

182186 - Priorsland Cherrywood SHD

**Outline Construction & Demolition Waste
Management Plan**

March 2022

Document Control

Document Number: 182186-R5-PL0

Revision	Description	Date	Prepared	Checked	Approved
PL0	Outline C&D Waste Management Plan	29/07/20	JP Murray	MC Daly	P Casey
PL1	Outline C&D Waste Management Plan	30/03/22	JP Murray	MC Daly	P Casey

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1 Introduction

A Main Contractor has not yet been appointed to carry out the proposed works. Once appointed, it will be the responsibility of the Main Contractor to prepare and submit a detailed construction management plan for the Client's submission to the local authority for approval. The Construction and Demolition Waste Management Plan will be a live document that will be updated throughout the project lifecycle by the Main Contractor as required.

1 Carrickmines Land Limited intend to apply for permission for development at this site of approx. 8.63 ha located at Priorsland, located within the townlands of Carrickmines Great and Brennanstown, Dublin 18. The site comprises lands north and south of the Carrickmines Stream and adjacent Carrickmines Luas Park & Ride. The application relates to development within the Cherrywood Strategic Development Zone (SDZ) and is subject to the Cherrywood Planning Scheme, 2014 (as amended).

The development will comprise a mixed-use village centre and residential development of 443 no. units comprising 6 no. blocks (A-F) of apartments (up to 5 storeys with basement/undercroft parking) providing 402 no. apartments units (146 no. 1-beds; 218 no. 2-beds and 38 no. 3-beds), and 41 no. houses (19 no. 3-beds and 22 no. 4-beds). All apartments provided with private balconies/terraces. Provision of indoor residential facilities to serve apartment residents.

The Village Centre and non-residential elements will comprise a supermarket, local retail/retail service units, non-retail commercial units, creche, gym, community space, and offices (High Intensity Employment) use.

Provision of car/bicycle/motorcycle parking; ESB sub-stations; bin storages areas, and all associated plant areas.

Provision of the first phase of Priorsland Park (on lands within the applicant's ownership) and other public and communal open spaces.

Construction of Castle Street through the subject lands and two road bridges across the Carrickmines Stream, one to serve the future school site/ park, the second to provide pedestrian and cyclist access to the Carrickmines Luas station and future Transport Interchange to the north. Provision of an additional pedestrian bridge to the park. Provision of an acoustic barrier along the southern/western edge of the site.

All associated site development works, landscaping, boundary treatments and services provision.

The proposed works are outlined in a series of architectural drawings prepared and MOLA Architects and engineering drawings prepared by PUNCH, supplied as part of this planning submission.

This report was prepared for Dun Laoghaire-Rathdown County Council (DLRCC) in relation to the planning application for the proposed development and deals specifically with the Outline Construction and Demolition Waste Management Plan.

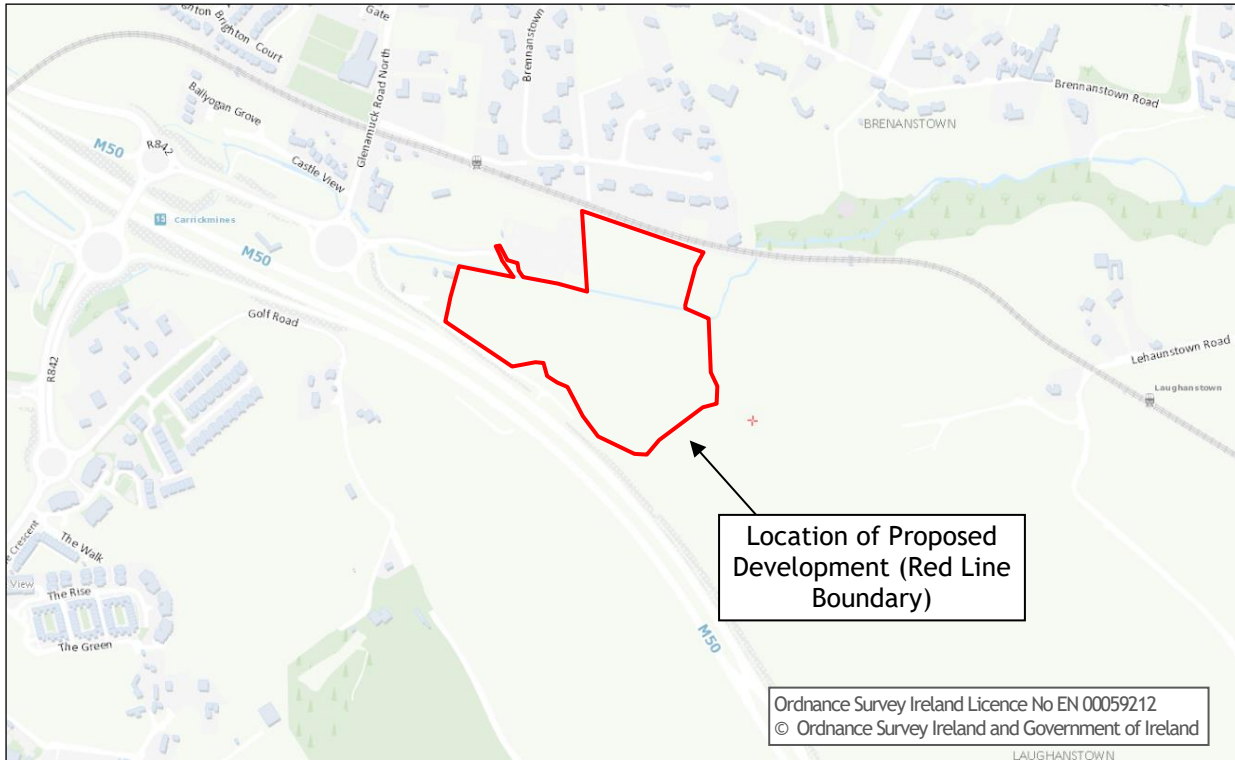


Figure 1 - Site Location of the Proposed Development

2 Construction & Demolition Waste Management

2.1 Background

The purpose of the Construction and Demolition Waste Management Plan (C&D WMP) is to provide the information necessary to ensure that the management of C&D waste at the site is undertaken in accordance with current legal and industry standards including the *Waste Management Act 1996* and associated Regulations, *Litter Act 1997* and the *Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021*.

This section was prepared in accordance with the 'Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects' for the planning application of the proposed development and outlines a Preliminary Construction & Demolition Waste Management Plan for the proposed construction works at the site.

2.2 Best Practice

The management of construction and demolition waste should reflect the waste management hierarchy, with waste prevention and minimisation being the first priority succeeded by reuse and recycling.

During site clearance and construction works, there are numerous opportunities for the beneficial reuse and recycling of the demolition materials. The subsequent use of recycled materials in construction works also reduces the quantities of waste which ultimately needs to be consigned to landfill sites.

2.3 Prevention of Waste

The primary effort therefore should be to engage in waste prevention and reduce the amount of waste generated in the first place i.e. minimise the resources needed to do the job.

Prevention is financially advantageous as it reduces the purchase of construction materials and obviates the need to remove wastes from site. It is important to emphasise the potential for certain purchasing procedures to contribute to a reduction in excessive material wastage on site.

Examples include:

- ensuring materials are ordered on an “as needed” basis to prevent over supply to site;
- purchasing construction materials in shape, dimensions and form that minimises the creation of excessive scrap waste on site;
- ensuring correct storage and handling of construction materials to minimise generation of damaged materials/waste, e.g. keeping deliveries packaged until they are ready to be used;
- ensuring correct sequencing of operations; and
- assigning individual responsibility (through appropriate contractual arrangements) to sub-contractors for the purchase of raw materials and for the management of wastes arising from their activities, thereby ensuring that available resources are not expended in an extravagant manner at the expense of the main contractor.

2.4 Reuse of Waste

Material that is generated should be reused on site or salvaged for subsequent reuse to the greatest extent possible and disposal should only be considered as a last resort. Initiatives should be put in place to maximise the efficient use/reuse of materials.

2.5 Recycling of Waste

There are a number of established markets available for the beneficial use of C&D waste:

- waste timber can be:
 - recycled as shuttering or hoarding, or
 - sent for reprocessing as medium density fibreboard;
- waste concrete can be utilised as fill material for roads or in the manufacture of new concrete when arising at source; and
- in addition, the technology for the segregation and recovery of stone, for example, is well established, readily accessible and there is a large reuse market for aggregates as fill for roads and other construction projects.

2.6 Overall Management of Construction and Demolition Waste

Waste minimisation, reuse and recycling can best be managed operationally by nominating a “Construction and Demolition Waste Manager” to take responsibility for all aspects of waste management at the different stages of the Project.

This C&D Waste Manager may well be a number of different individuals over the life-cycle of the Project, but in general is intended to be a reliable person chosen from within the Contracting Team, who is technically competent and appropriately trained, who takes the responsibility to ensure that the objectives and measures within the Project Waste Management Plan are delivered and who is assigned the requisite authority to secure achievement of this purpose.

Specifically, the function of the C&D Waste Manager will be to communicate effectively with colleagues in relation to the aims and objectives for waste management on the Project. The primary responsibility for delivery of the objectives of the Waste Management Plan will fall upon the C&D Waste Manager designated at the demolition/ construction stage. A key objective for the C&D Waste Manager should be to maintain accurate records on the quantities of waste/ surpluses arising and the real cost (including purchase) associated with waste generation and management.

The preparation, application and documentation of a Project Waste Management Plan should enable all parties - including contractors, designers and competent authorities - to learn from the systematic implementation and assessment of best practice, particularly through the recording of summary information on performance outcomes.

2.7 Construction Management Plan

2.7.1 Disposal of Water, Wastewater and Sewage

All site facilities during construction will be located entirely within the site. The facilities will include canteen, toilet block and drying room for all staff/workers. These facilities will be connected to the Local Authority sewage system with local authority approval.

2.7.2 Water Disposal

Throughout the works, all surface water (water from excavations etc.) will be pumped to a holding tank on site. From here the water will be pumped to a series of settlement tanks. These tanks will act as primary and secondary settlement. The settlement tanks will be of sufficient number and size to allow the necessary retention time for solids to settle. The discharge water from the final tank will be routed to the existing combined water system with approval from the local authority. Visual checks of the pumping and settlement system will be carried out on a routine basis.

2.7.3 Working Hours

The proposed hours of work on site will be 08:00 hrs to 19:00 hrs Monday to Friday and 08:00 hrs to 14:00 hrs Saturday unless otherwise specified by planning conditions. Certain tasks may need to be undertaken outside of these hours. All outside of hours work will first be agreed in writing with the Local Authority.

2.7.4 Waste Management Control Policy

In general:

Regular shaped skips, will be used for the duration of the demolition/ construction works. All skips will be situated in the waste segregation area on site.

Labelled skips will be available for each of the following waste types: wood, metal, brick/ rubble, canteen waste, plasterboard, paper and cardboard, other general waste and special bins for any hazardous wastes as required.

Throughout the demolition/ construction zone, covered labelled wheelie bins will be placed at designated waste depots. These bins will be taken and used by the operatives/ sub-contractors and returned to the depots after use.

The waste segregation area banksman will co-ordinate the movement of skips to and from the demolition/ construction zone. The banksman will also co-ordinate the scheduling of the approved waste collector to transport waste to the relevant permitted/ licensed waste facility.

2.7.5 Spoil/Imported Fill Management

Spoil and imported fill material will be distributed within the lands made available (LMA) to the extent practical. This requires proper placement of the spoil and fill material within the LMA using techniques to avoid or minimize environmental disturbance, such as vegetation impacts. If the spoil material cannot be completely distributed within the LMA, spoil disposal sites will be required.

Objectives:

- To ensure that all spoil shall be controlled to protect environment
- To ensure proper disposal of all spoil in the spoil disposal site in construction stage.

Management Measures:

- Identify an area to dispose of the spoil within the lands made available where possible
- Designate an area for temporary stockpiling if required, temporary stockpiles to be covered with 1.5mm thick polyethylene membrane
- All topsoil to be stored in stockpiles of 1m sloped to ensure no water can pond, they shall be kept weed free and planted with sterile Italian Ryegrass if they are to be in place for over 12 months
- Send samples of the material away for classification in the LoW.
- If no area can be identified for the disposal of spoil on site, material to be disposed of in accordance with Sections 2.9 and 3.

2.7.6 Control of Fuels and Lubricants

In order to provide fuel to the relevant items of plant on site, a certified double skinned metal fuel tank with integrated pump, delivery hose, meter, filter and locking mechanism will be situated in a

secure area on the construction site. It will be situated within a bund. This tank will be certified for lifting when full.

Sand piles and emergency clean up spill kits will be readily available in the event of a fuel spill. A hazardous bin will also be available to contain any spent sand or soak pads.

New metal gerry cans with proper pouring nozzles will be used to move fuel around the site for the purposes of refuelling items of small plant on site.

Drip trays will be used under items of small plant at all times. Any waste oils etc. contained in the drip trays or the bunded area will be emptied into a waste oil drum, which will be stored within the bund.

Metal gerry cans and any other items of fuel containers will be stored in certified metal bunded cabinets. Any gas bottles will be stored in a caged area at a secure location on the site. All will be properly secured at point of work.

2.7.7 Site Compound Layout

The site will be enclosed by hoarding. A waterproof membrane will be fixed to the base of the hoarding and the ground. The compound area will be of existing hardstanding material.

2.7.8 Car Parking Arrangements

Parking of construction workers vehicles will be facilitated by the large site extents. To minimise congestion, a traffic management plan will need to be developed by the Contractor to ensure that construction workers access the site using alternative means of transport (i.e. public transport) to negate/minimise any impacts on the local network.

2.7.9 Traffic Management Procedures / Generation

All deliveries will be booked into site at least one day before delivery. All drivers will contact the site gate man 15 minutes before arrival on site.

It is proposed that the construction traffic temporarily access/exit the proposed development via a western route utilising the available legal right of way (itself accessed via the M50 Southbound Roundabout). This is a temporary arrangement only and has a precedent approval associated with it under the previously granted permission DZ16A/0585. This access track may be utilised for construction activities associated with construction of the western Carrickmines Stream bridge crossing to establish the proposed interim pedestrian and cyclist access to the Transport Interchange. All deliveries will be off-loaded without delay by the most appropriate method and escorted off site. Refer to defined construction/demolition traffic route in Section 4.1.1 of this report.

The site gate man will be responsible for ensuring that there is no conflict between pedestrians and vehicles entering/ exiting the site. In addition, temporary markings will be painted on the footpath either side of the site entrance to alert pedestrians.

It is predicted that there will be as many as 300 personnel on site during peak construction activity. Accounting for car sharing, there could be in the order of 150 vehicles arriving and departing the site every day during peak construction activity. It is envisaged that working hours on site will be 08:00 hrs to 19:00 hrs Monday to Friday and 08:00 hrs to 14:00 hrs Saturday, therefore the peak movements in and out of the site should occur outside of the AM/PM rush hour traffic.

The volume of HGV movements per day will vary according to the different stages of demolition. Peak HGV movements will be associated with removal off-site of concrete walls and roof cladding elements.

Site Fill Works:

For a rigid HGV hauling material to the site, it will typically take 15 mins from when the rigid arrives at the site entrance, travels to the unloading area, empties its load and leaves the site.

The worst-case scenario is demolition works with an estimated average of 6 HGV's per hour predicted during peak site grading activity. It is envisaged that HGV movements will be undertaken outside of AM/ PM rush hour traffic.

2.7.10 Air Quality

There is the potential for a number of emissions to the atmosphere during the demolition stage of the project. In particular, activities may generate quantities of dust. Construction vehicles, generators etc., will also give rise to some exhaust emissions.

Vehicular movements to and from the site will make use of existing roads. It is estimated that peak construction HGV movements will be 6 HGV's per hour. Considering the existing traffic levels in the area, the likely air quality impact associated with construction traffic is not significant.

A dust minimisation plan will be formulated for the demolition and construction phase of the project, as construction activities are likely to generate dust emissions. The potential for dust to be emitted depends on the type of activity being carried out in conjunction with environmental factors including levels of rainfall, wind speeds and wind direction. The potential for impact from dust depends on the distance to potentially sensitive locations and whether the wind can carry the dust to these locations. The majority of any dust produced will be deposited close to the potential source and any impacts from dust deposition will typically be within several hundred metres of the construction area.

In order to ensure that no dust nuisance occurs, a series of measures will be implemented.

Roads shall be regularly cleaned and maintained as appropriate. Hard surface roads shall be swept to remove mud and aggregate materials from their surface. Furthermore, 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 delivering material with dust potential both on and off the site shall be enclosed or covered with tarpaulin at all times to ensure no potential for dust emissions.

All vehicles exiting the site shall make use of a wheel wash facility, if required, prior to entering onto public roads, to ensure mud and other wastes are not tracked onto public roads. Public roads outside the site shall be regularly inspected for cleanliness and cleaned as necessary.

Material handling systems and site stockpiling of materials shall be designed and laid out to minimise exposure to wind. Water misting or sprays shall be used as required if particularly dusty activities are necessary during dry or windy periods.

At all times, the procedures put in place will be strictly monitored and assessed. In the event of dust nuisance occurring outside the site boundary, satisfactory procedures will be implemented to rectify the problem.

The dust minimisation plan shall be reviewed at regular intervals during the construction phase to ensure the effectiveness of the procedures in place and to maintain the goal of minimisation of dust through the use of best practise and procedures.

2.8 Noise and Vibration

2.8.1 Noise

There is no published Irish guidance relating to the maximum permissible noise level that may be generated during the construction phase of a project. Local authorities normally control construction activities by imposing limits on the hours of operation and consider at their discretion noise limits.

In the absence of specific noise limits, appropriate criteria relating to permissible construction noise levels for a development of this scale will be agreed with Dun Laoghaire-Rathdown County Council as part of the planning conditions and will indicate the maximum permissible noise levels at adjacent properties during construction and any related time constraints with regard hours of operation. The majority of the construction activity is expected to occur during normal working hours.

2.8.2 Vibration

There are two varieties of criteria for vibration: those dealing with human comfort and those dealing with cosmetic or structural damage to buildings. In both instances, it is appropriate to consider the magnitude of vibration in terms of Peak Particle Velocity (PPV).

It is acknowledged that humans are particularly sensitive to vibration stimuli and that any perception of vibration may lead to concern. In the case of road traffic, vibration is perceptible at around 0.5 mm/s and may become disturbing or annoying at higher magnitudes. However, higher levels of vibration are typically tolerated for single events or events of short duration. For example, piling is typically tolerated at vibration levels up to 5mm/s. This guidance is applicable to the daytime only; it is unreasonable to expect people to be tolerant of such activities during the night.

Guidance relevant to acceptable vibration within buildings is contained in the following documents:

- British Standard BS 7385 -2:1993: Evaluation and measurement for vibration in buildings. Guide to damage levels from ground borne vibration, and;
- British Standard BS 5228-2:2009: Code of practice for noise and vibration control on construction and open sites

2.8.3 Noise and Vibration Mitigating Measures

Due to the nature of the activities undertaken on a construction site, there is naturally potential for generation of significant levels of noise. A variety of items of plant may be in use, such as pneumatic breakers, excavators, lifting equipment, dumper trucks, compressors and generators. The flow of vehicular traffic to and from a construction site is also a potential source of relatively high noise levels.

The potential for vibration at neighbouring sensitive locations during construction is typically limited to demolition works, excavation works and lorry movements on uneven road surfaces.

With regard to construction activities, reference will be made to BS 5228-1:2009: Noise control on construction and open sites, which offers detailed guidance on the control of noise and vibration from demolition and construction activities. In particular, it is proposed that various practices be adopted during construction, including:

- limiting the hours during which site activities likely to create high levels of noise or vibration are permitted;
- establishing channels of communication between the contractor/developer, Local Authority and residents;
- appointing a site representative responsible for matters relating to noise and vibration;
- monitoring typical levels of noise and vibration during critical periods and at sensitive locations;
- all site access roads will be kept even, to mitigate the potential for vibration from lorries;
- Construction of 2.4m high hoarding.

Furthermore, it is envisaged that a variety of practicable noise control measures will be employed. These may include:

- selection of plant with low inherent potential for generation of noise and/ or vibration;
- erection of barriers as necessary around noisy processes and items such as generators heavy mechanical plant or high duty compressors;
- placing of noisy / vibratory plant as far away from sensitive properties as permitted by site constraints and the use of vibration isolated support structures where necessary.

We would recommend that vibration from construction activities be limited to the values set out in section 2.8.2. It should be noted that these limits are not absolute but provide guidance as to magnitudes of vibration that are very unlikely to cause cosmetic damage. Magnitudes of vibration slightly greater than those are normally unlikely to cause cosmetic damage, but construction work creating such magnitudes should proceed with caution. Where there is existing damage these limits may need to be reduced by up to 50%.

During the construction phase of the project there will be some small impact on nearby properties due to noise emissions from site traffic and other activities. However, given that the construction phase of the project is temporary in nature, it is expected that the various noise sources will not be excessively intrusive. Furthermore, the application of binding noise limits and hours of operation, along with implementation of appropriate noise and vibration control measures, will ensure that noise and vibration impact is kept to a minimum.

It is highly recommended that appropriate dilapidation records for the site and surrounding area are documented prior to the commencement of construction/demolition activities.

2.9 Indicative On-Site Waste Construction & Demolition Waste Management Plan

In the course of the Project, it is estimated that the following quantities of construction and demolition wastes/material surpluses will arise:

Construction Waste Material	Quantity	Actions
Metal	558.6 t	20% to be reused on site and 80% to be recycled
Glass	11.76 t	50% of any waste concrete to be recycled and 50% to be properly disposed of
Paper & Cardboard	0.88 t	100% of any waste masonry to be recycled
Plastic	0.88 t	100% of any waste timber to be recycled
Wood	168 t	100% of any waste packaging to be recycled
Mixed Waste	8.82 t	Not envisaged at this stage of the project*
Mineral (concrete, bricks, gypsum)	1293.6 t	Any other waste materials will be recycled where possible or disposed of appropriately
Soil/Stones	221.7 t	
Residues	676.2 t	
TOTAL Arisings	2,940 t	

Table SF1 Estimated C&D Waste Arisings on Site from Appendix 3 of Best Practice Guidelines of Waste Management Plans for C&D Projects

These quantities are provisional only and subject to further determination during construction works.

2.9.1 Proposals for Minimisation, Reuse and Recycling of C&D Waste

Construction and demolition waste will arise on the Project mainly from the site clearance, service trenches and foundation preparation.

The following are proposals for minimisation, reuse and recycling of C&D waste:

- The Purchasing Manager shall ensure that materials are ordered so that the quantity delivered, the timing of the delivery and the storage is not conducive to the creation of unnecessary waste.
- Concrete waste will be source segregated.
- Masonry and wood will be source segregated.
- Packaging will be source segregated for recycling or return to suppliers.
- Hazardous wastes will be identified, removed and kept separate from other C&D waste materials in order to avoid further contamination.
- Other C&D waste materials will be collected in receptacles with mixed C&D waste materials, for subsequent separation and disposal at a remote facility.

It is anticipated that waste materials will have to be moved off site. It is the intention to engage specialist waste service Contractors, who will possess the requisite authorisations, for the collection and movement of waste off-site, and to bring the material to a facility which currently holds a Waste Licence/ Waste Permit/ Certificate of Registration. Accordingly, it will be necessary to arrange the following waste authorisations specifically for the Project:

Authorisation Type	Specific Need for Project (Yes/No?)	
Waste Licence	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Waste Permit	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Waste Collection Permit	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Trans frontier Shipment Notification	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Movement of Hazardous Waste Form	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

Table SF2 Waste Authorisations Necessary for the Scheme from Appendix 3 of Best Practice Guidelines of Waste Management Plans for C&D Projects

A list of waste collection permit holders to be employed on this project will be submitted to the local authority by the contractor in their Formal Construction and Demolition Waste Management Plan for the Construction Stage.

A list of waste collection permit sites that the waste may be recovered or disposed to on this project will be submitted to the local authority by the contractor in their Formal Construction and Demolition Waste Management Plan for the Construction Stage.

2.9.2 Assignment of Responsibilities

A foreman shall be designated as the Responsible Person and have overall responsibility for the implementation of the on-site Waste Management Plan.

The Responsible Person will be assigned the authority to instruct all site personnel to comply with the specific provisions of the Plan.

At the operational level, a Ganger from the main contractor and appropriate personnel from each sub-contractor on the site shall be assigned the direct responsibility to ensure that the discrete operations stated in the Waste Management Plan are performed on an on-going basis.

2.9.3 Training

Copies of the Waste Management Plan will be made available to all personnel on site. All site personnel and sub-contractors will be instructed about the objectives of the Waste Management Plan and informed of the responsibilities which fall upon them as a consequence of its provisions.

Where source segregation, selective demolition and material reuse techniques apply, each member of staff will be given instructions on how to comply with the Waste Management Plan.

Posters will be designed to reinforce the key messages within the Waste Management Plan and will be displayed prominently for the benefit of site staff.

2.9.4 Waste Auditing

The C&D Waste Manager shall arrange for full details of all arisings, movements and treatment of construction and demolition waste discards to be recorded during the construction stage of the Project.

Each consignment of C&D waste taken from the site will be subject to documentation, which will conform to Table SF3 and ensure full traceability of the material to its final destination.

Detail	Particulars
Name of Project of Origin	e.g. New Harbour Motorway
Material being Transported	e.g. Soil, Demolition Concrete, Crushed Asphalt etc.
Quantity of Material	e.g. 20.50 tonnes
Date of Material Movement	e.g. 01/07/2020
Name of Carrier	e.g. Authorised Carriers Ltd.
Destination of Material	e.g. Priorsland Development
Proposed Use	e.g. Use as Hardcore in Dwelling Floors

Table 1 Table SF3 Details to be Included within Transportation Dockets from Appendix 3 of Best Practice Guidelines of Waste Management Plans for C&D Projects

Details of the inputs of materials to the Construction site and the outputs of wastage arising from the Project will be investigated and recorded in a Waste Audit, which will identify the amount, nature and composition of the waste generated on the site.

The Waste Audit will examine the manner in which the waste is produced and will provide a commentary highlighting how management policies and practices may inherently contribute to the production of construction and demolition waste.

The measured waste quantities will be used to quantify the costs of management and disposal in a Waste Audit Report, which will also record lessons learned from these experiences which can be applied to future projects.

The total cost of C&D Waste management will be measured and will take account of the purchase cost of materials (including imported soil), handling costs, storage costs, transportation costs, revenue from

sales, disposal costs etc. Costs will be calculated for the management of a range of C&D Waste materials, using the format shown in Table SF4.

The Table SF4 below will be completed and submitted to the Council in full following the appointment of a contractor for the works.

Material	Estimated Quantities & Costs (tonnes & Euro)
<u>SOIL</u>	XXX tonnes for €_____
Quantity of Waste Soil(tonnes)	
Purchase Cost i.e. Import Costs (€)	
Materials Handling Costs (€)	
Material Storage Costs (€)	
Material Transportation Costs (€)	
Revenue from Material Sales (€)	
Material Disposal Costs (€)	
Material Treatment Costs (€)	
Total Waste Soil Management Costs (€)	
Unit Waste Soil Management Costs (€)	

Table SF4 Standard Record Form for Costs of C & D Waste Management from Appendix 3 of Best Practice Guidelines of Waste Management Plans for C&D Projects

Details of the quantities and types of C&D Waste arising from the Project will be forwarded to Environmental Protection Agency, local competent authority, NCDWC etc.

3 Waste Management Legislation and Obligations

3.1 Relevant Waste Management Legislation

This section provides details of waste related legislation relevant to the project. In accordance with cradle to grave responsibilities, the Contractor will be responsible for all waste arisings from the time the waste is generated until it reaches its final destination point. This includes its method of treatment/disposal. The Waste Management Acts 1996-201, give effect to the polluter pays principle effectively stating that the waste producer may be liable for any pollution incidents arising from the management of their waste. There is therefore an onus on the Contractor to ensure that all contractors managing waste on their behalf are legally compliant and technically competent and the waste itself is contained, handled, treated and disposed of in accordance with all relevant regulatory requirements.

A brief description of the main waste related regulatory controls relevant to the project is provided hereunder; however, the list is not exhaustive and should be reviewed and amended at regular intervals in accordance with changing legislation:

3.1.1 Waste Management (Landfill Levy) Regulations 2015, S.I. No. 189/2015

The existing levy of €75 per tonne of waste disposed is unchanged under these new Regulations.

3.1.2 Waste Management (Facility Permit and Registration) (Amendment) Regulations 2015, S.I. No. 198/2015

These regulations describe the process for obtaining a Waster Permit or Certificate of Registration, by a private operator from a local authority, or a Certificate of Registration from the Environmental Protection Agency (EPA) in respect of a local authority run waste activity which requires registration.

3.1.3 Waste Management (Licensing) (Amendment) Regulations 2010, S.I. No. 350/2010

These regulations relate to the process for obtaining a waste licence from the EPA for the operation of certain waste recovery or disposal facilities under Part V of the Waste Management Act.

3.1.4 Waste Management (Collection Permit) (Amendment) Regulations 2016, S.I. No. 24/2016

These regulations relate to the requirement to obtain a waste collection permit from the relevant local authority for the collection of waste on a commercial basis.

3.1.5 Waste Management (Movement of Hazardous Waste) Regulations 1998, S.I. No. 14/1998

These regulations control the movement of hazardous waste within Ireland requiring authorisation in the form of C1 consignment forms. The C1 form is completed by the Consignor, the Carrier and the Consignee. A three part document provides a tracking mechanism for the hazardous waste from its point of origin to its final destination.

3.1.6 Waste Management (Shipments of Waste) Regulations 2007, S.I. No. 419/2007

These regulations control the movement of waste across member states. Shipments are controlled under a TFS (Transfrontier Shipment) form, which designates the waste under the categories of Green, Amber and Red List. Dublin City Council is the designated competent authority under the regulations.

3.1.7 Waste Classification, List of Waste and Determining if Waste is Hazardous or Non-Hazardous, 2015

This document allows the generators of waste to classify the waste as hazardous or non-hazardous and in the process assigning the correct List of Waste entry. The waste classification system applies across the EU and is the basis for all national and international waste reporting obligations. Correct classification is the foundation for ensuring that collection, transportation, storage, treatment of waste is carried out in a manner that provides protection for the environment and human health and in compliance with legal requirements.

3.1.8 Carriage of Dangerous Goods by Road Regulations 2015, S.I. No. 288/2015

These regulations require drivers transporting dangerous goods to be ADR trained. In addition, a Dangerous Goods Safety Advisor (DGSA) must be appointed where activities include the carriage, or related packing, loading, filling or unloading of dangerous goods by road.

4 Construction Traffic Management

This section, relating to the Construction Traffic Management Plan (CTMP), sets out the traffic management requirements that will apply to Contractors who are engaged in the demolition and construction activities associated with the proposed development in the northwest sector of the Cherrywood SDZ, to the south and east of the Carrickmines Luas Park and Ride, County Dublin. The Contractor must adopt the requirements of this Outline Construction Traffic Management Plan into his own Construction Traffic Management Plan and must agree same with Dun Laoghaire-Rathdown County Council prior to commencement on site.

4.1 Construction Traffic Access to the Site

4.1.1 Location and access to the site

The proposed construction access route to the Priorsland site will be via the western route utilising the available legal right of way (via the M50 Southbound Roundabout). This access route will consist of a stop/go system giving primacy to incoming construction related traffic in order to minimise impacts on the local road network. The management of construction traffic on the public road network around the development will be a critical part of the overall project and must be actively managed by the Contractor. Scheduling and coordination of site traffic in advance of arrival/departure will be needed to ensure that disruption to public traffic is mitigated.

This access track will also be utilised for construction activities associated with construction of the western Carrickmines Stream bridge crossing which will establish the proposed interim pedestrian and cyclist access to the Transport Interchange. Refer to Figures 2a and 2b for site photographs.

This interim access represents an 'alternative use of infrastructure' pursuant to the adopted amendment to the SDZ which states the following in Section 7.2.2:

“However, it is acknowledged that there may be exceptional or unforeseen circumstances beyond the reasonable control of an individual developer or the local authority, whereby a piece of infrastructure necessary to progress the development of a Growth Area cannot be provided in the short to medium term (circa 0-3 years). In such instances, there may be an appropriate alternative utilising other infrastructure as provided for under the Planning Scheme, as an interim measure to facilitate the early delivery of housing, and early engagement with the Development Agency will be an essential prerequisite.”

Once the Castle Street extension becomes viable, and is completed in its entirety, that Level 2 route would become the standard, on-going access route for the Priorsland development. Access to the Priorsland development will therefore eventually utilise the Level 2 Road access route as required under the permanent SDZ requirement. This also applies to the residential/operational traffic associated with the proposed development.



Figure 2a - Access Gate at Carrickmines Roundabout



Figures 2b - Access Track along South Boundary

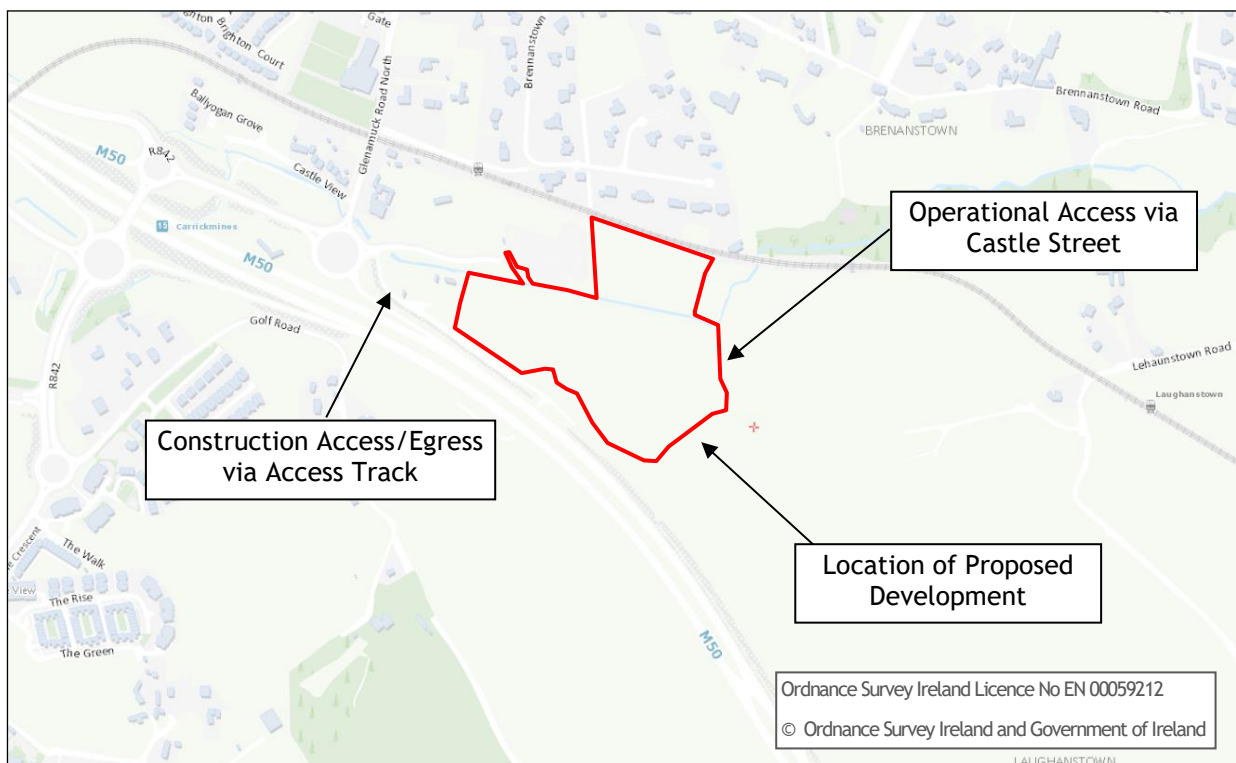


Figure 3 - Proposed Primary Route To/From Site

Please refer to Appendix A for illustration of the proposed construction traffic arrangements for the Priorsland development.

The management of construction traffic on the public road network around the development will be a critical part of the overall project and must be actively managed by the Contractor.

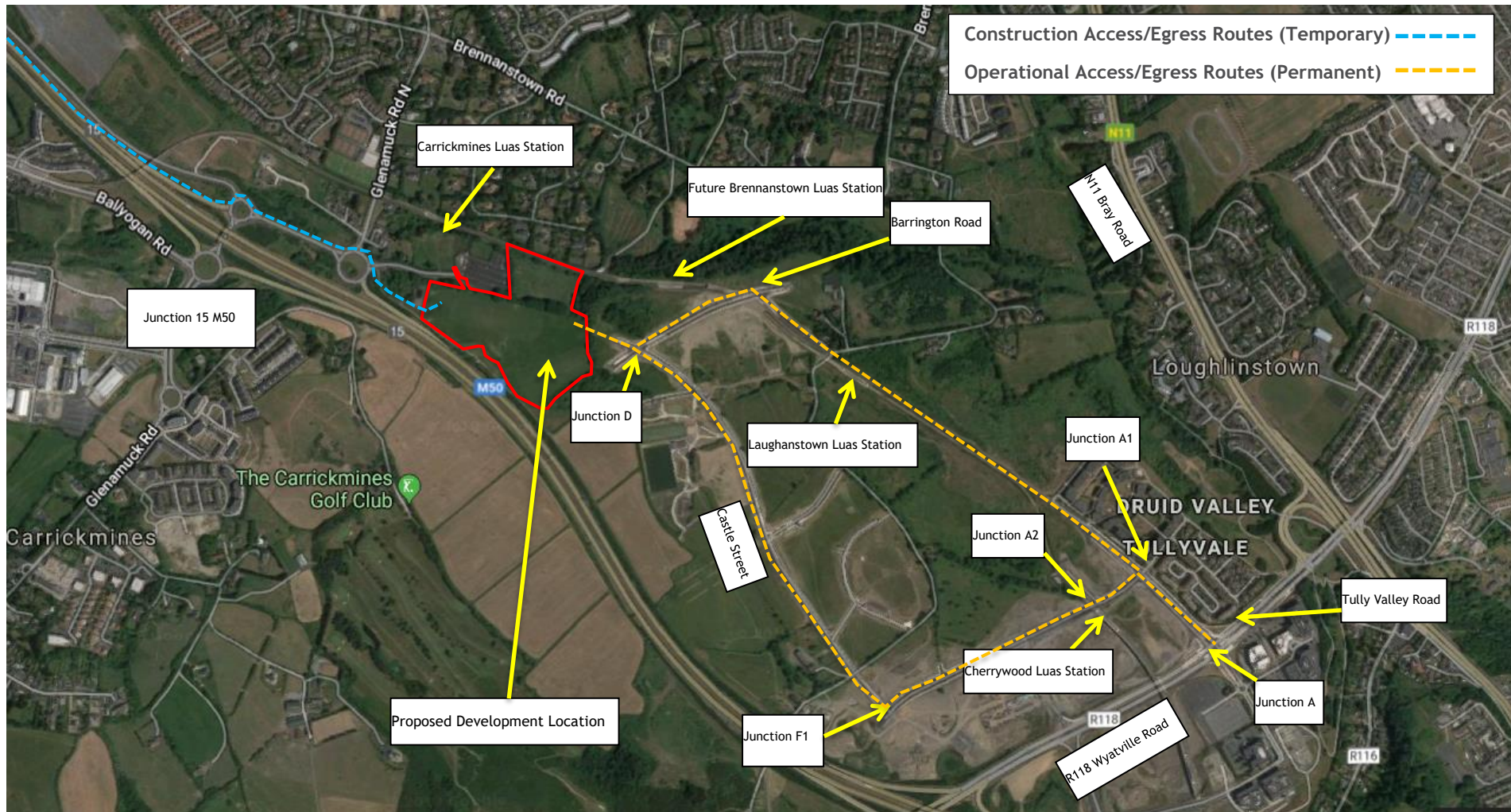


Figure 4 - - Development Site Location Map and Surrounding Road Network © Google Map

4.1.2 Definition of Construction Traffic

Construction traffic means the following vehicles:

- HGVs & haul trucks - i.e. vehicle with 6 tyres or more as set out in the RSA publication 'Guidelines on Maximum Weights and Dimensions of Mechanically Propelled Vehicles and Trailers, Including Manoeuvrability Criteria'
- Site machinery such as excavators, tippers, bulldozers, etc.
- Concrete trucks.

Smaller vehicles used by construction workers to access the site, such as cars and vans, are not deemed to be construction traffic.

4.2 Management of Construction Traffic around the Priorsland Site

The Contractor is required to control the construction traffic in and around the proposed development location, with construction vehicle access to the site provided by a western route utilising the available access wayleave (itself accessed via the M50 Southbound Roundabout). The Contractor must adhere to the following:

- Communicate clearly to all construction staff and subcontractors that they are bound by these restrictions.
- Schedule site traffic in advance to ensure that these restrictions are adhered to.
- Monitor construction traffic at key points remote from the site to check compliance.
- Details of the Contractor's management plan must be submitted to Dun Laoghaire-Rathdown County Council in advance of construction and included as part of the Construction Management Plan.
- Vehicle movements associated with ancillary, maintenance and other non-essential activities will be minimised during the peak traffic hours on the public road in the vicinity of the site. These are the hours of 8:00-9:00AM in the morning and 17:00-18:00PM in the evening.
- A special permit for moving oversized and hazardous loads will be obtained from DLRCC/ An Garda Síochána prior to any such movements.
- Daily construction programmes will be planned to minimise the number of disruptions to surrounding streets by staggering HGV movements to avoid site queues.
- It is envisaged that there will be provision for on-site parking, sufficient only to serve those directly involved with the works.
- Construction vehicles will follow the road hierarchy as much as practicable - i.e. construction vehicles will be directed away from local or minor streets and roads and will be required to use designated primary national and regional routes for accessing the site.
- The Contractor will appoint a Traffic Management Coordinator who will be responsible for the coordination of all traffic safety and traffic management matters. The Traffic Management Coordinator will ensure that all traffic management requirements set-out in the CTMP are met.
- In the event that multiple contractors will be working on site, overall traffic management coordination will be required. This will include a review of the individual CTMPs prepared by different Contractors and provision of guidance to ensure consistency between them. An

overall CTMP for the entire site should be prepared and agreed with DLRCC in advance of commencement of works.

4.3 Proof of Compliance with Traffic Restrictions

The Contractor will track the transit of construction traffic in the area for the duration of the works.

The Contractor will control traffic movements using the following procedure;

- Develop a restrictions and rule adherence form that all lorry drivers and site operatives will sign.
- All traffic movements to and from site to be managed by the Contractor's transport manager in accordance with these restrictions
- Appointed person located at the site entrance to issue dockets and record all traffic entering and leaving site.
- Records to be reviewed periodically by the site manager.
- Prior to any new contractors starting, all persons must sign up to restrictions and prequalification forms.
- A certified Flagman must be present to coordinate the traffic entering and leaving the site.

4.4 Construction Traffic Access to site via M50 South Roundabout/Luas Park & Ride Access Road

4.4.1 Traffic Management Procedures / Generation

Refer to Section 2.7.9 above for details.

4.4.2 Traffic management - Internal Site Extents

Contractor / subcontractor / supplier parking is not permitted on any local access routes. Vehicles must be parked within approved designated areas within the site extents. To minimise congestion, a traffic management plan will need to be developed by the Contractor to ensure that construction workers access the site using alternative means of transport (i.e. public transport) to negate impacts on the local network.

No unloading or blockages of access routes, including emergency vehicle access routes. Such vehicles will be immediately requested to move to avoid impeding works.

In accordance with this CTMP, the Contractor must appoint a Traffic Management Coordinator responsible for the management of traffic management related activities on site.

The Contractor must carry out an auto-track analysis to ensure that adequate turning space is available. The auto-track must demonstrate how construction vehicles will go in and out of the site. Contractors must eliminate where possible the necessity for reversing of any construction or supply chain vehicle onsite.

Contractor is to note requirement for traffic management.

4.4.3 Traffic management coordination meetings

Monthly logistics coordination will be undertaken where the traffic management strategy, traffic management coordination (and implementation of any required temporary traffic management schemes) will be discussed and agreed.

4.4.4 Construction Access Road required behaviours

The Contractor must adhere to established traffic management measures specified in the Construction Traffic Management Plan including:

- Queuing procedures outside the site for vehicles seeking to enter the site to prevent back-up onto the local road network;
- Sign-in requirements;
- Visual PPE checks;
- Arrangements for infrequent visitors, e.g. project team, client visitors;
- Compliance to sign-in requirements, use of turnstiles and/or swipe cards; and
- Collaborate with any required security searches of vehicles entering or exiting.

All Contractors will be deemed to have inspected and examined the site and its surroundings at tender stage and to have satisfied itself as to the nature and means of access to the site.

In the event of a Contractor not being satisfied with the permitted access routes to and from the site, the Contractor is obliged to provide for all expenses and charges for temporary way-leaves and temporary truck/vehicle holding areas in connection with different access arrangements to the site. Any amendments must be to the satisfaction of DLRCC.

4.4.5 Loading/Unloading locations

Vehicles must be loaded and unloaded within the site area (i.e. access routes, site compound set-up and loading areas to be developed and agreed with the Contractor). Contractors are not permitted to carry out loading or unloading on the public roadway. This approach reduces the risk to the public, reduces congestion, and minimises disruption and risk to any passing vehicles on the highway. All deliveries and collections should be overseen and managed for the Contractor by a nominated competent person.

Contractors must consider and explain how to manage the impacts on cyclists, pedestrians, other road users, and any affected roadway infrastructure.

4.4.6 Emergency Access

Access for emergency vehicles via the primary haul roads must be maintained at all times.

4.4.7 Asset Protection

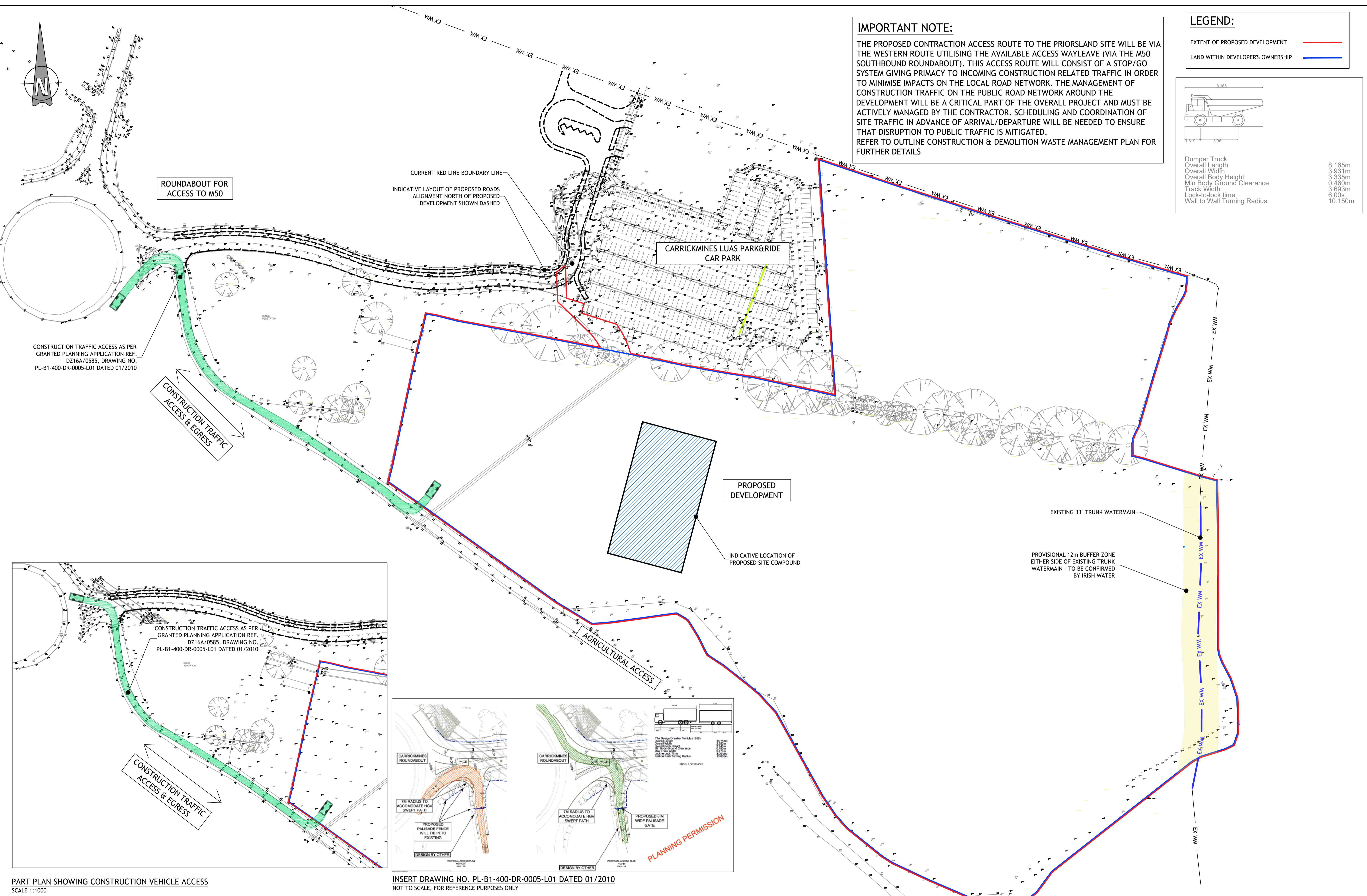
The Contractor must take care to avoid damage to roads, footpaths, grass margins, and other surfaces and all walls including protected walls, structures including protected structures and the associated curtilage, trees, lighting fixtures and all other street furniture within or outside of the overall site. They shall be liable for the cost of repairing / replacing all such damage caused by its operations to the satisfaction of DLRCC and TII.

Contractors must take precautions to ensure against spillage of diesel fuel, contaminated water or solvents. Any damage so caused shall be made good by the offending Contractor at its own expense. There may also be repercussions relating to planning conditions for which the Contractor will be liable.

Contractors must prohibit the use of tracked plant on road surfaces outside of the site unless suitably approved protective measures are taken to safeguard the integrity of surfaces.

The Contractors Construction Management Plan must include specifications regarding the quality of temporary reinstatements and the timelines for permanent reinstatements of roads and pavements affected by the works.

Appendix A Proposed Construction Traffic Arrangement



IMPORTANT NOTE:
 THE PROPOSED CONTRACTION ACCESS ROUTE TO THE PRIORSLAND SITE WILL BE VIA THE WESTERN ROUTE UTILISING THE AVAILABLE ACCESS WAYLEAVE (VIA THE M50 SOUTHBOUND ROUNDABOUT). THIS ACCESS ROUTE WILL CONSIST OF A STOP/GO SYSTEM GIVING PRIMACY TO INCOMING CONSTRUCTION RELATED TRAFFIC IN ORDER TO MINIMISE IMPACTS ON THE LOCAL ROAD NETWORK. THE MANAGEMENT OF CONSTRUCTION TRAFFIC ON THE PUBLIC ROAD NETWORK AROUND THE DEVELOPMENT WILL BE A CRITICAL PART OF THE OVERALL PROJECT AND MUST BE ACTIVELY MANAGED BY THE CONTRACTOR. SCHEDULING AND COORDINATION OF SITE TRAFFIC IN ADVANCE OF ARRIVAL/DEPARTURE WILL BE NEEDED TO ENSURE THAT DISRUPTION TO PUBLIC TRAFFIC IS MITIGATED. REFER TO OUTLINE CONSTRUCTION & DEMOLITION WASTE MANAGEMENT PLAN FOR FURTHER DETAILS

LEGEND:

- EXTENT OF PROPOSED DEVELOPMENT
- LAND WITHIN DEVELOPER'S OWNERSHIP

Dumper Truck
 Overall Length 8.165m
 Overall Width 3.931m
 Overall Body Height 3.335m
 Min Body Ground Clearance 0.480m
 Track Width 3.693m
 Lock-to-lock time 6.00s
 Wall to Wall Turning Radius 10.150m

PART PLAN SHOWING CONSTRUCTION VEHICLE ACCESS
 SCALE 1:1000

INSERT DRAWING NO. PL-B1-400-DR-0005-L01 DATED 01/2010
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Date Drawn: MAY 2019
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 Date Issued:
 Issued By:



Rev	Amendment	By	Date

Client:
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