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Construction Waste & By-Product Management Plan

for

Proposed Residential Development

Bloomfield Park, Bracklin Road, Edgeworthstown, Co. Longford.

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1.0 INTRODUCTION

This document presents the Construction Waste and By-Product Management Plan (CWMP) for the control, management and monitoring of waste associated with the proposed residential development at Bloomfield Park, Bracklin Road, Edgeworthstown, Co. Longford.

The development will consist of the construction of 100 no. dwellings and associated ancillary infrastructure as follows:

- 46 no. 2 storey houses
 - 24 no. 3 bedroom houses [House Types 3A & 3B],
 - 20 no. 4 bedroom houses [House Types 4A, 4B and 4D],
 - 2 no. 5 bedroom houses [House Type 5];
- 4 no. 3 storey houses [House Type 4C],
- 50 no. apartments/duplex apartments in 5 no. 3 storey buildings – (25 no. 2 bedroom apartments and 25 no. 3 bedroom duplex apartments) all with terrace;
- Open space of c. 0.5 hectares, hard and soft landscaping (including public lighting) and open space (including boundary treatment), communal open space for duplex apartments; regrading/re-profiling of site where required [including import/export of soil as required] along with single storey bicycle/bin stores, estate management store and ESB substation;
- Vehicular and pedestrian access (including construction access) from the Bracklin Road and from a new junction off the Bracklin Park Link Road as well as 162 no. car parking spaces and 150 no. cycle spaces for the duplex apartments;
- Surface water attenuation measures and underground attenuation systems as well as connection to water supply, and provision of foul drainage infrastructure;
- All ancillary site development/construction/landscaping works, along with provision of footpath/public lighting/roadworks/landscaping on the Bracklin Park Link Road.

The CWMP has been prepared to demonstrate how the Construction Phase will comply with the following relevant legislation, relevant Best Practice Guidelines and Local Authority Waste Management Policies:

Waste Management Acts 1996

Waste Management (Collection Permit) Regulations 2007 (SI No. 820 of 2007)

Waste Management (Collection Permit) Amendment Regulations 2008 (SI No. 87 of 2008)

Department of the Environment, Heritage and Local Government – Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects – July 2006.

The Eastern-Midlands Region Waste Management Plan 2015-2021.

Longford County Development Plan 2021-2027 Waste Management Objectives CPO 5.121 – CPO 5.130 inclusive.

EPA “Guidance on Soil and Stone By-Products in the context of Article 27 of the European Communities (Waste Directive) Regulations – Version 3 June 2019

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:

- 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.
- To ensure that all waste materials are segregated into different waste fractions and stored on-site in a managed and dedicated waste storage area.
- To 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 DEVELOPMENT LOCATION

The subject site is located on undeveloped lands at Bloomfield Park, Bracklin Road, Edgeworthstown, Co. Longford. The site is generally bordered to the south, east and north by existing residential development and to the west by agricultural lands.

3.0 DESCRIPTION OF SITE ACTIVITIES & WASTE ARISING

The development of the subject site will initially require the stripping of top and sub soils and the excavation of ground to foundation level. 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 & 3 below. There are no structures to be demolished on the existing site, other than a cow shed/shelter of block construction measuring c.5m x 8m.

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., broadband etc.
Removal of Vegetation	e.g. Trees and vegetation
Transport of material off site	Bulk excavation
Substructure	Foundations services infrastructure
Superstructure	Framework, roofing and external finishes
Internal Finishes	Mechanical & Electrical etc.
External Landscaping	Hard and soft landscaping

Table 2 Typical Construction Waste Composition

Description of Waste	%
Mixed Construction & Demolition Waste	33
Wood	28
Plasterboard (Gypsum materials)	10
Ferrous Metals	8
Concrete	6
Mixed other wastes	15
<i>Total</i>	<i>100</i>

Table 3 Predicted Waste Generation							
Waste Type	Predicted tonnage to be produced	Re-Use		Recyclable		Disposal	
		Tonnage	%	Tonnage	%	Tonnage	%
Mixed C&D	750	75	10	600	80	75	10
Timber	600	240	40	330	55	30	5
Plasterboard	300	90	30	180	60	30	10
Metals	150	7.5	5	135	90	7.5	5
Concrete	120	36	30	78	65	6	5
Mixed waste	480	96	20	288	60	96	20
Total	2400	544.5		1611		244.5	

Table 4 – Typical 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 in 17 03 01	17 03 02
Bituminous Mixtures including Coal Tar and Tarred products	17.03 02
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 04
Gypsum based construction material	17 08 02
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 arisings / 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
- Waste Storage Procedures
- Waste Disposal Procedures
- Waste Auditing
- Record Keeping

5.0 WASTE MANAGEMENT & RESPONSIBILITIES

5.1 Roles and Responsibilities Project Manager

The Project Manager will be responsible for the overall implementation of the plan and associated procedure. The Project 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.

Nominated C&D Waste Manager

A technically competent and appropriately trained C&D Waste Manager will be appointed by the Project 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 C&D WMP (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).

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 C&D WMP will be made available to all relevant personnel on site. The Project Manager will arrange for all site personnel and sub-contractors to be instructed about / receive training on the objectives of the Project C&D 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
- C&D WMP
- Materials to be segregated Segregation systems and protocols
- Arrangement for the storage and handling of reusable materials and recyclables Document control requirements
- Where source segregation and materials re-use techniques apply, each member of staff will be given instructions on how to comply with the Project C&D Waste Management Plan and will be displayed for the benefit of site staff.

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 construction site activities, will be established within the active construction phase of the development site.
- Spill kits shall be located within the site 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 order to ensure that the construction contractor correctly segregate waste materials, it is the responsibility of the site construction 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 Project 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 Project Manager or his/her delegate 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 under Section 17 Construction and Demolition Wastes of the European Waste Catalogue (EWC) as detailed in Table 4.

- 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 / Project 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 / Project 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.

7.0 ON-SITE WASTE REDUCTION REUSE RECYCLING AND MANAGEMENT

Waste will arise on the project mainly from bulk excavation and general construction activities relating to the roads and services. 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 subcontractors 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. The C&D 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. Any soil that will have to be removed off site will be removed to a licenced landfill facility. The C&D 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 C&D 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 C&D waste

Waste Soils & Stones Export & Article 27 Declarations

The development will not require Article 27 Declarations. All stripped soils shall be re-used on site.

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. Material may be processed on site if necessary, using an on-site crusher unit, which will process fill material into suitable size classes for the reuse as on-site construction materials. Mixed C&D waste with large non-uniform stone or compacted soils may be passed through a mobile crusher unit which will render the material into a uniform shape and size which will allow for improved backfilling and compaction to required engineering standards.

Hazardous Wastes

The management of all hazardous waste arisings 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.

Invasive Species

Species listed on the Third Schedule of S.I. 477/2011 (as amended) Japanese Knotweed & Giant Hogweed. An ecological assessment of the site by Joe McConville & Associates did not identify the presence of any invasive species.

8.0 RECORD KEEPING

It is the responsibility of the C&D 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

The waste records shall be issued to Longford County Council 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 C&D waste taken from site will be subject to documentation and recording.

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 (WMP) and its implementation, will be subject to regular audits by the C&D 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 C&D 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.