

# INFRASTRUCTURE

Project

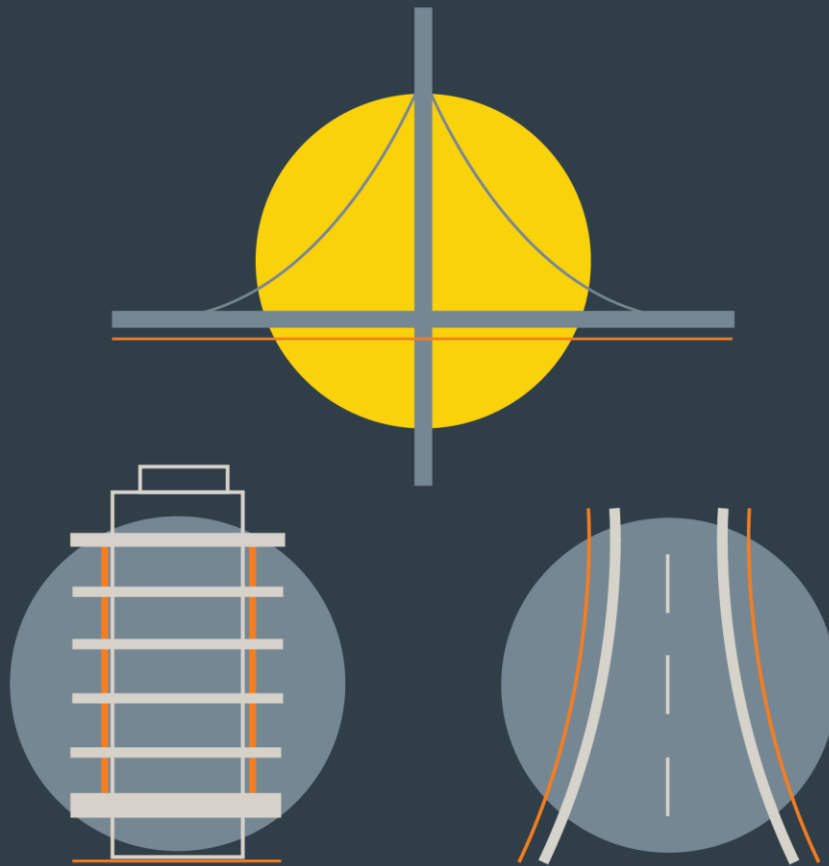
**Residential Development, Cornelscourt, Dublin 18**

Report Title

**Preliminary Construction Management Plan**

Client

**Cornel Living Ltd.**



DBFL CONSULTING ENGINEERS

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## Document Control

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## 1. WORKS PROPOSAL

This Construction Management Plan is for the works associated with the construction of 452 apartments, 10 houses, 6 bungalows, a café / restaurant, office space, concierge and central residential amenity space on a 2.14 Ha site, located at Cornelscourt Village, Old Bray Road, Cornelscourt, Dublin 18.

The site which is currently greenfield (with the exception of a temporary carpark in its north-west corner) is located adjacent to Cornelscourt Village (refer to Figure 1.1).

The N11 road is located to the north-east of the site, existing residential development (Willow Grove) is located to the south-east of the site and the AIB (and associated carparking) is located to the north-west of the site. Old Bray Road is located to the south-west of the site.



Figure 1.1, Site Location

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

- Working Hours
- Traffic Management
- Stripping of Topsoil and Excavation of Subsoil
- Erosion and Sediment Control
- Accidental Spills and Leaks
- Ecology
- Waste Management
- Noise and Vibration
- Air Quality and Dust Control
- Landscape and Visual Impact
- Material Assets – Site Services
- Site Compound Facilities and Parking

This Preliminary Construction Management Plan shall be referenced in all tender and contract documentation for the proposed works and is to be read in conjunction with all relevant Engineering and Architectural documentation.

## **2. WORKING HOURS**

For the duration of the proposed infrastructure works, the maximum working hours shall be 07:00 to 19:00 Monday to Friday (excluding bank holidays) and 09:00 to 13:00 Saturdays, subject to the restrictions imposed by the local authority.

No working will be allowed on Sundays and Public Holidays.

Subject to the agreement of the local authority, out of hours working may be required for water main connections, foul drainage connections etc.

### 3. TRAFFIC AND TRANSPORTATION

A Traffic Management Plan (TMP) will be prepared for the works in accordance with the principles outlined below and shall comply at all times with the requirements of:

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

In general, the impact of the construction period will be temporary in nature and less significant than the operational stage of the proposed development.

A permanent site entrance off Old Bray Road will be constructed, in the position of the existing site access shared with AIB. All construction traffic will enter the site via Old Bray Road and will be routed to the site via the primary road network in the area (i.e. N11 duale carriageway).

Queuing of material delivery vehicles will not be permitted on the access road to the site (which also serves as access to the AIB carpark).

Wheel wash facilities will also be provided and adjacent public roads swept as required (also refer to Section 5 and Section 8 of this document).

Construction Traffic will consist of the following categories:

- Private vehicles owned and driven by site staff and management
- Construction vehicles e.g. excavation plant, dump trucks
- Materials delivery vehicles involved in site development works

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

It should be noted that a large proportion of construction workers would arrive in shared transport.

#### 4. SOILS AND GEOLOGY

Site development works will include stripping of topsoil and excavation of subsoil layers. These activities have potential to expose the soils and geological environment to pollution.

The contractor shall obtain approval of their proposed erosion and sediment control measures from Dun Laoghaire-Rathdown County Council's Environment Section prior to commencing works on site.

The following measures are to be implemented in order to mitigate against such risks.

##### **Stripping of Topsoil**

- Stripping of topsoil will be carried out in a controlled and carefully managed way and coordinated with the proposed staging for the development
- At any given time, the extent of topsoil strip (and consequent exposure of subsoil) will be limited to the immediate vicinity of active work areas
- Topsoil stockpiles will be protected for the duration of the works and not located in areas where sediment laden runoff may enter existing surface water drains
- Topsoil stockpiles will also be located so as not to necessitate double handling

##### **Excavation of Subsoil Layers**

- The duration that subsoil layers are exposed to the effects of weather will be minimized
- Disturbed subsoil layers will be stabilized as soon as practicable (e.g. backfill of drainage trench excavations)
- Stockpiles of excavated subsoil material will be protected for the duration of the works, stockpiles of subsoil material will be located separately from topsoil stockpiles

##### **Weather Conditions**

- Typical seasonal weather variations will also be taken account of when planning stripping of topsoil and excavations with an objective of minimizing soil erosion

##### **Dust Control**

- Dust suppression practices are to be implemented during stripping of topsoil layers and excavation of subsoil layers as outlined in Section 9 of this Preliminary Construction Management Plan

### **Area Impacted by Hydrocarbons Adjacent to Filling Station**

An area of the site adjacent to the neighbouring filling station (adjacent to the western boundary) has been impacted by hydrocarbons. Investigation within the hydrocarbon impacted area confirms that the reduction in degree of impact moving downgradient and away from the filling station suggests that the impact is related to the filling station.

Two locations have been identified where these materials should be excavated and removed from site in the event of residential development (see Figure 4.1). These materials should be classified as and disposed of as hazardous. All subsoil impacted by hydrocarbons which are affected by the proposed development is to be removed.

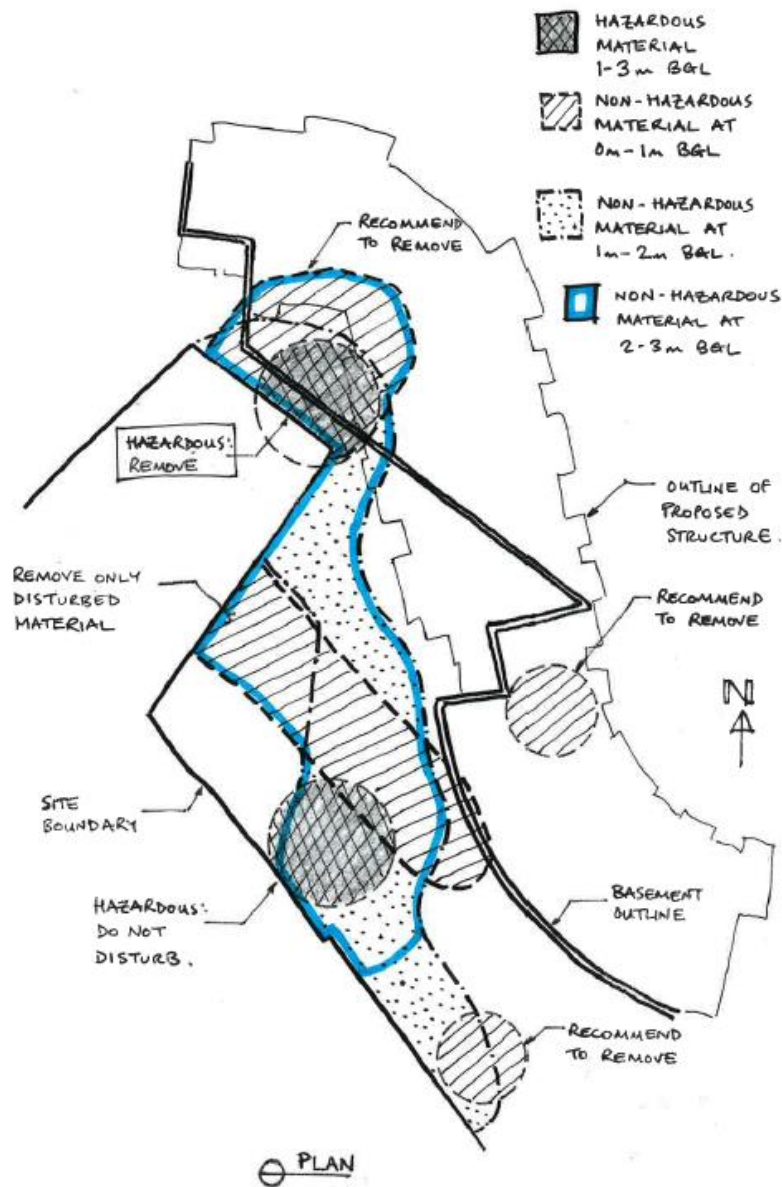
The natural subsoils outside the impacted area have been assessed and are suitable for removal to a suitably licenced inert facility.

Also refer to EIAR Chapter 7 Lands and Soils.

The Contractor is to provide a Method Statement (to be agreed prior to commencing any works on site) for works in the vicinity of areas impacted by hydrocarbons including but not limited to details of:

- Their proposed specialist sub-contractors
- Proposals for containment of contamination,
- Proposal for removal of hydrocarbons from dewatered groundwater prior to discharge
- Co-ordination of contamination removal with other site works
- Proposed licenced waste receiving facility
- Compliance with relevant legislation including HSA publications and the Waste Management Act.





**Figure 4.1, Location of Hazardous and Non-Hazardous Contaminated Materials source of information GII Ground Investigation Report and DBFL Environmental Assessment Executive Summar**

## 5. WATER AND HYDROGEOLOGY

The following measures are to be implemented during the construction phase in order to mitigate risks to the water and hydrogeological environment.

### **Erosion and Sediment Control**

- Measures will be implemented to capture and treat sediment laden surface water runoff (e.g. sediment retention ponds, surface water inlet protection, fencing and signage around specific exclusion zones and earth bunding adjacent to open drainage ditches)
- Surface water runoff from areas stripped of topsoil and surface water collected in excavations will be directed to on-site settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge of surface water at a controlled rate
- On-site settlement ponds are to include geotextile liners and riprapped inlets and outlets to prevent scour and erosion
- Surface water discharge points during the construction phase are to be agreed with Dun Laoghaire-Rathdown County Council's Environment Section prior to commencing works on site

### **Accidental Spills and Leaks**

- All oils, fuels and other chemicals will be stored in a secure bunded hardstand area
- Refueling and servicing of construction machinery will take place in a designated hardstand area which is also remote from any surface water inlets (when not possible carry out such activities off site)
- A response procedure will be put in place to deal with any accidental pollution events and spillage kits will be available and construction staff will be familiar with the emergency procedures and use of the equipment

### **Concrete**

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

### **Wheel Wash Areas**

- Discharge from any vehicle wheel wash areas is to be directed to on-site settlement ponds, debris and sediment captured by vehicle wheel washes are to be disposed off-site at a licensed facility

## 6. ECOLOGY

The following measures are to be implemented during the construction phase in order to mitigate risks to flora and fauna.

- Ensure that invasive species are treated appropriately and avoid spreading these species during any works/activities (in accordance with Invasive Plant Solutions' Construction Stage IAPS Management Plan).

## 7. CONSTRUCTION WASTE MANAGEMENT

The following measures are to be implemented during the construction phase in order to reduce the amount of waste produced, manage the wastes generated responsibly and handle waste in such a manner as to minimise the effect on the environment:

- Building materials should be chosen with an aim to 'design out waste'
- On-site segregation of non-hazardous waste materials into appropriate categories
- On-site segregation of hazardous waste materials into appropriate categories
- All wastes segregated at source where possible
- All waste material will be stored in skips or other suitable receptacles in a designated area of the site
- Left over materials (e.g. timber off-cuts) shall be re-used on site where possible
- All waste leaving the site will be recycled, recovered or reused where possible
- All waste leaving the site will be transported by suitable permitted contractors and taken to suitably registered, permitted or licensed facilities
- All waste leaving the site will be recorded and copies of relevant documentation maintained

All site works shall also comply with the requirements of the Construction and Demolition Waste Management Plan for Cornelscourt Residential Development.

## 8. NOISE AND VIBRATION

During the works the contractor shall comply with the requirements of BS 5228-1:2009+A1:2014 and BS 5228-2:2009+A1:2014 (Code of Practice for Noise and Vibration Control on Construction and Open Sites) as well as Safety, Health and Welfare at Work (General Application) Regulations 2007, Part 5 Noise and Vibration.

In particular, the following practices are to be implemented during the construction phase:

- Limiting the hours during which site activities that are likely to create high levels of noise and vibration are permitted.
- Erection of a barrier (e.g. Standard 2.4m high construction hoarding) to remove direct line of sight between noise source and receiver when construction works are being carried out in proximity to noise sensitive receivers.
- Establishing channels of communication between the contractor, local authority and residents.
- Appointing a site representative responsible for matters relating to noise.
- A noise and vibration monitoring specialist will be appointed to periodically carry out independent monitoring of noise and vibration during random intervals and at sensitive locations for comparison with limits and background levels.
- Selection of plant with low inherent potential for generation of noise.
- Siting of noisy plant as far away from sensitive properties as permitted by site constraints and implementation of noise reduction measures such as acoustic enclosures.
- Avoid unnecessary revving of engines and switch off plant when idle.
- All vehicles and mechanical plant used for the purpose of the works shall be fitted with effective exhaust silencers and shall be maintained in good and efficient working order. In addition, all diesel engine powered plant shall be fitted with effective air intake silencers.
- All ancillary pneumatic percussive tools shall be fitted with mufflers or silences of the type recommended by the manufacturers, and where commercially available, dampened tools and accessories shall be used.

### Noise Limits

Noise Limits to be applied for the duration of construction works are as set out in the National Roads Authority (NRA) Guidelines for Treatment of Noise and Vibration in National Roads Schemes (summarised below in Figure 9.1) and BS 5228-1:2009+A1:2014 (Code of Practice for Noise Control on Construction and Open Sites).

Date <sup>a</sup>	Noise Level (dB re 2x10 <sup>-5</sup> Pa) <sup>a</sup>	
	L <sub>Aeq</sub> (1hr) <sup>a</sup>	L <sub>Afmax</sub> <sup>a</sup>
Monday to Friday 07:00 to 19:00hrs <sup>a</sup>	70 <sup>a</sup>	80 <sup>a</sup>
Monday to Friday 19:00 to 22:00hrs <sup>a</sup>	60* <sup>a</sup>	65* <sup>a</sup>
Saturdays 08:00 to 16:30hrs <sup>a</sup>	65 <sup>a</sup>	75 <sup>a</sup>
Sundays & Bank Holidays 08:00 to 16:30hrs <sup>a</sup>	60* <sup>a</sup>	65* <sup>a</sup>

**Figure 9.1, NRA Guidelines for Maximum Permissible Noise Levels at the Façade of Dwellings During Construction.**

BS 5228 applies a noise limit of 70 dBA between 07:00 am and 19:00 pm outside the nearest window of the occupied room closest to the site boundary in suburban areas away from main road traffic and industrial noise.

For the duration of construction works, a daytime noise limit (07:00 am to 19:00 pm) of 70 dBA shall apply (in accordance with the requirements of BS 5228 and generally in agreement with the NRA guidelines).

### Vibration Limits

Vibration Limits to be applied for the duration of construction works are as set out in BS 5228-2:2009+A1:2014 (Code of Practice for Vibration Control on Construction and Open Sites) and BS 7385: 1993 (Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration). Allowable vibration during the construction phase is summarised below in Figure 9.2.

Allowable vibration (in terms of peak particle velocity) at the closest part of sensitive property to the source of vibration, at a frequency of:-		
Less than 15Hz	15 to 40Hz	40Hz and above
12 mm/s	20 mm/s	50 mm/s

**Figure 9.2, Allowable Vibration (in terms of peak particle velocity) at the closest part of sensitive property to the source of vibration**

## 9. AIR QUALITY AND CLIMATE

The primary air quality impact during the construction phase relates to nuisance dust emissions.

The following dust suppression practices are to be implemented during the construction phase:

- The Contractor shall prepare a dust minimisation plan (including a documented system for managing site practice with regard to dust and specification of effective measures to deal with any complaints received) which shall be communicated to all site staff
- Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic
- Any road that has the potential to give rise to fugitive dust must be regularly watered, as appropriate, during dry and/or windy conditions
- Vehicles using site roads will have their speed restricted, and this speed restriction must be enforced rigidly (on any un-surfaced site road, this will be 20 kph and on hard surfaced roads as site management dictates)
- Vehicles delivering material with dust potential (soil, aggregates etc.) will be enclosed or covered with tarpaulin at all times to restrict the escape of dust
- Public roads outside the site will be inspected on a daily basis for cleanliness and cleaned as necessary
- Debris, sediment, grit etc. captured by road sweeping vehicles is to be disposed off-site at a licensed facility
- Vehicles exiting the site shall make use of a wheel wash facility where appropriate prior to entering onto public roads
- 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
- During movement of materials both on and off-site, trucks will be stringently covered with tarpaulin at all times. Before entrance onto public roads, trucks will be adequately inspected to ensure no potential for dust emissions

Monitoring of dust deposition levels (via the Bergerhoff method) shall take place at a number of locations at the site boundary of the proposed development to ensure that dust nuisance is not occurring at nearby sensitive

receptors. This monitoring aims to ensure that the dust mitigation measures outlined above remain effective.

## 10. LANDSCAPE AND VISUAL IMPACT ASSESSMENT

Proposed construction phase mitigation measures are summarised below:

- Site hoarding will be erected to restrict views of the Construction activity e.g. standard 2.4m high construction hoarding
- Establishment of tree protection measures as required (no-dig construction zones, tree protection fencing and existing hedgerow retention). Any trees which are not to be taken down shall remain undisturbed and undamaged
- Tree protection fences if required are to be constructed in accordance with BS 5837:2012 "Trees in Relation to Design, Demolition and Construction - Recommendations"
- A 'Construction Exclusion Zone' notice shall be placed on tree protection fencing at regular intervals
- Tree Protection Zones are not to be used for car parking, storage of plant, equipment or materials
- A post construction re-assessment of any retained trees shall be carried out

## 11. MATERIAL ASSETS: SITE SERVICES

### Existing Underground Services

- The location of all existing underground services are to be confirmed by the contractor prior to commencing any works on site

### Existing Overhead Services

- Existing overhead ESB lines are located in the vicinity of the site entrance.
- For works in the vicinity of existing overhead electrical lines refer to ESB's Code of Practice for Avoiding Danger from Overhead Electrical Lines

## 12. SITE COMPOUND FACILITIES AND PARKING

The exact location of the construction compound is to be confirmed in advance of commencement of the works (and agreed with Dun Laoghaire-Rathdown County Council).

The location of the construction compound may be relocated during the course of the works.

- The construction compound will include adequate welfare facilities such as wash rooms, drying rooms, canteen and first aid room as well as foul drainage and potable water supply
- Foul drainage discharge from the construction compound will be tankered off site to a licensed facility until a connection to the public foul drainage network has been established
- The construction compound's potable water supply shall be protected from contamination by any construction activities or materials
- The construction compound will be enclosed by a security fence
- Access to the compound will be security controlled and all site visitors will be required to sign in on arrival and sign out on departure
- A permeable hardstand area will be provided for staff carparking
- A separate permeable hardstand area will be provided for construction machinery and plant
- The construction compound will include a designated Construction material recycling area
- A series of way finding signage will be provided to direct staff, visitors and deliveries as required
- All construction materials, debris, temporary hardstands etc. in the vicinity of the site compound will be removed off-site on completion of the works