Preliminary Construction & Environmental Management Plan

Rathfarnham Castle Development, Dublin 14

2332

March 2025

Issue No. 1

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Table of Contents

1 Introduction

1.1 General

This document presents an outline plan to inform the construction of the proposed development and ensure active control, management and monitoring of waste and environmental impacts associated with the proposed development during both the Construction Phase.

This plan will be developed by the chosen Works Contractor and implemented throughout the construction phase of the project to ensure:-

- That all site activities are effectively managed to minimise the generation of waste and to maximise the opportunities for on-site reuse and recycling of waste materials.
- To ensure that all waste materials generated by site activities are removed from site by appropriately permitted waste haulage contractors and that all wastes are disposed of at approved waste licensed / permitted facilities in compliance with the Waste Management Acts 1996, 2007 & 2011.
- To manage and control any environmental impacts (noise, vibration, dust, water) that construction work activities may have on neighbouring properties and on the local receiving environment.

This Preliminary Construction & Environmental Management Plan will demonstrate how it is proposed during the Construction Phase to comply with the following relevant legislation and relevant Best Practice Guidelines:-

- *Waste Management Acts 1996 to 2011*
- *Waste Management (Collection Permit) Regulations 2007 (SI No. 820 of 2007)*
- *Waste Management (Collection Permit) Amendment Regulations 2008 (SI No. 87 of 2008)*
- *Department of the Environment, Heritage and Local Government – Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects – July 2006.*

Each section of the Preliminary Construction & Environmental Management Plan presents the potential environmental impacts, proposed monitoring methodologies, limit values where applicable, based on the concept of Best Practice and the proposed mitigation measures to be implemental at the site. Reference to National and International Standards are also included where relevant.

2 Description of Proposed Development

2.1 General

The development broadly consists of the refurbishment of the redundant former yards and outbuildings of Rathfarnham Castle into an economically viable mixture of appropriate public and visitor uses to include community, cultural, retail, café/ restaurant and tourist amenity.
The site is currently vacant, and associated earthworks will form part of the development.

2.2 Scope of Construction Management Plan

The range of works to which this Preliminary Construction & Environmental Management Plan will be integrated into during the design phase and construction phase of the site over an approximate 24 month period, are summarised as follows:-

- Site works including drainage and landscaping.
- Shallow excavations on the site for foundations and for drainage runs.
- Construction of single storey café and retail buildings
- Waste Management during the Construction Phase.

It is proposed that this Preliminary Construction & Environmental Management Plan will be developed by the Contractor at the beginning of the construction phase of the works and include a detailed Sequencing and Phasing Schedule and Traffic and Parking Management Plan for the works.

2.3 Access to the Works and Traffic Management

It is proposed that access to the site will be the entrance to the existing car park which will form part of the site compound. This will allow safe and proper segregation of vehicular movement from the local traffic.

This approach is taken to ensure that access is maintained at all times for adjoining local residents, business and schools.

A full detailed Part 8 Construction Traffic Management Plan will be developed by the selected Contractor prior to commencement of site works for submission to SDCC for their review. It is envisaged that the Contractor will meet with SDCC to agree all details prior to submission after a consultation with all stakeholders.

This will include, but not be limited to, agreement on the height and line of closed board hoarding, associated pedestrian routes, exact location of access and delivery gates etc. It is envisaged that there will be at a minimum of 2 No. dedicated gate personal provided by the Contractor at all times during site operations to manage logistical operations in accordance with the Construction Traffic Management Plan. A '*Just in Time'* approach will have to be employed on site for all deliveries and cart-away material exiting site given storage will be limited given site restrictions. The main Contractor will agree with SDCC its methodology to ensure that all approach roads and the environs are free at all times from any Demolition and Construction waste including the use of Road Cleaning Machines.

All sub-contractors and supply chain members will be issued with the relevant section of the Construction Traffic Management Plan including preferred agreed approach routes, specific site logistic, and delivery hours in accordance with permitted working hours etc prior to their appointment by the Main Contractor.

2.4 Proposed Building Construction

The new café and retail buildings are expected to be formed with traditional reinforced concrete strip footings on standard or trench fill formations with rising masonry walls. The superstructures are likely to be formed with a timber frame system.

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3 Waste Management Plan – Construction Phase

Waste materials generated by earthworks, demolition and construction activities will be managed according to the Department of the Environment, Heritage and Local Government's 2006 Publication - *Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects.*

The Waste Management Plan will specifically address the following points:-

- Analysis of waste arising / material surpluses
- Specific Waste Management objectives for the Project including the potential to reuse and process on-site demolished buildings for further use in the construction phase.
- Asbestos Removal
- Methods proposed for Prevention, Reuse and Recycling
- Waste Handling Procedures
- Waste Storage Procedures
- Waste Disposal Procedures
- Waste Auditing
- Record Keeping

3.1 Waste Minimisation

Construction Waste minimisation and prevention shall be the primary responsibilities of the Purchasing Manager and the Project Manager for the Contractor during construction of the buildings and they shall ensure the following:-

- Materials will be ordered on a 'just in time' basis to prevent over supply and site congestion.
- Materials shall be correctly stored and handled to minimise the generation of damaged materials.
- Materials shall be ordered in appropriate sequence to minimise materials stored on site.
- Sub-contractors will be responsible for similarly managing their wastes.

In addition, as the useable area for construction is confined the Contractor will need to carefully manage storage of materials on site.

3.2 Programme of Waste Management for Construction Works

The Project Manager for the Contractor will determine the best methods for waste minimisation, reduction, reuse, recycling and disposal as the construction phase progresses and waste materials are generated in accordance with procedures outlines in the Waste Management Plans.

3.3 Construction Waste Disposal Management

It is proposed that from the outset of construction activities, a dedicated and secure compound within the site containing segregated bins and/or skips, into which all waste materials generated by construction site activities will be established at the site.

In order to ensure that construction staff correctly segregate waste materials, it will be the responsibility of the Site Construction Manager to ensure all staff are informed by means of clear signage and verbal instruction and made responsible for ensuring site housekeeping and the proper segregation of construction waste materials.

It will be the responsibility of the Project Manager or his/her delegate that a written record of all quantities and natures of wastes exported off-site are maintained in a Waste File at the Project office and that all contracted waste haulage drivers hold an appropriate Waste Collection Permit for the transport of waste loads.

It is proposed that waste materials generated by the demolition of existing structures and the construction of new structures will be collected and stored in separate clearly labelled skips in a predefined waste storage area in the site compound and that these materials will be collected by a Permitted Waste Contractor holding an appropriate Waste Collection permit in compliance with *Waste Management (Collection Permit)Regulations 2007 (SI No. 820 of 2007) and Waste Management (Collection Permit)Amendment Regulations 2008 (SI No. 87 of 2008)* and that they will be sent for recycling and reuse to appropriately Permitted / Licensed Waste Facilities in compliance with *Waste Management (Facility Permit and Registration) Regulations S.I. No. 821 of 2007and the Waste Management (Facility Permit and Registration) Amendment Regulations S.I. No. 86 of 2008.*

Prior to the commencement of the Project, the Construction / Project Manager shall identify permitted Waste Contractor(s) who shall be employed to collect and dispose of all wastes arising from the project works. In addition, the Construction / Project Manager shall identify all waste licensed / permitted facilities that will accept all expected waste exported off-site and will maintain copies of all relevant Waste Permits / Licences as required.

3.4 On-Site Waste Reuse and Recycling Management

It is proposed that construction waste material generated by the demolition of the existing buildings that is deemed by the project Engineer to be suitable for reuse on the Project site for fill material during the temporary phase, such as infill piling matts and haul ramps etc, will be re-used as directed. This initiative shall provide a positive environmental impact to the construction phase as follows:-

- Reduction in the requirement for virgin aggregate materials from quarries
- Reduction in energy required to extract, process and transport virgin aggregates
- Reduced HGV movements associated with the delivery of imported aggregates to the site

- Reduced noise levels associated with reduced HGV movements
- Reduction in the amount of landfill space required to accept C&D waste

The employing of the above is in line with the LEED accreditation which the new building will attain.

3.5 Inert Wastes

Site development shall involve excavated materials in the form of clays and fill materials.

The waste material generated by construction works will be mixed Construction & Demolition (C&D) waste, comprising of concrete, tiles, ceramics, bricks and blocks. Material will be sorted and separated on site into different classifications for removal off site which is considered standard procedure.

All wood waste generated by site works will be inspected and examined and will be segregated as re-useable wood and scrap wood waste.

3.6 Hazardous Wastes

While it is not anticipated to encounter hazardous wastes on the site, should any be encountered the procedures outlined in this document and in the Construction & Demolition Waste Management Plan should be followed.

The management of all hazardous waste arising (such as but not limited to asbestos and lead) if they occur, shall be coordinated in liaison with the Contractors Health and Safety Management.

3.7 Contaminated Soil

Detailed site investigations have been carried out on the site and it is not anticipated that there will be contaminated soil on the site. The report is appended to this document.

Where it is discovered that existing grounds including top and sub soils may be contaminated by fuel oil hydrocarbons, these areas of ground will be isolated, tested for contamination, and pending the results of laboratory testing, will be excavated and exported off-site by an appropriately Permitted Waste Contractor holding an appropriate Waste Collection permit and that this hazardous material will be sent for appropriate treatment / disposal to an appropriately Permitted / Licensed Waste Facility. It is the responsibility of the Project Manager or his/her delegate that a written record of all quantities and natures of wastes reused / recycled during the project are maintained in a Waste File at the Project office.

While a detailed site investigation report has been carried out and a factual waste classification report is available for review. However the main contractor may require further investigation as required so that material to be removed from site can be suitably classified and disposed of at a suitable location.

4 Environmental Management Plan

The Environmental Management Plan (EMP) will be implemented to ensure that potential impacts relating to noise nuisance and disturbance, dust deposition nuisance, surface water and vibrational impacts are effectively minimised, controlled and monitored to ensure that the site construction activities do not have an adverse or unacceptable impact on local receptors, adjacent property, adjacent users and human health or on the wider receiving environment.

4.1 Environmental Aspects & Impacts

The following section describes the environmental aspects and impacts that are relevant to the construction phase of the proposed development and form the basis of the proposed environmental management and monitoring programme.

Definitions of Environmental Aspects and Impacts:-

Environmental Aspect:	Element of an activity, products or service that can interact with the existing environment.
Environmental Impact:	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an activity, products or services.
Direct Impacts:	Those impacts associated directly with the environmental aspect (e.g. increased noise and dust levels).
Indirect Impacts:	Those impacts associated indirectly with the environmental aspect (e.g. ‘disposal of waste’ and ‘fumes emitted during transportation to landfill contributing to the greenhouse effect’ impact.
Normal Situations:	The project programme is progressing as planned.
Abnormal Situations:	The project programme is not progressing as planned because of unforeseen and unpredictable circumstances.
Emergency Situations:	An unplanned and unwanted situation or activity has occurred (e.g. fire, explosion, malicious damage).

4.2 General Site Works – Construction Phase

4.2.1 Construction Phase Operating Hours

The proposed operating hours for the project are proposed to be as follows:-

07:00hrs – 18:00hrs Monday to Friday
07:00hrs – 14:00hrs Saturdays
Site closed on Sundays / Public Holidays

Compliance with these strict noise controls will be verified by the programme of construction and demolition phase noise monitoring proposed in this CEMP.

4.2.2 Temporary Works

There will be temporary works associated with propping and construction of the building which are all normal construction techniques.

4.2.3 Demolition Works on the Site

The works can be defined as follows:-

- Removal of existing cobbled floors within outbuildings
- Removal of all loose elements including glass, aluminium, brickwork and blockwork.
- Demolition of selected timber roofs
- Demolition of walls and removal of existing ground surfaces

4.2.4 Excavations on the Site

Excavations on the site will be shallow for local foundations, trench fill and drainage runs.

4.2.5 Storage of plant, materials and operatives vehicles

In addition to minimising materials on site, it is proposed that all plant, materials and operatives vehicles shall be stored in dedicated compound areas within the site in order to minimise the interaction that each element may have on the other. That is, the separation of operative vehicles from aggregate material stockpiles will minimise the potential for vehicle movements to generate dust. All plant shall be stored in a dedicated area following the cessation of site activities at the end of each working day or during periods when the plant is not being utilised. It is recommended that a specific area on site shall be delineated.

Site vehicles and mobile plant (e.g. Generators) have the potential to contaminate soil and groundwater by leaking oil or fuel. The storage of these items of plant in a suitable dedicated area on mobile bunded units and drip trays will serve to minimise the potential for contamination as any leaks, oil spills or stains on the ground will be more readily identifiable and will better ensure that an immediate or more timely response.

The Site Manager shall conduct a daily visual inspection of the site to identify any signs of ground contamination from plant storage areas and that where a spill is identified, the source shall be identified and the appropriate repair / maintenance be conducted. All daily visual inspections shall be recorded by the site manager or his/her delegate on a “Daily Site Inspection Sheet”. All fuels, oils and liquid materials shall be stored in a dedicated bunded area or within a dedicated impermeable storage unit to minimise the potential for soil and groundwater contamination. Storage units containing all fuels oils and liquid material must be locked and secured overnight so as to prevent against pilferage and vandalism.

A policy of “zero tolerance” shall be applied at the site in relation to the dumping of empty or partially empty oil, lubricant, fuel, or any other non solid material in the vicinity of the site. All empty containers must be stored in a dedicated area designed to prevent the contamination of soil and groundwater as a result of leaking drums or containers prior to the proper disposal off site to a suitably licensed waste disposal facility.

4.3 Dust Management Programme

Construction site activities have the potential to generate fugitive emissions of dust levels as a result of demolition works and vehicle movement on unsealed site surfaces, windblown dusts from aggregate / fine material stockpiles, angle grinding of concrete and stone, crushing activities if required and the movement and deposition of aggregates, soils / clay and other materials at the site.

4.3.1 Proposed Dust Monitoring Programme

Dust deposition levels will be routinely monitored in order to assess the impact that site activities may have on the local ambient air quality and to demonstrate that the environmental control measures in place at the site are effective in minimising the impact of construction site activities on the local receiving environment.

4.3.2 Dust Management and Suppression / Abatement Techniques

It shall be the responsibility of the Site Manager to ensure that dust emissions generated by site activities are controlled and minimised and as such will implement appropriate dust suppression techniques as appropriate. Appropriate techniques will include water spraying of stockpiles and haul roads and temporarily curtailing specific operations when unfavourable weather conditions are prevailing (e.g. during dry, windy weather when the prevailing winds may cause dust to be blown towards local receptors).

A road sweeper vehicle shall be used to clean soiled roads in the vicinity of the site when required. This will also ensure that the potential for elevated concentrations of particulate matter entering any surface water drain will be minimised.

The Site Manager shall maintain a complaints log and in the event of a complaint relating to dust nuisance, an investigation shall be initiated.

4.4 Pollution Control

4.4.1 General

Contamination of Watercourses, storm sewers and ground water is a risk during the construction phase. Detailed construction method statements will be prepared by the appointed civil/ ground works contractors and approved by the local authority and relevant statutory bodies (e.g. Inland Fisheries).

Identified risks include spillages into storm sewers and unprotected ground, allowing pollutants to enter watercourses, storm sewers or ground water. A construction management strategy shall be put in place to manage this risk would be the use of exclusion zones where practicable.

4.4.2 Sediment and Erosion

Similar to the above, adjacent watercourses/groundwater need to be protected from sedimentation and erosion due to direct surface water runoff generated onsite during the construction phase. To prevent this from occurring surface water discharge from site will be managed and controlled for the duration of the construction works until the permanently attenuated surface water drainage system of the proposed site is complete.

A temporary drainage system shall be installed prior to the commencement of the construction works to collect surface water runoff by the site during construction. The temporary surface water management facility will include throttle runoff and allow suspended solids to be settled out and removed before being discharged in a control manner to the agreed outfall. All inlets to the cascading settling basins will be riprapped to prevent scour and erosion in the vicinity.

4.4.3 Accidental Spills and Leaks

All oils, fuels, paints and other chemicals will be stored in a secure bunded construction hardstand area located at the site compound. Refuelling and servicing of construction machinery will take place in a designated hardstand area which is also remote from any surface water features and ditches (when not possible to carry out such activities off site). A response procedure will be put in place to deal with any accidental pollution events and spillage kits will be available and construction staff will be familiar with the emergency procedures and use of the equipment

4.4.4 Concrete

Concrete batching will take place off site, wash down and wash out of concrete trucks will take place off site and any excess concrete is not to be disposed of on site. Pumped concrete will be monitored to ensure there is no accidental discharge. Mixer washings are not to be discharged into surface water drains.

4.4.5 Disposal of Wastewater from Site

Discharge from any vehicle wheel wash areas is to be directed to on-site settlement ponds, debris and sediment captured by vehicle wheel washes are to be disposed off-site at a licensed facility. Foul drainage discharge from the construction compound will be tankered off site to a licensed facility until a connection to the public foul drainage network has been established.

4.4.6 Pest Control

It is essential that a good standard of hygiene be maintained on site during the course of construction if rodents are not to be attracted to it. A specialist Pest Control Contractor shall be appointed to manage potential infestations around the site and around the site compounds.
It is not unusual for construction sites to be infested with rats before construction commences. The rats may be living in hedges, on the banks of a nearby river, in old drains etc.
Prior to Construction the following work is carried out

- Determine if the land is infested, and if so, the land should be disinfested before building operations commence.
- All refuse should be removed from site.
- Old drains and other disused pipes should either be filled with concrete, or alternatively dug out and the junctions with working drains sealed.

Good housekeeping and high hygiene standards are essential to maintaining high levels of pest control on the site. The following day to day controls are strictly adhered to.

- Canteen and break facilities are provided at a single location. Taking breaks and eating food are not permitted in construction areas.
- Waste food, empty food tins, and other waste which might attract rodents should be stored in bins with tight fitting lids.
- Accumulations of old timber, bricks and debris, provide harbourage for rodents and should

be cleared away as quickly as is possible.

- Stocks of building material should be neatly stacked and stored in the site compound.
- Building materials are delivered to site as needed to avoid prolonged stockpiling of materials.
- Waste is removed from site regularly by a licenced waste contractor. All waste permit numbers and records are maintained in the site folders.

5 Liaison with Local Community & Neighbours

It is recognized that there may be concerns among the local Community & Residential neighbours and about the impacts of construction. In addition, to developing this Preliminary Plan and setting out clear and thorough procedures for the management of the project the Contractor will be required to:

- Appoint a Community Liaison Officer as a single point of contact to engage with the community and respond to concerns.
- Ensure specific construction tasks such as large deliveries and standard material deliveries are pre-planned and scheduled to minimize disruption where possible.
- Keep local residents and neighbours informed of progress and the timing of particular construction activities that may impact on them.

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