



Outline Construction & Environmental Management Plan

Project:

Kilwoghan Woods, Crodaun,
Celbridge, Co. Kildare

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1 INTRODUCTION

This Outline Construction Environmental Management Plan (CEMP) has been developed to outline commitments and mitigation measures to be implemented by Seattle Construction Limited., during the construction of the proposed site Kilwoghan Woods, Crodaun, Celbridge, Co. Kildare.

Refer to Figure 1.1 below for site location.

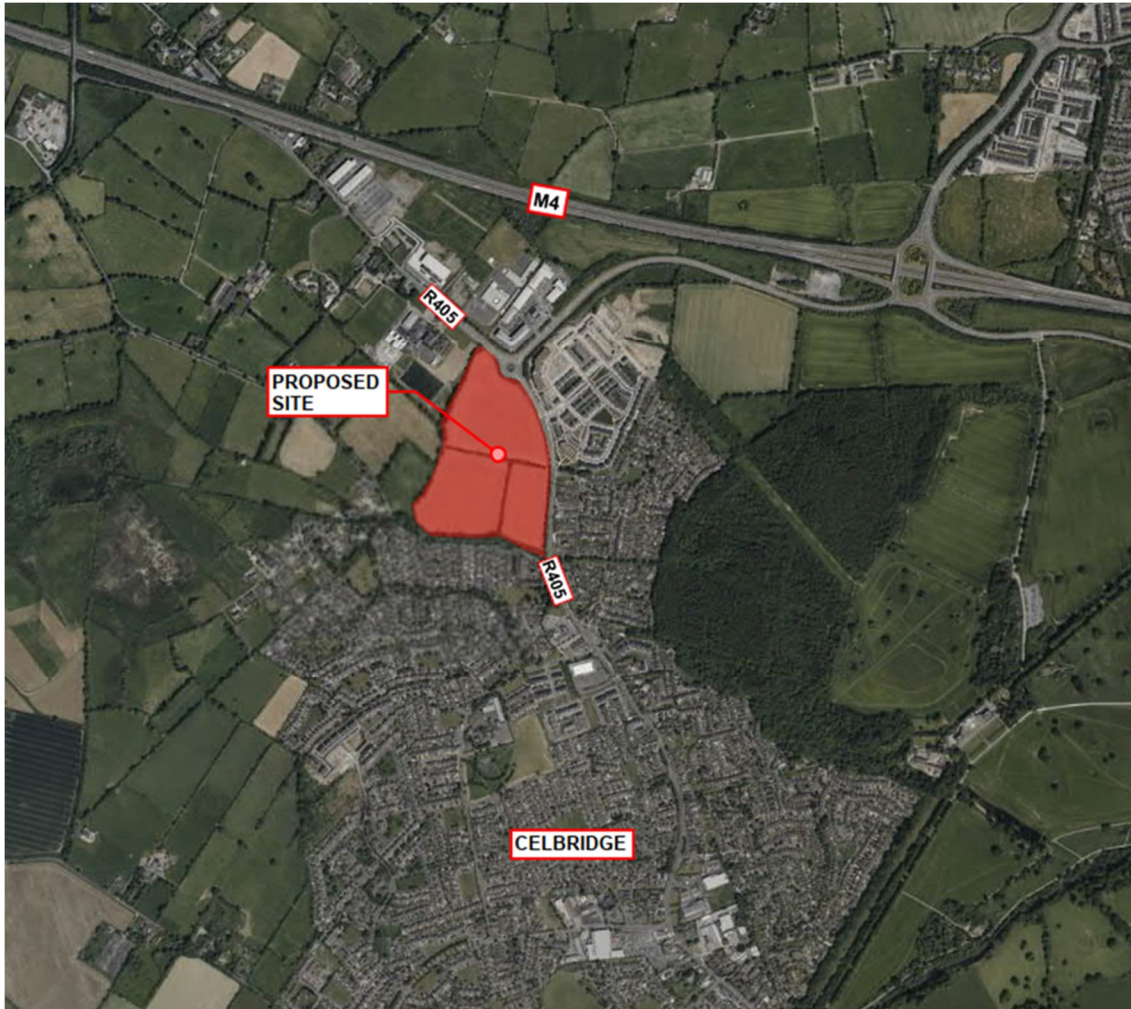


Figure 1.1 – Aerial View of Site Maynooth Road

This outline Construction Environmental Management Plan (CEMP) is submitted to demonstrate that the proposed residential development can be carried out in a planned and structured manner, with appropriate environmental safe guards. The plan, which is a live document during the course of the project, will be subject to change, arising from:

- Detailed Compliance requirements agreed with Kildare County Council
- Requirements by other state bodies
- Concerns raised by residents affected by the works
- Final Traffic Management Plans prepared on completion of detailed design
- Any specific requirements of the appointed main contractor.

This CEMP prepared for the development will be subject to periodic review as part of the management of the construction process.

This CEMP should be read together with all other reports submitted with the planning application for the proposed development.

The purpose of the CEMP is to provide details on how the proposed project is intending to use a comprehensive and integrated approach to protecting environmental receptors on site and within the potential zone of influence, including the Kildare drainage network. The following CEMP outlines the potential impacts of the development, details the sensitive receptors, environmental controls, project staging and the mitigation measures that will be implemented to minimise impacts on the ecology and the surrounding environment. The CEMP also details the specific requirements that need to be addressed during project stages and also includes the related roles and responsibilities of individuals involved in the project.

In the preparation of this CEMP, we have been cognizant of the following documents:

- o DECLG document '*Circular WPR 07/06 - Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects, published by the DECLG, July 2006*'.
- o ProPG document '*Planning & Noise – Professional Practical Guidance on Planning & Noise - New Residential Development May 2017*'
- o CIRIA C532: *Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors*
- o CIRIA C692: *Environmental Good Practice on Site*
- o BPGCS005: *Oil Storage Guidelines*.
- o CIRIA C648: *Control of Water Pollution from Linear Construction Projects*.

2. CEMP STRUCTURE

This CEMP is based on measures to ensure legal compliance and established good management practice on-site and includes the following sections:

1. Project Description: Details of the proposed development project and sensitive receptors (Sensitive habitats and species as outlined in the EIA screening, EcIA and AA screening.)
2. Analysis of the Potential Impacts (As outlined in the EcIA)
3. Site Information (Roles & responsibilities etc.)
4. Construction Management Information: a description of the works based on the information available to date, anticipated construction programme, mitigation measures, Traffic Management Plan, proposed working hours, details of construction access routes, equipment to be used, etc.
5. Ecology & Biodiversity: potential environmental issues related to the demolition and construction works, details of the site inspection and audit programme, methods for managing environmental risks and reducing impacts, emergency procedures, waste and hazardous materials storage procedures, and specific project environmental procedures relating to waste and materials management, dust and air quality, noise and vibration, vehicles management and protection of vegetation and fauna.

3. PROJECT DESCRIPTION

3.1 PROPOSED SITE LEVELS AND EXCAVATION

BMCE have carried out a review of the existing site levels on the site and the proposed development levels. Site levels typically follow the existing site topography. Building levels have been adjusted to ensure gravity drainage to the site discharge point. We estimate that, the site strip will generate approximately c.19,700m³ of spoil. No significant filling of the site is required.

3.2 PROPOSED DEVELOPMENT

Seattle Construction Limited intend to apply to Kildare County Council for permission to amend a previously permitted Strategic Housing Development (SHD) (ABP 307100-20) by way of a planning application for a Large-Scale Residential Development (LRD) on an overall site of approx. 12.93ha located on lands at Kilwoghan Woods in the townland of Crodaun, Celbridge, Co. Kildare. The proposed amendments relate to phase 2 (c.3.94ha) of the overall permitted development and will include amending 239 no. residential units. (The overall total number of permitted 467 no. units in phase 1 and 2 remain unchanged)

The proposed amendments comprises a re-design of phase 2 only to include:

- a) The construction of 2 no. 4-storey apartment blocks at the north of the site (81 no. units in total) to include a retail unit (153 sqm) and creche (212sqm – 47 children) with outdoor play area at ground floor:
 - i. Block A – 40 no. units consisting of 18 no. 1 bed and 22 no. 2 bed units
 - ii. Block B – 41 no. units consisting of 19 no. 1 bed and 22 no. 2 bed units
- b) 5 no. 3-storey apartment and duplex units to be located on the eastern boundary of the site;
 - i. Duplex C – 08 no. units consisting of 4 no. 2 beds and 4 no. 3 beds
 - ii. Duplex D – 18 no. units consisting of 4 no. 1 beds, 8 no. 2 beds, and 6 no. 3 beds
 - iii. Duplex E – 18 no. units consisting of 4 no. 1 beds, 8 no. 2 beds, and 6 no. 3 beds
 - iv. Duplex F – 20 no. units consisting of 10 no. 2 beds, and 10 no. 3 beds
 - v. Duplex G – 18 no. units consisting of 4 no. 1 beds, 8 no. 2 beds, and 6 no. 3 beds
- c) 76 no. terraced houses consisting of;
 - i. 48 no. 2 bed mid terrace units;
 - ii. 12 no. 3 bed end terrace units;
 - iii. 16 no. 3 bed end terrace dual frontage units
- d) 252 no. of car parking spaces which includes 2 no. car sharing spaces, 14 no. motorcycle spaces and 538 no. bicycle parking spaces will be provided for in phase 2.
- e) Amendments to the previously permitted open spaces in phase 2 to now provide 5,357sqm Public Open Space, 1,165sqm Communal Open Space, and 3,313 Amenity Space. Each of the units are afforded their own private open space in the form of private gardens, balconies, or terraces.
- f) Amendments to internal residential access roads and cyclist/pedestrian paths to allow for the 4 arm entrance junction and a new shared pedestrian/cycle path through the site running north to south.
- g) All associated site development works, services provision, infrastructural and drainage works, internal access roads, home zones, cycle and pedestrian infrastructure, bin stores, car and bicycle parking, public lighting, communal open spaces, private open space in the form of gardens, terraces and/or balconies, landscaping and boundary treatment works.
- h) All application documentation and information is available for public viewing at the following website (www.kilwoghandrivephase2lrd.ie).

4. ENVIRONMENTAL CONSIDERATIONS

4.1 MANAGEMENT OF WASTEWATER

All wastewater generated during the construction and operation phase will be directed to the existing foul sewerage system on Maynooth Road and, and onwards to the Irish Water sewer network.

4.2 MANAGEMENT OF SURFACE WATER

The construction management of the site will take account of the recommendations of the CIRIA guides *Control of Water Pollution from Construction Sites* (2001) and *Control of Water Pollution from Linear Construction Projects* (2006) and Inland Fisheries Ireland's (IFI's) *Requirements for the Protection of Fisheries Habitat during Construction and Development Works*.

- Chemical, fuel and oil stores will be sited on impervious bases and within a secured bund of 110% of the storage capacity, within the lay down area;
- As fuels and oils are classed as hazardous materials, any on-site storage of fuel/oil, all storage tanks and all draw-off points will be bunded (or stored in double-skinned tanks) and located in the dedicated site compound. Provided that these requirements are adhered to and site crew are trained in the appropriate refuelling techniques, it is not expected that there will be any fuel/oil wastage at the site.
- Oil and fuel stored on site for construction should be stored in designated areas. These areas shall be bunded and should be located away from surface water drainage and features.
- The integrity and water tightness of all the bunding structures and their resistance to penetration by water or other materials stored therein shall also be tested and demonstrated.
- All fuel oil fill areas will have an appropriate spill apron.
- Vehicles and refuelling – standing machinery will have drip trays placed underneath to prevent oil and fuel leaks causing pollution. Where practicable, refuelling of vehicles and machinery will be carried out on an impermeable surface in designated areas, well away from any surface watercourse and surface water drains;
- Maintenance – maintenance to construction plant will not be permitted on site, unless vehicles have broken down necessitating maintenance at the point of breakdown. All necessary pollution prevention measures will be put in place prior to commencement of maintenance in this instance;
- Concrete - Wet concrete operations would not be carried out within watercourses or adjacent to watercourses or surface drains. Runoff from wastewaters or contaminated storm water will be directed to drains installed as part of the surface water management plan;
- Weather conditions and seasonal weather variations will also be taken account of when planning excavations, with an objective of minimizing soil erosion.
- Concrete batching will take place off site or in a designed area with an impermeable surface.
- Concrete wash down and wash out of concrete trucks will take place off site or in an appropriate facility.
- A designated impermeable cement washout area will be provided.
- Any in-situ concrete work to be lined and areas bunded (where possible) to stop any accidental spillage.
- All new infrastructure is to be installed and constructed to the relevant codes of practice and guidelines.

- All surface water infrastructure is to be pressure tested by an approved method during the construction phase and prior to connection to the public networks, all in accordance with Local Authority Requirements.
- Connections to the public network are to be carried out to the approval and / or under the supervision of the Local Authority prior to commissioning.
- All new sewers are to be inspected by CCTV survey post construction; to identify any possible physical defects for rectification prior to operational phase.
- Care will be required for the environmental management of the site to ensure that no potential contamination issues are experienced.
- Mess, sanitation and welfare facilities will be required during construction and will be located at the construction compound. Foul effluent will make use of chemical facilities with periodic removal for offsite disposal.

Surface water generated at the project site will be discharged via the operation phase surface water management system. The surface water management system has been designed to capture surface water generated at the project site and discharge water at greenfield runoff rates. A suitable level of surface water attenuation has been catered for within the management system. Following attenuation and prior to release all surface water will be treated via a combine silt and hydrocarbon interceptor so that only treated surface water is discharged to the receiving stream and storm water network.

The provision of these design features will ensure that surface water emitted from the project site during the operation phase is adequately treated and will eliminate any risk of polluted surface water being discharged from the project site during operation.

It is proposed to construct a new surface water drainage system for the development to collect runoff from roofs and paved areas and any additional runoff from landscaped areas which doesn't percolate to ground. The design intent of the new Kilwoghan Woods Development is to discharge to the south into Kilwoghan Stream.

It is proposed to provide with the following drainage system:

- Detention basins situated on the north-east side of the greenbelt open space.
- Green and blue roofs, proposed to be installed above the two blocks of apartments.
- Permeable paving for the paved areas such as carpark spaces.
- Underground attenuation tanks located to the northeast and south of the site.

These measures collectively aim to manage stormwater effectively, reduce flood risks, and contribute to a more sustainable urban environment.

4.3 MEASURES TO REDUCE DUST AND NOISE EMISSIONS

To control dust emissions during construction works, standard mitigation measures shall include spraying of exposed earthwork activities and site haul roads during dry and/or windy conditions; provision of wheel washes at exit points; control of vehicle speeds and speed restrictions (20 km/h on any un-surfaced site road); covering of haulage vehicles; and sweeping of hard surface roads. These procedures will be strictly monitored and assessed on a daily basis.

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.

4.4 MEASURES TO REDUCE THE SPREAD OF INVASIVE SPECIES

There is potential for the spread of invasive species during excavation and construction works or they may be accidentally introduced to a location via contaminated vehicles and equipment, in particular tracked vehicles, which were previously used in locations that contained invasive species. Landowners are responsible for preventing the spread of invasive species on their own land and vigilance is required by all landowners as invasive species can spread quickly across boundaries. Adapted from the Irish Water Guidance (2016), the following best practice avoidance measures will help to contain and/or prevent the introduction of invasive species on a site as follows:

- In advance of site clearance, a preclearance survey will be undertaken by the project ecologist to confirm the absence of non-native species from the development site.
- All plant and equipment employed on the proposed works (e.g. diggers, tracked machines, footwear etc.) must be thoroughly cleaned down using a power washer unit, and washed into a dedicated and contained area prior to arrival on site and on leaving site to prevent the spread of invasive aquatic / riparian species such as (but not limited to) Japanese knotweed (*Fallopia japonica*) and Himalayan Balsam (*Impatiens glandulifera*). A sign off sheet must be maintained by the contractor to confirm cleaning;
- Material gathered in the dedicated and contained clean down area will be appropriately treated as contaminated material on site;
- For any material entering the site, the supplier must provide an assurance that it is free of invasive species;
- Ensure all site users are aware of invasive species management plan and treatment methodologies. This can be achieved through Toolbox talks before works begin on the site;
- Adequate site signage, hoarding and fencing is to be erected in relation to the management of non-native invasive species.

If invasive species are present within the development, a control and management plan and program for the particular invasive species is required as part of the planning process and to comply with the provisions of European Communities (Birds and Natural Habitats) Regulations 2011 and EU Regulations 1143/2014. The control plan will describe what and where invasive species are present and what control measures will be implemented, who will implement these and when they will be implemented. Annual monitoring reports on the control program are to be submitted to the Planning Authority until the invasive species is eradicated.

These will be developed in line with

- Kildare County Development Plan 2023-2029
- TII: The Management of Invasive Alien Plant Species on National Roads – Standard (2020)
- NRA (2008). Guidelines for the Management of Waste from National Road Construction Project.
- Biosecurity protocols available for aquatic and riparian species available on the Control of Aquatic Invasive Species and Restoration of Natural Communities in Ireland (CAISIE) www.caisie.ie.

4.5 MITIGATION MEASURES FOR BREEDING BIRDS DURING CONSTRUCTION

Removal of vegetation (e.g. scrub and grassland) should be avoided, between the 1st of March and the 31st of August, to avoid direct impacts on nesting birds. Where the construction programme does not allow this seasonal restriction to be observed, then these areas will be inspected by a suitably qualified ecologist for the presence of breeding birds prior to clearance. Areas found not to contain nests will be cleared within three days of the nest survey. Where the vegetation is not cleared within three days of checks, a repeat check will be required. Should nesting birds be

encountered during surveys, the removal of vegetation will be required to be delayed until after the nesting has finished.

5 SOIL MANAGEMENT

5.1 TOPSOIL

Topsoil on site, will be stripped back and stockpiled within the site boundary for reuse. This will be stored on site in the materials and waste storage area prior to reuse. Topsoil will be stored in stockpiles of max 2m high as per best practice. The stockpiles will be managed and maintained by the main contractor.

The application of herbicide in advance of site clearance is not permitted.

5.2 SPOIL REMOVAL

It is estimated that site strip across the site, including excavations for foundations and site services, will be an average of c.0.75m and generate approximately 29,550m³ of spoil. Of this, any suitable topsoil required for reuse, shall be set aside and stockpiled on site. The balance of material will be removed from site.

During the excavation works, should evidence of contamination be encountered which was not identified within the site investigation report, the soil in question shall be tested and an independent Waste Classification Report issued confirming the status of the material. The Waste Classification Report shall detail methods and recommendations of how to dispose of the contaminated material and these shall be adhered to by the contractor.

The existing topography of the site is such that no significant filling is required.

6 SITE INFORMATION

6.1 PUBLIC RELATIONS/COMMUNITY LIAISON

The site is located in the proximity to a residential area. The Main Contractor will ensure that all agents, sub-contractors and suppliers act in a manner to minimise disruption to the locality. However, access to the site will be directly from the main road – Maynooth Road.

Construction staff will be encouraged to remove all Personal Protective Equipment (PPE) and use wash down facilities before leaving the site.

A senior member of the contractor's site staff will be appointed Liaison Manager and will be responsible for the following:

- Participation and distribution of a local information leaflet on site activities.
- Briefing as necessary with neighbours on progress and issues.
- Liaison with Kildare County Council and emergency services as appropriate.
- Liaison with An Garda Síochána, particularly in relation to traffic movements and permits.
- Preparation of reports for the site meetings on neighbourhood issues.
- Recording & dealing with complaints.

Efficient signage, maintenance and cleanliness of services and temporary facilities will be given high priority.

Due to the nature of construction works, it is essential to operate Good Neighbour Policies wherever possible. The key aspects of the Projects Team's Good Neighbour Policy include:

- Early implementation
- Good client, staff, and neighbourhood liaison.
- Reduction of nuisance factors.
- Clear access for neighbouring premises.
- Clear and concise information.
- Designated liaison officer.
- Working within the prescribed hours

It is essential that the Good Neighbour Policy and any necessary procedures be in place before any works are commenced on site.

6.2 ROLES AND RESPONSIBILITIES

The roles and responsibilities of the personnel involved in the construction works are outlined in Table 6.1. However, it will be necessary that all personnel involved in the project are responsible for ensuring the requirements of the CEMP are followed.

Table 6.1 Roles and responsibilities of the personnel involved in the development project:

Role	Roles and responsibilities
Applicant	Seattle Construction Ltd will manage the construction stage of the project and will have overall responsibility for the compliance with the CEMP. They will appoint staff and contractors to deliver the various Elements of the development and oversee works carried out on site.

Contractor	Contractors will be hired to carry out all works on site. Works carried out will be overseen by Seattle Construction Ltd and on a day-to-day basis by the site manager. All contractors on site are required to comply with all elements of the CEMP.
Site Manager	The Site Manager will be responsible for the day to day management of the site including compliance of all personnel with the CEMP, in addition to Health and Safety, Environmental and Quality elements. The Site Manager is responsible for ensuring that all people on-site are provided with relevant information concerning environmental protection. The Site Manager will be responsible for overseeing any environmental monitoring programmes, carrying out site environmental inspections and audits as necessary, and will co- ordinate the environmental monitoring programme. All records of incidents and environmental issues will be collated and maintained by the site manager. The Site Manager will also be responsible for reviewing all risk assessment method statements and ensuring an appropriate programme of tool box talks are developed and effectively communicated. The site manager will be responsible for overall waste management issues arising from the project. These would include: Implementation and monitoring of waste minimisation, segregation and safe disposal measures and Dissemination of waste reduction and waste management procedures to all relevant personnel on site.
Project Ecologist	The primary responsibilities of the PE shall be to: • Act as the contact for the Planning Authority and agree the frequency and number of site inspections and monitoring programme for the implementation of the Biodiversity related mitigation of the updated Ecological Impact Assessment, CEMP and the objectives and actions of the Habitat and Species Management Plan; • Act as the primary on-site ecological contact for the PC and SM regarding implementation of the Biodiversity related mitigation of the final Ecological Impact Assessment, CEMP and the objectives and actions of the Habitat and Species Management Plan; • Ensure compliance with all Biodiversity related mitigation of the final Ecological Impact Assessment, CEMP and also the objectives and actions of the Habitat and Species Management Plan; • Request relevant records and documentation from the SM where necessary; • Attend routine meetings with the SM; • Keep detailed records of any ecological incidents and the remedies required and implemented. Report these to the PC and Planning Authority; • The PE shall produce the staged monitoring reports in agreement with the Planning Authority on the implementation of Biodiversity related mitigation of the updated Ecological Impact Assessment, CEMP and also the objectives and actions of the Habitat Management Plan; The PE shall submit these directly to the Planning Authority and to the PC. • The PE shall also act as overall technical advisor to the PC and SM regarding the implementation of all Biodiversity related mitigation of the updated Ecological Impact Assessment, CEMP and also the objectives and actions of the Habitat Management Plan Note: No modifications to the final Ecological Impact Assessment and/or Habitat Management and Species Plan can be made post planning permission that will alter the outcomes of the ecological assessments in terms of significance of impacts or that will affect the objectives of the Kildare

	Biodiversity Action Plan. Therefore, no modifications can be made without prior agreement with the Planning Authority and no modifications will be proposed that will negatively impact biodiversity.
All Staff & Subcontractor	All staff and subcontractors have the responsibility to comply with the CEMP including environmental procedures on site to minimise environmental impacts, avoid pollution on-site, including noise and dust, and to respond quickly and effectively to an incident to avoid or limit environmental impacts. All incidents must be reported to the Site Manager immediately.

6.3 TRAINING AND RAISING AWARENESS

As part of site induction for all personnel, a copy of the CEMP will be provided and discussed. This would include discussing the elements outlined in the CEMP including sensitive receptors on site and measures in place to mitigate impacts on these receptors.

As part of toolbox talks relevant elements of the CEMP will be discussed particularly when working in areas where there is potential to impact sensitive receptors on site e.g. KCC drainage network. Training records of all personnel on site will be reviewed and copies held centrally. This is particularly important for those operating excavators, other heavy machinery and with environmental certification to deal with incidents on site.

6.4 REPORTING

The Site Manager / Project Manager is responsible for collating and maintaining all reporting. This would include all environmental and compliance documentation. The following checklist in Table 6.2 is to be employed as a minimum standard by the Main Contractor on a daily basis (to be developed and expanded as necessary, as the project develops). This is to be kept up to date by the Main Contractor and held on site by the site manager.

Table 6.2 CEMP Reporting Checklist

Kilwoghan Woods Development			
Construction & Environmental Management Plan – Daily Record			Date:
Activities			Weather:
Item No.	Item Description	Compliance Check Result Y/N	Comment / Action Required
1	Wheel wash operational.		
2	Noise monitoring operational.		
3	Noise mitigation measures in place and functioning.		
4	Dust monitoring operational.		
	Dust mitigation measures in place and functioning.		
5	Vibration monitoring operational.		
	Vibration mitigation measures in place and functioning.		
6	Site boundary fences / hoardings / gates intact		
7	Road sweeping operational and		

	functioning well.		
8	Any complaints from neighbours. If yes what action required.		
9	Any complaints / comments from local authority or other. If yes what action required.		
10	Construction surface water discharge arrangements in place and operational.		
11	Gate manned and traffic marshalling operational. Any issues		
12	Site toilet facilities fully operational and clean		
13	Canteen facilities operational and clean.		
14	Drying room operational		
15	Site parking facilities operational		
16	Site delivery operations - any problems		

6.5 ENVIRONMENTAL TARGETS AND OBJECTIVES

Targets

- Zero pollution incidents
- Segregation of site waste to include timber, general waste and other materials
- Completion of environmental checklists as required
- Fuel spill kit to be present on each site at all times.
- Maintain all waste licences and waste transfer notes for all waste movements including contractors

Reporting Specific Objectives

- Environmental incidences to be reported to Site Manager without delay
- The following documentation will be reported to Seattle Construction Ltd on a 4-weekly basis:
 - Environmental incidents and nonconformities raised, including nature, status, corrective and preventive actions and potential for statutory intervention;
 - Key environmental issues raised by others;
 - Significant environmental incidents;
 - Complaints and the current status of those complaints;
 - Actions or interventions undertaken by enforcement organisations;

Site Specific Objectives

- Reduce waste, water and energy use on the project including within all of the site offices;
- Ensure that everyone comply with the environmental requirements in the contract;
- Seek ways to incorporate environmental opportunities within the design;
- Seek ways to reduce the carbon footprint of the contract;
- Reduce the amount of construction waste and excavated material generated which goes to landfill;
- Zero pollution incidents onsite;
- Recycle construction waste where possible;
- Maximise beneficial reuse of the materials: and
- Ensure that all waste documentation (waste transfer dockets, permits etc.) is available for inspection at the site office / in head office.

To ensure the CEMP remains 'fit for purpose' for the duration of the project it will be reviewed and updated by the project ecologist during the life of the project to ensure that it remains suitable to facilitate efficient and effective delivery of the project environmental commitments. The environmental review would, consider past performance from inspections, audit report and monitoring data, plan actions required to mitigate forthcoming risks and disseminate best practice.

6.6 ENVIRONMENTAL COMPLAINTS AND INCIDENTS

The site manager will develop and implement an appropriate queries / complaints procedure. Records will include full details of the concerns expressed and ensure that a formal assessment is commenced of the reported concern. The site manager will also discuss complaints with Seattle Construction Ltd and oversee an initial response to the person who has submitted the complaint/concern confirming its receipt.

An investigation to assess the issue of concern will be carried out and decisions made to see what corrective and/or preventive action, or further investigation is necessary. With overall

responsibility for complaints, the site manager will respond within a reasonable timescale and maintain records of all correspondence. If significant corrective action and external stakeholder involvement is required the site manager / project manager will oversee all elements of the process.

Complaints that may be received will be logged, assessed and appropriate action taken as soon as practical. The construction company will be actively seeking liaison with all parties throughout the construction periods. It will be critical to the success of the project that key issues are properly addressed from the outset to create a good working relationship and an integrated team approach to resolving potential issues before they arise.

The project team appreciates that occasionally incidents arise whereby it is impossible or impractical to comply with all the requirements. In these emergency situations, as much notice as possible about the works will be given to the appropriate authorities and neighbours. Examples of such works are Crane and Hoist erection / removal or special crane lifts.

In the event of spillages or other incident steps will be taken to prevent environmental pollution, for example through protection of drains by use of drain covers or booms, use absorbent granules following and 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 corporation and relevant authorities and recorded in the site environmental register.

6.7 WORKING HOURS

Working hours during the course of the construction process will be as per the working hours prescribed in the KCC County Development Plan.

08.00 – 19.00 Monday to Friday

08.00 – 14.00 Saturdays

No works shall take place on site on Sundays or Bank Holidays.

6.8 EMPLOYMENT

During construction, the development will generate direct and indirect employment over the 22 - 24 month construction period. It is estimated that at peak construction periods that there would be approximately 60 - 70 people employed on site.

6.9 SITE STORAGE AND OFFICES

Site offices, meeting rooms, toilet blocks and storage units are likely to be stacked as per example image below.



Figure 6.1: Stacked Office Example

Storage of materials to be minimal. No large materials will be stored on site until such times as they are required. Glazing and cladding systems will be delivered with a view to only keeping one week's worth of installation on site at any one time. Such materials will be loaded out evenly on the required floors. At no given time during the project will materials or other items be placed outside the hoarding line.

6.10 NOISE AND DUST CONTROL

Noise is a material consideration in the planning of construction works and a key aspect of sustainable development. A Demolition and Construction Noise Management Plan will be put in place for the construction process, a third-party consultant will be engaged to prepare this report and monitor activity and noise levels generated. The Noise Management Plan will address the following areas:

6.10.1 Noise Sensitive Locations

The site is bounded to the east and south by residential development. Steps will be taken to ensure that any noise arising will be adequately mitigated. It will be noted that as part of the scheme design due consideration has been given to the issue of noise and physical and operational measures have been proposed in order to mitigate potential noise impacts associated with the site.

6.10.2 Baseline Noise Survey

A baseline noise monitoring programme will be completed prior to construction works commencing. Attended noise monitoring will be carried out at a number of locations yet to be determined. Survey details, procedures and results of this aspect of the baseline noise monitoring programme will be in general in accordance with ISO 1996: Part 2: 2007.

6.10.3 Assessment of Noise Effects

Consideration will also be given to advise in relation to establishing significant construction noise effects as set out in BS5228. During construction the development shall comply with British Standard 5228 'Noise Control on Construction and open sites Part 1. Code of practice for basic information and procedures for noise control.'

6.10.4 Best Practice Guidelines for the control of Construction Noise

BS 5228 includes guidance on the various aspects of construction site noise mitigation, including, but not limited to:

- Liaison with neighbours
- Noise monitoring
- Hours of works
- Selection of quiet plant
- Control of noise sources and screening

6.10.5 The Introduction of New Noise Sources onto the Development lands

The potential of any item of plant to generate noise will be assessed prior to the item being brought onto the site.

- Consideration of Alternatives
- Information to be submitted by the contractor
- In-situ Noise Measurement

6.10.6 Noise Control Audits

Noise control audits will be conducted at regular intervals through the demolition and construction phase of the development. In the first instance it is envisaged that such audits will take place on a monthly basis. This subject to review and the frequency of audits may be increased if deemed necessary.

The purpose of the audits will be to ensure that all appropriate steps are being taken to control construction noise emissions. To this end, consideration will be given to issues such as the following:

- Hours of operation
- Opportunities for noise control 'at source'
- Optimum siting of plant items
- Correct use of proprietary noise control measures
- Materials handling
- Good maintenance of plant and equipment

Correct use of screening provided and opportunities for provision of additional screening.

Dust is a material consideration in the planning of demolition and construction works and a key aspect of sustainable development. A Dust Management Plan will be put in place for the demolition and construction process, a third-party consultant will be engaged to prepare this report and monitor activity and noise levels generated.

6.10.7 Dust Management Plan Overview

The objective of dust control at the site is to ensure that no significant nuisance occurs at nearby sensitive receptors. In order to develop a workable and transparent dust control strategy, a dust management plan will be formulated by drawing on best practice guidance from Ireland, the UK and the USA.

Effective site management regarding dust emissions will be ensured by the formulation of a dust management plan (DMP) for the site, by the Main Contractor. The key features of the DMP will be:

- the DMP will cover both the excavation and fill of soil material phase, soil stabilization phase and the main construction phase.
- the specification of a site policy on dust;

- the identification of the site management responsibilities for dust;
- the development of documented systems for managing site practices and implementing management controls;
- the development of means by which the performance of the dust management plan can be assessed.

6.10.8 Site Management

The aim is to ensure good site management by avoiding dust becoming airborne at source. This will be done through good design and effective control strategies.

At the planning stage, the soil cut & fill and construction activities and siting of storage of materials will take note of the location of sensitive receptors and prevailing wind directions in order to minimise the potential for significant dust nuisance. In addition, good site management will include the ability to respond to adverse weather conditions by either restricting operations on-site or using effective control measures quickly before the potential for nuisance occurs:

During working hours, technical staff shall be on site and available to monitor dust control methods as appropriate;

Complaint registers will be kept on site detailing all telephone calls and letters of complaint received in connection with construction activities, together with details of any remedial actions carried out;

It is the responsibility of the contractor at all times to demonstrate full compliance with the dust control conditions within the Dust Management Plan once drafted.

At all times, the procedures put in place will be strictly monitored and assessed.

The dust minimisation measures shall be reviewed at regular intervals during the soil cut & fill phases and construction phase to ensure the effectiveness of the procedures in place and to maintain the goal of minimisation of dust through the use of best practice and procedures. In the event of dust nuisance occurring outside the site boundary, site activities will be reviewed and satisfactory procedures implemented to rectify the problem. Specific dust control measures to be employed are highlighted below.

6.10.9 Dust Control – Site Roads

Dust arising from site roads can be easily and effectively controlled. 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 20 km/hr will be applied as an effective control measure for dust for on-site vehicles.

Bowsers will be available during periods of dry weather throughout the construction period. Research has found that the effect of watering is to reduce dust emissions by 50%. The bower will operate during dry periods to ensure that unpaved areas are kept moist. The required application frequency will vary according to soil type, weather conditions and vehicular use.

Any hard surface roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only.

6.10.10 Dust Control - Land Clearing / Earth Moving

Land clearing / earth-moving during periods of high winds and dry weather conditions can be a significant source of dust.

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

6.10.11 Dust Control – Storage Piles

The location and moisture content of storage piles are important factors which determine their potential for dust emissions.

Overburden material will be protected from exposure to wind by storing the material in sheltered regions of the site;

Regular watering will take place to ensure the moisture content is high enough to increase the stability of the soil and thus suppress dust. The regular watering of stockpiles has been found to have an 80% control efficiency.

6.10.12 Dust Control – Public Roads

Spillage and blow-off of debris, aggregates and fine material onto public roads will 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 at all times to restrict the escape of dust;
- Public roads outside the site shall be regularly inspected for cleanliness, as a minimum on a daily basis, and cleaned as necessary. A road sweeper will be made available to ensure that public roads are kept free of debris.
- A wheel wash facility will be employed at the exit of the site so that traffic leaving the site compound will not generate dust or cause the build-up of aggregates and fine material in the public domain.

6.10.13 Dust Management Summary

The pro-active control of fugitive dust will ensure that the prevention of significant emissions, rather than an inefficient attempt to control them once they have been released, will contribute towards the achievement of no dust nuisance occurring during the soil cut excavation and construction phase. The key features with respect to control of dust will be:

- The specification of a site policy on dust and the identification of the site management responsibilities for dust issues;
- The development of a documented system for managing site practices with regard to dust control;
- The development of a means by which the performance of the dust minimisation plan can be monitored and assessed;
- The specification of the measures to be taken to control dust emissions before it occurs and effective measures to deal with any complaints received.

6.11 ROADS

Prior to the works commencing, the main contractor, in conjunction with the local authority (if so desired by the KCC) and prior to the commencement of construction operations, shall carry out road pavement and footpath condition surveys along roads which provide access to the site. These

will record the baseline structural condition of the road being surveyed immediately prior to construction.

Detailed surveys (condition schedules) of adjoining walls, roads, footpaths, grass verges etc. shall also be prepared. Copies of the relevant parts are to be made available to adjoining owners and Kildare County Council. This record will form the basis of assessing repairs to adjoining areas in the future should a dispute arise as to their cause. Roadways are to be kept clean of muck and other debris. A road sweeping truck is to be provided if necessary to ensure that this is so.

These surveys shall take the form of video footage and photographic records.

Reinstatement at completion of the works will involve:

- The cleaning of the existing sewers in the vicinity of the development as required.
- Testing and cleaning of all watermain in the development to the requirements of the Local Authority prior to connection to the public watermain. This will reduce the risk of contamination to the public water supply when the new network is connected to the system.
- Repair of any damage to any adjacent public roadways, kerbs, grass verges etc. in accordance with Kildare County Council requirements.
- Reinstatement of all excavations to the requirements of Kildare County Council.
- Leaving the area in a neat and clean condition, removing all deleterious materials that may have been deposited during construction works.

Construction traffic will enter from and exit onto Maynooth Road. It will be a requirement of the works contract that the main contractor is required to carry out vacuum road sweeping operations to remove any project related dirt and material deposited on the road network by construction / delivery vehicles. Road Sweepers will dispose of material following sweeping of road network, to licensed waste facility.



Figure 6.2: Example Vacuum Road Sweepers

The frequency of road sweeping operations and the frequency of emptying / water changes on the road sweeper unit is likely to vary across the duration of the construction works, depending on the weather and the nature of operations at any given time.

Exposed earth surfaces shall be capped with geotextile and stone capping layer, as soon as practicably possible after excavation / uncovering. Uncapped earth surfaces shall not be trafficked by plant / machinery or construction delivery were practicably possible.

The main contractor shall be responsible for monitoring the condition (and where necessary repairing) stone capped surfaces to ensure that excessive mud / debris is not being tracked onto the surrounding road network.

It is a requirement of the works contract that the main contractor will be required to provide wheel washing facilities, and any other necessary measures to remove mud and organic material from vehicles exiting site.



Figure 6.4: Example static wheel wash systems

The main contractors shall ensure that loads of materials leaving each site will be evaluated and covered if considered necessary to minimise potential dust impacts during transportation.

The transporting entity (sub-contractor and /or suppliers) shall take all reasonable measures while transporting waste or any other materials likely to cause fugitive losses from a vehicle during transportation to and from site, including but not limited to:

- Covering of all waste or material with suitably secured tarpaulin/ covers to prevent loss;
- Utilisation of enclosed units to prevent loss.

Throughout the course of the construction of the proposed development, ongoing visual inspections and monitoring of the haul roads will be undertaken to ensure any damage caused by construction traffic is recorded and that the relevant local authority is notified. Arrangements will be made, by the Main Contractor, and at their own cost, to repair any such damage to an appropriate standard (as required by the KCC) in a timely manner such that any disruption is minimised.

Upon completion of the construction of the proposed development, the surveys carried out at preconstruction phase shall be repeated and a comparison of the pre and post construction surveys carried out. Where such comparative assessments identify a section of road as having been damaged or as having deteriorated as a result of construction traffic, the road will be repaired to the preconstruction standard or better (as required by the KCC).

6.12 LIAISON

Kildare County Council's relevant departments will be contacted and liaised with prior to the commencement. Where necessary Road Opening Licence applications will be submitted for approval from Kildare County Council. It is acknowledged that many parties will have an interest in this project throughout the duration of the construction and operation of the development. The construction phase will have a direct impact on the local environment, particularly concerning the following:

- Local residents and landowners
- Tenants and Residents Associations
- Planning Authority
- Other Statutory Authorities
- Building Control
- Environmental Health
- Utilities Providers

The project manager will be responsible for project strategic liaison whilst the construction manager will be responsible for day-to-day liaison and logistics for all of the construction related activities.

Both will be permanently based on site with the construction manager as the first point of contact for all concerns, issues and complaints. A display board will be erected outside the site, which as minimum will identify key personnel contact addresses and telephone numbers.

Workshops and forums will be held on a regular basis to maintain open relationships and keep stakeholders up to date on construction progress and its impact on all third parties. Newsletters, liaison meetings, progress photos, are all methods by which the Main Contractor can communicate how they intend to carry out the works and keep people informed.

Complaints that may be received will be logged, assessed and appropriate action taken as soon as practical. We will be actively seeking liaison with all parties throughout the construction periods. It will be critical to the success of the project that key issues are properly addressed from the outset to create a good working relationship and an integrated team approach to resolving potential issues before they arise.

6.13 TRAFFIC MANAGEMENT PLAN (TMP'S)

Traffic Management Plans will be put in place by the main contractor for the construction of the new entrance and service connections as part of Road Opening Licence applications to Kildare County Council.

6.14 PEST CONTROL

The Main Contractor will take all necessary steps to ensure that pests, rodents, birds, insects and plants are controlled at all times. Control measures will be undertaken prior to commencement of any works on the site. Poison where used, will comply with any relevant Health and Safety requirements and which eliminate any danger to children, household pets and other wildlife. Old and discussed service pipes and voids will be removed or filled to avoid the potential pest to infest the site.

6.15 VEHICLE MOVEMENT AND SITE DELIVERIES

Access routes to and from the site, delivery times and off-loading proposals will be formally agreed with the KCC. In developing the construction and logistics plans, the Main Contractor will fully include representatives of KCC, and other interested parties in a consultation process to ensure that our intentions are properly communicated, agreed and do not unduly affect the surrounding residential, retail properties and public open space.

All deliveries of materials, plant and machinery to the site and removals of waste or other material, will take place within the permitted hours of work. Vehicle movements will be planned to ensure arrival and departure times are maintained inside the agreed working hours. No day time or night time parking of vehicles will be permitted outside agreed areas. The logistics plans indicate the site access routes at each stage of the project, initially utilizing existing access routes and subsequently the new permanent access routes.

- Vehicles delivering concrete, reinforcement and other building materials
- Vehicles delivering large material (example facade panels)

Over the course of the soil cut & fill, lime stabilization and construction programme (which is estimated at circa 22 – 24 months), the total number of large vehicle movements is estimated as follows (large vehicles are assumed to include spoil lorries, concrete trucks, large rigid delivery vehicles and HGV's)

- Earthworks, Site Strip and Site Services – estimated 250 No. vehicle journeys.
- Buildings Construction – estimated 3,200 No. vehicle journeys.

6.16 DELIVERY SYSTEM

The key to efficient material/plant deliveries will be the effective management and co-ordination/timing of all deliveries. Deliveries will be coordinated to prevent queuing of vehicles adversely affecting traffic flow and to minimise disruption to local traffic. They will be timed and coordinated to avoid conflict with collection of waste, other deliveries (particularly to adjoining owners) and rush hour traffic. During the project procurement phase, the Main Contractor will produce a schedule of deliveries, adopting a 'just in time' approach to avoid potential conflicts and unnecessary storage and handling.

6.17 EMERGENCY WORK

The project team appreciates that occasionally incidents arise whereby it is impossible or impractical to comply with all the requirements. In these emergency situations, as much notice as possible about the works will be given to the appropriate authorities and neighbours. Examples of such works are Crane and Hoist erection / removal or special crane lifts.

In the event of spillages or other incident steps will be taken to prevent environmental pollution, for example through protection of drains by use of drain covers or booms, use absorbent granules following and 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 relevant authorities and recorded in the site environmental register. The site manager will be the person responsible for managing any emergency environmental issue.

6.18 SITE SECURITY

Hoarding/temporary fencing will be erected to delineate all site works from public areas located adjacent to the development. The development will also be monitored by CCTV cameras. A site compound and car parking facility will also be set up.

The construction area will be isolated during construction as indicated on the site hoarding plan with hoardings in line with the temporary works design.

Security of the site is an important issue with respect to restricting site entry to personnel solely involved in the construction process during working hours and preventing unauthorised access out of hours. Site access for all personnel and visitors will be strictly controlled and all visitors will report to the site offices prior to entering the construction area.

Regular inspections of the hoarding and fencing around excavations will be undertaken to ensure that the safety of any vehicles or pedestrians is not compromised. The site compound including offices and welfare facilities will be provided within the construction boundary as indicated on the enclosed logistics plan.

Whereas there will be certain provision for Site Operatives and Visitor Parking, the Main Contractor will encourage use of public transport where possible, and will actively discourage parking on the surrounding residential estate roads, by construction operatives involved in the project.

6.19 CRANES, LIFTING OF EQUIPMENT AND ROAD CLOSURES

Cranes and concrete placing booms may be required during construction. A combination of goods hoists and telehandlers will offload and distribute materials for the finishing trades.

All lifting equipment and appliances will carry current test certificates and be inspected prior to use. Trained banksmen will attend the cranes at all times.

Permits and approval for road restrictions will be applied for with KCC and all parties involved kept informed on progress. The Main Contractor will obtain approval from the Environmental Health Department and Planning to ensure that what is planned is feasible within the times agreed.

6.20 DELIVERY OF MATERIALS

All offloading operations will take place inside the site boundary.

6.21 ROAD SAFETY

The main contractor will organise the construction site so that vehicles and pedestrians are kept separate at the access points. Gatemen will ensure that the interface between deliveries and road traffic will be controlled at delivery gates. The key message is: construction site vehicle incidents can be prevented by the effective management of transport operations throughout the construction process.

Key issues in dealing with traffic management on site are:

- Keeping pedestrians and vehicles apart
- Minimising vehicle movements
- People on site
- Turning vehicles
- Visibility
- Signs and instructions

Accidents can occur from groundwork's to finishing works and managers, workers, visitors to sites and members of the public can all be at risk. Inadequate planning and control is the root cause of many construction vehicle accidents. Keeping pedestrians and vehicles apart is key. 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 – the Main Contractor will provide separate entry and exit gateways for pedestrians and vehicles with a gate man in attendance 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.
- Crossings - where walkways cross roadways, we will provide a clearly signed and lit crossing point where drivers and pedestrians can see each other clearly;
- Visibility - the Main Contractor will make sure drivers driving out onto public roads can see both ways along the footway before they move on to it;
- Obstructions - the Main Contractor will not block walkways so that pedestrians have to step onto the vehicle Route; and
- Barriers - the Main Contractor will install a barrier between the roadway and walkway.

People on site

The Main Contractor shall take steps to make sure that all workers are fit and competent to operate the vehicles, machines and attachments they use on site by, for example:

Checks when recruiting drivers/operators or hiring contractors;

- Training drivers and operators;
- Managing the activities of visiting drivers.

People who direct vehicle movements will be trained and authorized to do so. Accidents can also occur when untrained or inexperienced workers drive construction vehicles without authority. Access to vehicles will be managed and people alerted to the risk

The Main Contractor will provide:

- Aids for drivers - Mirrors, CCTV cameras or reversing alarms will be provided that can help drivers can see movement all-round the vehicle;
- Gatemen will be appointed to control manoeuvres and who are trained in the task;
- Lighting - 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;
- Clothing - Pedestrians on site will wear high visibility clothing.

Signs and instructions

The Main Contractor will make sure that all drivers and pedestrians know and understand the routes and traffic rules on site. Use standard road signs where appropriate.

The Main Contractor will provide induction training for drivers, workers and visitors and send instructions out to visitors before their visit. We will make sure that all the drivers and our supply chain personnel are competent and have relevant training and certification appropriate for their job.

6.22 RECORD KEEPING

Records will be kept for all waste material which leaves the site, either for reuse on another site, recycling or disposal. A recording system will be put in place to record the construction waste arisings on site. A copy of the Waste Collection Permits, Certificates of Registration, Waste Facility Permits and IED or Waste Licences will be maintained on site at all times.

The waste manager or delegate will record the following;

1. Waste taken for reuse off-site.
2. Waste taken for recycling.
3. Waste taken for disposal.
4. Reclaimed waste materials brought on-site for reuse.

For each movement of waste on or off-site, a signed docket will be obtained by the waste manager from the contractor, detailing the weight and type of the material and the source and destination of the material.

This will be carried out for each material type. This system will also be linked with the delivery records. In this way, the percentage of C&D waste generated for each material can be determined.

The system will allow the comparison of these figures with the targets established for the recovery, reuse and recycling of C&D waste and to highlight the successes or failures against these targets.

6.23 OUTLINE MANAGEMENT PROCEDURE

1. Responsibility for Waste Audit

The appointed waste manager will be responsible for conducting a waste audit at the site during the C&D soil cut & fill and construction phases of the development.

2. Review of Records and Identification of Corrective Actions

A review of all the records for the waste generated and transported on or off-site will be undertaken mid-way through the project. If waste movements are not accounted for, the reasons for this will be established in order to see if and why the record keeping system has not been maintained. The waste records will be compared with the established recovery/reuse/recycling targets for the site. Each material type will be examined, in order to see where the largest percentage waste generation is occurring. The waste management methods for each material type will be reviewed in order to highlight how the targets can be achieved. Waste management costs will also be reviewed. Upon completion of the C&D phase, a final report will be prepared, summarising the outcomes of waste management processes adopted and the total recycling/reuse/recovery figures for the development.

6.24 DISCHARGE AND SITE DRAINAGE

Refer to separate Construction Surface Water Management Plan submitted as part of the planning application.

6.25 STORAGE OF HAZARDOUS MATERIALS

Chemical products such as sealants, adhesives, glues, epoxy resins, solvent based paints, isocyanate based foams/ paints, mineral oil and cement based products are used every day on construction sites. Any such materials shall have accompanying safety data sheets (SDS) and Main Contractor shall be responsible for the use and storage of all such materials on sites, in accordance with the manufacturers requirements and in accordance with the current health and safety legislation applicable at the time.

The Main Contractor shall provide further information on any proposed on-site fuel storage. However, if fuel storage is proposed to take place on site, then as a minimum the Main Contractor shall provide, operate and maintain, a proprietary self-contained and 110% self-bunded fuel store system such as that indicated in the image below, complete with pump, dispensing hose, removable fuel particle filter, automatic shut off trigger.



Figure 6.5: Example of self bunded fuel store system.

In addition, a 120 litre oil/hydrocarbon spill kit and an oil spill drip tray shall be maintained in readiness on site, in the event of an accidental fuel / oil or hydraulic fluid spill / leak from construction plant or equipment. An example being available from Safety Care Ireland or equivalent.



Figure 6.6: Example of 120L Chemical Spill Kit and Oil Spill Drip Tray

6.26 SITE SECURITY AND HOARDING

The site boundary will be secured with a combination of solid timber hoarding and/or palisade fencing and/or demountable 'heras' type fencing. The type and exact alignment/location of these may vary during the course of the works.



Figure 6.7: Example – Demountable 'Heras' fence and solid timber hoarding with ballast blocks

7 GOOD PRACTICE GUIDE FOR CONSTRUCTION AND DEMOLITION ENVIRONMENTAL MANAGEMENT

7.1 GENERAL CONSIDERATIONS

All site staff shall be briefed on noise mitigation measures and the application of best practicable means to be employed to control noise.

Good Quality site hoarding should be erected, designed to maximise the reduction in noise levels Medium and high-risk sites The contact details of the contractor and site manager shall be displayed to the public, together with the permitted operating hours, including any special permissions given for out of hours work.

The site entrance shall be located to minimise disturbance to noise sensitive receptors, subject to traffic restrictions.

Internal haul routes shall be maintained, and steep gradients shall be avoided where possible for medium and high risk sites

Material and plant loading and unloading shall only take place during normal working hours unless the requirement for extended hours is for traffic management (i.e. road closure) or health and reasons (application must be made to KCC a minimum of 4 days prior to proposed works).

Use rubber linings in chutes, dumpers and hoppers to reduce impact noise for medium and high-risk sites.

Minimise opening and shutting of gates through good coordination of deliveries and vehicle movements.

No materials shall be burned on site.

Adequate dust/debris screening should be in place at the site boundary to contain and minimise the amount of windblown dust. This must be maintained in good condition at all times.

All consignments containing material with the potential to cause air pollution being transported by skips, lorries, trucks or tippers must be covered during transit on and off site.

The site shall be dampened down as necessary to minimise windblown dust when necessary or during periods of dry weather. Where dust is likely to be a persistent problem a water spray system e.g. (IBC tanks fitted with hoses) must be put in place from the commencement of the works where required.

Dust suppression equipment must be used when point source emissions are likely.

The entry and exit points to the site should be constructed of hard standing which is regularly dampened to minimise dust emissions.

Use of road sweeper and/or handheld dust vacuums as required to wash external site perimeter to include pavements.

Implementation of a detailed complaints recording and handling procedure

7.2 VEHICLE ACTIVITY

Ensure all vehicle movements (on site) occur within normal working hours (other than where extension of work requiring such movements has been granted in cases of required road closures or for health and safety reasons).

Plan deliveries and vehicle movements so that vehicles are not waiting or queuing on the public roads. If unavoidable engines should be turned off.

Minimise the opening and closing of the site access through good coordination of deliveries and vehicle movements.

Plan the site layout to ensure that reversing is kept to a minimum Medium and high-risk site.

Where reversing is required use broadband reverse sirens or where it is safe to do so, disengage all sirens and use trained banksmen.

Wheel washing of vehicles prior to exiting the site shall take place to ensure that adjoining roads are kept clean of dirt and debris. Regular washing of adjoining streets should also be carried out by the developer, as required by mechanical road sweepers.

7.3 MONITORING

Establish pre-existing levels of ambient noise by baseline monitoring or use of noise maps.

Carry out regular on-site observation monitoring and checks/audits to ensure that BPM is being used at all times. Such checks shall include;

- Hours of work
- Presence of mitigation measures
- Number and type of plant
- Construction methods

Site reviews must be recorded and made available for inspection.

Monitor noise and vibration continuously during demolition, piling, excavation and sub and superstructure works at agreed locations and report to KCC at agreed intervals and in an agreed format.

To comply with this the following must take place:

- The initial monitoring locations must be agreed with officers of KCC and must remain in situ, unless agreed otherwise. If additional monitoring is required, the new locations must be agreed with KCC.
- The results of the monitoring must be forwarded to officers of KCC Environmental Enforcement Section every two weeks in the following format:
 1. Provide the construction noise level as defined in British Standard 5228 and the peak particle velocity readings for the hours of operation of the site. This will include the construction noise level for any overtime period worked outside of normal working hours.
 2. Provide a report detailing and discussing the noise and vibration levels over the reporting period.
 3. If a breach is recorded the follow up action that took place to prevent any further breaches must be included in the report.

4. This information must be provided in electronic format. If results are required owing to complaints, the results will be provided as soon as possible by the contractor to KCC.

Appraise and review working methods, processes and procedures on a regular basis to ensure continuous development of BPM.

The 'ABC' Method detailed in Paragraph E.3.2 of BS 5228-1:2009 shall be used to determine acceptable noise levels for day, evening and nighttime work.

Vibration levels are recommended to be kept below 1.0 mm/sec (PPV) where possible. Where levels are expected to exceed this value residents must be warned, and an explanation given.

Appropriate dust suppression must be employed to prevent fugitive emissions affecting those occupying neighboring properties or pathways, in so far as possible. Street and footpath cleaning must be undertaken during the demolition and ground works phase.

The following air quality monitoring procedures must be applied:

1. Continuous real time particulate (i.e. PM10 and PM2.5) monitoring along the site boundary must be undertaken during any demolition, ground works or during a construction phase which KCC deems necessary. The location of particulate monitors to be agreed with KCC prior to installation. The results of the monitoring shall be made available to KCC on request in an agreed format.
2. Dust deposition monitoring must be undertaken using a methodology agreed in advance with KCC.

7.4 LIAISON WITH LOCAL COMMUNITY AND BUSINESS

Appointment of a Liaison Officer as a single point of contact to engage with the local community and respond to concerns.

Keeping local residents and businesses informed of progress and timing of particular construction activities that may impact on them, including any special permissions given for out of hours work.

A copy of this plan must be sent to KCC as a matter of urgency in the case of sites 14 days in advance of commencement of works for any site.

Send regular updates at appropriate intervals to all identified affected neighbours/ businesses via a newsletter and post relevant information on the site hoarding. Also make the information available via email/website including weekly noise monitoring reports

7.5 COMPLAINTS HANDLING

Maintenance of a site complaints log detailing

1. Name and address of complainant.
2. Time and date complaint was made.
3. Date, time and duration of noise, or other issues complained of.
4. Characteristics of nuisance, such as noise rumble, clatters, intermittent, etc.
5. Likely cause or source of nuisance.
6. Weather conditions, such as wind speed and direction.
7. Investigative and follow-up actions, including response sent to complainant.

Contact details for the site manager and liaison officer should be displayed prominently on the site hoarding.

8 CONCLUSION

This outline CEMP has been submitted to show Seattle Construction Ltd commitment to Construction and Environmental Management of the proposed project. This CEMP has outlined the environmental principles that will be adopted to ensure that potential environmental impacts and health and safety issues associated with the construction processes are effectively managed, minimised and / or eliminated. The plan details the roles and responsibilities of the applicant, the site manager, project manager and site workers and how these controls are to be implemented.

The outline CEMP will be adopted by the appointed main contractor in due course and shall be expanded and updated to suit, as the further detail of the project develops, and to take account of any particular planning conditions that may be imposed.

The outline CEMP will require regular monitoring throughout the development programme to ensure potential risks are adequately managed throughout site clearance, earthworks and construction works, as is the normal process.

We have outlined that the nature of the construction of the proposed buildings and associated site works is very conventional in nature and poses negligible risk to adjoining properties. There are no particularly difficult or challenging aspects to the construction.

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