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Project: Proposed Residential Development, Coolcarron, Fermoy, Co. Cork

Project No: 19074

Document Title: Preliminary Construction and Demolition Waste Management Plan

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1.0 Introduction

Walsh design group (WDG) were appointed by Cumnor Construction Ltd. to produce a preliminary Construction and Demolition Waste Management Plan (CDWMP) as part of a planning application for the proposed residential development at Coolcarron, Fermoy, Co. Cork.

The appointed Main Contractor for the development will produce a detailed CDWMP when the construction methodology for each element of the development has been finalised. That plan will be a live document subject to regular review during the construction phases. This preliminary CDWMP will form the basic framework on which that detailed CDWMP can be developed.

The preliminary CDWMP shall outline how waste will be managed during the construction phase of the development. The objective of the CDWMP is to ensure that the development's construction and demolition (C&D) waste is managed in accordance with applicable legislation, local authority plans and policies and regional waste management targets.

This document has been prepared in accordance with the Department of the Environment, Heritage and Local Government Best Practice Guidelines for the Preparation of Waste Management Plans for Construction Projects, 2006.

Construction & demolition (C&D) wastes are defined as waste arising from construction, renovation and demolition activities, together with all waste categories mentioned in Chapter 17 of the European Waste Catalogue (EWC).

Based on volume, C&D waste is the largest waste stream in the EU. Effective management of C&D waste, including hazardous and recycled materials, can have major benefits on waste management and sustainability targets.

Benefits are also seen in the construction and recycling industry, through the increased demand for C&D recycled materials. The Waste Framework Directive 2008/98/EC aimed to have 70% of C&D waste recycled by 2020. However, with the exception of a few EU countries, only about 50% of C&D waste is currently being recycled.

This plan has been developed to establish objectives and guidelines prior to the commencement of construction and to be flexible, allowing the Main Contractor to expand on the plan throughout the construction phases, as required. The preliminary CDWMP was prepared following the guidance provided in the following publication:

- Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects, 2006, DoEHLG [1]

and with reference to the following legislation and plans:

- The Waste Management Act, 1996 (as amended) and Associated Regulations,

- The Litter Pollution Act, 1997,
- The Southern Region Waste Management Plan 2015-2021.

Following each revision to the document, the Main Contractor shall be required to furnish the Developer with an updated copy of the CDWMP.

1.1. Objectives

The Waste Management Objectives for the construction and demolition phases for the proposed development are as follows:

- Preventing waste and maximising recycling and recovery of waste where possible;
- Diverting waste from landfill wherever possible;
- Prevent littering;
- Prevent any other environmental pollution such as soil or water contamination.

The hierarchy of priorities for the management of construction waste are outlined in Figure 1.

Figure 1:Waste Management Hierarchy as outlined in the Directive 2008/98/EC on Waste (EC, 2008)

Specific targets for the reuse, recovery and recycling of wastes are set out in Section 0 of this document. Both the CDWMP and the CEMP shall be live documents which shall be updated through all phases of construction.

2.0 Development Description

The proposed development consists of 336 dwelling units consisting of 250 houses, 86 duplex apartments and 1 crèche and all associated site development works. The site is 11.56ha in total area and is currently laid out as agricultural pasture land. It is located just South of Fermoy town on the eastern side of the R639 Fermoy to Rathcormac road, see Figure 2.

The site generally slopes gently downwards from west to east and there is an existing open drainage channel along the eastern boundary. Where the proposed entrance road to the development meets the R639 the ground level is 57.57m but within the site the high point is 56.99m in the southwest corner and this falls to a low point of 51.11m in the northeast corner (all levels are to Malin Head datum).

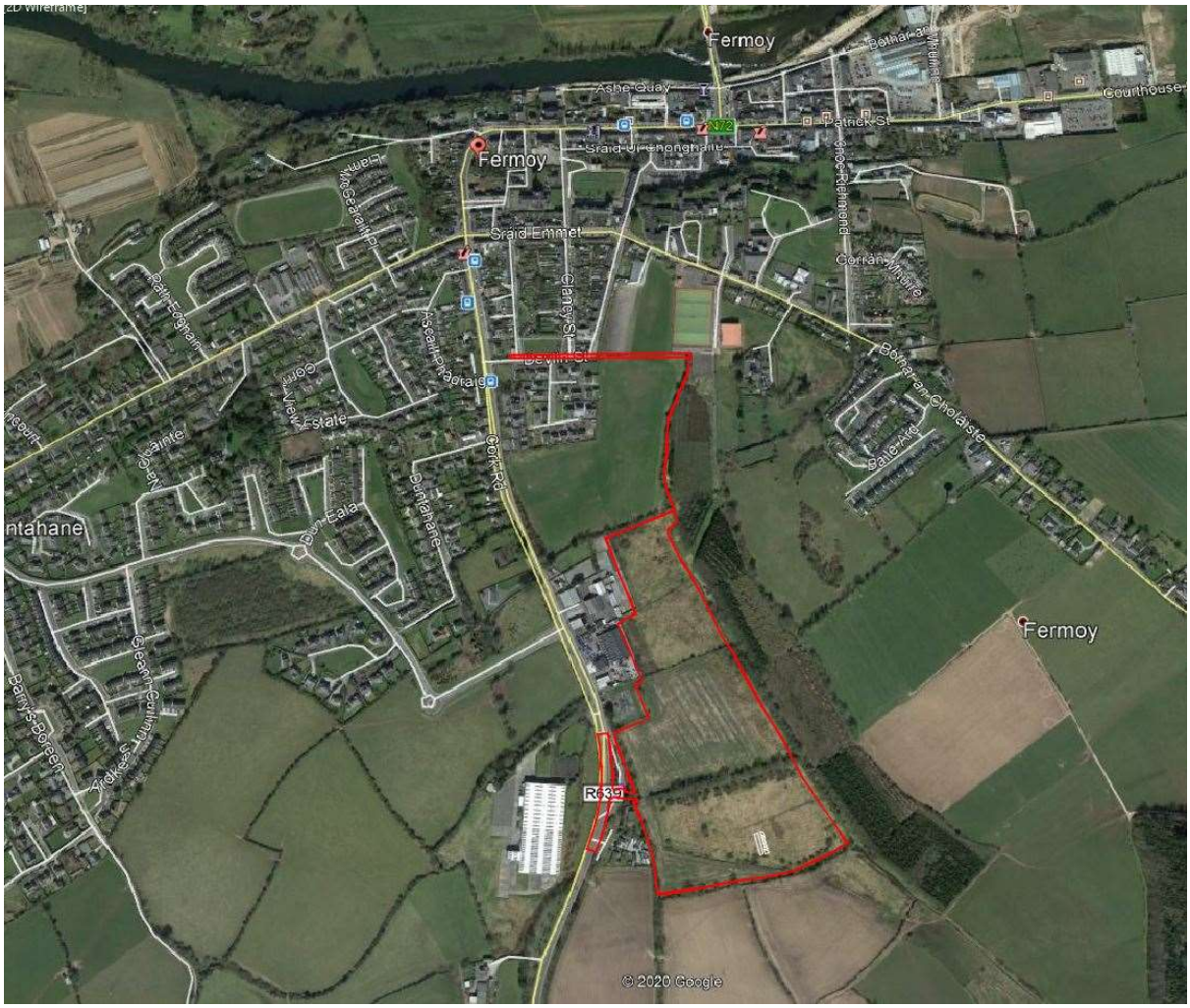


Figure 2: Satellite image showing Site Location and application boundary (Google Earth)

The southern boundary of the site is shared with agricultural land. The western boundary is shared with private dwellings at the southern end and an ESB facility and commercial properties at the northern end. An existing lay-by and weigh station is situated adjacent to the proposed development entrance, beside the R639. The northern boundary is shared with the St. Coleman's sports ground and the eastern boundary is shared with land, beyond the drainage channel that is currently forested.

3.0 Waste Management

The Main Contractor will be responsible for the development of a final, detailed Construction Management Plan, and to develop final quantities of materials, and construction methodologies. Quantities of construction waste materials may vary depending on these construction methods. Therefore, the difficulty of estimating waste quantities is noted which depends on the approach of the appointed Main Contractor. Throughout the construction phase of the development these quantities may be subject to change and the Main Contractor's Waste Manager will update the CDWMP accordingly.

Their detailed plan will incorporate the elements identified in this plan to promote sustainable waste management in line with the waste hierarchy, and also focus on integrating good site management practices to ensure efficiency and reduce potential for any other negative environmental effects.

3.1. Demolition Waste

This development site is currently a green-field site in its entirety and there will be no requirement for demolition before the construction phase commences.

3.2. Construction Waste

It is anticipated that the majority of wastes generated during construction will be suitable for reuse, recovery or recycling and will therefore be segregated to facilitate the reuse, recovery and/or recycling, wherever possible. A non-exhaustive list of construction waste categories which may be generated during the construction phase of the Proposed Development have been identified below and the appropriate European Waste Catalogue Code for construction wastes has been provided in Figure 3.

Non-Hazardous Waste Streams

- Topsoil, sub soil, stones, made ground fill from excavations;
- Excess new concrete, brick, tiles and ceramics;
- Excess asphalt and tar products;
- Excess plasterboard;
- Scrap metal;
- Cardboard and other packaging;
- Plastic including wrapping and packaging;
- Waste wood;
- Paper;
- Glass;
- Waste from portable site toilets;
- Canteen and food waste; and
- Damaged materials.

Hazardous Waste Streams

- Contaminated soils;
- Asbestos;
- Batteries;
- Oils, fuels and lubricants from machinery and equipment; and
- Excess paints.

17	CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)
17 01	**concrete, bricks, tiles and ceramics**
17 01 01	concrete
17 01 02	bricks
17 01 03	tiles and ceramics
17 01 06*	mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing hazardous substances
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 02	**wood, glass and plastic**
17 02 01	wood
17 02 02	glass
17 02 03	plastic
17 02 04*	glass, plastic and wood containing or contaminated with hazardous substances
17 03	**bituminous mixtures, coal tar and tarred products**
17 03 01*	bituminous mixtures containing coal tar
17 03 02	bituminous mixtures other than those mentioned in 17 03 01
17 03 03*	coal tar and tarred products
17 04	**metals (including their alloys)**
17 04 01	copper, bronze, brass
17 04 02	aluminium
17 04 03	lead
17 04 04	zinc
17 04 05	iron and steel
17 04 06	tin
17 04 07	mixed metals
17 04 09*	metal waste contaminated with hazardous substances
17 04 10*	cables containing oil, coal tar and other hazardous substances
17 04 11	cables other than those mentioned in 17 04 10

17 05	**soil (including excavated soil from contaminated sites), stones and dredging spoil**
17 05 03*	soil and stones containing hazardous substances
17 05 04	soil and stones other than those mentioned in 17 05 03
17 05 05*	dredging spoil containing hazardous substances
17 05 06	dredging spoil other than those mentioned in 17 05 05
17 05 07*	track ballast containing hazardous substances
17 05 08	track ballast other than those mentioned in 17 05 07
17 06	**insulation materials and asbestos-containing construction materials**
17 06 01*	insulation materials containing asbestos
17 06 03*	other insulation materials consisting of or containing hazardous substances
17 06 04	insulation materials other than those mentioned in 17 06 01 and 17 06 03
17 06 05*	construction materials containing asbestos
17 08	**gypsum-based construction material**
17 08 01*	gypsum-based construction materials contaminated with hazardous substances
17 08 02	gypsum-based construction materials other than those mentioned in 17 08 01
17 09	**other construction and demolition wastes**
17 09 01*	construction and demolition wastes containing mercury
17 09 02*	construction and demolition wastes containing PCB (for example PCB-containing sealants, PCB-containing resin-based floorings, PCB-containing sealed glazing units, PCB-containing capacitors)
17 09 03*	other construction and demolition wastes (including mixed wastes) containing hazardous substances
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03

Figure 3: EPA Waste Classification - List of Waste applicable from July 2018

A full list of the European Waste Code (EWC) classifications [2] can be found at the following EPA web page; https://www.epa.ie/publications/monitoring--assessment/waste/2019--FULL-template.pdf.

3.3. Waste Management Options

The Main Contractor and their C&D Waste Manager will be responsible for setting out and maintaining waste storage areas across the development site during each construction phase. These areas will be secured and provide for appropriate segregation of waste materials. The relocation of these areas will be planned appropriately as works progress across the site.

The Main Contractor will implement waste management policies whereby waste materials generated on site are to be segregated as far as practicable. The Main Contractor and C&D waste Manager will ensure that all waste which arise from the construction of the proposed development that cannot be reused on site will be removed from site by approved waste contractors. These contractors will be required to hold a valid waste collection permit. Furthermore, all waste materials which are required to be disposed off-site will be reused, recycled, recovered or disposed of at an appropriate facility which holds appropriate registration, permit or licence.

The C&D Waste Manager will retain up-to-date copies of the relevant collection permits, and facility registrations, permits and licences on file.

Other written records of the waste arisings from construction will be maintained as per Section 0 of this CDWMP.

3.4. Management of Waste Streams

3.4.1. Soil & Stone

The development of the subject site will require the stripping of top and sub soils and the excavation of ground to formation level.

The volume of material in the initial site strip of 0.3m depth has been estimated at approximately 33,900 m^3. With an anticipated bulk density of 1.9 tonne/m^3 this equates to ca. 64,410 tonnes of soil. The bulk density conversion is based on industry experience of similar soils. The subsoil strip to formation level is estimated to be c. 15,340m^3 with an approximate weight of 29,146 tonnes. The site fill required under structures is estimated at c. 40,360m^3 or 64,580 tonnes of stone (at an assumed crushed stone bulk density of 1.6 tonne/m^3) and the site fill required to landscaped areas is estimated at c. 29,100m^3 or 55,290tonnes.

See Appendix B to this document for a breakdown of the initial estimations for the site cut and fill volumes, by phase, expected during the site works and the summary of cut and fill volumes in Table 1.

Phase	Site Strip (300mm) (m^3)	Site Cut (m^3)	Site Fill (under Structures) (m^3)	Site Fill (Landscaped areas) (m^3)
1	5535	3761	9036	7653
2	7657	1554	17280	6577
3	9572	8535	4307	5649
4	5908	1473	3715	4093
5	5264	20	6023	5125
Totals	33936	15343	40361	29097

Table 1: Summary of Estimated Site Cut & Fill Volumes

More refined models will be created closer to the construction stage of the development and it is envisaged that the volume of fill under the landscaped areas will increase as more detail is added around private gardens etc. whilst the volume of fill under structures will decrease correspondingly bringing the site cut and fill volumes closer to a balance.

It is not known at this stage whether suitable stone will be recovered from site excavations to be used in fill but soils cut from the site will be stockpiled and reused to fill under the landscaped areas of the site, as required.

The Soil and Stone Recovery & Disposal Capacity (Update Report 2020) recommends that proposed developments with demolition and excavation processes exhaust all reuse possibilities before sending to recovery or disposal facilities. Provisions in the EC (Waste Directive) Regulations 2011 provide for the reclassification of waste as resources and this is addressed under Article 27 (by-product) and Article 28 (end-of-waste).

When certain criteria can be demonstrated by the economic operator, Article 27 allows for the declaration of a material as a by-product rather than a waste. This instrument is well established for soils and stone. The classification of soils and stone as a by-product can have significant economic benefits and allow for the handling of these materials outside waste legislation. There are also significant environmental benefits through facilitating a circular economy approach.

These decisions made by the economic operator must be notified to the EPA. This is considered by the EPA on a case-by-case basis and the EPA then takes a risk-based approach in making their determination. This determination has an advisory period of 10 weeks. For this declaration the economic operator is required to demonstrate that all four of the by-product conditions are met:

1. The further use of the soil and stone is certain;
2. The soil and stone can be used without any further processing other than normal industrial practice;
3. The soil and stone are produced as an integral part of a production process; and,

4. Further use is lawful fulfilling relevant product, environmental and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts.

This process requires that these excavated materials are advised to not be removed from the Site until appropriate approvals are received from the EPA.

The Main Contractor should seek advice on this process from an appropriately qualified consultant.

3.4.2. Hazardous Soils

Hazardous soils may be suitable for recovery at soil recovery facilities subject to meeting the waste acceptance criteria specific to those facilities rather than disposal to landfill.

Soils not suitable for re-use or recovery will be removed offsite to appropriately licenced waste disposal facilities. Soils intended for disposal are required to undergo Waste Classification in accordance with WM3 to determine if soils are hazardous or non-hazardous in nature prior to WAC assessment. Hazardous soils are not anticipated at this green-field site, however, in the unlikely event that hazardous soils are discovered on site, these soils should be stored separately and covered prior to removal offsite to an appropriate, licenced facility.

3.4.3. Estimated Construction Waste

The amount of other wastes likely to arise as a result of the construction phase of the proposed development was estimated using the Building Research Establishment (BRE) Waste Benchmark Data [3]. The total amount is presented in Table 2 (note that this table does not include waste arising from excavations and groundworks).

Development Type	$m^3/100m^2$	m^2 Buildings	Estimated Waste Volume (m^3)
Commercial/Retail	15	332	49.8
Residential	15.2	36,145.5	5494.1
Total		36477.5	5543.9

Table 2: Estimated Construction Waste Volumes

The EPA provides a breakdown of the proportion of different types of C&D wastes collected in Ireland [4]. This was used to estimate the breakdown in the different types of waste likely to arise as a result of the construction and demolition phases of the Proposed Development. This estimate is presented in Table 3 along with proposed targets for recycling and/or recovery.

Waste Stream	Proportion	Proportion when Soil & Stone are excluded	Tonnes	Reuse, Recovery or Recycling Target
Soil and Stone	84.8%	n/a	See section 3.4.1	See section 3.4.1
Mixed C&D Waste	4.5%	29.6%	1641	20% (see note below)
Concrete, Brick, Tiles and Gypsum	6.9%	45.4%	2517	80%
Metals	2.2%	14.4%	498	95%
Bituminous Mixtures	1.3%	8.6%	477	80%
Segregated wood, glass and plastic	0.3%	2.0%	111	80%

Table 3: Estimated Construction Waste Teams

Other wastes, not listed in Table 3, are likely to be generated in very small volumes.

Mixed C&D waste is the most common C&D waste after soils and stone in Ireland. Mixed C&D waste cannot be recovered or recycled due to its mixed nature being made up of numerous materials. Some mixed C&D waste can be somewhat segregated and a portion recycled at the receiving waste facility e.g., removal of metal by magnet. However, to achieve a target of 20% reuse, recovery, or recycling for this waste stream a greater proportion of segregation will be required. Measures to facilitate and manage this are set out in Sections 0 to 0 of this document.

Materials should be ordered on an as needed basis to avoid excess materials becoming waste. Any excess, unused, materials will be sent back to the supplier. To facilitate this, materials in packaging should not be unpackaged until they are ready for use.

4.0 Estimated Waste Management Cost

There is a benefit to construction site management when costs associated with waste production are identified. This will enhance cost control and ensure the avoidance of C&D waste management during the construction phase.

Costs benefits associated with waste management strategies are outlined in this section. The potential costs and savings will be entirely dependent on the final quantities of materials and the appointed Main Contractor's construction methodologies and approaches. Methodologies will be designed in such a way as to design out waste and manage its generation before materials come to site.

The costs of C&D waste management during the construction phase will be closely monitored by the Waste Manager. Their assessments will take into account handling costs, storage costs, transportation costs, revenue from potential rebates and disposal costs. On site waste management will strive to reuse materials as far as practicable. If materials are required to be sent off site as waste, then recycling is the preferred alternative to landfill disposal.

4.1. Design out Waste

Opportunities exist during the design, procurement and construction phases to design out waste from construction activities. Waste prevention will be prioritised by the Main Contractor as define their approach to each element of construction and during the development of the Construction and Environmental Management Plan.

This can be achieved through a combination of strategies such as; off-site construction methods, materials optimisation and standardisation, etc. Specific construction practices would include: the use of prefabricated materials and components in construction, where feasible, in order to reduce waste generation on site and associated transportation impacts; purchasing power can be used to minimise materials packaging and ensure that packaging is recyclable where possible and any unused materials will be returned to suppliers (where possible) or used on other projects to avoid their potential wastage and disposal.

4.2. Reuse

The reuse of waste materials will result in a reduction of waste management costs in terms of collection, transportation and other contractor recycling, recovery and disposal costs.

Cost savings can be made where clean and inert soils and stones that reused on site are utilised as capping material at landfill sites, or for the reinstatement of land voids. Depending on the sites and the authorisation, the material can be taken without charge or at a reduced fee, thereby reducing waste management costs for the development site.

4.3. Recycling

Efficient on-site waste management and segregation of wastes can provide significant cost savings to the construction site, depending on segregation at source for the recyclable materials. Waste contractors charge considerably less to receive appropriately segregated wastes streams from a site as opposed to mixed waste.

Clean and uncontaminated wastes such as cardboard and various hard plastics can be recycled, similarly wood and timber products can be recycled. Recyclable metals can earn a rebate from metal recycling contractors which can positively affect the cost of waste management for the site.

4.4. Disposal

Disposal is the least preferable method of waste management. A landfill Levy of €75 per tonne is imposed for waste sent to landfill under the Waste Management (Landfill Levy) Regulations 2015 (S.I. 189 of 2015). Current typical gate fees for non-hazardous waste disposal to landfill are €150-170 per tonne, which includes this levy.

An additional fee for collection and transport would also be imposed by the waste contractor. This can vary a lot depending on the distance from the site to the landfill and individual agreements made with waste contractors. Collection of segregated C&D waste costs less than municipal waste. Specific C&D waste contractors take the waste off-site to a licensed or permitted facility and, where possible, remove salvageable items from the waste stream before disposing of the remainder to landfill. Clean soil, rubble, metal etc. is also used as fill/capping material, where possible.

5.0 Resources and Training

A responsible and reliable member of the construction management team will be appointed as the project waste manager to ensure compliant, efficient and documented waste management during the construction and demolition of the project. Each member of the construction staff, however, including sub-contractors, will require training in waste management procedures appropriate to their role and each person will have the responsibility to comply with the CDWMP and related waste management procedures.

5.1. Waste Manager

The appointed Waste Manager will be given responsibility and authority to select a waste team, if required. This team will include members of the site staff that will aid them in the organisation, operation and recording of the waste management system on the site.

The Waste Manager will have overall responsibility to oversee, record and provide feedback to the client on everyday waste management at the site. Authority will be given to the waste manager to delegate responsibility to sub-contractors where necessary and to coordinate with suppliers, service providers and sub-contractors to prioritise good practice in waste prevention and recycling on site.

The Waste Manager will have overall responsibility to manage, record and provide updates to the client and construction management team on everyday waste management at the site. It will be their responsibility to ensure that all relevant site personnel are trained, appropriately to their role in the implementation of the CDWMP and related waste management procedures. These procedures will include litter prevention and mitigation measures.

The Waste Manager will be required to ensure that only appropriately permitted waste collection contractors are used to collect waste from the site. This can be checked on the National Waste Collection Permit Office (NWCPO) website at https://www.nwcpo.ie/permitsearch.aspx. They will also be responsible for ensuring that all waste is processed, and/or disposed of at a suitably licenced or permitted waste facility. The status of a site's waste permit or certificate of registration (COR) can be checked on the NWCPO website at http://facilityregister.nwcpo.ie/. The Waste Manager will be trained in how to establish and maintain a waste record keeping system, how to perform an audit and how to establish targets for the waste management on site. They will be also trained in the best methods for segregation and storage of recyclable materials, have information on the materials that can be reused on site and know how to implement the CDWMP. They will also be responsible for conducting waste audits at regular intervals throughout the construction programme.

5.2. Contractor's Staff and Sub-Contractors

It will be the responsibility of all relevant site construction staff and sub-contractors to ensure that waste is segregated and stored appropriately in line with the CDWMP and related waste management procedures.

A basic awareness course will be given to all site staff and relevant sub-contractors to outline the CDWMP and explain the Contractor's requirements in terms of segregation of waste materials at source and litter prevention. This short course could be added to the site induction training and will describe the materials to be segregated, the storage methods and the location of the Waste Storage Areas. A sub-section on hazardous wastes will be incorporated into the training program and the particular dangers of each hazardous waste will be explained. This may also include the provision of training and reminder material such as posters, signs and contact details for the Waste Manager and other relevant staff members.

6.0 Record Keeping

Prior to commencement on site the Main Contractor will tabulate the CDWMP permit numbers, authorised waste sites etc. for ease of reference. Waste handling and all documentation will be monitored in accordance with the procedures outlined in the CDWMP. For each movement of waste i.e., skip or truckload, the Waste Manager will obtain a signed docket from the waste contractor listing the weight, type and final destination of the load. A receipt from the final destination will also be kept on file to allow cross checking. All information will be entered in a waste management system to be maintained on-site.

The following is a non-exhaustive list of details to be recorded for each load of waste material leaving the site:

- All waste collection permits covering the transport of waste off-site,
- All licences, waste facility permits and certificates of registration covering the destination of the waste generated by the project,
- The details of any exemption from these requirements claimed by any organisation employed to handle wastes from the project,
- Wastes streams (hazardous and non-hazardous), list of waste codes, the quantities, types, etc.,
- A register of method statements for demolition work/ waste segregation etc.,
- Staff Training Records,
- A register of names and roles of personnel responsible for management of waste on site,
- Copies of all delivery dockets to and from site,
- A site layout map.

The record system will allow the comparison of recorded waste amounts with the targets established for the recovery, reuse and recycling. This system should also be linked with that for delivery records. In this way, the percentage of construction waste generated for each material can be determined. The record system will also contain appropriate details of all Article 27 declarations made on the site.

7.0 Auditing

The effectiveness of the C&D Waste Management Plan and its implementation shall be tracked through regular audits carried out on site. An audit plan shall be devised at the same time as the waste management procedures are being laid out, at the start of the project.

Audits shall focus on material inputs to the project and the waste outputs for each unit operation. This internal auditing shall be carried out by the appointed Waste Manager and reviewed by the Project Manager and/or Client as appropriate. The audits shall also investigate the operational factors and management policies that contribute to the generation of waste and identify appropriate corrective actions. It is essential that reviews of waste management practices take place through each stage of the project.

It is worth noting that Cork County Council provide a template for a Construction and Demolition Waste Management Plan on their Website. A copy of this template is provided, for reference, in Appendix A to this document.

A record of each audit shall be kept on file by the Waste Manager.

8.0 Conclusion

This preliminary CDWMP outlines the management procedures which will enable the appointed Main Contractor's Project Manager to prepare and update a construction stage CDWMP. The appointed Main Contractor will be required to develop an updated CEMP and CDWMP prior to the commencement of any construction works and this will be submitted to the Planning Authority for approval, if requested.

The implementation of all of the environmental management measures outlined in this preliminary CDWMP will ensure that the construction programme will be completed whilst minimising adverse effects on the surrounding environment and minimising waste disposal in so far as is possible.

9.0 Works Cited

[1] DoEHLG, Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects, DoEHLG, 2006.

[2] EPA, "List of Waste & determining if Waste is Hazardous or Non-hazardous," June 2019. [Online]. Available: https://www.epa.ie/publications/monitoring--assessment/waste/2019--FULL-template.pdf.

[3] BRE, "BRE Waste Benchmark Data," 2012. [Online].

[4] EPA, "Construction and Demolition Waste Statistics for Ireland," 17 November 2021. [Online]. Available: https://www.epa.ie/our-services/monitoring--assessment/waste/national-waste-statistics/construction--demolition/.

Appendix A

Cork County Council –
Construction and Demolition Waste Management Plan Template

Construction and Demolition Waste Management Plan (WMP) Form

1. General Information

a) Planning Ref No: _____

b) Name of Contractor/ Manager: _____

c) Address of Contractor/ Developer: _____

d) Name of Site Manager: _____
(Person responsible for the implementation of the Waste Management Plan)

e) Address of Development: _____

f) Contact Details of Person responsible for preparing the Waste Management Plan

i) Name:_____

ii) **Telephone No: _____ Email:_____**

Describe the nature of the Development:

_____
_____
_____
_____
_____
_____

2. Description of Construction Waste Generated (*details of the waste types expected to be produced and an account of how C&D waste surpluses/deficits are liable to arise*);

Construction Waste Generated

Describe the type of waste and estimate the quantity of waste expected to be generated from the ***construction*** works. A List of Waste code(s) must be assigned to each waste type. See attached list of LoW Codes for construction and demolition waste. All other waste types including LoW codes can be found by contacting the Environmental Protection Agency on 053 9160600 or www.epa.ie

Please complete Table A at planning application stage. All waste moved off site must be done so by an authorised waste collector and recovered/ disposed of at an authorised site.

Table A: Details of Construction Waste Generated.

Type of Waste ***(Description)***	**List of Waste Code(LoW Code)**	**Volume of Waste generated** ***Estimate (tonnes)***	**Waste Exported off-site** ***Estimate (tonnes)***	**Name and NWCPO Ref No. of the Waste Collector proposed to be used.** (refer to www.nwcpo.ie for more information). **and Name and CoR/ Permit/ Waste Licenced Ref. No. of Authorised Site(s) receiving the waste.**
Clean Soil and Stone See Footnote (i)				Name of Waste Collector & Permit Ref No: **Name of CoR/Waste Permit /Waste Licensed Facility & Ref No.**
Concrete, Blocks, Tiles				Name of Waste Collector & Permit Ref No: **Name of CoR/Waste Permit /Waste Licensed Facility & Ref No.**
Hazardous waste See footnote (ii)				Name of Waste Collector & Permit Ref No: **Name of CoR/Waste Permit /Waste Licensed Facility & Ref No.**
Wood/green waste				Name of Waste Collector & Permit Ref No: **Name of CoR/Waste Permit /Waste Licensed Facility & Ref No.**
Plaster Board				Name of Waste Collector & Permit Ref No: **Name of CoR/Waste Permit /Waste Licensed Facility & Ref No.**
Glass				Name of Waste Collector & Permit Ref No: **Name of CoR/Waste Permit /Waste Licensed Facility & Ref No.**
Metals				Name of Waste Collector & Permit Ref No: **Name of CoR/Waste Permit /Waste Licensed Facility & Ref No.**
Plastics				Name of Waste Collector & Permit Ref No: **Name of CoR/Waste Permit /Waste Licensed Facility & Ref No.**
Other				Name of Waste Collector & Permit Ref No: **Name of CoR/Waste Permit /Waste Licensed Facility & Ref No.**

i. Clean soil and stone is classified as a waste. When transported off site, it must be recovered/ disposed of at an authorised waste facility. Please contact the Environment Directorate Section Cork County Council at 021-4532700 if you have any queries.

ii. Hazardous wastes may include but is not limited to, asbestos, electrical equipment, waste oils, contaminated soil, etc.

3. Demolition Work

a) Demolition Plan & Demolition Method Statements

Prepare a Demolition Plan and a Demolition Method Statement (for Non Hazardous Waste and Hazardous Waste) indicating the methods to be used in carrying out demolition work to ensure all waste streams are cleanly separated.

b) Demolition Waste Generated

Describe the type of waste and estimate the quantity of waste generated from demolition activities. A List of Waste code(s) must be assigned to each waste type. See attached list of LoW Codes for construction and demolition waste. All other waste types including LoW codes can be found by contacting the Environmental Protection Agency on 053 9160600 or www.epa.ie

Please complete Table B at planning application stage

Table B: Details of Demolition Waste Generated.

Type of Waste ***(Description)***	**List of Waste Code(LoW Code)**	**Volume of Waste generated *Estimate (tonnes)***	**Waste Exported off-site *Estimate (tonnes)***	**Name and NWCPO Ref No. of the Waste Collector propose to be used.** (see www.nwcpo.ie for more information) **and Name and CoR/ Permit/ Waste Licenced Ref. No. of Authorised Site(s) receiving the waste.**
Wood (e.g. MDF, plywood,timber)				Name of Waste Collector & Permit Ref No: **Name of CoR/Waste Permit /Waste Licensed Facility & Ref No.**
Concrete, soil, rubble and stone.				Name of Waste Collector & Permit Ref No: **Name of CoR/Waste Permit /Waste Licensed Facility & Ref No.**
Hazardous Waste. (e.g Fluorescent light tubes, Asbestos, electrical equipment, waste oils, contaminated soil etc)				Name of Waste Collector & Permit Ref No: **Name of CoR/Waste Permit /Waste Licensed Facility & Ref No.**
Plumbing fixtures and fittings				Name of Waste Collector & Permit Ref No: **Name of CoR/Waste Permit /Waste Licensed Facility & Ref No.**
Plaster Board				Name of Waste Collector & Permit Ref No: **Name of Waste Permit /Waste Licensed Facility**
Glass				Name of Waste Collector & Permit Ref No: **Name of CoR/Waste Permit /Waste Licensed Facility & Ref No.**

Metals (e.g. iron, steel)				Name of Waste Collector & Permit Ref No:
				Name of CoR/Waste Permit /Waste Licensed Facility & Ref No.
Asphalt / macadam				Name of Waste Collector & Permit Ref No:
				Name of CoR/Waste Permit /Waste Licensed Facility & Ref No.
Other				Name of Waste Collector & Permit Ref No:
				Name of CoR/Waste Permit /Waste Licensed Facility & Ref No.

4. Waste segregation

Provide a method statement detailing measures to be taken to promote waste segregation. The method statement shall detail type(s) of containers to be used, location(s), method(s) of transport, etc.

5. Provision of a site layout map (*indicating where waste is to be temporarily stored prior to disposal / recovery*)

Provide a site layout map indicating where waste will be temporarily stored prior to disposal / recovery.

Waste storage areas shall be selected so that they are set back from watercourses, ecological sensitive areas of extreme vulnerability, and away from potential floodplain areas and areas containing invasive species.

6. Staff training, awareness and resource management

Prepare procedures for communication and training with regard to the handling of waste including waste prevention, segregation, minimisation and storage of waste on site. The roles and responsibilities of site staff with regard to waste management shall be clearly identified.

7. Compliance documentation and record keeping and Waste Audit

The Waste Management Plan should provide for systems that will ensure that details of all arisings, movement and treatment of C&D waste are recorded. Special consideration should be given to the provision of a computerised monitoring tool, which can provide for convenient recording of information in a useful format and ultimately contribute to waste reduction through benchmarking of waste arisings.

Recording of on-going monitoring and results should be a key duty of the site staff appointed to oversee the environmental performance of the project, and should extend to all waste management activities. Site audits form part of this process, as does the internal review of the content of the waste management plan to ensure that it remains relevant to the project as a whole.

The main contractor on a project should be aware of where all waste arising from the project is going to and who is taking it. At the very minimum, the contractor must keep a full record of the following:

- All waste collection permits covering the transport of waste off-site;
- All licences, waste facility permits and certificates of registration covering the destination of the waste generated by the project;
- The details of any exemption from these requirements claimed by any organisation employed to handle wastes from the project;
- Wastes streams (hazardous and non hazardous), list of waste codes, the quantities, types, etc
- A register of method statements for demolition work/ waste segregation etc
- Staff Training Records
- A register of names and roles of personnel responsible for management of waste on site
- Copies of all delivery dockets to and from site
- A site layout map

8. Declaration

I agree that all information supplied is accurate. Where there is a significant deviation in estimates or details provided in the Waste Management Plan, Cork County Council will be notified immediately.

Records (**including daily docket sheets, copy of waste collection permit and waste authorisations**) of all waste removed from the site shall be maintained at the site office and shall be made available to Cork County Council when requested.

Signed: _____ **Date**: __/__/__/

Applicant / Developer.

Appendix 1
Waste Classification

List of Waste & Determining if Waste is Hazardous or Non-hazardous (Valid from 1st of June 2015)

17	CONSTRUCTION AND DEMOLITION WASTES *(INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)*
17 01	**concrete, bricks, tiles and ceramics**
17 01 01	concrete
17 01 02	bricks
17 01 03	tiles and ceramics
17 01 06*	mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing dangerous substances
17 01 07	mixture of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 02	**wood, glass and plastic**
17 02 01	wood
17 02 02	glass
17 02 03	plastic
17 02 04*	glass, plastic and wood containing or contaminated with dangerous substances
17 03	**bituminous mixtures, coal tar and tarred products**
17 03 01*	bituminous mixtures containing coal tar
17 03 02	bituminous mixtures containing other than those mentioned in 17 03 01
17 03 03*	coal tar and tarred products
17 04	**metals (including their alloys)**
17 04 01	copper, bronze, brass
17 04 02	aluminium
17 04 03	lead
17 04 04	zinc
17 04 05	iron and steel
17 04 06	tin
17 04 07	mixed metals
17 04 09*	metal waste contaminated with dangerous substances
17 04 10*	cables containing oil, coal tar and other dangerous substances
17 04 11	cables other than those mentioned in 17 04 10
17 05	**soil (including excavated soil from contaminated sites), stones and dredging spoil**
17 05 03*	soil and stones containing dangerous substances
17 05 04	soil and stones other than those mentioned in 17 05 03
17 05 05*	dredging spoil containing dangerous substances
17 05 06	dredging spoil other than those mentioned 17 05 05
17 05 07*	track ballast containing dangerous substances
17 05 08	track ballast other than those mentioned in 17 05 07
17 06	**insulation materials and asbestos-containing construction materials**
17 06 01*	insulation materials containing asbestos

17 06 03*	other insulation materials consisting of or containing dangerous substances
17 06 04	insulation materials other than those mentioned in 17 06 01 and 17 06 03
17 06 05*	construction materials containing asbestos
17 08	**gypsum-based construction material**
17 08 01*	gypsum-based construction materials contaminated with dangerous substances
17 08 02	gypsum-based construction materials other than those mentioned in 17 08 01
17 09	**other construction and demolition waste**
17 09 01*	construction and demolition wastes containing mercury
17 09 02*	construction and demolition wastes containing pcb (for example pcb-containing sealants, pcb-containing resin-based floorings, pcb-containing sealed glazing units, pcb-containing capacitors)
17 09 03*	other construction and demolition wastes (including mixed wastes) containing dangerous substances
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03

Please note ***Hazardous (marked with an asterisk)***

Guidelines for Preparation of Waste Management Plans

Construction and Demolition Waste

Introduction:
When required by condition of planning, a Contractor / Developer shall prepare a Waste Management Plan. The plan must be agreed with Cork County Council prior to submission of the Commencement Notice for the development.

The Waste Management Plan (WMP) must provide an overall framework for the management of all waste arising on site. The WMP must also take account of the waste hierarchy which favours, in descending order: waste prevention and minimisation, material reuse, material recovery and recycling, energy recovery from waste, disposal of waste to licensed landfill.

What is Construction and Demolition Waste?
Construction and Demolition (C&D) waste is all waste that arises from construction and demolition activities (including excavated soil from contaminated sites), together with all waste categories mentioned in Chapter 17 of the *Environmental Protection Agency*, "*Waste Classification, List of Waste & Determining if Waste is Hazardous or Non-Hazardous, Valid from June 2015*.Also included within the definition are surplus and damaged products and materials arising in the course of construction work or used temporarily during the course of onsite activities.

When is a Construction and Demolition Waste Management Plan required?
A Construction & Demolition Waste Management Plan is required where there may be potential for the proposed project to exceed the thresholds set out in the DoEHLG publication 'Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects July 2006', which are set out in **Table C**.

Table C: C&D Projects/Development Thresholds.

Item	Description of C&D Projects/Development
1	New residential development of 10 houses or more
2	New developments other than (1) above, including institutional, educational, health and other public facilities, with an aggregate floor area in excess of 1,250 m2;
3	Demolition/renovation/refurbishment projects generating in excess of 100m3 in volume, of C&D waste;
4	Civil Engineering projects producing in excess of 500m3 of waste, excluding waste materials used for development works on the site.

General Information required to be provided in Construction and Demolition Waste Management Plan (WMP) Form:
The Waste Management Plan (WMP) must provide details of the Contractor / Developer & the Site Manager responsible for implementation of WMP.

Description of Development and Waste Generated:
The Waste Management Plan (WMP) must provide details of the size, scale and nature of the works together with a comprehensive list of the various waste streams arising on site and estimated quantities of each material. The LoW code for each waste type should also be included. A sample list of LoW codes is provided in Appendix 1.
A full listing is available on the EPA website (www.epa.ie).

Site layout map:
The Waste Management Plan (WMP) must include a site layout map indicating where waste is to be temporarily stored prior to disposal / recovery. For example, this arises where spoil, clay etc. is being stockpiled on site pending removal. Spoil should be stored in a location that will not result in silt being washed into surface waters or onto public roads or drains.

Demolition:
If demolition is involved a method statement should be included with the Waste Management Plan (WMP) which details the methods that will be used during the demolition work to ensure all waste streams are cleanly separated.
The demolition of a building without firstly stripping out all roofing, timber, insulation, wiring, partitions, fixtures, etc is unacceptable as inert and non-inert waste become co-mingled and very difficult to separate.
A building or lands may need to be surveyed by a competent person to determine if any hazardous materials are present, such as asbestos cement sheeting, asbestos cement slate, asbestos insulation, PCB's, soil contaminated with hazardous chemicals, soil contaminated with hydrocarbons, etc.
The method statement should clearly state the proposed methods to be used to removed, store, transport and dispose of all waste arising from demolition work.

Segregation of Waste:
The Waste Management Plan (WMP) must provide details of the methods that will be used during the demolition work to ensure the separation of and subsequent segregated storage of recyclable materials on site pending collection (e.g. timber, paper & cardboard, metals, glass, plastic film, concrete, macadam, soil / rubble / stone, other recyclable waste etc.)

Cardboard / paper needs to be stored separately in a dry location pending collection.

Mixed non-hazardous waste should be stored on-site, pending collection, in a large wheelie-bin, an enclosed skip or a suitable enclosed trailer. The designated container should be on-site at all times during construction work.

Procedures should be in place to ensure littering of the site does not occur.

Hazardous Waste:
Hazardous waste such as drums or tins containing hazardous chemicals (displaying hazard symbols), oil based paints or varnishes, wood preservatives, herbicides, pesticides, batteries, fluorescent tubes etc. shall be separated from mixed waste and treated as hazardous waste. Water based emulsions are classed as non-hazardous. Hazardous waste should be collected by a specialised permitted Waste Collector.

Asbestos Waste:
Wastes such as asbestos cement sheeting, asbestos cement slates or asbestos insulation, which contain asbestos fibres, are classified as hazardous and require special handling procedures.
Asbestos waste should be collected by a specialized permitted Waste Collector for ultimate disposal.

Transport of Waste:
Any waste (including inert waste) removed from the site shall only be transported by an individual or company which holds a valid Waste Collection Permit to transport such material.
Waste Collection Permits are issued by the National Waste Collection Permit Office , (Áras an Chontae, Charleville Road, Tullamore, Co. Offaly - Telephone: (057) 935 7428 Website – www.nwcpo.ie).
Any person transporting waste should have a copy of their Waste Collection Permit available for inspection in the vehicle at all times.

Certified/ Permitted / Licensed Facilities Used:
Any waste (including inert waste) removed from any site shall only be taken to facilities which hold either a valid Certificate of Registration or Waste Facility Permit issued by Cork County Council or a Waste Licence issued by the EPA. Details should be included in the plan of the actual facilities to be used for the final recovery / disposal of waste arising.

Roles including Training and Assignment of Responsibilities for Implementation of the Waste Management Plan:
A Site Engineer/ Manager etc shall be designated as the C & D Waste Manager and have overall responsibility for the implementation of the Project Waste Management Plan.
All site personnel will be instructed about the objectives of the Project Waste Management Plan and informed of the responsibilities that fall upon them.

Records/ Waste Auditing:
A record shall be maintained of all waste removed from the site. The record shall include information on the type of waste removed, the quantity removed, the date when the waste was removed, details of whether the waste in question was being removed for either disposal or recovery, details of the individual or company removing the waste (including permit number), details of the facility to which the waste was removed (including licence or permit or CoR number).
A location shall be identified where all records in regard to waste transport, recovery, disposal will be held for inspection.

Prohibited Activities.
The Waste Management Acts, 1996 prohibit the unauthorised disposal, recovery or movement of waste.
Waste should not be burned.
Waste should not be buried on site.
Waste should not be transferred to unauthorised persons.
Waste should not be transferred to unauthorised sites.

Conclusion:
A copy of the completed Draft Waste Management Plan (WMP) for the development should be submitted to the Planning Authority for assessment and agreement prior to the submission of a Commencement Notice.

Further information on the preparation on Waste Management Plans can also been obtained from the following publication:
“Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects” – Department of the Environment, Heritage & Local Government, July, 2006.

Appendix B

- Proposed construction phasing drawing – Architect's Drawing No. PL-02
- Initial Cut/fill estimations per phase.

PHASING LEGEND

PHASE 1
HOUSES 1-17 & 28-57
DUPLEX 18-27

PHASE 2
HOUSES 58-67 & 78-127
DUPLEX 68-77

PHASE 3
HOUSES 128-204
CRECHE

PHASE 4
HOUSES 239-270
DUPLEX 205-238

PHASE 5
HOUSES 271-285 & 294-304
SIMPLEX 286-293
DUPLEX 305-336

PHASING PLAN IN
RESPECT OF PART V

LEGEND

PHASE	UNIT TYPE	TOTAL NO. OF UNITS/PHASE	NO. OF PART V	PART 5 PER PHASE (%)
1	47 HOUSES 8 DUPLEX	55	6 DUPLEX	10.9%
2	60 HOUSES 10 DUPLEX	70	2 HOUSES 4 DUPLEX	8.5%
3	77 HOUSES	77	7 HOUSES	9%
4	32 HOUSES 36 DUPLEX	68	8 DUPLEX	11.8%
5	26 HOUSES 40 DUPLEXES	66	2 HOUSES 4 DUPLEX	9%
TOTAL				
	HOUSES	242	11 HOUSES	4.5%
	DUPLEXES	94	22 DUPLEXES	23.4%
	TOTAL AMOUNT	336	33 PART V UNITS	10%

LOCATION OF SITE
NOTICE NO. 3

LOCATION OF SITE
NOTICE NO. 4

LOCATION OF SITE
NOTICE NO. 5

LOCATION OF SITE
NOTICE NO. 2

LOCATION OF SITE
NOTICE NO. 1

LOCATION OF SITE
NOTICE NO. 6

N

PHASING SITE LAYOUT PLAN

1:1000

REV.:	DATE:	DRWN.:	DESCRIPTION:	INT:

GCA
GERALDINE COUGHLAN
ARCHITECTS
Ard-Na-Greine, Enniskeane, Co. Cork 086-8259794 info@gca.ie

PROJECT: DEVELOPMENT AT FERMOY					JOB NO: 19037
DRAWING: DEVELOPMENT PHASING PLAN		AH	CLIENT: CUMNOR		DRAWING NO: PL 02
SERIES: PLANNING	SCALE: 1:1000	A0	DATE: 09/02/2022		

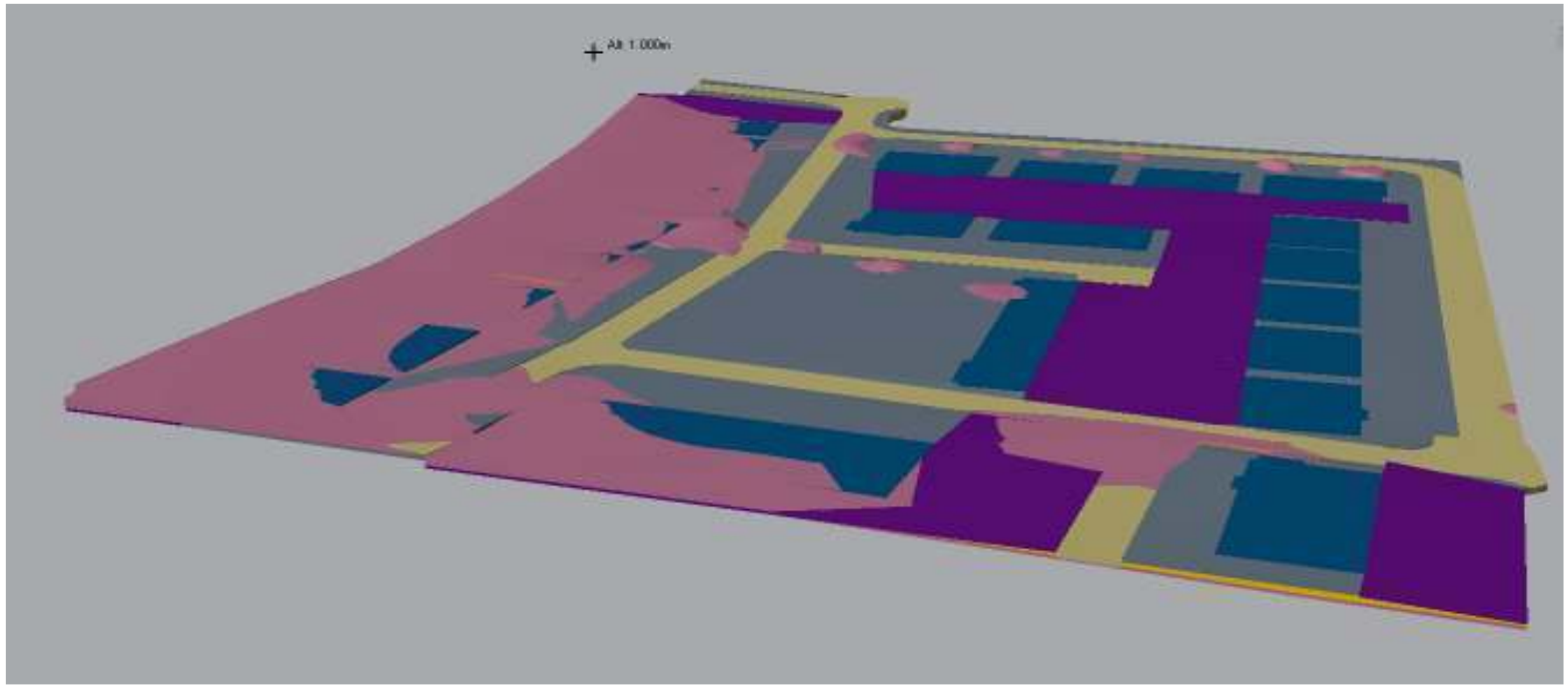
16274

Coolcarron Fermoy Development

Outline Cut and Fill **Date** **17/01/2022**

PHASE 1	QTY	UNIT
Site Strip (assumed 300mm deep)	5535	m3
Site Cut	3761	m3
Site fill (under structures, roads,etc)	9036	m3
Site fill (Landscaping areas)	7653	m3

Model Image



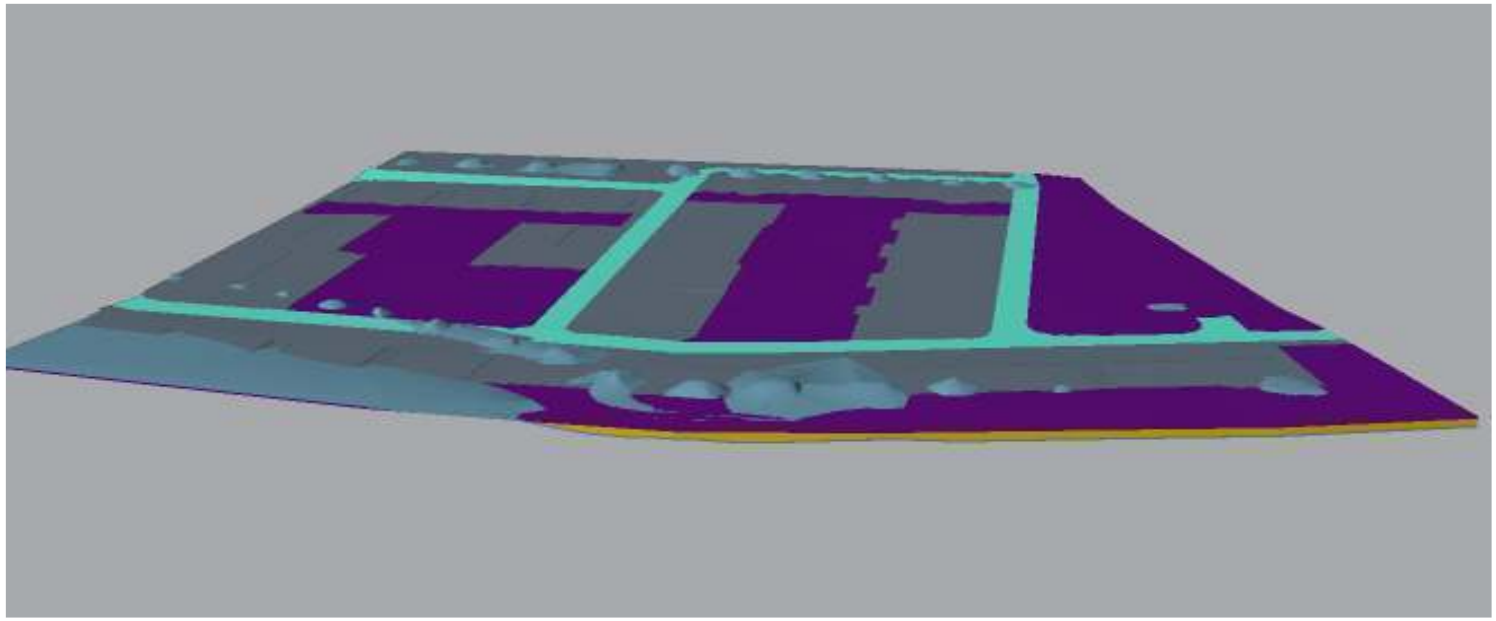
16274

Coolcarron Fermoy Development

Outline Cut and Fill **Date** **17/01/2022**

PHASE 2	QTY	UNIT
Site Strip (assumed 300mm deep)	7657	m3
Site Cut	1554	m3
Site fill (under structures, roads,etc)	17280	m3
Site fill (Landscaping areas)	6577	m3

Model Image



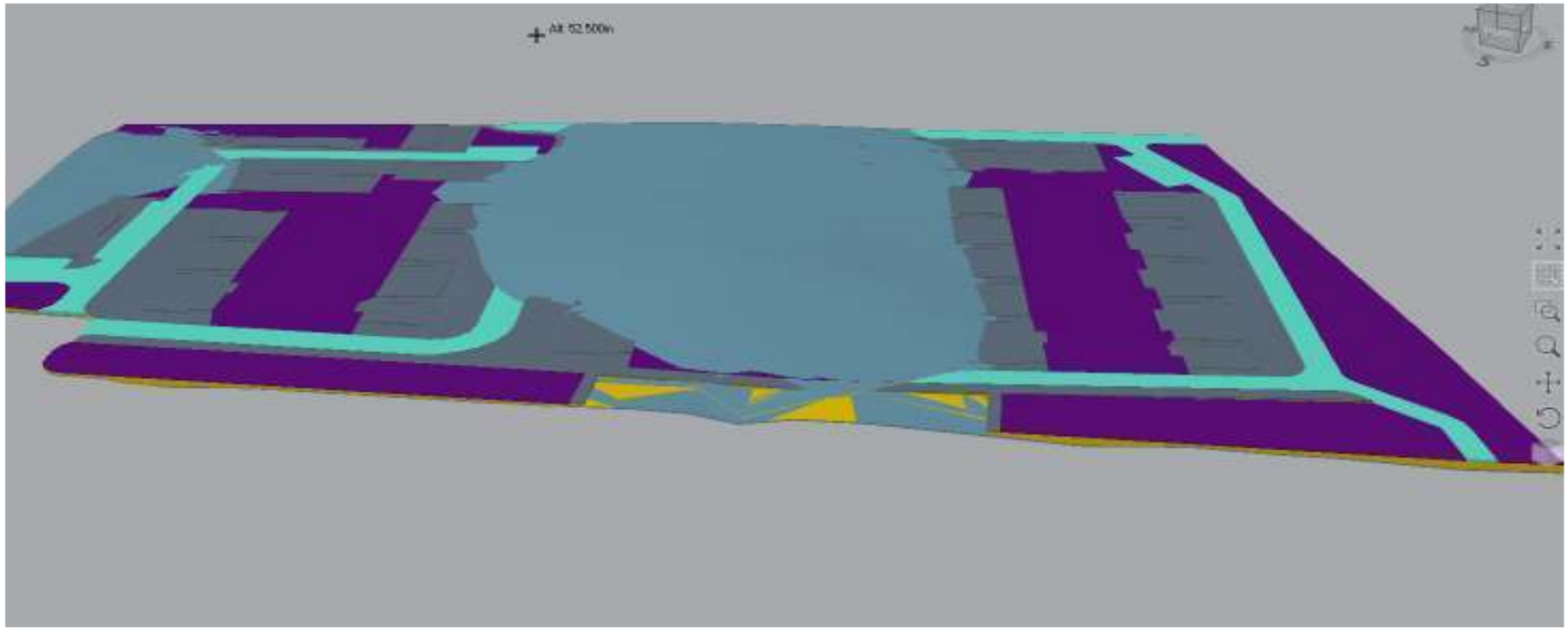
16274

Coolcarron Fermoy Development

Outline Cut and Fill **Date** **17/01/2022**

PHASE 3	QTY	UNIT
Site Strip (assumed 300mm deep)	9572	m3
Site Cut	8535	m3
Site fill (under structures, roads,etc)	4307	m3
Site fill (Landscaping areas)	5649	m3

Model Image



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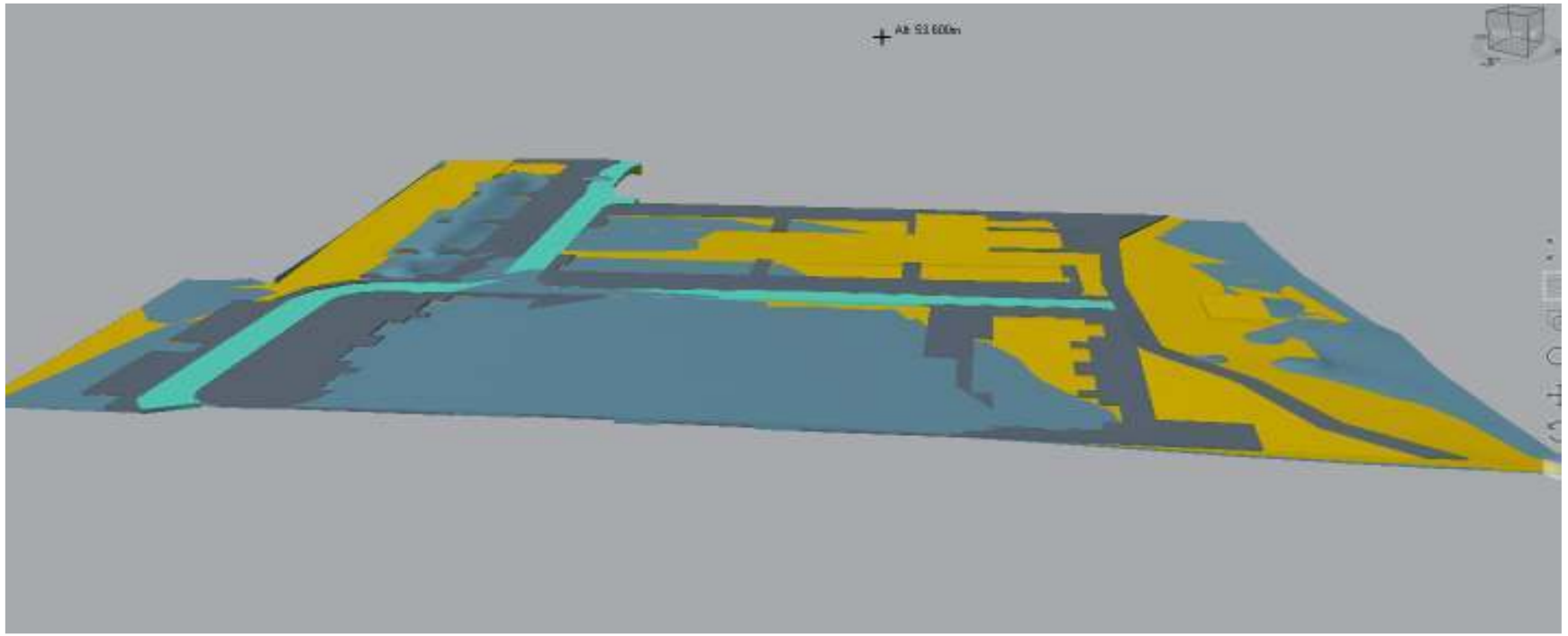
Coolcarron Fermoy Development

Outline Cut and Fill **Date** **17/01/2022**

PHASE 4	QTY	UNIT
Site Strip (assumed 300mm deep)	5908	m3
Site Cut	1473	m3
Site fill (under structures, roads,etc)	3715	m3
Site fill (Landscaping areas)	4093	m3

Model Image



16274

Coolcarron Fermoy Development

Outline Cut and Fill **Date** **17/01/2022**

PHASE 5	QTY	UNIT
Site Strip (assumed 300mm deep)	5264	m3
Site Cut	20	m3
Site fill (under structures, roads,etc)	6023	m3
Site fill (Landscaping areas)	5125	m3

Model Image