OUTLINE CONSTRUCTION MANAGEMENT PLAN

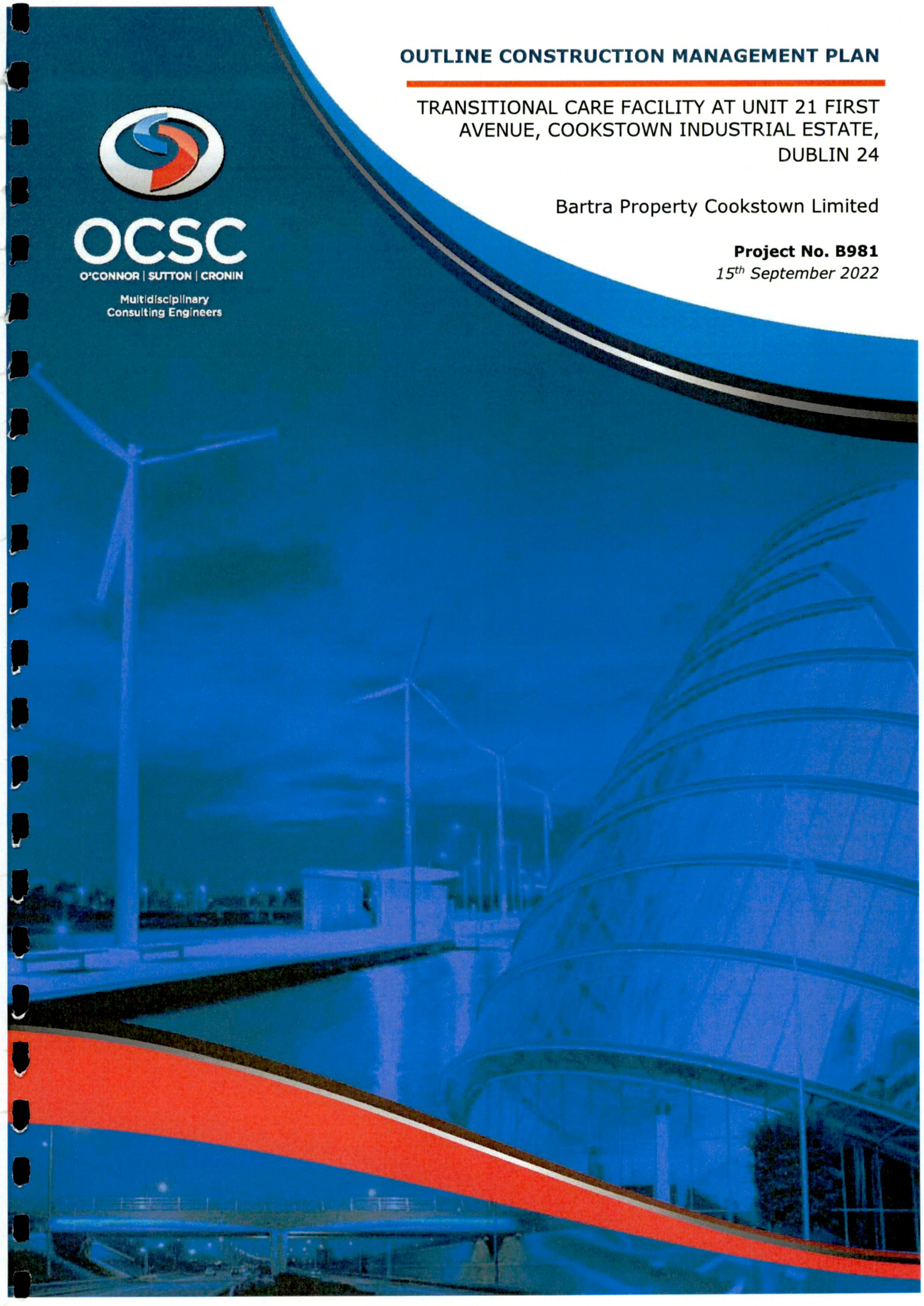
TRANSITIONAL CARE FACILITY AT UNIT 21 FIRST AVENUE, COOKSTOWN INDUSTRIAL ESTATE, DUBLIN 24

Bartra Property Cookstown Limited

Project No. B981

15th September 2022

OCSC
O'CONNOR | SUTTON | CRONIN
Multidisciplinary
Consulting Engineers



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NOTICE

DOCUMENT CONTROL & HISTORY

OCSC Job No.: B981	Project Code	Originator	Zone Volume	Level	File Type	Role Type	Number	Status / Suitability Code	Revision
	B981	OCSC	XX	XX	RP	C	0007	S4	P01

Rev.	Status	Authors	Checked	Authorised	Issue Date
P01	S4	COM	DC	AOB	15.09.22
P01	S3	COM	DC	AOB	07.09.22

Contents

1.0 INTRODUCTION

O'Connor Sutton Cronin & Associates (OCSC) have been commissioned by Bartra Property Cookstown Limited to undertake this Outline Construction Management Plan report with respect to the proposed development at Unit 21, First Avenue, Cookstown Industrial Estate, Dublin 24.

The development will consist of the following:

- Demolition of all existing 1-3 storey industrial/commercial structures and small café on site totalling c.5,500sqm in area;
- Construction of a 1-5 storey Transitional Care Facility (step-up/step-down) providing 131 no. bedspaces over partial basement (total floor area c.6,743sqm) with central courtyard (c.519sqm);
- The basement consists of a sprinkler tank and pump rooms, water tank room, plant room and workshop;
- Provision of dining and kitchen areas, siting/family rooms, activity rooms, coffee dock, hair salon, oratory, lobbies/reception areas, ancillary offices and staff areas, stores, toilets, shower/changing facilities, ESB substation, generator, switchroom, service yard and waste areas serving the facility;
- Lobbies, stair/lifts, photovoltaic panels and green roofs throughout;
- Partial provision of the pocket park identified in the Tallaght LAP (c.1,286sqm);
- New vehicular access from First Avenue and egress onto Cookstown Road via a one-way system through the subject site;
- Entrance signage on the eastern elevation of the proposed facility;
- All associated site development works, services provision, connection to the water supply, foul and surface water networks on First Avenue and Cookstown Road, attenuation/bioretention systems, vehicular and pedestrian access including internal road and footpaths, public realm upgrade works, landscape and boundary treatment works, tree removal, bicycle storage (68 no. spaces), car parking (32 no. spaces), set-down parking spaces, 1 no. ambulance set-down space serving the facility and delivery/loading areas to First Avenue.

The subject site is located at Unit 21 First Avenue, Cookstown, Industrial Estate, Tallaght, Dublin 24, as shown in Figure 1.1 – Site Location. The proposed development site is immediately bound by:

- First Avenue, to the north;
- Cookstown Estate Road, to the east;
- Unit 20 Commercial unit, to the west;
- 3nr. commercial units, to the south.

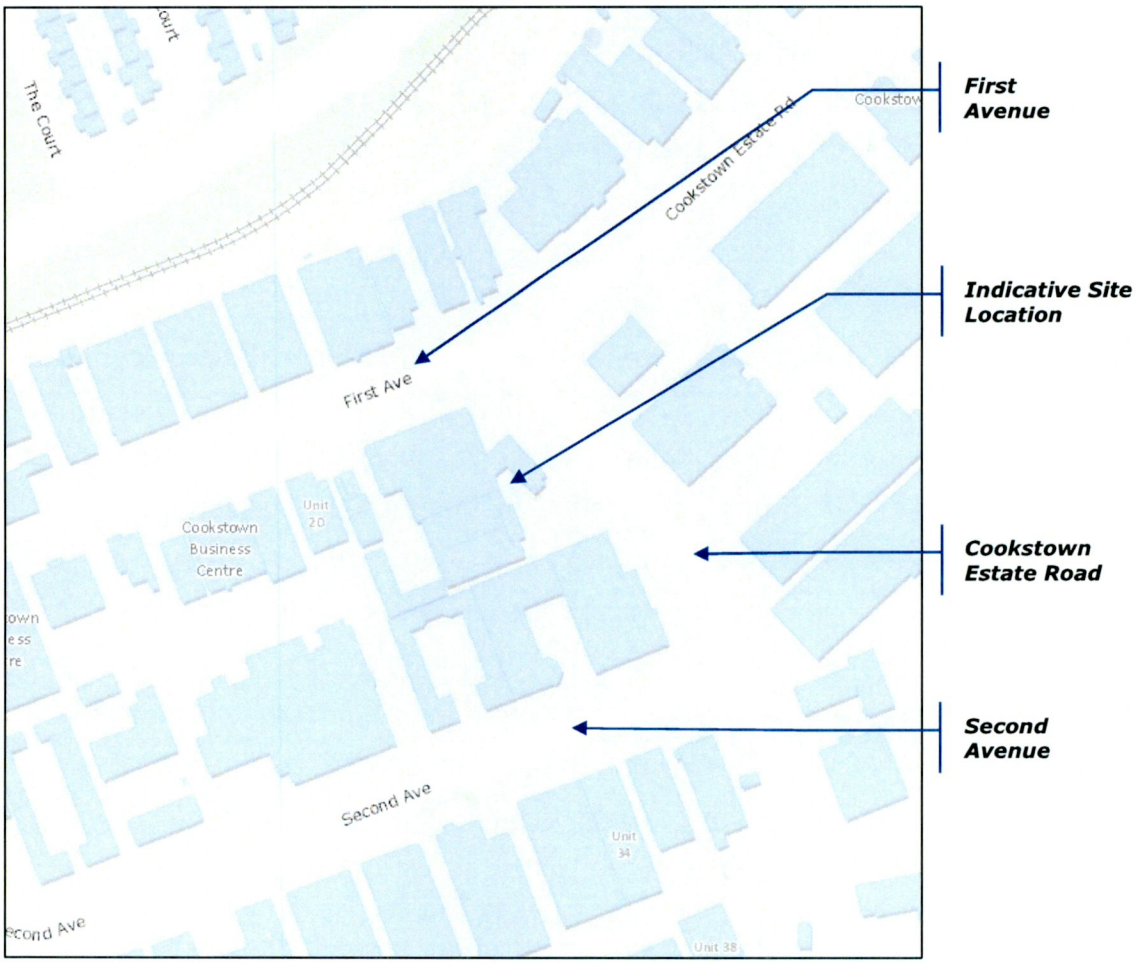


Figure 1.1 – Indicative Site Location (www.myplan.ie)

1.1 EXISTING SITE & USAGE

The site contains several existing low-rise industrial buildings. There are four distinct structures as indicated in Figure 1.2 - Building Layout. The remainder of the site is typically covered with a concrete or tarmac surface.

Building 1(B1) is a steel portal frame with masonry infill walls and reinforced concrete windposts. The building is currently not in use. Building 2 is a reinforced concrete portal frame approximately 11m high. The reinforced concrete frame is infilled with masonry walls. An additional mezzanine has been constructed in part of the building with a steel frame and timber floor. Building 2 was formerly used for glass manufacturing and associated office. Part of the building is now used for non-contaminate storage by Richard Nolan Civil Engineering.

Building 3(B3) is a two storey office formed of masonry and concrete floors. B4 covers the perimeter single storey warehouses which are constructed of steel portal frames with mono pitch roofs and masonry infill walls.

The combined buildings have gross floor area of c. 5,500sq.m.

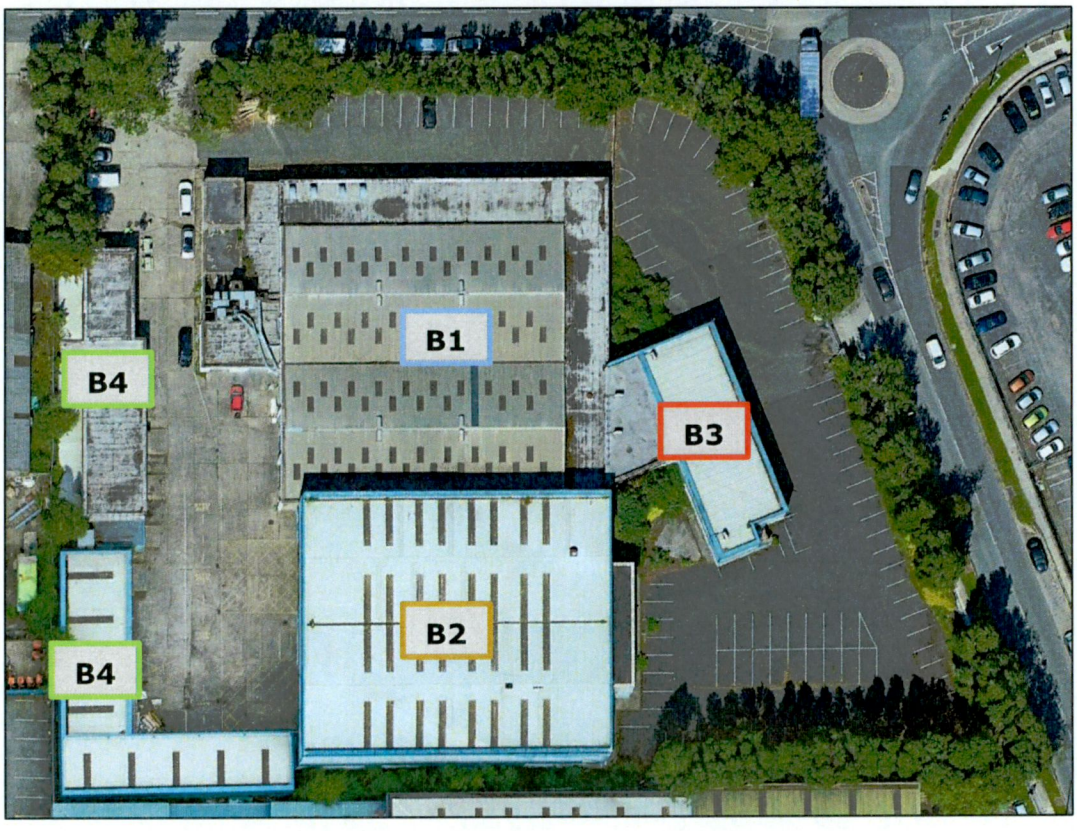


Figure 1.2 – Building Layout (Google Maps)

1.2 Proposed Demolition Works

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

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

1.3 Material Re-use / Recovery Rate

Where possible materials will be re-used. Careful extraction of materials will be undertaken to ensure that the highest proportion of the materials can be re-used. This will reduce the level of new materials required for the proposed site. This in turn reduces the impact on new resources and carbon emissions associated with the extraction, manufacture and transportation of materials to the site. Undertaking the demolition and enabling works upfront ensures that more time can be spent on the careful recovery of materials on site. Where appropriate, excavated material from development sites should be reused on the subject site. If any of the excavated spoil is found to be clean/inert, the site manager will investigate whether nearby construction sites may require clean fill material, to both minimise the costs of transport and to reuse as much material as possible. Any material used on another site will be done under Article 27 of the European Communities (Waste Directive) Regulations 2011.

2.0 SCOPE OF REPORT

This report sets out the Outline Construction Management Plan (OCMP) for the proposed development as described in section 1 of this report. However, this plan also makes allowance for the expected development on the remainder of the site which is to be subject to a separate and future planning application for c. 123 apartment units and ancillary ground floor retail uses. Therefore, allowance is made for what is described as the masterplan development on the overall site for the purposes of this report.

This OCMP, is a preliminary plan written by OCSC Multidisciplinary Consultant Engineers and will be subject to detailed development by the main contractor on appointment. It sets out likely and anticipated construction methodology and phasing which will be developed by a main contractor prior to commencement of construction on site. The main contractor will then develop their own fully detailed construction management plan prior to commencement of works on site.

3.0 OUTLINE DEVELOPMENT PROGRAM

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

- Receipt of a Grant of Planning Permission;
- Progression through detailed design stage;
- Issue of tender documents to shortlisted main contractors followed by period for tender returns, assessment and award of contract;
- Mobilisation of contractor;
- Set up site perimeter hoarding, maintaining existing pedestrian and traffic routes around the site;
- Demolition and Site Clearance;
- Reduced Level excavations;
- Construction of 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;
- Completion of works.

The above is a very high level estimate of the key project milestones. Associated durations of the respective stages are also dependent on a number of factors but a high level, preliminary estimate would suggest the actual construction works will take approximately 28-36 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 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.

4.0 INDICATIVE SITE SETUP

4.1 Introduction

Site offices and welfare compounds are to be provided on site for construction and management personnel. The main contractor will consider phased locations but it is anticipated that the main site compound area will initially be located outside the area of demolition works. The proposed initial site set up is shown in Figure 4.1 below.

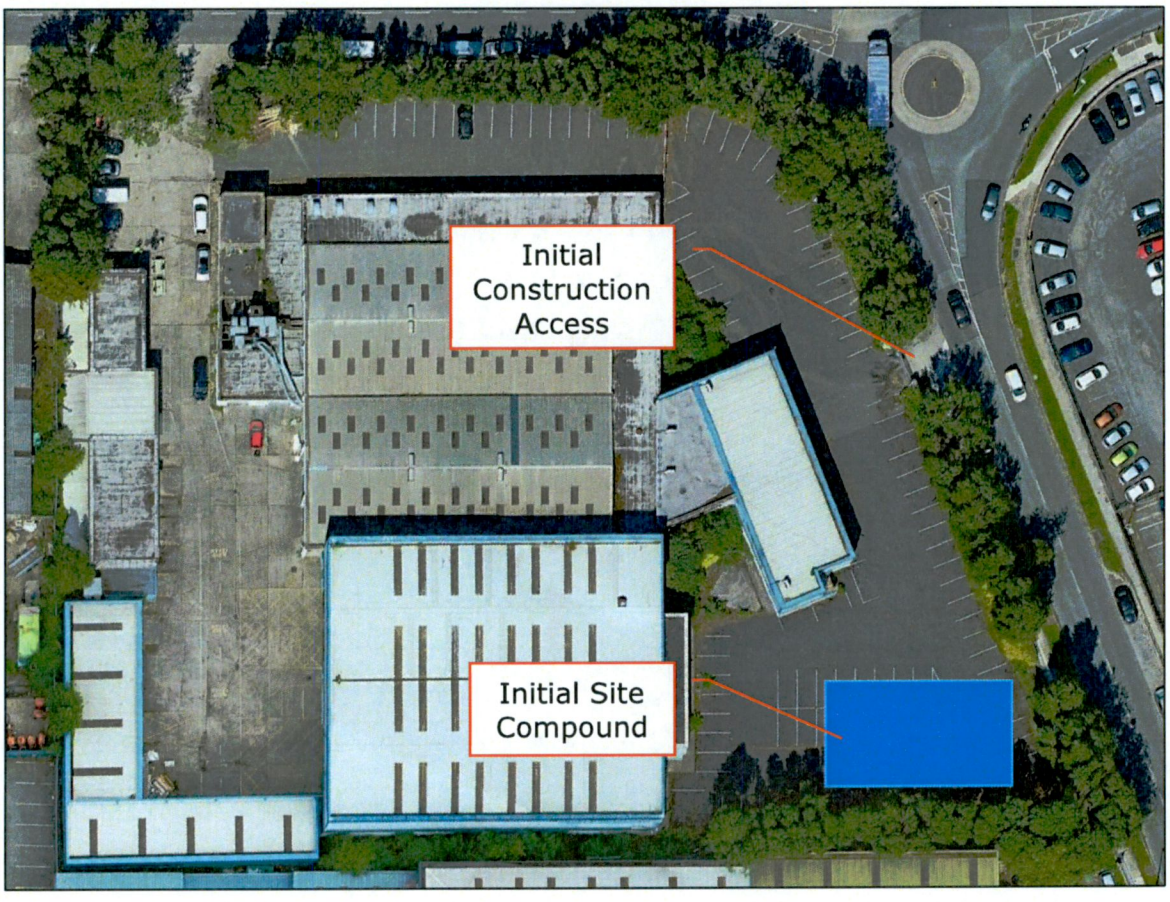


Figure 4.1: Site Compound

It is the intention to provide a main site accommodation and welfare facility on the Southern boundary. The principal contractor will be responsible for providing canteen and welfare facilities for the on-site operatives. These facilities will be maintained by the main contractor.

4.2 Site Offices & Compound

It is expected that the site compound will initially be set up along the Southern boundary of the site for the demolition works. This will allow for the efficient spread of resources through the site for construction traffic. The compound will be moved dependent on construction needs to be located outside the footprint of the proposed buildings. Site offices will be provided on site for construction and management personnel. Appropriate levels of welfare facilities will be provided along with secure facilities for the storing of construction materials.

Segregation will be employed on site to separate pedestrians from heavy equipment. Fenced off pedestrian walkways will be provided close to the site offices.

4.3 Site Delineation

The initial work on site will include the erection of an appropriate standard hoarding/security fence around the entirety of the site in order to protect the works and members of the public. The boundary to the site will be maintained at all times.

Construction traffic will access the site via the Cookstown Road. Adequate site security will be maintained throughout the contract period.

It is proposed that the main contractor will employ a security company to monitor the site out of working hours through regular inspections and/or remote camera monitoring. During working hours the main contractor is to have a gate man permanently employed keeping record of all work personnel on site (holding valid SafePass accreditation), and visitors, entering and leaving the site.

4.4 Pedestrian Access

Pedestrian access will be strictly controlled. Only *Safe Pass* accredited personnel will be permitted on site and daily in-out attendance records will be maintained. Access will be strictly controlled via security personnel at each of the access point on site.

Visitors will only be allowed to enter the site via designated vehicular / pedestrian access gate and must report to the site security office to sign-in and for obtaining any additional PPE required.

Visitors will be expected to attend a specific site safety briefing and be accompanied by a member of the site team at all times.

4.5 Vehicle Access

Vehicular access to the site will be via Cookstown Road via the site access road only and will be strictly managed and controlled – see *Site Monitoring, Security & Management* section following. A traffic management plan will be prepared in order to safely control construction traffic.

Separate pedestrian access will be developed at the access point to the site in order to maintain vehicle and pedestrian segregation.

4.6 On Site Parking

Taking into consideration the need to balance the promotion of sustainable travel against the risk of over spill parking, appropriate and limited on-site provision will be made for car parking by site construction personnel. Adequate numbers of cycle parking will be provided for site personnel and personnel will be encouraged to use public transport which is available in the surrounding area. A limited number of spaces will be provided for critical use such as the delivery of materials, tools etc. to prevent overspill parking onto the local road network. All vehicular access will be controlled at the gate where all access and egress will be recorded. All site personnel and delivery drivers will have to undergo site induction.

The LUAS Red Line Belgard stop is located within 10 minutes of the site and will encourage the use of public transport for workers on the site.

4.7 Working Hours

Working hours will be restricted to 07:00 to 19:00 Monday to Friday & 08:00 to 16:30 on Saturdays. No Sunday or Bank Holiday work will be permitted. Out of hours working will be only permitted by arrangement with site management. Work

outside of normal hours will be subject to approval by South Dublin County Council.

If there is any occasion where work may be carried out outside normal daytime working hours, South Dublin County Council, local residents and businesses in the area which are likely to be affected by the proposed works will be notified in advance in the form of a letter or leaflet containing the following information:

- Name, address and telephone number of person responsible for carrying out works.
- Nature of the works and reasons for carrying out at the proposed time.

The Project Supervisor Construction Stage (PSCS) will liaise with the Client to agree specific arrangements for activities outside of normal working hours that will minimise the risk and disruption to residents and members of the public. All reasonable precautions will be taken for the operation of plant and equipment to avoid nuisance and excess noise impact on the surrounding residents.

4.8 Construction Vehicle Numbers

It is difficult to assess the exact quantum of traffic that will be generated during the construction period. However, a number of preliminary estimates have been made based on the extent of excavation, type of development and estimated phasing. Peak numbers of construction vehicles are expected during the excavation for the basement, foundations, ground floor and superstructure.

These are summarised as follows:

- 60 no. private vehicles per day from staff and site visitors i.e. 120 no. vehicle movements;
- 40 no. light goods vehicles per day from subcontractor staff i.e. 80 no. vehicle movements;
- 100 no. heavy goods vehicles per day during peak excavation process i.e. 200 no. vehicle movements;
- 40 no. heavy goods vehicles per day outside of the peak excavation periods i.e. 80 no. vehicle movements.

No HGV transit permits are required for construction vehicles accessing the site provided they do not cross the city centre restricted zone.

4.9 Traffic Management Plan

As detailed in the earlier paragraphs this development will have a notable number of movements for construction goods and people during the building phase. It is noted that the traffic management plan will be developed by the contractor for the scheme and this will be discussed with South Dublin County Council.

4.10 Site Craneage

Given the scale of the site it is evident that a number of cranes will be required in order to provide efficient site coverage. Whilst the exact number will be dictated by the programme and the specific construction requirements, it is likely that be 2 tower cranes will be required, based on a 40m – 50m crane jib dimension an outline tower crane layout is shown following. It is noted that to maximise efficiency of the tower cranes they will be supplemented by mobile cranes to facilitate lifts at and beyond the extremity of the reach of the cranes.

A mobile crane may be used for elements of the structure and external works. Loading areas will be used to minimise storage on site, and "just in time" deliveries for each floor level will be used to load materials before the floor for the next level is placed. Detailed lifting plans and RAMS (Risk Assessment / Method Statements) will be compiled for all activities involving cranes by the contractor.

Prior to commencement of works on site the developer/contractor will engage with the IAA's Air Navigation Service Provider in relation to the utilisation of cranes on site.

4.11 Material Storage and Handling

It is envisaged that the contractor will maintain a tidy site and to operate a "just in time" policy for the delivery and the supply of materials for the works, particularly the final phase of the works when on site storage will be at a minimum.

All materials will be stored on site as to minimise the risk of damage. A teleporter will be used for general unloading during the structural and envelope works. Unloading over the public roadway and path will be avoided.

5.0 SITE MONITORING, SECURITY & MANAGEMENT

5.1 Monitoring

Pre Commencement Condition Surveys

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

5.2 Site Security & Management

The site will be closely managed on a day to day basis by site management. Security and control will be provided at the main site access to record and control all personnel entering and leaving the site and to record and control all materials entering and leaving the site. Appropriate manned security will be maintained at the site access gates in order to secure the site, to control vehicular access and to monitor and record all deliveries and removals operations. The main construction works will be conducted within the permitted working hours, as will be outlined in permitted planning permission.

5.2.1 Wheel Washing Facilities:

A properly sized and designed wheel wash will be provided and maintained on site as necessary for the earthworks and superstructure elements of the project. Appropriate water collection and filtering will take place prior to discharge to the public sewer system. Gate staff will be trained to inspect vehicles for cleanliness prior to egress to the public road network and any trucks that have been inadequately cleaned will be re-washed. A road sweeper will also be utilised as required on the public road at vehicular access / egress points.

5.2.2 Covered Vehicles:

Cover systems will be used as appropriate on vehicles removing spoil from site so as to minimise dust arising on surrounding streets. Trucks leaving the site will, as

previously noted, pass through a wheel washing system. In addition, these trucks will be watered down and covered. This will be carried out in a dedicated wash down zone with dedicated site personnel.

5.2.3 Dust Suppression:

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

6.0 SAFETY, HEALTH AND ENVIROMENTAL

6.1 General Health, Safety and Environmental Consideration

Construction and demolition works will be carried out in such a way as to limit, as far as practicable, adverse environmental impact.

Works will be carried out in accordance with the following general provisions:

- Planning approvals from the Local Authority;
- Requirements from the Local Authority.

As part of the Construction Method Statement, the process will ensure that construction techniques and materials used are a fundamental consideration of the design and intended long-term use, the aim below is achieved:

- Design for durability and low maintenance.
- Design for flexibility and adaptability.
- Use of materials from sustainable sources.
- Use of local materials where possible.

Safety, health and environmental issues are a primary consideration in the construction methods adopted. The construction team will develop detailed health and safety plans, specific environmental, fire and accident procedures to suit the construction sequence of the Development. Contractors involved in the Development will ensure that all non-English speaking employees are provided with relevant Health and Safety information in their national language.

All contractors will be required to adopt the relevant skills certification required for that element of the works.

A site specific Safety Statement and a detailed Construction Stage Safety & Health Plan will be compiled prior to any works on site and will be in accordance with the Health & Safety Authority and Local Authority guidelines.

6.2 Control of Substances Hazardous to Health

The strategy for controlling all substances and all work processes that may generate hazardous substances will have to be addressed and control measures put in place.

Some of the control measures to be employed include the following:

- All fuel and chemicals to be stored in designated areas, with deliveries of hazardous materials supervised.
- Storage tanks and container facilities will be appropriately bunded.
- In the case of spills or discharges, remedial action will be taken as soon as possible in accordance with company procedures.
- Personal protective equipment (PPE) suitable to the pertaining conditions will be used by all site personnel.

6.3 Environmental, Emergency and Accident Procedure

Measures will be carried out to avoid environmental incidents, however if these occur then the following types must be reported to the responsible person in the construction team.

The overall strategy in the event of a spillage will be to "Stop-Contain-Notify" in the event of:

- Spills or discharge to the atmosphere, water supplies, sewage systems, rivers and other watercourses, or to the ground:
    - Any chemical products
    - Oils or fuels
    - Effluent/fumes and gases
    - Waste or contaminated materials
- Damage to existing:
    - Trees and wildlife
    - Flora and existing local habitats
- Any environmental incidents that could lead to:
    - Local Authority or regulatory enforcement
    - Public complaint

Emergency routes and procedures will be continuously adapted to suit the construction sequence and stage of the Development. An Emergency and Evacuation Plan will be prepared following the guidelines detailed below and updated on a regular basis during construction.

- Definition of the management organisation and responsibility for safety;
- Definition of appropriate fire prevention measures, including good housekeeping of site, welfare facilities and offices;
- Adequate provision of fire extinguishers across the site;
- Use of non-flammable/fire retardant materials for protection of finished works;
- Safe use and safe storage of flammable materials of all categories, whether solid, liquid or gas;
- Appropriate waste management procedures;
- Monitoring the type and frequency of fire inspections/audits;
- Development of evacuation plans, to include escape routes, muster stations, means of sounding alarms and general emergency procedures;
- Site safety inductions and fire drills;
- The application of permit systems for Hot works, Confined Space Entry and Electrical Access Control;
- The provision of first aiders. Checking of emergency routes are available and unobstructed at all times;
- Liaison with the emergency services and occupants of the adjacent buildings.

First aid facilities will be established and at least one trained first aider will be present on-site at all times. In addition, trained Fire Wardens / Fire Marshalls will be in place on-site to address fire safety.

6.4 Air Quality

General Provisions

Construction and demolition works will be carried out in such a way as to limit the emission to air of pollutants, employing best practices.

- The site will be managed in accordance with the Construction Management Plan to minimise potential effects on air quality from construction;

- Air monitoring will be undertaken throughout the construction period as may be deemed necessary;
- The storage and handling of construction materials can be significant dust emission source. The appropriate dust control measures will greatly reduce dust emissions from these sources and ensure that the adverse effect will be reduced or eliminated. These include covering waste sips, scaffold netting, use of water to suppress dust, provision of hard stand access for truck and vehicles;
- Handling and storage areas will be sited as far away as is reasonably and practically possible from public/residential areas. Prolonged storage of materials will be avoided where possible. Transportation of materials that may be dusty will be sheeted down to prevent any escape of materials.

6.5 Construction Plant

Construction plant can be a significant source of emission although control measures can be implemented to minimise any adverse impacts. The following measures will be employed:

- Site plant and equipment will be serviced regularly and maintained in good condition and in accordance with the manufacture's specifications. Allowing for economic constraints, the plant will be selected on the basis of which has the least potential for dust and emissions;
- Plant will not be left running when not in use;
- Plant with dust suppression equipment will be used where practicable.

6.6 Vehicle Movements

Vehicle movement may result in dust emissions and exhaust emissions. However, a number of control measures can be adopted to eliminate or minimise such emissions:

- Damping down the site haul roads during prolonged dry periods;
- Regular cleaning of hard surfaces at the site entrance;
- Ensuring that materials are transported appropriately (sheeting used over dusty materials);
- Confinement of plant and machinery to designated haul routes on site;
- Speed restrictions on site will be enforced;

- Hoarding to site boundaries where practical which will aid in the reduction of windblown dust off site.

6.7 Dust

Dust control will be best achieved at sources, and if possible, activities will be carried out in a manner as to preclude dust generation.

If dust is generated, steps will be taken to protect workers in the vicinity who shall, as a minimum, be issued with appropriate dust masks. Dust will, as far as is reasonably practicable, be contained in the area where it was generated. Dust suppression will be carried out to ensure that dust nuisance affecting neighbouring properties is minimised.

Dust emissions from construction will be controlled through careful pre-project planning and effective site management. The following control measure and good practices will be employed:

- Prohibiting the burning of materials;
- Loading and unloading will only be permitted in designated areas;
- Provision of water sprays in dust sensitive locations will be introduced, e.g. demolition areas, concrete cutting etc;
- Haulage vehicles transporting gravel and other similar materials to site will be covered by a tarpaulin or similar.
- Access and exit of vehicles will be restricted to certain access/exit points.
- Vehicle speed restrictions of 20km/hr, or lower as deemed fit by the contractor, will be in place.
- Bowsers will be available during periods of dry weather throughout the construction period.
- During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will operate to ensure moisture content is high enough to increase the stability of soil and dust susceptible materials in order to suppress dust.
- Stockpiles will be stored in sheltered areas of the Site and covered, with appropriate levels of moisture applied regularly or as needed if exposed during dry weather.
- Gravel should be used at site exit points if appropriate to remove caked-on dirt from tyres and tracks.

- Equipment should be washed at the end of each work day.
- Hard surfaced roads will be wet swept to remove any deposited materials.
- Unsurfaced roads will be restricted to essential site traffic only.
- If practicable, wheel-washing facilities should be located at all exits from the construction site.
- Dust production as a result of site activity will be minimized by regular cleaning of the site access roads using vacuum road sweepers and washers. Access roads should be cleaned at least 0.5 km on either side of the approach roads to the access points.
- Public roads outside the site shall be regularly inspected for cleanliness, as a minimum daily, and cleaned as necessary. A road sweeper will be made available to ensure that public roads are kept free of debris.
- The frequency of cleaning will be determined by the Site Agent and is weather and activity dependent.
- The height of stockpiles will be kept to a minimum and slopes should be gentle to avoid windblown soil dust.
- The following will be damped down during dry weather:
    - Unpaved areas subject to traffic and wind;
    - Stockpiles;
    - Areas where there will be loading and unloading of dust-generating materials, and
    - Borrow-pits.
- No run-off of water or mud will be permitted from the Site for the duration of the works. All construction related water produced on-site will be stored and disposed of offsite at a licensed facility.

6.8 Ecology

All construction works will be carefully controlled in terms of potential environmental effects through implementation of this CMP and consultation with the relevant bodies. As part of the construction process, protective fencing will be provided to protected trees, which in turn will provide protection to the ecology.

Procedures to minimise risk of pollution potential incidents will be put in place.

6.9 Noise and Vibration

General Provision

Noise and vibration levels will be controlled as set out below to ensure that the Developments is operated in a way that minimises detrimental impact to the amenities of local residents

Construction Noise

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

- BS 5228:2009 Code of Practice for Noise and Vibration Control on Construction and Open Sites, Part 1 and part 2
- 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 infrastructure works are those specified in the b Category of BS 5228. These limits are summarised below and will be applied at the nearest sensitive receptors to the works.

- Night (23.00 – 07.00) = 45dB
- Evening (19.00 – 23.00) = 45dB
- Day (07.00 – 19.00) = 70dB

In addition to the above noise limits, the following restrictions will be observed in relation to day to day operations:

- Day to Day Operation (Noise Sensitive & Schools) – 40dB LAeq,15min;
- Day to Day Operation (Commercial) – 55dB LAeq,15min;
- Emergency Operation (Noise Sensitive & Schools) – 55dB LAeq,15min.

Noise levels will be monitored continuously and a threshold value of 65 db $L_{Aeq,1hr}$ free field at residential noise sensitive locations in the vicinity of the development will be adopted. Where noise levels exceed this threshold, adequate steps will be taken by the site management to review works and implement additional mitigation measures.

Off-site infrastructure works, excavations and concrete works will be among the most significant activities. The activities are likely to generate the most noise over prolonged periods will be demolition and concrete activities.

The general mitigation principles and methods will include;

- Selection of plant with low inherent potential for generating noise.
- Avoid unnecessary revving of engines and switch off plant items when not required.
- Keep plant machinery and vehicles adequately maintained and serviced.
- Proper balancing of plant items with rotating parts.
- Keep internal routes well maintained and avoid steep gradients.
- Minimise drop heights for materials or ensure a resilient material underlies.
- Use of alternative reversing alarm systems on plant machinery.
- Where noise becomes a source of resonating body panels and cover plates, additional stiffening ribs or materials should be safely applied where appropriate.
- Limiting the hours during which site activities likely to create high levels of noise are permitted.
- Appointing a site representative responsible for matters relating to noise.
- Monitoring typical levels of noise during critical periods and at sensitive locations.

As the building within the proposed development rise above the ground, there will be some noise from scaffold and formwork erecting.

On occasions it may prove necessary to carry out noisy activities outside normal working hours, these activities will be discussed with the effected parties before they are carried out.

No heavy construction equipment/machinery (to include pneumatic drills, construction vehicles, generators, etc.) shall be operated on or adjacent to the construction site before 07.00 or after 19:00 Monday to Friday, and before 08:00 and after 13:00 on Saturdays.

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 07:00. No deliveries of materials, plant or machinery shall take place before 07:00 in the morning or after 19:00 the evening.

Vibration limits to be applied for the infrastructure works are to be specified in the NRA document Guidelines for the Treatment of Noise and Vibration in National Road Schemes (NRA, Revision 1, 2004). These limits are outlined below:

Allowable vibration (in terms of peak particle velocity) at the closest part of the sensitive property to the source of vibration, at a frequency of;

Less than 11Hz	**11 to 50 Hz**	**50 to 110 Hz (and above)**
3mm/s	3 to 8mm/s	8 to 11mm/s

6.10 Soils and Contamination

Existing Conditions

A site investigation was undertaken as part of the development of the proposals for the building and surrounding landscape. The underlying soil conditions consists of made ground over stiff brown gravelly silt/clay which is underlain by very stiff to hard grey black gravelly. Bedrock was encountered at approximately 14m below ground level.

A Waste Assessment Characterisation (WAC) was undertaken by OCM during the site investigation works which will inform the contractor of the waste soil classification of the material on-site and potential outlets for disposal/remediation as required. All samples as part of the WAC were characterised as non-hazardous.

Prior to removal of any excavated material, it will be required to be classified by the contractor as either non-hazardous or hazardous in accordance with the EPA publication entitled 'Waste Classification: List of Waste & Determining if Waste is

Hazardous or Non-Hazardous' 13 using the HazWasteOnline application (or similar approved classification method).

Any proposed waste facilities should be contacted to determine if they require this classification as well as the WAC test results to establish if they can accept the material. The waste classification assessment should be forwarded onto the waste facility before excavated material is relocated and the contractor should receive written approval of acceptance.

In the event that hazardous soil or historically waste is encountered during the construction phase, the contractor will notify South Dublin County Council and provide a Hazardous/Contaminated Soil Management Plan, to include estimated tonnages, description of location, any relevant mitigation, destination for disposal/treatment, in addition to information on the authorised waste collector(s).

Strategy

The strategy for controlling and mitigating potential adverse environmental or health and safety effects during construction will be to adopt the procedures and methods set out within this CMP.

Operation Control

The strategy for controlling and mitigating potential adverse environmental or health and safety effects during construction will include the following, as appropriate:

- Identification and assessment of the potential for residual ground contamination to be presented prior to the start of any excavation works;
- Minimisation of potential risks to site workers as required by the Safety, Health and Welfare (Construction Regulations) 2013;
- Testing and sampling of excavated soils in order to assess the suitability of materials for re-use on site;
- Dust suppression from any contaminated soils by the regular use of water spray during any dry conditions, sheeting of haulage vehicle loads;
- Stockpiling of contaminated materials will be avoided where possible;

- Stockpiles will be treated to prevent windblown dust;
- Adequate drainage will be designed and installed during construction work to manage surface water runoff;
- The handling and storage of any potentially hazardous liquids on site, e.g. fuels and chemicals, will be controlled and best practice guidelines. Storage tanks/container facilities will have appropriate bunding within the designated area;
- If hazardous liquids escape, remedial action will be taken as soon as possible;
- Where unforeseen contamination is identified during the course of the work, specific investigations will be carried out in the areas in question and appropriate health and safety procedures will be implemented during the removal of the material.

A strategy will be prepared to identify, analyse, segregate and control existing contaminated materials on site.

Procedures will be drawn up to control all potentially contaminated materials brought to site.

6.11 Transport

General Provisions

Estimates of construction traffic generations for the construction phase are compiled and are discussed earlier within this report.

The works will be carried out in such a way that inconvenience to the public and business' arising from increase in traffic flows and disruptive effects of construction traffic on local and main roads is limited wherever practical.

The key principle of the traffic management plan is to ensure the safety of all personnel (drivers & pedestrians). This means a segregated entrance for vehicles and pedestrians. The onsite traffic flow will change through the course of the Development. All site traffic will be subject to speed restrictions.

Vehicles and pedestrians will be segregated at the site entrance. Site operatives will be required to wear high-vis clothing on site. Plant and truck operators will be required to have valid qualifications for the plant/trucks that they are operating.

Specific material storage will be identified and will be managed for on-site movement by the mobile crane or the forklift.

For large, wide or abnormal loads, appropriate guidelines will be followed.

A Traffic Management Plan will be developed for the project prior to commencing works. It will be reviewed and updated to reflect the changing access requirements and route availability. The Traffic Management Plan will be reviewed and updated in line with the construction programme and will typically include details of the following:

- Temporary Traffic Operations Supervisor (TTOS);
- Temporary traffic control measures;
- Temporary and permanent access to the works – vehicle and pedestrian;
- Off-loading and storage areas;
- Traffic management procedures for waste disposal vehicles;
- Personnel and vehicle segregation;
- Equipment e.g. road cones, temporary fencing and signage etc.;
- Ensuring all work is planned and method statements prepared and detailing safe systems of work;
- Ensuring that all sub-contractors make adequate provision for vehicle selection and supervision of drivers;
- Making vehicle safety an integral part of the development safety & health plan;
- Defining standards for driver competence, vehicle safety and maintenance;
- Ensuring the coordination and cooperation between contractors;
- Ensuring that all workers receive site induction training, detailing safe traffic routes and site rules for operating vehicles. Establish safety monitoring procedures for the use of vehicles on site.

6.12 Waste

As noted previously a separate "*Construction & Demolition Waste Management Plan*" prepared for the scheme by O'Connor Sutton Cronin Consulting Engineers and has been submitted with this application under a separate cover.

General Provision

All works carried out as part of these works will comply with all Statutory Legislation including the Waste Management Act & Local Government (Water Pollution) Acts, and the contractor will co-operate in full with the Environmental Section of the Local Authority.

The disposal of waste generated during construction, including bulk excavation, will be managed to maximise the environmental and development benefits from the use of surplus materials and to reduce any adverse effects of disposal. In general, the principle of waste management hierarchy, which favours waste minimisation, re-use material and recycle over disposal to landfill will be favoured.

Construction and Demolition Waste

The management of Methods for waste reduction will form the basic strategy for construction waste management from the start. These materials will generally be inert or environmentally benign and may have alternative uses on site or perhaps another site. Excavated material where possible shall be reused on site.

Control During Construction

The contractor will ensure minimisation of waste arising on site and reuse where possible, either directly or by recycling, waste monitoring and setting of targets. Recyclable materials such as metal, timber, cardboard and office paper will be put in colour coded bins, ready for collection by the appropriate contactor.

Initiatives to reduce other waste streams include as far as practically possible:

- Minimising raw material waste through analysing design and construction techniques where possible.

- Liaison with suppliers to enable packaging materials to be sent back for reuse, the use of off-cuts where possible and the recycling of off-cut materials by suppliers.
- Engaging contractors in the process of maximising the use of recycled aggregates for hardcore.
- The entrance to the site will be kept clean as to minimise dust and pollution to the water course.

To ensure compliance with legislative requirements, only local authority licenced waste hauliers, waste contractors are permitted to collect and remove waste from site. All waste removed from site will be deposited at a licensed waste facility. Waste delivery dockets must be completed and given to site management for recording purposes.

Suitable protection measures will be incorporated in the design of the waste management area to prevent pollution, and regular inspections carried out to ensure that stored waste is covered by present accidental spillage and from being blown away.

6.13 Water Resource

The works will be carried out and working methods adopted to ensure that construction activities do not adversely affect surface water and ground water quality. The most damaging being concrete leachate, oils and chemicals and suspended solids.

The following best practice measures will be adopted as appropriate:

- Use of silt fences and silt bags to contain surface water run-off from the site;
- Discharge to public sewers – after prior agreement with the local authority;
- The existing storm water drainage system will be retained where possible during construction, with modifications as necessary to prevent ingress of debris;
- Control of spoil and other materials to prevent spillage;
- Oils/Fuels/Hazardous Wastes will be stored in bunded areas or in bunded containers;

- Washout from concrete trucks will be contained or prohibited on site;
- All drainage arrangements will be determined in consultation with the Local Authority;
- Surface water as arising during excavation works will be discharged to the surface water system;
- Sediment control will be implemented where surface water is contaminated with silt.

7.0 ENVIRONMENTAL MANAGEMENT

Construction Phase Measures – Pollution Prevention

Works will follow best practice guidance as outlined in *Guidelines on the Protection of Fisheries during Construction Works in and Adjacent to Waters* (IFI, 2016). Although the risk of any significant impact on water quality in any receiving water bodies is considered to be extremely low given the lack of running water features on the site. Best practice will be implemented at all times in relation to all construction activities to avoid any accidental pollution events occurring to the nearby water courses, or polluting the ground water table.

This will include the following actions:

- SuDS will be constructed in line with manufacturer's guidelines / best practice methods;
- During construction, any surfaces which are intended to enable infiltration must be protected from compaction. This includes protecting from heavy traffic or storage materials;
- Water contaminated with silt will not be allowed to enter a watercourse or drain as it can cause pollution. All parts of the drainage system will be protected from construction runoff to prevent silt clogging the system and causing pollution downstream. Measures to prevent this include soil stabilisation, early construction of sediment management basins, channelling run-off away from watercourses and surface water drains and erosion prevention measures;
- Following construction, subsoil that has been compacted during construction should be broken up prior to the re-application of topsoil to reinstate the natural infiltration performance of the ground;
- Areas of SuDS that have been compacted will be refurbished;
- Pipe systems and orifices will be checked for blockages or partial blockages;
- Silt deposited during construction will be removed;
- Soils will be stabilised and protected from erosion whilst planting becomes established;
- Hydrocarbons or any hazardous chemicals will be stored in specific bunded areas. Refuelling of plant and machinery will also be carried out in bunded

areas to minimise risk of any potential pollutants being discharged from the site;

- Pollution control measures will be implemented to control run-off from the site and prevent run-off which is potentially contaminated with sediments or hazardous chemicals entering the drainage network;
- Pouring of cement based materials for works will only be carried out in dry conditions. Pumped concrete will be monitored to ensure there is no accidental discharge. Mixer washings and excess concrete will not be discharged directly into the drainage network. Concrete washout areas will be created to avoid any accidental discharge from the proposed development site;
- Foul drainage from site offices and compounds, where not directed to the existing wastewater network, will be contained and disposed of off-site in an appropriate manner and in accordance with the relevant statutory regulations to prevent the pollution of watercourses;
- A response procedure will be put in place to deal with any accidental pollution events and spillage kits will be available on site. Construction staff will be familiar with the emergency procedures and use of the equipment.

8.0 BASEMENT, GROUND FLOOR & SUPERSTRUCTURE CONSTRUCTION

8.1 Construction Sequence

It is proposed to initially demolish the existing buildings and remove/remediate/re-use the ground.

This will be followed by a build out of the development lands with the installation of piling, pad or strip foundations prior to the construction of the basement, ground floor and superstructure with traditional bottom up construction.

8.2 Enabling Works

- Secure site and set up contractor welfare facilities and site accommodation;
- Locate and terminate existing live services;
- Install tree protection and remove trees that are required to be felled;
- Demolish existing structures on the site as per section 1.2;
- Excavate and remove material to the required formation. This will require a bulk excavation and removal from the site;
- Maintain existing entrances and incorporate new roads and hardstanding as required;
- Make good and install any finished boundary treatments that can be installed at this stage

8.3 Basement Construction

A basement is proposed below a portion of the transitional care facility as pre Figure 8.1 to provide required services and plant space.

All basement concrete works will be designed and constructed as watertight structures in accordance with current design standards. A pour plan will be agreed with the Engineer ahead of casting. This will outline the location of construction joints and the specific detailing of all watertightness installations.

Construction will be by traditional formwork and falsework methods with all temporary works being fully designed by a qualified structural engineer. Formwork and rebar will be handled by mobile and tower craneage.

The site can be battered on three sides to form the basement formation level, with a king post system or similar retaining structure installed along the Northern boundary to construct the Northern basement wall.

In general, large horizontal elements such as slabs will be pumped with vertical elements such as columns and walls being craned in skips. Specified finishing grades will determine pour sizes and schedules.

8.4 Superstructure

The entire development comprises of low to medium rise buildings. In this regard it is not considered that any specialised construction techniques will need to be applied on the site.

8.5 Health & Safety

Health & Safety issues will be a primary concern for the Main Contractor. This will apply in respect of persons working on and in the vicinity of the site and in respect of passing pedestrians, motorists or other transport carriers. In this regard the highest possible care will be taken in providing properly designed scaffolding.

The following general principles will apply:

- Toe boards will be provided;
- There will be no lifting of materials over live footpaths or roadways;
- A sloped fan will be provided at second floor level and will move upwards as construction advances (where necessary);
- Debris netting will be provided for the full scaffolded perimeter;
- Fully recorded inspections will be carried out of the scaffolding for the full duration of construction.

8.6 Sequencing

The Main Contractor will engage with the professional design team to reach early agreement on an acceptable construction sequence.

9.0 PROPOSED CONSTRUCTION HAUL ROUTES

9.1 Introduction

Given the site is located in mixed use area it is critical that appropriate construction traffic/removal haul routes be identified and a *Traffic Management Plan* is implemented by the appointed Contractor.

9.2 Construction Delivery & Haul Routes

It is important that the most appropriate construction routes be identified in order to bring materials to and from the site in the most efficient and environmentally sensitive manner. It is noted that specific haul routes will be agreed and licensed between the appointed contractor for the enabling works package and South Dublin County Council. Movements of large or abnormal loads will be addressed in advance with the relevant authorities.

9.3 Construction Route Options

Construction traffic will access the site from First Avenue. Adjoining street network provides easy access to Belgard Road and M50 for deliveries and extraction to and from the site. The following route of approximately 3km to the M50 is put forward for discussion:

- **Route Option**: From the site it runs East along Cookstown Rd. before turning Northwards on the R113. From the R13 it runs East along the R838 towards the M50;

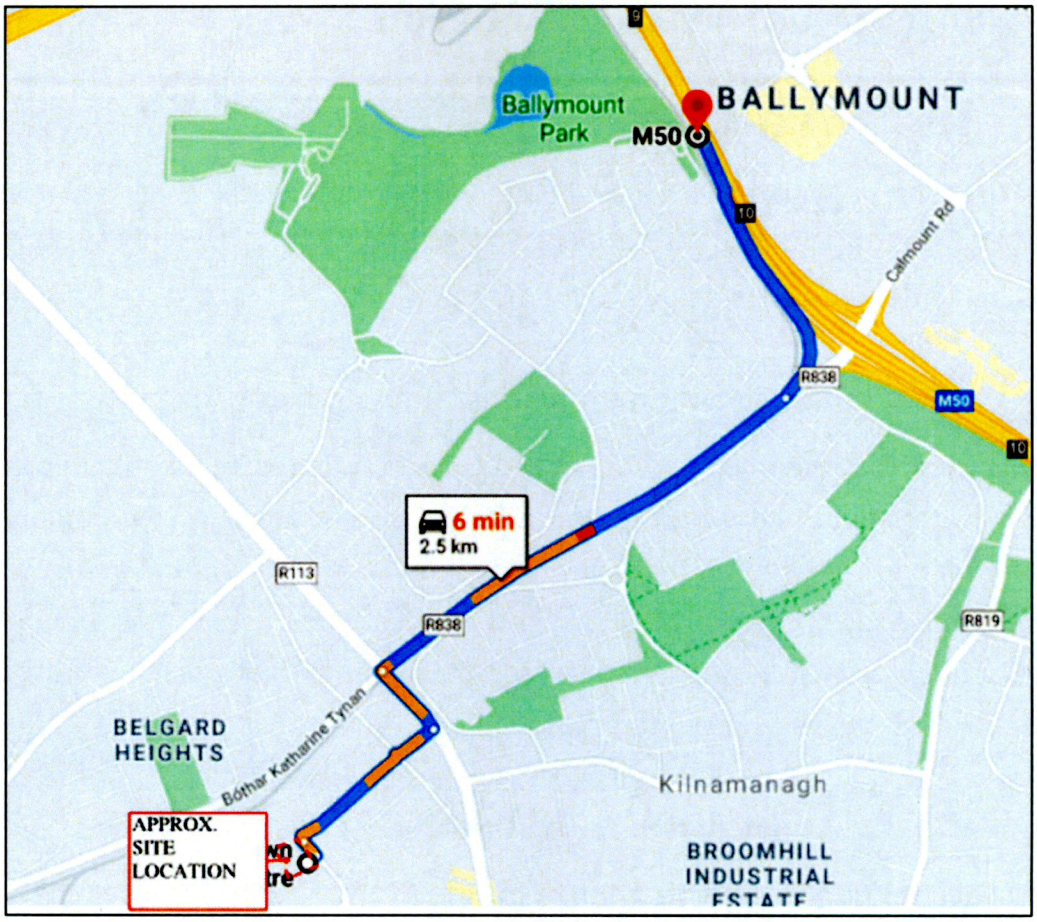


Figure 9.1: Construction Route Option

10.0 CONSTRUCTION STAGE COMMUNITY LIAISON

10.1 Introduction

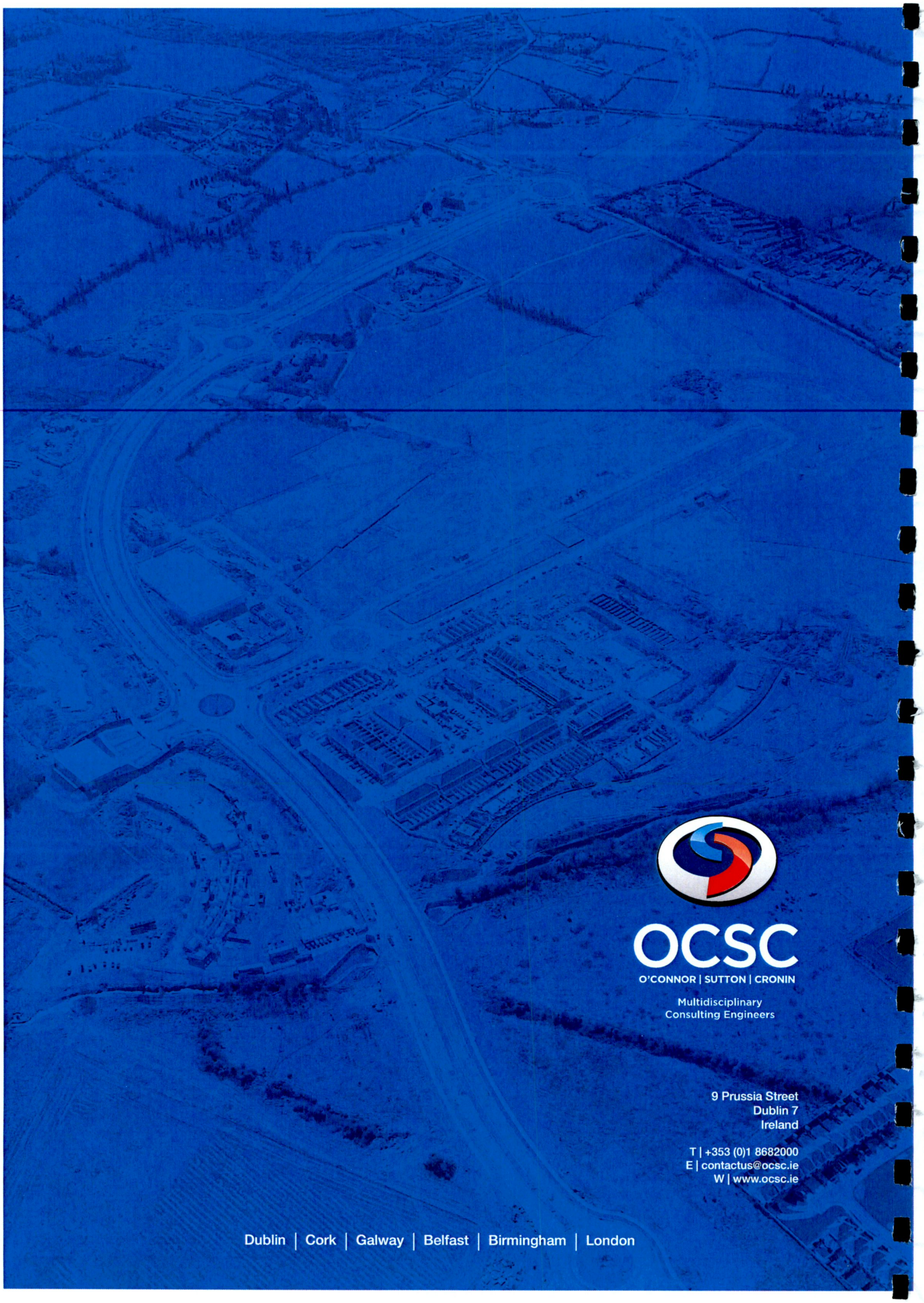
It is imperative that discussions with local residents, businesses and the general public commence well in advance of work commencing on site. The appointed contractor will be required to follow best practice *'Considerate Constructor'* guidelines. The Considerate Constructor experience in Ireland and the U.K. has been that early positive and proactive engagement with businesses and residents impacted by building works is the best approach.

10.2 Respect the Community

Constructors should give utmost consideration to their impact on neighbours and the public by informing, respecting and showing courtesy to those affected by the work. This shows itself in minimising the impact of deliveries, parking and work on the public highway.

10.3 Community Liaison Manager

A Community Liaison Officer (CLO) will be appointed by the Main Contractor to lead and manage all community related issues. The CLO will initially host and attend regular community meetings. Following the initial meetings the CLO will compile a list of stakeholders in the area. These stakeholders will be kept informed of progress and planned works on the site.



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