

Project

**Residential Development at Shackleton Road, Ballymakealy Upper,
Celbridge, Co. Kildare**

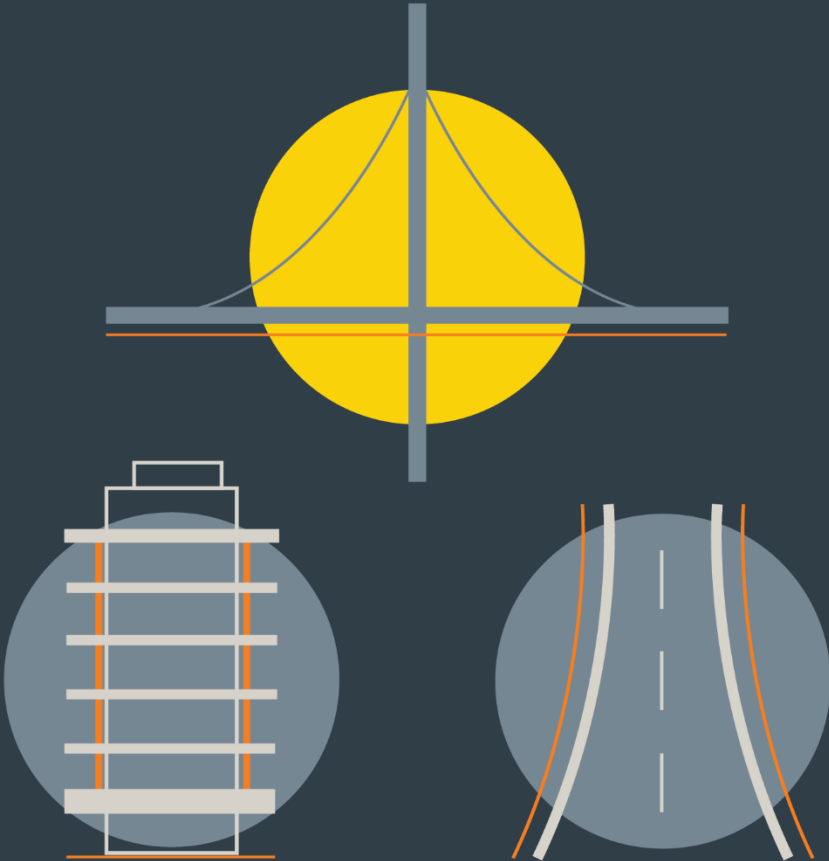
Report Title

Preliminary Construction & Environmental Management Plan

Client

Glenveagh Homes Ltd

INFRASTRUCTURE



DBFL CONSULTING ENGINEERS

March 2022

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1. WORKS PROPOSAL

This Preliminary Construction & Environmental Management Plan (PCEMP) is for the works associated with the proposed Residential Development and road upgrades at Shackleton Road, Ballymakealy Upper, Celbridge, Co. Kildare.

The proposed development site measures approximately 4.71 ha in extent and comprises of 152 no. units and a childcare facility.

Glenveagh Homes Ltd. intend to apply to An Bord Pleanála for planning permission for a strategic housing development at Shackleton Road, Ballymakealy Upper, Celbridge, Co. Kildare.

The development will consist of:

1. The construction of 152 no. residential units comprising a mixture of 6 no. 4 bed dwelling houses, 66 no. 3 bed dwelling houses and 48 no. 2 bed dwelling houses and 32 no. 1, 2 and 3 bed apartments/duplex units consisting of 20 no. 2 and 3 bed units in a 3 to 4 storey apartment/duplex building and 12 no. 1 bed maisonette units in 4 no. 3 storey blocks;
2. A creche/childcare facility;
3. The provision of landscaping and amenity areas scattered throughout the development including an adventure playground, a linear park, a central square and play equipment.
4. The provision of 2 no. pedestrian bridges over Toolestown Stream to connect into Oldtown Woods Estate; and
5. All associated infrastructure and services including 1 no. vehicular access point on to Shackleton Road, improvements to pedestrian footpath and cycleway along Shackleton Road, upgraded pedestrian junction at Shackleton Road and the R403, parking, lighting and drainage.

A Natura Impact Statement has been prepared in respect of the proposed development

The site is located within lands zoned under “Key Development Area 3 - Oldtown” (KDA 3) in the Celbridge Local area Plan (2017-2023).

The site (currently greenfield) is located to the West of Celbridge town (refer to Figure 1.1) along R403 Shackleton Road. Existing residential development is located to the south-east of the site. R403 Shackleton Road is located along the site’s Eastern boundary with agricultural lands located to the West of the site.

The construction management issues addressed within this plan include the following main topics:

- Working Hours
- Traffic Management
- Stripping of Topsoil and Excavation of Subsoil

- Erosion and Sediment Control
- Accidental Spills and Leaks
- Biodiversity
- Waste Management
- Noise and Vibration
- Air, Dust & Climatic Factors
- Landscape and Visual Impact
- Archaeology and Culture Heritage
- Material Assets – Site Services
- Site Compound Facilities and Parking

This PCEMP has been compiled to provide information regarding the construction stage of the project.

- C532 – Control of Water Pollution from Construction Sites. Guidance for Consultants and Contractors (Construction Industry Research and Information Association (CIRIA, 2001);
- C741 - Environmental Good Practice on Site (4th edition) (CIRIA, 2015)

It incorporates recommendations and mitigation measures detailed in the following planning stage documents;

- Natura Impact Statement, by Malone O Regan
- Ecological Impact Assessment, by Malone O Regan
- Archaeological Heritage Impact Assessment Report, Rubicon
- Construction Waste and By-Product Management report
- Tree Survey report, By Charles McCorkell

It is recommended that this PCEMP shall be referenced in tender and contract documentation for the proposed works and is to be read in conjunction with all relevant engineering and architectural documentation. Construction works shall be carried out in accordance with the mitigation measures outlined in this document.

2. WORKING HOURS

For the duration of the proposed infrastructure works the normal working hours will be 07:00 to 18:00 Monday to Friday (excluding bank holidays) and 08:00 to 15:00 Saturdays, subject to the restrictions imposed by the local authority.

No working is proposed on Sundays and Public Holidays.

Should construction work be required out of normal hours, then they shall be subject to prior agreement of the local authority. Examples of when this may be

required are to facilitate water main connections or foul drainage connections, concrete pouring, road works.

3. TRAFFIC AND TRANSPORTATION

The contractor will be required to prepare a Construction Traffic Management Plan (CTMP) for the works in accordance with the principles outlined below and shall comply at all times with the requirements of:

- Department of Transport Traffic Signs Manual 2019 – Chapter 8 Temporary Traffic Measures and Signs for Roadworks;
- Department of Transport Guidance for the Control and Management of Traffic at Road Works (2010);
- Additional requirements detailed in the Design Manual for Roads and Bridges (DMRB) & Design Manual for Urban Roads & Streets (DMURS);
- Local Authority Road licensing restrictions;
- Planning Conditions.

The CTMP shall be agreed with the local authority.

In general, the impact of the construction period on traffic and transportation will be temporary in nature and less significant than the operational stage of the proposed development. It is anticipated that the generation of HGV's during the construction period will be evenly spread throughout the day and as such will not impact significantly during the peak traffic period. Insofar as is reasonable the contractor shall manage deliveries to coincide with out-of-peak traffic hours.

From the start of construction phase, construction traffic will access the site via the R403 Shackleton Road.

In general construction traffic will approach the site from the east via R403 Shackleton Road and the R405 Maynooth Road, and Via the Clane Road to the West from Barberstown Roundabout, with all effort to avoid Celbridge town centre unless specifically agreed with the local authority, refer to figure 1.1.

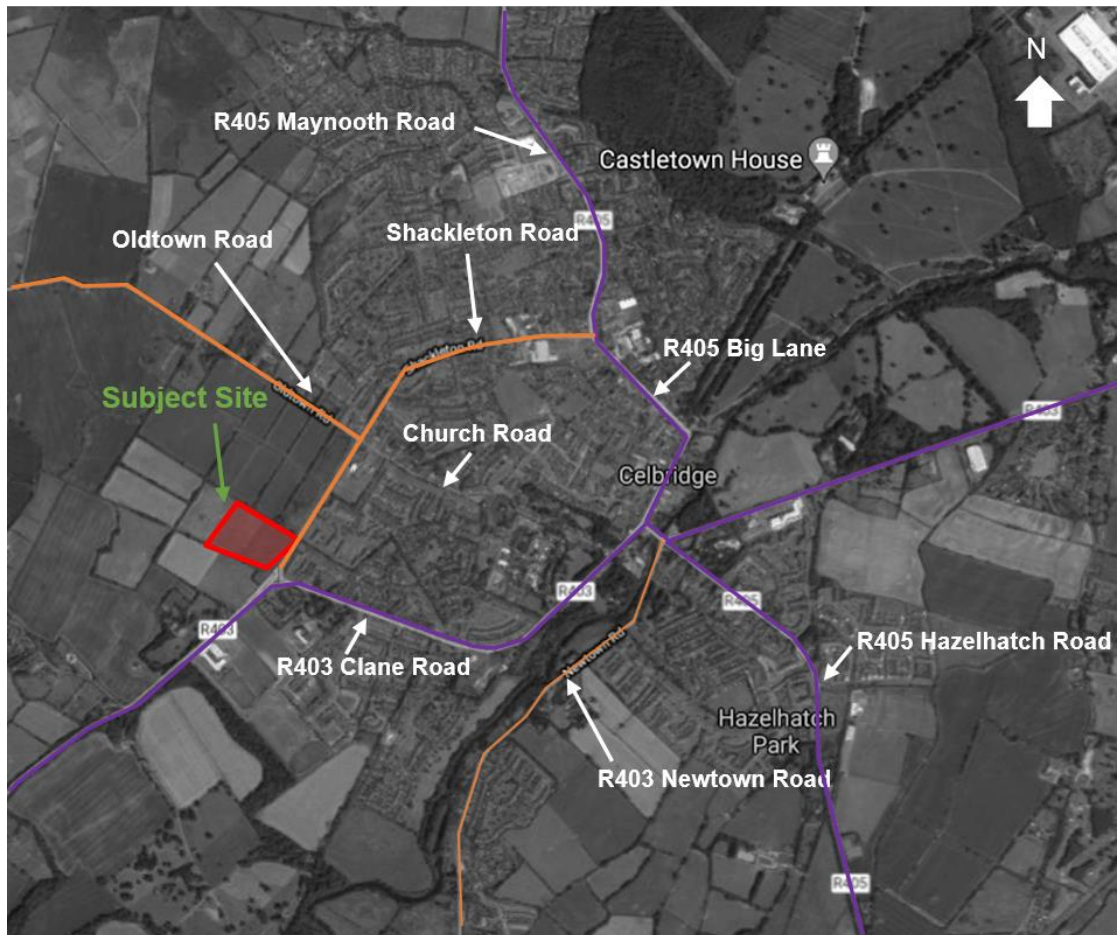


Figure 1.1: Site Boundary indicative Only and Access Routes (reference: <http://www.google.ie/maps>)

Construction traffic will enter the site via the R403 Shackleton Road for the construction phase of the development with construction traffic then using internal, temporary haul routes to access construction areas and evolving phases of construction.

The works proposals also involve the provision of new vehicular access junction on the Shackleton Road and the site access has been coordinated in line with the Celbridge LAP proposals and the cycle and pedestrian linkages, as such there will be disruption to traffic on the affected stretch of road during the construction period for this element of work. Depending on the type of works being completed and the local authority road opening license conditions, the work could require contraflow arrangements or road closures for some elements. It is envisaged that this element will be constructed early in the overall programme and prior to occupation.

All construction related parking will be provided on site. Construction traffic will consist of the following categories:

- Private vehicles owned and driven by site construction staff and by full time supervisory staff.

- Excavation plant and dumper trucks involved in site development works and material delivery vehicles for the following main elements of work: granular fill materials, concrete pipes, manholes, reinforcement steel, ready mix concrete and mortar, concrete blocks, miscellaneous building materials, etc.

On-site employees will generally arrive before 08:00, thus avoiding morning peak hour traffic. These employees will generally depart after 16:00.

It should be noted that a large proportion of construction workers would arrive in shared transport and all construction related parking will be provided on-site.

Also, the site is a short walk from bus stops on the main street for workers that may travel using public transport.

4. SOILS AND GEOLOGY

Site development works will involve stripping of topsoil and excavation of subsoil layers for the construction of the proposed development. Due to the existing topography works will also involve raising the land along the western side of the development, and where suitable existing material removed for the infrastructure will be tested and if suitable reused as class 2c material in accordance with Series 6 of the TII specification. Works will also be undertaken to provide stormwater storage systems. Depending on rock levels some localised rock breaking may be required to construct drainage services. Rock is expected to be removed for some of the deeper infrastructure and reference should be made to the Ground Site Investigation Report included within the infrastructure design report.

Excavation activities have potential to expose the soils and geological environment to pollution. The contractor shall agree the methodology of excavating cut material with the Local Authority where necessary and ensure that soils are protected against risk of pollution during the construction period.

The following construction related measures are proposed to mitigate against such risks.

Accessing the Site

- Earthwork's plant and vehicles delivering construction materials to site shall be confined to predetermined haul routes around the site.
- Appropriate facilities, agreed with the local authority, shall be installed to remove debris / soil from wheels of plant before exiting the site onto the public road.

Stripping of Topsoil

- The stripping of topsoil shall be carried out in a controlled way and be limited to the immediate vicinity of the active work areas.

- Topsoil stockpiles will be protected during the construction works and not located in areas where sediment laden runoff may enter existing watercourse and surface water drains.
- Topsoil stockpiles will also be located so as not to necessitate double handling.

Excavation of Subsoil Layers

- Drainage pipework levels have also been set as high as possible to reduce excavation depths for drainage and services. The contractor shall work to the design levels provided unless otherwise agreed with the engineer.
- The duration that subsoil layers are exposed to the effects of weather shall be minimised. Disturbed subsoil layers shall be stabilised as soon as practicable after they are exposed (e.g., backfill of service trenches, construction of road capping layers, construction of building foundations and completion of landscaping).
- Like stripped topsoil measures, stockpiles of excavated subsoil material shall be protected for the duration of the works. Stockpiles of subsoil material shall be located separately from topsoil stockpiles.
- Where bedrock is encountered, it will be investigated for being used within the designed works to reduce the volume of material leaving the site and imported to the site (subject to satisfactory crushing, screening and testing).
- Demolition materials arising from the existing buildings on site should be investigated / tested to determine if they are suitable to be crushed and reused within the development, to reduce the volume of material leaving the site and imported to the site.

Weather Conditions

- Typical seasonal weather variations shall be taken account of when planning stripping of topsoil and excavations with an objective of minimising soil erosion.

Surface Water Runoff from excavated areas

- Surface water runoff from areas stripped of topsoil and surface water and collecting in excavations will be directed to on-site settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge of surface water at a controlled rate.
- All excavation works within the quarry area shall be strictly managed to protect groundwater and infiltration characteristics of the area.
- *Refer also to further restrictions to be implemented under Water / Hydrogeology in relation to surface water.*

Water Pumped from Excavations

- Rainwater pumped from excavations is to be directed to on-site settlement ponds.
- Groundwater pumped from excavations is to be directed to on-site settlement ponds.
- On-site settlement ponds are to include geotextile liners and riprapped inlets and outlets to prevent scour and erosion.
- Surface water discharge points used during the construction phase shall be agreed with the Local Authority's Environment Section prior to commencing works on site.

5. WATER – HYDROLOGY & HYDROGEOLOGY

Measures to protect the existing hydrology / natural water environment have been selected in accordance with best practice guidance from Inland Fisheries Ireland (2016) and from recommendations outlined in the Natura Impact Statement for this development prepared by Malone O Regan. These measures are essential in preventing pollution effects to the bordering Toolstown Stream.

As part of the construction works, two number new bridge crossings will be constructed over the Toolstown Stream. A S50 Consent shall be requested from the office of public works prior to any construction activities and both bridges will have a minimum freeboard of 500mm above 1:1000 year flood levels from the latest CFRAMs study. The design of the bridge shall consist of a series of prestressed concrete beams with a specified decking and in-situ concrete supports/ abutments. The abutments shall be designed to have minimal impact of the existing stream banks and shall be kept back from the stream edges a minimum of 1.5m from the stream bank. Quick-set, waterproof concrete will be utilised to install these concrete footings. These works will only be undertaken in dry weather with sufficient time for the concrete to fully cure.

Natura Impact Statement Pollution prevention measures during construction;

- *The following guidance will be referred to and will be followed during the construction phase of the project to prevent water pollution that may occur within the area:*
 - *C532 – Control of Water Pollution from Construction Site. Guidance for Consultants and Contractors (CIRIA 2001)*
 - *C741 – Environmental Good Practice on Site (4th Edition) (CIRIA 2015) and;*
 - *All works will be undertaken with the requirements for the Protection of Fisheries Habitat during Construction and Development. (NBDC 2022)*

- *Site personnel will be trained in the importance of preventing pollution and the mitigation measures described here to ensure same.*
- *The site manager will be responsible for the implementation of these measures. They will be inspected on at least a daily basis for the duration of works, and a record of these inspections will be maintained.*

Further Erosion and Sediment Control measures are to be implemented during the construction phase to mitigate against risks to the water and hydrogeological environment.

Erosion and Sediment Control

Management of surface water runoff and subsequent treatment prior to release off-site will be undertaken during construction work as follows:

- *Temporary construction surface drainage and sediment control measures will be in place before earthworks commence.*
- *No pumped construction water will be discharged directly into any local surface watercourse. Pumped Water (if necessary) will be discharged via a silt bag which will filter any remaining sediment from the pumped water. If silt bags are required the entire silt bag discharge area will be enclosed by a perimeter of double silt fencing*
- *No pumped construction water will be discharged directly into any local surface watercourse.*
- *Pumped water (if necessary) will be discharged via a silt bag which will filter any remaining sediment from the pumped water. If silt bags are required, the entire silt bag discharge area will be enclosed by a perimeter of double silt fencing.*
- *Daily monitoring of the excavation/earthworks and associated water management systems will be completed by a suitably qualified person during the construction phase.*
- *All necessary preventative measures will be implemented to ensure no entrained sediment, or deleterious matter will enter any downstream spring areas or watercourses.*
- *If high levels of silt or other contamination is noted, construction works will be stopped. No works will recommence until the issue is resolved and the cause of the elevated source is remedied; and,*
- *Earthworks will take place during periods of low rainfall to reduce run-off and potential siltation of watercourses.*

In addition to the Natura Impact Statement the following measures in relation to Sediment, Accidental Spills and Leaks and concrete works are to be provided by the contractor.

- Measures shall be implemented to capture and treat sediment laden surface water runoff (e.g., sediment retention ponds, surface water inlet protection, fencing and signage around specific exclusion zones and earth bunding adjacent to open drainage ditches).
- Surface water runoff from areas stripped of topsoil and rainwater collected in excavations shall be directed to on-site settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge of surface water at a controlled rate.
- Groundwater pumped from excavations is to be directed to on-site settlement ponds.
- Wheel washing facilities will be installed close to the site entrance to prevent mud from construction operations being transported onto adjacent public roads during major earthworks.
- Surface water discharge points during the construction phase are to be agreed with the Local Authority's Environment Section prior to commencing works on site.

Accidental Spills and Leaks

- All oils, fuels, paints and other chemicals will be stored in a secure bunded hardstand area.
- Refuelling and servicing of construction machinery shall take place in a designated hardstand area which is also remote from any surface water inlets (when not possible to carry out such activities off site).
- Discharge from any vehicle wheel wash areas is to be directed to on-site settlement ponds.

A response procedure shall be put in place to deal with any accidental pollution events and spillage kits shall be available and construction staff will be familiar with the emergency procedures and use of the equipment.

Concrete works

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

6. WATER SERVICES AND MATERIAL ASSETS

The following measures are to be implemented during the construction phase to mitigate against risks to the water supply, sewers, watermains and utilities.

- Any 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.
- The construction compound's potable water supply shall be located where it is protected from contamination by any construction activities or materials.
- Relocation of any overhead ESB lines shall be fully coordinated with ESB Networks to ensure interruption to the existing power network is minimized.
- Connections to the existing gas and telecommunications networks shall be coordinated with the relevant utility provider and carried out by approved contractors.
- Any excavations in proximity to potable watermain shall be undertaken in accordance with Irish Water recommendations for same.

7. BIODIVERSITY

Disturbance of bird nests

- Where possible, site clearance works should proceed outside the nesting season. The bird nesting season is from 1 March to 31 August.
- Vegetation must first be inspected by a suitably qualified ecologist. If a nest is encountered then works must stop, until such time as nesting has ceased.
- Cutting, grubbing, burning or destruction by other means of vegetation growing on uncultivated land or in hedges or ditches during the nesting and breeding season for birds and wildlife is restricted from 1 March to 31 August. Limited exemptions to the above restrictions which apply from March to August and include
 - The destruction, in the ordinary course of agriculture or forestry of any vegetation growing on or in any hedge or ditch;
 - The cutting or destruction of vegetation executed for public health and safety reasons by a statutory body including a local authority;
 - The clearance of vegetation carried out in the course of fisheries development works undertaken by Inland Fisheries Ireland.

Construction Pollution:

- A detailed Construction Management Plan (CMP) shall be prepared by the Contractor to detail how construction activities and risk of pollution is to be managed during the project.
- The site manager will be responsible for ensuring that pollution prevention measures are fully implemented and monitored. A written record of at least daily checks should be maintained. Pollution incidents should be recorded and reported to the IFI in a timely manner.
- The CMP shall detail how these measures are to be implemented on the site as well as the construction methods for construction activities.

The following measures, as detailed in the Ecological Impact Assessment and Natura Impact Assessment by Malone O Regan, shall be implemented to protect the existing ecology.

- *Mitigation measures in relation to the removal of hedgerows, scrub and tree felling;*
- *The removal of hedgerows or scrub should not take place from March to August inclusive as per the Wildlife Act. If this is unavoidable then vegetation subject to removal must first be inspected for signs of breeding birds. It is an offence to destroy or interfere with a bird's nest or eggs. If no nesting is occurring, then vegetation can be removed within 48 hours. If nesting is found, then vegetation can only be destroyed under licence from the NPWS.*
- *Prior to construction commencing, an updated tree inspection will be required. Dusk emergence and dawn re-entry surveys will be required to confirm the presence / absence of roosting bats in any trees to be removed and the level of bat activity onsite and;*
- *If high levels of bat activity or roosting bats are identified as a result of these surveys consultation with the NPWS will be required.*
- *Prior to vegetation remove the ECoW will inspect the site. The management and removal of vegetation onsite will be undertaken in a systematic way, under the direction of the ECoW, to ensure that the retained hedgerows / treelines are not damaged by the works.*

Mitigation measures in relation to Badgers;

- *Guidance on the treatment of Badgers during construction works are available from the National Roads Authority (now TT) guidance and Policies NH3, NH11 and NH12 (KCC, 2017) will be undertaken.*

Mitigation in relation to landscape operations the following tree protection measures are required.

- *All landscape operations within the protected area will be carried out by hand using hand tools only, unless otherwise agreed with by the arboricultural consultant.*
- *No dumping of spoil or rubbish, parking of vehicles or plant, storage of materials or temporary accommodation will be undertaken in the TPZs*
- *All tree roots within the RPAs greater than 25mm diameter will be retained and works around; and*
- *Soil levels will not be increased or reduced within the RPAs of trees without prior agreement by the arboricultural consultant.*

WASTE MANAGEMENT

The contractor shall implement effective waste management and minimisation, reuse, recycling, recovery and disposal of waste material generated during the construction phase of the proposed development. The contractor(s) will endeavour to ensure that excavated material to be taken offsite is reused or recovered off-site or disposed of at authorized facility.

The following measures as detailed in the Construction Waste and By Product Management Plan, shall be implemented for construction stage in relation to waste.

- *Building materials should be chosen with an aim to ‘design out waste’.*
- *On-site segregation of waste materials will be carried out to increase opportunities for off-site reuse, recycling and recovery – it is anticipated that, Concrete rubble; Plasterboard; Metals; Glass; and Timber, at a minimum, will be segregated:*
- *Left over materials (e.g. timber off-cuts, broken concrete blocks/bricks) and any suitable construction materials shall be re-used on-site, where possible;*
- *All waste materials will be stored in skips or other suitable receptacles in designated areas of the site;*
- *Any hazardous wastes generated (such as chemicals, solvents, glues, fuels, oils) will also be segregated and will be stored in appropriate receptacles (in suitably bunded areas, where required);*
- *A waste manager will be appointed by the main contractor(s) to ensure effective management of waste during the excavation and construction works;*
- *All construction staff will be provided with training regarding the waste management procedures;*
- *All waste leaving site will be reused, recycled or recovered where possible to avoid material designated for disposal;*

- *All waste leaving the site will be transported by suitable permitted contractors and taken to suitably registered, permitted or licenced facilities; and*
- *All waste leaving the site will be recorded and copies of relevant documentation maintained.*

8. NOISE AND VIBRATION

Noise-related mitigation methods as described below will be implemented for the project in accordance with best practice and BS5228: Noise control on construction and open sites, which offers detailed guidance on the control of noise and vibration from demolition and construction activities. Various mitigation measures will be considered and applied during the construction of the proposed development as they are needed and including, but not limited to:

- Selection of Quiet Plant: The potential for any item of plant to generate noise will be assessed prior to the item being brought onto the site. The least noisy item should be selected wherever possible.
- Noise Control at Source: If replacing a noisy item of plant is not practical, a modification or application of improved sound reduction method will be employed.
- Screening: Construction: Site hoarding/fencing will be constructed around the site boundaries as standard. In addition, careful planning of the site layout will also be considered.
- Liaison with the Public: A designated environmental liaison officer will be appointed to site during construction works. Any noise complaints will be logged by the liaison officer and in addition, where particularly noisy activity is planned, the liaison officer will inform the nearest noise sensitive locations of the time and expected duration of the noisy works.
- Monitoring: Where required, construction noise monitoring will be undertaken at periodic sample periods at the nearest noise sensitive locations to the development.
- Project Programme: When high noise generating works are in progress on a site at the same time as other works of construction that may generate significant noise and vibration, the working programme will be phased so as to prevent unacceptable disturbance at any time.
- Vibration: The vibration from construction activities will be limited to the values as agreed with the local authority.
- The Contractor shall appoint a Site Environmental Manager (SEM) responsible for matters relating to noise and vibration.

9. AIR QUALITY & CLIMATE

The Principal Contractor or equivalent must monitor the contractors' performance to ensure that the proposed construction phase mitigation measures are implemented, and that construction impacts and nuisance are minimised.

The following mitigation measures are to be implemented during the construction phase:

- Procedures within the Dust Management Plan will be strictly monitored and assessed.
- Avoid unnecessary vehicle movements and manoeuvring, and limit speeds on site so as to minimise the generation of airborne dust.
- Use of rubble chutes and receptor skips during construction activities.
- During dry periods, dust emissions from heavily trafficked locations (on and off site) will be controlled by spraying surfaces with water and wetting agents.
- Hard surface roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads will be restricted to essential site traffic only.
- Re-suspension in the air of spillages material from trucks entering or leaving the site will be prevented by limiting the speed of vehicles within the site to 10kmh and by use of a mechanical road sweeper.
- The overloading of tipper trucks exiting the site shall not be permitted.
- Aggregates will be transported to and from the site in covered trucks.
- Where the likelihood of windblown fugitive dust emissions is high and during dry weather conditions, dusty site surfaces will be sprayed by a mobile tanker bowser.
- Wetting agents shall be utilised to provide a more effective surface wetting procedure.
- Exhaust emissions from vehicles operating within the construction site, including trucks, excavators, diesel generators or other plant equipment, will be controlled by the contractor by ensuring that emissions from vehicles are minimised by routine servicing of vehicles and plant, rather than just following breakdowns; the positioning of exhausts at a height to ensure adequate local dispersal of emissions, the avoidance of engines running unnecessarily and the use of low emission fuels.
- All plant not in operation shall be turned off and idling engines shall not be permitted for excessive periods.
- Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind. Water misting or sprays will be

used as required if particularly dusty activities are necessary during dry or windy periods.

- Material stockpiles containing fine or dusty elements including top soils shall be covered with tarpaulins.
- Where drilling or pavement cutting, grinding or similar types of stone finishing operations are taking place, measures to control dust emissions will be used to prevent unnecessary dust emissions by the erection of wind breaks or barriers. All concrete cutting equipment shall be fitted with a water dampening system.
- A programme of air quality monitoring shall be implemented at the site boundaries for the duration of construction phase activities to ensure that the air quality standards relating to dust deposition and PM10 are not exceeded. Where levels exceed specified air quality limit values, dust generating activities shall immediately cease and alternative working methods shall be implemented.
- A complaints log shall be maintained by the construction site manager and in the event of a complaint relating to dust nuisance, an investigation shall be initiated.

10. LANDSCAPE AND VISUAL IMPACT ASSESSMENT

Standard best practice construction site management in relation to landscape and visual impact shall be implemented.

- Site fencing/hoarding shall be erected to restrict views of the construction activity around the perimeter and for the security of the site.

11. ARCHAEOLOGY & CULTURAL HERITAGE

The Archaeological Heritage Assessment report, undertaken by Rubicon, for the proposed development concluded that it was not likely that the development, as proposed, will cause any direct or indirect/visual impacts to any identified archaeological monuments.

There are no identified monuments or features of archaeological interest located within, or in the immediate environs of the proposed development lands.

The extensive archaeological testing undertaken previously on the site recovered only extremely low numbers of artefacts in terms of the extent of area investigated by the testing. Consequently, the report recommended that *no further archaeological interventions are required of the development.*

Groundworks associated with the proposed development outside of any areas previously subject to archaeological testing shall be monitored by a suitably qualified archaeologist and/or as stipulated by planning conditions. If features of archaeological potential are discovered, the archaeologist shall be notified immediately and the groundworks in that area stopped until it can be assessed. Depending on the find further mitigation may be required such as preservation in-situ or by record. Any further mitigation will require approval from the National Monuments Service of the Department of Housing, Local Government and Heritage.

12. POPULATION & HUMAN HELATH

Adherence to the recommendations of the PCEMP during the construction phase will reduce the detrimental effects of the construction phase on the environment and local population.

13. SITE COMPOUND FACILITIES AND PARKING

The project will require a construction compound in order to cater for the construction personnel, equipment and machinery during the course of the works.

The exact location of the construction compound is to be confirmed in advance of commencement of the works (and agreed with the Local Authority prior to commencement).

The location of the construction compound is likely to be relocated during the course of the works, in line with the progress of the construction.

The construction compound will include offices and adequate welfare facilities such as washrooms, drying rooms, canteen and first aid room as well as foul drainage and potable water supply.

- 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 subject to agreement with Irish Water.
- A builder's temporary water supply for the welfare facilities shall be provided.
- The construction compound's potable water supply shall be protected from contamination by any construction activities or materials.
- The construction compound will be enclosed by a security fence.
- Access to the compound will be security controlled and all site visitors will be required to sign in on arrival and sign out on departure.
- A permeable hardstand area will be provided for staff car parking.
- A separate permeable hardstand area will be provided for construction machinery and plant.
- Run-off from parking areas shall comply with the requirements for surface water run-off (chapter 5).
- The construction compound will include a designated construction material recycling area.
- A series of way finding signage will be provided to direct staff, visitors and deliveries as required.
- All construction materials, debris, temporary hardstands etc. in the vicinity of the site compound will be removed off-site on completion of the works.