PUNCH
consulting engineers

Link Road to Clonlara Road, Baldonnell Business Park, Dublin 22.

Construction & Demolition Waste Management Plan

212126-PUNCH-XX-XX-RP-C-0002

June 2022

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1 Introduction

PUNCH Consulting Engineers have been appointed as Civil Consulting Engineers for Link Road to Clonlara Road, Baldonnell Business Park, Dublin 22.

This Construction and Demolition Waste Management Plan is provided for the purposes of a planning submission only. The contractor will be required to produce a Construction and Demolition Waste Management Plan for the construction stage. This report has been prepared for submission to South Dublin County Council (SDCC) as part of a planning application and deals solely with the Construction and Demolition Waste Management Plan.

The site location is shown in Figure 1-1 below.

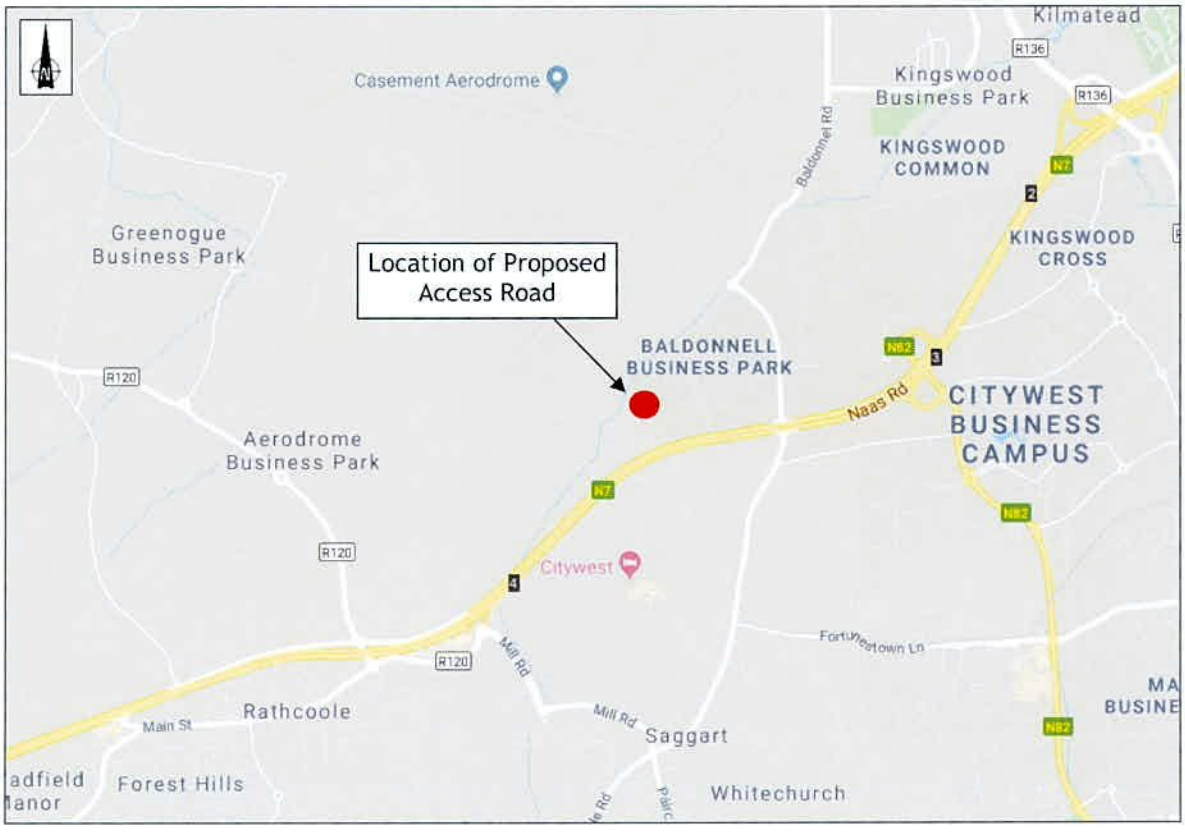

Figure 1-1: Site Location of the Proposed Development (© Google maps)

1.1 Project Background

The subject site has an area of approximately 0.083 ha. The proposed site is located on agricultural lands. It is bounded by existing and under construction logistics/warehouse developments to the north and east, and agricultural/ongoing construction works to the west and south. The River Camac flows adjacent to the proposed road. The topography of the site is relatively flat.

The proposed development consists of the construction of a single carriage 2-way 54m long access road, and footpath, along with foul and surface water sewer networks which will serve future developments located to the southwest of the ongoing 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 sites.

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.

Where practical, the contractor should implement procedures as outlined in the document *'Control of water pollution from construction sites Guidance for consultants and contractors (CIRIA, 2001).'*

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:

- Maximising the earthworks cut/fill balance to ensure the minimum amount of imported materials are in use on site
- 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.

in accordance with legislation. Any knotweed that is located will be appropriately treated and disposed of in accordance with legislation

2.7 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.

2.8 Construction Management Plan

2.8.1 Disposal of Water, Wastewater and Sewage

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

2.8.2 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 surface water system with approval from the local authority. Visual checks of the pumping and settlement system will be carried out on a routine basis.

2.8.3 Working Hours

The proposed hours of work on site will be 07:00 hrs to 19:00 hrs Monday to Friday and 08:00 hrs to 16:00 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.

2.8.8 Traffic Management Procedures / Generation

The site is located close to the main road network through the N7 Naas Road and as such will not need to be routed via smaller roads. Large vehicles will be routed to and from the N7 via Clonlara Road from either two routes: Barneys Lane or R136. Routing of vehicles will be via existing sign posted route.

Refer to defined construction/demolition traffic route in section 4 of this report. All deliveries will be off-loaded without delay by the most appropriate method.

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 signs adjacent to the footpath either side of the site entrance to alert pedestrians.

It is predicted that there will be approximately 25 personnel on site during peak construction activity. It is envisaged that working hours on site will be 07:00 hrs to 19:00 hrs Monday to Friday and 08:00 hrs to 16:30 hrs Saturday.

2.8.9 Air Quality

There is the potential for a number of emissions to the atmosphere during the construction stage of the project. In particular, the general earthworks 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 4 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 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 two 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. A wheel cleaning procedure will be used in order to mitigate the amount of mud that could be deposited on the local roads by vehicles exiting the construction site. An area near to the site exit will be utilised for a tyre wash set into the ground that all vehicles leaving site will have to pass through. Mechanical road sweeping of Clonlara Road and Barney's Lane will carried out daily/as and when required for the duration of the works.

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.

2.9 Noise and Vibration

2.9.1 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 South Dublin County Council 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.

2.9.2 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.

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+A1:2014: Code of practice for noise and vibration control on construction and open sites

2.9.3 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 excavation works and lorry movement.

With regard to construction activities, reference will be made to BS 5228-1:2009+A1:2014: 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;

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

In the course of the Project, it will be for the contractor to provide a quantity for construction and demolition waste. The following information will need to be determined as part of the construction works.

Construction & Demo Waste Material	Quantity	Action
Clay and Stones (Soil, Stones & Bedrock)		Disposal of unsuitable material . Excludes reused soil material.
Concrete (floor slabs, tanks, walls)		50% of any waste concrete to be recycled and 50% to be properly disposed of
Masonry		100% of any waste masonry to be recycled
Wood		100% of any waste timber to be recycled
Packaging		100% of any waste packaging to be recycled
Hazardous Materials		Not envisaged at this stage of the project*
Steelwork (beams, columns, roof trusses & water tank)		Any other waste materials (the quantities of such are expected to be minimal) will be recycled where possible or disposed of appropriately
M&E Plant		
Insulated panel roof sheeting		
Roof slates		
Corrugated steel wall sheeting		
Waste paints and oils		
Asbestos roof & wall sheeting		
TOTAL Arisings		

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

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

The proposed development will reuse as much existing soil as possible to minimise the amount of imported material on site. Earthworks up to the underside of the stone sub-base level may be formed using site won clay material. Construction and demolition waste will arise on the Project mainly from the site clearance and preparation at the proposed site.

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.

2.10.3 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.

2.10.4 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.

2.10.5 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 SF4 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. 01/04/2019
Name of Carrier	e.g. Authorised Carriers Ltd.
Destination of Material	e.g. Newtown Residential and Office Development
Proposed Use	e.g. Use as Hardcore in Dwelling Floors

Table 1 Table SF4 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.

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 1996-2011, 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 levy per tonne of waste disposed is determined under these 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. South Dublin County Council is the designated competent authority under the regulations.

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 Access Road, Baldonnell Business Park, Dublin 22. The Contractor must adopt the requirements of this Construction Traffic Management Plan into his own Construction Traffic Management Plan and must agree same with South Dublin County Council prior to commencement on site.

4.1 Construction Traffic Access to Site

4.1.1 Location and access to the sites

The site will be accessed from the N7. Vehicles to and from the N7 will access / exit the site via one of the following:

- The site will be accessed via the Clonlara Rd. Clonlara Rd will be accessed via the N7 interchange with R136.
- The site will be accessed via the Clonlara Rd. Clonlara Rd will be accessed via the N7 junction with Barneys Lane.

Refer to Figure 4-1 for illustration. See section 4.2 for restrictions regarding the above routes.

The volumes of traffic that will be generated during the construction phase of the development will be very small in comparison to the traffic volumes generated by the operation of the entire Mountpark Development during the peak hour periods.

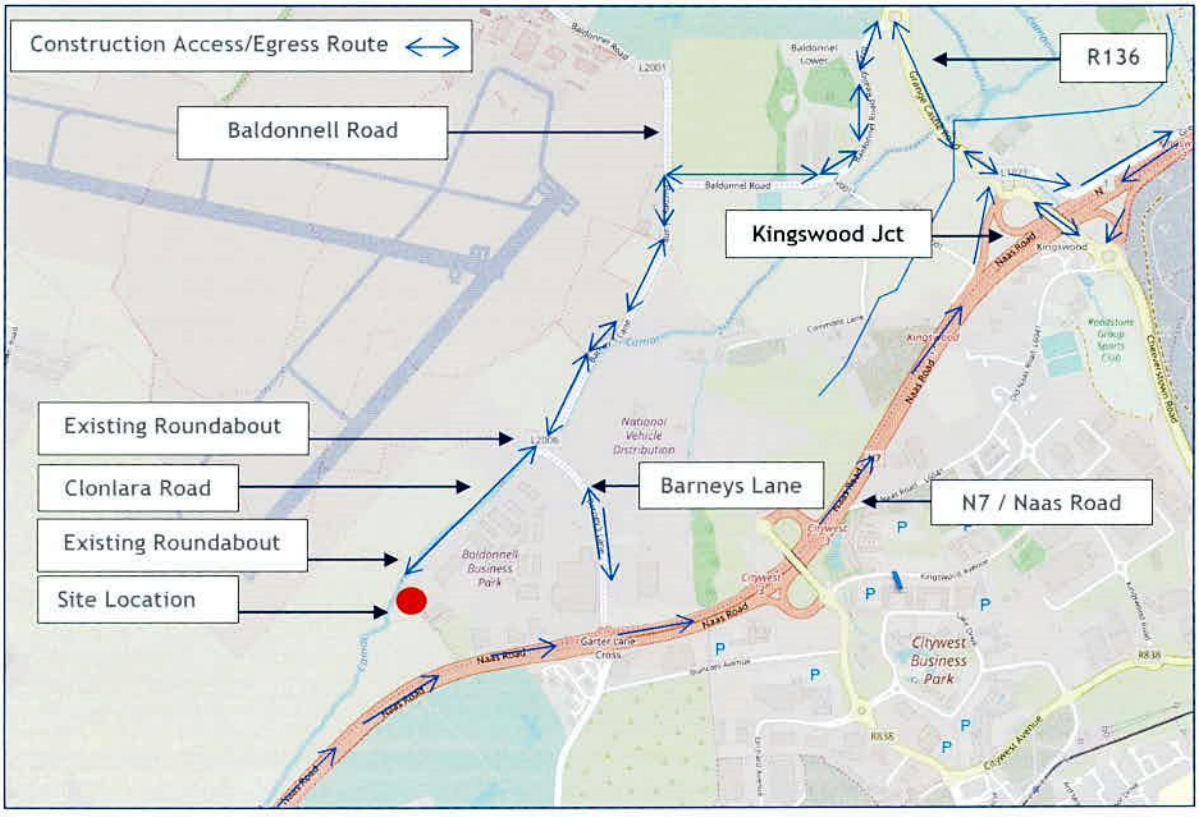

Figure 4-1: Proposed Route to/from Site at Baldonnell Business Park (Ref - https://maps.opw.ie/drainage/map/)

different Contractors and provision of guidance to ensure consistency between them. An overall CTMP for the entire site should be prepared and agreed with SDCC 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

4.4.1 Traffic Management Procedures / Generation

All construction traffic will arrive along the Clonlara Road. All deliveries will be off-loaded without delay by the most appropriate method and escorted off site.

The site gate man will be responsible for ensuring that there is no conflict between pedestrians and vehicles / entering / exiting the site.

It is predicted that there will be approximately 25 personnel on site during peak construction activity. Accounting for car sharing, there could be in the order of 20 vehicles arriving and departing the site every day during peak construction activity. It is envisaged that working hours on site will be 07:00 hrs to 19:00 hrs Monday to Friday and 08:00 hrs to 16:00 hrs Saturday.

The maximum expected HGV construction traffic is predicted as 12 HGV's per day during peak activity.

4.4.2 Traffic management - Internal Site Extents

Contractor / subcontractor / supplier parking is not permitted on any local access routes. Site car parking is to be planned for by the Contractor within their site set up layout strategy.

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.

5 Conclusions

This report was prepared in accordance with the NCDWC / DoEHLG *'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 and Demolition Waste Management Plan for the proposed construction works at the site.

Reference is also made to the document *'Control of water pollution from construction sites Guidance for consultants and contractors (CIRIA, 2001).'*

The report outlines the on-site waste construction & demolition waste management plan including estimates of proposed tonnages of construction & demolition waste.

Subject to receiving planning permission for the proposed project, the appointed Contractor will prepare a detailed formal Construction and Demolition Waste Management Plan for the Construction Stage of this project using this preliminary plan as a basis. All details of the plan will be agreed with South Dublin County Council prior to commencement on site.

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Link Road to Clonlara Road, Baldonnell Business Park, Dublin 22.

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C00	Planning issue	1/6/2022	JP Murray	M Richardson	M Richardson

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The site location is shown in Figure 1-1 below.

Figure 1-1: Site Location of the Proposed Development (© Google maps)

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The subject site has an area of approximately 0.083 ha. The proposed site is located on agricultural lands. It is bounded by existing and under construction logistics/warehouse developments to the north and east, and agricultural/ongoing construction works to the west and south. The River Camac flows adjacent to the proposed road. The topography of the site is relatively flat.

The proposed development consists of the construction of a single carriage 2-way 54m long access road, and footpath, along with foul and surface water sewer networks which will serve future developments located to the southwest of the ongoing development.

The proposed works are outlined in a series of engineering drawings prepared by PUNCH Consulting Engineers and CSR Landscape Architects. This documentation is supplied as part of the planning documentation.

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.*

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Where practical, the contractor should implement procedures as outlined in the document *'Control of water pollution from construction sites Guidance for consultants and contractors (CIRIA, 2001).'*

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:

- Maximising the earthworks cut/fill balance to ensure the minimum amount of imported materials are in use on site
- 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 Overview of Potential Hazardous Waste Arising

A site investigation was carried out by Ground Investigations Ireland Ltd. between November 2018 and February 2019 on the proposed site within the Mountpark Development. The purpose of the site investigation was to investigate the subsurface conditions utilising a variety of investigative methods including trial pits, soakaways, cable percussion boreholes, rotary core boreholes, groundwater monitoring wells followed by specific geotechnical & environmental laboratory testing.

Specific investigative works including the following;

- Trial pits to a maximum depth of 5.70m BGL.
- Soakaways to determine soil infiltration values to BRE digest 365.
- Cable percussion boreholes to a max depth of 5.70m BGL.
- Rotary core boreholes to a maximum depth of 16.20m BGL.
- Groundwater monitoring wells

Topsoil was encountered in all exploratory holes and was present to a maximum depth of 0.60m BGL. Cohesive deposits were encountered beneath the topsoil and were described typically as light brown slightly sandy slightly gravelly silty CLAY overlying a brown/grey slightly sandy gravelly CLAY with many angular cobbles and boulders which in turn, overlay a black slightly sandy gravelly CLAY with many angular cobbles and boulders. The depth of rock varies from 3.50m BGL to a maximum 6.90m BGL.

All excavations should be monitored by a suitably qualified person to ensure that in the unlikely event that potentially contaminated soil is encountered, that it is identified and segregated. In the unlikely event that any potentially contaminated material is encountered, it will need to be segregated from clean/inert material, tested and classified as either non-hazardous or hazardous in accordance with the EPA publication entitled 'Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous' 13 using the HazWasteOnline application (or similar approved classification method). 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 14, which establishes the criteria for the acceptance of waste at landfills.

An Appropriate Assessment was carried out on the Mountpark Development site in 2015. The report states that Japanese Knotweed was previously identified on a small amount of land to the north of the Barney's Lane roundabout. To date this knotweed was treated appropriately by a specialist contractor

in accordance with legislation. Any knotweed that is located will be appropriately treated and disposed of in accordance with legislation

2.7 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.

2.8 Construction Management Plan

2.8.1 Disposal of Water, Wastewater and Sewage

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

2.8.2 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 surface water system with approval from the local authority. Visual checks of the pumping and settlement system will be carried out on a routine basis.

2.8.3 Working Hours

The proposed hours of work on site will be 07:00 hrs to 19:00 hrs Monday to Friday and 08:00 hrs to 16:00 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.

2.8.4 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 that may arise: 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.

All method statements should be in accordance with biodiversity requirements.

2.8.5 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.

Fuels, lubricants, and hydraulic fluids as well as solvents, oils and paints are to be carefully handled by trained personnel in order to best avoid spillages. These are to be properly secured against unauthorised access or vandalism and provided with spill containment in accordance with best practice standards.

2.8.6 Site Compound Layout

The sites will be enclosed by hoarding/fencing. The compound area will be of hardstanding material.

2.8.7 Car Parking Arrangements

Parking of construction workers vehicles will be facilitated adjoining the Contractors compound and will not require spill over to the local road network. 20 no. temporary car parking spaces will be provided. To minimise congestion, a traffic management plan will need to be developed by the Contractor to ensure that construction workers access the site while minimising congestion on the local network.

2.8.8 Traffic Management Procedures / Generation

The site is located close to the main road network through the N7 Naas Road and as such will not need to be routed via smaller roads. Large vehicles will be routed to and from the N7 via Clonlara Road from either two routes: Barneys Lane or R136. Routing of vehicles will be via existing sign posted route.

Refer to defined construction/demolition traffic route in section 4 of this report. All deliveries will be off-loaded without delay by the most appropriate method.

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 signs adjacent to the footpath either side of the site entrance to alert pedestrians.

It is predicted that there will be approximately 25 personnel on site during peak construction activity. It is envisaged that working hours on site will be 07:00 hrs to 19:00 hrs Monday to Friday and 08:00 hrs to 16:30 hrs Saturday.

2.8.9 Air Quality

There is the potential for a number of emissions to the atmosphere during the construction stage of the project. In particular, the general earthworks 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 4 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 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 two 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. A wheel cleaning procedure will be used in order to mitigate the amount of mud that could be deposited on the local roads by vehicles exiting the construction site. An area near to the site exit will be utilised for a tyre wash set into the ground that all vehicles leaving site will have to pass through. Mechanical road sweeping of Clonlara Road and Barney's Lane will carried out daily/as and when required for the duration of the works.

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.

2.8.10 Protection of the River Camac and Other Natural Water Bodies from Construction Related Works

The River Camac runs adjacent with the proposed site. It is important to be cognisant and aware of the potential spillages and deposits from construction related materials during the construction phase. Mitigation measures to be explored are as follows;

- Stockpiling and storage areas to be located away from open drains, waterbodies and any other contributing water source to the river.
- Carry out excavation works during dry periods to limit sediment run-off.
- Installation of silt trenches adjacent to river to retain sediment from surface run-off.
- Re-fuelling of construction vehicles to take place in designated areas. These areas are not be located in the vicinity of surface water drains/water courses etc.
- A concrete truck washdown area will be provided for the site for trucks to use after delivery of concrete. This area will be adequately bunded to mitigate the risk of contaminated runoff discharge to the River Camac. Concrete trucks are to be washed down within the concrete truck washdown area after delivery of concrete, prior to exiting the site. Washdown runoff will be appropriately treated prior to discharge.
- Minimising exposed surfaces and employing silt fencing in areas of temporary topsoil stockpiling will limit the potential for excess sediment movement within the site at source.
- Management and auditing procedures, including tool box talks to personnel, will be put in place to ensure that any works which have the potential to impact on the aquatic environment are being carried out in accordance with the contactors environmental controls, which will be consistent with the submitted construction management plan and construction and demolition waste management plan and any planning conditions.
- Existing and proposed surface water drainage and discharge points will be mapped on the Drainage layout. These will be noted on construction site plans and protected accordingly to ensure water bodies are not impacted from sediment and other pollutants using measures to intercept the pathway for such pollutants.

A project specific Pollution Incident Response Plan will be prepared by the contractor and will be in accordance with measures as outlined in PPG 21 Pollution Incident Response Planning. The contractor's Environmental Manager will be notified in a timely manner of all incidents where there has been a breach in agreed environmental management procedures. Suitable training will be provided by the contractor to relevant personnel detailed within the Pollution Incident Response Plan to ensure that appropriate and timely actions is taken.

The measures as outlined in section 2.8.5 above shall be managed in order to appropriately manage oils fuels and lubricants and mitigate the risk of tier impact on the River Camac and other water bodies.

2.9 Noise and Vibration

2.9.1 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 South Dublin County Council 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.

2.9.2 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.

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+A1:2014: Code of practice for noise and vibration control on construction and open sites

2.9.3 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 excavation works and lorry movement.

With regard to construction activities, reference will be made to BS 5228-1:2009+A1:2014: 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;

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.
- Toolbox talks and site inductions.
- Site speed limit to be limited to 9.5mph

We would recommend that vibration from construction activities be limited to the values set out in the relevant standards mentioned in section 2.9.2. 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.

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, but this should be limited due to the distance to adjoining properties, and the background noise levels from the N7. However, given that the construction phase of the project is temporary in nature, it is expected that the various noise sources will be minimal. 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.

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

In the course of the Project, it will be for the contractor to provide a quantity for construction and demolition waste. The following information will need to be determined as part of the construction works.

Construction & Demo Waste Material	Quantity	Action
Clay and Stones (Soil, Stones & Bedrock)		Disposal of unsuitable material . Excludes reused soil material.
Concrete (floor slabs, tanks, walls)		50% of any waste concrete to be recycled and 50% to be properly disposed of
Masonry		100% of any waste masonry to be recycled
Wood		100% of any waste timber to be recycled
Packaging		100% of any waste packaging to be recycled
Hazardous Materials		Not envisaged at this stage of the project*
Steelwork (beams, columns, roof trusses & water tank)		Any other waste materials (the quantities of such are expected to be minimal) will be recycled where possible or disposed of appropriately
M&E Plant		
Insulated panel roof sheeting		
Roof slates		
Corrugated steel wall sheeting		
Waste paints and oils		
Asbestos roof & wall sheeting		
TOTAL Arisings		

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

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

The proposed development will reuse as much existing soil as possible to minimise the amount of imported material on site. Earthworks up to the underside of the stone sub-base level may be formed using site won clay material. Construction and demolition waste will arise on the Project mainly from the site clearance and preparation at the proposed site.

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 ■ No □
Waste Permit	Yes ■ No □
Waste Collection Permit	Yes ■ No □
Trans frontier Shipment Notification	Yes □ No ■
Movement of Hazardous Waste Form	Yes □ No ■

Table SF3 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.

2.10.2 Site Grading

The works shall be undertaken in a manner which maximises the potential for recycling, including source segregating waste where appropriate. Activities shall be carried out in the following sequence:

Activity Sequence	General Description
Excavate material to form construction grades and establish excavated profile for foundations	e.g. Application of H & S Procedures
Storage of contaminated spoil to containers prior to transport/disposal.	e.g. Secure skip containers to store contaminated spoil
Construction Activity Generated Waste	e.g. formwork, temporary hoardings or structures, waste materials arising from site activities
Source Segregation of Material Fractions	Separation into Designated Material Fractions
Transport of Material from Site to Treatment Facilities	e.g. C/D Waste Recycling Facility
Transport of Material from Site to Controlled Disposal Sites	e.g. Inertised Hazardous Landfill Site
Site Preparation/ Restoration	e.g. Hardstanding, Landscaping

2.10.3 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.

2.10.4 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.

2.10.5 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 SF4 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. 01/04/2019
Name of Carrier	e.g. Authorised Carriers Ltd.
Destination of Material	e.g. Newtown Residential and Office Development
Proposed Use	e.g. Use as Hardcore in Dwelling Floors

Table 1 Table SF4 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 SF5.

The table SF5 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)
SOIL	
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 SF5 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 1996-2011, 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 levy per tonne of waste disposed is determined under these 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. South Dublin County 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 Access Road, Baldonnell Business Park, Dublin 22. The Contractor must adopt the requirements of this Construction Traffic Management Plan into his own Construction Traffic Management Plan and must agree same with South Dublin County Council prior to commencement on site.

4.1 Construction Traffic Access to Site

4.1.1 Location and access to the sites

The site will be accessed from the N7. Vehicles to and from the N7 will access / exit the site via one of the following:

- The site will be accessed via the Clonlara Rd. Clonlara Rd will be accessed via the N7 interchange with R136.
- The site will be accessed via the Clonlara Rd. Clonlara Rd will be accessed via the N7 junction with Barneys Lane.

Refer to Figure 4-1 for illustration. See section 4.2 for restrictions regarding the above routes.

The volumes of traffic that will be generated during the construction phase of the development will be very small in comparison to the traffic volumes generated by the operation of the entire Mountpark Development during the peak hour periods.

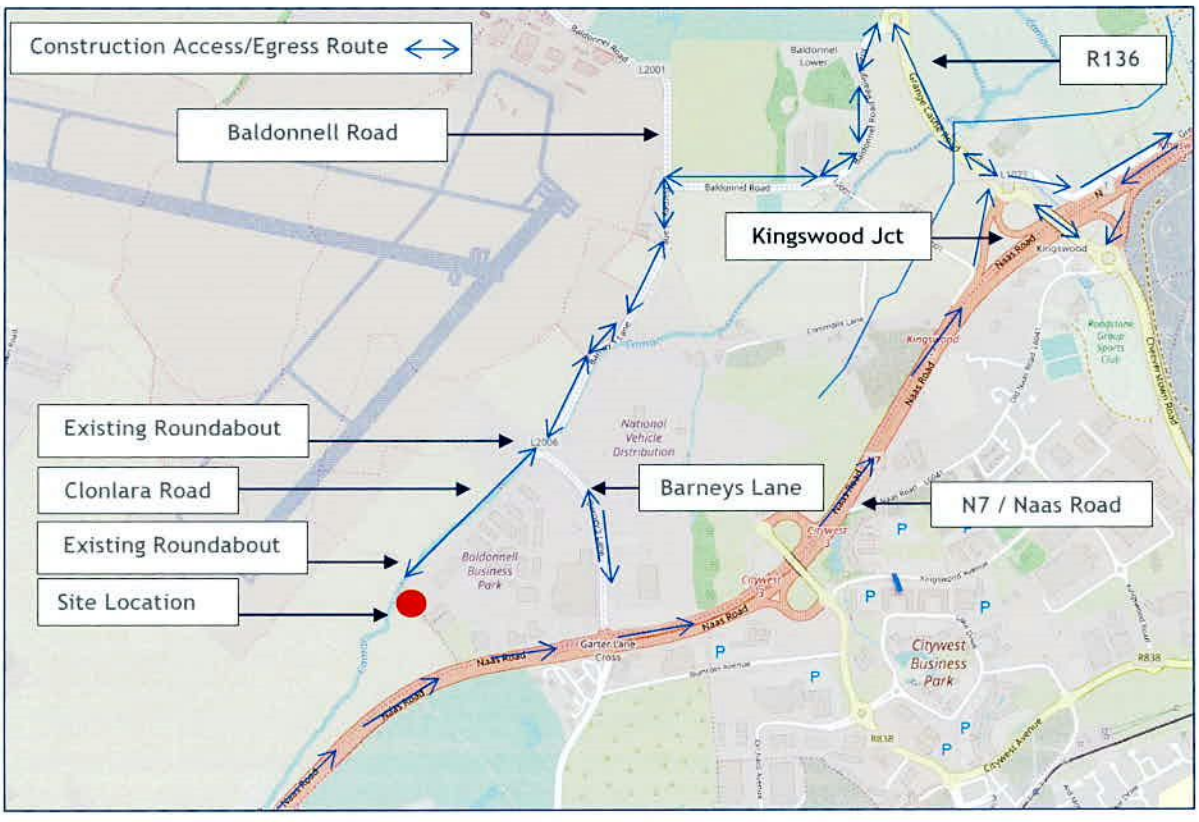

Figure 4-1: Proposed Route to/from Site at Baldonnell Business Park (Ref - https://maps.opw.ie/drainage/map/)

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

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 sites, such as cars and vans, are not deemed to be construction traffic.

4.2 Management of Construction Traffic around the Baldonnell Site

The Contractor is required to control the construction traffic in and around the proposed development location, with access to the site via Barney's Lane and the Baldonnell Road onto Clonlara Road. 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 South Dublin 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 07:45-08:45AM in the morning and 16:30-17:30PM in the evening.
- Vehicles are not to access the N7 via the Barneys Lane/N7 junction during AM peak traffic. Traffic will instead access the N7 at the Kingswood N7 junction during the AM peak.
- A special permit for moving oversized and hazardous loads will be obtained from SDCC/ 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.
- There will be site parking, sufficient 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 SDCC 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

4.4.1 Traffic Management Procedures / Generation

All construction traffic will arrive along the Clonlara Road. All deliveries will be off-loaded without delay by the most appropriate method and escorted off site.

The site gate man will be responsible for ensuring that there is no conflict between pedestrians and vehicles / entering / exiting the site.

It is predicted that there will be approximately 25 personnel on site during peak construction activity. Accounting for car sharing, there could be in the order of 20 vehicles arriving and departing the site every day during peak construction activity. It is envisaged that working hours on site will be 07:00 hrs to 19:00 hrs Monday to Friday and 08:00 hrs to 16:00 hrs Saturday.

The maximum expected HGV construction traffic is predicted as 12 HGV's per day during peak activity.

4.4.2 Traffic management - Internal Site Extents

Contractor / subcontractor / supplier parking is not permitted on any local access routes. Site car parking is to be planned for by the Contractor within their site set up layout strategy.

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;
- Collaborate with any required security searches of vehicles entering or exiting.

4.4.5 Loading/Unloading locations

Vehicles must be loaded and unloaded within the site area (i.e. within site boundary red line). 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 SDCC.

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.

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.

5 Conclusions

This report was prepared in accordance with the NCDWC / DoEHLG *'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 and Demolition Waste Management Plan for the proposed construction works at the site.

Reference is also made to the document *'Control of water pollution from construction sites Guidance for consultants and contractors (CIRIA, 2001).'*

The report outlines the on-site waste construction & demolition waste management plan including estimates of proposed tonnages of construction & demolition waste.

Subject to receiving planning permission for the proposed project, the appointed Contractor will prepare a detailed formal Construction and Demolition Waste Management Plan for the Construction Stage of this project using this preliminary plan as a basis. All details of the plan will be agreed with South Dublin County Council prior to commencement on site.