Road, two busy main streets in Dun Laoghaire that are well-served by public transport and bus routes. The surrounding area is primarily a mix of residential and retail spaces.

The boundary of the proposed development site is shown below.

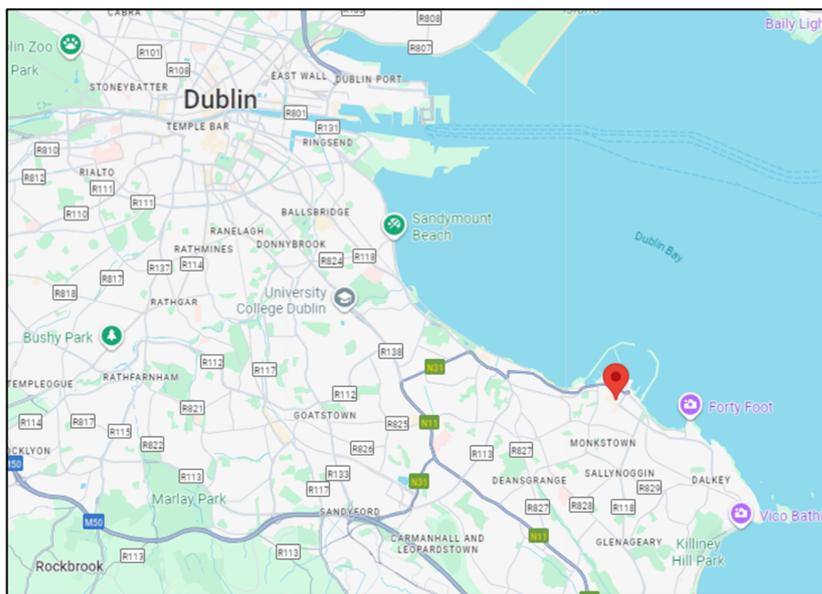


Figure 3.1 – Site Location (Source: Google Maps)

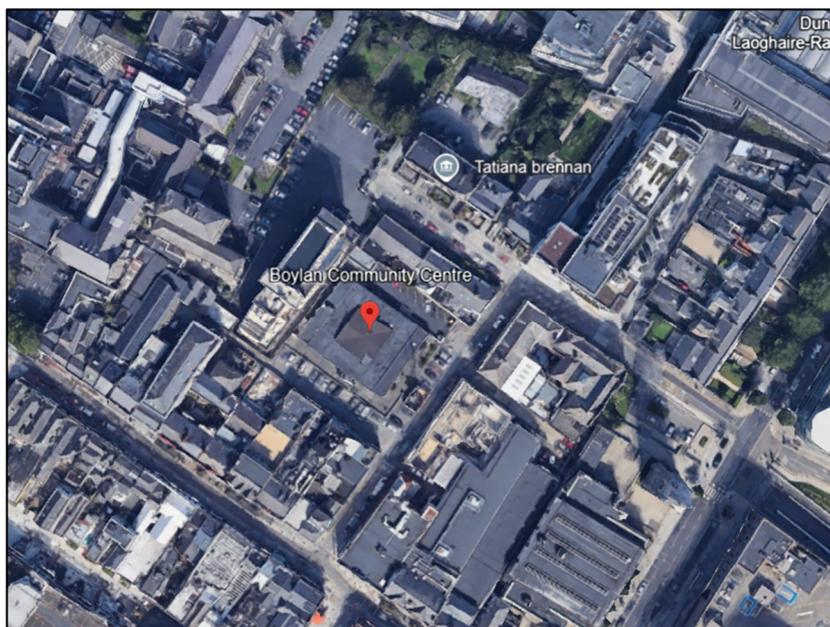


Figure 3.2 – Site Location (Source: Google Earth)

4.0 Proposed Development

The project site is located off Sussex Street and Eblana Avenue, Dún Laoghaire, with an approximate area of 0.25 hectares. It is bounded by:

- Sussex Street to the east.
- Eblana Avenue and neighbouring residential units to the north.
- St. Michael's Hospital grounds to the west.
- An access road to the south.

The site currently provides 25 Surface car parking spaces with vehicular access from Sussex Street

4.1 Proposed Works Summary

Proposed demolition of community building at 10 Eblana Avenue and demolition of community and commercial building and removal of on-street parking at 10 Sussex Street. Construction of a new community facility and housing development comprising of 39nr. 1-bed apartments, 16nr. 2-bed apartments and 4nr. 3-bedroom houses and provision of 1nr. accessible parking space, an accessible drop-off area, 66nr. cycle parking spaces and all associated site works on Sussex Street and Eblana Avenue, Dún Laoghaire, Co. Dublin

An initial phase of enabling works will be undertaken by Dún Laoghaire–Rathdown County Council (DLRCC) to reduce contractual risks for the main construction. These enabling works will involve the demolition of community building at 10 Eblana Avenue and demolition of community and commercial building and removal of on-street parking at 10 Sussex Street.

The scheme is designed to integrate with the existing urban fabric; help activate the town centre and provide a range of housing options in a sustainable location. It is consistent with the County Development Plan objectives (including SLO 73) and DLRCC's strategy for town-centre densification and compact growth.

4.2 Surface Water Impacts

Surface water run-off from surface construction activities has the potential to become contaminated.

The main contaminants arising from construction activities include:

- Suspended solids: arising from ground disturbance and excavation.
- Hydrocarbons: accidental spillage from construction plant and storage depots.
- Faecal coliforms: contamination from coliforms can arise if there is inadequate containment and treatment of onsite toilet and washing facilities.
- Concrete/cementitious products: arising from construction materials.

These pollutants pose a temporary risk to surface water quality for the duration of the project if not properly contained and managed.

4.3 Proposed Construction Works

The proposed work will consist of the following:

- Site preparation.
- Erection of security fencing/perimeter fencing.
- Setting up a secure site compound including wash down area.
- Site clearance including earth stripping.
- Construction of infrastructure including access road, drainage, and services.
- Construction of the Blocks A & B and all associated works.

5.0 Mitigation Measures

The following Mitigation Measures are to address potential impacts to water quality. All works will be undertaken with reference to the following guidelines:

- CIRIA C532: Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (Masters-Williams et al., 2001).
- CIRIA C692: Environmental Good Practice on Site, (Audus et al., 2010).
- BPGCS005: Oil Storage Guidelines.
- CIRIA C648: Control of Water Pollution from Linear Construction Projects: Technical Guidance (Murnane et al., 2006a).
- CIRIA C648: Control of Water Pollution from Linear Construction Projects: Site Guide (Murnane et al., 2006a).
- CIRIA C649 – Control of Water Pollution from Linear Construction Projects: Site Guide.
- CIRIA C753 – The SUDS Manual.
- CIRIA C698 – Site handbook for the construction of SUDS.
- Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters (IFI 2016).
- Guidelines for Planning Authorities – Architectural Heritage Protection – Guidance on Part IV of the Planning and Development Act 2000. (Part 2, Chapter 7) and ICOMOS Principles.

The schedule of mitigation presented within Table 3- 1 summarises measures that will be undertaken in order to reduce impacts on ecological receptors within the zone of influence of the proposed development.

Table 5.1 – Schedule of Surface Water Mitigation Measures

No.	Risk	Possible Impact	Mitigation	Result of Mitigation
2	Pollutants from site compound areas entering the surface water drainage network.	Water quality impacts Reduction in habitat quality Mortality of aquatic key ecological receptors/qualifying interests	Provide treatment to run-off before discharge to surface water network.	Prevents pollution of the aquatic zone from toxic pollutants

3	Pollutants from material storage areas entering the surface water drainage network.	Water quality impacts Reduction in habitat quality Mortality of aquatic key ecological receptors/qualifying interests	Fuels, oils, greases and other potentially polluting chemicals will be stored in bunded compounds at the Contractor's compound. Bunds are to be provided with 110% capacity of storage container. Spill kits will be kept on site at all times and all staff trained in their appropriate use. Method statements for dealing with accidental spillages will be provided to the Contractor for review by the Employer's Representative.	Prevents contamination of aquatic zone by toxic pollutants
4	Concrete/cementitious materials entering the surface water drainage network from washdown.	Water quality impacts Reduction in habitat quality Mortality of aquatic key ecological receptors/qualifying interests	A designated wash down area within the Contractor's compound will be used for cleaning of any equipment or plant, with the safe disposal of any contaminated water.	Prevents contamination of aquatic zone by suspended solids or pollutants, ensures invasive species material is not transported off site
4	Concrete/cementitious materials entering the surface water drainage network from concrete pours.	Water quality impacts Reduction in habitat quality Mortality of aquatic key ecological receptors/qualifying interests	Pouring of cementitious materials will be carried out in the dry.	Prevents contamination of aquatic zone by suspended solids or pollutants, ensures invasive species material is not transported off site
5	Leaching of contaminated soil into groundwater.	Water quality impacts Reduction in habitat quality Mortality of aquatic key ecological receptors/qualifying interests	Spill kits will contain 10 hr terrestrial oil booms (80mm diameter x 1000mm) and a plastic sheet, upon which contaminated soil can be placed to prevent leaching to ground water	Prevents contamination of aquatic zone by petrochemicals

6	Pollutants from equipment storage/refuelling area entering the surface water drainage network.	Water quality impacts Reduction in habitat quality Mortality of aquatic key ecological receptors/qualifying interests	Any refuelling and maintenance of equipment will be done at designated bunded areas with full attendance of plant operative(s) within contained areas.	Prevents contamination of aquatic zone by petrochemicals
7	Runoff from exposed work areas and excavated material storage areas entering the surface water drainage network.	Water quality impacts Reduction in habitat quality Mortality of aquatic key ecological receptors/qualifying interests	The contractor is to prepare a site plan showing the location of all surface water drainage lines and proposed discharge points to the sewer. The plan will include the location of all surface water protection measures, including monitoring points and treatment facilities.	Prevents contamination of aquatic zone by suspended solids or pollutants.

6.0 Management of Environmental Impacts

Construction is envisaged to commence once final planning permission has been obtained. It is anticipated that the development will be constructed over a period of approximately 18 months.

The proposed potential pollution mitigation measures outlined below will be implemented in accordance with 'CIRIA C532 – Control of Water Pollution from Construction Sites – Guidance for Consultants and Contractors' – CIRIA-2001.

6.1 Roles and Responsibilities

6.1.1 Main Contractor

The main Contractor will have overall responsibility for the implementation of the project Construction Environmental Management Plan (CEMP) during the construction phase. The appointed person from the Main Contractors team will be appropriately trained and assigned the authority to instruct all site personnel to comply with the specific provisions of the CEMP. At the operational level, a designated person from each sub-contractor on the site shall be assigned the direct responsibility to ensure that the operations stated in the CEMP are performed on an on-going basis.

Copies of the CEMP will be made available to all relevant personnel on site. All site personnel and sub- contractors will be instructed about the objectives of the CEMP and informed of the responsibilities which fall upon them because of its provisions.

The responsibilities of the appointed person will be as follows.

- Updating the CEMP as necessary to reflect activities on site.
- Advise site management (including, but not limited to, the site Construction Manager) on environmental matters.
- Ensure pre-construction checks for protected species, if any, are undertaken.
- Review method statement of the sub-contractors to ensure that it incorporates all aspects of CEMP.
- Provide toolbox talks and other training and ensure understanding by all involved of all mitigation measures.
- Assess effectiveness of mitigation, check weather forecast and site conditions where trigger levels are required.
- Ensure adherence to the specific measures listed in the Planning Conditions.
- Advise upon the production of written method statements and site environmental rules and on the arrangements to bring these to the attention of the workforce.
- Investigate incidents of significant, potential, or actual environmental damage, ensure corrective actions are carried out and recommend means to prevent recurrence; and,
- Be responsible for maintaining all environmental related documentation.
- Ensure plant suggested is environmentally suited to the task in hand.
- Co-ordinate environmental planning of the construction activities to comply with environmental authorities' requirements and with minimal risk to the environment. Give contractors precise instructions as to their responsibility to ensure correct working methods where risk of environmental damage exists.

6.1.2 Construction Waste Manager

A Construction Waste Manager shall be appointed from the Contractor's Staff and have overall responsibility for the implementation of the project Waste Management Plan (WMP) during the construction phase. The Construction Waste Manager will be appropriately trained and assigned the authority to instruct all site personnel to comply with the specific provisions of the WMP. At the operational level, a designated person from the main contractor and from each sub-contractor on the site shall be assigned the direct responsibility to ensure that the operations stated in the WMP are performed on an on-going basis.

Copies of the Waste Management Plan will be made available to all relevant personnel on site. All site personnel and sub-contractors will be instructed about the objectives of the Waste Management Plan and informed of the responsibilities which fall upon them as a consequence of its provisions. Where source segregation, selective demolition and material reuse techniques apply, each member of staff will be given instructions on how to comply with the Waste Management Plan. Posters will be designed to reinforce the key messages within the Waste Management Plan and will be displayed prominently for the benefit of site staff.

6.1.3 Environmental Officer

The Environmental Officer will be responsible 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 other managed Contractors in scoping their work and during Contract execution.
- To ensure that advice, guidance, and instruction on all CEMP matters are provided to all their managers, employees, construction contractors and visitors on site.
- Report to the Construction manager on the environmental performance of the Line Management, Supervisory Staff, Employees and Contractors; and,
- Advise site management (including, but not limited to, the site Construction Manager) on environmental matters.

6.1.4 Project Environmental Consultant

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

- Preparation of the CEMP, environmental control plans, supporting procedures.
- Advise site management (including, but not limited to, the site Construction Manager) on environmental matters.
- Ensure adherence to the specific measures listed in the Planning Conditions and in the Natura Impact Statement (NIS) Mitigation matters.
- Advise upon the production of written method statements and site environmental rules and on the arrangements to bring these to the attention of the workforce.
- Investigate incidents of significant, potential, or actual environmental damage, ensure corrective actions are carried out and recommend means to prevent recurrence; and,

- Be responsible for maintaining all environmental related documentation.

6.1.5 Site Supervisor

Site Supervisors are required to:

- Read, understand and implement the CEMP.
- Know the broad requirements of the relevant law in environmental matters and take whatever action is necessary to achieve compliance. Where necessary seek the advice of the Environmental Officer.
- Ensure that the environmental matters are taken into account when considering contractors' Construction methods and materials at all stages.
- Be aware of any potential environmental risks relating to the site, plant or materials to be used the premises and bring these to the notice of the appropriate management.
- Ensure plant suggested in environmentally suited to the task in hand.
- Co-ordinate environmental planning of the construction activities to comply with environmental authorities' requirements and with minimal risk to the environment. 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.
- Be aware of any potential environmental risks relating to the Contractors and bring these to the notice of the appropriate management.

6.1.6 Site Personnel

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

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

6.2 Hours of Working

Typical working hours for the site would be 07.00 to 18.00 Monday to Friday and between 08.00 and 14.00 hours on Saturdays only. No work shall be permitted on Sundays and public holidays.

The above working hours are typical, however, special construction operations may need to be carried out outside these hours in order to minimise disruption to the surrounding area.

Weather restrictions may apply, e.g., no cement pouring during heavy rainfall.

6.3 Pre-Construction Plan

6.3.1 Designated Storage Area & Site Compound

A site compound(s) including offices and welfare facilities will be set up by the main contractor.

The main contractor will be required to schedule delivery of materials daily. It is proposed to provide a site compound on the site for the secure storage of materials.

Measures will be implemented throughout the construction stage to prevent contamination of the soil and surrounding watercourses from oil and petrol leakages and significant siltation. 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. Spill kits will be provided by the Contractor to cater for any other spills.

Construction materials should only be stored in designated material storage areas and material stockpiles should be kept to a minimum size. Material stockpiles should be stored away from the pond and drains, on an impermeable base and away from moving plant and machinery.

The site compound will include designated parking areas. No parking of construction-related vehicles will be permitted on the adjoining internal estate road network and adequate parking facilities will be made available within the Construction Compound for all site workers during construction. In addition, a designated wash down area within the Contractor's compound will be used for cleaning of any equipment or plant, with the safe disposal of any contaminated water.

6.3.2 Site Security and Hoarding Lines

Hoarding lines and site security will be set up within the development site as required.

Hoarding and security fencing may be required on the public roads during the construction works and for the construction of the new realigned entrance to the site. Before construction commencing, a detailed construction traffic management plan will be prepared and submitted by the appointed contractor to Dun Laoghaire Rathdown County Council

The construction traffic management plan will identify staging areas, delivery of materials, strategy for large concrete pours, removal of demolition waste, traffic routes etc.

Access gates will be operated by a flagman who will divert incoming/outgoing vehicles/pedestrians and general traffic as necessary.

6.3.3 Deliveries and Site Access

A full traffic management plan will be available prior to the commencement of project.

In the event that large concrete pours are required which may result in congestion at the entrance to the site the deliveries will be organised such that concrete trucks will queue at a pre-determined staging point (such that they do not cause an obstruction to general traffic in the area) and will then be called in by radio as appropriate to the site, via a pre-determined route and to the required access gate.

Set procedures and designated wash-out areas will be provided.

All delivery vehicles will be co-ordinated as required at the relevant access point.

6.4 Construction Plan

6.4.1 Vehicle Washdown

Vehicle and wheel washing facilities will be provided at the entrance/exit for the site, as required by the site-specific Risk Assessment. All construction vehicles leaving site will be required to drive through these wheel wash areas. The wheel wash area will be cleaned regularly so as to avoid build-up of residue. Vehicles wash down water will discharge directly into the on-site foul water drainage network via suitable pollution control and attenuation.

6.4.2 Surface Water Monitoring Parameters.

In addition to daily visual inspections, a surface water monitoring programme, as outlined in Table 4-1 must be followed during construction in order to ensure maintenance of water quality protection. This is in line with Transport Infrastructure Ireland (TII)'s 'Guidelines for the Creation, Implementation and Maintenance of an Environmental Operating Plan'. It is considered that the parameter limit values (Guide/Mandatory) defined in the Fresh Water Quality Regulations (EU Directive 2006/44/EEC) should act as a trigger value for the monitoring of Surface Water.

Table 6.1 – Monitoring Guidelines (Fresh Water Quality Regulations)

Parameter	Guide limit	Mandatory limit	Frequency and Manner of Samplings
Temperature		1.5 ⁰ C	Weekly, and at appropriate intervals where the works activities associated with the scheme have the potential to alter the temperature of the waters.
Dissolved oxygen	50% of Samples ≥ 9 (mg/l O ₂) 100% of Samples ≥ 7 (mg/l O ₂)		Weekly, minimum one sample representative of flow oxygen conditions of the day of sampling.
pH		6-9	Weekly
Nitrites	≤0.01 (mg/l NO ₂)		Monthly
Suspended Solids	≤25 (mg/l)		Monthly
BOD ₅	≤3 (mg/l)		Monthly
Phenolic Compounds			Monthly where the presence of phenolic compounds is presumed (An examination by test)
Petroleum Hydrocarbons	5 (mg/l)		Monthly (visual)
Non-Ionized Ammonia	≤ 0.005 (mg/l NH ₃)		Monthly
Total Ammonium	≤ 0.004 (mg/l NH ₄)		Monthly

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Total Residual Chlorine		≤ 0.005 (mg/l HOCl)	At appropriate intervals where works activities associated with the scheme have the potential to alter the Total residual Chlorine of the waters
Electrical Conductivity			Weekly

6.4.3 Dewatering of excavations

The contractor shall develop an appropriate dewatering scheme to keep the excavations free from water and ensure the quality of water leaving site is high. Any excavations that need to be pumped clear of groundwater should be pumped to a settlement tank with sufficient retention time before the water is allowed to discharge. Under no circumstances will silt laden water be pumped into a watercourse. Water will only be discharged following treatment.

Discharge of water will be regularly monitored visually for hydrocarbon sheen and suspended solid and periodic laboratory testing of discharge water samples will be carried out in accordance with the requirements of Dun Laoghaire Rathdown County Council before discharge to the surrounding drainage network.

6.4.4 Dust and Dirt Control

Nuisance dust emissions from construction activities are a common and well recognised problem. Fine particles from these sources are recognised as a potential significant cause of pollution.

The main contractor will be required to demonstrate that both nuisance dust and fine particle emissions from the site are adequately controlled and are within acceptable limits.

Dust and fine particle generation from construction and demolition activities on the site can be substantially reduced through carefully selected mitigation techniques and effective management. Once particles are airborne it is very difficult to prevent them from dispersing into the surrounding area. The most effective technique is to control dust at source and prevent it from becoming air borne, since suppression is virtually impossible once it has become air borne.

The following are techniques and methods which are widely used currently throughout the construction industry, and which may be used in the proposed development.

- The public roads around the site are all surfaced, and no dust is anticipated arising from unsealed surfaces. Unsurfaced roads do exist within the site.
- Vehicles travelling on any unsurfaced site roads should have their speed restricted to 20 kmph.
- A regime of 'wet' road sweeping can be set up to ensure the roads around the immediate site are as clean and free from dirt / dust arising from the site, as is reasonably practicable. This cleaning will be carried out by approved mechanical sweepers.
- High level walkways and surfaces such as scaffolding can be cleaned regularly using safe 'wet' methods, as opposed to dry methods.
- Vehicle waiting areas or hard standings can be regularly inspected and kept clean by brushing or vacuum sweeping and will be regularly sprayed to keep moist, if necessary.

- Vehicle and wheel washing facilities can be provided at site exit(s) where practicable. If necessary, vehicles can be washed down before exiting the site.
- Vehicles and equipment shall not emit black smoke from exhaust system, except during ignition at start up.
- Engines and exhaust systems should be maintained so that exhaust emissions do not breach stationary emission limits set for the vehicle / equipment type and mode of operation.
- Servicing of vehicles and plant should be carried out regularly, rather than just following breakdowns.
- Internal combustion plant should not be left running unnecessarily.
- Exhaust direction and heights should be such as not to disturb dust on the ground and to ensure adequate local dispersal of emissions.
- Where possible fixed plant such as generators should be located away from residential areas.
- The number of handling operations for materials will be kept to a minimum in order to ensure that dusty material is not moved or handled unnecessarily.
- The transport of dusty materials and aggregates should be carried out using covered / sheeted lorries.
- Material handling areas should be clean, tidy, and free from dust.
- Vehicle loading should be dampened down and drop heights for material to be kept to a minimum.
- Drop heights for chutes / skips should be kept to a minimum.
- Dust dispersal over the site boundary should be minimised using static sprinklers or other watering methods as necessary.
- Stockpiles of materials should be kept to a minimum and if necessary, they should be kept away from sensitive receptors such as residential areas etc.
- Stockpiles will be sealed as required.
- Methods and equipment should be in place for immediate clean-up of spillages of dusty material.
- No burning of materials will be permitted on site.
- Earthworks excavations should be kept damp where necessary and where reasonably practicable.
- Cutting on site should be avoided where possible by using pre-fabrication methods.
- Equipment and techniques for cutting / grinding / drilling / sawing / sanding etc, which minimise dust emissions and which have the best available dust suppression measures, should be employed.
- Where scabbling is to be employed, tools should be fitted with dust bags, residual dust should be vacuumed up rather than swept away, and areas to be scabbled should be screened off.
- Wet processes should be used to clean building facades if possible. If dry grit blasting is unavoidable then ensure areas of work are sealed off and dust extraction systems used.
- Where possible pre-mixed plasters and masonry compounds should be used to minimise dust arising from onsite mixing.
- Prior to commencement, the main contractor should identify the construction operations which

are likely to generate dust and to draw up action plans to minimise emissions, utilising the methods highlighted above. Furthermore, the main contractor should prepare environmental risk assessments for all dust generating processes, which are envisaged.

- The main contractor should allocate suitably qualified personnel to be responsible for ensuring the generation of dust is minimised and effectively controlled.
- The name and contact details of a person to contact regarding air quality and dust issues should be displayed on the site boundary, this notice board should also include head/regional office contact details.

6.4.5 Noise Control

The main contractor will deal with the immediate dangers to hearing etc. associated with high noise levels and the impact of same on construction operatives, by means of risk assessment and mitigation / precautionary measures and equipment, all pursuant to the current health and safety legislation.

The main contractor should carry out a noise assessment in relation to the proposed works at construction stage. This noise assessment should be carried out by a competent person (or specialist firm) with specialist training in this area.

The noise assessment should include the following steps: -

- Identify and list all construction work activities where there is likely to be a significant noise hazard.
- Determine the hazards / nuisance.
- Identify all third parties likely to be exposed to the nuisance.
- Measuring the risk: The level of noise in dBs
- Considering and Implementing Control Measures.
- Control exposure to noise.
- Record the findings of the noise assessment.
- Review and revise.

6.4.6 Protection of Soils and Groundwater

To preserve the topsoil on the site, topsoil will be removed to stockpiles and protected during the construction period for reuse on completion of the works. Topsoil will be stored in mounds and suitably protected to prevent water logging during wet weather. The stripping of topsoil will be undertaken on a phased basis so that no area is stripped until such time as works are imminent in that area.

Levels of the proposed roads will be established to minimise the quantity of fill material to be imported to the site. Surplus subsoil will be used for landscaping where possible.

The provision of wheel wash facilities at the construction entrance to the development will minimise the amount of soils deposited on the surrounding road network. The adjoining road network will be cleaned on a regular basis, if required, to prevent the build-up of soils from the development site on the existing blacktop roads.

Measures will be implemented throughout the construction stage to prevent contamination of the soil and adjacent watercourses from oil and petrol leakages and significant siltation. 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. Spill kits will

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be provided by the Contractor to cater for any other spills.

Dampening down measures with water sprays will be implemented during periods of dry weather to reduce dust levels arising from the development works.

After implementation of the above measures the proposed development will not give rise to any significant long term adverse impact. Negative impacts during the construction phase will be short term only in duration.

6.4.7 Refuelling

- Construction plant and equipment will only be parked over-night within the site compound. Construction plant and equipment will be checked daily for any visual signs of oil or fuel leakage, as well as wear and tear.
- Fuel will not be stored on site for the duration of the construction phase. Fuel will only be brought to site via mobile fuel bowser. For any liquid other than water, this will include storage in suitable tanks and containers which will be housed in the designated area surrounded by bund wall of sufficient height and construction so as to contain 110 percent (110%) of the total contents of all containers and associated pipework. The floor and walls of the bunded areas will be impervious of all containers and associated pipework. The floor and walls of the bunded area will be impervious to both water and oil. The pipes will vent downwards into the bund.
- Only designated trained and competent operatives will be authorised to refuel plant on site.
- Spill kit containment equipment will be stored at all work areas for use in the event of an emergency. The contents of the spill kit will be replenished if used and they will be checked on a scheduled basis during environmental inspections and audits. All crews will be trained in the use of spill kit equipment.
- Where Contractors are required to refuel vehicles, this will only be carried out at the designated refuelling location within the site storage compound, which must employ pollution control mechanisms to prevent escape of fluids to local surface water network.
- The local authority will be informed immediately of any spillage or pollution incident that may occur on-site during the construction phase.
- All small plant such as generators and pumps bunded and stood in drip trays capable of holding 110% of their tank contents,
- Waste oils, empty oil containers and other hazardous wastes will be disposed of in accordance with the requirements of the Waste Management Act, 1996.
- An Emergency Response Plan will be implemented in the event of any environmental incidents such as spillage of oil/fuel during the construction/operational phase of the project.
- All emergency procedures and equipment will be in place prior to the commencement of any works.

6.4.8 Site Tidiness and Housekeeping

- Construction works will be carried out according to a defined schedule agreed with the client and the relevant contractors, with regard to the hours of work outlined above. Any delays or extensions required will be notified at the earliest opportunity to the client and Contractors.
- Contractors will ensure that road edges and footpaths are swept on a regular basis.
- Any and all waste materials arising during the works will either be immediately taken to a location from which discharge to the natural watercourses cannot take place, or temporarily

stored/covered to prevent washout thereto.

- 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.

6.4.9 Monitoring, Inspection and Record Keeping

- Routine inspections of construction activities will be carried out on a daily basis by the contractor staff to ensure all controls to prevent environmental impact, relevant to the construction activities taking place at the time, are in place. Environmental inspections will ensure that the works are undertaken in compliance with the Project CEMP and that the requirements of the Conditions of Planning, and associated documentation are being adhered to during construction.
- The Contractor will develop their own site inspection programme, which will include an inspection procedure and relevant forms to record any issues.
- Only suitably trained staff will undertake environmental site inspections.

7.0 Construction Traffic Routes

7.1 Access to the Site

Deliveries and access to the construction site will be made via N31 / Marine / Sussex Street roads.

Due regard will be paid to minimising any impacts by construction vehicles on the existing developments in the area. Should routes become an issue, then the position will be reviewed by the Project Team and changes made.

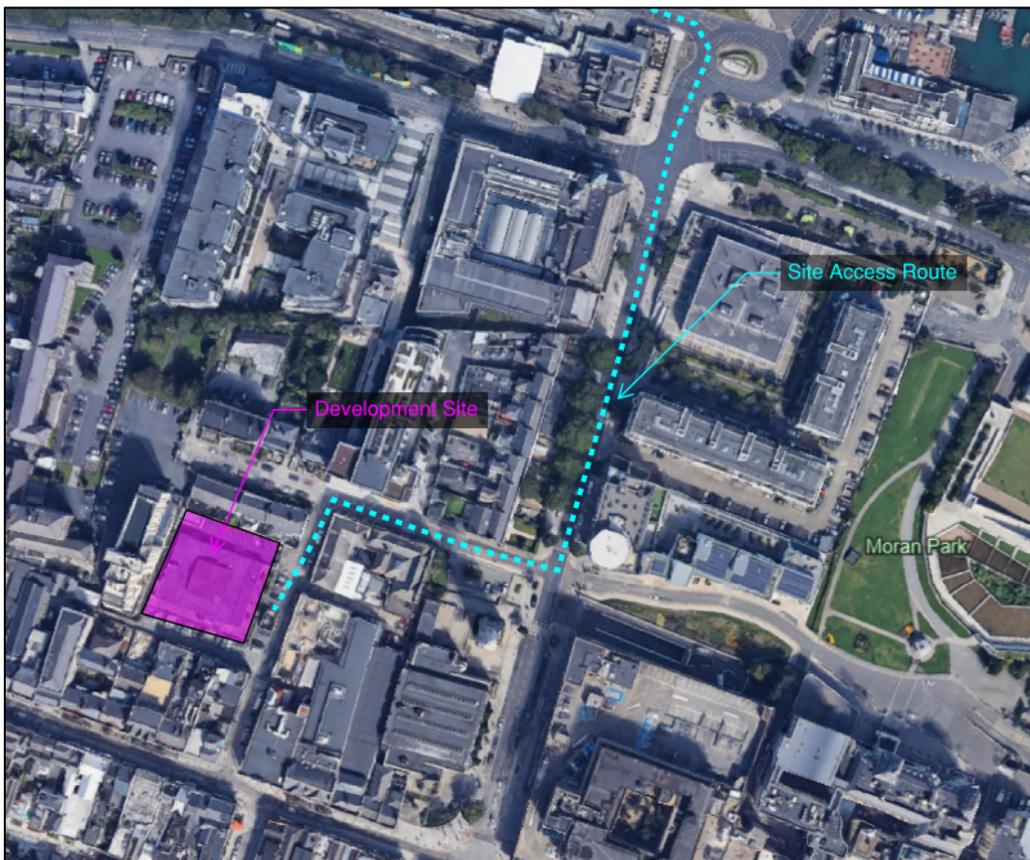


Figure 7.1 – Construction Access Route

All delivery vehicles will be co-ordinated as required by a flagman on duty at the relevant access point. All large pours shall be carefully co-ordinated with the roads department at Dun Laoghaire Rathdown County Council. The main contractor will be required to schedule delivery of materials on a daily basis. If necessary, the main contractor will be required to provide a secure material staging compound on the site.

Wheel washing facilities will be provided for vehicles entering and exiting the site.

8.0 Control of Noise & Vibration

8.1 Existing Noise Sources

The dominant source of noise in the area of the site is background noise from the local roads surrounding the development

8.2 Construction Noise Management

In the absence of any statutory Irish guidance relating to the maximum permissible noise level that may be generated during the construction phase of a project, it is proposed that the construction works will incorporate:

- Best practice measures relating to the control and minimisation of as set out in BS 5228 (2009) Parts 1 and 2 noise during all phases of the work.
- Selection of quiet plant including proprietary acoustic enclosures to compressors and generators.
- Control of noise sources including reduction of resonance effects by stiffening and / or the application of damping compounds to panels and / or cover plates.
- Control of rattling and grinding noises by fixing resilient materials between the contact surfaces.
- Screening by demountable enclosures.
- The siting of mechanical plant as far away from residential areas as possible.
- Regular maintenance of all plant.

Ref: British Standard BS 5228 (2009): Code of Practice for Control of Noise and Vibration on Construction and Open Sites Part 1: Noise.

8.3 Construction Vibration Management

In the absence of any statutory Irish guidance relating to the maximum permissible vibration level that may be generated during the construction phase of a project, it is proposed that the construction works will incorporate:

- Selection of quiet plant with low vibration emissions.
- Provision of anti-vibration mounts on reciprocating plant.
- Limitation of vibration from construction activities to the levels recommended in BS 5228.
- Strip and pad foundations in lieu of piling.
- Materials to be lowered rather than dropped.
- Resilient materials to be provided on surfaces onto which materials are being lowered.

Ref: British Standard BS 5228 (2009): Code of Practice for Control of Noise and Vibration on construction and Open Sites Part 2: Vibration