

CLONBURRIS CANAL EXTENSION

Outline Construction Management Plan

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Outline Construction Management Plan

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1 INTRODUCTION

1.1 Purpose

This document outlines the proposed construction methodologies that will be adopted during the development of the Clonburris Canal Extension site.

This outline plan aims to establish how the proposed development can be delivered in a safe manner, by incorporating specific procedures which mitigate potential risks to the public and the surrounding environment.

It is noted that this Outline Construction Management Plan can only be considered an outline plan, and the final Construction Management Plan (CMP) would be agreed with South Dublin County Council (SDCC) by the appointed Main Contractor prior to construction commencing.

The project tender documentation will require the main contractor to prepare and submit a detailed CMP. SDCC may choose to stipulate same as a planning condition. Details of the CMP can be found in **Section 4**.

1.2 Project Location

The site is located on lands adjoining the Bawnogue Road and Ashwood drive in Clondalkin / Clonburris, just south of the Grand Canal, and west of the Fonthill road (the R113), on SDCC Council lands. The site extends to 3.25Ha and will form Phase 02 of the development of SDCC lands within the approved Strategic Development Zone (SDZ) at Clonburris.



Figure 1-1: Architects Site Layout Plan

1.3 Project Specific Issues

The following items have been identified as key issues, and are mitigated in the design solution:

- Neighbouring properties – The southern boundary of the site adjoins 22 residential properties and a public road. Measures to limit disruption to the neighbouring properties will be implemented.
- Public Access – The site is readily accessible from all directions, particularly from the north along the grand canal. Site security measures will be implemented to prevent access to unauthorised persons.

- Access and Egress of Construction Vehicles – A construction traffic management plan will be required by the appointed contractor. An outline scope has been developed.
- Existing live services –Live services are contained within the site boundary including, underground gas lines, overhead powerlines, underground electricity cables. The exact location of these services will be determined. Services will be rerouted where deemed necessary. The appropriate service providers will be engaged to develop workable solutions.
- Waterways – The site is near an active waterway, frequently used by the public for leisure activities. Specific measures to protect waterways during the construction works will be put in place

1.4 Proposed Development Description

The existing site is a greenfield site which does not have any existing structures. There are presently live overhead and underground services located on the site.

The Proposed Development consists of the construction of 118 no. residential units comprising a combination of the following:

- three-bed houses
- four-bed houses
- Affordable Duplex units; consisting of both two-beds (Ground Floor units) and three-beds (2 storey units)
- Social Duplex units; consisting of both two-beds (Ground Floor units) and three-beds (2 storey units)
- Affordable Triplex units; consisting of two-beds (Ground Floor units) and one-bed units + study (First and Second Floor)
- Affordable Triplex units; consisting of both two-beds (Ground Floor units) and one-bed units (First and Second Floor)
- 4 Storey Apartment building; consisting of 19 No. Apartments (15 No. one-beds and 4 No. two-beds)
- Site development and landscape works include the provision of 112no. total car parking spaces, bicycle parking, bin storage 1 No. ESB Substation, shared communal and private open space, play areas, site landscaping, public lighting, and related site services, access from Bawnogue Road and all associated site development works

2 CONSTRUCTION MANAGEMENT

The following section set out and describe the proposed sequencing of the project together with discussion on site management issues and logistics requirements.

2.1 Sequencing of Project

The proposed development programme is to be agreed with SDCC and appointed contractor.

For high level programme purposes, we estimate that the development will operate on a 78-week construction programme. This construction programme is indicatively broken down as follows:

Table 2-1 Possible Project Duration Breakdown

Activity	Expected Duration (Weeks)
Enabling Works (incl. site setup)	4
Enabling Works (Haul roads within site)	4
Main Construction Works	64
Site Civil Works and Landscaping	6

2.2 Site Management

The Main Contractor will be responsible for the overall site management during the proposed works.

The Main Contractor will be required to submit a site layout plan that will indicate site perimeter, the proposed details of site hoarding, site security and gate system along with the proposed location of the site compound, storage areas etc.

It is envisaged that the Main Contractor may have a peak of between 120 – 150 construction personnel on site during the most labour-intensive phases of the construction programme.

The following are a number of areas which the Main Contractor will be required to address during the works.

2.2.1 Site Security

The Main Contractor will be responsible for site security and will ensure that the site and site compound are adequately secured at all times.

All personnel will be required to sign-in and sign-out at the Main Contractor's site office. It will be the responsibility of the Main Contractor to ensure that a full, intact and impenetrable site cordon is maintained at all times, and that all people entering and exiting the site do so with expressed and recorded granted permission.

2.2.2 Signage

The Main Contractor will be responsible for the erection of all appropriate site, safety, road & traffic signage including:

- General warnings, keep out & safety signage to be displayed externally on-site boundary.
- General site warnings & safety signage to be displayed within the site boundary.
- Identification of vehicle & pedestrian access points.
- Location & direction of site parking, site offices, first aid boxes & equipment.
- Construction site & traffic warning signage on public roads approaching the site entrance.

All signage used will meet the requirements of the Safety, Health & Welfare at Work (General Applications) Regulations 2007 and Chapter 8 Traffic Signs Manual.

2.2.3 Health and Safety

The Main Contractor must progress their works with reasonable skill, care, diligence and at all times, through the appointed Project Supervisor Construction Stage (PSCS), to proactively manage the works in a manner most likely to ensure the safety and welfare of those carrying out construction works, all other persons using the site and interacting stakeholders. Contractors are further required to ensure that, as a minimum, all aspects of their works and project facilities comply with good industry practice, statutory instruments, and all necessary consents.

These will be further expanded and developed within The Construction Stage Safety & Health Plan to be developed by the PSCS prior to commencing works on site. It will be the responsibility of the PSCS to co-ordinate all health and safety risks throughout the construction phase in line with this Construction Stage Safety and Health Plan.

With reference to consideration of health and safety issues during the design stage, the design team will take account of the Principles of Prevention, as set out in the Construction Regulations 2013. In accordance with these principles, and where possible, the design team will identify and design out any risks to the safety & health of construction workers and end users of the development.

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All residual risk and special requirements for the construction stage of the project will be communicated by the design team to the Project Supervisor for the Design Process (PSDP) for inclusion in the Preliminary Safety & Health Plan.

Given the location of the site in residential suburban setting, special care will be taken to provide suitable protection for passing pedestrians and occupants of neighbouring properties. Due to the nature of the development, the safety of pedestrian and the neighbourhood will be a major priority.

The following general principles will apply:

- Pedestrian and traffic routes will be clearly defined.
- Consistent lifting points for any precast units and the removal of existing building materials will be incorporated
- Toe boards will be provided to the edges of any temporary works
- There will be no lifting of materials over live footpaths or roadways
- Debris netting will be provided as required
- Fully recorded inspections will be carried out any scaffolding or access ladders / platforms for the full duration of construction.

2.2.4 Permitted Working Hours

Anticipated working hours are as follows, and are to be stipulated at planning stage:

- **Monday to Friday** 08:00 to 18:00
- **Saturday** 08:00 to 14:00
- **Sundays and Bank Holidays** Require explicit permission of the relevant authority.

Deviation from these times will only be allowed in exceptional circumstances where prior written approval has been received from the Employer's Representative. Such approval may be given subject to conditions pertaining to the particular circumstances being set by the Employer's Representative. Night-time working is not permitted, except in exceptional circumstances where the prior written approval of the Employer's Representative and SDCC has been received.

Certain activities may be required, subject to prior agreement with SDCC to be undertaken outside of these working hours.

2.2.5 Site Lighting

During the winter months, site lighting may be necessary so that construction works can be carried out in a safe manner and necessitate the use of site lighting.

Any use of site lighting should be designed to prevent any nuisance to neighbouring residents or road traffic and be used primarily for reasons of health and safety or security.

The Main Contractor will ensure that:

- Nearby resident's welfare is not adversely affected by light pollution from the site.
- An energy efficient lighting approach is adopted.
- Lighting does not pose a hazard.
- Plant which is not in use is switched off and that lighting is used only when necessary (such as through the use of timers).

Site lighting should be located and aligned so as not to intrude into neighbouring or residential properties, on sensitive areas, or constitute a road hazard.

2.3 Site Setup

A construction site compound will be utilised throughout the duration of the proposed works. The Main Contractor will be required to submit a site layout plan which will detail the proposed location of the site compound.

The compound will consist of:

- Site office / Cabins / Main Contractor personnel & welfare facilities
- Car parking
- Toilets
- Canteen area
- Laydown & contractor storage / stockpile / plant & fuel depot area

Further details on compound controls are provided below.

2.3.1 Hoarding & Security

The site is within a residential area of South County Dublin with neighbouring properties to the South of the site and as such necessitates the establishment of a site compound and perimeter hoarding by the Main Contractor following possession of the site.

The Contractor is to provide details of the proposed site hoarding, site security and gate system on the site layout plan.



Figure 2-1: Manned Security Gates

The Main Contractor will be responsible for the security of the site for the duration of the works.

The Main Contractor will be required to:

- Install and maintain adequate site hoarding to the site boundary with adequate controlled access and egress points.
- Ensure restricted access is maintained to the works.
- Operate a Site Induction Process for all site staff.
- Ensure all staff have current 'Safe Pass' & Construction Skills Cards.

- Monitor and record all deliveries to site and all materials/waste taken off site for disposal to appropriate licensed facility.

All staff will be made fully aware of their individual responsibilities with regard to security and will undertake their work in line with guidelines.

It is noted that certain works phases or activities, such as main drainage and services tie-ins, may be required to be undertaken outside of the proposed development site with localised, appropriate protection measures such as Heras fencing and high-visibility tape or traffic cones adopted for the duration of these activities, however, the greatest majority of the construction works will occur within the development site.

Permits will be obtained through the appropriate channels in consultation with the local authority for the main contract works that affect public facilities or roadways, as required.

All vehicular access will be controlled at the entrance gate where all access and egress movements will be recorded. All site personnel and delivery drivers will have to undergo site induction. A Site Safety & Induction Room will be provided as part of the site set up.

Within the contractors detailed Construction Management Plan, the Contractor shall include specific measures addressing site security & management, in order to limit the risk of unauthorised persons or vehicles either wilfully or inadvertently accessing the site.

2.3.2 Compound Services

2.3.2.1 Water Supply

The Main Contractor will require a water source for the duration of the works. Water will be required for:

- Main Contractor's welfare facilities.
- Wheel wash and vehicle wash-down (use recycled water where feasible).
- Dust suppression measures - damping down, wheel washes etc.
- Curing concrete in warm weather.
- General construction cleaning materials/equipment etc.

There is an existing public water-main passing directly through the site. The Main Contractor will be required to apply for a temporary connection from the Local Authority.

2.3.2.2 Electrical supply

The Main Contractor will provide back-up generators / mobile power cells in addition to sourcing a temporary electrical connection from the statutory utilities' provider, in order that Main Contractor activity on site is maintained at all times as required by the works contract.

It is essential that the Main Contract works electrical connection be applied for during the pre-start stage such that a full connection can be made as early as possible in the site set-up phase, minimising the requirement for generators running out of hours, and to allow the Main Contractor to avail of the incoming supply as early as possible.

Should generators be utilised in the event of a disruption to the mains electrical supply, they shall be placed behind the hoardings within the site compound area.

2.3.3 Storage of Materials

Construction materials will be stockpiled within the contractor's compound in a safe manner, to be monitored on an on-going basis through-out the works by the Main Contractor's Health and Safety co-ordinator and the client agent PSDP.

The contractor is to consider the direction of workflow and sequencing of construction for the development which will allow to maximize the space available & ease of storage of materials throughout the project.

2.3.3.1 Harmful Materials

Harmful materials shall be stored on site for use in connection with the construction works only. The following measures will be included for the works to prevent any spillages to ground of fuels and prevent any resulting soil and/or groundwater quality issues:

- Designation of bunded refuelling areas on the site.
- Provision of spill kit facilities across the site.
- Where mobile fuel bowsers are used the following measures will be taken:
 - Any flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use.
 - The pump or valve will be fitted with a lock and secured when not in use.
 - All bowsers are to carry a spill kit and operatives must have spill response training.
 - Portable generators or similar fuel containing equipment will be placed on dip trays.

In the case of drummed fuel or other potentially polluting substances which may be used during construction, the following measures will be adopted:

- Secure storage of all containers that contain potential polluting substances in a dedicated internally bunded chemical storage cabinet unit or inside a concrete bunded area,
- Clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage,
- All drums to be quality approved and manufactured to a recognised standard,
- If drums are to be moved around the site, they should be done so secured and on spill palettes,
- Drums to be loaded and unloaded by competent and trained personnel using appropriate equipment.

2.4 Site Clearance

The site is a greenfield site containing buried and overhead services. There are no existing structures on the site.

A ground investigation shall be conducted to determine the ground conditions. Laboratory soil chemical analysis & screening shall be carried out where the select determinant concentration levels are deemed to be above the allowable values for a residential development. Where soil within the site is potentially hazardous to human health, the soil should be remediated or removed to the appropriate facility.

General site clearance will involve the removal of all topsoil & made-ground, removal of all existing concrete slabs & low-level structures, along with the removal of foliage and site rubble.

Should the Contractor decide to process any waste on site, such as crushing and screening concrete and other hard building materials on site, such activities would require a Waste Permit before actual the work starts. Dust and noise suppression shall always be maintained. Monitor noise levels and vibrations.

2.5 Existing Site Services

There are currently a number of buried and overhead services located on the site. Approximate locations can be seen on the architectural site layout plan. The known services on site are as follows;

- Electricity Lines
 - Below ground cables
 - Overhead lines
- Gas mains
- Watermain
- Foul and surface water sewers

This list does not represent the full extent of the onsite services. The appointed contractor shall determine the location of all site services before commencing the works.

The contractor shall map and record all above and below ground services. Request detailed service layouts from the utilities providers, to confirm locations of all below ground services. Where there is ambiguity about the location of below ground service locations, contact the providers directly;

- | | |
|--|--------------|
| • ESB Networks | 1800 928 960 |
| • Gas Networks Ireland – Dial before you dig | 1800 427 747 |
| • Irish Water | 1800 278 278 |
| • Telecom’s providers (Eir, VM) | As necessary |

An existing watermain crossing the site has been identified as an asbestos watermain. This watermain will be removed and diverted as part of the development. This work will be carried out by a qualified asbestos removal specialist and the asbestos pipe disposed of at the appropriate licenced facility. The main contractor must contact Irish water in advance of any works to the watermain services. Further details can be found in the Engineering Services Report, Proposed Site Services Watermain Drawings and the IW Pre Connection Enquiry submission. Appropriate measures shall be put in place to protect all site personnel during these works. The asbestos pipe material shall be removed safely by a specialist contractor. The waste material shall be disposed of at an appropriately licensed facility. The appointed contractor shall submit a risk assessment and method statement with all works carried out in accordance with the Safety, Health and Welfare at Work (Asbestos) Regulations 2006-2010

The overhead electricity lines will be relocated as part of the works. The contractor will need to liaise with ESB networks to ensure that the works are appropriately schedule so as not to affect the proposed programme of works and project delivery date.

Further investigation is required in relation to the buried gas main crossing the site. At the time of writing a full GPR survey is underway to confirm the location of same with the proposed housing and apartment footprints kept away from the gas main. The contractor shall liaise with Gas Networks Ireland prior to construction, with a view to facilitating the proposed works in a safe manner.

2.6 Waste Management

In addition to the inherent design measures during the construction phase the following measures are proposed in relation to waste management:

- The Contractor will minimise waste disposal so far as is reasonably practicable.
- Waste from the proposed project will be transported by authorised waste collectors in accordance with the Waste Management (Collection Permit) Regulations, 2007 as amended.

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- Waste from the proposed project will be delivered to authorised waste facilities in accordance with the Waste Management Acts 1996 as amended.
- Source Segregation: Where possible metal, timber, glass and other recyclable material will be segregated during construction works and removed off site to a permitted/licensed facility for recycling. Waste stream colour coding, and photographs of wastes placed in each container as required, will be used to facilitate segregation. Where waste generation cannot be avoided this will maximise the quantity and quality of waste delivered for recycling and facilitate its movement up the waste hierarchy away from landfill disposal and reduce its environmental impact.
- Material Management: 'Just-in-time' delivery will be used so far as is reasonably practicable to minimise material wastage.
- Supply Chain Partners: The Contractor will engage with the supply chain to supply products and materials that use minimal packaging, and segregate packaging for reuse.
- Waste Auditing: The Main Contractor will record the quantity in tonnes and types of waste and materials leaving site during the construction phase.
- Material assets – utilities.

The Contractor will be obliged to put measures in place to ensure that there are no interruptions to existing services and all services and utilities are maintained unless this has been agreed in advance with the relevant service provider and local authority.

All works in the vicinity of utilities apparatus will be carried out in ongoing consultation with the relevant utility company and/or local authority and will be in compliance with any requirements or guidelines they may have.

Where new services are required, the Contractor will apply to the relevant utility company for a connection permit where appropriate and will adhere to their requirements.

2.7 Dust Management

In order to ensure that no dust nuisance occurs, the contractor will implement a series of measures. The following section describes typical measures to minimise the potential for dust emissions associated with the project. At all times, these procedures will be strictly monitored and assessed. In the event of dust nuisance occurring outside the site boundary, movements of materials likely to raise dust would be curtailed and satisfactory procedures implemented to rectify the problem before the resumption of construction operations.

2.7.1 Dust Management Plan Overview

The objective of dust control at the site is to ensure that no significant nuisance occurs at nearby sensitive receptors. In order to develop a workable and transparent dust control strategy, the following management plan has been formulated by drawing on best practice guidance from Ireland, the UK and the USA.

Effective site management regarding dust emissions will be ensured by the formulation of a dust management plan (DMP) for the site. The key features of the DMP are:

- the specification of a site policy on dust;
- the identification of the site management responsibilities for dust;
- the development of documented systems for managing site practices and implementing management controls;
- The development of means by which the performance of the dust management plan can be assessed.

2.7.2 Site Management - dust

The aim is to ensure good site management by avoiding dust becoming airborne at source. This will be done through good design and effective control strategies. At the planning stage, the siting of construction

activities and storage piles will take note of the location of sensitive receptors and prevailing wind directions in order to minimise the potential for significant dust nuisance. In addition, good site management will include the ability to respond to adverse weather conditions by either restricting operations on-site or using effective control measures quickly before the potential for nuisance occurs:

- During working hours, technical staff shall be on site and available to monitor dust control methods when required to do so;
- Complaint registers will be kept on site detailing all telephone calls and letters of complaint received in connection with construction activities, together with details of any remedial actions carried out;
- It is the responsibility of all contractors at all times to demonstrate full compliance with the dust control conditions herein;
- At all times, the procedures put in place will be strictly monitored and assessed.

The dust suppression measures shall be reviewed at regular intervals during the construction phase to ensure the effectiveness of the procedures in place and to maintain the goal of minimisation of dust through the use of best practice and procedures. In the event of dust nuisance occurring outside the site boundary, site activities will be reviewed, and satisfactory procedures implemented to rectify the problem. Specific dust control measures to be employed are highlighted below.

2.7.3 Dust Control – Site Roads

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

- A speed restriction of 20 km/hr will be applied as an effective control measure for dust for on-site vehicles;
- Bowsers will be available during periods of dry weather throughout the construction period. Research has found that the effect of watering is to reduce dust emissions by 50%. The bower will operate during dry periods to ensure that unpaved areas are kept moist. The required application frequency will vary according to soil type, weather conditions and vehicular use;
- Any hard surface roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only.

2.7.4 Dust Control - Land Clearing / Earth Moving

Land clearing / earth-moving during periods of high winds and dry weather conditions can be a significant source of dust.

- During dry and windy periods, and when there is a likelihood of dust nuisance, a bower will operate to ensure moisture content is high enough to increase the stability of the soil and thus suppress dust.

2.7.5 Dust Control – Storage Piles

The location and moisture content of storage piles are important factors which determine their potential for dust emissions

- Overburden material will be protected from exposure to wind by storing the material in sheltered regions of the site;
- Regular watering will take place to ensure the moisture content is high enough to increase the stability of the soil and thus suppress dust.
- The regular watering of stockpiles has been found to have an 80% control efficiency.

2.7.6 Dust Control – Public Roads

Spillage and blow-off of debris, aggregates and fine material onto public roads should be reduced to a minimum by employing the following measures.

- Vehicles delivering material with potential for dust emissions to an off-site location shall be enclosed or covered with tarpaulin at all times to restrict the escape of dust;
- Public roads outside the site shall be regularly inspected for cleanliness, as a minimum on a daily basis, and cleaned as necessary. A road sweeper will be made available to ensure that public roads are kept free of debris.

2.7.7 Dust Management Summary

The pro-active control of fugitive dust will ensure that the prevention of significant emissions, rather than an inefficient attempt to control them once they have been released, will contribute towards the achievement of no dust nuisance occurring during the construction phase. The key features with respect to control of dust will be:

- The specification of a site policy on dust and the identification of the site management responsibilities for dust issues;
- The development of a documented system for managing site practices with regard to dust control;
- The development of a means by which the performance of the dust minimisation plan can be monitored and assessed;
- The specification of the measures to be taken to control dust emissions before it occurs and effective measures to deal with any complaints received.

2.8 Noise and Vibration Control

The following section describes typical measures to minimise the potential for noise and vibration emissions associated with the project.

A Construction Noise Management Plan will be put in place for the construction process. Appropriate personnel will be engaged to prepare this report and monitor activity and noise levels generated. The Noise Management Plan will address the areas outlined below.

2.8.1 Baseline Noise Survey

A baseline noise monitoring programme will be completed prior to construction works commencing. Attended noise monitoring will be carried out at a number of locations yet to be determined. Survey details, procedures and results of this aspect of the baseline noise monitoring programme will be in general in accordance with ISO 1996: Part 2: 2007 2.

2.8.2 Assessment of Noise Effects

In addition to the limits in the Guidelines for the Treatment of Noise and Vibration in National Road Schemes consideration will also be given to advice in relation to establishing significant construction noise effects as set out in BS5228. During the construction phases, the development shall comply with British Standard 5228 'Noise Control on Construction and open sites Part 1. Code of practice for basic information and procedures for noise control.'

2.8.3 Best Practice Guidelines for the control of Construction Noise

BS 5228 include guidance on the various aspects of construction site noise mitigation, including, but not limited to:

- Liaison with neighbours.
- Noise monitoring.
- Hours of work.
- Selection of quiet plant.
- Control of noise sources and screening.

Best practice measures will be employed by the Contractor to ensure the construction noise and vibration criteria outlined in **Table 2** and **Table 3** are not exceeded.

The Contractor will take specific noise abatement measures and comply with the recommendations of BS 5228 and the European Communities (Noise Emission by Equipment for Use Outdoors) Regulations, 2001.

BS 5228 includes guidance on several aspects of construction site practices, including, but not limited to:

- Selection of quiet plant and the control of noise sources – the use of proprietary acoustic enclosures and the quietest plant, where possible.
- Selection of the method of excavation to ensure there is no likelihood of structural or cosmetic damage to neighbouring buildings.
- Screening – the effectiveness of screening is based on the location, height and length of the barrier; and
- Liaison with the public – a designated liaison officer will be appointed to deal with any complaints relating to noise.

Table 2: BS5228 (Part 1) ABC Assessment Categories and Thresholds (BSI, 2014)

Assessment Category and Threshold Value Period L_{Aeq}	Threshold Value in Decibels (dB)		
	A ^{A)}	B ^{B)}	C ^{C)}
Night 23:00-7:00hrs)	45	50	55
Evening ^{D)}	55	60	65
Day (07:00-19:00hrs)	65	70	75

A) Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are less than these values

B) Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are the same as category A values

C) Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are higher than category A

D) 19:00 – 23:00hrs weekdays, 13:00-23:00hrs Saturdays and 07:00-23:00hrs Sundays

Table 3: Noise Limits to be applied based on BS5228 Criteria

Assessment Category and Threshold Value Period L_{Aeq}	Threshold Value in Decibels (dB)
Night (23:00-07:00hrs) (L_{Aeq} , dB)	55
Evening (19:00-23:00hrs) (L_{Aeq} , dB)	65
Day (07:00-19:00hrs) (L_{Aeq} , dB)	75

2.8.4 The Introduction of New Noise Sources onto the Development Lands

The potential of any item of plant to generate noise will be assessed prior to the item being brought onto the site. Regard shall be had to:

- Consideration of Alternatives;
- Information to be submitted by the contractor;
- In-situ Noise Measurement.

2.8.5 Noise Control Audits

Noise control audits will be conducted at regular intervals through the construction phase of the development. In the first instance, it is envisaged that such audits will take place on a monthly basis. This subject to review and the frequency of audits may be increased if deemed necessary. The purpose of the audits will be to ensure that all appropriate steps are being taken to control construction noise emissions. To this end, consideration will be given to issues such as the following:

- Hours of operation being correctly observed;
- Opportunities for noise control 'at source';

- Optimum siting of plant items;
- Plant items being left to run unnecessarily;
- Correct use of proprietary noise control measures;
- Materials handling;
- Poor maintenance;
- Correct use of screening provided and opportunities for provision of additional screening.

2.8.6 Vibration Sensitive Locations

The development lands are located adjacent to residential areas. The contractor will be required to include a detailed section in the CMP on how vibration will be monitored & controlled. A green, amber, red level of warning alarm system will be required with monitors directly linked to the mobile phones of key construction personnel. The contractor will be required to produce a weekly vibration monitoring report with vibration levels directly linked to the construction activities that are taking place.

2.9 Pre-Commencement Condition Surveys

A Visual Condition Survey (VCS) will be carried out of all surrounding streets and buildings recorded with the South Dublin County Council prior to any site works commencing. The contractor may choose to install survey points on adjacent property (subject to adjacent owner agreement) to confirm no building movement occurs during construction. The appointed Main Contractor will have to liaise with SDCC 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.

2.10 Surface Water and Groundwater

Water pollution will be minimised by the implementation of good construction practices. Such practices will include adequate bunding for oil containers, wheel washers and dust suppression on site roads, and regular plant maintenance. The Construction Industry Research and Information Association provides guidance on the control and management of water pollution from construction sites in their publication Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors – C532 CIRIA Report (Masters-Williams et al, 2001), which provides information on these issues.

Pollutants can commonly include suspended solids, oil, chemicals, cement, cleaning materials and paints. These can enter controlled waters in various ways:

- Directly into a watercourse
- Via drains or public sewers
- Via otherwise dry ditches
- In old field drains
- By seepage into groundwater systems
- Through excavations into underlying aquifers
- By disturbance of an already contaminated site.

During construction, careful management and planning will help minimise water pollution. This may include adequate bunding of all oil tanks, wheel washers and dust suppression on haul roads, particular care to be

Outline Construction Management Plan

taken near watercourses, and regular plant maintenance. The contractor will be required to implement the following procedures during the construction phase in order to minimise adverse effects to the sites water and to reduce runoff and prevent pollutants entering the any watercourse:

- Temporary storage of soil will be stored away from any open surface water drains. Movement of material will be minimised in order to reduce degradation of soil structure and generation of dust.
- Waste fuels and materials will be stored in designated areas that are isolated from surface water drains. Skips will be closed or covered to prevent materials being blown or washed away and to reduce the likelihood of contaminated water leakage.
- Hazardous materials including waste oil, solvents and paints, will be stored in sealed containers and kept separate from other waste materials while awaiting collection by a registered waste carrier. Re-fuelling, lubrication and storage areas and site offices will not be located within 50m of any surface water bodies.
- All ready-mixed concrete will be brought to site by truck. A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of alkaline waste waters or contaminated storm water to the underlying subsoil. Wash down and washout of concrete transporting vehicles will take place at an appropriate facility offsite.
- A project-specific Construction Environmental Management Plan (CMP) will be established and maintained by the contractors during the construction phase of the proposed project works. The plan will cover all potentially polluting activities and include an emergency response procedure. All personnel working on the site will be trained in the implementation of the procedures. The Contractor will comply with the following guidance documents:
- CIRIA – Guideline Document C532 Control of Water Pollution from Construction Sites (CIRIA, 2001) and;
- CIRIA – Guideline Document C624 Development and Flood Risk - guidance for the construction industry (CIRIA, 2004).
- Rainwater from roofing and surface water runoff from hardstanding areas will be discharged to a surface water attenuation pond with silt trap and Class 1 petrol interceptor. The interceptor will prevent pollution to surface waters by any hydrocarbons, which may be present in small volumes due to accidental leaks from cars/trucks from hardstanding areas.

Any contaminated surface water or groundwater will be collected and removed from the site. Nonetheless, a contingency plan for pollution emergencies should also be developed and regularly updated, which would identify the actions to be taken in the event of a pollution incident. The C532 CIRIA Report (2001), recommends that a contingency plan for pollution emergencies should address the following:

- containment measures
- emergency discharge routes
- list of appropriate equipment and clean-up materials
- maintenance schedule for equipment
- details of trained staff, location, and provision for 24-hour cover
- details of staff responsibilities
- notification procedures to inform the relevant environmental protection authority
- audit and review schedule
- telephone numbers of statutory water undertakers and local water company
- list of specialist pollution clean-up companies and their telephone numbers

There are no natural water features within the boundary of the existing development. The existing site is a brown field site with existing surface features draining hard landscaping area on the site. It is understood that all surface water generated on the site is infiltrating to ground within the site. According to the GPR survey results, there is no evidence of surface water infrastructure crossing the site boundary.

2.11 Construction Traffic Management Plan (TMP)

Construction traffic will be limited to certain routes and times of day, with the aim of keeping disruption to existing traffic and public transport to a minimum. To minimise disruption to the local areas, construction traffic volumes will be managed through the following measures which include:

- During peak hours, ancillary, maintenance and other site vehicles movements will be discouraged,
- Daily construction programmes will be planned to minimise the number of disruptions to surrounding roads by staggering HGV movements to avoid site queues,
- The Main Contractor will be required to promote travel by sustainable modes of transport. A framework mobility management plan is presented in **Section 2.11.9** below.

2.11.1 Site Access and Egress

It will be the Main Contractor's responsibility to enforce traffic control to the defined public delivery routes from the roundabout entrance to the site for each phase as required. This is to include taking all necessary measures to prevent unauthorised parking so as to maintain an unobstructed route for construction traffic.

All contractor traffic and site deliveries will be via the construction access point on the Bawnogue Road to the South-West edge of the site as shown in Figure 2-2 below.



Figure 2-2: Site Access Route

The site entrance will be gated at the entrance from the Bawnogue Road. The location of the site security office at the entrance to site will require all personnel and deliveries to pass by in order to access the site, giving site management control of contractors and visitors. The Main Contractor shall ensure that the site entrance and directional signage will be displayed directing all construction site personnel and visitors to the site compound.

2.11.2 Parking, Loading, Turning and Unloading

Vehicles associated with the construction phase of the proposed development are to follow the required access arrangements and utilise allocated parts of the construction compound and working areas for parking, loading, turning and unloading by site personnel, visitors and delivery vehicles. Traffic management will seek to ensure as a priority that the impacts are minimised on the existing road network. Details of the above are to be included in the final detailed CTMP.

2.11.3 Temporary Traffic Management

As part of the works are to be carried out on a live public road, it will be necessary to implement Temporary Traffic Management (TTM) arrangements during the course of the works, while some localised temporary diversions to pedestrians may also be required. The following should be adhered to, and details of these adherence procedures included in the final detailed CTMP:

- All TTM should comply with Chapter 8 of the Traffic Signs Manual 2019 and associated guidance documents,
- All TTM should be designed, installed, maintained and removed by appropriately qualified personnel,
- All TTM plans to be issued in advance to the Local Authority for review and comment,
- Access provision to all developments, dwellings and businesses is to be maintained at all times,
- Any temporary diversion routes required, should be of a similar standard to that of the original route, and
- All TTM and associated diversion route proposals should be minimised to reduce the impact as much as possible on road users and the general public.

2.11.4 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 assumed single phase delivery. Peak numbers of construction vehicles are expected during the excavation for the foundations and ground floors slabs.

Construction Vehicle numbers are estimated as follows:

- 30 no. private vehicles per day from staff and site visitors i.e. 60 no. vehicle movements; (takes into account assumed adjacent public transport use by site staff, and also the fact that white van workers tend to share their vehicles with respect to commuting),
- 25 no. light goods vehicles per day from subcontract staff i.e. 50 no. vehicle movements,
- 40 no. heavy goods vehicles per day during peak road and foundation construction periods i.e. 80 no. vehicle movements.

Construction vehicles travelling to and from the site will be spread across the course of the working day meaning the number of HGVs travelling during the peak hours will be relatively low. Given typical construction working hours, staff travelling in private vehicles will arrive and depart the site outside of the peak traffic hours. As a result, it is not anticipated to significantly impact on the surrounding road network.

In terms of numbers of staff on site we estimate an average of 120 to 150 construction personnel on site per day over the construction period.

2.11.5 Road Opening Licence

All works to be carried out on public roads will require a Road Opening Licence (ROL) from the Local Authority, and will be required to comply with the requirements of the Guidelines for Managing Openings in Public Roads (Purple Book) April 2017.

2.11.6 Dust / Dirt Management

In order to ensure that no dust nuisance occurs, the Main Contractor will implement a series of measures. It will be a requirement that the Main Contractor ensures that, where appropriate:

- During movement of materials both on and off-site, vehicles carrying material with dust potential (soil, aggregates) will be stringently covered with tarpaulin or covering system at all times. Before entrance onto public roads, trucks will be adequately inspected to ensure no potential for dust emissions.



Figure 2-3: Truck Covering System

- A wheel wash facility will be provided at the egress point from the site, and will be a drive through type. This will be carried out in a dedicated wash down zone with dedicated site personnel;
 - All vehicles shall be required to pass through the wheel wash before exiting the site onto the Bawnogue Road. The wheel wash will be kept in place and used throughout the critical dirt generating activities of the construction works,
 - Water supplies will be recycled for use in the wheel wash. All waters will be drained through appropriate filter material prior to discharge from the site,
 - The Main Contractor's wheel-wash facility will be in place for all traffic leaving the site, so as to maintain otherwise clean road surfaces leading from the site and shared with public traffic.
- Public roads outside the site will be regularly inspected for cleanliness and cleaned as necessary.
- Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods.
- A road sweeper is to be available at all times to carry out any cleaning operations required on road surfaces, while all public pedestrian and cyclist areas are to be kept clean and free from debris at all times. All details of these requirements are to be included in the final detailed CTMP.
- The Construction Site Manager will be given the responsibility to implement further dust monitoring and control measures on site as necessary, including the implementation of any additional dust control measures.

At all times, these procedures will be strictly monitored and assessed. In the event of dust nuisance occurring outside the site boundary, movements of materials likely to raise dust would be curtailed and satisfactory procedures implemented to rectify the problem before the resumption of construction operations.

2.11.7 Deliveries

The Main Contractor will be required to appoint a coordinator responsible for managing / coordinating site deliveries so that all delivery of materials will arrive on a 'just-in-time basis'. This proposes that materials are delivered to site as they are needed which will reduce the build-up of stored material on site. Deliveries shall also be managed so that deliveries do not coincide with peak hours, and no more than one delivery can occur at a time. Where a number of deliveries are required to migrate to the site simultaneously, for events such as a large concrete pour, a local holding point shall be identified in accordance with the local authority, so that construction vehicles can wait until they are instructed to proceed to site. This will eliminate the possibility of two construction vehicles trying to gain access to site simultaneously and therefore reduce the risk of traffic congestion outside the site.

2.11.8 Contractor Traffic Management Plan

As part of the construction works the appointed Contractor shall prepare a CTMP which will outline their approach to the proposed project and detail potential impacts for the public road system. This will include provision of transport facilities and encouragement of car sharing for staff. It will also include measures to moderate any potential noise and air quality impacts resulting from construction activities, namely from traffic movements in and out of the site. Such traffic management plans will be developed on site as and when required and communicated to all affected parties.

The CTMP will also detail how the Contractor proposes to accommodate traffic movements within the site, during the construction works. The traffic management plan will be reviewed by the Design Team and the Project Supervisor for the Design Process (PSDP), as is customary, before implementation, or commencement of any works associated with macro management of traffic movement for specific aspects of the works.

The CTMP will provide details of intended general best practice measures for the development, including:

- Location of the site and materials compound(s) including area(s) identified for the storage of construction refuse.
- Location of areas for construction site offices and staff facilities.
- Details of site security fencing and hoardings.
- Details of pedestrian routes.
- Details of the timing and routing of construction traffic to and from the construction site and associated directional signage, to include proposals to facilitate the delivery of abnormal loads to the site.
- Measures to obviate queuing of construction traffic on the adjoining road network.
- Measures to prevent the spillage or deposit of clay, rubble or other debris on the public road network.
- Alternative arrangements to be put in place for pedestrians and vehicles in the case of the closure of any public road or footpath during the course of site development works.

In the event that public roadways are affected by construction works, such as installation of the zebra crossing to the Bawnogue Road, a road opening or closing license permit will be applied for to the Local authority, a Traffic Management Plan specific to those works will be provided by suitably qualified designers within the employ of the Main Contractor to the Design Team and the PSDP for review and comment prior to implementation of the plan and commencement of the associated works.

2.11.9 Mobility Management Plan

The Main Contractor will be required as part of the contract to introduce a Mobility Management Plan (MMP) for its workforce to encourage access to the site by means other than by private car. The following section identifies some of the measures the Contractor will provide as part of the MMP. The Mobility Management Plan will form part of the Construction Traffic Management Plan and will be agreed with SDCC prior to works beginning on site.

2.11.9.1 Cycling

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

2.11.9.2 Car Sharing

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

2.11.9.3 Public Transport

The Contractor will issue an information leaflet to all staff as part of their induction on site highlighting the location of the numerous bus routes that operate in the vicinity of the site. The Contractor will also offer the “Bike to Work Scheme” and the “Tax saver Commuter Ticket Scheme” to employees.

3 CONSTRUCTION STAGE COMMUNITY LIASON

3.1 Introduction

The appointed Main 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.

3.2 Code of Considerable Practice

Considerate Constructors seek to improve the image of the construction industry by striving to promote and achieve best practice under the Code. The *Code of Considerate Practice* outlines the Scheme's expectations and describes those areas that are considered fundamental for registration with the Scheme. The Code is in five parts and contains a series of bullet points. Each section of the Code contains an aspirational supporting statement and four bullet points which represent the basic expectations of registration with the Scheme. The Code of Considerate Practice applies to all registered sites, companies and suppliers regardless of size, type or location.

3.3 Respect the Community

Constructors should give the 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 traffic. It also contributes to and supports the local community and economy. Finally, it works to create a positive and enduring impression, and promoting the Code.

3.4 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 through the publication and distribution of a Monthly Progress Newsletter.

Follow through is a vital attribute for successful community liaison so it will be a fundamental element of the CLO's job description that they continually engage with the community, follow through on promises and deliver results.

3.5 Updated Construction Programme

An important element of community liaison will be the provision of updates to the community on the construction programme.

In this regard, each edition of the Community Newsletter will feature updates to the construction programme along with details of any upcoming Exceptional Activities which may impact on traffic, short term accessibility for business or residents or have the potential to be disruptive. It is intended that by implementing a strong community liaison relationship that the environmental impacts of the proposed development on the community can be minimised and the social impacts, by way of local employment or business opportunities may be maximised.

4 CONTRACTOR'S CONSTRUCTION MANAGEMENT PLAN

4.1 Content of Construction Management Plan

As a minimum, the Contractor's Construction Management Plan shall cover the following matters: -

- All matters set out in this Construction Plan
- Site compound areas and welfare facilities
- Detailed Construction Programme
- Detailed Construction Waste Management Plans a Construction Sequencing and Methods etc
- Comprehensive Health and Safety matters
- Other matters normally included in the Contractor's own standard approach to Construction Management Plans

4.2 Application of Construction Management Plan

It is expected that after the Contractor's Construction Management Plan has been prepared, it will be made available and widely circulated to all relevant parties, including but limited to South Dublin County Council, the Employers Representative, the Design Team, Construction Team, Sub-contractors, and Suppliers.

The Plan should be maintained and developed/updated in light of:

any routine comments that are received that are considered sufficiently relevant to merit an amendment to the Plan

any design changes, alternative construction proposals or methods or any new findings that alter or render inappropriate assumptions or construction methods that the latest or current version of the Plan was based on.

The Contractor should ensure that any amended versions of the Plan should be made available and widely circulated to all relevant parties who have a site role or duties relevant to the construction project.