BARRETT **MAHONY**
CIVIL & STRUCTURAL
CONSULTING ENGINEERS

Construction Environmental Management Plan

Project:
Proposed Strategic Housing Development,
Kenelm, Deer Park,
Howth, Co. Dublin

Contact Information

Barrett Mahony Consulting Engineers Ltd
52-54 Lower Sandwith Street, Dublin 2
D02 WR26

Telephone: 01 677 3200
Email: bmce@bmce.ie

www.bmce.ie

BM BARRETT MAHONY CONSULTING ENGINEERS CIVIL & STRUCTURAL

Document Information

Project
Howth Road

Project No.
19.196

Document Title
Construction Environmental Management Plan

Document No.
19.196.-IR-06 CEMP

Document History

Issue	Date	Description	Orig.	PE	Issue Check
P1	26.02.2021	DRAFT	DO'R	SO'C	GH
P2	05.03.2021	DRAFT	DO'R	SO'C	GH
P3	07.05.2021	DRAFT	DO'R	SO'C	GH
P4	20.05.2021	Issued or SHD Application	DO'R	SO'C	GH

EXECUTIVE SUMMARY

This Construction Environmental Management Plan (CEMP) has been developed to outline commitments and mitigation measures to be implemented by GLL PRS HOLDCO Limited during the construction of the proposed SHD residential development at lands at Deer Park, Howth, Co. Dublin. Refer Fig 1 below, site location map.

Figure 1 *– Site Location Map (Site Red Line Boundary Indicative only)*

The CEMP provides a framework from which a more detailed CEMP will be developed by the appointed Contractor to implement the mitigation measures described below.

This outline CEMP sets out the overall management strategy for excavation and construction works for the proposed development. The CEMP aims to ensure the management of all construction activity is carried out in a planned, structured and considerate manner which minimises the impacts of the works on the local environment, residents and commercial activities in the vicinity of the site. Due to the nature of construction works, there may be unforeseen events which occur at the site and the project team will actively manage any changes and discuss with the relevant authorities, where required. The CEMP should be viewed as a live document that will be updated as the development progresses and if any circumstances change.

This CEMP is being submitted as part of a Strategic Housing Development (SHD). An Ecological Impact Assessment (EcIA) in the form of an Appropriate Assessment (AA) and Natura Impact Statement has been prepared for the proposed site development by Scott Cawley.

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. 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:

- 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'.*
- ProPG document *'Planning & Noise – Professional Practical Guidance on Planning & Noise - New Residential Development May 2017'*
- *CIRIA C532: Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors*
- *CIRIA C692: Environmental Good Practice on Site*
- *BPGCS005: Oil Storage Guidelines.*
- *CIRIA C648: Control of Water Pollution from Linear Construction Projects.*

This plan must be read in conjunction with the Environmental Impact Assessment Report (EIAR) that accompanies the application, the Construction Waste Management Plan (CWMP) prepared by Byrne Environmental, the Arboricultural Report prepared by John Morris and the Natura Impact Statement (NIS) prepared by Scott Cawley. All construction phase mitigation and monitoring measures presented in those reports are deemed adopted for the purpose of the CEMP.

INTRODUCTION

This 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 CEMP provides a framework from which a more detailed CEMP will be developed by the appointed Contractor to implement the mitigation measures described below. The CEMP should be viewed as a live document that will be updated as the development progresses and if any circumstances change arising from:

- Detailed Compliance requirements agreed with Fingal 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 report should be read in conjunction with the following supporting information submitted with the application which contain construction phase mitigation and monitoring measures where deemed appropriate. These measures are deemed adopted for the purpose of the CEMP and the appointed contractor will be required to implement them during the construction phase. The relevant documentation is as follows;

1. Environmental Impact Assessment Report
2. Traffic & Transport Assessment (BMCE)
3. Infrastructure Report (BMCE)
4. Arboricultural Report (John Morris)
5. Construction Demolition Waste Management Plan (Byrne Environmental)
6. Natura Impact Statement (Scott Cawley)

STRUCTURE OF THE CEMP

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 Natura Impact Statement (NIS) and AA screening.)
2. Analysis of the Potential Impacts
3. Site Information (Roles & responsibilities etc.)
4. Construction Management Information: a description of the works, construction programme, mitigation measures, Traffic Management Plan, proposed working hours, details of construction access routes, equipment to be used, etc.;
5. Potential environmental issues related to the 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.

1. PROJECT DESCRIPTION

1.1 SITE CONTEXT

The site is bounded to the north by Howth Road (R105) and to the east, by the access road to Howth Castle and Deer Park Golf Club and further east with St. Mary's Church. The west of the site is bounded by garden boundary walls to existing houses. The south is bounded by the Deer Park Golf Club.

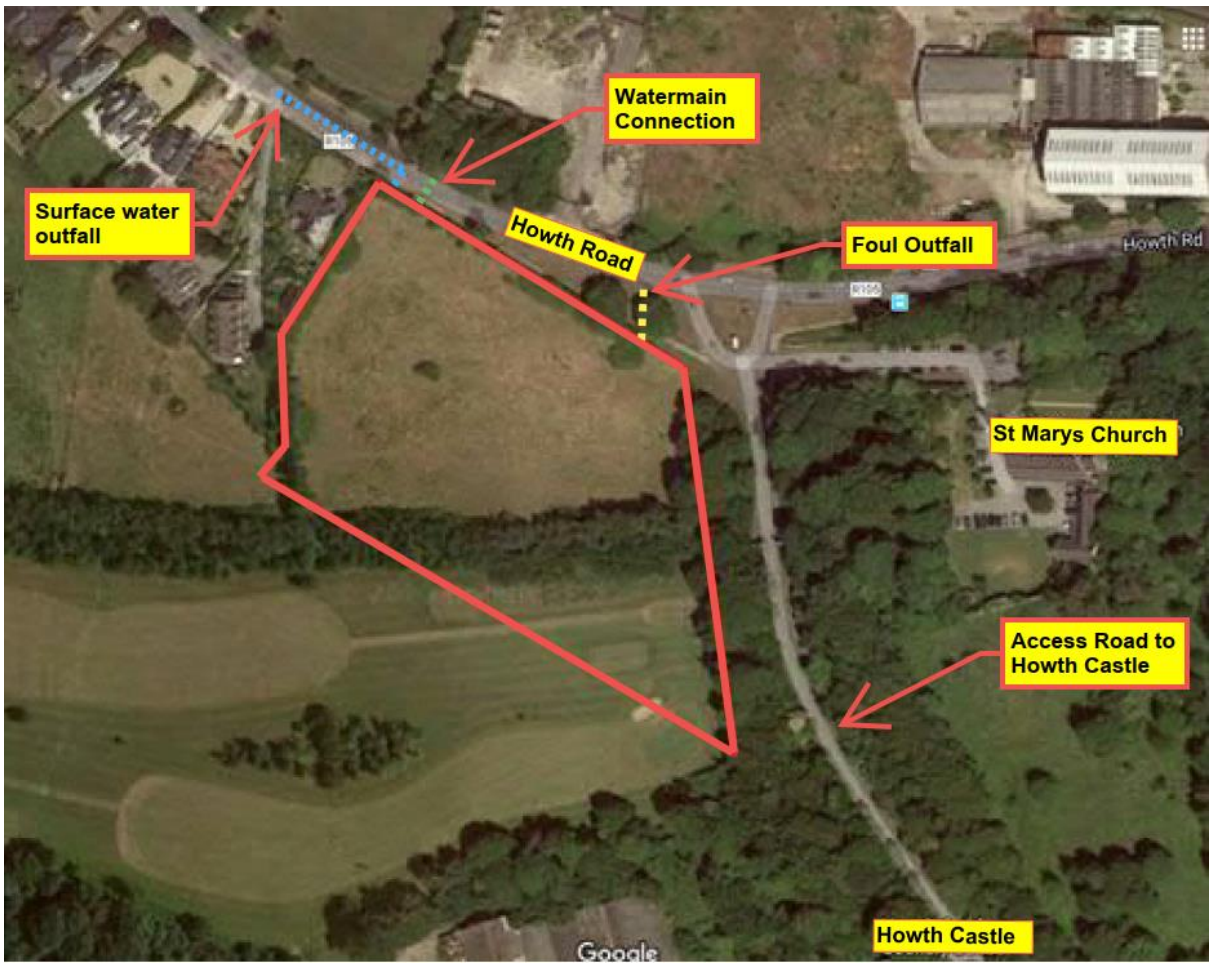

***Figure 2** – Aerial Overview of Site (Site Red Line Boundary Indicative only)*

1.2 PROPOSED DEVELOPMENT

The proposed development layout is shown in Fig. 2 and consists of the following:

- The construction of a new vehicle site entrance (at the north-west corner of the site) and a new pedestrian entrance near the north of the site.
- Construction of a basement car park below two blocks (Blocks A & B). The car park will contain 132no. car spaces and 325no. long stay bicycle spaces with an additional 30no. short-stay / visitor bicycle spaces provided at grade / ground floor level.
- Construction of 3no. buildings (Blocks A-C) containing a total of 162no. apartments.
- Associated site works including buried foul, surface water and watermain connections and new surface level finishes and landscaping.

Figure 3 *– Proposed development*

2. CONSTRUCTION IMPACT ASSESSMENT SUMMARY

The primary construction phase impacts associated with the proposed development are identified as being;

(i) Noise, vibration & dust effects
(ii) Increased traffic movements
(iii) Risk of impact to local water bodies, specifically the European Designated sites in Baldoyle Bay.
(iv) Protection of trees to be retained on site and those along the eastern boundary (outside the application area) that line the avenue to the wider demesne.
(v) Protection of the integrity of the demesne wall that forms the northern boundary during its partial demolition to facilitate 2 no. access points.
(vi) Impacts on unknown sub surface archaeology.

2.1 SUMMARY OF CONSTRUCTION PHASE MITIGATION MEASURES TO PROTECT EUROPEAN DESIGNATED SITES

The NIS sets out the potential impacts from the proposed development on the conservation objectives from nearby Special Protection Areas (SPAs) and Special Areas of Conservation (SAC). An assessment was undertaken to determine whether mitigation is required and sets out what measures are to be implemented during construction to avoid or reduce the potential impacts.

The contractor will be required to implement the following specific mitigation measures to prevent the release of hydrocarbons, polluting chemicals, sediment/silt and contaminated waters that may arise during the construction phase. The NIS states the following mitigation measures in respect of the construction stage:

- Specific measures to prevent the release of sediment over baseline conditions in the downstream receiving water environment, during the construction work. These measures include, but not limited to, the use of silt fences, silt curtains, settlement lagoons and filter materials.
- Provision of exclusion zones and barriers (e.g. silt fences) between earthworks, stockpiles and temporary surfaces to prevent sediment washing into the existing drainage systems and hence the downstream receiving water environment.
- Provision of temporary construction surface drainage and sediment control measures to be in place before earthworks commence.
- Weather conditions will be taken into account when planning construction activities to minimise risk of run-off from the site.
- Prevailing weather and environmental conditions will be taken into account prior to the pouring of cementitious materials for the works adjacent to any surface water drainage features, or drainage features connected to same. Pumped concrete will be monitored to ensure no accidental discharge. Mixer washings and excess concrete will not be discharged to existing surface water drainage systems. Concrete washout areas will be located remote from any surface water drainage features, to avoid accidental discharge to watercourses. Washing out of any concrete trucks on site will be avoided.
- Any fuels or chemicals (including hydrocarbons or any polluting chemicals) will be stored in a designated, secure bunded area(s) to prevent any seepage of potential pollutants into the local surface water network. These designated areas will be clearly sign-posted and all personnel on site will be made aware of their locations and associated risks.

- All mobile fuel bowsers shall carry a spill kit and operatives must have spill response training. All fuel containing equipment such as portable generators shall be placed on drip trays. All fuels and chemicals required to be stored on-site will be clearly marked. Care and attention will be taken during refuelling and maintenance operations. Particular attention will be paid to gradient and ground conditions, which will be available at all times and shall include as a minimum:
    - Valid Safety Data Sheets;
    - Health and Safety, Environmental controls to be implemented when storing, handling, using and in the event of spillage of materials;
    - Emergency response procedures/precautions for each material; and,
    - The Personal Protective Equipment (PPE) required when using the material.
- Implementation of response measures to potential pollution incidents.
- Robust and appropriate Spill Response Plan and Environmental Emergency Plan will be prepared prior to works commencing and they will be communicated, resourced and implemented for the duration of the works. Emergency procedures/precautions and spillage kits will be available and construction staff will be trained and experienced in emergency procedures in the event of accidental fuel spillages.
- All trucks will have a built-on tarpaulin that will cover excavated material as it is being hauled off-site and wheel wash facilities will be provided at all site egress points.
- If groundwater is encountered during the proposed works and temporary pumping at a very localised location is required:
    - An appropriate dewatering system and groundwater management system specific to the site conditions will be designed and maintained. These will include measures to minimise any surface water inflow into the excavation, where possible, and the prolonged exposure of groundwater to the atmosphere will be avoided.
    - Qualitative and quantitative monitoring will be adopted to ensure that the water is of sufficient quality to discharge. The use of silt traps will be adopted if the monitoring indicates the requirement for same with no silt or contaminated water permitted to discharge to the receiving water environment.
- All waters shall be drained through appropriate filter material prior to discharge from the construction sites.
- The removal of any made ground material, which may be contaminated, from the construction site and transportation to an appropriate licenced facility shall be carried out in accordance with the Waste Management Act, best practice and guidelines for same.
- A discovery procedure for contaminated material will be prepared and adopted by the appointed contractor prior to excavation works commencing on site. These documents will detail how potentially contaminated material will be dealt with during the excavation phase.
- Implementation of measures to minimise waste and ensure correct handling, storage and disposal of waste (most notably wet concrete, pile arisings and asphalt).
- 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.
- All of the above measures implemented on site will be monitored throughout the duration of construction to ensure that they are working effectively, to implement maintenance measures if required/applicable and to address any potential issues that may rise.

3. OUTLINE DEVELOPMENT PROGRAMME

As the development is subject to the planning application process, it is not possible to confirm exact dates against a timeline at this stage. However, key project milestones are considered to be the following:

- Receipt of a Grant of Planning Permission;
- Progression through detailed design stage;
- Issue of tender documents to shortlisted Contractors followed by period for tender returns, assessment and award of contract;
- Mobilisation of contractor; preparation of Contractor's Construction Management Plan (CMP)
- Site set-up, installation of perimeter hoarding to secure the site.
- Enabling works and services diversions within the site.
- Excavation works for proposed basement area.
- Commencement of foundation works.
- Completion of super-structures for each of the buildings.
- External facades and completion of internal fit-out works.
- Completion of site works including final services connections.
- Completion of all external landscaping works.
- Final handover and certification.

Based on other developments of a similar scale and complexity, it is considered that the construction works will take approximately 22 months upon commencement.

A more detailed programme will be developed by the Contractor once appointed and included in the updated version of this plan.

All statutory consents and licences required to commence an onsite activity will be obtained by the Contractor ahead of work commencing and giving the appropriate notice periods. These will include,

- Construction notices;
- Connections to existing utilities and main sewers;
- Licence to discharge from the site to public systems.

4. SITE MANAGEMENT

4.1 ROLES AND RESPONSIBILITIES

The roles and responsibilities of the personnel involved in the construction works are outlined in Table 4. However, it will be necessary that all personnel involved in the project are responsible for ensuring the requirements of the CEMP are followed.

Role	Roles and responsibilities
Applicant	GLL PRS HOLDCO 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 appointed to carry out all works on site. Works carried out will be overseen by GLL PRS HOLDCO 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.
All Staff and Subcontractors	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.

Table 4. *Roles and responsibilities of the personnel involved in the development project:*

4.2 HEALTH & SAFETY

The primary aim of planning for safety is ensuring the safety of site operatives and visitors within the site and all pedestrians, road users, neighbours and members of the public in the vicinity and affected by the development.

The works will be carried out by a reputable contractor with adequate skilled resources and management skills to deliver the project to the quality required within the expected timeframe and budget and the minimisation of disruption in so far as practical.

The construction contractors will utilise best practices and most appropriate techniques to deliver the works in an efficient manner with the minimum nuisance created to the locality and environs of the site.

All works which are intended to be carried out will be reviewed in advance and detailed method statements provided to ensure that the site management team have taken into consideration all factors and all foreseen potential issues that can be mitigated against.

The requirements of the Safety and Health Acts and Regulations will be taken into consideration and as is required under law, a Project Supervisor Construction Stage will overview the safety arrangements which will cover both the site and the external environs of the work area.

4.3 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. Fingal County Council 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.

4.4 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 table 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.

Howth Road SHD Development, Howth Road, Howth, Co Dublin			
Construction & Environmental Management Plan – Daily Record			**Date:**
Activities			**Weather:**
Item No.	**Item Description**	**Compliance Check Result Y/N**	**Comment / Action Required**
1	Wheel wash / wheel cleaning facility 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		

4.5 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 GLL PRS HOLDCO LIMITED 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 complies 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 appointed contractor 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

4.6 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 GLL PRS HOLDCO 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.

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.

4.7 Working Hours

Site development and building works shall be carried out only between the hours of:

0700 to 1900 Mondays to Fridays inclusive, and between
0800 to 1400 hours on Saturdays and works will not take place on Sundays and public holidays.

Deviation from these times will only be allowed in exceptional circumstances where prior written approval has been received from the planning authority.

It is noted that these working hours are consistent with those permitted (ABP Ref. TA06F.306102) for the Claremont development which is opposite the proposed development site.

4.8 Employment

During construction, the development will generate direct and indirect employment over the estimated 22 month construction period. It is estimated that at peak construction periods that there would be approximately 40 - 50 people employed on site.

4.9 SITE ACCESS

The proposed vehicular entrance to the site is located to the north west of the site adjacent to Howth Road (see Fig. 4) and this entrance will be used initially for construction access and then permanently as the main vehicle entrance. The entrance location provides the required sightlines for vehicles exiting the site – refer to BMCE drawing 19196-HOW-BMD-00-ZZ-DR-C1001_PROPOSED ROAD LAYOUT - SIGHTLINES for further detail.

It is also proposed to form a pedestrian entrance to the site as indicated in Fig 5.

The forming of both entrances will require the demolition of a portion of the existing boundary wall adjacent to the public footpath. A method statement of the demolition of this portion of the wall is included in Appendix 1 of this document.

***Figure 4** – Location of proposed vehicle entrance from Howth Road (portion of boundary wall to be demolished)*

4.10 SITE DELINEATION & SECURITY

Following the appointment and mobilization of the Contractor, they will take possession of the site and set up with perimeter hoarding and internal site compound for site operative offices and welfare facilities. The indicative Contractor's site set up is shown in Fig 5 below.

The initial work on site will include the erection of an appropriate standard hoarding/security fence around the entirety of the site to secure the site perimeter and prevent access from members of the public. The boundary to the site will be maintained at all times.

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. Regular inspections of the hoarding and fencing around the basement excavations will be undertaken to ensure that the safety of any vehicles or pedestrians is not compromised.

Example – Demountable 'Heras' Fence

Example – Solid timber hoarding with ballast blocks

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.

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.

4.11 SITE COMPOUND

The Contractor will provide and maintain an area within the site for construction and management personnel offices, operative's welfare facility, canteen, visitor parking and for the storage of construction materials.

The preliminary location of these facilities has been marked on Figure 5 near the north western corner of the site and the proposed site entrance. The compound will be moved or altered dependent on construction needs over the course of the project.

The pedestrian and vehicle routes from the site offices and compound area to the remainder of the site areas will be formed as segregated routes to separate pedestrian site operatives from construction vehicles.

Figure 5 – *Initial Site Set Up with Compound (Site Red Line Boundary Indicate only)*

Site offices, meeting rooms, toilet blocks and storage units are likely to be stacked as per Fig 6 below.

Figure 6 – *Example of stacked site offices*

Due to the site restrictions, storage of materials will 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.

4.12 TREE PROTECTION

An arborists report has been prepared and accompanies this planning application. The report confirms that certain trees on the site will be removed and certain trees will be retained, protected and incorporated into the completed development. All trees marked for retention as identified in the Landscaping proposals will be fenced off at the outset and for the duration of the construction to avoid damage to the trunk, branches or root systems of the trees.

BS 5837:2012 'Trees in relation to design, demolition and construction. Recommendations' is the principle standard applicable to protection of trees during construction. The design and management recommendations as set out in "BS5837:2012" are considered as "best practice" regarding the selection, retention, protection, and management of tree within the scope of new developments.

In respect of tree protection, whether vertical or horizontal, all must conform or equate to the recommendations of Section 6, BS5837: 2012, must be fit for purpose and commensurate with the nature of development and the expected day-to-day activities of the site works.

4.13 NOISE

Noise levels will be controlled as set out below to ensure that the construction is managed in a way that minimises detrimental impact to the amenities of local residents.

During the construction of the works the following codes and regulations will be adhered to:

- BS 5228-1:2009+A1:2014 and BS 5228-2:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites,
- Safety, Health and Welfare at Work (General Application) Regulations 2007 to 2016, Part 5 Noise and Vibration

The noise limits to be applied for the duration of the construction works are those specified in the Category B of BS 5228 which are deemed appropriate with reference to BS5228, section E.2 which advises that noise levels should not exceed "*70 decibels in rural, suburban and urban areas away from main road traffic and industrial noise*".

The BS 5228 Category B limits are summarised below and will be applied at the nearest sensitive receptors to the works.

- Night (23.00 – 07.00) = 50dB (LAeq, T)
- Evening (19.00 – 23.00) = 60dB (LAeq, T)
- Day (07.00 – 19.00) = 70dB (LAeq, T)

The total noise (LAeq) which should not be exceeded during daytime is therefore 70dB.

Noise levels will be monitored continuously and where noise levels exceed the thresholds, adequate steps will be taken by the site management to review works and implement additional mitigation measures.

The general mitigation principles and methods will include;

- Avoidance of unnecessary revving of engines and switching off of equipment when not required;
- Keeping internal haul roads well maintained;
- Minimise drop heights of materials;
- Start-up plant sequentially rather than together;
- Where practical enclose noise sources;
- Keep site equipment away from sensitive receptors such as adjacent houses along the northern and eastern boundaries of the site.
- Regular maintenance of plant and equipment.

No heavy construction equipment/machinery (to include pneumatic drills, construction vehicles, generators, etc.) shall be operated on or adjacent to the construction site before 08.00 or after 19:00 Monday to Friday, and before 08:00 and after 14:00 on Saturdays – in accordance with the working hours permitted in the grant of planning permission.

No activities shall take place in site on Sundays or Bank Holidays. No activity, which would reasonably be expected to cause annoyance to residents in the vicinity, shall take place on site between the hours of 19:00 and 08:00. No deliveries of materials, plant or machinery shall take place before 08:00 in the morning or after 19:00 the evening.

4.14 VIBRATION

The Contractor will be required to assess and monitor vibration levels during all works activities to identify any risks of vibration impacts at nearby receptors.

Table 5 below sets out the vibration threshold levels applicable at nearby soundly constructed buildings to avoid cosmetic damage to the building.

Property Type	***Allowable vibration (peak particle velocity) at the closest part of the relevant building to the source of vibration, at a frequency of***		
	Less than 15Hz	**15Hz to 40Hz**	**40Hz and above**
Residential or light commercial building	15mm/s	20mm/s	50mm/s

Table 5 Allowable maximum vibration levels during construction

4.15 DUST

Dust control will be best achieved at sources and activities will be carried out in a manner that removes or minimizes dust generation.

In order to develop a workable and transparent dust control strategy, the measures set out below have been formulated by drawing on best practice guidance from Ireland, the UK and the US, such as:

- Department of Environment, Heritage and Local Government (DOEHLG), *Quarries and Ancillary Activities, Guidelines for Planning Authorities* (2004).
- US Environment Protection Agency (USEPA), *Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition* (periodically updated) (1986).
- The Scottish Office – Development Department, *Planning Advice Note PAN50 Controlling the Environmental Effects Of Surface Mineral Workings Annex B: The Control of Dust at Surface Mineral Workings* (1996) and
- Institute of Air Quality Management (IAQM), *Guidance on the Assessment of Dust from Demolition and Construction* (2014).

4.15.1 Site Management

The site activities will be undertaken with due consideration of the surrounding environment and the close proximity of sensitive receptors such as residents and pedestrians. Dust management during the construction phase will be the most important aspect in terms of minimising the impacts of the project on the surrounding air quality. The following measures will also be implemented to ensure impacts are minimised:

- Complaint registers will be kept detailing all telephone calls and letters of complaint received in connection with construction activities, together with details of any remedial actions carried out;
- Equipment and vehicles used on site will be in good condition such that emissions from diesel engines etc. are not excessive; and
- Pre-start checks will be carried out on equipment to ensure they are operating efficiently and that emission controls installed as part of the equipment are functional.

Dust deposition levels will be monitored on a regular basis in order to assess the impact that site activities may have on the local ambient air quality. The following procedure will be implemented:

- The dust deposition rate will be measured by positioning Bergerhoff Dust Deposit Gauges at strategic locations near the boundaries of the site for a period of 30 (+/- 2) days if required. Monitoring should be conducted as required during periods when the highest levels of dust are expected to be generated i.e., during site preparation works and soil stripping activities.
- The exact locations will be determined after consideration of the requirements of Method VDI 2119 with respect to the location of the samplers relative to obstructions, height above ground and sample collection and analysis procedures.
- After each 30 (+/- 2 days) exposure period, the gauges will be removed from the sampling location, sealed and the dust deposits in each gauge will be determined gravimetrically by an accredited laboratory and expressed as a dust deposition rate in $mg/m^2/day$ in accordance with the relevant standards.
- Technical monitoring reports detailing all measurement results, methodologies and assessment of results shall be subsequently prepared and maintained by the Contractor's Site Manager.
- A limit value of 350 $mg/m^2/day$ will be imposed. If this limit is exceeded, the Contractor will review the dust control measures implemented over the previous monitoring period and alter work practices as required to mitigate the risk of further exceedances of the limit.

4.15.2 Dust Control Measures

The aim is to ensure good site management by avoiding dust becoming airborne at source.

This will be done through good design, planning and effective control strategies. The siting of construction activities and the limiting of stockpiling 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 will be available to monitor dust levels as appropriate; and
- At all times, the dust management procedures put in place will be strictly monitored and assessed.

The dust minimisation measures should be reviewed at regular intervals during the construction phase to ensure the effectiveness of the procedures in place and to maintain the goal of minimisation of dust generation. In the event of dust nuisance occurring outside the site boundary, site activities will be reviewed, and procedures implemented to rectify the problem. Specific dust control measures to be employed are presented below.

Site Routes

Site access routes (particularly unpaved areas) can be a source of fugitive dust from construction sites if control measures are not in place. The most effective means of suppressing dust emissions from unpaved roads is to apply speed restrictions. Studies show that these measures can have a control efficiency ranging from 25% to 80%.

- A speed restriction of 20 km/hr will be applied as an effective control measure for dust for on-site vehicles or delivery vehicles within the vicinity of the site;
- Bowsers will be available during periods of dry weather throughout the construction period. Research shown found that the effect of surface watering is to reduce dust emissions by 50%. The bowser 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; and
- Any hard surface roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced areas shall be restricted to essential site traffic only.

Excavation

Excavation works 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, watering shall be conducted to ensure moisture content of materials being moved is high enough to increase the stability of the soil and thus suppress dust;
- During periods of very high winds (gales), activities likely to generate dust emissions should be postponed until the gale has subsided.
- The movement of truck containing materials with a potential for dust generation to an off-site location will be enclosed or covered.
- Provision of water sprays in dust sensitive locations will be introduced, e.g. concrete cutting etc;
- Public roads outside the site will be regularly inspected for cleanliness and cleaned as necessary.

- Burning of materials is prohibited.

Stockpiling
The location and moisture content of stockpiles are important factors which determine their potential for dust emissions. The following measures will be put in place:

- Overburden material will be protected from exposure to wind by storing the material in sheltered parts of the site,
- Regular watering will take place during dry/windy periods to ensure the moisture content is high enough to increase the stability of the soil and suppress dust;

Site Traffic on 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 at all times to restrict the escape of dust;
- Any hard surface site 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.
- A power washing facility or wheel cleaning facility will be installed near to the site compound for use by vehicles exiting the site when appropriate, and
- Road sweepers will be employed to clean the site access route as required.

General
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 satisfactory management of dust by the construction contractor.

4.16 DIRT
The site is currently fully enclosed along the northern boundary with the demesne wall. The first phase of the construction stage will necessitate the construction of the proposed site entrance. This will involve partial demolition of the boundary wall. The method statement for these works is included in Appendix 1.

There is one vehicular entrance to the development located on Howth Road, a straight road which provides good sight lines in both directions for safe access and egress – refer to BMCE 19196-HOW-BMD-00-ZZ-DR-C1001_PROPOSED ROAD LAYOUT - SIGHTLINES. All construction traffic will use this entrance for access into the construction site. 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 roa

Road Sweepers will dispose of material following sweeping of the road network, to a licensed waste facility.

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 where 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 (see typical examples below), and any other necessary measures to remove mud and organic material from vehicles exiting site.

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 loses 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; and
- Utilisation of enclosed units to prevent loss.

The main contractor, in conjunction with the local authority (if so desired by the LA) 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. These surveys shall take the form of video footage and photographic records.

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 LA) 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 LA).

We recommend that Howth Road including footpaths both sides of the road are surveyed for 150m west and 150m east of the proposed site entrance.

4.17 BASEMENT EXCAVATION & SITE PROFILING

The existing site topography rises from approximately 6.82 – 7.17 OD Malin along the inside of the boundary wall with the Howth Road to a level between 10 – 11 OD Malin at the southern boundary with the Deer Park Golf Club.

The initial stages of the construction works will involve bulk excavation to reduce ground levels to the proposed basement formation level and a temporary grading of the excavation face beyond.

A cut and fill assessment has been carried out (refer to BMCE drawings 19196-HOW-BMD-00-ZZ-DR-C1050 & 19196-HOW-BMD-00-ZZ-DR-C1051) and this indicates that there is sufficient clearance between the basement and the site boundaries to grade the excavation faces without requirement for temporary retention systems.

On completion of the basement construction, the perimeter of the excavation will be backfilled against the basement retaining wall and the surrounding ground levels regraded to suit the proposed development ground floor level.

To the south of the proposed basement, the backfilling of the temporary excavation will also involve a regrading of the ground levels as indicated on the Landscape proposals submitted with the application.

4.18 LIAISON

Fingal 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 Fingal County Council. It is acknowledged that many parties will have an interest in this project throughout the duration of the contract. Our presence during 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.
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.

4.19 CONSTRUCTION TRAFFIC MANAGEMENT

Prior to construction of the proposed development a Traffic Management Plan (TMP) will be prepared by the contractor and agreed with the Local Authorities & Emergency Services to mitigate any impact of the construction on the surrounding road network.

The Traffic Management Plan (TMP) will be a "Live Document" and will reflect any changes to the construction programme or operations over the course of the development. The TMP shall comply at all times with the requirements of:

- Department of Transport Traffic Signs Manual 2010 – Chapter 8 Temporary Traffic Measures and Signs for Roadworks
- Department of Transport Guidance for the Control and Management of Traffic at Road Works (2010)
- Any additional requirements detailed in the Design Manual for Roads and Bridges (DMRB) & Design Manual for Urban Roads & Streets (DMURS)

The Traffic Management Plan will provide for the following where required:

1. The contractor shall be responsible for and make good any damage to existing roads or footpaths caused by his own contractor's or suppliers transport to and from the site.
2. The contractor shall at all times keep all public and private roads, footpaths entirely free of excavated materials, debris, rubbish, provide vehicle wheel wash and thoroughly clean all wheels and arches of all vehicles as they leave the site.
3. The contractor shall confine his activities to the area of the site occupied by the works and the builders' compound, as far as practicably possible, during any particular phase of the development.
4. Haul routes to and from the site will be defined and agreed with the Local Authority.
5. Properly designed and designated entrance and egress points to the construction site for construction traffic will be used to minimize impact on external traffic.
6. Flagmen shall be used to control the entry and exit of construction vehicles from the site onto the public road.
7. Existing fire hydrants are to remain accessible as required.

4.20 Construction Delivery & Haul Routes

It is important that the most appropriate haul routes be identified in order to bring materials to and from the site in the most efficient and environmentally sensitive manner.

In general, deliveries and construction vehicle activity will be scheduled to occur outside of peak traffic hours. Delivery times will vary based on construction activity, for example during large pours there will be a higher demand for deliveries of concrete. The construction programme and Contractor's management of deliveries will aim to minimize the effect of construction traffic during peak hours and instead organize for times outside.

Consideration will also be given to the additional sensitive factors such as schools in the local area and how construction related traffic can be managed to avoid any potential impact.

All HGV's during the construction phase will travel to and from Sutton Cross using Howth Road, Route 1, as shown in Fig 7. This route was chosen as it is the shortest and minimises the effect the development has during the construction phase on Howth Village.

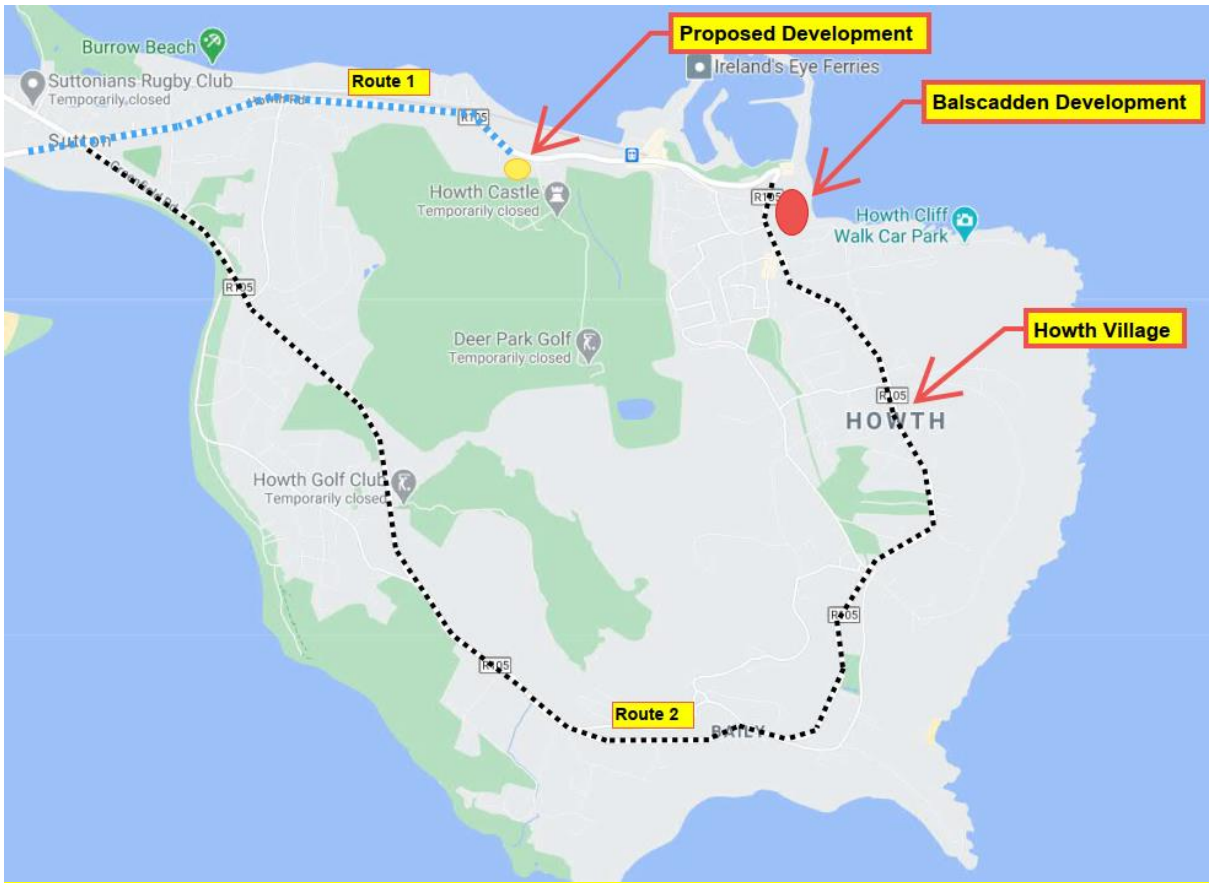

Figure 7 – *Route 1 for HGVs serving proposed development*

Over the course of the construction programme 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)

- No. of private vehicles per day due to staff and site visitors – 20.
- No. of light good vehicles per day from subcontract staff – 15.
- No. of heavy goods vehicles per day during excavation process – 70 truck movements over a 9week dig period to remove approximately 30,000m^3 bulk excavation volume (as advised by GLL PRS HOLDCO LTD)
- No. of heavy goods vehicles per day outside of bulk excavation works – 10.

4.21 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.

All offloading operations will take place inside the site boundary.

4.22 Emergency Work

Should exceptional working hours be required, 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 incidents 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 recorded in the site environmental register. The site manager will be the person responsible for managing any emergency environmental issue.

4.23 Cranes, Lifting of Equipment and Road Closures

Tower cranes and concrete placing booms will be required to construct the superstructure, facades and roofs of the blocks. A combination of a 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 FCC 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.

4.24 Waste Management

A Construction Demolition Waste Management Plan has been prepared by Byrne Environmental and submitted under separate cover with the application.

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 construction 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 construction waste and to highlight the successes or failures against these targets.

4.25 DISCHARGE AND SITE DRAINAGE

A detailed construction surface water management plan (CSWMP) will be prepared by the Main Contractor and submitted to FCC for agreement. The contents of such a plan, shall be the responsibility of the Main Contractor, however as a minimum will include:

1.0 Introduction
1.1 Background
1.2 Aims and Objectives
1.3 Roles and Responsibilities
1.4 Risk Assessment

2.0 Surface Water Management Measures
2.1 Design Philosophy
2.2 Existing Site Drainage
2.3 Remediation Works Measures
2.4Surface Water Management Review
2.5 Sedimentation Control
2.6 Hydrocarbon Interception

3.0 Installation Monitoring and Maintenance
3.1. Installation Plan
3.2 Monitoring and Testing Plan
3.3 Maintenance

Surface Water Impacts:

Surface water run-off from surface construction activities has the potential to become contaminated. The main potential contaminants arising from construction activities include:

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

These pollutants pose a temporary risk to surface water quality for the duration of the project, however they can be easily contained and managed, with a comprehensive CSWMP.

Mitigation Measures

All surface water management works will be undertaken with reference to the following guidelines:

- CIRIA C532: Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors
- CIRIA C692: Environmental Good Practice on Site
- BPGCS005: Oil Storage Guidelines.
- CIRIA C648: Control of Water Pollution from Linear Construction Projects.

Some mitigation measures might include:

- Designated parking located at least 50m from any watercourse.
- Have oil spill kits on site and ensure appropriate staff are trained in their use.
- Ensure any fuel tanks are bunded.
- Ensure chemicals used in construction are properly stored and secured.
- A designated washdown area will be provided within the contractors compound for cleaning of any equipment or plant, with safe disposal of any contaminated water.
- Pouring of cementitious materials to be carried out in the relatively dry conditions.

- A wheel wash system will be installed to prevent excessive material being wheeled on to surrounding roads (from where it could get washed into road gullies and onwards into water courses).
- Road sweeping devices will be deployed when and where necessary to keep surrounding roads clean.
- Any discharge of construction surface water or groundwater from excavations shall pass through appropriate filtration and sedimentation system, designed in accordance with *CIRIA C532: Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors*

4.26 Coronavirus Covid-19 Measures

The main contractor and Project Supervisor Construction Stage (PSCS) in charge of the site, will be responsible for managing all aspects of health and safety pertaining to the construction works, and this will include, interalia, managing the risks from Coronavirus Covid-19. The Construction Industry Federation CIF has published (and continual reviews) it's C-19 Pandemic Standard Operating Procedures and this provides practical advice to contractors.

4.27 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.

Example of self bunded fuel store system.

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.

Example Oil Spill Drip Tray

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.

Example of 120L Chemical Spill Kit

5. CONCLUSION

This outline CEMP has been submitted to demonstrate GLL PRS HOLDCO 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 CEMP will be adopted by the appointed main contractor in due course and shall be expanded and updated to suit and to take account of any particular planning conditions that may be imposed.

The CEMP will require regular monitoring throughout the development programme to ensure potential risks are adequately managed throughout the 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 and in constructions terms we consider the project to be quite straightforward.

BARRETT **MAHONY**
CONSULTING ENGINEERS
CIVIL & STRUCTURAL

APPENDIX
1

METHOD STATEMENT FOR DEMOLITION WORK TO EXISTING BOUNDARY WALL TO FORM VEHICLE & PEDESTRIAN ENTRANCES

(1) All work is to be in accordance with this Method Statement and also with reference to the Project Conservation Architect's Method Statement.

(2) The existing wall is constructed in random rubble with mortar bedding between the stones. At two locations, it is proposed to form new openings – the first for the proposed vehicle access to the site and the second to form a new pedestrian access.

(3) In both locations the method of demolition and remedial works to the edge of the new openings is to be followed as outlined below.
    (i) At the external face of the existing boundary wall, the Contractor is to erect hoarding to enclose the works area from the general public.
    (ii) The wall is to be carefully dismantled, using hand-held equipment removing individual stones and setting aside for salvage and re-use purposes as per the Project Conservation Architect's Method Statement.
    (iii) At the vehicle entrance the wall is to be reduced in height to a level matching the formation level of the new access road.
    (iv) At the pedestrian entrance the wall is to be reduced in height to a level matching the formation level of the new pedestrian footpath.
    (v) At the vertical edges of the new openings, the end of the rubble wall is to be made good reusing removed stones to provide a new vertical end face.
    (vi) For cleaning, repairs and repointing of the wall, refer to the Project Conservation Architect's Method Statement.

Barrett Mahony Consulting Engineers

Dublin:
Sandwith House,
52-54 Lower Sandwith Street,
Dublin 2,
D02 WR26, Ireland.
Tel: +353 1 677 3200

London:
12 Mill Street,
London, SE1 2AY,
United Kingdom
Tel: +44 203 750 3530.

Sofia:
19 Yakubitsa Street,
Lozenets,
Sofia 1164,
Bulgaria
Tel: +359 2 494 9772

WWW.BMCE.IE