Ganson Building & Civil Engineering Ltd

SITE-SPECIFIC CONSTRUCTION & DEMOLITION WASTE MANAGEMENT PLAN

Bakers Forge PBSA

Client:

Lands at Baker's Corner,

Rochestown Avenue and Kill Avenue,

Dun Laoghaire,

Co. Dublin, A96TD77

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1.0 INTRODUCTION

This document presents the site-specific Construction and Demolition Waste Plan (C&DWMP) for the control, management and monitoring of waste associated with a proposed residential development at

The Construction and Demolition Waste Management Plan has been prepared to demonstrate how the Construction Phase will comply with the following relevant legislation and relevant Best Practice Guidelines:

a) Prior to the commencement of any works, a Construction and Demolition Waste Management Plan must be furnished to and approved by Dun Laoghaire Rathdown County Council having regard to Circular WPR 07/06 - Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects - published by the DECLG, July 2006
b) This document includes our Hazardous/Contaminated Soil Management Plan with estimated tonnages, description of location, any relevant mitigation, destination for disposal/treatment, in addition to information on the authorised waste collector(s).
c) Prior to the commencement of any storage of waste on-site, the applicant must consult with the Waste Regulation Unit of Dun Laoghaire Rathdown County Council.
d) Monthly reports regarding the management of the waste during works, must be forwarded electronically to the Waste Regulation Unit of Dun Laoghaire Rathdown County Council.
e) The works must comply with the following:
f) Waste Management Act 1996, as amended.
g) Dun Laoghaire Rathdown County Council Waste Bye-Laws 2013 (Bye-Laws for the storage, presentation and collection of Household and Commercial waste) or any revision thereof.
h) Eastern & Midlands Regional Waste Management Plan 2015-2021.
i) Best Practice Guidelines on the Preparation of Waste Management Plans for the Construction and Demolition Projects - DECLG 2006.
j) Waste Management (Hazardous Waste) (Amendment) Regulations S.I. No 73/2000
k) National Hazardous Waste Management Plan 2014-2020
l) Article 27 of the European (Waste Directive) Regulations S.I. No 126 of 2011
m) Any other relevant Waste Management related regulations
n) Dun Laoghaire Rathdown County Council Development Plan (Current Version)

The Objective of this Waste Management Plan is to minimise the quantity of waste generated by construction activities, to maximise the use of materials in an efficient manner and to maximise the segregation of construction waste materials on-site to produce uncontaminated waste streams for off-site recycling.

The Waste Management Plan shall be implemented throughout the construction phase of the development to ensure the following:

- Ensure that all site activities are effectively managed to minimise the generation of waste and to maximise the opportunities for on-site reuse and recycling of waste materials.
- Ensure that all waste materials are segregated into different waste fractions and stored on-site in a managed and dedicated waste storage area.
- Ensure that all waste materials generated by site activities are removed from site by appropriately permitted waste haulage contractors and that all wastes are disposed of at approved waste licensed / permitted facilities in compliance with the *Waste Management Act 1996* and all associated Waste Management Regulations.

2.0 PROJECT DESCRIPTION

Site Location

The proposed development is located at Baker's Corner, Rochestown Avenue and Kill Lane, Dun Laoghaire, Co. Dublin, A96 TD77.

The proposed development will consist of a purpose-built student accommodation scheme on a site of c.0.375 including the following:

Baker's Forge Properties Limited intend to apply for permission for a Large-Scale Residential Development comprising amendments to the permitted Strategic Housing Development Ref. ABP-311411-21 on a site of 0.483 ha at a site 'Baker's Hall', (formally known as Baker's Corner), Rochestown Avenue and Kill Avenue, Dun Laoghaire, Co. Dublin.

The proposed development comprising amendments to the permitted Strategic Housing Development consists of:

- A 4 storey over ground extension of c. 436 sqm to the rear / courtyard elevation of Block A to provide for an additional 12 no. student accommodation units.
- The reconfiguration of permitted internal circulation and communal amenity spaces to provide for 10 no. additional student accommodation units within Block A.
- The internalisation of an overhanging roof canopy on the roof terrace of Block A to provide 2 no. additional student accommodation units.
- The total number of additional student accommodation units proposed is 24 no. providing a total of 300 no. units on site. 276 units are permitted on site.

<u>The proposed development amendment works to Block A also comprise of the :-</u>

- Removal of the permitted building overhang at 5th floor level of Block A.
- Relocation of a switch room and substation to the north-eastern corner of Block A.
- Provision of additional window and escape door to permitted licenced premises on northern elevation.
- Amendment of the permitted entrance to provide for a recessed entrance arrangement to the permitted licenced premises in Block A.

- Omission of the roof terrace to the south of Block A, and the increase in size of the permitted roof terrace to the east of Block B from c. 60sqm to c. 95sqm.
- Minor amendment of fenestration at 1st-5th floor level on the southern elevation of Block A to accommodate proposed internal rooms.
- Additional plant space within permitted commercial units in Block A with a reduction in net internal floor space.
- Omission of louvred plant screen on roof level of Block A.
- Changes to the design treatment of the permitted elevation of Block A at Rochestown Avenue, minorly changing the total permitted floor area of Block.

<u>The proposed development amendment works to Block B also comprise of the:-</u>

- Reduction in size of the screened roof-top terrace area to Block B (from 450 sqm to 150 sqm).
- Reduction in height of stair core and lift shaft to western stair core of Block B.
- Relocation of the permitted bike shelter to the east elevation of Block B. The number of bicycle parking spaces remains unchanged.
- Minor elevation alterations to eastern and western elevations of Block B to account for relocation of permitted internal building services.
- Additional plant space within permitted commercial unit in Block B with a reduction in net internal floor space

The proposed amendments to the development will also include a minor increase to the overall height of both permitted blocks (of c. 550 mm) due to building structure design; as well as minor changes to the scheme as agreed at compliance stage including inter alia the reconfiguration of the central open space area to provide for 30 no. car park spaces (unchanged from agreed compliance); and all associated elevational changes, site development and landscape treatment works necessary to facilitate the proposed development and consequent amendments proposed.

3.0 DESCRIPTION OF SITE ACTIVITIES & WASTE ARISINGS

This development is to provide for the construction of two new 5 storey student accommodation buildings, including two ground floor commercial units. The development includes car and bicycle parking, bin store, landscaping, boundary treatments and all associated site and engineering works necessary to facilitate the development.

The proposed works will also include the demolition of the existing public house and all associated ground works. The building will consist of pre-cast structural elements, concrete

blockwork, windows, doors, internal woodwork, flooring, exterior roofing works, rendering, car parking & landscaping.

The range of works required for the Construction Phases are summarised in Table 1. The expected construction waste that will be generated throughout the course of the development are described in Tables 2 - 6 below.

Table 1 Sequence of Construction Works

Activity Sequence	General Description
Identification of Existing Utility Services	Set up bunting, mark location of live services, including E.S.B., Gas etc.
Demolition of existing building and structures	Hard surface removal
Removal of soil & vegetation	e.g. soil, trees and vegetation
Site Preparation	Soil stripping, stockpiling, export
Infrastructure installation	Drainage, Utility ducts, power
Substructure	Excavation Rebar, Formwork
Superstructure	Internal refurbishment works
Roof	Installation of roof structures & coverings
External Envelope	Blockwork, windows, doors
Internal Finishes	Mechanical & Electrical, Flooring, doors, skirting, kitchen units
External Landscaping	Gardening
Roads, footpaths, street lighting, services	Hard and soft landscaping, connections to utilities

Table 2 Construction Waste Composition

Description of Waste	%
Soils & Stones / B1 / B2 / C1	63%
Mixed Construction & Demolition Waste	21%
Timber	<1%
Plasterboard (Gypsum materials)	<1%
Metals	<1%
Concrete Bricks & Tiles	13%
Mixed other wastes	<1%
Total	100

Table 3 Demolition Waste Generated (Estimation)

Waste Type	Produced (Tonnage)	Re-Use	Re-Cycled	Disposal
Concrete & Rubble	274	25%	25%	50%
Metals	3.7	0%	85%	15%

Asphalt	100	0%	50%	50%
Timber	4.25	0%	50%	50%
Glass	0.6	0%	85%	15%

Table 4 Waste Soil Generation (Estimation)

Waste Type	Produced (Tonnage)	Re-Use	Re-Cycled	Disposal
Soil/Sub-Soil	200	None	None	Landfill
CAT B1 / B2 / C1	5325	None	None	Enva

As the appointed contractor, we will ensure that all hazardous and non-hazardous soils found on-site are identified, classified, and managed in full compliance with the environmental regulations and waste management legislation. Prior to excavation, soils will be assessed through site investigation and laboratory testing to confirm their classification and determine the appropriate disposal route. This WAC testing will be carried out in a clearly identified 10meter * 10meter grid. Meticulous records will be kept of these results. Any hazardous soils identified will be handled by licensed waste management specialists, with removal, transport, and disposal undertaken in accordance with all statutory requirements and delivered to authorised hazardous waste facilities. Non-hazardous soils will, where suitable, be reused on-site or transported to an approved recovery facility. All soil movements will be tracked using the appropriate waste transfer documentation, and works will be planned to minimise environmental impact, ensure the safety of all personnel, and maintain full compliance with Environmental Protection Agency (EPA) guidelines and the requirements of the local authority.
This above will be the basis for the identification of the three soil types discovered in the previously conducted WAC test noted in Appendix 5.

Table 5 Construction Waste Generation (Estimation)

Waste Type	Produced (Tonnage)	Re-Use	Re-Cycled	Disposal
Mixed C & D	1172	None	Yes	Waste Skip
Timber	55	None	Yes	Waste Skip
Plasterboard	153	None	Yes	Waste Skip
Metals	82	None	Yes	Waste Skip
Concrete & Masonry	307	None	Yes	Waste Skip
Canteen Waste	42	None	None	Waste Bin
Total	1811			

Table 6 Asbestos

Waste Type	(Tonnage)	Type	Transport	Disposal

Asbestos	4.1	chrysotile	BDCE - NWCPO-10-01305-03	Enva 14A Grants Road, Greenogue Business Park, Rathcoole, Dublin W0185-01

Table 6 Construction Waste Types

Description of Waste	Corresponding LoW Code
Concrete, Bricks, Tiles and Ceramics	17 01
Concrete	17 01 01
Bricks	17 01 02
Tiles and Ceramics	17 01 03
Mixture of concrete, bricks tiles & ceramics	17 01 07
Wood, Glass and Plastic	17 02
Wood	17 02 01
Glass	17 02 02
Plastic	17 02 03
Bituminous mixtures, coal tar and products	17 03
Bituminous mixtures containing other than those mentioned ir 17 03 01	17 03 02
Bituminous Mixtures including Coal Tar and Tarred products	17.03
Metals (including their alloys)	17 04
Copper, Bronze, Brass	17 04 01
Aluminium	17 04 02
Lead	17 04 03
Zinc	17 04 04
Iron and Steel	17 04 05
Tin	17 04 06
Mixed Metals	17 04 07
Insulation and Construction Materials	17 06
Gypsum based construction material	17 08
Other Construction and Demolition Waste	17 09
Mixed Construction and Demolition Waste other than those mentioned in 17 09 01, 17 09 02, 17 09 03	17 09 04
Sewage Screenings	19 08 01
Paper and Cardboard	20 01 01
Wood other than that mentioned in 20 01 37	20.01 38
Soil and Stones	17 05 04
Mixed Municipal Waste	20 03 01
Hydraulic oils	13 01 01*
Fuel oils and diesel	13 07 01*

4.0 PRINCIPALS OF THE DEMOLITION & CONSTRUCTION WASTE MANAGEMENT PLAN

Waste materials generated by construction and demolition activities will be managed according to the Department of the Environment, Heritage and Local Government's 2006 Publication - Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects.

The Waste Management Plan specifically addresses the following points:

- Analysis of waste arising / material surpluses

- Waste Management Responsibilities and Training
- Specific Waste Management
- Objectives for the Project including the potential to re-use existing on-site materials for further use in the construction phase.
- Methods proposed for Prevention, Reuse and Recycling
- Waste Handling Procedures
- Hazardous Waste Handling Procedures
- Waste Storage Procedures
- Waste Disposal Procedures
- Waste Auditing
- Record Keeping

5.0 WASTE MANAGEMENT & RESPONSIBILITIES

5.1 Roles and Responsibilities

Contract/Project Manager

The Contract/Project Manager will be responsible for the overall implementation of the Construction Waste Management Plan. The Contract Manager will ensure that the reporting and recording requirements are met and all necessary resources are in place to support the implementation of the plan.

The Contract/Project Manager should be proactive in engaging with the occupants of neighbouring properties and should notify them of any works forecast to generate appreciable levels of noise and vibration, explaining the nature and duration of the works.

The Contract/Project Manager appointed for the duration of the construction works and will log any issues and follow up in a prompt fashion.

Responsibility for the management and control of noise and vibration on the project lies with the site management team.

The Contract/Project Manager is responsible for all aspects of the day-to-day monitoring of all noise, vibration and dust associated with the project construction works and the movement of traffic (See Appendix 1 Noise, Vibration & Dust Management Plan).

Nominated Construction & Demolition Waste Manager

A competent and appropriately trained Construction & Demolition Waste Manager will be appointed by the Contract Manager. The nominated person will be responsible for all aspects waste management throughout the different stages of the project including waste assessment and characterisation, implementation of the Construction Waste Management Plan (and associated target recycling rates), and effective communication of the objectives with all the operatives associated with the project (including site staff, external contractors and suppliers). The Construction & Demolition Waste Manager shall be responsible for the management of the construction waste compound.

A key objective of the nominated person will be the maintenance of accurate records on the quantities of waste / surplus materials generation and management. The recording of summary information will further assist the implementation of the plan.

Site Personnel
All personnel on site will be responsible for the effective implementation of the plan and associated procedures. All staff will receive training on waste prevention, segregation and best practice guidelines.

Staff Training
Copies of the Construction & Demolition Waste Management Plan will be made available to all relevant personnel on site. The Contract Manager will arrange for all site personnel and sub-contractors to be instructed about / receive training on the objectives of the Project Construction & Demolition Waste Management Plan and materials management, and be informed of the responsibilities that fall upon them as a consequence of its provision. The topics to be covered will include;

- Project programme and requirements
- Health and Safety requirements
- Construction & Demolition Waste Management Plan
- Materials to be segregated
- Segregation systems and protocols
- Arrangement for the storage and handling of reusable materials and recyclables
- Document control requirements

6.0 DEMOLITION & CONSTRUCTION WASTE MANAGEMENT & DISPOSAL

It is proposed that from the outset of construction activities, a dedicated and secure compound containing bins, and/or skips, and storage areas, into which all waste materials generated by demolition and construction site activities, will be established within the active construction phase of the development site.

- Spill kits shall be located within the waste compound with clearly labelled instructions on how they shall be used to clean up fuel/oil spills.

- All vehicle and plant oils and liquid construction materials shall be stored in impermeable storage units.

- All diesel-powered generators shall be inspected on at least a weekly basis by a delegate of the project manager to ensure it is not leaking diesel or oils.

- All empty containers containing residual quantities of oils, greases and hydrocarbon-based liquids shall be stored in a dedicated bunded receptacle in the waste compound.

- In order to ensure that as Main Contractor we correctly segregate waste materials, it is the responsibility of the Construction & Demolition Waste Manager to ensure all staff are informed by means of clear signage and verbal instruction and made

responsible for ensuring site housekeeping and the proper segregation of construction waste materials.

- It will be the responsibility of the Construction & Demolition Waste Manager to ensure that a written record of all quantities and natures of wastes exported off-site are maintained on-site in a Waste File at the Project office.
- It is the responsibility of the Construction & Demolition Waste Manager that all contracted waste haulage drivers hold an appropriate Waste Collection Permit for the transport of waste loads and that all waste materials are delivered to an appropriately licenced or permitted waste facility in compliance with the following relevant Regulations:

  - Waste Management (Collection Permit) Regulations 2007 (SI No. 820 of 2007)
  - Waste Management (Collection Permit) Amendment Regulations 2008 (SI No. 87 of 2008)
  - Waste Management (Facility Permit and Registration) Regulations S.I.821 of 2007 and the Waste Facility Permit under the Waste Management (Facility Permit and Registration) Amendment Regulations S.I.86 of 2008.

- Typical Waste materials that are to be generated or anticipated to be generated by construction works are classified as follows under Section 17 Construction and Demolition Wastes of the European Waste Catalogue (EWC) as detailed in Table 1.

- It is proposed that waste materials will be collected and stored in separate clearly labelled skips in a predefined waste storage area in the site compound and that these materials will be collected by a Permitted Waste Contractor holding an appropriate Waste Collection permit in compliance with Waste Management (Collection Permit) Regulations 2007 (SI No. 820 of 2007) and Waste Management (Collection Permit) Amendment Regulations 2008 (SI No. 87 of 2008) and that they will be sent for disposal or further processing to appropriately Permitted / Licensed Waste Facilities in compliance with Waste Management (Facility Permit and Registration) Regulations S.I. No. 821 of 2007 and the Waste Management (Facility Permit and Registration) Amendment Regulations S.I. No. 86 of 2008.

- Prior to the commencement of the Project, the Construction & Demolition Waste Manager shall identify a permitted Waste Contractor who shall be employed to collect and dispose of all inert and hazardous wastes arising from the project works. In addition, the Construction & Demolition Waste Manager shall identify all waste licensed / permitted facilities that will accept all expected waste exported off-site and will maintain copies of all relevant Waste Permits / Licences as required.

- All waste soils prior to being exported off-site, shall be classified as inert, non-hazardous or hazardous in accordance with the EPA's Waste Classification Guidance – List of Waste & Determining if Waste is Hazardous or Non-Hazardous document dated 1st June 2015 to ensure that the waste material is transferred by an

appropriately permitted waste collection permit holder and brought to an appropriately permitted or licensed waste facility.

Construction Waste Compound Design

A dedicated and secure construction waste storage compound shall be located adjacent to the site offices. The Construction & Demolition Waste Manager shall be responsible for the management of the construction waste compound. The area shall be demarcated by fencing and shall be of sufficient size to house a minimum of 4 x 20 cubic yard roll on roll off skips for construction waste materials and 1 x 14 cubic yard covered skip for mixed municipal wastes generated by site staff.

Signage shall be installed at each skip to clearly identify the nature of waste that may be placed within it.

Segregated as follows:

1	2	3
Bin For Canteen Waste	Recycling Skip	Mixed Waste Skip

Sufficient space will be left between each bay to ensure the skips can be lifted with ease by the service provider.

7.0 ON-SITE WASTE REDUCTION REUSE RECYCLING AND MANAGEMENT

Waste will arise on the project mainly from demolition, excavation and general construction activities. The site management team will order materials and arrange storage in order to minimise the potential for waste on site.

- Materials will be ordered on an “as needed” basis to prevent over supply
- Materials shall be correctly stored and handled to minimise the generation of damaged materials
- Materials shall be ordered in appropriate sequence to minimise materials stored on site
- All staff and Sub contractors shall be advised through tool box talks on how to dispose of their waste correctly on-site.
- Concrete blocks, engineering bricks and clay bricks that are surplus will be broken up and used for hardstanding areas.

- Excess wood will be segregated in separate skips and sent for recycling. The site management will police to make sure that the segregation of the wood skip is kept exclusively for wood.

- Plastic arising from general waste or packaging will be segregated and stored in separate skips. Again, the site management team will ensure that there is no contamination of the segregated skips on site.

- Any excess metal generated on site from reinforcement steel and from the demolition element of the project will be kept in the one area and removed off site to a licenced metal recycling facility. Construction & Demolition Waste Manager will keep certification of this on file on site.

- Top soil that is required for the soft landscaping will be measured and this quantity will be retained on site. The soil that will have to be removed off site will be removed to a licenced landfill facility. The Construction & Demolition Waste Manager will keep records of the removal and the certification on file on site.

- Any hazardous material discovered during the course of the construction shall be reported to the Construction & Demolition Waste Manager. The relevant authorities will be informed and an agreed method for the removal of the hazardous material.

- Construction waste material such as damaged or broken concrete slabs, blocks, bricks and tiles generated that is deemed by the Project Engineer to be suitable for reuse on the Project site for ground-fill material will be processed if necessary, by on-site mobile crushing plant. This initiative shall provide a positive environmental impact to the construction phase as follows:

    - Reduction in the requirement for virgin aggregate materials from quarries
    - Reduction in energy required to extract, process and transport virgin aggregates
    - Reduced HGV movements associated with the delivery of imported aggregates to the site
    - Reduced noise levels associated with reduced HGV movements
    - Reduction in the amount of landfill space required to accept Construction & Demolition waste

Waste Soils & Stones Export & Article 27 Declarations

The project is to refurbish the existing building and the materials will be characterised as being inert, non-inert or hazardous in accordance with Landfill Directive (2003/33/EC) by conducting site investigations.

Demolition and excavated waste shall be removed off-site throughout the development and exported by an appropriately permitted haulage contractor to an appropriately permitted/licenced waste acceptance facility.

The project manager shall inform Dublin City Council's Environment and Waste Department of the waste facilities to which inert and hazardous soils and the volumes of which shall be exported to.
Excavated excess soils that are required to be exported off-site shall be tested to determine their classification as hazardous or non-hazardous in accordance with EPA Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous. Non-Hazardous soils may be suitable for re-use in other construction sites and may be declared as a by-product in accordance with Article 27 of the European
Communities (Waste Directive) Regulations 2011. Article 27 requires that the material classified not a waste but a by-product must meet specific criteria and that that a declaration of a material as a by-product is notified to the EPA. The EPA publication "Guidance on Soil and Stone By-Products in the context of Article 27 of the European Communities (Waste Directive) Regulations – Version 3 June 2019 shall be considered in this regard. Appendix I presents the schematic process by which a material is determined as a waste or a by-product.

The records of all WAC tests shall be maintained in the site's Waste File including the destination of the facility that contaminated soils are exported to and the details of the permitted haulier's Waste Collection Permit.

Inert Wastes
The waste material generated by site construction works will be mixed construction & demolition waste, comprising of soil and stone, concrete, tiles, ceramics, and bricks.

Hazardous Wastes
The management of all hazardous waste arising if they occur, shall be coordinated by the C&D Waste and the Health and Safety Managers.
Hazardous wastes such as waste oils and construction liquids shall be stored in dedicated clearly labelled impermeable containers in the waste compound prior to removal off-site.

Contaminated Soil
Where contaminated soils/materials are discovered or occur as a result of accidental spillages of oils or fuels during the construction phase, these areas of ground will be isolated and tested in accordance with the 2002 Landfill Directive (2003/33/EC) for contamination, and pending the results of laboratory WAC testing, will be excavated and exported off-site by an appropriately Permitted Waste Contractor holding an appropriate Waste Collection permit and that this hazardous material will be sent for appropriate treatment / disposal to an appropriately Permitted / Licenced Waste Facility.

8.0 WASTE RECORD KEEPING

It is the responsibility of the Construction & Demolition Waste Manager that a written record of all quantities and natures of all wastes reused / recycled and exported off-site during the project are maintained in a Waste File at the Project office.

The following information shall be recorded for each load of waste exported off-site:

- Waste Type EWC Code and description.
- Volume of waste collected.
- Waste collection contractor's Waste Collection Permit Number and collection receipt including vehicle registration number.
- Destination of waste load including Waste Permit / Licence number of facility.
- Description of how waste at facility shall be treated i.e. disposal / recovery / export
- Details of all Article 27 declarations

The waste records shall be issued to Fingal County Council's Environmental and Waste Department as required / requested.

Where practicable, a computerised monitoring tool may be employed. This system will enable the Contractor to measure and record the quantity of waste generated, and identify possible savings on wastage. Thus, each consignment of Construction & Demolition waste taken from site will be subject to documentation and recording. An indicative template is contained in Figure 6, to ensure that full traceability of materials to its final destination.

Verifiable and validated tracking and authorisation documentation will be maintained for all wastes destined for re-use, recovery, recycling or disposal. Justification will also be provided where a disposal option had been employed.

In addition, a record will be kept of all materials as they arrive on site detailing the assignment of specific uses within the works. This will enable the monitoring of the quantity and type of waste produced at various stages throughout the project.

9.0 CONSTRUCTION WASTE MANAGEMENT AUDITING

The effectiveness of a Waste Management Plan and its implementation, will be subject to regular audits by the Construction & Demolition Waste Manager throughout the duration of the project in accordance with the Audit Plan (to be developed during the works).

The regular audits will focus on materials inputs to the project and the waste outputs for each operation identifying additional opportunities for waste reduction, re-use and recycling.

The audits will also investigate the operational factors and management policies that contribute to the generation of waste and identify appropriate corrective actions, where necessary.
Performance targets will be developed, e.g., an 85% overall recycling target, successes and failures will be recorded and Action Plans will be developed to address any issue which arise.

Inspections of the waste storage areas will be undertaken on a weekly basis, issues relating to housekeeping, inappropriate storage and / or segregation will be actioned at the earliest practicable opportunity.

The Construction & Demolition Waste Manager will record the findings of the audits, including waste types identified, quantities of waste arising, final treatments and cost, in a report to be available to the Local Authority as required during the course of the works.

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 the Final Waste Audit, which will identify the amount, nature and composition of the waste generated on the site.

The Final 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 measure waste quantities will be used to qualify 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.

10.0 WASTE EXPORT PERMITS/LICENCES

It is the responsibility of the Construction & Demolition Waste Manager that a written record of all quantities and natures of all wastes reused / recycled and exported off-site during the project are maintained in a Waste File at the Project office.

The nominated groundworks contractor will be responsible for the excavation of soils and their subsequent transport off-site to a permitted waste acceptance facility.
The nominated groundworks contractor's vehicles exporting material off-site will operate under a valid Waste Collection Permit.

The nominated groundworks contractor's vehicles shall transport waste materials from the site to appropriately permitted / licenced facilities.

Copies of all relevant Waste Collection Permits and Waste Facility Permits / Waste Licences shall be maintained by the Construction & Demolition Waste Manager.

Pending the award of the groundworks contract, copies of the relevant Waste Collection Permits and Waste Facility Permits / Waste Licences shall be made available to Dublin City Council.

All monthly waste logs shall include the gate receipt from the facility accepting the waste load. This receipt shall correspond with the load removed from site.

Appendix 1:
Noise, Vibration & Dust Management Plan

POLICY

It is Ganson Building & Civil Engineering Ltd policy that all noise, vibration and dust emissions on the Project will be managed in compliance with Construction and Demolition Good Practice guide in their Construction Management Plan

This Noise, Vibration & Dust Management Plan incorporates the measures and procedures for the management of noise and vibration arising from the construction and demolition works on this project.

This plan describes the noise, vibration and dust control measures and monitoring proposals for all above and below ground works associated with the construction and demolition works.

RESPONSIBILITIES

The Contract Manager should be proactive in engaging with the occupants of neighbouring properties and should notify them of any works forecast to generate appreciable levels of noise and vibration, explaining the nature and duration of the works.

A designated neighbourhood liaison officer will be appointed for the duration of the construction works and will log any issues and follow up in a prompt fashion.

Responsibility for the management and control of noise and vibration on the project lies with the site management team.

The Project Manager is responsible for all aspects of the day-to-day monitoring of all noise, vibration and dust associated with the project construction works and the movement of traffic.

GENERAL REQUIREMENTS

Noise & Vibration

Ganson Building & Civil Engineering Ltd will provide the best practicable means of control during construction works to minimise noise, vibration and dust at neighbouring residential properties and other sensitive receptors arising from construction activities.

The general principles of noise and vibration management are given below to control at source:

- Equipment – noise emissions limits for equipment brought to site.
- Equipment – method of directly controlling noise and vibration by retrofitting controls to plant and machinery.
- Equipment - indirect method of controlling noise by fitting acoustic screens.
- Equipment - indirect method of controlling noise and vibration by using alternative construction methodology to achieve the objective e.g., vibratory piling techniques as opposed to more conventional but noisier techniques; selection of quieter tools/machines or the application of quieter processes.

Control across site by:

- Administrative and legislative control.

- Control of working hours.
- Control of delivery areas and times,
- Careful choice of compound location.
- Physically screening site.
- Control of noise via Contract specification of limits.
- Noise and Vibration Monitoring, to check compliance with noise level limits.

Many of the activities which generate noise can be mitigated to some degree by careful operation of machinery and use of tools. This may best be addressed by tool box talks and site inductions.

Noise and Vibration Control Measures

In addition to specific requirements of the Planning Restrictions, Ganson Building & Civil Engineering Ltd will adopt the following more specific control measures:
Ganson Building & Civil Engineering Ltd will comply with the recommendations set out in DCC Construction and Demolition Good Practice guide in particular with the following requirements:

- Vehicles and mechanical plant will be maintained in a good and effective working order and operated in a manner to minimise noise, vibration & dust emissions.
- Compressor, generator and engine compartment doors will be kept closed and plant turned off when not in use.
- All pneumatic tools will be fitted with silencers/mufflers.
- Care would be taken when unloading vehicles to avoid un-necessary noise.
- The use of particularly noise plant will be limited, i.e. no works to be carried outside the working hours of the project without prior consent of the Client and Dublin City Council.
- Restrict the number of plant items in use at any one time.
- Plant operations will be undertaken at distance from noise and vibration sensitive areas.
- Ensure that operations are designed to be undertaken with any directional noise and vibration emissions pointing away from sensitive areas.
- Ensure that the quietest plant available is considered for use on the project.
- Drop heights will be minimised when loading/unloading vehicles.
- Vehicles should be prohibited from waiting within the site with their engines running or alternatively, avail of the allocated waiting areas away from sensitive areas.
- Local hoarding, screens or barriers should be erected to shield particularly noisy activities.
- Piling will be carried out with the method that minimises dust, noise and the transmission of vibration to sensitive areas.
- Temporary noise screens will be used to reduce noise from particularly noisy activities and the height of perimeter hoarding will be extended where this would assist in reducing noise disturbance at sensitive areas.
- Hours of operation should be strictly enforced and any deviations other than those previously identified will be with the consent of the Client and Dublin City Council, as described in the planning permission Monday – Friday 08.00 – 19.00, Saturday 08.00 – 14.00.

Notifications

Occupiers of adjacent properties will be informed by Ganson Project Management in advance of the works taking place, including the duration and likely noise and vibration effects. In the case of work required in response to an emergency, the Client and local residents will be advised as soon as reasonably practicable that emergency work is taking place. Potentially affected residents will also be notified by the Project Management Team.
The maintenance of good community relations is vital. Construction noise has the potential to cause disturbance but can be tolerated if prior warning and explanation has been given to residents. In particular advice regarding the nature of construction works, the duration of the works and mitigation measures to be implemented can help to reduce people's reaction to noise. Ganson Project Management Team will consult local residents/communities regarding works and to give them details of the Management Team on site who will be able to deal with queries.

Noise and vibration monitoring
Ganson Will adhere to the Good Practice Guide for Construction and Demolition
A regular programme of noise and vibration monitoring shall be implemented as a minimum. The Ganson Project Management will submit the proposed method, the frequency and the location of monitoring site for agreement prior to commencing works.
Noise Monitoring Equipment Details
The Larson Davis SoundExpert LxT Sound Level Meter is a full-featured meter designed for general product evaluation and noise monitoring applications. SoundExpert LxT comes with a graphic display and a fixed set of firmware options applicable for these applications. It is available as a general hand-held meter or data acquisition tool and also in a short-term noise monitoring kit.
Vibration Monitoring Equipment Details
Micromate Vibration Monitor conforms to industry standards for functionality and ease of use. Micromate provides reliable regulatory compliance monitoring with an ISEE or DIN Triaxial Geophone and ISEE Linear Microphone. Micromate Vibration monitoring device provides a touch screen interface. Support of and use of external devices to record vibration levels.
Dust Monitoring

Ganson will adhere to the Good Practice Guide for Construction and Demolition
Air Quality Monitoring
A dust minimisation plan will be formulated for the demolition and construction phase of the project. Particular account will be taken of the local neighbours, shopping centre, schools and offices. The main contractor shall put in place a regime for monitoring dust levels in the vicinity of the site during works using the Bergerhoff Method (German Standard VDI 2119, 1972). The minimum criteria to be maintained shall be the limit specified by the Environmental Protection Agency (EPA) for licenced facilities in Ireland which is 350mg/m²/day as a 30-day average.

Ganson Building & Civil Engineering Management Team shall monitor dust during construction to ensure the limits are not breached throughout the project. The level of monitoring and adoptions of mitigation measures will vary throughout the construction works depending on the type of activities being undertaken and the prevailing weather conditions

at the time. For instance, additional monitoring and mitigation such as damping down of earth mounds on site would be undertaken if the prevailing weather conditions are dry and windy.

Waste contractors for the project

Waste type	Haulage Contractor name	Disposal Address/Facility
Top Soil, Sub Soil & Stones Cat B – D If confirmed by WAC Tests	John Watson Plant Hire Sevenparks Doolagh Naul Co Dublin K32 DP92	Enva Irleand Ltd. Clonminam Industrial Estate, Portlaoise, Co. Laois, R32 XD95
Concrete/Macadam	Moyglare Transport Moyglare House Ballycannon Kilcock Co Kildare	Callan Recycling Centre Drinnanstown Road North Rathangan Co Kildare
Construction Waste Skips & Canteen Waste Bins	Panda Recycling Ballymount Road Upper Ballymount Dublin	Panda Recycling Ballymount Road Upper Ballymount Dublin

Appendix 2:

Soil/Sub-Soil Waste / Inert / B1 / B2 / C1

Dates	Type	Tonne/ Loads	Haulier	Landfill Sites	EWC Codes

Appendix 3:

Demolition Waste

Dates	Type	Tonne/ Loads	Haulier	Landfill Sites	EWC Codes

Appendix 4:

Skip Hire Log:

Date	Size	Type	Amount Kg	ECW Codes

Appendix 5:

WAC test results:

Appendix 6:

Disposal Acceptance Letters

Appendix 7:

Asbestos Report and Clearance Cert