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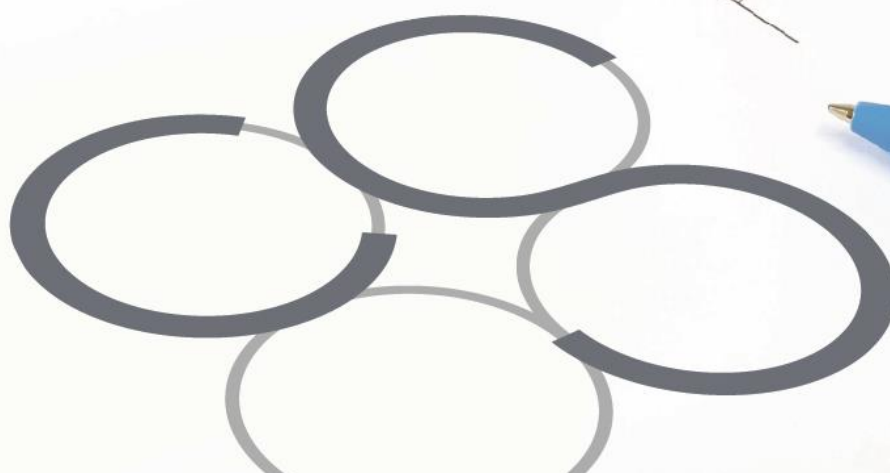
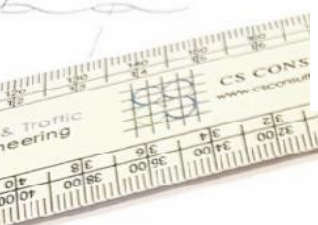
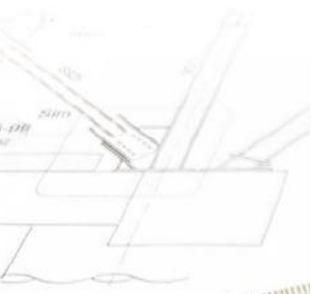
LIMERICK
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**Stage 1 Construction Management Plan
Stradbroke Road SHD
Mountashton, Blackrock, Co. Dublin**

Client: Tetrarch Residential Ltd

Job No. T059

July 2022



STAGE 1 CONSTRUCTION MANAGEMENT PLAN

STRADBROOK ROAD SHD, MOUNTASHTON, BLACKROCK, CO. DUBLIN

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T059 Construction Management Plan

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1.0 INTRODUCTION

Cronin & Sutton Consulting (CS Consulting) have been commissioned by Tetrarch Residential Ltd to prepare a Stage 1 Construction Management Plan to accompany a pre-planning application for a Development at Stradbrook Road, Co. Dublin. The Stage 1 Construction Management Plan includes a description of the proposed works and how these works shall be managed for the duration of the works on site. This plan shall be updated by the contractor and agreed with Dún Laoghaire-Rathdown County Council (DLRCC) (by the appointed Contractor) in advance of the construction phase.

The project shall be under the control of a main contractor who shall be appointed after the approval is granted for the Project Application. Upon appointment and once familiar with the site and having developed a final detailed methodology for the construction of the Development Project, the contractor shall prepare a Detailed Construction Management Plan. It is anticipated the detailed plan shall be based upon this plan. This outline construction management plan (CMP) is a preliminary plan which has been prepared to give an outline of the processes to be employed during construction of this project. Prior to the on-site activities commencing, this plan shall be revised by the contractor and expanded to provide a project specific site management plan, incorporating:

- Operational Health & Safety (OH&S) Management Plan;
- Environmental Management Plan including a Waste Management Plan;
- Pedestrian and Traffic Management Plan.

The Construction Management Plan shall be integrated into and implemented throughout the construction phase of the project to ensure the following:



- That all site activities are effectively managed to minimise the generation of waste and to maximise the opportunities for on-site reuse and recycling of waste materials.
- To ensure that all waste materials generated by site activities, that cannot be reused on site, are removed from site by appropriately permitted waste haulage contractors and that all wastes are disposed of at approved waste licensed / permitted facilities in compliance with the Waste Management Acts 1996, the Waste Management (Amendment) Act 2001 and the Protection of the Environment Act 2003.
- To manage and control any environmental impacts (noise, vibration, dust, water) that project construction work activities may have on receptors and properties that are located adjacent to project work areas and on the local receiving environment.
- To comply with planning conditions and requirements relating to waste management as required by Dún Laoghaire-Rathdown County Council.

The proposed Stage 1 Construction Management Plan has been prepared to demonstrate how the appointed contractor and the appointed Project Supervisors shall comply with the following relevant legislation, and relevant Best Practice Guidelines:

- Integrated Pollution Prevention and Control Directive (1996/61/EC)
- The Waste Management (Facility Permit and Registration) Regulations 2007 (SI No 821 of 2007)
- Environmental Protection Agency Act 1992,
- Waste Management Act 1996, the Waste Management (Amendment) Act 2001 and the Protection of the Environment Act 2003.

- Waste Management (Collection Permit) (Amendment)(No.2) Regulations 2016.
- Waste Management (Facility Permit and Registration) Regulations 2007
- Department of the Environment, Heritage and Local Government – Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects – June 2006
- Local Government Water Pollution Act 1977

This Stage 1 Construction Management Plan presents the potential environmental impacts and proposed management and monitoring methodologies based on the concept of Best Practice and the proposed mitigation measures to be implemented at the site.

2.0 SITE LOCATION AND PROPOSED DEVELOPMENT

2.1 Site Location

The proposed development site is located on the grounds of the existing car park to Blackrock College RFC off the Stradbroke Road, Blackrock Co. Dublin, approximately 360m to the southeast of the junction to the Stradbroke Road and Rowan Park (R827). The site is located in the administrative jurisdiction of Dún Laoghaire-Rathdown County Council and has a total area of approximately 0.4813 ha.

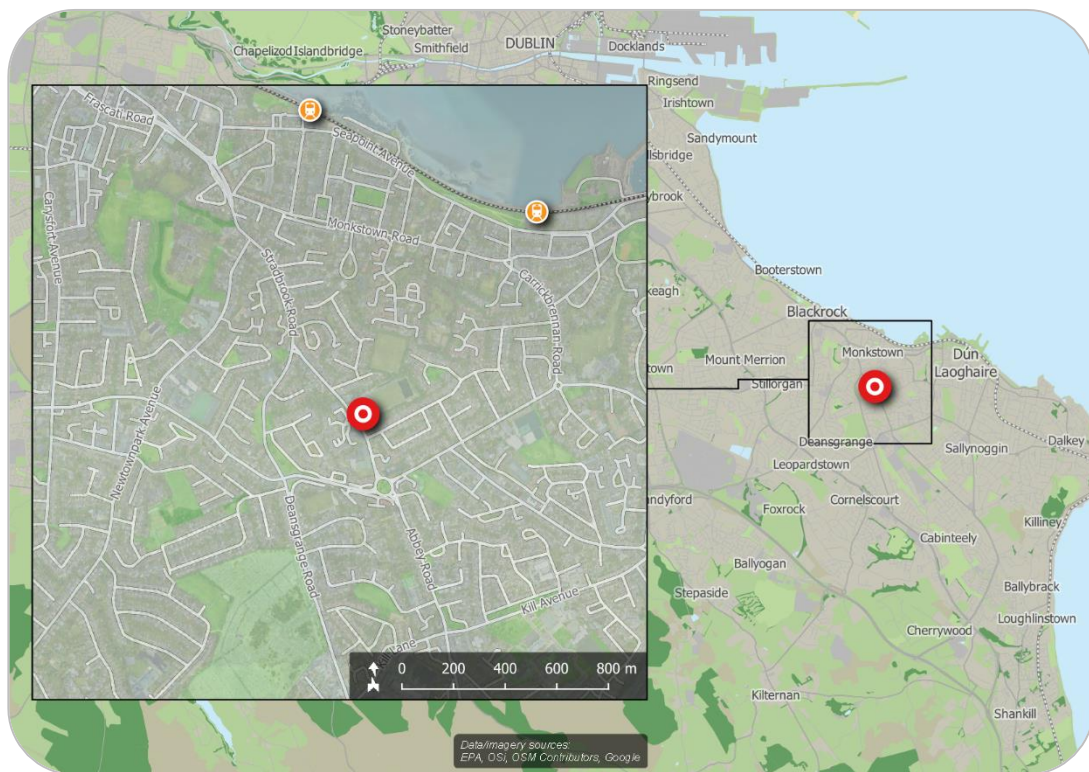


Figure 1 – Location of proposed development site
(map data & imagery: EPA, OSM Contributors, Google)

The location of the proposed development site is shown in Figure 1 above; the indicative extents of the development site, as well as relevant elements of the surrounding road network, are shown in more detail in Figure 2.

The site is bounded to the north and east by the existing Blackrock College RFC clubhouse and playing fields, to the south by existing residential properties, to the west by Stradbroke Road and Rockford Manor housing estate.

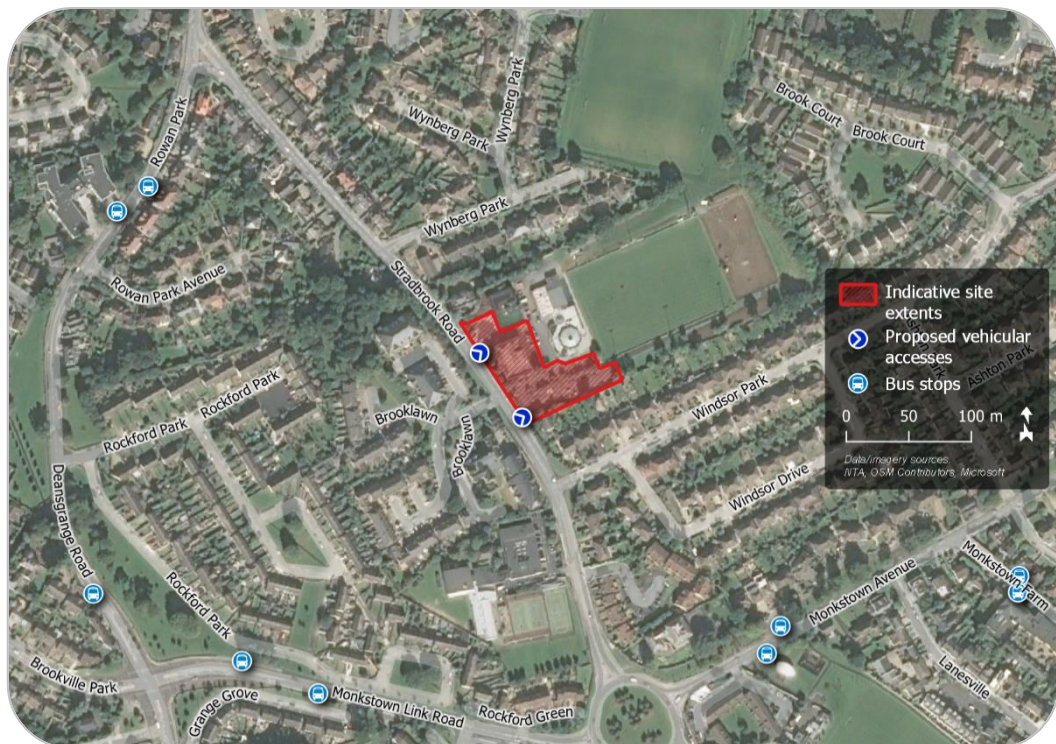


Figure 2 – Site extents and environs
(map data & imagery: NTA, GoCar, OSM Contributors, Google)

2.2 Existing Land Use

The development site is at present occupied by an existing car park, a commercial building and car parking associated to an adjoining creche.

2.3 Proposed Development

The proposed mixed-use development at a site of some 0.4813ha on Stradbroom Road, Mountashon, Blackrock, Co. Dublin shall consist of:

The demolition of existing buildings and surface car park, and the construction of 108 No. Build-to-Rent residential senior living apartments (83 No. 1-bed apartments and 25 No. 2-bed apartments), with balconies / winter gardens at all elevations, across 2 No. blocks ranging between 3 to 7-storeys with set back at sixth-floor level and additional basement storey. The proposal also includes for 148 No. secure bicycle parking spaces, 55 No. underground car parking spaces, a two-way vehicular entrance ramp and bin storage, circulation areas and associated plant at basement level; a self-contained office unit, a residential staff management suite, resident's facilities, residents' communal amenity rooms, and residents' communal open space, as well as 13 No. surface car parking spaces (incl. 1 No. accessible commercial car parking space and 12 No. car parking spaces for use by the adjoining creche (incl. 1 No. accessible)), 24 No. secure cycle spaces within separate bike store, separate bin store for office use, 30 No. short-term bicycle parking spaces, and 3 No. ESB substations at ground floor level; additional communal amenity rooms at first, second, third, fourth and fifth-floor levels; roof gardens / terraces at third, fourth and sixth-floor levels; green roofs; and PV panels on third, fourth and sixth-floor roof-level; amendments to existing boundary wall to provide new vehicular and pedestrian entrances; provision of security gates; and associated site landscaping, lighting and servicing, and all associated works above and below ground.

3.0 LOGISTICS

3.1 Construction Program & Phasing

Subject to a successful grant of planning, it is intended for the works to commence in Q4 2022. The proposed development is anticipated to be constructed over an 18 to 24-month period.

The development is proposed to be constructed on the following basis;

- Set up site perimeter hoarding, maintaining existing pedestrian and traffic routes around the site;
- Demolition and Site Clearance;
- Reduced Level excavations;
- Foundations and ground beams;
- Site services installations (drainage, power, water and the like);
- Construct Building Frame and Envelope;
- Mechanical and Electrical Fit-out;
- Finish Interior and Exterior Landscaping;

3.2 Vehicular Access to Site

The site is currently accessed from Stradbroke Road. It is anticipated that for the duration of the works access and egress for deliveries shall be via Stradbroke Road. It would also be beneficial to install a pedestrian only entrance to the site to segregate vehicular and pedestrian movements to and from site. All vehicular access routes during the construction phase shall be laid out in accordance with the requirements of Chapter 8 of the *Traffic Signs Manual*.



Security personnel shall be present at the entrance/exit of the site to ensure all exiting traffic shall do so safely. A wheel wash shall be installed at the exit from the site to prevent any dirt being carried out into the public road. If necessary, a road sweeper shall be used to keep public road around the site clean.

3.3 Vehicular and Pedestrian Access to Blackrock RFC and Existing Creche

The site is currently accessed from Stradbrook Road. As part of the new development a new vehicular and pedestrian entrance and access road shall be constructed. This new entrance and access shall form part of an enabling works package that shall allow for the construction of the new entrance, access road and parking facilities to the existing creche.

Once this new entrance and access road is completed then and only then shall the existing vehicular entrance to the development site be removed.

Access to the Creche shall be prioritised by the Contractor at AM drop-off and PM pick up times. Deliveries to and from the construction site shall be limited during these time periods.

The Main Contractor shall liaise directly with Blackrock RFC on a minimum fortnightly basis and confirm times of sports matches and programme deliveries outside these times in order to avoid traffic congestion on Stradbrook Road.

3.4 Protection of Public Areas from Construction Activity

Perimeter hoarding shall be provided around the site to provide a barrier against unauthorized access from the public areas. Controlled access points to the site, in the form of gates or doors, shall be kept locked for any time that these areas are not monitored (e.g. outside working hours).

The hoarding shall be well-maintained and shall be painted. Any hoardings may contain graphics portraying project information.

3.5 Site Security

The site shall be secured with a solid hoarding 2.4m high.

The site hoarding shall be branded using the appointed Contractors logos etc. Some marketing images or information boards may also be placed on the hoarding.

Access to site shall be controlled by means of an electronic access control system and camera remote monitoring system for out of hours.

During working hours, a gateman shall control traffic movements and deliveries.

All personnel working on site must have a valid Safe Pass card.

The Contractor shall ensure the presence of site security staff at all times on the site.

3.6 Material Hoisting & Movement Throughout the Site

It is envisaged that a tower crane shall be erected on site to assist with superstructure and exterior works. In addition to the tower crane, separate mobile crane visits may be required from time to time. These visits shall be coordinated with the other site activities and crane operations to ensure all risks are correctly assessed and mitigated against.

Hoists and teleporters may also be utilised around the perimeter as required during the project to facilitate material movement into the structures and waste movements out of the buildings. With the commencement of the fit-



out activities, hoists strategically positioned shall play a key role for successful project delivery. They are also less susceptible to being affected by inclement weather conditions.

A permanent odometer shall be installed on the site tower cranes which shall pass wind speed data to the site office and to the Contractor's management team in their head office to monitor compliance with safe lifting practices.

3.7 Deliveries & Storage Facilities

It is proposed that unloading bays/delivery areas are provided to the project within the hoarding perimeter. They should be accessible by tower crane and forklifts. Appropriately demarcated storage zones shall be used to separate and segregate materials.

All deliveries to site shall be scheduled to ensure their timely arrival and avoid need for storing large quantities/stockpiles of materials on site. Deliveries shall be scheduled outside of rush traffic hours to avoid disturbance to pedestrian and vehicular traffic in vicinity of the site.

It is envisaged that all deliveries shall be made off Stradbroke Road by way of a construction vehicle access point on the site.

Out of hours deliveries should be avoided when possible. When out of hour deliveries are required, the contractor shall provide a specific plan outlining the nature of the activity, the reason for the out of hours works. The Contractor shall outline the mitigation measures which shall be put in place to minimise the impact to Third Parties. These works shall need to be agreed with the Local Council prior to the works progressing.

Any materials stored on site that could possibly cause pollution shall be inspected on a daily basis and sign off sheets provided confirming all is safe and in order.

3.8 Site Accommodation

On-site facilities shall consist of;

- Materials storage area;
- Site office & Meeting Room;
- Staff welfare facilities i.e. toilets, drying room, canteen, etc.

Electricity shall be provided to the site via national grid.

Water supply to the site shall be provided by means of a temporary connection to the public water main. Similarly, a temporary connection for foul water drainage shall be made to the public network. It may be possible to utilise branch connections already in place on the existing site to minimise/prevent disruption to the public space outside of the site boundary when making these connections.

3.9 Site Parking

Limited number of onsite parking may be provided during early stages of development. Nearby off-site car parking shall also be identified to avoid congestion in the surrounding areas and construction staff shall be instructed not to park in residential estates.

Construction staff shall also be encouraged to use public transport and information on local transportation shall be published on site.

3.10 Site Working Hours

Construction operations on site shall generally be subject to a planning permission and conditions but shall generally be between the hours of 07:00 and 18:00, Monday to Friday, and 08:00 to 14:00 on Saturdays, with no works on Sundays or bank holidays. However, it may be necessary for some construction operations to be undertaken outside these times, for example; service diversions and connections, concrete finishing and fit-out works, etc.

Deliveries of materials to site shall generally be between the hours of 07:00 and 18:00, Monday to Friday, and 08:00 to 14:00 on Saturdays. There may be occasions where it is necessary to make certain deliveries outside these times, for example, where large loads are limited to road usage outside peak times. Such deliveries outside of the conditioned working hours shall only be carried out subject to the agreement of Dún Laoghaire-Rathdown County Council.

3.11 Liaison Officer

A liaison officer shall be appointed as a point of contact with local residents, Dún Laoghaire-Rathdown County Council and the Gardaí. The liaison officer shall keep all parties informed of progress, timing of particular construction activities etc.

Complaints and follow up actions on the construction site shall be managed by the liaison officer (together with the Client) and the contractor shall ensure that all complaints are recorded accordingly to the requirements of developer and DLR Co Co. A complaints log shall be kept and any complaint from interested parties shall be recorded, actioned and closed out.

The complaints log shall include the following:

- Name, Address and Date of complainant
- Date, Time and duration of disturbance
- Description of Disturbance
- Source of disturbance, including weather and wind factors if applicable
- Description of how the complaint was actioned and closed out
- Follow up with Complainant

This record can be provided to the local authority if requested.

4.0 ENVIRONMENTAL ISSUES

4.1 Noise

Noise monitoring shall be established on site throughout the project. Noise monitoring shall be carried out for a period of at least 2 weeks prior to any works commencing, in order to establish a baseline, and communicating the results to DLR Co Co in the form of baseline reports.

Variation of noise levels from those experienced as part of everyday life in an area can result in extreme disruption. The Contractor shall implement measures to eliminate where possible and reduce noise levels where not.

All construction activities shall be carried out in compliance with the recommendations of BS 5228, "Noise Control on Construction and open site's part 1 and comply with BS 6187 Code of Practice for Demolition. These measures are employed to ensure compliance shall include: -

- Noise monitoring stations, which shall be monitored daily, shall be located on site and at recommended locations in the vicinity of the site to record background and construction noise activity. The plan layout of the monitoring stations shall be submitted to DLR Co Co for agreement by the contractor.
- Monitoring data shall be compiled into monthly technical reports by the contractor
- The best means practical shall be used to minimize the noise produced by all on site operations.
- Proper maintenance of all operating plant to ensure noise emission compliance.
- All operating plant shall be selected on the basis of incorporating noise reducing systems, and at a minimum be fitted with effective exhaust silencers.

- Compressors shall be fitted with acoustically lined covers, which shall remain closed while the machines are in operation.
- Plant such as pumps and generators which are required to work outside of normal working hours shall be enclosed with acoustic enclosures.
- There shall be strict adherence to the site working hours stipulated in the Planning Conditions.
- A log of all complaints due to noise to be recorded and actioned, see section 3.10

4.2 Air Quality & Dust Monitoring

Dust prevention measures shall be included for control of any site airborne particulate pollution. Prior to commencement the contractor shall draw up an Air Quality Mitigation Plan for demolition, excavation and construction works which shall be constantly monitored during the lifetime of the works. If air quality targets set out in the plan are constantly exceeded the contractor shall cease that activity causing the dust and implement alternative working methods.

The Contractor shall provide dust sampling points. The plan layout of the monitoring stations shall be submitted to DLR Co Co for agreement by the contractor. Monitoring data shall be compiled into monthly technical reports by the contractor and maintained on site.

The Contractor shall monitor dust levels in the vicinity of the site using a Bergerhoff gauge instrument or in accordance with DLR Co Co Planning conditions. Records shall be kept of such monitoring for review by the Planning Authority. The minimum criteria to be maintained shall be the limit for Environmental Protection Agency (EPA) specification for licensed facilities in Ireland, which is 350mg/m²/day.



The Contractor shall continuously monitor dust over the variation of weather and material disposal to ensure the limits are not breached throughout the project. It is proposed to use a "Dust Boss" spray cannon machine in order to contain dust on site. The cannon is capable of spraying a water mist up to 45m and has been used in Dublin during the demolition of buildings up to 8 storeys in height. This dust suppression method is very successful in containing dust on-site. The machine has a range of controls and adjustability to accurately target sources of dust generated from works.

4.3 Migrating Dust & Dirt Pollution

The Contractor shall ensure that all construction vehicles that exit the site onto the public roads shall not transport dust and dirt to pollute the external roadways. This shall be achieved through a combination of the following measures:

- Ensuring construction vehicles have a clean surface to travel on within the site (i.e. haul road)
- Ensuring all construction vehicles are inspected by the gateman for cleanliness prior to exiting the site
- Providing a "Full-Body Self Contained" wheel wash shall be constructed and located within the site confines
- Ensuring an appropriate wheel or road washing facility is provided as and when required throughout the various stages of construction on site. If conditions require it then a manned power washer shall be put in place to assist the wheel wash system
- A dedicated road sweeper shall be retained for the duration of the haulage works; and Water supplies shall be recycled for use in the wheel wash. All waters shall be drained through appropriate filter material prior to discharge from the site

- The contractor shall ensure proper maintenance of all operating plant to ensure dust and fuel emissions are in compliance with site plans. All operating plant not in use shall be turned off.
- Stockpiles of materials shall be located and /or designed to mitigate exposure to wind and ensure dust emissions are kept low.

The use of appropriate water-based dust suppression systems shall greatly reduce the amount of dust and windborne particulates as a result of the construction process. This system shall be closely monitored by site management personnel particularly during extended dry periods and in accordance with site management methods.

4.4 Harmful Materials

Harmful material shall be stored on site for use in connection with the construction works only. These materials shall be stored in a controlled manner. Where on-site facilities are used there shall be a bunded filling area using double bunded steel tank at a minimum. These materials shall be inspected on a daily basis and logged in a daily inspection sheet.

4.5 Vibration

The Contractor shall be required to carry out their works such that the effect of vibration on the adjacent buildings and surroundings is minimised, and that no damage to these results from construction activity on site.

The Contractor shall be required to comply with the requirements of the planning permission for any vibration limits for the works. In the absence of any Local Authority requirements, the following table shall set the limitations.

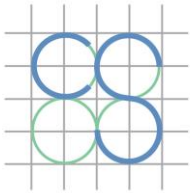


Table 1 – Trigger values for vibration

Trigger Level	Peak Particle Velocity (PPV)	
	50Hz and below	Above 50Hz
1	10 mm/s	10 mm/s
2	10 mm/s	12 mm/s
3	10 mm/s	15mm/s

The Administrator, Engineer, Client, and/or Contractor are to establish background vibration levels prior to the commencement of works.

A vibration monitoring system is to be put in place prior to any works taking place. This system is to raise an alarm if an agreed limit is exceeded, at which time the working methods are to be adjusted so as to reduce the vibration generated.

5.0 WASTE MANAGEMENT

A Stage 1 Demolition and Construction Waste Management Plan has been prepared by Cronin & Sutton Consulting as part of this application.

Please refer to these reports for details on waste management during the demolition and construction phases of the project.

6.0 TRAFFIC MANAGEMENT

6.1 Access to the Site

Construction traffic shall access the site from Stradbroom Road via Deansgrange Road (R827). This adjoining street network provides access to the N11, M11 and M50 for deliveries and extraction to and from the site.

6.2 Vehicle Movements During Construction

The major construction items include demolition, excavation, superstructure construction and fit out. It is anticipated that the peak of HGV movements to and from the site shall be during the demolition of existing structure and excavations works. The peak LGV movements to and from the site shall be during the foundation's construction and superstructure construction. It is anticipated that the construction traffic impact on the surrounding local road network to the proposed development site shall be minimal.

The Contractor shall submit a Construction Traffic Management plan to the Local Authority for approval. Haulage vehicle movements should be fully coordinated to comply with the requirements of the Layout and requirements herein.

- At no time should construction associated vehicles be stopped or parked along the routes;
- Haulage vehicles should not travel in convoys of greater than two vehicles at any time;
- Haulage vehicles should be spaced by a minimum of 250m at all times;
- Strictly at no time should haulage vehicles be parked or stopped at the entrance to the site;

- All loading of excess material shall occur within the site boundary;
- All off-loading of deliveries shall take place within the site, away from the public road and shall access via the construction site access.

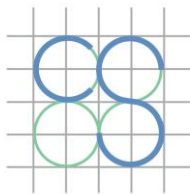
The routes to and from the site shall depend on where the demolition material and excavated material shall be taken to and from where construction material shall be brought into the site. The above locations shall be identified by the Contractor at a later stage and appropriate routes shall be agreed with Dún Laoghaire-Rathdown County Council as part of the Contractors more detailed construction management plan.

The increase in traffic as a result of construction shall be minor and can be readily accommodated within the existing road network. However, the flow of construction traffic shall need to be marshalled and regulated to ensure that potential conflicts with vulnerable users are avoided as much as possible.

6.3 Minimise Construction Vehicle Movements

Construction vehicle movements shall be minimized through:

- Consolidation of delivery loads to/from the site and manage large deliveries on site to occur outside of peak periods;
- Use of precast/prefabricated materials where possible;
- 'Cut' material generated by the construction works shall be re-used on site where possible, through various accommodation works;
- Adequate storage space on site shall be provided;
- A strategy shall be developed to minimise construction material quantities as much as possible;
- Construction staff vehicle movements shall also be minimised by promoting the use of public transport.



The following headings identify some of the measures to be encouraged:

Cycling

Cycle parking spaces shall be provided on the site for construction staff, in addition lockers shall be provided to allow cyclists to store their clothes.

Public Transport

Construction staff shall be encouraged to use public transport as means to travel to and from the site. An information leaflet shall be provided to all staff as part of their induction on site highlighting the location of the various public transport services in the vicinity of the construction site.

Car Sharing

Car sharing among construction personnel shall be encouraged, especially from areas where construction personnel may be clustered. The Contractor shall aim to organise shifts in accordance with personnel origins, hence enabling higher levels of car sharing. Such a measure offers a significant opportunity to reduce the proportion of construction personnel driving to the site and shall minimise the potential traffic impact on the surrounding road network.

Public Roads

A Visual Condition Survey (VCS) shall be carried out of all surrounding streets prior to any site works commencing. The Contractor shall liaise with DLRCC Roads & Traffic Department to agree any changes to load restrictions and construction access routes for the site. Measures shall be put in place as required to facilitate construction traffic whilst simultaneously protecting the built environment.

All entrances and temporary roads shall be continuously maintained for emergency vehicle access.

The following measures shall be taken to ensure that the site, public roads and surroundings are kept clean and tidy:

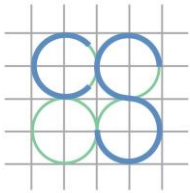
- A regular program of site tidying shall be established to ensure a safe and orderly site;
- Scaffolding shall have debris netting attached to prevent materials and equipment being scattered by the wind;
- Food waste shall be strictly controlled on all parts of the site;
- Mud spillages on roads and footpaths outside the site shall be cleaned regularly and shall not be allowed to accumulate;
- Wheel wash facilities shall be provided for vehicles exiting the site;
- In the event of any fugitive solid waste escaping the site, it shall be collected immediately and removed.

6.4 Project Specific Traffic Management Plan

A detailed project specific traffic management plan shall be developed by the Contractor and agreed with DLRCC and An Garda Síochána prior to works commencing on site. This plan shall be updated as required throughout the project.

Issues addressed in the Traffic Management Plan shall include:

- Public safety;
- Construction traffic routes;
- Deliveries' schedule;
- Special deliveries (wide and long loads);
- Traffic flows.
- Signage and lighting;
- Road opening requirements;
- Road closures;
- Lighting.



A liaison officer shall be appointed as a point of contact with local residents, Dún Laoghaire-Rathdown County Council and the Gardaí. The liaison officer shall keep all parties informed of progress, timing of particular construction activities etc.

Complaints and follow up actions on the construction site shall be managed by the liaison officer (together with the Client) and the contractor shall ensure that all complaints are recorded accordingly to the requirements of developer and DLR Co Co. A complaints log shall be kept and any complaint from interested parties shall be recorded, actioned and closed out. This record can be provided to the local authority if requested.

7.0 PROVISIONS FOR CONSTRUCTION

7.1 Hoarding, Set-up of Site & Access/Egress Points

The site area shall be enclosed with hoarding, details of which are to be agreed with Dún Laoghaire-Rathdown County Council. Hoarding panels shall be maintained and kept clean for the duration of the project.

This shall involve erecting the hoarding around the proposed site perimeter in line with the finished development description.

7.2 Removal of Services

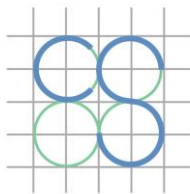
Prior to any works a utility survey shall be carried out to identify existing services. All services on site shall be disconnected, diverted or removed as agreed with service providers.

7.3 Site Clearance & Demolition

There is an existing building on the site. The existing building has a gross floor area of approx. 605 m² and this building shall be demolished to facilitate the proposed development.

The following is a high-level method statement for the demolition of the existing house:

- Establish a site set-up and welfare facilities;
- Carry out an invasive species survey using a qualified and approved surveyor;
- Carry out a detailed services survey of the site to identify all buried services, determine what services are live, redundant and potentially



serve neighbouring properties. This survey is to be performed before any demolition is performed on site.

- Carry out any necessary services diversions and decommissioning works.
- Demolition shall only take place following a full asbestos survey. Any materials identified as being hazardous shall be removed and disposed of in strict accordance with the applicable legislation. All services shall be disconnected and removed from the building along with a 'soft strip' of any fixtures, fittings and demountable non-load bearing structure. Demolition shall be completed by appropriately experienced and skilled Contractors who shall commence by removing the timber roof. Where possible material shall be removed by hand or by low impact equipment. Walls shall be demolished by pulling them from the top down back into the site so as not to impact on adjoining lands. The existing slab and concrete foundations shall be broken by excavators. All reinforced concrete shall be partially processed on site to separate the steel from the concrete. All materials shall either be fully separated on site and disposed of to the applicable landfills / processing facility or failing that material shall be sent to a processing facility for separation. Relevant certification and documentation confirming the final separation and most environmentally friendly disposal shall be available.

7.4 Excavation

This development shall involve a bulk excavation and removal of material when forming the basement. A site investigation is to be conducted and shall determine the type of soil to be excavated and its chemical composition. The basement area shall involve the excavation and removal from site of approximately 6825m³ of material.

The Contractor shall prepare a Construction Waste Management Plan in accordance with the “Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects” (Department of Environment, Heritage and Local Government, 2006) and ensure that all material is disposed of at an appropriately licensed land fill site. The Contractor must also outline detailed proposals within the Construction Management Plan to accommodate construction traffic.

7.5 Site Service Installations

Drainage, power, water and the like shall be installed to serve the proposed development.

7.6 Construction Stage

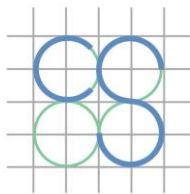
The structure of the proposed development is from 3 to 6 storeys high over a basement. Each storey sets back from the floor below with majority of the structure terminating at second floor. The third floor is a roof garden and roof top bar with a cantilevering floor plate.

The building is constructed as a reinforced concrete and steel frame with load bearing RC core walls and steel columns. The floor plates are constructed in precast slabs supported on steel beams and trusses.

7.7 Superstructure

The construction of the superstructure shall involve the delivery of either prefabricated steel beams/columns, insitu reinforced concrete and precast concrete slabs.

As noted, the construction methodology and therefore the programme of the construction activities shall be dictated by the Contractor.



The following outlines a general construction sequence for the superstructure:

7.7.1 Buildings Structure:

- Install below ground services
- Construction of the foundation basement slab and permanent retaining wall structures;
- Construction of rising elements to ground floor and remaining foundations from ground level
- Construction of ground floor slab;
- Construction RC walls and erection of steel columns;
- Install steel beams
- Install precast slabs and pour in-situ structural screed;
- Repeat for upper floors.

7.7.2 Envelope / Cladding:

- Commencement of envelope works to ground floor when structure has progressed to third floor, with suitable temporary openings in the façade left for ease of transport of construction material.

7.7.3 Mechanical & Electrical fit-out:

- First fix shall commence at each level behind structure;
- This shall be followed by the second fix and the final connections.

7.7.4 Fit-out:

- Initial installation of stud work when cladding is complete, and floor is weather tight;
- Installation of equipment and associated connection to services;
- Completion of finishes.

7.7.5 Commissioning:

- The final commissioning period shall commence during fit-out;
- The above is an indicative construction sequence. The final sequence shall be dictated by the Contractor. The Contractor must issue a detailed construction programme outlining the various stages prior to commencement of works.

7.8 Erection and operation of cranes

It is envisaged that one or two crawler cranes shall be required to accommodate the construction works for the distribution of precast elements, structural steel members, reinforcing steel, concrete skips, concrete formwork element and general building materials. The Contractor shall need to obtain all necessary licences from the Local Authority.



8.0 CONSTRUCTION SURFACE WATER MANAGEMENT PLAN

The below information sets out how to demonstrate how pollution of watercourses during and after construction period shall be prevented and/or mitigated in line with best practices.

8.1 Surface Water Impacts

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

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

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

8.2 Proposed Construction Works.

Site Preparation;

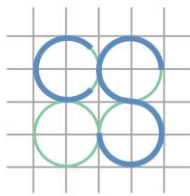
- Erection of security fencing/perimeter fencing;
- Setting up a secure site compound including wash down area;
- Site clearance including topsoil stripping;

- Construction of infrastructure including roads, drainage, and services;
- Provision of road up grades and pedestrian links;
- Construction of residential building.

8.3 Mitigation Measures

The following Mitigation Measures are to address potential impacts to water quality and are required to protect the downstream surface water networks. All works shall be undertaken with reference to the following guidelines:

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



The schedule of mitigation presented below summarises measures that shall be undertaken in order to reduce impacts on ecological receptors within the zone of influence of the proposed development.

Item 1: Hydrocarbons from carparking area entering the watercourse.

Possible Impact: Water quality impacts, Reduction in habitat quality.

Mitigation: Designated parking at least 50m from any watercourse.

Result of Mitigation: Ensures no soil disturbance or hydrocarbons leak near aquatic zone.

Item 2: Pollutants from site compound areas entering the watercourse.

Possible Impact: Water quality impacts. Reduction in habitat quality.

Mitigation: The site compound shall be located at least 100m from any watercourse.

Result of Mitigation: Prevents pollution of the aquatic zone from toxic pollutants.

Item 3: Pollutants from material storage areas entering the watercourse.

Possible Impact: Water quality impacts. Reduction in habitat quality.

Mitigation: Fuels, oils, greases, and other potentially polluting chemicals shall be stored in bunded compounds or at a location at least 50m from any body of water. Bunds are to be provided with 110% capacity of storage

container. Spill kits shall be kept on site at all times and all staff trained in their appropriate use.

Result of Mitigation: Prevents pollution of the aquatic zone from toxic pollutants.

Item 4: Concrete/cementitious materials entering the watercourse from washdown and pours.

Possible Impact: Water quality impacts. Reduction in habitat quality.

Mitigation: A designated wash down area within the Contractor's compound shall be used for cleaning of any equipment or plant, with the safe disposal of any contaminated water. Pouring of cementitious materials shall be carried out in the dry.

Result of Mitigation: Prevents pollution of the aquatic zone from toxic pollutants, ensures invasive species material is transported off site.

8.4 Management of Environmental Impacts

Construction is envisaged to commence once final planning permission has been obtained. It is anticipated that the development shall be constructed over a period of 12-18 months.

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



8.5 Roles and Responsibilities

Main Contractor

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

Copies of the Construction Surface Water Management Plan shall be made available to all relevant personnel on site. All site personnel and sub-contractors shall be instructed about the objectives of the CSWMP and informed of the responsibilities which fall upon them because of its provisions.

The responsibilities of the appointed person shall be as follows;

- Updating the CSWMP as necessary to reflect activities on site.
- Advise site management (including, but not limited to, the site Construction Manager) on environmental matters;
- Ensure pre-construction checks for protected species, if any undertaken;
- Review method statement of sub-contractors to ensure that it incorporates all aspects of CSWMP.
- Provide toolbox talks and other training, and ensure understanding by all involved of all mitigation measures;

- Assess effectiveness of mitigation, check weather forecast and site conditions where trigger levels are required;
- Ensure adherence to the specific measures listed in the Planning Conditions;
- Advise upon the production of written method statements and site environmental rules and on the arrangements to bring these to the attention of the workforce;
- Investigate incidents of significant, potential, or actual environmental damage, ensure corrective actions are carried out and recommended means to prevent recurrence; and,
- Be responsible for maintaining all environmental related documentation.
- Ensure Plant suggested in environmentally suited to the task in hand;
- Co-ordinate environmental planning of the construction activities to comply with environmental authorities' requirements and with minimal risk to the environment. Give contractors precise instructions as to their responsibility to ensure correct working methods where risk of environmental damage exists;

8.6 Pre-Construction Plan

Designated Storage Area & Site Compound

A site compound (s) including offices and welfare facilities shall be set up by the main contractor in locations to be decided within the subject site.

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



Measures shall be implemented throughout the construction stage to prevent contamination of the soil and surrounding watercourses from oil and petrol leakages and significant siltation. Suitable bunded areas shall be installed for oil and petrol storage tanks. Designated fuel filling points shall be put in place with appropriate oil and petrol interceptors to provide protection from accidental spills. Spill kits shall be provided by the Contractor to cater for any spills.

8.7 Construction Plan

Vehicle Washdown

Where possible the permanent connection to the public foul sewer shall be used temporarily for construction phase. Vehicle wash down water shall discharge directly, via suitable pollution control and attenuation, to the foul sewer system.

Surface Water Run-off

On-site treatment measures shall be installed to treat surface water run-off from the site prior to discharge to the receiving surface water sewer. This treatment shall be achieved by the construction of cut off trenches along the lowest parts of the site. Cut off trenches shall incorporate straw bales to reduce sediment loading, settlement tanks, the instillation of proprietary surface water treatment systems including class 1 full retention petrol interceptors and spill protection control measures. Settlement tanks shall be sized to deal with surface run-off and any groundwater encountered. All measures shall be approved prior to commencement with the pollution Section of DLRCC.

A sampling chamber with shut down valve shall be installed downstream of the settlement tank and water quality monitoring shall be carried out prior

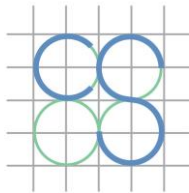
to discharge to the surface water sewer and subsequently to the nearby watercourse.

Surface Water Monitoring Parameters.

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

8.8 Monitoring

To ensure that CSWMP actions are achieving the required objective, supervision and monitoring is required. As part of their role, the PE shall agree a schedule of monitoring and reporting with the local authority. The schedule of monitoring shall depend on the programme of works, which in turn shall depend on the programme of the construction contractor. It is considered appropriate that visual checks of the tie-in to the external drainage network take place on a daily basis during the installation of the outfall.



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