

# Resource and Waste Management Plan

Proposed 18 Unit Housing Development

At

Rathmore Road, Lusk, Co. Dublin

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Council



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## Document Control Sheet

<b>Client</b>	<b>Fingal County Council</b>
<b>Project Title</b>	Proposed 18 Unit Housing Development at Rathmore Road, Lusk
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## 1.0 Introduction

This Resource and Waste Management Plan (RWMP) has been prepared by McMahon Associates for the proposed development of 18No dwelling units at Rathmore Road, Lusk, Co. Dublin.

This RWMP has been prepared in accordance with the Environmental Protection Agency’s Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction and Demolition Projects (EPA Best Practice Guidelines RWMP) and the project (Design and Construction) will be executed with a commitment to adhering to the Guidelines set out by the EPA.

This RWMP consist of *Pre-Construction Phase* content and should be considered a “live” document, with *Construction Phase* content added by the appointed contractor pre commencement on site. The RWMP should be continually referenced throughout the construction stage.

The document should be read in conjunction with the Contractors Construction and Environmental Management Plan (CEMP), the contractor health and safety plan and any other relevant construction documents.

The purpose of the RWMP is to document the measures implemented at design stage and set out the RWMP plan for the construction phase, ensuring early consideration of resources is at the forefront of developing a construction project. The proposed scheme is for 18 units and is therefore considered a Tier 2 Project, albeit can be considered a relatively small Tier 2 project. Therefore, this RWMP is proportionate to the scale of the scheme as outlined in the EPA Best Practice Guidelines RWMP.

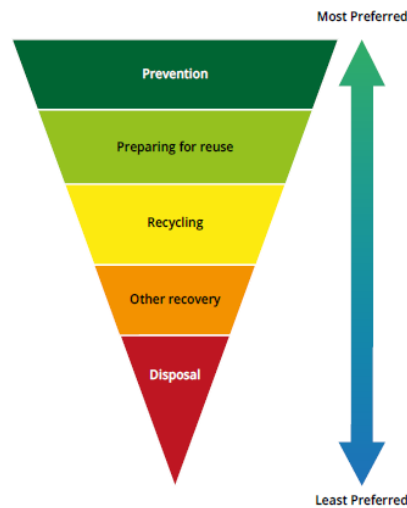
### 1.1 Fingal County Council Environment and Waste Policy

Fingal County Council (FCC) Environment and Waste Policy is set out in FCC Climate Change Action Plan 2019 - 2024, with action areas of Energy and Buildings, and Resource Management. The Action Plan sets out specific construction requirements relevant to the proposed development, such as all new council buildings to be built to nZEB standards.

The Fingal Development Plan 2023 -2029 also outlines climate action requirements such as Policy CAP10 (f), requiring new developments to “*Minimise the generation of site and construction waste and maximising reuse or recycling*”.

## 1.2 Legislation

The EU Waste Framework Directive sets out the basic concepts relating to waste management such as definitions of waste, recycling and recovery and requires member states to apply the waste hierarchy (Figure 1) in waste management legislation and policy.



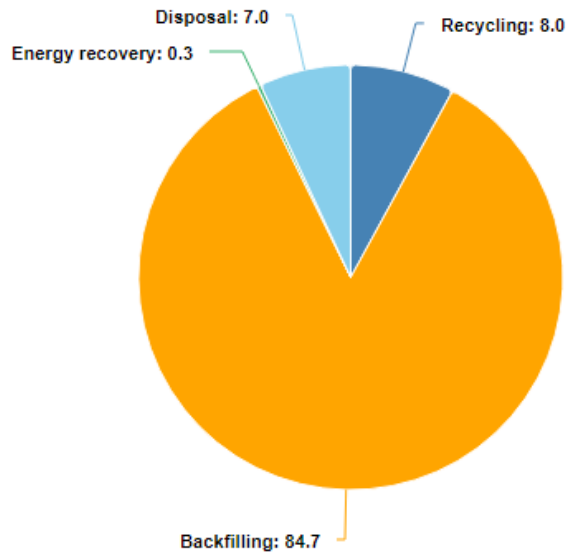
**Figure 1 – Waste Hierarchy (EPA)**

Nationally, Ireland National Waste Policy 2020-2025 is set out in the Waste Action Plan for a Circular Economy (WAPCE). WAPCE outlines a shift in policy away from just treating waste, but instead looks to introduce a circular economy, looking *“first at how we consume materials and resources, how we design the products that households and businesses use, how we prevent waste generation and resource consumption and how we extend the productive life of all goods and products in our society and economy.”*

## 1.3 Resource Targets

As part of the RWMP, the Client will set targets for the contractor to aim to achieve as part of the project. These targets will be set post detailed design stage when the exact scheme design has been sufficiently developed.

Currently, EPA statistics for 2021 shows the treatment breakdown of Construction and Demolition Waste in Ireland as Figure 2.



**Figure 2 – Treatment of C&D waste in Ireland 2021 (EPA)**

For the proposed development, it is likely the Client will set targets in keeping with Figure 2, with a maximum of 7% waste disposal being targeted.

## 2.0 Site Description

The proposed site is bounded to the south by Rathmore Road, to the west by Forge Avenue and to the east by the Remount housing development. To the north is existing greenspace.



**Figure 3 – Site Location**

The site is currently greenfield and is 0.415 hectares in area. The topography is relatively flat, with a fall of approx. 1:50 from the northeast corner of the site to the southwest corner. The site is clear of any structures and therefore there will be no waste demolition associated with the project.

As the site is open greenspace, site clearance of vegetation will be minimal with approx. 300mm of topsoil is expected to be cleared prior to construction. Topsoil will be stored on site and reused within the gardens and greenspaces associated with the development where possible. The proposed levels broadly match existing level, so the requirement to balance cut and fill across the site is minimal.

The proposed development access road will be one way, with access to the development via the north part of Remount and egress via the southern part of Remount. Storm and foul drainage will be provided within the development and connect to adjacent existing services.

In terms of structures, the proposed development will consist of three house types, one bed semi-detached single storey house, a two-bed duplex and a three-bed duplex.

A Site Investigation has been undertaken for the site and made ground recorded in a localised location to the southwest corner of the site. Contamination testing of same shows it to be non-hazardous.

It is expected that the scheme will have a programme of approximately 15 months and will be constructed in a single phase.

The proposed site layout is included in Appendix A.



### **3.0 Roles and Responsibilities**

The main design team will consist of the following:

- Client - FCC Housing Department
- Architect - FCC Architects Department
- Civil and Structural Engineers – To be confirmed
- Mechanical and Electrical Engineers – To be confirmed
- Contractor – To be confirmed

#### **3.1 Clients Role**

The client will be responsible for:

- Establishing the performance targets for the Project,
- Set out these commitments and targets in relation to prevention and minimisation in the project brief, tendering documentation including pre-qualification requirements, invitation to tender, etc.
- Requiring the preparation and submission of an RWMP as part of the detailed design.
- Requiring the preparation and submission of an updated RWMP as part of the construction tendering process.
- Ensuring that the RWMP is agreed and submitted to the local authority prior to commencement of works on site; and
- Requesting the end-of-project RWMP from the Contractor.

#### **3.2 Design Team Role**

The Design Team (Engineers and Architects) will be responsible for:

- Drafting and maintaining the RWMP through the design, planning and procurement phases of the project.
- Appointing a Resource Manager (RM) to track and document the design process, inform the Design Team and prepare the RWMP.
- Including details and estimating quantities of all projected waste streams. This should also include data on waste types (e.g. waste characterisation data, contaminated land assessments, site investigation information) and prevention mechanisms (such as by-products) to illustrate the positive circular economy principles applied by the Design Team.
- Incorporating relevant conditions imposed in the planning permission into the RWMP.

- Handover of the RWMP to the Contractor at commencement of construction for the development of the RWMP in a similar fashion to how the safety file is handed over to the Contractor;
- Working with the Contractor as required to meet the performance targets for the project.

### **3.3 Resource Manager**

The current Resource Manager (McMahon Associates) has been responsible for:

- Tracking the design process and identifying waste avoidance solutions
- Developing and implementing the RWMP
- Aiding the detailed design of the scheme with a strong consideration of minimising waste

### **3.4 Contractor**

The proposed contractor, once appointed, will be responsible for:

- Preparing, implementing and reviewing the RWMP through construction (including the management of all suppliers and sub-contractors) as per the requirements of the EPA Best Practice Guidelines RWMP.
- Identifying a designated and suitably qualified Resource Manager (RM) who will be responsible for implementing the RWMP.
- Identifying all hauliers to be engaged to transport each of the resources / wastes off-site. Note that any resource that is legally a 'waste' must only be transported by a haulier with a valid Waste Collection Permit.
- Identifying all destinations for resources taken off-site.
- End-of-waste and by-product notifications addressed with EPA where required;
- Clarification of any other statutory waste management obligations, which could include on-site processing;
- Full records of all resources (both wastes and other resources) should be maintained for the duration of the project; and
- Preparing a RWMP Implementation Review Report at project handover.

## **4.0 Design Approach**

### **4.1 Prevention**

The design approach for the scheme has been influenced by the desire to prevent waste. A key element of this will be considering the use of offsite construction such as timber frame/Light Gauge Steel (LGS) construction, timber roof trusses and precast concrete floor slabs, subject to detailed design.

The proposed site selection has also prevented waste as it is currently greenfield and therefore does not require any demolition works, meaning waste generated by any site clearance will be prevented.

### **4.2 Reuse and Recycling**

In terms of reusing on site materials, there is no current buildings on site, therefore no demolition waste to be reused.

The proposed site layout and proposed site levels have been developed to minimise the required excavation associated with the site. Any topsoil stripped from the site will be stored on site and reused where possible with the site greenspace. Similarly, any arisings from excavations will be reused where possible on site.

For any surplus topsoil or general fill generated by the development, its possible on other active FCC projects will be investigated, subject to the relevant legislation requirements.

### **4.3 Green Procurement Principles**

Procurement for the scheme will be predominately covered in the *Construction Phase* content that will be prepared by the successful contractor. From a design perspective, the material specifications for the project will remain flexible to allow for contractor proposed variations that may use reclaimed material, have reduced packing, be sourced closer to the site or result in less waste.

### **4.4 Offsite Construction**

As discussed in section 4.1, off site construction will be used where possible, with offsite timber roof trusses and precast concrete floor slabs likely to be used, subject to detailed design.

At detailed design the possible use of timberframe or LGS will be investigated to see if appropriate for the proposed development.

Further guidance in the Modern Method of Construction Introductory Guide is available and will be explored at detailed design to provide faster and more sustainable homes, making the best use of available resources and minimising waste generation.

#### **4.5 Material Optimisation**

For the proposed development, the number of unit types has been kept to three. This will reduce the number of materials specified to facilitate construction repeatability and minimise the number of variables and bespoke elements to enable installation efficiencies.

Lighter forms of construction such as timberframe and LGS will be assessed to see if appropriate, which would contribute to reduced loadings and consequently, less materials required for foundations.

The selection of insulation materials will be optimised to ensure a high BER performance rating, minimising energy waste. Similarly, the heat source for the units will likely be air to water heat pump which minimising waste and street lighting within the development will be more sustainable LED bulbs.

#### **4.6 Flexibility and Deconstruction**

As the proposed development is residential, the flexibility of the units to change use is limited. However, the units will have a minimal design life of 60 years, resulting in the buildings being an efficient, long term use of materials.

## 5.0 Key Materials, Quantities and Costs

The proposed development is currently at planning stage and therefore the quantities of waste that will be generated are difficult to accurately predict. Once detailed design is complete, a better appreciation of the quantities and types of waste materials generated will be known.

The proposed development is not expected to require any *abnormal* construction methodologies; therefore it is expected that the materials and quantities of waste generated will broadly be in keeping with the EPA breakdown of typical Composition of Construction and Demolition waste in Ireland, summarised in Table 1 below.

**Table 1 – Composition of C&D waste collected in Ireland in 2021 (EPA)**

C&D Waste Type	% of Total
Soils, stones and dredging spoil	85.1%
Concrete, brick, tile and gypsum	6.7%
Mixed C&D waste	4.0%
Metal	2.8%
Bituminous Mixtures	1.0%
Segregated wood, glass and plastic	0.4%
Total	100%

In terms of the costs associated with the waste generated from the proposed development, these will need to be assessed post detailed design when the exact materials and construction methodologies have been confirmed and a better understanding of the market rates for material disposal known at the time of construction.

## 6.0 Site Management

A critical part of a successful RWMP will be the effective implementation on site. At construction stage, the appointed contractor will therefore be required to:

- Agree and revise as necessary any commitments or targets included in the RWMP developed at design/planning with the Client for acceptance and adoption in the RWMP for construction.
- Allocate responsibility for resource management to one or more individuals of sufficient seniority to put the relevant procedures into practice. Nominate a suitably qualified Resource Manager (RM) with expertise in waste and resource management to implement the RWMP.
- The RM will be required to update the plan as required to reflect new resource streams, work practices, suppliers or resource management options as required.
- The RM will be responsible for delivery of all training and induction in relation to resource management.
- The RM will be responsible for ensuring site infrastructure is supplied and maintained as fit for purpose.
- The RM will be responsible for conducting all internal site audits including audits of sub-contractor operations.
- The RM will be available as required for any Local Authority or other audits undertaken.
- The RM will be responsible for maintaining site records for waste and resources exported off-site and ensuring these are undertaken by suitably authorised operators to suitably authorised sites.
- The RM will be engaged with relevant individuals who have access to ordering and stock-control records to ensure supply chain initiatives have been adopted.

The RM will also be responsible for training site personnel and making all on site operatives aware of their individual responsibility to reduce waste. The training will include:

- Outlining the scope and contents of the RWMP
- Resource and waste targets for the project
- Procedures in place to minimise waste, including procedures for segregating waste
- Location of Waste Storage Areas

## 7.0 Site Infrastructure

At construction stage, the appointed contractor will be required to provide sufficient infrastructure to deal with waste safely and efficiently. This will include:

- Allocating sufficient space on site for Waste Storage Areas, with adequate space for storage and handling.
- Allocating sufficient space for the stockpiling of excavating materials
- Allocating sufficient space for multiple skips to allow waste segregation
- Providing clear signage for waste storage area
- Providing sufficient space for any hazardous waste storage, including any bunding requirements
- Taking into consideration the visibility of waste storage area to local residents and providing suitable buffers and hoarding to mitigate any potential visual and odour issues.

## 8.0 Conclusion

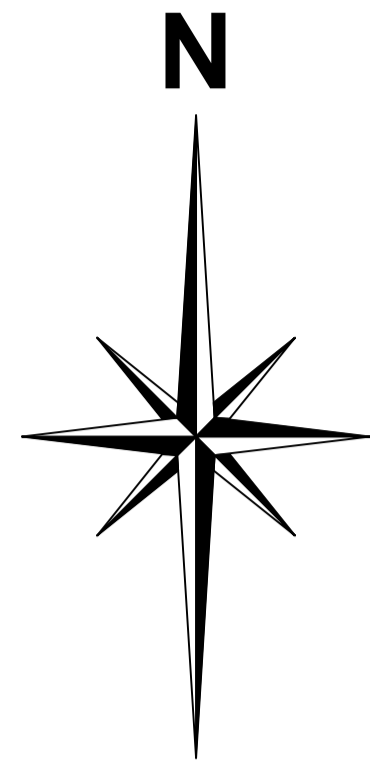
This RWMP has been produced for the proposed development of 18 Units at Rathmore Road, Lusk. It contains *Pre Construction* content based on the initial design phase to support a Part 8 planning application for the site.

The RWMP should be considered a “live” document and should be updated when detailed design has progressed and further information regarding materials and construction methods have been fully explored.

*Construction Stage* content will be provided by the Contractor prior to commencement on site. A suitably qualified Resource Manager will be appointed and responsible for implementing the required process on site to minimise waste and meeting the resource targets set by the Client.



## Appendix A: Proposed Site Layout

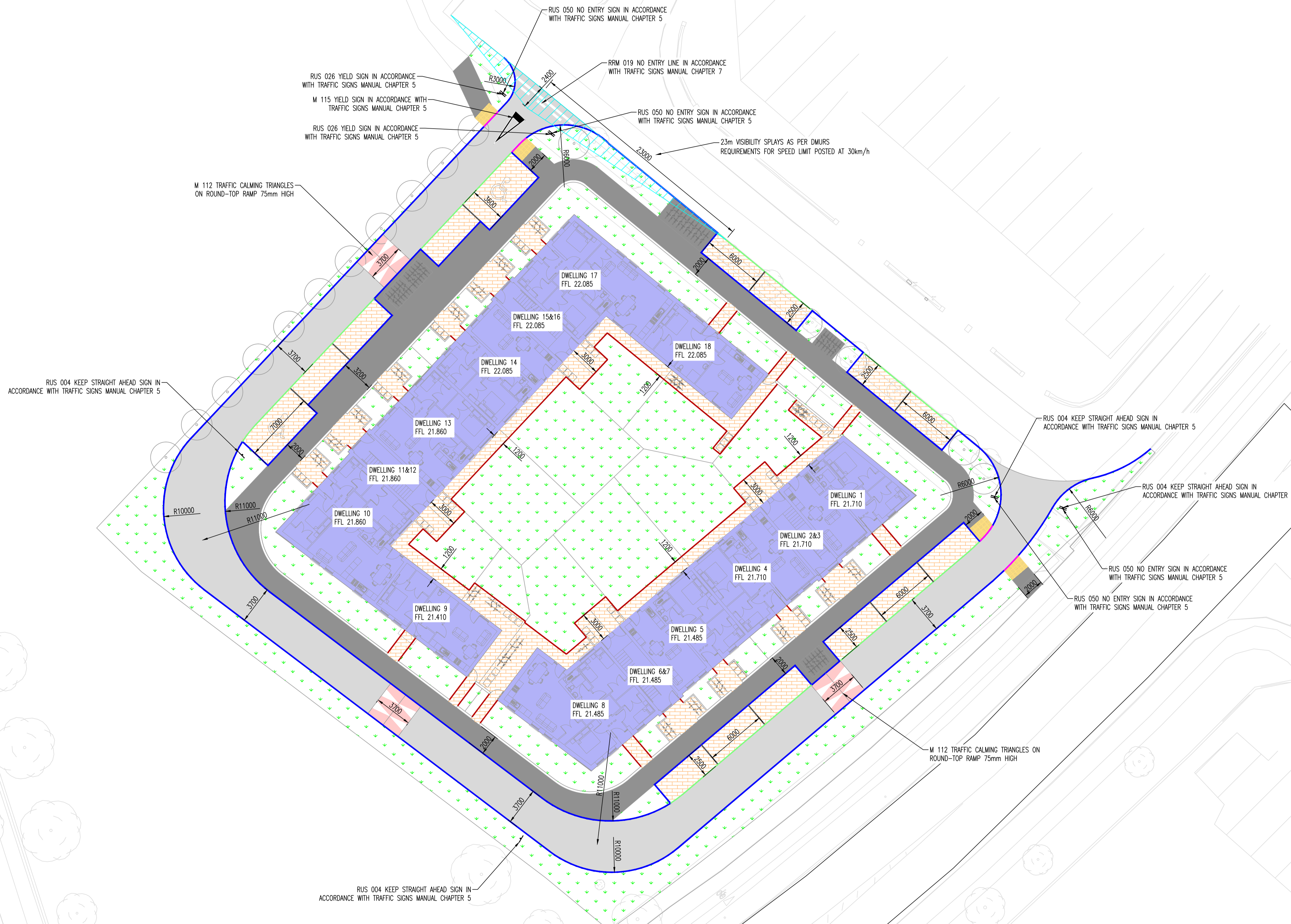


**GENERAL NOTES:**

1. ALL DIMENSIONS AND LEVELS TO BE VERIFIED ON SITE PRIOR TO COMMENCEMENT OF THE WORKS. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECT'S AND OTHER ENGINEERING DRAWINGS.

**LEGEND**

- PROPOSED DWELLING UNITS
- PROPOSED POROUS ASPHALT ROAD
- PROPOSED CONCRETE FOOTWAY
- PROPOSED PERMEABLE PAVING
- PROPOSED LANDSCAPE
- PROPOSED 125mm UPSTAND INSITU KERB
- PROPOSED DROPPED INSITU KERB
- PROPOSED FLUSH INSITU KERB
- PROPOSED PIN KERB
- PROPOSED VISIBILITY SPLAYS
- PROPOSED TACTILE PAVING



REV	DATE	DESCRIPTION	BY	CHK
A	27.01.23	MINOR CHANGES	SM	MK

DRAWING STATUS:  
**PART\_8**

CLIENT:  
**FINGAL COUNTY COUNCIL**

JOB DESCRIPTION:  
**18NO. DWELLING HOUSING DEVELOPMENT, RATHMORE ROAD, CO. DUBLIN**

DRAWING TITLE:  
**INDICATIVE SITE LAYOUT**

PROJECT No.: **P-3633**  
DRAWING No.: **C-01**  
REV. No.: **A**

SCALE: 1:200  
SHEET: A1  
DATE: 23.01.23  
DRAWN BY: SM  
CHECKED BY: MK  
APPROVED BY: PMCM

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