Client:

Estuary View Enterprises 2020 Ltd.

Project:

Bessborough SHD Development

Report:

Construction & Environmental Management Plan (CEMP)

BARRY & PARTNERS

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SECTION 1: INTRODUCTION

1.1 Introduction

This Construction and Environmental Management Plan (CEMP) has been prepared as part of the planning application for the Bessborough Strategic Housing Development (SHD). The CEMP considers the proposed works associated with the construction of 280 residential units at Bessborough, Ballinure, Blackrock, Cork and will assist with avoiding, reducing, or mitigating construction and environmental impacts arising from the proposed development.

This document has been prepared based on known assessment issues related to construction works management, traffic and transportation measures, air quality, noise and vibration, water and wastewater, landscape management, archaeology, waste management, emergency planning response and inspection and monitoring, all of which are associated with the construction works. This information will be built on prior to commencement of construction in an updated CEMP.

More detailed site-specific measures will be developed and agreed with Cork City Council prior to the commencement of construction works, subject to a successful planning application. The final CEMP will take into account any conditions attached to a grant of planning permission.

The Phase 1 application represents one of two phases of the development proposed by Estuary View Enterprises 2020 Ltd, for which planning permission is being sought from An Bord Pleanála under the Strategic Housing Development legislation. Zoning differences across the site have necessitated a dual approach being adopted to applying for planning permission, see Fig.1.1 below, including highlighted location of Phase 1. The area for Phase 1 is zoned under ZO4 – Residential, Local Services and Institutional Uses & SE4 – Landscape Preservation Zone. This CEMP details requirements for Phase 1 'The Meadows' and a separate document, 21207-JBB-PH2-XX-RP-C-05002_Construction_&_Environmental_Plan, has been prepared for the proposed Phase 2 development, 'The Farm'.

Figure 1-1: Zoning Differences across the proposed site (Cork City Development Plan 2015-2021)

1.2 Proposed Development

1.2.1 Existing Site

The application site is in Bessborough, Ballinure, Blackrock, considered within the south-eastern suburbs of Cork City as defined in the Cork City Development Plan 2015-2021. Access to/from the site is via an existing access road, Bessborough Road. Bessborough Road joins the wider road network at the junction with Skehard Road. Access to the site is by means of the existing access road serving Bessborough Day Care Centre and Bessborough Castle Folly. The existing development lands currently accommodate grasslands, and the site is predominately greenfield. Nearby buildings include Bessborough Day Care Centre to the north, Cork Community Mediation Service and the Bessborough Centre to the West.

The surrounding lands are predominantly a mix of residential, parklands and commercial/industrial buildings at Mahon Industrial Estate. There have been several residential developments north of the proposed site, close to the Mahon Industrial Estate, in recent years, one of which is currently at construction stage.

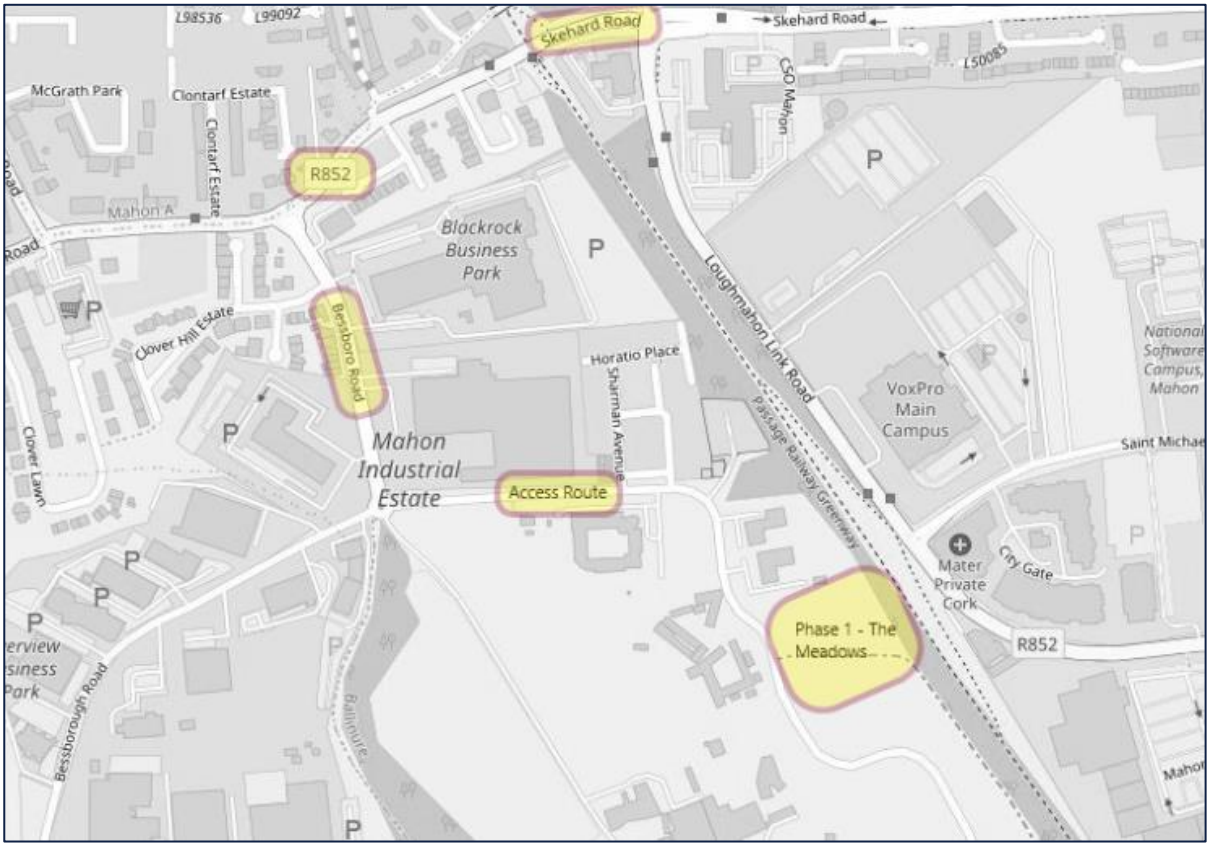

Figure 1-2: Site location and Access Route

1.2.2 Proposed Development Site Overview

The overall proposed development is ultimately intended to comprise 420 residential units with two creches, a café, tenant amenities, landscaping, pedestrian/cycleway infrastructure and associated site development works located on lands bounded by the N40, Bessborough Road, the Passage West Greenway and the Ballinure amenity walk.

Permission for the first two phases of the proposed development is being sought under two separate SHD planning applications. These two applications are named as Phase 1 The Meadows and Phase 2 The Farm. Further development of the site is to include Phase 3 North Fields, subject to appropriate zoning for this

portion of the overall lands, and this Phase 3 area is shown in the masterplan layout. See Appendix 1 for the proposed masterplan layout.

1.2.3 Proposed Development - Phase 1 'The Meadows'

This CEMP is prepared for the Phase 1 element of the development. The development will consist of the construction of a residential development of 280 no. residential apartment units with supporting tenant amenity facilities, café, crèche, and all ancillary site development works. The proposed development includes 280 no. apartments to be provided as follows: Block A (6 no. studio apartments, 14 no. 1-bedroom, 34 no. 2-bedroom & 1 no. 3-bedroom over 1-6 storeys), Block B (37 no. 1-bedroom & 49 no. 2-bedroom over 6-10 storeys), Block C (31 no. 1-bedroom, 36 no. 2-bedroom & 6 no. 3-bedroom over 5-9 storeys) and Block D (30 no. 1-bedroom, 31 no. 2-bedroom & 5 no. 3-bedroom over 6-7 storeys).

The proposal includes a new pedestrian/cycle bridge over the adjoining Passage West Greenway to the east, connecting into the existing down ramp from Mahon providing direct access to the greenway and wider areas.

The proposed development provides for outdoor amenity areas, landscaping, under-podium and street car parking, bicycle parking, bin stores, 2 no. substations one of which is single storey free standing, a single storey carpark access building, public lighting, roof mounted solar panels, wastewater infrastructure including new inlet sewer to the Bessborough Wastewater Pumping Station to the west, surface water attenuation, water utility services and all ancillary site development works. Vehicular access to the proposed development will be provided via the existing access road off the Bessboro Road (See Appendix 2).

SECTION 2: ROLES AND RESPONSIBILITIES

2.1 Client and Contractor

The Applicant will be responsible for ensuring that an appropriate Environmental Management Framework is adhered to, that competent parties are appointed to undertake construction and that sufficient resources are made available to facilitate the appropriate management of risks to the environment.

As part of the Environmental Management Framework, the Building Contractor will need to comply with all relevant environmental legislation, take account of published standards (ISO14001) and relevant documentation including the Environmental Impact Assessment Report (EIAR), any planning conditions from An Bord Pleanala (ABP), this CEMP and the subsequent detailed CEMP. Regarding the subsequent detailed CEMP, the Applicant is responsible for ensuring that this is developed in consultation with the design team and the local authority.

The Building Contractor is also responsible for ensuring that all members of the Project Construction Team, including sub-contractors comply with the procedures set out in the CEMP, including following any specific requirements set-out in the EIAR. The Contractor appointed will be responsible for the organisation, direction and execution of environmental-related activities during the construction of the proposed development. In addition, they will ensure that all persons allocated specific environmental responsibilities are notified of their appointment and confirm that their responsibilities are clearly understood.

2.2 Site Manager

A Site Manager will be appointed by the Contractor to oversee the day-to-day management of the site and ensure that effective, safe and planned construction activities are delivered on an ongoing basis to the highest standards. The Site Manager will be competent, suitably qualified and an experienced professional that will oversee site logistics, communicate regularly with construction staff, accommodate project-specific inductions for staff on-site and ensure that all work is complaint with the relevant design standards and health and safety legislation.

2.3 Site Environmental Manager (SEM)

A Site Environmental Manager will be appointed by the Contractor to ensure that the CEMP is effectively implemented. The Environmental Manager will be suitably qualified and competent. The responsibilities of the SEM include, but are not limited to:

- Preparing, maintaining and implementing the CEMP
- Completing site inspection and environmental compliance reports
- Providing guidance for the site team in dealing with environmental matters, including legal and statutory requirements affecting the works
- Reviewing environmental management content of method statements where relevant
- Reporting environmental performance to the Site Manager
- Liaising with statutory and non-statutory bodies and third parties with an environmental interest in the proposed development.
- Conducting regular environmental inspections as specified in the contract and checking adherence to the CEMP
- Keeping up-to-date with relevant environmental best practice and legislative changes
- Ensuring all personnel have undertaken adequate environmental inductions, awareness briefings sand training (including sub-contractors)
- Dealing with environmental complaints
- Managing and responding to environmental incidents and ensuring that all incidents are recorded and reported in an appropriate manner.

2.4 Environmental Specialists

Where relevant, and to fulfil obligations under the CEMP, the Contractor will be responsible for engaging suitably qualified specialists including (where necessary):

- Project archaeologist
- Project ecologist
- Project arborist
- Noise and vibration specialist
- Air Quality and dust specialist
- Land, soils and contamination specialist; and
- Water specialist

2.5 Training and Induction

2.5.1 Site Induction

All personnel involved in the proposed Phase 1 development will receive environmental awareness training. The environmental training and awareness procedure will ensure that staff are familiar with the principles of the CEMP, the environmental aspects and impacts associated with their activities, the procedures in place to control these impacts and the consequences of departure from these procedures.

2.5.2 Specific Training and Awareness Raising

A project specific training plan that identifies the competency requirements for all personnel allocated with environmental responsibilities will be produced by the Contractor. Training will be provided by the Contractor to ensure that all persons working on site have a practical understanding of environmental issues and management requirements prior to commencing activities. A register of completed training is to be kept by the SEM. The Site Manager will ensure that environmental emergency plans are drawn up and the SEM will conduct the necessary training/inductions.

SECTION 3: CONSTRUCTION WORKS MANAGEMENT

3.1 Proposed Construction Sequencing

The development of Phase 1 'The Meadows' will include the construction and completion of 280 no. residential units comprising 4 apartment blocks and all ancillary works. Prior to any construction works being carried out, the proposed development will initially involve some site clearance and earthworks in order to clear and grade the site to accommodate the construction of all associated engineering works and subsequently the building foundations.

This will involve the delivery of machinery, site equipment/plant and materials and the removal of some material off-site. Any material that can be reused later in the construction process will be stockpiled in an appropriate location; this will reduce the number of vehicular movements on the public roads. Once the site access, parking and compound facilities are established, the main haulage of materials to the site will include stone, concrete, blocks, steel and other building materials. Appropriate traffic management measures will be provided to minimise the impact of construction traffic on the local road network as detailed in Section 4 below.

An indicative construction sequence is outlined below to illustrate the buildability of the project. This should be read in conjunction with Appendix 3 which illustrates the location of the site access, staff compound, staff parking, location of ped/cycle bridge, the construction runoff silt trap and wheel wash facility.

The actual construction sequence will be confirmed when any conditions of planning are received, and construction appointments confirmed.

To develop the complete site for Phase 1, the following works will be required to be carried out:

- Provision of a temporary construction access from the existing Bessborough Road into the site (at the location of the proposed permanent entrance), safe and secure site compound including welfare facilities for workers and the erection of temporary boundary fencing.
- Measures to reduce the potential risk of impacts to retained trees.
- Creation of a storage area for surplus plant and materials.
- Creation of a site batch concrete area.
- Creation of silt traps at the low point to the south of the construction site to prevent construction runoff towards natural vegetation and Cork Harbour estuary watercourse.
- Trenching for underground services including foul sewer, surface water drainage including attenuation, water mains, gas, telecommunications, electricity and lighting.
- Construction of a new pedestrian/cycle bridge over the existing Passage West Greenway and linking to the existing down ramp from Mahon to the greenway.
- Construction and connection of underground services to existing underground services.
- Foul sewer connection will be made across the Ballinure walkway to the west of the site to connect to the existing wastewater pumping station close to the western boundary of the site. The final section of the foul sewer connection to the existing Ballinure wastewater pumping station will be made using directional-drilling methods (and not open-cut trenching) to maintain the integrity of the existing boundary wall to the estate and to allow the walkway to remain in use while these works proceed. A pipe jacking chamber will be constructed on the eastern side of the existing boundary wall to facilitate this installation work.
- Surface water connection will be made to an existing surface water sewer in the south-western area of the site.
- Watermain connections will be made to the existing watermain in Bessborough Road.
- No dwelling unit will be occupied prior to the completion of an approved foul sewer outfall and no hard-standing area will be completed without an approved storm outfall.
- Excavation and concrete works for strip and pad footing foundations.
- Piling to some blocks, likely to be bored piles with in-situ concrete and rebar infilling.

- Construction of the apartment buildings, plant and storage areas, likely to be constructed in reinforced-concrete frames.
- Construction of ancillary site works including the provision of 2 substations, outdoor amenity area, landscaping, 102 car parking spaces, 10 motorbike spaces, 604 bicycle parking spaces, bin stores, public lighting and all supporting site development works.
- Erection of permanent boundary fencing, landscaping and lighting.

It is estimated that the construction stage of Phase 1 will take 24 months to complete.

3.2 Working Hours

It is envisaged that normal working hours will be between 7:00am and 6:00pm, Monday to Friday and 8:00am to 2:00pm on Saturdays, subject to any conditions set down by An Bord Pleanála/Cork City Council. No working will be allowed on Sundays or Bank Holidays. Subject to the agreement of the local authority, out-of-hours working may be required for water main connections, foul drainage connections, tower crane erection and removal etc. Any such arrangements will be agreed at construction stage.

3.3 Cranes and Lifting of Equipment

The proposed build method for the apartment blocks is likely to be as a reinforced concrete (RC) frame. Tower cranes and concrete placing booms will be required to erect the RC frame. A combination of goods hoists and telehandlers will offload and distribute materials for the construction and finishing trades.

Craneage will be required for the installation of the main structure of the pedestrian/cyclist bridge.

All lifting equipment and appliances will carry current test certificates and be inspected prior to use. Trained and competent bankmen will attend the cranes.

Road Closures may be required for a short period to enable the tower crane to be transported to/from site. The appropriate approvals and permits for any road closures will be applied for and agreed with Cork City Council. All relevant stakeholders will be kept informed of any such closures.

3.4 Site Storage

Due to the site restrictions, the storage of materials on site will be kept to the minimum. A construction programme will be developed to ensure that no large materials will be required to be stored on-site until they are needed. Materials such as glazing and cladding systems will be delivered in batches and loaded evenly on the required floors. Throughout the project, storage of materials outside the site boundary will not be permitted.

3.5 Site Safety and Access/Egress

A construction site compound and staff parking area will be set up before any construction works start on-site. Hoarding and boundary fencing will be erected to delineate all site works and separate same from the surrounding public areas located adjacent to the development. Appendix 3 illustrates the likely site compound and staff parking areas.

Appropriate management of the transport operations will be applied throughout the construction process. As the proposed car park for site staff may be located away from the site compound, there will be appropriate pedestrian facilities between the two which will segregate pedestrians from moving traffic and give priority to pedestrians at any crossing points. A detailed Construction Traffic Management Plan will be prepared by the Contractor and submitted to the Planning Authority prior to the commencement of any construction.

It is proposed to construct the bridge structure which will link the site to the Passage West Greenway as part of the Phase 1 works. This would enable a connection for construction workers to use active travel or public transport during future phases of development, reducing the requirement for dedicated parking spaces for some workers. See Appendix 4 for details of the proposed bridge.

The construction of the bridge structure over the greenway will require work on both sides of the proposed structure to install abutments/landing areas for what is likely to be a steel structure which is fabricated off-site and delivered and erected on site by crane in a single operation. The construction of a suitable abutment structure/landing area on the eastern side of the greenway will require temporary closure of the access ramp into which the bridge connects and the timing and sequencing of this work will be agreed with Cork City Council. The impacts on the use of the greenway will be limited in extent and significance for this stage of the works.

During the construction of the bridge, a closure will be required to construct the bridge supports and lift the bridge into place. When the pre-fabricated bridge structure is being lifted into place there will be a requirement to close the greenway and ramp access to allow this work to proceed safely. This closure is likely to be for a limited period only and again the details of such a closure will be agreed with Cork City Council in advance of construction work commencing on the development. Appropriate diversions will be in place from both the Blackrock and Rochestown side, using the facilities around the Mahon Retail Park. Travelling from Blackrock, users will exit the greenway at the Mater Hospital ramp and use the facilities on the R852 and re-join the greenway prior to the N40 overbridge. From the Rochestown direction, the reverse of the above route will enable users to continue their journey during the bridge construction.

Security of the site is an important issue with respect to restricting site entry to personnel solely involved in the construction process during working hours and preventing unauthorised access out of hours. Site access for all personnel and visitors will be strictly controlled and all visitors will report to the site office prior to entering the construction area.

SECTION 4: TRAFFIC & TRANSPORTATION MEASURES

4.1 Introduction

Chapter 5 of the EIAR and the Traffic and Transport Assessment (TTA) and Mobility Management Plan (MMP) prepared by MHL Consulting Engineers has not identified any significant potential impacts in respect of traffic during the construction phase:

- *'In general, the impact of the construction traffic will be temporary in nature and less significant than the final development operational stage'.*
- *'The surrounding road network is suitable to accommodate the construction traffic associated with the proposed development'.*

It is outlined in the TTA that a detailed Construction Traffic Management Plan (CTMP) will be prepared by the successful contractor in consultation with Cork City Council Roads and Transportation Department.

The principal objective of the CTMP is to ensure that the impacts of all building activities generated during the construction phase upon the public (off-site), visitors to the subject site (on-site) and internal (on-site) workers environment are fully considered and proactively managed/programmed, thereby ensuring that safety is maintained at all times, disruption is minimised, and that works are undertaken within a controlled, hazard-minimised environment.

4.2 Access Control

The proposed construction site is located off the access road which serves existing buildings including the Bessboro Day Care Centre and the Cork Community Mediation Service. See Figure 4.1. The proposed development is approximately 750m from the junction of Skehard Road and Bessboro Road. This is the main access point from the wider road network and will form the preferred haulage route to/from the site in agreement with Cork City Council. The geometry of the access route is appropriate for construction traffic and HGVs. A number of nearby residential developments were recently completed or are currently under construction and would have used the same access route, up to a point, for this development.

It is anticipated that heavy goods vehicles, HGVs, will be restricted to off-peak times on the local road network to reduce the impact on the road network during the morning and evening peaks. It is expected that HGV movements and general deliveries will otherwise arrive/leave throughout the day at a steady rate.

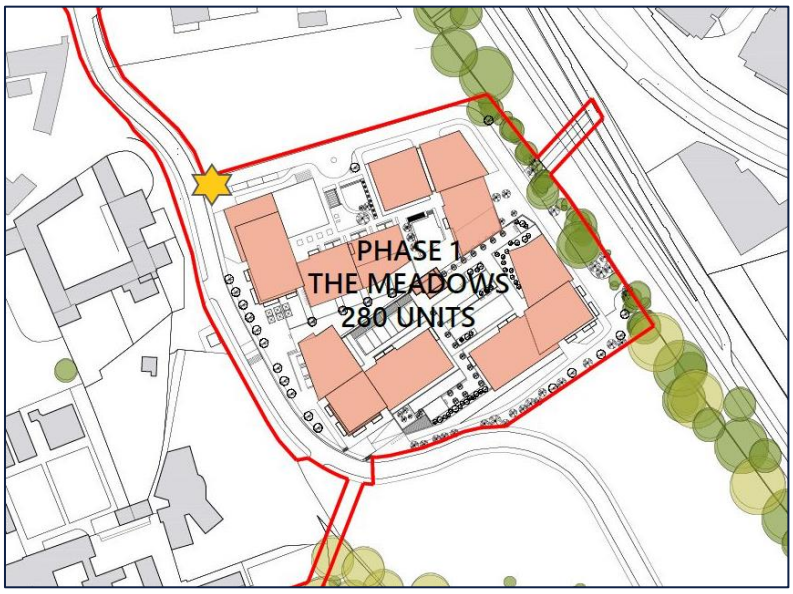

Figure 4-1: Proposed Construction Site Access

Appropriate signage for the site will be provided on the approach routes to provide clarity for construction vehicles, particularly deliveries who may not be familiar with the site location. This will provide wayfinding for drivers and limit the number of turning manoeuvres outside the site.

The following section includes a range of mitigation measures to minimise the construction traffic generation, ensure the safety of the workforce on the site and accessing the site, and ensuring the safety of the public on the surrounding roads.

4.3 Construction Related Traffic Movements

The demolition, site clearance, piling and general construction activities will generate a level of vehicle movement to and from the site as well as internally within the subject site.

The typical construction trips generated during site clearance and construction comprise:

- Construction employees arriving and leaving work
- Deliveries and removal of machinery; and
- Delivery and removal of materials.

Appropriate measures will be put in place to ensure safe access to/from the site. Measures will also be implemented on-site to ensure safe manoeuvres can be carried out within the construction site. An employee car park will be located within the Applicant's lands with a dedicated pedestrian route to the to the site accommodation. There will be designated areas on site for loading/unloading and a specified storage area for materials and machinery. A waste and recycling area will be established within the construction site boundary, close to the construction access, to prevent unnecessary trips through the site for collection. To ensure that the internal site routes and the public road to the construction site entrance is kept in good condition, a wheel washing facility will be located close to the exit from the construction area to minimize mud and dust.

The level of construction traffic throughout the working day is expected to be low to moderate, the highest volume of vehicles is expected when workers arrive to and leave work. Generally, workers are expected to travel by private vehicle and public transport. It is expected that there will be a typical average of approximately 80 no. construction employees on site during Phase 1 works.

Deliveries and HGV movement numbers are expected to be low to moderate and evenly spread throughout the day. The HGV traffic is expected to be greater during the initial stage of the development as larger machinery and materials will be delivered. This will, however, reduce as the construction of the buildings advance.

Deliveries of materials to site will be planned to avoid high volume periods where possible, particularly the AM peak hour. There may be occasions, however, when it is necessary to have deliveries within these periods. As previously stated, the Contractor will develop, agree and submit a detailed Construction Traffic Management Plan to the local authority for approval prior to commencement of construction works. The following section details some of the mitigation measures to be included in the detailed CTMP.

4.4 Mitigation Measures

A competent traffic co-ordinator and banksmen will be appointed by the contractor to oversee the following control measures which will be implemented as part of the final CTMP to reduce the risks associated with construction traffic. Some of the following measures also tie in with mitigation measures for dust and noise.

- A detailed site plan/layout of the construction site will be developed to identify locations for site offices/storage areas/waste management areas etc.
- Entrances and exits – separate entry and exit gateways will be provided for pedestrians and vehicles with a gate attendant employed to interface with the traffic and public to facilitate safe access and egress of vehicles.
- Where employees will need to cross the carriageway, a clearly signed and lit crossing point will be provided where drivers and pedestrians can see each other clearly.
- Visibility – the site operator will ensure that drivers driving out onto the public road have the appropriate visibility splays.
- All public and private walkways will be maintained free of obstructions
- All operators of construction machinery and vehicles will be trained and competent and have valid CSCS cards.
- All site staff will be made aware that there are residents and employees in the surrounding areas using the access road.
- Approach signage with good sightlines will be provided at the site access route and site entrance.
- Traffic management procedures will be communicated to suppliers and workers.
- Deliveries to site will be planned to arrive during working hours only, save for exceptional loads for which a detailed plan will be agreed with the local authority..
- The access route to the construction site entrance and internal site routes will be kept in good condition and clear of obstructions.
- The contractor will put measures in place to mitigate any excessive noise for nearby properties that may be created during construction activities.
- Internal trafficked areas will be watered twice daily on dry days to reduce dust, if required. Vehicles delivering or collecting material with dust potential will be covered with tarpaulin at all times to restrict the escape of dust.
- A stringent ‘clean as you go’ policy will be implemented on site to ensure no loose material is left on the ground within the construction access road and the public road.
- Vehicle wheel washing facilities will be in place for vehicles leaving the construction site area.
- A road sweep will be deployed if necessary to ensure the site access route between the site access and the Skehard Road junction will be kept clean at all times.
- Construction materials or equipment will not be stored outside the site boundary.
- Pedestrian/vehicular routes, crossing points, parking, loading and vehicle only areas will be clearly marked, signposted and segregated as appropriate.
- Where required site vehicles will be fitted with appropriate audible and visual devices.
- Loading and unloading will be carried out in a designated area within the construction site boundary and reversing activities will be kept to a minimum.
- Loads will be checked prior to unloading and loads will be adequately secured for travel.

- Visitors to site will be accompanied and a safe area will be provided for visiting drivers during loading and unloading.
- Speed limits signage will be used to control speeds on the access route and within the construction site.
- Construction vehicles and machinery will be maintained in good condition by a competent person as per the manufacturer's instructions. A dedicated area for maintenance work will be provided within the construction site area.
- All operators will wear personal protective equipment on-site and seat belts where fitted by the manufacturer will be worn when operating equipment.

SECTION 5: AIR QUALITY

5.1 Introduction

As construction activities are likely to generate some dust emissions, dust management requirements will be developed and implemented as part of the detailed Dust Mitigation Plan during the construction phase of the project. The potential for dust to be emitted depends on the type of construction activity being carried out, the dust controls in place and also the weather conditions, such as the level of rainfall, wind speed and direction.

A preliminary Dust Management Plan has been prepared by the DK Partnership as part of the Environmental Impact Assessment Report (EIAR) for the project and this plan is attached as Appendix 5 of this document for information purposes.

5.2 Dust Sources

The potential impact for dust depends on the distance to potentially sensitive locations, such as neighbouring residential and commercial properties in this case. The main activities that give rise to dust emissions during construction include the following:

- Excavations and Piling
- Materials handling and storage
- Temporary stockpiling of any earthworks material for re-use
- Movement of vehicles, particularly HGVs.

The mitigation measures set out below will be put in place during the construction phase. The level of dust control to be implemented will depend on the weather conditions, the specific construction activities (e.g. earthworks activities, construction activities and site vehicle movements) and the potential for dust nuisance as a result of those activities.

5.3 Mitigation Measures

Mitigation measures for dust control will include:

- The contractor shall prepare a dust minimisation plan which shall be communicated to all staff.
- Internal trafficked areas will be watered twice daily on dry days to reduce dust if required. Vehicles delivering or collecting material with dust potential will be covered with tarpaulin at all times to restrict the escape of dust.
- A stringent ‘clean as you go’ policy will be implemented on site to ensure no loose material is left on the ground within the construction access road and the public road.
- Vehicle wheel washing facilities will be in place for vehicles leaving the construction site area.
- Bessboro public road will be inspected daily for cleanliness and a road sweep will be deployed if necessary to ensure the site access route between the site access and the Bessboro Road/Skehard Road junction will be kept clean at all times.
- Topsoil stockpiles will be located in a location so as not to necessitate double handling and topsoil stockpiles will be seeded to promote grass growth and reduce dust.
- Material handling systems and site stockpiling of materials will be 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.

Further mitigation measures are outlined in the preliminary Dust Management Plan prepared by the DK Partnership, see Appendix 5.

SECTION 6: NOISE AND VIBRATION CONTROL MEASURES

6.1 Introduction

In order to minimise the noise impact on the adjoining community, creche and residential properties it is proposed that heavy equipment and machinery including piling drills (if required), construction vehicles and generators only work between the hours detailed above. In addition, no deliveries and/or removal of materials will occur outside of these hours, save for exceptional situations when permissions will be sought from the Local Authority.

Normal working hours are outlined in Section 3.2 above, however these will be subject to detailed agreement with Cork City Council prior to commencement.

On occasions it may prove necessary to carry out construction activities outside of normal working hours. In such instances prior consultation will be carried out with Cork City Council, local residents, and businesses outlining the nature and reason for the works and their likely duration.

6.2 Noise and Vibration Regulations

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 Applications) Regulations 2007 Noise and Vibration.

Noise Limits

Noise limits to be applied for the duration of the construction works are as set out in BS 5528. This applies a noise limit of 70dBA between 07:00 and 19:00 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 the construction works, a daytime noise limit (07:00 to 19:00) of 70 dBA shall apply (in accordance with BS 5228).

Vibration Limits

Vibration limits to be applied for the duration of construction works are as set out in BS 5228 (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 daameg levels from ground borne vibration). Allowable vibration during the construction phase is summarised below in Figure 5.1.

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 4Hz	15 to 40Hz	40Hz (and above)
12 mm/sa	12.5 mm/sa	50 mm/sa

Figure 6-1: Guidelines for Allowable Vibration

6.3 Mitigation Measures

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 along the site boundary (e.g. standard 2.4m high construction hoarding) to remove direct line of sight between noise sources and receiver when construction works are being carried out in proximity to noise sensitive receivers

- Establish channels of communication between the contractor, local authority and local businesses and residents
- Appoint a site representative (SEM) responsible for matters relating to noise
- 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 when required
- Avoidance of unnecessary revving of engines and switching off of plant when idle
- All plant and equipment will be maintained in good working order in accordance with BS.5228 in order to minimise air and noise emissions.
- All ancillary pneumatic percussive tools shall be fitted with mufflers or silencers of the type recommended by the manufacturers, and where commercially available, dampening tools and accessories shall be used.
- Noise monitors will be erected and data collected to assess sound levels.
- Ear protection zones will be established and all personnel will be trained on ear protection.

SECTION 7: WATER AND WASTEWATER CONTROLS

7.1 Introduction

All works carried out as part of these works will comply with all Statutory Legislation including the Local Government (Water Pollution) Act, 1977 and 1990 (as amended) and the contractor will cooperate in-full with Irish Water and the Environmental Department of Cork City Council. There is no immediate watercourse in the vicinity of the site. The Douglas Estuary is located south of the site on the southern side of the N40.

The following description outlines the proposed water/wastewater works to be carried out during Phase 1:

- Surface Water - The proposed surface water network will include a drainage pipe network, attenuation storage and SuDS features. The restricted discharge from the site will be conveyed in a new surface water pipe laid from the western boundary of the Meadows in a westerly direction across the Bessborough site to connect to an existing 750mm diameter surface water sewer upstream of its connection to the 1350mm diameter surface water pipe which discharges to the Douglas Estuary south of the N40. A legal wayleave is in place across the Bessborough lands immediately to the south-west of The Meadows development to facilitate this connection.
- Foul Drainage - Wastewater collection within the proposed development will be via a network of 150mm and 225mm diameter gravity sewers, which will direct the flows to the southwest corner of the site. A new gravity sewer will then convey the flows in a westerly direction and will connect directly to the Bessborough wastewater pumping station. A legal wayleave is in place across the Bessborough lands immediately to the south-west of The Meadows development to facilitate this connection.
- Potable Water - A 150mm diameter ductile iron watermain is located in the existing road that forms the eastern boundary of The Meadows development. Irish Water have advised that the connection to serve the development is to be made to this existing main.

The mitigation measures outlined below provide the water management controls required to be implemented by potential Contractors and Sub-contractors and set out the proposed procedures and operations to be utilised on the proposed development to mitigate against any water related environmental impacts. The mitigation and control measures outlined herein will be employed on site during the construction phase of the development.

The main areas of water related concerns covered by this section are:

- Pre-Construction (Inc Site Clearance/Tree felling)
- Construction Phase drainage controls
- Earthworks (i.e. infrastructure & drainage) and surface water quality protection
- Temporary stockpiles water management and controls; and
- Fuel usage, storage and management.

7.2 Mitigation Measures

Surface water runoff during site clearance and construction stage can be potentially contaminated. The most likely forms of contamination are ‘siltation’ and spillage. Siltation occurs when soil and particulate matter are washed away in rainfall events by rainwater. Siltation will be mitigated on the project using stilling basins and strainers within the site to prevent silt being lost to the drainage network.

Excavation, Erosion and Sediment Control

- Measures will be implemented to capture and treat sediment laden water run off (e.g. silt traps; siltbuster)
- The area of exposed ground will be minimised and as much vegetation as possible will be retained for as long as is practical
- Delay clearing and topsoil stripping of each area until work is ready to proceed.

- Close and backfill trenches as soon as practically possible
- Any earthworks temporary stockpile areas will require silt fencing to be installed.
- Any on-site settlement areas are to include geotextile liners and riprapped inlets and outlets to prevent scour and erosion
- Surface water runoff from areas stripped of topsoil and surface water collected in excavations will be directed to on-site settlement areas, at the lower, south west end of the site, where measures will be implemented to capture and treat sediment laden runoff prior to discharge of surface water at a controlled rate.
- Surface water discharge points during the construction phase are to be agreed Cork City Council's Environment Section prior to commencing works on site.

As fuels and oils are required during construction stage, it is necessary to mitigate the possibility of there being an accidental leakage of these liquids. All fuels stored on site will be bunded and all chemicals will be stored in an appropriate tank. Should any spillage occur on site during construction, it is likely that there will be a localised moderate impact in the short term on the environment.

Accidental Spills and Leaks

- All oils, fuels, paints and other chemicals will be stored in a secure bunded hardstand (impervious) area
- Refuelling and servicing of construction machinery will take place in a designated hard stand area which is also remote from any surface water inlets.
- 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 equipment.

Concrete

- Concrete batching will take place on-site and offsite. Wash down and wash out of concrete trucks will take place off site and any excess concrete will not 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 and will be directed to settlement areas.

Wheel Wash Areas

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

Through consultation with the Site Manager (SM) /Site Environmental Manager (SEM), a schedule for surface water quality monitoring will be drawn up. This will be finalised prior to the start of construction. Where monitoring parameters are found to exceed the standards laid down, the SM/SEM will initiate and report corrective actions. This may necessitate the alteration of the environmental control measures and in turn the relevant construction method statement.

It is proposed to implement a programme for monitoring water quality at the outfall tie-in as part of the construction of this development, in agreement with the Planning Authority. This programme and sampling requirements will be agreed with Cork City Council.

SECTION 8: LANDSCAPE MANAGEMENT

During Phase 1 construction, site security fencing and solid hoarding will be used where appropriate to restrict visibility, minimise noise pollution and restrict visibility into the site, minimising the temporary landscape and visual impacts. There is a significant area of existing vegetation/trees to the south and east of the site and along the routes of foul and surface-water outfall/connections. These areas will require protection measures to be employed during construction works, particularly during the construction of the bridge and foul and storm drainage outfalls. It is expected that approximately thirteen trees will be required to be removed as part of the development of this phase.

The mitigation measures set out below will be implemented to minimise the impact on any trees/vegetation.

Although the removal of some trees will be required for the construction of the pedestrian/cycle bridge and the trenching and construction of watermains, foul and surface-water drainage, such tree removal will be restricted to that identified for removal in the application.

- All mitigation measures to be put in place to protect such trees and vegetation shall be prepared in consultation with a qualified Arborist, who shall supervise works for which an Arboriculture Method Statement is required.
- The specific Arboriculture Method Statement shall be prepared for any works within the root protection area of any tree to be retained and the measures outlined shall be strictly enforced on site.
- Trees will be protected in accordance with BS: 5837:2012 *Trees in relation to design, demolition and construction. Recommendations* and any further agreed procedures.
- The construction works for the new ped/cycle bridge shall be fenced off with solid hoarding and protected from the public. The contractor will liaise and co-ordinate these works with the Cork City Council.
- Reinstatement of trees and vegetation will be undertaken by a suitably qualified landscape contractor.

SECTION 9: ARCHAEOLOGY & HERITAGE

9.1 Pre-construction

Given the historic and sensitive nature of the site, prior to any construction commencing an archaeological and heritage assessment and surveys will be carried to include advance archaeological testing across the footprint of the development where machine or hand excavated test trenches allow for the early indication of relevant material. This allows for informed decisions to be made as to how best to progress with construction works and deal with any discovered archaeological finds should they arise.

Based on the results of the above assessments/surveys, detailed monitoring of all groundworks associated with the development may be recommended, with the provision for full excavation of any archaeologically significant material uncovered.

9.2 During Construction

Following the archaeological and heritage assessment, during the construction process, if deemed necessary, archaeological monitoring will be carried out where the construction works are suspected to be in the proximity to an archaeological site. This may involve a forensic archaeologist or human osteoarchaeologist maintaining a watching brief while groundworks are taking place in order to identify and record any archaeological remains that may be present. In the event of archaeological features or material being uncovered during construction monitoring, it is important that all machine work in the immediate area ceases to allow the archaeologist to assess, excavate and record any findings.

Should archaeological features or material be uncovered, adequate funds to cover excavation, fencing, post-excavation analysis and reporting will be made available. This work should be done under license in accordance with Section 26 of the National Monuments Act 1930-2014 and with a method statement agreed in advance with the National Monuments Service (Dept. of Culture, Heritage and the Gaeltacht) and the National Museum of Ireland.

9.3 Mitigation Measures

A programme of archaeological supervision/monitoring of all ground works will be undertaken by a suitably-qualified archaeologist. Given the developed nature of the portions of the site (especially within ‘The Farm’) and previous programmes of archaeological investigations (within the ‘The Meadows’), the archaeological risk is considered to be low. In the unlikely event of an archaeological discovery, the National Monuments Service and Cork City Council will be consulted to agree how the encountered archaeological remains are recorded and resolved.

Site development works (especially ground reduction work and drainage excavation works) will be monitored by a forensic specialist and osteoarchaeologist to allow for the identification of any previously-unrecorded burials or human remains. In the event of such a discovery, An Garda Síochána will be immediately notified and the localised works in the affected area will be suspended subject to the direction of An Garda Síochána.

In relation to works to historic boundary walls, it is recommended that interventions to historic masonry boundary walls have intentionally been kept to a minimum. Where repair or rebuilding works to historic masonry walls are required (including the creation of a new pedestrian entrance in the boundary wall adjacent to the historic entrance to Bessborough Estate), such works will be undertaken by suitably-experienced conservation contractors with proven experience in the use of traditional lime mortars and rubble masonry.

SECTION 10: WASTE MANAGEMENT

10.1 Introduction

A detailed Construction Waste Management Plan will be agreed with Cork City Council and put in place in order to control waste management on site, ensure segregation of waste streams and minimise construction waste costs. Waste arising from the site will be considered in relation to the waste management hierarchy of prevention, reduce, reuse, recycle, energy recovery and disposal.

Construction and demolition waste is the largest "municipal" waste stream contributing to the current pressure on landfill facilities in the region. Unsustainable management and inappropriate disposal of this waste stream can result in impact on natural resources and lead to environmental pollution. The main source of waste material at the site will be construction waste.

Waste is defined as any substances or object belonging to a category of waste specified in the First Schedule (of the Waste Management Act 1996) or included in the European Waste Catalogue, which the holder discards or intends or is required to discard and anything which is discarded or otherwise dealt with as if it were waste shall be presumed to be waste until the contrary is proved.

There are two main types of construction waste – Hazardous and Non-hazardous as detailed below:

Non-hazardous

- Timber Waste
- Scrap Metal
- Plastic
- Paper / Cardboard
- Canteen Waste
- Litter

Hazardous

Hazardous Wastes are defined as wastes which can have a harmful effect on the environment and on human health as they exhibit ignitability, reactivity, corrosivity and/or toxicity and/or are listed as hazardous by the European Waste Catalogue and/or may be identified as hazardous by application of the EPA Waste Characterisation Tool compiled by The Clean Technology Centre.

The hazardous wastes that may be experienced at a development of this nature are as follows:

- Adhesives and Sealants
- Aerosols
- Batteries
- Chemicals
- Cleaning Products
- Oil (Contaminated absorbent Material or debris)
- Paints and Thinner
- Fuels (hydrocarbons such as diesel)
- Concrete waste

The Meadows (Phase 1) development will result in the generation of waste material from the following sources:

- Removal of existing boundaries
- Excavation of soil for site access, to foundations, ductwork and sewers/watermains
- Excavation of stone / made ground at infrastructure tie-ins to existing water mains, sewers, gas etc.
- Surplus material (off-cuts, damaged materials, packaging etc.) generated during the construction of the new development.

Soil will be excavated to facilitate construction of foundations, access roads, the installation of site services and general landscaping. Where possible, excavated topsoil will be reused on site for landscaping. It is anticipated that any additional soil will be removed from the site for reuse, recovery and/or disposal as there are limited suitable onsite re-use options.

The Waste Management Hierarchy states that the most preferred option for waste management is prevention and minimisation of waste, followed by reuse and recycling/recovery, energy recovery (i.e. incineration) and, least favoured of all, disposal. The excavations are required to facilitate construction so the preferred option (prevention and minimisation) cannot be accommodated for the bulk excavation phase.

The next option (beneficial reuse) may be possible for some and potentially all of the inert natural material (Category A1). This material could be used as fill material in other construction projects or engineering fill for waste licensed sites. Beneficial reuse of surplus excavation material as engineering fill may be subject to further testing to determine if materials meet the specific engineering standards for their proposed end-use.

Any nearby sites requiring clean fill/capping material will be contacted to investigate reuse opportunities for clean and inert material. If any of the material is to be reused on another site European Communities (Waste Directive) Regulations 2011, Article 27 requires that certain conditions are met and that by-product decisions are made to the EPA, via their online notification form.

If the material is deemed to be a waste, removal and reuse/recycling/ recovery/disposal of the material will be carried out in accordance with the Waste Management Acts 1996-2008, the Waste Management (Collection Permit) Regulations 2007 (as amended) the Waste Management (Facility Permit & Registration) Regulations 2007 (as amended). The volume of waste removed will dictate whether a Certificate of Registration (COR), Waste Facility Permit or Waste Licence is required by the receiving facility.

Once all available beneficial reuse options have been exhausted, the options of recycling and recovery at waste permitted and licensed sites will be considered. The option of disposal of inert natural material to landfill will only be considered once all available reuse options have been explored and where capacity cannot be secured at appropriately permitted/licensed facilities for recycling or recovery purposes.

Any soil/subsoil that is deemed to be contaminated will be stored separately to the clean and inert soil/subsoil. The material will be appropriately tested and classified as either non-hazardous or hazardous in accordance with the EPA publication ‘Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous’ using the HazWasteOnline application (or similar approved classification method). The material will then need to be classified as clean, inert, non-hazardous or hazardous in accordance with the EC Council Decision 2003/33/EC.

The highest volume of materials generated will be topsoil and subsoil/stones from site clearance to accommodate access routes, bridge construction, footpaths, services, and foundation excavation to enable construction of the apartment blocks. Some of the material will be re-used on site for the car park podium and landscaping, however, some will be removed off-site. Given the proposed developable area is 1.53 hectares, the following estimations of excavated material have been calculated:

- An average depth of 100-200mm for topsoil strip will generate approx. 4860m3.
- Subsoil excavation for access route and footpath construction, piling and excavation for foundations will generate approx.4470m3.
- Excavation for watermains, foul and surface water sewer will generate approx. 2400m3 of material.
- Subsoil excavation to provide SUDS attenuation area amounts to approx. 800m3.
- The total subsoil excavation is therefore approximately 7670m3.

Approx. 1000m3 of topsoil and 1200m3 of subsoil will be required for backfilling the SUDS attenuation and trench excavation. As such, it is estimated that approx. 10,330m3 will need to be transported off-site for reuse/recycling (See Table 9.1).

A standard 4-axle rigid construction tipper capacity weight is 20 tonnes which is equivalent to approx. 15 cubic metres of soil. Therefore, approx. 690 loads will be required to export the excess soil off-site.

Table 10-1: Cut and Fill Calculation

Item	Excavate	Reuse	Export
Topsoil Strip	4860m3		
Topsoil Reuse		1000m3	
Topsoil for Export			3860m3
Subsoil from Excavation	7670m3		
Fill Required		1200m3	
Subsoil Excess for Export			6470m3
Total Surplus for Export off-site			10,330m3

SECTION 11: EMERGENCY PLANNING AND RESPONSE

A set of standardised emergency response procedures will govern the management of emergency incidents. The contractor will be required to outline emergency incident response procedures in the detailed CEMP and to develop an Emergency Incident Response Plan. These procedures will be as follows:

- Emergency preparedness and response procedure (incl. emergency phone numbers)
- Incident investigation procedure
- Nonconformity, corrective action and preventative action
- Spillage containment procedure
- Pollution prevention programme and corrective action reporting

In the event of spillages or other incidents, steps will be taken to prevent environmental pollution, for example through protection of drains by use of drain covers or booms, use of absorbent granules following a fuel or oil / chemical spill and turning off equipment or other sources of noise or dust.

Once the situation has been rectified, full details the incident and remedial actions undertaken will be provided to the City Council and relevant authorities and recorded appropriately.

Appropriate measures to prevent a recurrence of such incidents will be developed in consultation with these authorities.

SECTION 12: INSPECTIONS AND MONITORING

The environmental performance of the contractor will be monitored through site inspections. Monitoring will be carried out in accordance with the requirements of the EIAR so that construction activities are undertaken in a manner that does not give rise to significant negative effects. Suitable monitoring programmes will need to be developed, implemented, documented, and assessed in accordance with the measures outlined in the detailed CEMP and EIAR.

The results of all environmental monitoring activities will be reviewed by the Site Environmental Manager on an ongoing basis to enable trends to be identified and corrective actions to be implemented as necessary.

Routine inspections of construction activities will be carried out by the Site Environmental Manager on a daily basis to ensure all necessary environmental measures relevant to the construction activities are being effectively implemented by construction staff. Detailed inspections should be carried out weekly which would be appropriately documented by the Environmental Manager. The inspection routine should include:

- Summary of compliance/non-compliance with the detailed CEMP
- Results and interpretation of monitoring programmes
- Key issues noted during inspections
- Summary record of non-conformities, incidents and corrective actions
- Summary of environmental complaints and queries received in relation to environmental matters; and
- Summary record of environmental training undertaken by staff.

Appendix 1

PROPOSED MASTERPLAN LAYOUT

ORDNANCE SURVEY MAP

Ordnance Survey Ireland

1:1,000 | 6428-05
1:1,000 | 6383-25
1:1,000 | 6429-01

NORTH POINT

Data Extraction Date:
==========
Date= 18-Mar-2021

Source Data Release:
==========
DCLMS Release V1.138.111

Product Version:
==========
Version= 1.3

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==========
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Arna thiomsú agus arna fhoilsiú ag Suirbhéireacht Ordanáis Éireann, Páirc an Fhionnuisce, Baile Átha Cliath 8, Éire.

Sáraíonn ataírgeadh neamhúdaraithe cóipcheart
Shuirbhéireacht Ordanáis Éireann agus Rialtas
na hÉireann.

Gach cead ar cosnamh. Ní ceadmhach aon chuid den fhoilseachán seo a chóipeáil, a ataírgeadh nó a tharchur in aon fhoirm ná ar aon
bhealach gan cead i scríbhinn roimh ré ó úinéirí
an chóipchirt.

Ní hionann bóthar, bealach nó cosán a bheith ar
an léarscáil seo agus fianaise ar chead slí.

Ní thaispeánann léarscail de chuid Ordanáis Shuirbheireacht na hÉireann teorann phointí dleathúil
de mhaoin riamh, ná úinéireacht de ghnéithe fhisiciúla.

1 PROPOSED SITE MASTER PLAN
1:1000 @ A1

A FOR APPLICATION 16.03.2022

SITE MASTER PLAN

SHiPSEYBARRY place makers

PROJECT :	BESSBOROUGH	DRAWING DESCRIPTION:	SITE MASTER PLAN	CLIENT :	ESTUARY VIEW ENT. 2020 LTD.
SCALE :	1:1000 @ A1	DATE : 03.2022	OVERSEEN BY : JJ	APPROVED BY : GB	DRAWING NO. : SB-2020-107-805

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Appendix 2

PROPOSED SITE PLAN

NORTH POINT

Day Centre

Chy

Car Park

Car Park

Car Park

THE BESSBOROUGH CENTRE

Burial Ground

A

B

C

D

THE MEADOWS BUILDINGS: A,B,C,D

280 APARTMENTS	NO.	%
STUDIO AP.	6	2.1 %
1 BEDROOM AP.	112	40.0 %
2 BEDROOM AP. 4P	150	53.6%
3 BEDROOM AP.	12	4.3 %
TOTAL NO.	280	100 %
DUAL ASPECT	121	43.2%
NO. OF UNITS WITH AREA 10% GREATER THAN REQUIRED	162	57.8%
TOTAL RESIDENT'S PRIVATE AMENITY AREA	2,172 sqm	
PUBLIC OPEN SPACE	3,958 sqm	63,5 %
PARKING SPACES	98	35.0%
CRECHE DROP OFF	4	
MOTORBIKE SPACES	10	
RESIDENT'S BIKE SPACES	464	
VISITOR'S BIKE SPACES	140	

LEGEND

- POND
- VEGETATIONS
- PATHS
- GREEN ROOF
- EXISTING TREES
- ROOT PROTECTION ZONE
- PROPOSED TREES
- TREE TO BE REMOVED

SITE BOUNDARY AREA: 2.3 ha

Site Centre Point Coordinates:
X,Y = 571940.0,570405.0

- SITE BOUNDARY
- OTHER LANDS UNDER APPLICANT'S OWNERSHIP

1 SITE PLAN
SCALE 1:500

280 UNITS 1:500 A1

C. PLANNING 03.2022
B. FOR PLANNING 08.2021
A. FOR DISCUSSION 03.2021

SITE PLAN

SHIPSEYBARRY
place makers

PROJECT: THE MEADOWS- BESSBOROUGH
SCALE: 1:500 @ A1
DATE: 03.2021
DRAWING DESCRIPTION: SITE PLAN
OVERSEEN BY: MD
APPROVED BY: GB
CLIENT: ESTUARY VIEW ENT. LTD
DRAWING NO.: SB-2020-107-200

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Appendix 3

PROPOSED SITE FACILITIES

Temporary Construction Employee Car Park

Protected Walkway & Pedestrian Crossings

Construction Access

Site Compound/Storage/ Wheelwashing Facility

Ped/Cycle Bridge

Internal Construction Access Route

Construction run-off/silt trap

BIM QUALITY SHEET NO.: PIM-JBB-00-XX-TP-Z-0003

LEGEND:

Rev.	Suit.	Description	Drawn	Ch'kd	Date
P01	S3	Issued for Review	AO'N	TF	02.02.22

Client

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Clients Representative:

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Project

BESSBOROUGH SHD DEVELOPMENT

Drawing Title

PROPOSED SITE FACILITIES

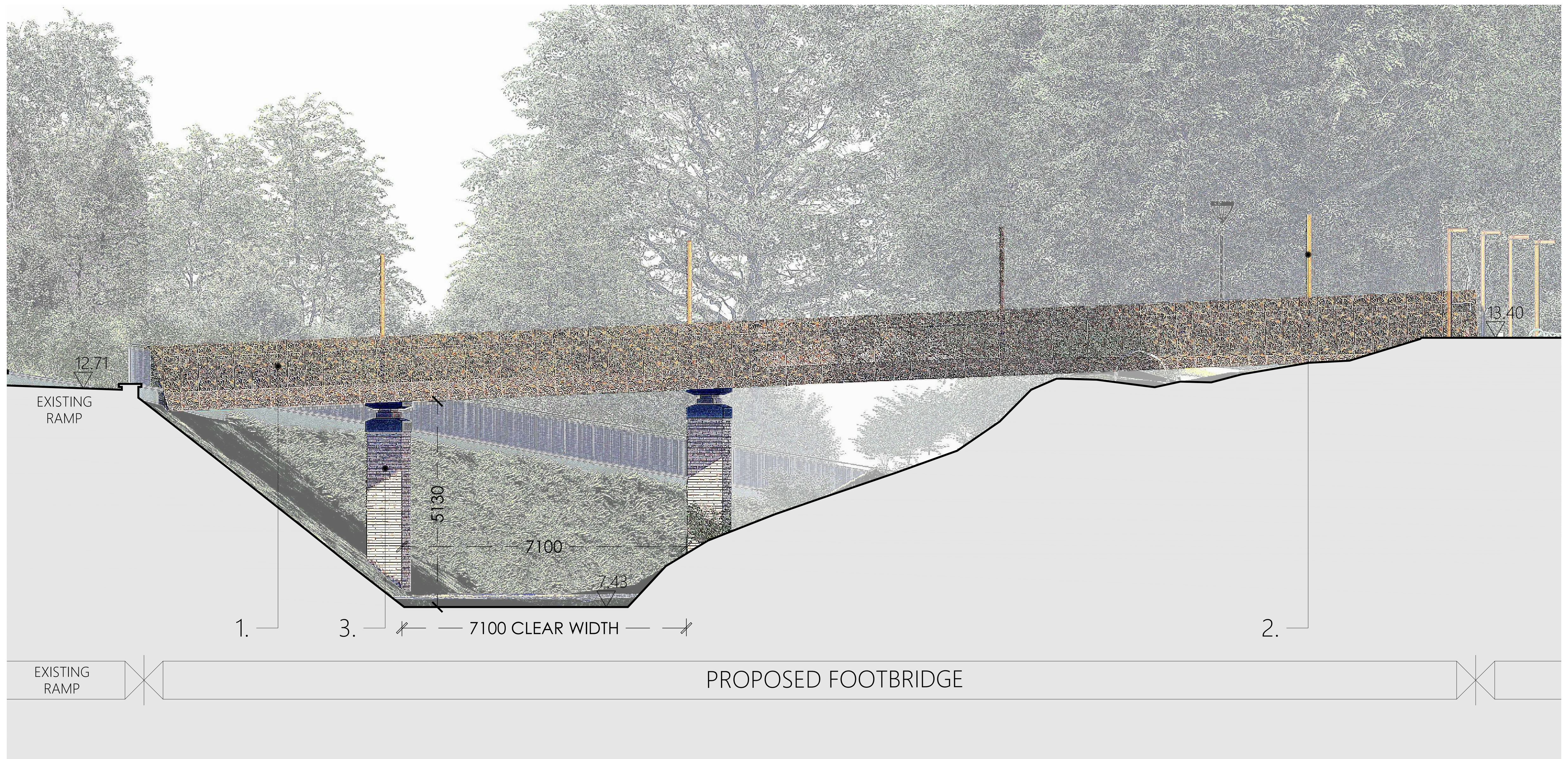
Drawn by :	AO'N	Date :	02.02.22
Checked by :	TF	Date :	02.02.22
Approved by :	TF	Date :	02.02.22
Internal Project REF :	JBB: 21207		
Scales :	1:500 @ A1, 1:1000 @ A3		
Stage :	PLANNING		

Drawing No. :	Revision	Suitability Code
21207-JBB-PH1-XX-DR-C-05003	P01	S3

File Name : \\ecorkdc03\Projects\Barry's Project Files\21 Projects\21207 - Bessborough SHD Development\00 WIP\Dwgs\21207- JBB-PH1-XX-DR-C-05003_Proposed_Site_Facilities.P01.02.dwg

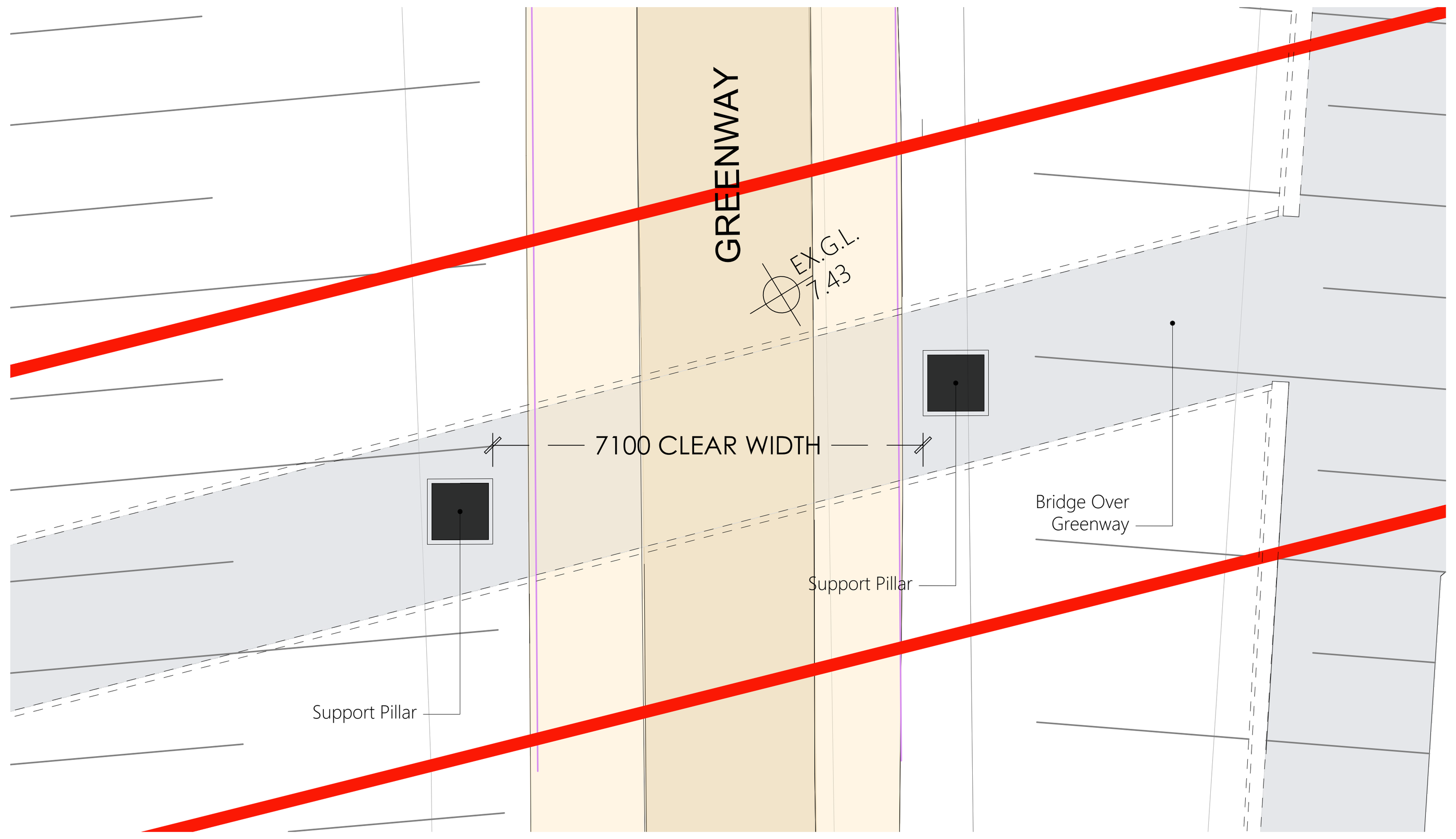
Appendix 4

PROPOSED PEDESTRIAN/CYCLE BRIDGE

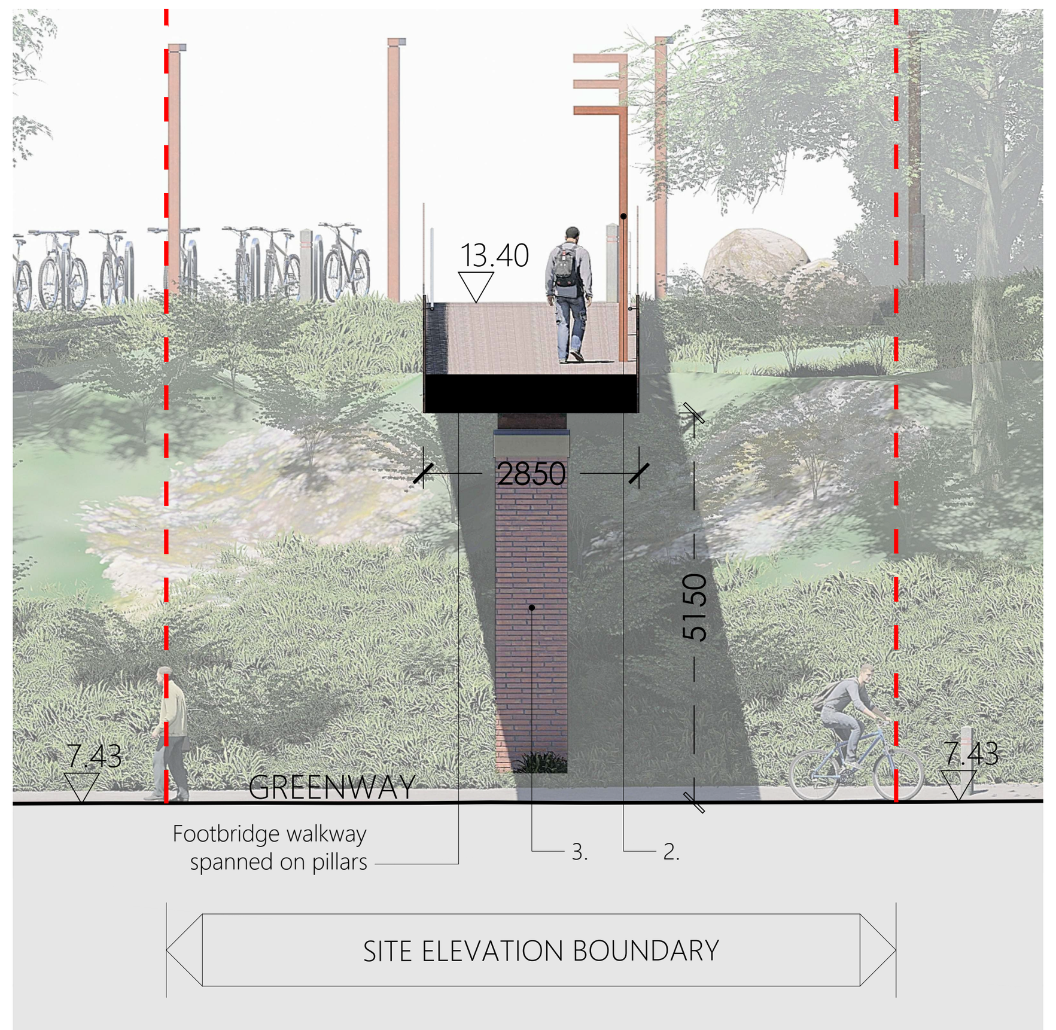


1 SECTION A-A
SCALE 1:100

2 SECTION B-B
SCALE 1:100

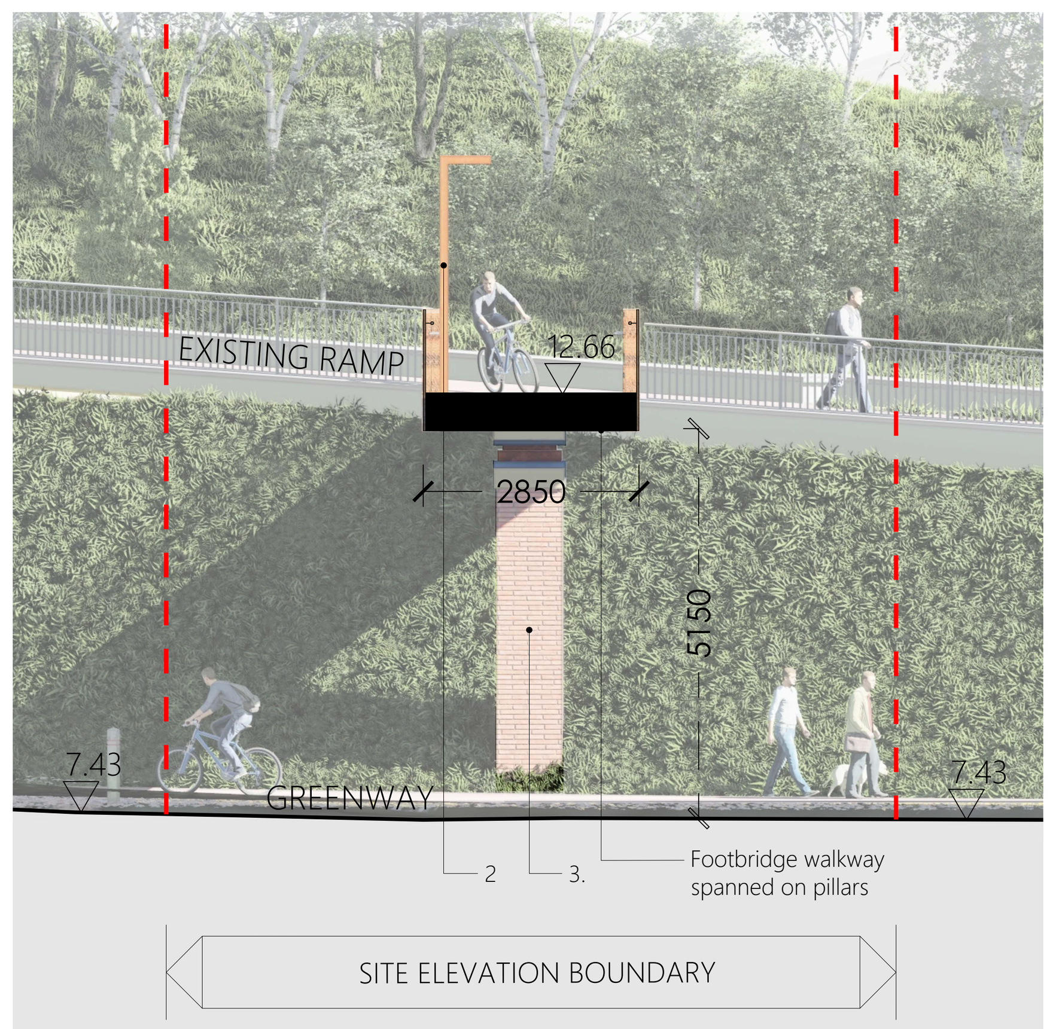


3 GREENWAY LEVEL
SCALE 1:100

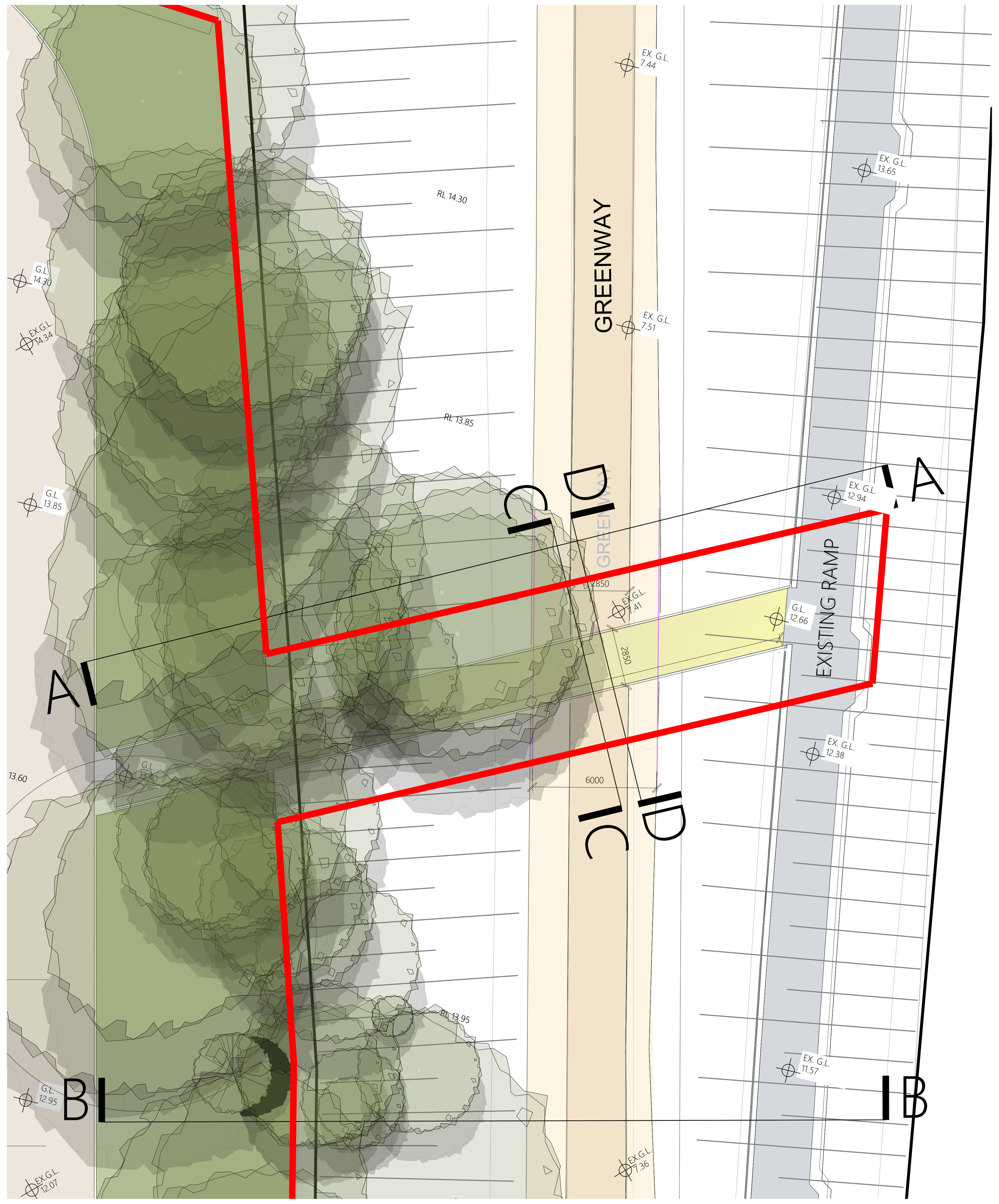


4 SECTION C-C
SCALE 1:100

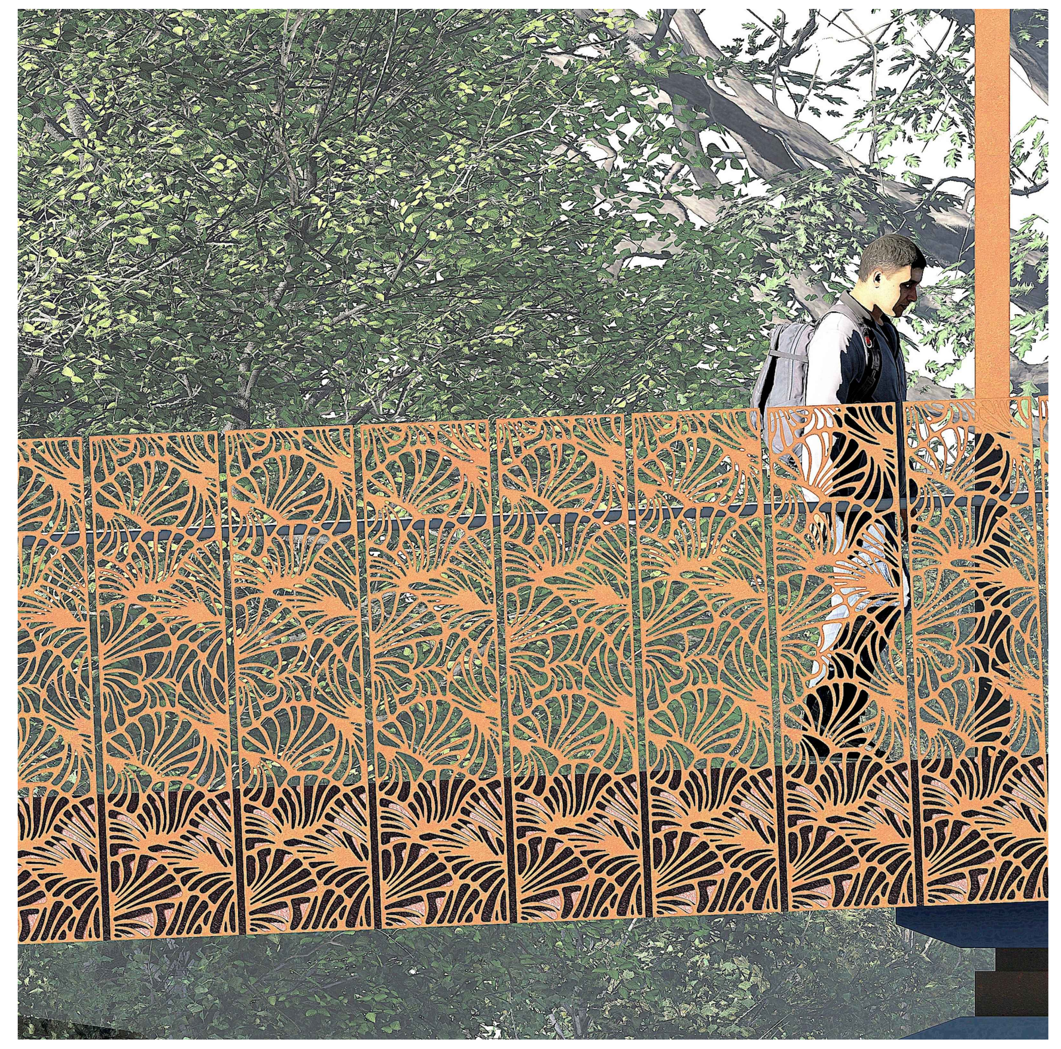
5 PEDESTRIAN VIEW



6 SECTION D-D
SCALE 1:100



7 SITE PLAN (bridge deck level)
SCALE 1:200

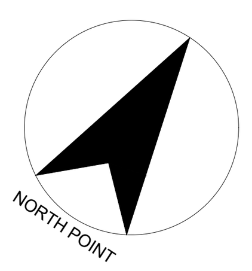


8 BALUSTRADE DETAIL

9 KEY PLAN
SCALE 1:2500

MATERIAL KEY:

1. TYPE 1 ORNAMENTAL PERFORATED METAL SHEETING BALUSTRADE
2. WALKWAY LIGHTS
3. BRICK BRIDGE PILLARS



1:100 & 1:200 A1

Rev	Status	Date
C	FOR APPLICATION	2022.02.04
B	FOR APPLICATION	2022.02.01
A	FOR INFORMATION	2021.12.22

FOOTBRIDGE

PROJECT : THE MEADOWS - BESSBOROUGH		DRAWING DESCRIPTION: SECTIONS, SITE PLAN		CLIENT : ESTUARY VIEW ENTERPRISES LTD	
SCALE : 1:100 & 1:200 @ A1	DATE : JANUARY 2022	OVERSEEN BY : JJ	APPROVED BY : GB	DRAWING NO. : SB-2020-107-900	

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Appendix 5

DUST MITIGATION PLAN

Appendix A
Dust Management Plan

Site management
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 construction planning stage, the siting of activities and storage piles will take note of the location of sensitive receptors and prevailing wind directions. As the prevailing wind is predominantly south-westerly, locating construction compounds and storage piles downwind of sensitive receptors will minimise the potential for dust nuisance to occur at sensitive receptors. The Principal Contractor or equivalent must ensure that the proposed mitigation measures are implemented, and that dust impacts and nuisance are minimised.

- It is recommended that community engagement be undertaken before works commence on site explaining the nature and duration of the works to local residents and businesses.
- The name and contact details of a person to contact regarding air quality and dust issues shall be displayed on the site boundary. A complaints register will be kept on site detailing all sources of complaints received in connection with dust nuisance or air quality concerns, together with details of any remedial actions carried out.
- Regular inspections of the site and boundary should be carried out to monitor dust, records and notes on these inspections should be logged.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook.
- In the event of dust nuisance occurring outside the site boundary, site activities will be reviewed, and satisfactory procedures implemented to rectify the problem.

Preparing and maintaining the site

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site if necessary.
- Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period
- Avoid site runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover or fence stockpiles to prevent wind whipping.

Site roads and operating vehicles / machinery

- A speed restriction of 20 km/hr will be applied as an effective control measure for dust for on-site vehicles using unpaved site roads.
- Access gates to the site shall be located at least 10m from sensitive receptors where possible.
- Bowsers or suitable watering equipment will be available during periods of dry weather. Watering shall be conducted during sustained dry periods to ensure that unpaved areas are kept moist.
- 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.
- Ensure all vehicles switch off engines when stationary.
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.

Site traffic on public roads

- Vehicles delivering material with potential for dust emissions to an off-site location shall be enclosed or covered with tarpaulin at all times.
- At the main construction traffic exit, a wheel wash facility shall be installed. All trucks leaving the site must pass through the wheel wash. The wheel wash will be located sufficiently far from the exit to allow trucks to ‘drip off’ prior to exit. In addition, public roads outside the site shall be regularly inspected for cleanliness and cleaned as necessary.
- Vehicles onsite shall turn off engines when not in use to prevent idling emissions.

Onsite operations

- Only use cutting, grinding, or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays.

- Ensure an adequate water supply on the site for effective dust / particulate matter suppression.
- Use enclosed chutes and conveyors and covered skips.
- Avoid dry sweeping of large areas.
- Minimise drop heights from conveyors and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
- Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event.

Waste management

- Avoid bonfires and burning of waste materials.

Demolition activities

- Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
- Ensure effective water suppression is used during demolition operations.
- Avoid explosive blasting, using appropriate manual or mechanical alternatives.
- Bag and remove any biological debris or damp down such material before demolition.

Earthwork's activities

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
- Only remove the cover in small areas during work and not all at once.
- During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser or similar will operate to ensure moisture content is high enough to increase the stability of the soil and thus suppress dust.

Construction activities

- Ensure aggregates are stored in bunded areas and are not allowed to dry out unless this is required for a particular process.
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in with suitable emission control systems to prevent escape of material and overfilling during delivery.
- For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately.
- During periods of very high winds (gales), construction activities likely to generate significant dust emissions should be postponed until the gale has subsided.